# GENERAL CATALOGUE W4

## Volume 1



# Rail-Mounted Terminal Block Systems

Rail-Mounted Terminal Blocks

X-COM®-SYSTEM

Terminal Strips

Patchboard Systems

Shield (Screen)

Connecting System





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2	Pluggable PCB connectors				PCE broad Blocks feedbrough Forward Blocks PCE Conventors Conventors for Special Applications	VOLUME 2
3	Feedthrough terminal blocks				WAGD*	VOL
4	PCB connectors  MULTI CONNECTION SYSTEM MICRO	Pin spacing	Cross section	า		
5	100% protected against mismating  MULTI CONNECTION SYSTEM MINI	2.5 mm/0.098 in	0.08 mm <sup>2</sup> - 0.5	5 mm²/AWG 28 - 20		
	100% protected against mismating	3.5 +3.81 mm/0.138+0.15 in	0.08 mm <sup>2</sup> - 1.5	5 mm²/AWG 28 - 14		
6	MULTI CONNECTION SYSTEM MIDI 100% protected against mismating	5/7.5 mm/0.197+0.295 in	0.08 mm <sup>2</sup> - 2.5	5 mm²/AWG 28 - 12		
7	MULTI CONNECTION SYSTEM <b>MIDI</b> Standard design	5/5.08 mm/0.197+0.2 in 7.5/7.62 mm/0.295+0.3 in		5 mm²/AWG 28 - 12 5 mm²/AWG 28 - 12		
8	X-COM® connectors for PCBs	5 mm/0.197 in	0.08 mm <sup>2</sup> -	4 mm² / AWG 28 - 12		
9	WINSTA connectors for PCBs	10 mm/0.394 in	2 x 0.5 mm <sup>2</sup>	- 4 mm² / AWG 20 - 12		
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FULL LINE CATALOG W4

full line catalog W4

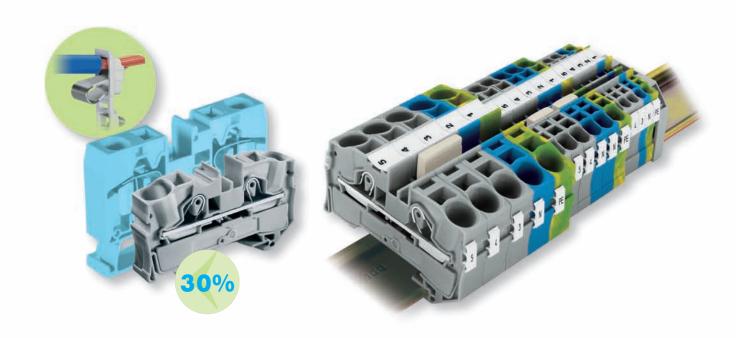
## Rail-Mounted Terminal Block Systems

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# Innovations from the Leader of Spring



TOPJOB®S RAIL-MOUNTED TERMINAL BLOCKS CAGE CLAMP® RAIL-MOUNTED TERMINAL BLOCKS



Clamp Termination Technology



FIT CLAMP RAIL-MOUNTED TERMINAL BLOCKS



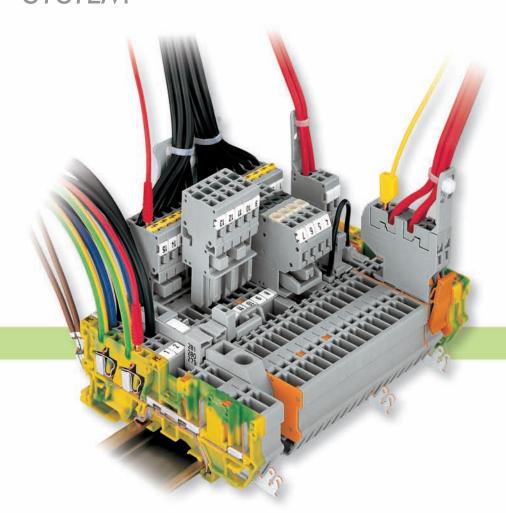


# Innovations from the Leader of Spring



MODULAR TERMINAL BLOCKS/TERMINAL STRIPS

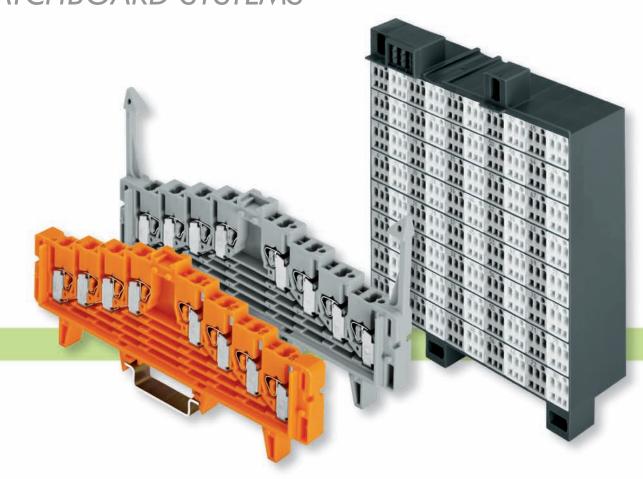
X-COM®-SYSTEM



# Clamp Termination Technology



SHIELD (SCREEN) CONNECTING SYSTEM
PATCHBOARD SYSTEMS

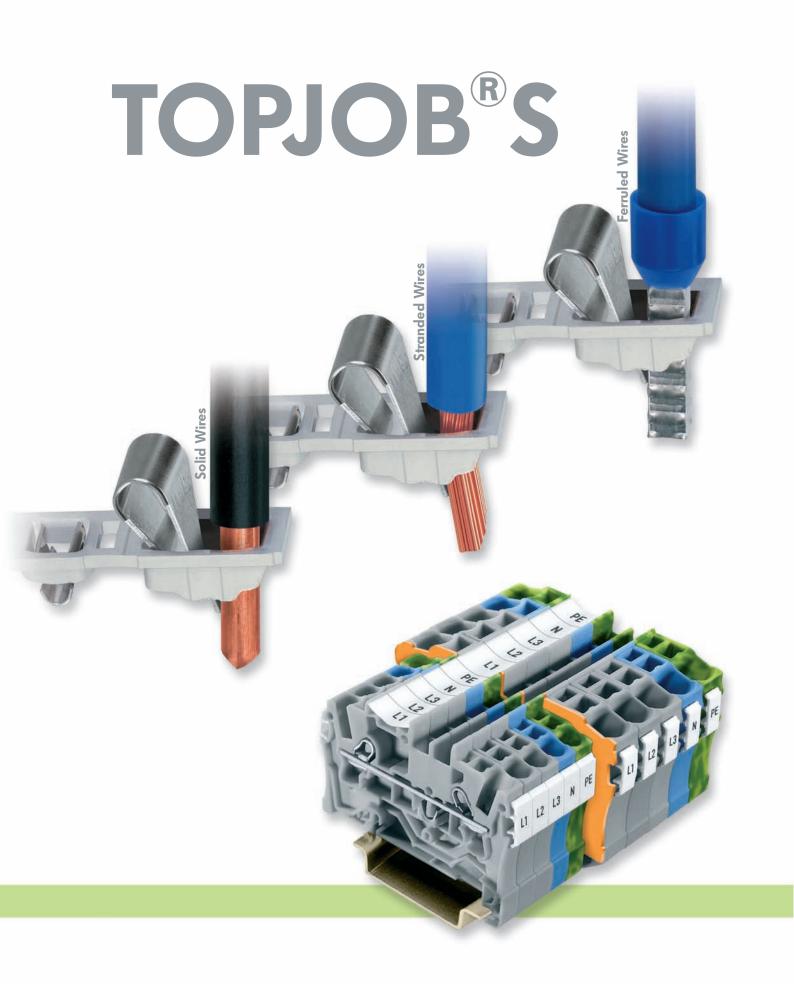




Series	279	2001	290	270	280	264	2002	870	880	281
Characteristic	Standard	TOPJOB®S	FIT CLAMP	Sensor/actuator	Standard	Miniature term. bl.	TOPJOB®S	Compact	Slim Line	Standard
Cross section max. (mm²) min.	<b>1.5</b>     0.08	<b>1.5</b>     0.25	1   1.5 "s"   "f-st" 0.31   0.34	<b>2.5</b> - 0.08	<b>2.5</b>   0.08	<b>2.5</b>   0.08	<b>2.5</b>   0.25	<b>4</b>     0.08	<b>4</b>     0.08	<b>4</b>     0.08
Nominal current (ampere)	18	18	13.5	18	24	24	24	24	25	32
Overall width (mm)	4	4.2	5	5	5	6	5.2	5	5	6
Test slot (Ø mm)									2	
Comment			FIT specifi- cations							
	Page									
2-conductor terminal block	6.6/2.8	1.6	8.6		6.6/2.10	4.4	1.7	3.6	2.14	6.6/2.16
3-conductor terminal block	2.8	1.6	8.6		2.10		1.7	3.6	2.14	2.16
4-conductor terminal block	2.8	1.6	8.6		2.10	4.4	1.7	3.6	2.14	2.16
2-cond. (earth) term. block	2.8	1.6	8.6		6.6/2.10		1.7	3.6	2.14	6.6/2.16
3-cond. (earth) term. block	2.8	1.6	8.6		2.10		1.7	3.6	2.14	2.16
4-cond. (earth) term. block	2.8	1.6	8.6		2.10	4.4		3.6	2.14	2.16
Double potential	2.9				2.11					
Double deck	2.29				2.30			3.8		2.33
Triple deck					2.34			3.9		
Quadruple deck										2.36
Disconnect terminal block					7.10					7.12
N-disconnect terminal block										
Fused disconnect term. block										7.30
Diode terminal block	7.56				7.57			7.64		7.58
Surge suppression devices					Vol. 3			Vol. 3		
Sensor/actuator				7.39	7.44					
Front-entry	X	Χ	X	X	X	X	X	X	X	X
Side-entry	X				X					X
Adjacent jumper	X		X		X			Χ	Χ	X
Staggered jumpers			X		X				Х	X
Push-in type jumper bar		Χ					X	Χ		
Comb type jumper bar						X				
Step-down jumpers										
Nominal current for jumpers (A)	15	18	24		24	16	25	18	24	32
WSB Quick marking	X		X		X				Χ	X
WMB Multi marking		Χ	X	Χ	X		X	Χ	Χ	X
Mini WSB		Χ		Χ		Χ	Х			

Series	2004	282	2006	284	2010	283	2016	285 -6xx	285 -19x	
Characteristic	TOPJOB®S	Standard	TOPJOB®S	Standard		Standard	TOPJOB®S	Standard	Standard	
Cross section (mm²) max.	<b>4</b>	<b>6</b>   0.2	<b>6</b>   0.5	10           	<b>10</b>   0.5	16         	16   0.5	<b>35</b> - 6	<b>95</b>   35	
Nominal current (ampere)	32	41	41	57	57	76	76	125	232	
Overall width (mm)	6.2	8	7.5	10	10	12	12	16	25	
Test slot (Ø mm)										
Comment										
	Page									
2-conductor terminal block	1.8	6.7/2.18	1.9	6.7/2.19	1.10	6.7/2.20	1.11	2.21	2.24	
3-conductor terminal block	1.8	2.18	1.9	2.19	1.10	2.20	1.11			
4-conductor terminal block	1.8									
2-cond. (earth) term. block	1.8	6.7/2.18	1.9	6.7/2.19	1.10	6.7/2.20	1.11	2.21	2.24	
3-cond. (earth) term. block	1.8	2.18	1.9	2.19	1.10	2.20	1.11			
4-cond. (earth) term. block	1.8									
Double potential										
Double deck										
Triple deck										
Quadruple deck										
Disconnect terminal block		7.26/7.22								
N-disconnect terminal block										
Fused disconnect term. block		7.36								
Diode terminal block										
Surge suppression devices										
Sensor/actuator										
Front-entry	Х	Х	X	X	Х	X	Х	Х		
Side-entry		Χ		Χ		Χ			Х	
Adjacent jumper		Х		Х		X		Х	Х	
Staggered jumpers										
Push-in type jumper bar	Χ		Х		Х		Х			
Comb type jumper bar										
Step-down jumpers		Χ		Χ		X		Х		
Nominal current for jumpers (A)	32	41	41	57	57	70	76	85	232	
WSB Quick marking		Х		X		Х		Х	Х	
WMB Multi marking	X	Х	Х	X	Χ	X	Х	Х		
Mini WSB	Χ		X		X		X			





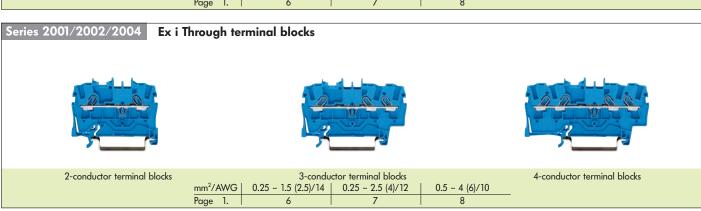
## TOPJOB®S Rail-Mounted Terminal Blocks with CAGE CLAMP®S Connection

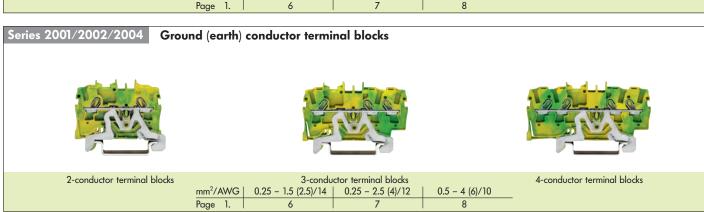
	TOPJOB®S rail-mounted terminal blocks	with CAGE CLAMP®S connection	
	AWG 22 - 14 (0.25 mm <sup>2</sup> - 1.5 (2.5) mm <sup>2</sup> )	Series 2001	_ 1.6
	AWG 22 - 12 (0.25 mm <sup>2</sup> - 2.5 (4) mm <sup>2</sup> )	Series 2002	_ 1.7
	TOPJOB®S rail-mounted terminal blocks	with CAGE CLAMP®S connection	
The state of the s	AWG 20 - 10 (0.5 mm <sup>2</sup> - 4 (6) mm <sup>2</sup> )	Series 2004	_ 1.8
	AWG 20 - 8 (0.5 mm <sup>2</sup> - 6 (10) mm <sup>2</sup> )	Series 2006	_ 1.9
	TOPJOB®S rail-mounted terminal blocks	with CAGE CLAMP®S connection	
Talker I	AWG 20 - 6 (0.5 mm <sup>2</sup> - 10 (16) mm <sup>2</sup> )	Series 2010	_ 1.10
	AWG 20 - 4 (0.5 mm <sup>2</sup> - 16 (25) mm <sup>2</sup> )	Series 2016	_ 1.11
	Ferrules and crimping tools		_ 1.13
	Modular TOPJOB®S connectors		_ 1.12
111111111111111111111111111111111111111	Testing accessories		_ 1.12



# TOPJOB®S Rail-Mounted Terminal Blocks with CAGE CLAMP®S Connection – Product Summary –

# 2-conductor terminal blocks 3-conductor terminal blocks mm²/AWG | 0.25 - 1.5 (2.5)/14 | 0.25 - 2.5 (4)/12 | 0.5 - 4 (6)/10 | Page 1. | 6 | 7 | 8









#### Series 2006/2010/2016 Through terminal blocks





2-conductor terminal blocks			3-conductor terminal blocks
mm²/AWG	0.5 - 6 (10)/8	0.5 - 10 (16)/6	0.5 - 16 (25 "f-st")/4
Page 1.	9	10	11

#### Series 2006/2010/2016 Ex i Through terminal blocks





2-conductor terminal blocks			3-conductor terminal blocks
mm <sup>2</sup> /AWG	0.5 - 6 (10)/8	0.5 - 10 (16)/6	0.5 - 16 (25 "f-st")/4
Page 1.	9	10	11

#### Series 2006/2010/2016 Ground (earth) conductor terminal blocks





2-conductor terminal blocks			3-conductor terminal bloc	ks
mm <sup>2</sup> /AWG	0.5 - 6 (10)/8	0.5 - 10 (16)/6	0.5 - 16 (25 "f-st")/4	
Page 1.	9	10	11	

#### Accessories (selection)





Modular TOPJOB®S connectors

Page 1.6

Test plug adapter for test plug 4 mm Ø Page 1.12



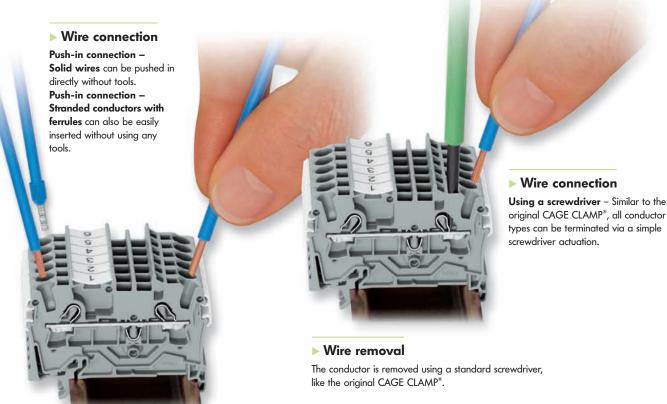


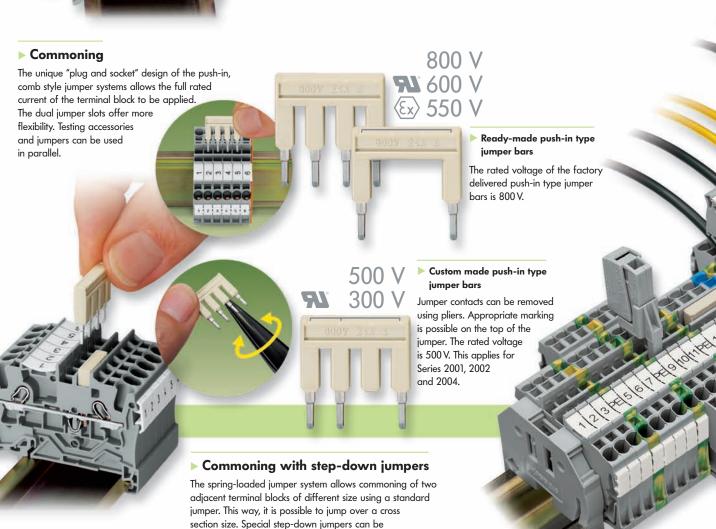
Testing tap for max. 2.5 mm²/ AWG 12 Page 1.12





# TOPJOB®S with CAGE CLAMP®S





used for even greater leaps.

# Connection

#### Series Rated

cross section

#### 2001/2002/2004/2006/2010/2016

AWG 16/AWG 14/ AWG 12/ AWG 10/ AWG 8/ AWG 6 (1.5 mm²/2.5 mm²/ 4 mm²/6 mm²/10 mm²/ 16 mm²)

#### ▶ Testing

The spring-loaded jumper system is suited for testing accessories like testing taps and test plug adapters as well as modular TOPIOB\*S connectors.



Testing tap suited for series 2001 to 2016. Individual test wires up to AWG 12 (2.5 mm²) can be connected without using any tools.



Test plug adapter

Test plug adapter for 4 mm/0.157 in Ø plugs suited for series 2001 to 2016.

#### ► Modular TOPJOB®S connectors

Modular connectors with CAGE CLAMP\*S technology offer an additional connection option. The connector is equipped with a 2mm/0.079 in Ø or 2.3mm/0.091 in Ø test socket. Additionally, terminal blocks can be skipped using spacer modules.

#### Marking

The TOPJOB\*S series offer three marker receptacles for WMB or miniature WSB cards.

The center receptacle allows the use of a continuous marker strip. The marker receptacles of terminal blocks from AWG 14 to 8 (1.5 mm² to 6 mm²) as well as AWG 6 (10 mm²) and AWG 4 (16 mm²) are at the same height so that one single marker strip can be used for different terminal block sizes. Marking is done using both a thermal transfer printer and WAGO's Smart Designer software. Apart from continuous marker strips, the printer is also suited for printing WMB markers on roll.





#### **TOPJOB®S** Rail-Mounted Terminal Blocks 1.5 (2.5) mm<sup>2</sup>/AWG 14 Series 2001

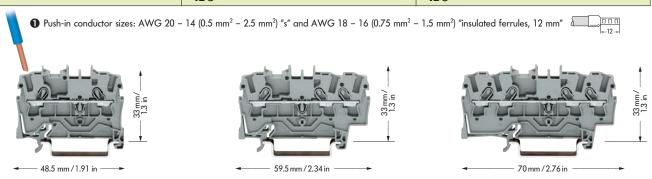
Terminal block width 4.2 mm / 0.165 in 9 – 11 mm / 0.39 in

0.25 **– 1.5** (**2.5**) mm<sup>2</sup> AWG 22 – 14 800 V/8 kV/3 18 A A A AWG 600 V, 15 A AWG 600 V, 15 A & AWG 600 V, 15 A & AWG 600 V, 15 A & AWG 600 V, 15 A

Terminal block width 4.2 mm / 0.165 in □■ 9 – 11 mm / 0.39 in

0.25 **–1.5** (**2.5**) mm<sup>2</sup> AWG 22 – 14 800 V/8 kV/3 18 A A AW 600 V, 15 A & 600 V, 15 A &

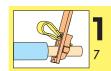
Terminal block width 4.2 mm / 0.165 in □■ 9 – 11 mm / 0.39 in



	Item No.	Packunit			Packunit pcs		Item No.	Packunit
2-conductor thr	rough terminal blocks		3-conductor thro	ugh terminal blocks		4-conductor thro	ugh terminal blocks	5
grey	2001-1201	100	grey	2001-1301	100	grey	2001-1401	100
blue	2001-1204 🕗	100	blue	2001-1304 🕗	100	blue	2001-1404 2	100
orange	2001-1202	100	orange	2001-1302	100	orange	2001-1402	100
more colors are l	being prepared		more colors are be	eing prepared		more colors are be	ing prepared	
2-conductor gre	ound (earth) terminal b	lock	3-conductor grou	und (earth) terminal b	lock	4-conductor grou	ınd (earth) terminal	block
green-yellow	2001-1207 🕕	100	green-yellow	2001-1307 🛑	100	green-yellow	2001-1407 🕕	100
	ations are being prepare	d		ions are being prepared	k		ions are being prepa	red
2 Suitable for E	Ex i applications		2 Suitable for Ex	i applications		2 Suitable for Ex	i applications	
Accessories		appr	opriate marker systen	wMB/Marker	strips (see se	ection 14)		
End and interm	rediate plate, 0.8 mm/0	0.031 in thick	End and interme	diate plate, 0.8 mm/0.	.031 in thick	End and intermed	diate plate, 0.8 mm	/0.031 in thick
	orange 2002-12	<b>92</b> 100 (4 x 25)		orange 2002-139	<b>92</b> 100 (4 x 25)		orange <b>2002-</b> 1	<b>492</b> 100 (4 x 25
	grey 2002-12	<b>91</b> 100 (4 × 25)		grey 2002-139	<b>91</b> 100 (4 × 25)		grey 2002-1	491 100 (4 x 25
Insulation stop,	, 5 pcs/strip	200 strips	Insulation stop, 5	pcs/strip	200 strips	Insulation stop, 5	pcs/strip	200 strips
00000	dark grey2001-17	<b>2</b> 0.75-1 mm <sup>2</sup>		dark grey2001-172	2 0.75-1 mm <sup>2</sup>		dark grey2001-1	<b>72</b> 0.75-1 mm
Push-in type ju	mper bars, light grey, ins	sulated, I <sub>N</sub> 18 A	Push-in type jum	per bars, light grey, ins	ulated, I <sub>N</sub> 18 A	Push-in type jum	per bars, light grey,	insulated, I <sub>N</sub> 18 A
	2-way <b>2001-40</b>	<b>2</b> 200 (8 × 25)		2-way <b>2001-40</b> 2	<b>2</b> 200 (8 × 25)		2-way <b>2001-</b> 4	102 200 (8 x 25
2000 NO. 100	3-way <b>2001-40</b>	<b>3</b> 200 (8 x 25)	100000000	3-way <b>2001-40</b> 3	<b>3</b> 200 (8 × 25)	THE PERSON OF	3-way <b>2001-</b>	103 200 (8 x 25
lll	4-way <b>2001-40</b>	, ,	lll	4-way <b>2001-40</b> 4		lll	4-way <b>2001-</b> 4	
111	5-way <b>2001-40</b>	<b>5</b> 100 (4 x 25)	111	5-way <b>2001-40</b> 5	5 100 (4 x 25)	111	5-way <b>2001-</b> 4	105 100 (4 x 25
	: :			: :			: :	
	10-way <b>2001-41</b>	<b>0</b> 100 (4 x 25)		10-way <b>2001-41</b> (	100 (4 x 25)		10-way <b>2001-</b> 4	110 100 (4 x 25)
Push-in type ju	mper bars, light grey, ins	sulated, I <sub>N</sub> 18 A	Push-in type jum	per bars, light grey, ins	ulated, I <sub>N</sub> 18 A	Push-in type jum	per bars, light grey,	insulated, I <sub>N</sub> 18 /
THE PARTY OF	1 - 3 <b>2001-43</b>	<b>3</b> 200 (8 x 25)	1000000000	1 - 3 <b>2001-43</b> 3	3 200 (8 x 25)	1100000000	1 - 3 <b>2001-</b> 4	133 200 (8 x 25
UU	1 - 4 2001-43	<b>4</b> 200 (8 x 25)	UU	1 - 4 <b>2001-43</b> 4	4 200 (8 x 25)		1 - 4 2001-4	134 200 (8 x 25
1 1	1 - 5 <b>2001-43</b>	<b>5</b> 100 (4 x 25)	1 1	1 - 5 <b>2001-43</b> 5	5 100 (4 x 25)	1 1	1 - 5 <b>2001-</b> 4	135 100 (4 x 25)
	: <b>:</b>			: <b>:</b>			: :	
	1 - 10 <b>2001-44</b>	<b>0</b> 100 (4 × 25)		1 - 10 <b>2001-44</b> 0	100 (4 x 25)		1 - 10 <b>2001-</b> 4	140 100 (4 x 25)
Modular TOPJO	OB®S connector,		Modular TOPJOE	3 <sup>®</sup> S connector,		Modular TOPJOE	8®S connector,	
1000	for jumper contact s	slot	1000	for jumper contact s	lot	1000	for jumper contac	t slot
	1 pole <b>2001-50</b>	<b>1</b> 100 (4 × 25)	(d) 4	1 pole <b>2001-50</b> 1	100 (4 x 25)	(B)	1 pole <b>2001-</b> 5	<b>501</b> 100 (4 × 25
Spacer, modular	r 2001-54	<b>9</b> 100 (4 × 25)	Spacer, modular	2001-549	9 100 (4 × 25)	Spacer, modular	2001-5	<b>349</b> 100 (4 × 25
see also page 1.1			see also page 1.12			see also page 1.12		
Test plug adapt	ter, for test plug 4 mm/0.		Test plug adapte	r, for test plug 4 mm/0.		Test plug adapte	r, for test plug 4 mm	
		<b>4</b> 100 (4 × 25)			4 100 (4 x 25)	1 111		<b>74</b> 100 (4 × 25
7 7	Testing tap, for mo		7 9	Testing tap, for ma		7 7	Testing tap, for	
1 1		<b>2</b> 100 (4 x 25)	1 1		2 100 (4 x 25)	1 1		<b>82</b> 100 (4 x 25
Marker strip, w			Marker strip, whi			Marker strip, whit	•	
	for center marking			for center marking			for center markin	~
	11 mm / 0.433 in wid			11 mm / 0.433 in wid			11 mm / 0.433 in	
"	50 m <b>2009-11</b>		"	50 m <b>2009-110</b>			50 m <b>2009</b> -1	
on roll	300 m <b>2009-13</b>	0 1	on roll	300 m <b>2009-13</b> 0	) 1	on roll	300 m <b>2009-</b> 1	30

 $<sup>^{*}</sup>$  For further approvals with corresponding ratings see section 15.

## **TOPJOB®S** Rail-Mounted Terminal Blocks 2.5 (4) mm<sup>2</sup>/AWG 12 Series 2002



□■ 10 – 12 mm / 0.43 in

0.25 – **2.5** (**4**) mm<sup>2</sup> AWG 22 – 12 800 V/8 kV/3 24 A A 600 V, 20 A **9**4 600 V, 20 A **9**4

Terminal block width 5.2 mm / 0.205 in

\* **%1. (%)** (# KEO) CCA LR (&)

AWG 22 - 12 600 V, 20 A **%** 600 V, 20 A **®** 

Terminal block width 5.2 mm / 0.205 in 10 – 12 mm / 0.43 in

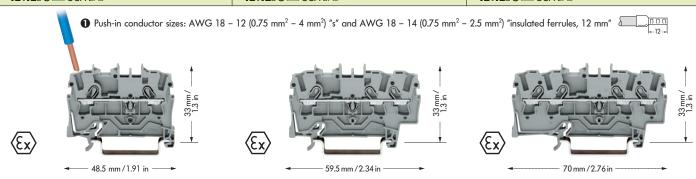
\* 711 .711 .6 KESS CCA LR 🐼

0.25 **– 2.5** (4) mm<sup>2</sup>**0** 800 V/8 kV/3 24 A

AWG 22 - 12 600 V, 20 A **9** 600 V, 20 A ®

Terminal block width 5.2 mm / 0.205 in 10 – 12 mm / 0.43 in

\* AL : AL : @ KEER CCA LR 🖘



	Item No.	Packunit pcs		ltem No.	Packunit pcs		ltem No.	Packunit pcs		
2-conductor throu	gh terminal blocks	•	3-conductor throu	gh terminal blocks	•	4-conductor thro	ugh terminal block			
grey (Ex)	2002-1201	100	grey (Ex)	2002-1301	100	grey (Ex)	2002-1401	100		
blue (Ex)	2002-1204 🕗	100	blue (Ex)	2002-1304 🕗	100	blue (Ex)	2002-1404 🕗			
orange (Ex)	2002-1202	100	orange (Ex)	2002-1302	100	orange (Ex)	2002-1402	100		
more colors are bei			more colors are bei			more colors are being prepared				
	nd (earth) terminal	l block		nd (earth) terminal	block	4-conductor ground (earth) terminal block				
green-yellow (Ex)	2002-1207	100	green-yellow (Ex)	2002-1307	100	green-yellow 🐼 2002-1407 🕕 100				
(Ex) Suitable for Ex	e II applications 550	V, 22 A	Ex Suitable for Ex	e II applications 550	V, 22 A	(Ex) Suitable for Ex	e II applications 550	) V, 22 A		
2 Suitable for Ex			2 Suitable for Ex i	applications		2 Suitable for Ex	i applications			
Accessories		appro	opriate marker system	WMB/Minia	ture WSB/M	arker strips (see	section 14)			
	liate plate, 0.8 mm						diate plate, 0.8 mm	1/0.031 in thick		
Ena ana intermed	orange 2002-1		End and intermediate plate, 0.8 mm/0.031 in thick orange 2002-1392 100 (4 x 25)			Ena ana interne	•	<b>1492</b> 100 (4 x 25		
		1291 100 (4 x 25)			<b>391</b> 100 (4 x 25)			<b>1491</b> 100 (4 x 25)		
	grey 2002-1	1271 100 (4 x 23)		grey 2002-1	1371 100 (4 x 23)		grey 2002-	1471 100 (4 x 25)		
Insulation stop, 5	pcs/strip	200 strips	Insulation stop, 5	pcs/strip	200 strips	Insulation stop, 5	5 pcs/strip	200 strips		
•4		2	••			- 4				
00000	light grey 2002-1		<b>1000</b>	light grey 2002-1		00000	0 0 /	<b>171</b> 0.25-0.5 mm		
- 1	dark grey2002-1		- 110	dark grey2002-1		- 1		<b>172</b> 0.75-1 mm <sup>2</sup>		
Push-in type jump	oer bars, light grey,		Push-in type jump	per bars, light grey,		Push-in type jum	per bars, light grey			
	I <sub>N</sub> 25 A, ⟨Ex⟩ 20 A			I <sub>N</sub> 25 A, ⟨Ex⟩ 20 A			I <sub>N</sub> 25 A, ⟨Ex⟩ 20			
7		<b>402</b> 200 (8 × 25)		2-way <b>2002-</b> 4		TT	•	<b>402</b> 200 (8 × 25)		
444	3-way <b>2002-</b> 4	, ,	444	3-way <b>2002-</b> 4	` '	+++		<b>403</b> 200 (8 × 25)		
111	4-way <b>2002-</b> 4		111	4-way <b>2002-</b> 4		111	•	<b>404</b> 200 (8 × 25)		
	5-way <b>2002-</b> 4	405 100 (4 x 25)		5-way <b>2002-</b> 4	105 100 (4 x 25)			<b>405</b> 100 (4 × 25)		
	: :	45.0 100 // 05\		: :	100 (4 05)		: :	45.0 7.00 //		
D.I.I.	10-way <b>2002-</b> 4		D.I	10-way <b>2002-</b> 4		10-way 2002-410 100 (4 x 25 Push-in type jumper bars, light grey, insulated,				
Push-in type jump	per bars, light grey,		Push-in type jump	per bars, light grey,		Pusn-in type jum				
E-months of	I <sub>N</sub> 25 A, (£x) 20 A		( According )	I <sub>N</sub> 25 A, (£x) 20 A		( According )	$I_N 25 A, \langle \varepsilon_x \rangle 20$	A <b>433</b> 200 (8 x 25)		
		<b>134</b> 200 (8 x 25)			, ,			<b>434</b> 200 (8 x 25)		
Y Y	1 - 5 <b>2002-4</b>		Y Y	1 - 4 <b>2002-4</b>		Y Y		<b>434</b> 200 (8 x 25) <b>435</b> 100 (4 x 25)		
		+33 100 (4 x 23)	1 1		100 (4 x 23)			433 100 (4 x 23)		
	: :	<b>140</b> 100 (4 × 25)		: : 1 - 10 <b>2002-</b> 4	140 100 (4 × 25)		: :	<b>440</b> 100 (4 × 25)		
	1 - 10 2002-4	140 100 (4 x 23)		1- 10 2002-4	140 100 (4 x 23)		1 - 10 2002-	440 100 (4 x 23)		
Protective warnin	g marker,		Protective warnin	g marker,		Protective warning	ng marker,			
	for 5 terminal blo	ocks		for 5 terminal blo	cks		for 5 terminal bl	ocks		
TTTTT	yellow <b>2002-1</b>	<b>115</b> 100 (4 × 25)	TTTTT	yellow <b>2002-1</b>	<b>15</b> 100 (4 x 25)	TTTTT	yellow <b>2002-</b>	<b>115</b> 100 (4 × 25)		
Modular TOPJOB	®S connector,		Modular TOPJOB	®S connector,		Modular TOPJOI	B®S connector,			
1000	for jumper contac	ct slot	1000	for jumper contac	t slot	1988	for jumper conto	ıct slot		
(B)		<b>501</b> 100 (4 × 25)	JE   8		<b>501</b> 100 (4 × 25)	(a)		<b>501</b> 100 (4 × 25)		
Spacer, modular	2002-5	<b>549</b> 100 (4 × 25)	Spacer, modular	2002-5	<b>349</b> 100 (4 × 25)	Spacer, modular	2002-	<b>549</b> 100 (4 × 25)		
see also page 1.12			see also page 1.12		, -,	see also page 1.12		, ==,		
· · ·	est plug adapter, for test plug 4 mm/0.157 in Ø			, for test plug 4 mm/	/0.157 in Ø	Test plug adapter, for test plug 4 mm/0.157 in Ø				
1 m		174 100 (4 × 25)	1 1		<b>74</b> 100 (4 × 25)	1 1		<b>174</b> 100 (4 × 25		
L W	Testing tap, for		L 4	Testing tap, for		L W	Testing tap, for			
		182 100 (4 x 25)			<b>82</b> 100 (4 x 25)			<b>182</b> 100 (4 × 25		

<sup>\*</sup> For further approvals with corresponding ratings see section 15.



# **TOPJOB®S**

#### Rail-Mounted Terminal Blocks 4 (6) mm<sup>2</sup>/AWG 10 Series 2004

0.5 **- 4** (6) mm<sup>2</sup> **0** 800 V/8 kV/3 32 A

AWG 20 - 10 600 V, 30 A **9** 600 V, 30 A **9** 

Terminal block width 6.2 mm / 0.244 in

□ 11 – 13 mm / 0.47 in

0.5 **– 4** (6) mm<sup>2</sup>**0** 800 V/8 kV/3 32 A

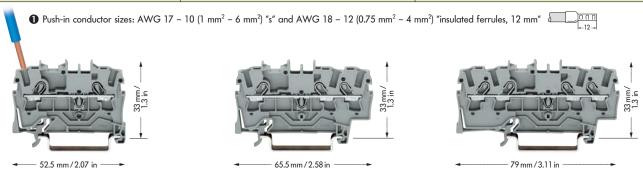
AWG 20 - 10 600 V, 30 A **7** 600 V, 30 A ®

Terminal block width 6.2 mm / 0.244 in □■ 11 – 13 mm / 0.47 in

0.5 – **4** (**6**) mm<sup>2</sup>**0** 800 V/8 kV/3 32 A

AWG 20 - 10 600 V, 30 A **9** 600 V, 30 A **9** 

Terminal block width 6.2 mm / 0.244 in □■ 11 – 13 mm / 0.47 in



	ltem No.	Pack. pcs	-unit		Item No.		Packunit pcs		Item No.		Pack.–unit ocs
2-conductor throu	gh terminal b	olocks		3-conductor throu	gh termino	ıl blocks		4-conductor thr	ough termin	al blocks	
grey	2004-1201	I ()	50	grey	2004-13	301 🔵	50	grey	2004-1	401 🔵	50
blue	2004-1204	4 🕗	50	blue	2004-13	304 🕗	50	blue	2004-1	404 🕗	50
orange	2004-1202	2 🛑	50	orange	2004-13	302	50	orange	2004-1	402	50
more colors are bei	ing prepared			more colors are bei	ng prepared	d		more colors are l	peing prepare	d	
2-conductor grou	0	ninal block		3-conductor grou			lock	4-conductor gro			ock
green-yellow	2004-1207	_	50	green-yellow	2004-13	_	50	green-yellow	2004-1	_	50
Ex Ex e II applicati		~		Ex Ex e II application		_	d	Ex Ex e II applio		_	
2 Suitable for Ex				2 Suitable for Ex i				2 Suitable for E			
Accessories			appro	priate marker system			re WSB/M		- ' '		
End and intermed	liate plate 1 r	mm /0.039 in t	thick	End and intermed	liate plate	1 mm /0 (	139 in thick	End and interm	ediate plate	1 mm /0.03	19 in thick
Life die illicilie		<b>004-1292</b> 100		Liid diid iiiiciiiicd			<b>92</b> 100 (4 x 25)	End did intern	orange		
		<b>004-1291</b> 100					<b>91</b> 100 (4 x 25)		grey	2004-149	
	grey 20	704-1271 100	) (4 X 23)		grey	2004-13	71 100 (4 X 23)		grey	2004-147	1100 (4 x 2
Insulation stop, 5	pcs/strip	20	00 strips	Insulation stop, 5	pcs/strip		200 strips	Insulation stop,	5 pcs/strip		200 strip
	light grev 20	<b>004-171</b> 0.25	-0.5 mm <sup>2</sup>		light grev	2004-17	1 0.25-0.5 mm <sup>2</sup>		light grey	2004-171	0.25-0.5 m
ODDE OUTS	0 0 ,	<b>004-172</b> 0.7		Other Olivin	0 0 ,		2 0.75-1 mm <sup>2</sup>	Other Other	0 0 ,	v2004-172	
Push-in type jum				Push-in type jump				Push-in type ju		,	
		<b>004-402</b> 100		. com m. type jemi	-		<b>2</b> 100 (4 × 25)	. con type jo		2004-402	
THE PARTY OF THE P		<b>004-403</b> 100		100000			<b>3</b> 100 (4 × 25)	more du m	,	2004-403	•
TT		<b>04-404</b> 100		11			<b>4</b> 100 (4 x 25)	TT		2004-404	
777		<b>004-405</b> 50	` '	444			<b>5</b> 50 (2 x 25)	444		2004-405	
1 1 1	:	:	(2 X 23)		:	:	30 (2 x 23)		:	:	30 (2 X 2
		0 <b>04-410</b> 50	(2 x 25)				<b>0</b> 50 (2 x 25)			2004-410	50 (2 x 2
				_							
Push-in type jump	per bars, light	grey, insulated	, I <sub>N</sub> 32 A	Push-in type jump	<b>oer bars,</b> lig	ht grey, in:	sulated, I <sub>N</sub> 32 A	Push-in type ju	mper bars, lig	ght grey, insu	ılated, I <sub>N</sub> 32
1000 0000 000	1 - 3 20	<b>004-433</b> 100	(4 x 25)	THE PERSON NAMED IN	1 - 3	2004-43	<b>3</b> 100 (4 × 25)	10000000000	1 - 3	2004-433	100 (4 x 2
	1 - 4 20	<b>004-434</b> 100	(4 x 25)		1 - 4	2004-43	<b>4</b> 100 (4 × 25)		1 - 4	2004-434	100 (4 x 2
TT		<b>004-435</b> 50		TT			<b>5</b> 50 (2 × 25)	TT		2004-435	
	:	:	, ,	•	:	:	, ,	•		:	,
	1 - 10 <b>20</b>	<b>004-440</b> 50	(2 x 25)			2004-44	<b>0</b> 50 (2 × 25)			2004-440	50 (2 x 2
Protective warnin	a marker.			Protective warnin	a marker.			Protective warn	ina marker		
roleenve wanni	for 5 termine	al blocks		Troicente Warnin	-	ninal block	s	Troicente wan		minal blocks	
TTTTT		<b>004-115</b> 100	(4 x 25)	TTTT			<b>5</b> 100 (4 × 25)	TTTTT		2004-115	100 (4 x 2
Modular TOPJOB	<sup>®</sup> S connector,			Modular TOPJOB	®S connect	or,		Modular TOPJO	OB®S connect	or,	
1000	for jumper o	ontact slot		1000	for jumpe	er contact :	slot	1000	for jump	er contact sl	ot
	1 pole <b>20</b>	<b>004-501</b> 100	(4 × 25)		1 pole	2004-50	<b>1</b> 100 (4 x 25)	3	1 pole	2004-501	100 (4 x 2
Spacer, modular	20	<b>004-549</b> 100	(4 x 25)	Spacer, modular		2004-54	<b>9</b> 100 (4 × 25)	Spacer, modular		2004-549	100 (4 x 2
see also page 1.12				see also page 1.12				see also page 1.1	2		
Test plug adapter	, for test plug 4	4 mm/0.157 in	Ø	Test plug adapter	, for test plu	g 4 mm/0	.157 in Ø	Test plug adapt	er, for test plu	ug 4 mm/0.1	57 in Ø
ı m		<b>009-174</b> 100		1 m		•	<b>4</b> 100 (4 × 25)	1 m		2009-174	
L 4		, for max. 2.5	, ,	L W	Testing t		ax. 2.5 mm <sup>2</sup>	L W	<b>Testina</b>	tap, for max	
		009-182 100			_	-	<b>2</b> 100 (4 × 25)		5	2009-182	
			7				/				

<sup>\*</sup> For further approvals with corresponding ratings see section 15.

#### **TOPJOB®S** Rail-Mounted Terminal Blocks 6 (10) mm<sup>2</sup>/AWG 8 Series 2006



0.5 - 6 (10) mm<sup>2</sup> 0 800 V/8 kV/3

AWG 20 - 8 600 V, 50 A **91** 600 V, 50 A ®

Terminal block width 7.5 mm / 0.295 in □ 13 – 15 mm / 0.55 in

\* **91** 0**91** 0s **6** KETA CCA LR

0.5 - 6 (10) mm<sup>2</sup> 0 800 V/8 kV/3

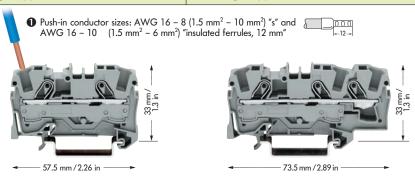
AWG 20 - 8 600 V, 50 A **9\** 600 V, 50 A **@** 

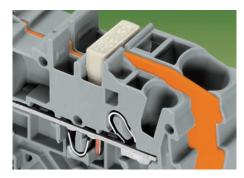
Terminal block width 7.5 mm / 0.295 in □ 13 – 15 mm / 0.55 in

\* **91** 0**91** 0s **6** KETA CCA LR

Commoning with step-down jumpers

The total current flowing must not exceed the rating of the step-down jumper/push-in type jumper bar.





	ltem No.	Packunit pcs		Item No.	Packunit pcs	ltem No.	Packunit pcs	
2-conductor the	rough terminal blocks		3-conductor th	rough terminal block	s	Commoning with step-down jur	npers	
grey	2006-1201	50	grey	2006-1301	25	An end plate must be applied betw	een the two terminal	
blue	2006-1204 🕗	50	blue	2006-1304 🕗	25	blocks.		
orange	2006-1202	50	orange	2006-1302	25	Step-down jumper 2006-499 can b	e used for	
						commoning AWG 12/10 (4/6 mm <sup>2</sup> )	terminal blocks with	
2-conductor gr	ound (earth) terminal l	olock	3-conductor ground (earth) terminal block			AWG 12/14/16 (4/2.5/1.5 mm²) terminal blocks.		
green-yellow	2006-1207 🕕	50	green-yellow	2006-1307	25	Step-down jumpers are simply push	ed down to full	
€x Ex e II applic	ations are being prepare	ed	εx Ex e II appli	cations are being prepo	ıred	insertion, in the same way as all oth	ner push-in type	
2 Suitable for B	Ex i applications		2 Suitable for	Ex i applications		jumper bars.		
Accessories		appr	opriate marker syst	www.WMR/Minio	iture WSR/M	arker strips (see section 14)		

End and intermed	liate plate	, 1 mm/0.039 in thick	Е	nd and interme	diate plate	, 1 mm/0.039 in thick	Step-down jumper, light grey, insulated				
	orange	<b>2006-1292</b> 100 (4 x 25)			orange	<b>2006-1392</b> 100 (4 x 25)	6.	32 A			
	grey	<b>2006-1291</b> 100 (4 x 25)			grey	<b>2006-1391</b> 100 (4 x 25)	W	2006-499	50 (2 x 25)		
							· 'Y				

**Push-in type jumper bars,** light grey, insulated, I<sub>N</sub> 41 A **Push-in type jumper bars,** light grey, insulated, I<sub>N</sub> 41 A 2-way **2006-402** 50 (2 x 25) 2-way 2006-402 50 (2 x 25) 3-way **2006-403** 50 (2 x 25)

3-way **2006-403** 50 (2 x 25) 4-way **2006-404** 50 (2 x 25) 4-way **2006-404** 50 (2 x 25) 5-way 2006-405 50 (2 x 25) 5-way 2006-405 50 (2 x 25)

**Push-in type jumper bars,** light grey, insulated, I<sub>N</sub> 41 A Push-in type jumper bars, light grey, insulated, I<sub>N</sub> 41 A

> 1 - 3 **2006-433** 50 (2 x 25) 1 - 3 **2006-433** 50 (2 x 25) 5)

	100	1 - 4	2006-434	50 (2 x 25)			1	4	2006-434	50 (2 x 25
Y	Y	1 - 5	2006-435	50 (2 x 25)	1	Y	1 - 3	5	2006-435	50 (2 x 25

Protective warning marker, Protective warning marker,

for 5 terminal blocks for 5 terminal blocks yellow **2006-115** 100 (4 x 25) yellow **2006-115** 100 (4 x 25) TTTTT

Test plug adapter, for test plug 4 mm/0.157 in  $\varnothing$ **Test plug adapter,** for test plug 4 mm/0.157 in  $\varnothing$ 2009-174 100 (4 x 25) 2009-174 100 (4 x 25)

Testing tap, for max. 2.5 mm<sup>2</sup> Testing tap, for max. 2.5 mm<sup>2</sup>

2009-182 100 (4 x 25) 2009-182 100 (4 x 25) Marker strip, white, plain Marker strip, white, plain for center marking for center marking

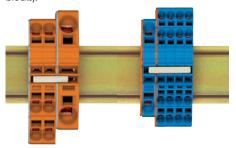
11 mm / 0.433 in wide 50 m **2009-110** 300 m 2009-130 on roll



#### Commoning with push-in type jumper bars

Commoning over the open side of the terminal block with end plate allows jumpering over one cross section size for 6 mm<sup>2</sup>, 4 mm<sup>2</sup> and 2.5 mm<sup>2</sup>.

Commoning over the closed side of the terminal block with end plate allows jumpering over two cross section sizes: e.g. from 6 mm² to 2.5 mm² (see blue terminal blocks).



300 m

11 mm / 0.433 in wide

50 m **2009-110** 

2009-130

TTTTT

on roll



<sup>\*</sup> For further approvals with corresponding ratings see section 15.

# TOPJOB®S Rail-Mounted Terminal Blocks 10 (16) mm²/AWG 6 Series 2010

0.5 – 10 (16) mm<sup>2</sup>**0** 800 V/8 kV/3 57 A

AWG 20 - 6 600 V, 65 A **9** 600 V, 65 A ®

Terminal block width 10 mm / 0.394 in 17 – 19 mm / 0.71 in

\* 91 @

0.5 – **10** (**16**) mm<sup>2</sup>**0** 800 V/8 kV/3 57 A AWG 20 - 6 600 V, 65 A **9** 600 V, 65 A ®

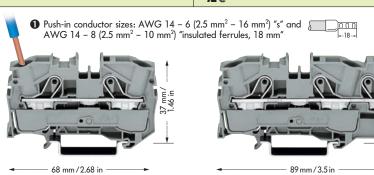
Terminal block width 10 mm / 0.394 in 17 – 19 mm / 0.71 in

k **a**v @

Commoning with step-down jumpers

Note:

The total current flowing must not exceed the rating of the step-down jumper/push-in type jumper bar.

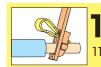




	— 66 mm / 2.66 in ——			07111117 0.01				A STATE OF THE PARTY OF THE PAR	
	Item No.	Packunit pcs		Item No.		ackunit		ltem No.	Packunit pcs
2-conductor thro	ough terminal block	rs .	3-conductor throu	gh terminal	l blocks		Commoning w	ith step-down jur	npers
grey	2010-1201	25	grey	2010-13	01 🔘	25	An end plate mu	st be applied betw	een the two terminal
blue	2010-1204 🕗	25	blue	2010-13	04 🕗	25	blocks.		
orange	2010-1202	25	orange	2010-13	02 🛑	25	Step-down jump	er 2016-499 can be	e used for
							commoning AW0	G 8/6 (10/16 mm²)	terminal blocks with
2-conductor gro	und (earth) termina		3-conductor grou			ck		4 (10/6/4/2.5 mm <sup>2</sup> )	
green-yellow	2010-1207 🕒	25	green-yellow	2010-13	_	25		ers are simply push	
	tions are being prepa	ared	Ex Ex e II applicati					ame way as all oth	er push-in type
Suitable for Ex	c i applications		2 Suitable for Ex	i applications			jumper bars.		
Accessories		appr	opriate marker system	WMB/I	Miniature	wsB/M	<b>arker strips</b> (se	ee section 14)	
End and interme	ediate plate, 1 mm/	0.039 in thick	End and intermed	liate plate, 1	1 mm/0.039	in thick	Step-down jum	<b>per,</b> light grey, insu	lated
	orange <b>2010-</b>	<b>1292</b> 100 (4 x 25)		orange 2	2010-1392	100 (4 x 25)		57 A	
	grey 2010-	<b>1291</b> 100 (4 x 25)		grey 2	2010-1391	100 (4 x 25)		2016-499	50 (2 x 25
							4 4		
Push-in type jun	<b>nper bars,</b> light grey,	insulated, I <sub>N</sub> 57 A	Push-in type jum	<b>per bars,</b> ligh	nt grey, insul	ated, I <sub>N</sub> 57 A			
		<b>402</b> 50 (2 x 25)		2-way	2010-402	50 (2 x 25)			
	3-way <b>2010-</b>	<b>403</b> 50 (2 x 25)		3-way	2010-403	50 (2 x 25)			
	4-way <b>2010-</b>	<b>404</b> 50 (2 x 25)		4-way	2010-404	50 (2 x 25)			
77777	5-way <b>2010-</b>	<b>405</b> 50 (2 × 25)	77777	5-way	2010-405	50 (2 x 25)			
Push-in type jun	<b>nper bars,</b> light grey,	insulated, I <sub>N</sub> 57 A	Push-in type jum	<b>per bars,</b> ligh	nt grey, insul	ated, I <sub>N</sub> 57 A			
_	1 0 0010	100 50 (0 05)		1 0 4	2010 400	FO (O OF)			
	1 - 3 2010-	<b>433</b> 50 (2 × 25)			2010-433				
V V	1 - 4 2010-	<b>434</b> 50 (2 × 25) <b>435</b> 50 (2 × 25)			2010-434 2010-435				
	1 - 5 2010-	<b>433</b> 30 (2 x 23)	1 1	1- 3	2010-435	30 (2 x 23)			
Protective warni	•		Protective warnin	•					
75.510	for 5 terminal blo		75330.		inal blocks	100 /4 05			
TTTTT	yellow <b>2010-</b>	<b>115</b> 100 (4 x 25)	Trove	yellow 2	2010-115	100 (4 x 25)			
Test plug adapte	er, for test plug 4 mm	Ø	Test plug adapter	, for test plug	g 4 mm Ø				
1 10.	2009-	<b>174</b> 100 (4 x 25)	1 111		2009-174	100 (4 x 25)			
4 4			h m						
1. 1			1 1						
Testing tap, for n		100 100 (1 0=)	Testing tap, for m			100 // 25			
		<b>182</b> 100 (4 × 25)			2009-182	100 (4 x 25)			
Marker strip, wh			Marker strip, white	•					
	for center marking	•		for center					
	11 mm / 0.433 in				433 in wide	,			
	50 m <b>2009</b> -				2009-110	1			
on roll	300 m <b>2009</b> -	130	on roll	300 m	2009-130	1			

<sup>\*</sup> For further approvals with corresponding ratings see section 15.

#### **TOPJOB®S** Rail-Mounted Terminal Blocks 16 (25 "f-st") mm<sup>2</sup>/AWG 4 Series 2016



Terminal block width 12 mm / 0.472 in □ 18 – 20 mm / 0.75 in

\* **91** 0**91** 0s **6** KETA CCA LR

0.5 - 16 (25 "f-st") mm<sup>2</sup> AWG 20 - 4 800 V/8 kV/3 600 V, 85 A

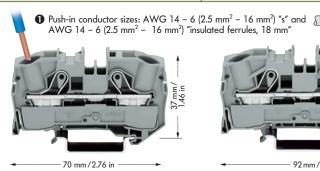
600 V, 85 A **9)** 600 V, 85 A ®

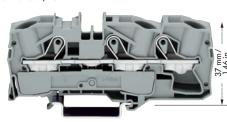
Terminal block width 12 mm / 0.472 in □ 18 – 20 mm / 0.75 in

\* **91** 0**91** 0s @ KETA CCA LR

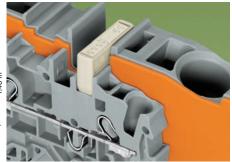
Commoning with step-down jumpers

The total current flowing must not exceed the rating of the step-down jumper/push-in type jumper bar.





92 mm / 3.62 in



	ltem No.	Packunit pcs		ltem No.	Packunit pcs		ltem No.	Packunit pcs		
2-conductor thr	ough terminal blocks		3-conductor th	rough terminal bloc	ks	Commoning with	step-down jum	pers		
grey	2016-1201	20	grey	2016-1301	20	An end plate must b	e applied betwe	en the two terminal		
blue	2016-1204 🕗	20	blue	2016-1304 🕗	20	blocks.				
orange	2016-1202	20	orange	2016-1302	20	Step-down jumper 2016-499 can be used for				
						commoning AWG 8	/6 (10/16 mm <sup>2</sup> ) te	erminal blocks with		
2-conductor gro	ound (earth) terminal b	olock	3-conductor gr	ound (earth) termin	al block	AWG 8/10/12/14 (1	0/6/4/2.5 mm <sup>2</sup> )	terminal blocks.		
green-yellow	2016-1207 🕕	20	green-yellow	2016-1307	20	Step-down jumpers	are simply pushe	d down to full		
εx Ex e II applica	ations are being prepare	·d	εx Ex e II applic	ations are being prep	ared	insertion, in the same	e way as all othe	r push-in type		
Suitable for E	x i applications		Suitable for I	Ex i applications		jumper bars.				
Accessories appropriate marker system WMB/Miniature WSB/Marker strips (see section 14)										
End and interm	End and intermediate plate, 1 mm/0.039 in thick			nediate plate, 1 mm	/0.039 in thick	Step-down jumper	r, light grey, insulc	ıted .		
	orange <b>2016-12</b>	92 100 (4 x 25)		orange <b>2016</b>	<b>-1392</b> 100 (4 x 25)		57 A			
	grey 2016-12	91 100 (4 x 25)		grey 2016	-1391 100 (4 x 25)		2016-499	50 (2 x 25)		

End and interme	End and intermediate plate, 1 mm/0.039 in thick			diate plate	, 1 mm/0.039 in thick	Step-down jumper, light grey, insulated			
	orange	<b>2016-1292</b> 100 (4 x 25)		orange	<b>2016-1392</b> 100 (4 x 25)		57 A		
	grey	<b>2016-1291</b> 100 (4 x 25)		grey	<b>2016-1391</b> 100 (4 x 25)		2016-499	50 (2 x 25)	
						* <b>Y</b>			
Push-in type ium	per bars, li	aht arev. insulated. I., 76 A	Push-in type ium	per bars, li	aht arev. insulated. L. 76 A				

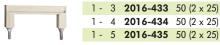
Push-in type jumpe	r bars, li	ght grey, insul	ated, I <sub>N</sub> /6 A
	2-way	2016-402	50 (2 x 25)
	_		

3-way **2016-403** 50 (2 x 25) 4-way **2016-404** 50 (2 x 25) 5-way 2016-405 50 (2 x 25)

2-way 2016-402 50 (2 x 25) 3-way **2016-403** 50 (2 x 25) 4-way **2016-404** 50 (2 x 25) 5-way 2016-405 50 (2 x 25)

#### Push-in type jumper bars, light grey, insulated, I<sub>N</sub> 76 A Push-in type jumper bars, light grey, insulated, I<sub>N</sub> 76 A

High Walls	1 -	3	2016-433	50 (2 x 25)	111
	1 -	4	2016-434	50 (2 x 25)	
T T	1 -	5	2016-435	50 (2 x 25)	T T



#### Protective warning marker,

TTTTT

for 5 terminal blocks yellow **2016-115** 100 (4 x 25)

#### Protective warning marker,

for 5 terminal blocks yellow **2016-115** 100 (4 x 25)

#### **Test plug adapter,** for test plug 4 mm $\varnothing$

2009-174 100 (4 x 25)

#### TTTTT

**Test plug adapter,** for test plug 4 mm  $\varnothing$ 2009-174 100 (4 x 25)

#### Testing tap, for max. 2.5 mm<sup>2</sup>

2009-182 100 (4 x 25)

#### Testing tap, for max. 2.5 mm<sup>2</sup>

2009-182 100 (4 x 25)

#### Marker strip, white, plain

on roll

for center marking 11 mm / 0.433 in wide 50 m **2009-110** 300 m 2009-130

#### Marker strip, white, plain

for center marking 11 mm / 0.433 in wide 50 m **2009-110** 300 m 2009-130 on roll

#### Commoning with push-in type jumper bars

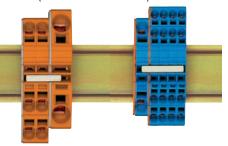
#### Commoning over the open side of the terminal block with end plate allows

jumpering over two cross section sizes for 16 mm<sup>2</sup> and 10 mm<sup>2</sup> and one cross section size for 6 mm<sup>2</sup>, 4 mm<sup>2</sup> and 2.5 mm<sup>2</sup>:

e.g. from 16 mm<sup>2</sup> to 6 mm<sup>2</sup> (see orange terminal blocks) or from 10 mm<sup>2</sup> to 4 mm<sup>2</sup>.

## Commoning over the closed side of the terminal block with end plate allows

jumpering over two cross section sizes: e.g. from 16 mm² to 6 mm² or from 6 mm² to 2.5 mm² (see blue terminal blocks).







# Test Plug Adapter and Testing Tap

# Modular TOPJOB®S Connectors with CAGE CLAMP®S Connection

Test plug adapter and testing tap for testing rail-mounted terminal blocks 2001/2002/2004/2006/2010/2016

Modular TOPJOB®S connectors 

Output

Description: for rail-mounted terminal blocks of series 2001 AWG 22 - 14 / 0.25 mm<sup>2</sup> - 1.5 (2.5) mm<sup>2</sup> AWG 22 – 12 / 0.25 mm<sup>2</sup> – 2.5 (4) mm<sup>2</sup> 2002 2004 AWG 20 - 10 / 0.5 mm<sup>2</sup> - 4 (6) mm<sup>2</sup> • Test voltage 500 V/ 6 kV Test current 18 A/24 A/32 A

Note: Unmated connectors must not be live. Also, connectors used according to the regulations must not be connected or disconnected under load.

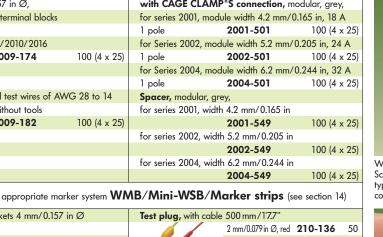






Snapping together of connectors and spacers to assemble a multi-pole connector

Item No.	Pack. unit pcs		Item No.	Pack. unit pcs			
Test plug adapter,		Modular TO	PJOB®S connectors				
for test plugs 4 mm/0.157 in Ø,		with CAGE CLAMP®S connection, modular, grey,					
for testing rail-mounted terminal blocks		for series 200	1, module width 4.2 mm/0	).165 in, 18 A			
of series		1 pole	2001-501	100 (4 x 25)			
2001/2002/2004/2006/2010/2016		for Series 200	02, module width 5.2 mm/	0.205 in, 24 A			
2009-174	100 (4 x 25)	1 pole	2002-501	100 (4 x 25)			
		for Series 200	04, module width 6.2 mm/	0.244 in, 32 A			
Testing tap,		1 pole	2004-501	100 (4 x 25)			
for connecting individual test wires of A	WG 28 to 14	Spacer, mod	ular, grey,				
(0.08 mm <sup>2</sup> – 2.5 mm <sup>2</sup> ) without tools		for series 200	1, width 4.2 mm/0.165 in				
2009-182	100 (4 x 25)		2001-549	100 (4 x 25)			
		for series 200	2, width 5.2 mm/0.205 in				
			2002-549	100 (4 x 25)			
		for series 200	14, width 6.2 mm/0.244 in				
			2004-549	100 (4 x 25)			





Wire connection: Screwdriver actuation for connection of all conductor types, i.e. stripped stranded conductors, or push-in connection of solid or ferruled stranded conductors.



for ex. mfd by Multi Contact Deutschland GmbH

touch proof,

not offered by WAGO

**Test plug,** 4 mm/0.157 in Ø, Strain relief plate, grey

2.3 mm/0.091 in Ø, yel. **210-137** 

snappable onto connector strips

 $100 (4 \times 25)$ 

 $100 (4 \times 25)$ 

100 (4 x 25)

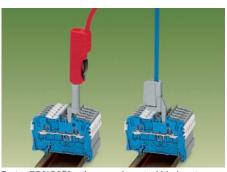
100 (4 x 25)



Snapping on a strain relief plate

**Application notes** 

Accessories



Testing TOPJOB®S rail-mounted terminal blocks using a test plug adapter or testing tap.



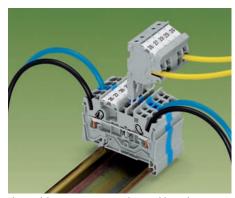
6 mm / 0.236 in wide **734-327** 

12.5 mm / 0.492 in wide **734-328** 

25 mm / 0.984 in wide **734-329** 

35 mm / 1.378 in wide **734-326** 

The connector has a test socket for 2 mm/0.079 in or 2.3 mm/0.091 in test plugs.



The modular connectors provide an additional connection option for conductors of the same cross section range as the terminal blocks being used.

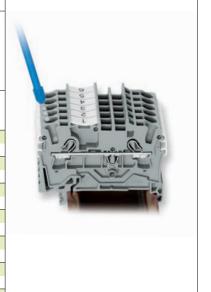
# Ferrules for TOPJOB®S Rail-mounted Terminal Blocks and Crimping Tools

Dimensions (in mm)	suitable for series	Sleeve f	or AWG	Color	Stripped length mm	L	L1	D mm	D1	D2	Item No.	Packunit pcs
	2001 – 2002	0.5	22	white	12	16	10	3.1	2.6	1.0	216-241	1000
<u> </u>	2001 - 2002	0.75	20	grey	12	16	10	3.3	2.8	1.2	216-242	1000
00-	2002 – 2006	0.75	20	grey	14	18	12	3.3	2.8	1.2	216-262	1000
1	2001 - 2002	1.0	18	red	12	16	10	3.5	3.0	1.4	216-243	1000
	2002 – 2006	1.0	18	red	14	18	12	3.5	3.0	1.4	216-263	1000
	2001 - 2002	1.5	16	black	12	16	10	4.0	3.5	1.7	216-244	1000
Insulated ferrules,	2002 – 2006	1.5	16	black	14	18	12	4.0	3.5	1.7	216-264	1000
electrolytic copper,	2010 – 2016	1.5	16	black	20	24	18	4.0	3.5	1 <i>.</i> 7	216-284	1000
electro-tin plated, acc. to DIN 46228,	2002	2.5	14	blue	12	17	10	4.7	4.2	2.2	216-246	1000
part 4/09.90	2002 – 2006	2.5	14	blue	14	19	12	4.7	4.2	2.2	216-266	1000
	2010 – 2016	2.5	14	blue	20	25	18	4.7	4.2	2.2	216-286	1000
	2004 – 2006	4.0	12	grey	14	20	12	5.4	4.8	2.8	216-267	500
	2010 – 2016	4.0	12	grey	20	26	18	5.4	4.8	2.8	216-287	500
	2006	6.0	10	yellow	14	20	12	6.9	6.3	3.5	216-208	500
	2010 – 2016	6.0	10	yellow	20	26	18	6.9	6.3	3.5	216-288	500
	2010 - 2016	10.0	8	red	20	28	18	8.4	7.6	4.5	216-289	500
	2016	16.0	6	blue	23	28	18	9.6	8.8	5.8	216-210	500

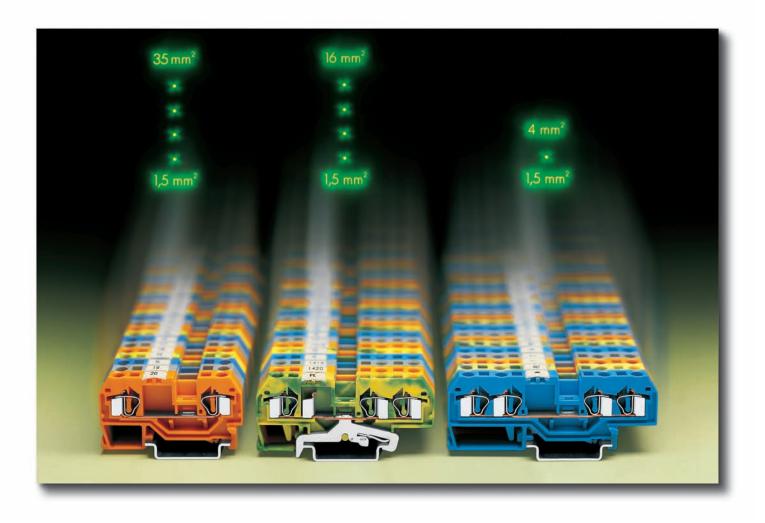
TOP	JOB®S – ove	erview o	f ferrules	from 0.	5 mm²					
Series	Rated cross section in mm <sup>2</sup>	0.5 mm <sup>2</sup>	0.75 mm <sup>2</sup>	1 mm²	1.5 mm <sup>2</sup>	2.5 mm <sup>2</sup>	4 mm²	6 mm²	10 mm²	16 mm²
2001	0.25 - 1.5 (2.5)	216-241	216-242	216-243	216-244	_	_	_	_	_
2002	0.25 - 2.5 (4)	216-241	216-242	216-243	216-244	216-246	-	-	-	-
2003	0.25 - 2.5 (4)	216-241	216-242	216-243	216-244	216-246	-	-	-	_
2004	0.5 - 4 (6)	+	216-262	216-263	216-264	216-266	216-267	-	-	_
2006	0.5 - 6 (10)	-	216-262	216-263	216-264	216-266	216-267	216-208	-	-
2010	0.5 - 10 (16)	-	_	-	216-284	216-286	216-287	216-288	216-289	-
2016	0.5 - 16 (25)	-	-	-	216-284	216-286	216-287	216-288	216-289	216-210



TOP	JOB®S – ove	rview o	f directly	connect	able fen	ules				
	4									
Series	Rated cross section in mm <sup>2</sup>	0.5 mm <sup>2</sup>	0.75 mm <sup>2</sup>	1 mm²	1.5 mm²	2.5 mm <sup>2</sup>	4 mm²	6 mm²	10 mm²	16 mm²
2001	0.25 - 1.5 (2,5)	+	216-242	216-243	216-244	-	-	-	-	-
2002	0.25 - 2.5 (4)	+	216-242	216-243	216-244	216-246	_	_	-	-
2003	0.25 - 2.5 (4)	+	216-242	216-243	216-244	216-246	-	-		-
2004	0.5 - 4 (6)	+	216-262	216-263	216-264	216-266	216-267	-		-
2006	0.5 - 6 (10)	+	-	-	216-264	216-266	216-267	216-208	-	-
2010	0.5 - 10 (16)	-	-	-	-	216-286	216-287	216-288	216-289	-
2016	0.5 - 16 (25)	-	-	-	-	216-286	216-287	216-288	216-289	216-210







WAGO front-entry rail-mounted terminal blocks of series 279 to 285

#### Rail-Mounted Terminal Blocks (Front-Entry) and Multilevel Terminal Blocks



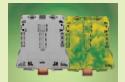


Through, ground (earth) conductor and shield (screen) terminal blocks
– angled type
– horizontal type

 $0.08 \text{ mm}^2 \text{ to } 16 \text{ mm}^2 / \text{AWG } 28 - 6$ Series 279 – 284 and 880 2.8 - 2.20

Distribution terminal blocks 10 mm<sup>2</sup>/35 mm<sup>2</sup> / AWG 8/2

Series 284 \_\_\_\_\_ 2.25



High current terminal blocks 6 mm<sup>2</sup> - 35 mm<sup>2</sup> / AWG 8 - 2 25 mm<sup>2</sup> - 95 mm<sup>2</sup> / AWG 4 - 0000

Series 285\_ Series 285



Multilevel terminal blocks

1.5 mm<sup>2</sup> / AWG 16 2.5 mm<sup>2</sup> / AWG 12 4 mm<sup>2</sup> / AWG 12 2.5 mm<sup>2</sup> / AWG 12 Double deck Series 279 Series 280 Series 281 2.29 - 2.33 Triple deck Series 280 \_ 2.34 - 2.35 - Quadruple deck 4 mm<sup>2</sup> / AWG 12 Series 281 2.36



Accessories for rail-mounted terminal blocks

- Banana plugs	2.42
- Busbar terminal blocks	11.20 – 11.21
- Comb type jumper bars	2.44
- Insulations stops	2.43
- Staggered jumpers	2.45
- Step-down jumpers for through terminal blocks	2.26 - 2.27
- Test plug modules	2.38 - 2.41
- Wire jumpers	2.45



#### Rail-Mounted Terminal Blocks with CAGE CLAMP® Connection - Product Summary -

Series 279 – 285 Through terminal blocks



2-conductor terminal blocks  $mm^{2}/AWG \mid 1.5/16 \mid 2.5/12 \mid 4/12 \mid 6/10 \mid 10/8 \mid 16/6 \mid 35/2$ Page 2. 8 10/12 16/17 18 19 20 21



3-conductor terminal blocks mm<sup>2</sup>/AWG | 1.5/16 | 2.5/12 | 4/12 | 6/10 | 10/8 | 16/6 Page 2. 8 10 16 18 19 20



4-conductor terminal blocks mm<sup>2</sup>/AWG | 1.5/16 | 2.5/12 | 4/12 Page 2. 8 10-12 16

#### Through terminal blocks



2-conductor terminal blocks mm<sup>2</sup>/AWG | 1.5/16 | 2.5/12 | 4/12 Page 2. 8 10 16



3-conductor terminal blocks mm<sup>2</sup>/AWG | 1.5/16 | 2.5/12 | 4/12 Page 2. 8 10 16



4-conductor terminal blocks mm<sup>2</sup>/AWG | 1.5/16 | 2.5/12 | 4/12 Page 2. 8 11-12 16

#### Series 279 – 282 Through terminal blocks for hazardous environments Ex i and Ex e II



2-conductor terminal blocks mm²/AWG | 1.5/16 | 2.5/12 | 4/12 | 6/10 | Page 2. | 8 | 10/12 | 16/17 | 18



3-conductor terminal blocks mm<sup>2</sup>/AWG | 1.5/16 | 2.5/12 | 4/12 | 6/10 | Page 2. | 8 | 10 | 16 | 18



4-conductor terminal blocks mm<sup>2</sup>/AWG | 1.5/16 | 2.5/12 | 4/12 Page 2. | 8/9 | 10-12 | 16

#### Series 279 – 285 Ground (earth) conductor terminal blocks



2-conductor terminal blocks mm<sup>2</sup>/AWG | 1.5/16 | 2.5/12 | 4/12 | 6/10 | 10/8 | 16/6 | 35/2 Page 2. 8 10/12 16/17 18 19 20 21



3-conductor terminal blocks mm<sup>2</sup>/AWG | 1.5/16 | 2.5/12 | 4/12 | 6/10 | 10/8 | 16/6 Page 2. 8 10/12 16 18 19 20



4-conductor terminal blocks mm²/AWG | 1.5/16 | 2.5/12 | 4/12 Page 2. 8 10/11 16

#### Series 284 Distribution terminal blocks



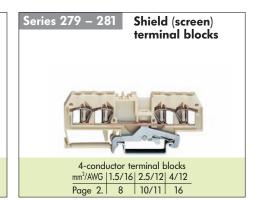
mm<sup>2</sup>/AWG | 35/2 and 3x10/3x8 Page 2. 25





 mm²/AWG | 1.5/16 | 2.5/12

 Page 2.
 8 | 10/12





#### Series 880 Through terminal blocks without/with shield (screen) contact, Slim-Line, 5 mm/0.197 in wide



2-conductor terminal block mm<sup>2</sup>/AWG | 4/12 Page 2. 14



3-conductor terminal block mm²/AWG | 4/12 Page 2. | 14



4-conductor terminal block

mm²/AWG | 4/12
Page 2. | 14



2- to 4-conductor terminal blocks 4 mm<sup>2</sup>/AWG 12 with ferrules Page 2.15

#### Series 880 Ground (earth) conductor terminal blocks, Slim-Line, 5 mm/0.197 in wide



2-conductor terminal block mm²/AWG | 4/12 Page 2. | 14



3-conductor terminal block mm²/AWG | 4/12 Page 2. | 14



4-conductor terminal block mm²/AWG | 4/12 Page 2. | 14



2- to 4-conductor terminal blocks 4 mm<sup>2</sup>/AWG 12 with ferrules Page 2.15

#### Series 280/281 Through terminal blocks



3-conductor terminal blocks mm²/AWG | 2.5/12 | 4/12 Page 2. | 12 | 17



4-conductor terminal block mm²/AWG | 2.5/12 Page 2. | 13



3- and 4-conductor terminal blocks

mm²/AWG | 2.5/12

Page 2. | 12 - 13

## Series 280/281 Through terminal blocks for hazardous environments Ex i and Ex e II



3- and 4-conductor terminal blocks mm²/AWG | 2.5/12 | 4/12 Page 2. | 12 | 17 Series 280 Shield (screen) terminal blocks



3-conductor terminal block mm²/AWG | 2.5/12 Page 2. | 12

#### Series 280/281 Ground (earth) conductor terminal blocks



3-conductor terminal blocks mm²/AWG | 2.5/12 | 4/12 Page 2. | 12 | 17

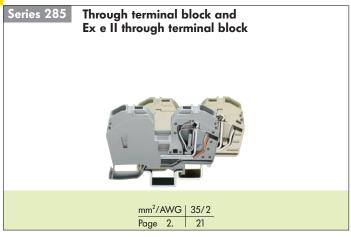
#### Series 283 Ground (earth) conductor terminal blocks Supply terminal blocks

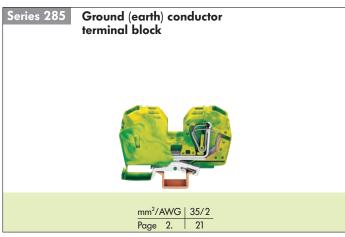


Supply terminal block 0.2 - 16 mm²/AWG 24 - 6 283-609 Accessories end plate 283-320

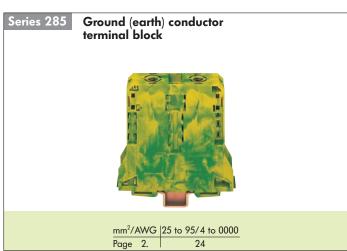


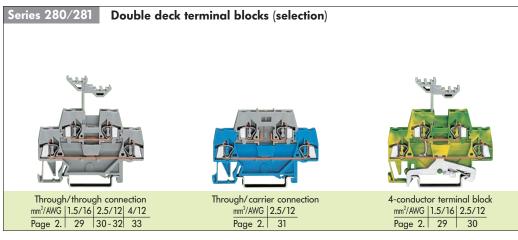
#### High Current Rail-Mounted Terminal Blocks and Multilevel Rail-Mounted Terminal Blocks – Product Summary –



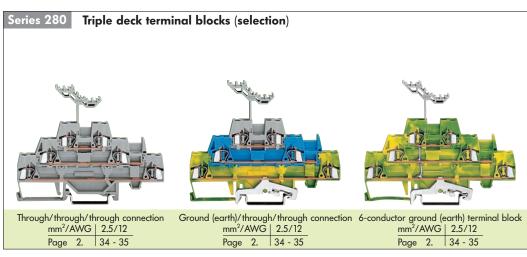


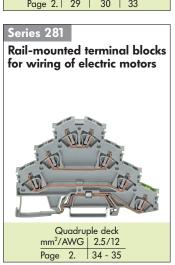












#### **Accessories for Terminal Blocks**

Modular test plugs Page 2.40

Page 2.38





# Rail-mounted Terminal Blocks with CAGE CLAMP<sup>®</sup> . . . Series 279 to 285 and 880

#### Assembly



By snapping a ground (earth) conductor terminal block onto the carrier rail, a direct electrical connection is automatically made to the rail.



Quick assembly keys prevent reverse mounting

#### Removal



Removal of a terminal block from the assembly

#### Commoning



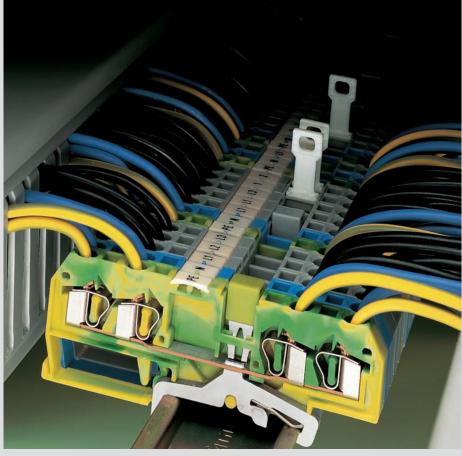
Commoning of ground (earth) cond. term. blocks with through term. bl. is possible in one direction only using adjacent jumpers. In addition to the required marking of these term. blocks, we also recommend the use of the yell.-green adj. jumpers.

#### Commoning

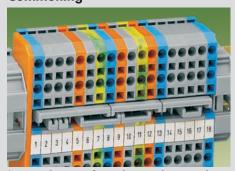


Commoning of terminal blocks of different sizes – step down Application notes see page 2.26

## According to EN 60947-7-2 [VDE 0611, part 3] steel carrier rails may not be used for PEN applications.



Commoning



Staggered jumpers for sophisticated wiring jobs. Application notes see page 2.45



CAGE CLAMP® clamps the following copper wires: \*

\* For aluminum wire see notes in section 15!

Testing - Series 880



The terminal blocks of series 880 have an additional test slot for test plugs 2 mm / 0.079 in  $\varnothing$  or 2.3 mm / 0.091 in  $\varnothing$ 



stranded

Protective warning marker



Protective warning markers inserted into the operating slots



fine stranded, also with tinned single strands

#### ... Description and Handling

#### CAGE CLAMP® connection



Connection of conductors



Connection of conductors

When using conductors with ferrules, it is necessary to use a terminal block one size larger than the nominal cross section of the conductor

#### **Testing**



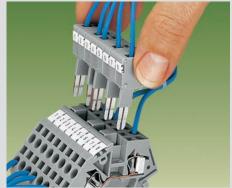
Testing with test plug.
Test plug with CAGE CLAMP®

#### **Testing**



Test plug modules with CAGE CLAMP\*. Testing using the conductor wire opening, see page 2.38

#### **Testing**



Test plug modules with CAGE CLAMP\*. Testing using jumper contact position in current bar, see page 2.39

#### Marking

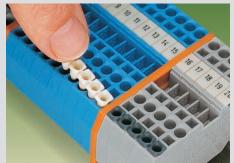


Marking with WMB multi-marking system or WSB quick marking system.
For other systems see section 14



fine-stranded wire tip bonded

#### **Insulation stop**



Insertion of insulation stop.
Application notes see page 2.43



fine-stranded wire with crimped ferrule **1** 

#### **Testing**



Testing with banana plug 4 mm/0.157 in Ø, using test plug adapter 209-170



fine-stranded wire with crimped pin terminal



## Through/Ground (Earth) Conductor/Shield (Screen) and (Ex) Terminal Blocks 1.5 mm² / AWG 16, Series 279

0.08 - 1.5 mm<sup>2</sup> 800 V/8 kV/3 **0** 18 A

AWG 28 - 16 600 V, 10 A **9** 600 V, 10 A ®

Terminal block width 4 mm / 0.157 in **■** 8 – 9 mm / 0.33 in

\* 🕦 🏽 KEER CCAKEER 🕞 🚏 🗥 GL BV LR NV 🛭 🐼

0.08 - 1.5 mm<sup>2</sup> 800 V/8 kV/3 **①** 18 A

AWG 28 - 16 600 V, 10 A **9** 600 V, 10 A ®

Terminal block width 4 mm / 0.157 in 8 – 9 mm / 0.33 in

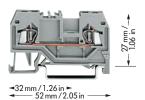
\* 🗫 🊳 KEER CCAKEER 🚱 🐨 🗥 GL BV LR NV 🛭 🕾

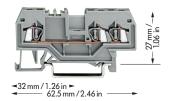
 $0.08 - 1.5 \text{ mm}^2$ 800 V/8 kV/3 **①** 18 A

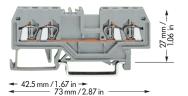
AWG 28 - 16 600 V, 10 A **9** 600 V, 10 A ®

Terminal block width 4 mm / 0.157 in 8 – 9 mm / 0.33 in

\* 🕦 🏽 KEGE CCAKEGE 🚭 📽 🗥 GL BV LR NV 🛭 🐼







	Item No.	Pack. unit pcs		Item No.	Pack. unit pcs		Item No.	Pack. ui pcs
2-conductor through terminal blocks			3-conductor thro	ugh terminal bloc	ks	4-conductor thre	ough terminal	blocks
grey	279-901	100	grey	279-681	100	grey	279-831	100
blue	279-904 🕗	100	blue	279-684 2	100	blue	279-834 🕗	100
orange	279-902	100	orange	279-682	100	orange	279-832	100
red	279-903	100	red	279-683	100	red	279-833	100
black	279-905	100	black	279-685	100	black	279-835	100
yellow	279-906	100	yellow	279-686	100	yellow	279-836	100
light grey (Ex)	279-992	100	light grey ⟨ξx⟩	279-993	100	light grey ⟨ξx⟩	279-994	100
0 0 / -	und (earth) terminal	blocks	0 0 / _	und (earth) termine	al blocks	4-conductor gro	ound (earth) ter	minal blocks
green-yellow	279-907	100	green-yellow	279-687	100	green-yellow	279-837	100
	279-907/999-950	_		279-687/999-95	<b>50 1</b> 00	green-yellow (Ex)		<b>9-950 1</b> 00
5 · · · / · · · · · · · · · ·			3 44 /4 44 🕒			4-conductor shi		~
						white	279-838	100
								, , , ,
Other terminal h	locks with the same	shape	Other terminal b	locks with the san	ne shape	Other terminal	blocks with the	same shape
diode	279-915/	page 7.56	diode	279-673/	•	double potential		page
		p g	LED	279-674/		diode	279-815/	
					F-9-11-1	LED	279-809/	1.3.
Accessories S	Series 279	Appr	opriate marking syste	m WMB/WSB	WFB (see section	n 14)		
	diate plate, 2 mm/0.			diate plate, 2 mm			ediate plate, 2	mm / 0.079 in thic 279-346 100 (4
Accessories S	ediate plate, 2 mm/0. orange 279-3	079 in thick		diate plate, 2 mm orange 279	/0.079 in thick		-	
	orange 279-3 grey 279-3	079 in thick 328 100 (4×25)		orange 279 grey 279	70.079 in thick 7-339 100 (4×25)		orange	<b>279-346</b> 100 (4
End and interme	orange 279-3 grey 279-3	079 in thick 328 100 (4×25) 325 100 (4×25) 330 100 (4×25)	End and interme	orange 279 grey 279	70.079 in thick 7-339 100 (4×25) 7-308 100 (4×25) 7-341 100 (4×25)		orange grey light grey	<b>279-346</b> 100 (4 <b>279-344</b> 100 (4 <b>279-348</b> 100 (4
End and interme	diate plate, 2 mm/0. orange 279-3 grey 279-3 light grey 279-3 zed, 2 mm/0.079 in the	079 in thick 328 100 (4×25) 325 100 (4×25) 330 100 (4×25)	End and interme	orange 279 grey 279 light grey 279 zed, 2 mm / 0.079 in	70.079 in thick 7-339 100 (4×25) 7-308 100 (4×25) 7-341 100 (4×25)	End and interme	orange grey light grey	<b>279-346</b> 100 (4 <b>279-344</b> 100 (4 <b>279-348</b> 100 (4
End and interme	orange 279-3 grey 279-3 light grey 279-3 zed, 2 mm/0.079 in th orange 279-3	079 in thick <b>328</b> 100 (4×25) <b>325</b> 100 (4×25) <b>330</b> 100 (4×25) ick	End and interme	orange 279 grey 279 light grey 279 zed, 2 mm / 0.079 in orange 279	70.079 in thick 7-339 100 (4×25) 7-308 100 (4×25) 7-341 100 (4×25) Thick	End and interme	orange grey light grey sized, 2 mm/0.0	<b>279-346</b> 100 (4 <b>279-344</b> 100 (4 <b>279-348</b> 100 (4 <b>79</b> in thick
End and interme	diate plate, 2 mm/0. orange 279-3 grey 279-3 light grey 279-3 zed, 2 mm/0.079 in th orange 279-3 grey 279-3	079 in thick 828 100 (4×25) 825 100 (4×25) 830 100 (4×25) 830 100 (4×25) 831 100 (4×25)	End and interme	orange 279 grey 279 light grey 279 zed, 2 mm / 0.079 in orange 279 grey 279	70.079 in thick 7-339 100 (4×25) 7-308 100 (4×25) 7-341 100 (4×25) 100 thick 7-340 100 (4×25)	End and interme	orange grey light grey sized, 2 mm/0.0 orange	<b>279-346</b> 100 (4 <b>279-344</b> 100 (4 <b>279-348</b> 100 (4 <b>79</b> in thick <b>279-347</b> 100 (4
End and interme	diate plate, 2 mm/0. orange 279-3 grey 279-3 light grey 279-3 zed, 2 mm/0.079 in th orange 279-3 grey 279-3 light grey 279-3	079 in thick 128 100 (4×25) 125 100 (4×25) 130 100 (4×25) 130 100 (4×25) 130 100 (4×25) 131 100 (4×25)	End and interme	orange 279 grey 279 light grey 279 zed, 2 mm / 0.079 in orange 279 grey 279 light grey 279 light grey 279	70.079 in thick 7-339 100 (4×25) 7-308 100 (4×25) 7-341 100 (4×25) 100 thick 100 th	End and interme	orange grey light grey sized, 2 mm/0.0 orange grey light grey	279-346 100 (4 279-344 100 (4 279-348 100 (4 79 in thick 279-347 100 (4 279-345 100 (4
End and interme  Separator, oversi	diate plate, 2 mm/0. orange 279-3 grey 279-3 light grey 279-3 zed, 2 mm/0.079 in th orange 279-3 grey 279-3 light grey 279-3 3, 5 pcs/strip	079 in thick 128 100 (4×25) 125 100 (4×25) 130 100 (4×25) 130 100 (4×25) 130 100 (4×25) 131 100 (4×25)	Separator, oversion	orange 275 grey 275 light grey 275 zed, 2 mm / 0.079 in orange 275 grey 275 light grey 275 grey 275 light grey 275	70.079 in thick 7-339 100 (4×25) 7-308 100 (4×25) 7-341 100 (4×25) 100 thick 100 th	End and intermed	orange grey light grey sized, 2 mm/0.0 orange grey light grey	279-346 100 (4 279-344 100 (4 279-348 100 (4 79 in thick 279-347 100 (4 279-345 100 (4
End and interme  Separator, oversi	diate plate, 2 mm/0. orange 279-3 grey 279-3 light grey 279-3 zed, 2 mm/0.079 in th orange 279-3 grey 279-3 light grey 279-3 3, 5 pcs/strip	079 in thick 128 100 (4×25) 125 100 (4×25) 130 100 (4×25) 130 100 (4×25) 131 100 (4×25) 131 100 (4×25) 1370 200 strips	End and interme  Separator, oversit	orange 275 grey 275 light grey 275 zed, 2 mm / 0.079 in orange 275 grey 275 light grey 275 grey 275 light grey 275 light grey 275 s, 5 pcs / strip white 275	70.079 in thick 7-339 100 (4×25) 7-308 100 (4×25) 7-341 100 (4×25) 100	End and intermed	orange grey light grey sized, 2 mm/0.0 orange grey light grey 3, 5 pcs/strip	279-346 100 (4 279-348 100 (4 279-348 100 (4 79 in thick 279-347 100 (4 279-345 100 (4 279-349 100 (4 279-340 200 st
Separator, oversi	diate plate, 2 mm/0. orange 279-3 grey 279-3 light grey 279-3 zed, 2 mm/0.079 in th orange 279-3 grey 279-3 light grey 279-3 B, 5 pcs/strip white 279-4	079 in thick 128 100 (4×25) 125 100 (4×25) 130 100 (4×25) 130 100 (4×25) 131 100 (4×25) 131 100 (4×25) 1370 200 strips	Separator, oversion	orange 275 grey 275 light grey 275 zed, 2 mm / 0.079 in orange 275 grey 275 light grey 275 grey 275 light grey 275 light grey 275 white 275 dark grey 275	70.079 in thick 7-339 100 (4×25) 7-308 100 (4×25) 7-341 100 (4×25) thick 7-340 100 (4×25) 7-309 100 (4×25) 7-342 100 (4×25) 7-470 200 strips	End and intermed	orange grey light grey sized, 2 mm/0.0 orange grey light grey 3, 5 pcs/strip white dark grey	279-346 100 (4 279-348 100 (4 279-348 100 (4 79 in thick 279-347 100 (4 279-345 100 (4 279-349 100 (4 279-470 200 st
Separator, oversi	diate plate, 2 mm/0. orange 279-3 grey 279-3 light grey 279-3 zed, 2 mm/0.079 in th orange 279-3 grey 279-3 light grey 279-3 3, 5 pcs/strip white 279-4 dark grey 279-4 r, insulated, I <sub>N</sub> 15 A	079 in thick 128 100 (4×25) 125 100 (4×25) 130 100 (4×25) 130 100 (4×25) 131 100 (4×25) 131 100 (4×25) 1370 200 strips	Separator, oversit	orange 279 grey 279 light grey 279 zed, 2 mm/0.079 in orange 279 light grey 279 light grey 279 light grey 279 light grey 279 dark grey 279 t, insulated, I <sub>N</sub> 15 A	70.079 in thick 7-339 100 (4×25) 7-308 100 (4×25) 7-341 100 (4×25) thick 7-340 100 (4×25) 7-309 100 (4×25) 7-342 100 (4×25) 7-470 200 strips	Separator, overs	orange grey light grey sized, 2 mm/0.0 orange grey light grey 3, 5 pcs/strip white dark grey	279-346 100 (4 279-348 100 (4 279-348 100 (4 79 in thick 279-347 100 (4 279-345 100 (4 279-349 100 (4 279-470 200 st 279-471 200 st
Separator, oversi	diate plate, 2 mm/0. orange 279-3 grey 279-3 light grey 279-3 zed, 2 mm/0.079 in th orange 279-3 grey 279-3 light grey 279-3 B, 5 pcs/strip white 279-4 dark grey 279-4 r, insulated, I <sub>N</sub> 15 A	079 in thick 128 100 (4×25) 125 100 (4×25) 130 100 (4×25) 130 100 (4×25) 131 100 (4×25) 131 100 (4×25) 1470 200 strips 1471 200 strips 1472 200 (8×25)	Separator, oversit	orange 275 grey 279 light grey 279 grey 279 zed, 2 mm/0.079 in orange 275 grey 279 light grey 279 light grey 279 dark grey 279 dark grey 279 insulated, I <sub>N</sub> 15 A grey 279	70.079 in thick 2-339 100 (4×25) 2-308 100 (4×25) 2-341 100 (4×25) 4-340 100 (4×25) 2-340 100 (4×25) 2-342 100 (4×25) 2-470 200 strips 2-471 200 strips	Separator, overs	orange grey light grey sized, 2 mm/0.0 orange grey light grey 3, 5 pcs/strip white dark grey er, insulated, I <sub>N</sub> 1 grey	279-346 100 (4 279-348 100 (4 279-348 100 (4 79 in thick 279-347 100 (4 279-345 100 (4 279-349 100 (4 279-470 200 st
Separator, oversi  Insulation stop	diate plate, 2 mm/0. orange 279-3 grey 279-3 light grey 279-3 grey 279-3 grey 279-3 light grey 279-3 light grey 279-3 b, 5 pcs/strip white 279-4 dark grey 279-4 r, insulated, I <sub>N</sub> 15 A grey 279-4 r, insulated, I <sub>N</sub> 15 A	079 in thick 128 100 (4×25) 125 100 (4×25) 130 100 (4×25) 130 100 (4×25) 131 100 (4×25) 131 100 (4×25) 1470 200 strips 1471 200 strips 1472 200 (8×25) 1472 200 (8×25)	Separator, oversional linsulation stop	orange 279 grey 279 light grey 279 gred, 2 mm / 0.079 in orange 279 grey 279 grey 279 light grey 279 light grey 279 dark grey 279 t, insulated, I <sub>N</sub> 15 A grey 279 grey 279 yellgreen 279	70.079 in thick 2-339 100 (4×25) 2-341 100 (4×25) 2-341 100 (4×25) 2-340 100 (4×25) 2-340 100 (4×25) 2-342 100 (4×25) 2-470 200 strips 2-471 200 strips 2-402 200 (8×25) 2-422 200 (8×25)	Separator, overs	orange grey light grey sized, 2 mm/0.0 orange grey light grey light grey 3, 5 pcs/strip white dark grey er, insulated, I <sub>N</sub> 1 grey yellgreen	279-346 100 (4 279-348 100 (4 279-348 100 (4 79 in thick 279-347 100 (4 279-345 100 (4 279-349 100 (4 279-470 200 st 279-471 200 st 5 A 279-402 200 (8 279-422 200 (8
Separator, oversi  Insulation stop	diate plate, 2 mm/0. orange 279-3 grey 279-3 light grey 279-3 grey 279-3 grey 279-3 light grey 279-3 light grey 279-3 b, 5 pcs/strip white 279-4 dark grey 279-4 r, insulated, I <sub>N</sub> 15 A grey 279-4 r, insulated, I <sub>N</sub> 15 A	079 in thick 128 100 (4×25) 125 100 (4×25) 130 100 (4×25) 130 100 (4×25) 131 100 (4×25) 131 100 (4×25) 1470 200 strips 1471 200 strips 1472 200 (8×25)	Separator, oversional linsulation stop	orange 279 grey 279 light grey 279 gred, 2 mm / 0.079 in orange 279 grey 279 grey 279 light grey 279 light grey 279 dark grey 279 t, insulated, I <sub>N</sub> 15 A grey 279 grey 279 yellgreen 279	70.079 in thick 2-339 100 (4×25) 2-308 100 (4×25) 2-341 100 (4×25) 2-340 100 (4×25) 2-340 100 (4×25) 2-342 100 (4×25) 2-470 200 strips 2-471 200 strips 2-402 200 (8×25)	Separator, overs  Insulation stop  Adjacent jumpe	orange grey light grey sized, 2 mm/0.0 orange grey light grey light grey 3, 5 pcs/strip white dark grey er, insulated, I <sub>N</sub> 1 grey yellgreen	279-346 100 (4 279-348 100 (4 279-348 100 (4 79 in thick 279-347 100 (4 279-345 100 (4 279-349 100 (4 279-470 200 st 279-471 200 st 279-402 200 (8 279-402 200 (8
Separator, oversi  Insulation stop  Adjacent jumper	diate plate, 2 mm/0. orange 279-3 grey 279-3 light grey 279-3 zed, 2 mm/0.079 in the orange 279-3 grey 279-3 light grey 279-3 light grey 279-3 dark grey 279-4 dark grey 279-4 r, insulated, I <sub>N</sub> 15 A grey 279-4 yellgreen 279-4 r, insulated, I <sub>N</sub> 15 A	079 in thick 128 100 (4×25) 125 100 (4×25) 130 100 (4×25) 130 100 (4×25) 126 100 (4×25) 131 100 (4×25) 1470 200 strips 1470 200 strips 1470 200 (8×25) 1420 200 (8×25) 1420 100 (4×25)	Separator, oversition of the separator of the separator oversition of the separator of the separator oversition oversition of the separator oversition oversiti	orange 275 grey 275 light grey 275 grey 275 light grey 275 grey 275 grey 275 light grey 275 light grey 275 dark grey 275 dark grey 275 t, insulated, I <sub>N</sub> 15 A grey 275 grey 275 t, insulated, I <sub>N</sub> 15 A	70.079 in thick 7-339 100 (4×25) 7-308 100 (4×25) 7-341 100 (4×25) 7-340 100 (4×25) 7-340 100 (4×25) 7-342 100 (4×25) 7-470 200 strips 7-471 200 strips 7-402 200 (8×25) 7-409 100 (4×25)	Separator, overs  Insulation stop  Adjacent jumpe	orange grey light grey sized, 2 mm/0.0 orange grey light grey light grey 3, 5 pcs/strip white dark grey str, insulated, I <sub>N</sub> 1 grey yellgreen er, insulated, I <sub>N</sub> 1 grey	279-346 100 (4 279-348 100 (4 279-348 100 (4 79 in thick 279-347 100 (4 279-345 100 (4 279-349 100 (4 279-470 200 st 279-471 200 st 279-402 200 (8 279-422 200 (8
Separator, oversi  Insulation stop  Adjacent jumper	ridiate plate, 2 mm/0. orange 279-3 grey 279-3 light grey 279-3 grey 279-3 grey 279-3 grey 279-3 jight grey 279-4 dark grey 279-4 r, insulated, I <sub>N</sub> 15 A grey 279-4	079 in thick 128 100 (4×25) 130 100 (4×25) 130 100 (4×25) 130 100 (4×25) 131 100 (4×25) 131 100 (4×25) 1470 200 strips 1470 200 strips 1470 200 (8×25) 1490 100 (4×25) 1491 100 (4×25) 1491 100 (4×25) 1491 100 (4×25)	Separator, oversition of the separator of the separator oversition of the separator of the separator oversition oversition of the separator oversition oversiti	orange 275 grey 275 light grey 275 grey 275 light grey 275 grey 275 grey 275 grey 275 grey 275 grey 275 dark grey 275 dark grey 275 t, insulated, I <sub>N</sub> 15 A grey 275 grey 275 t, insulated, I <sub>N</sub> 15 A grey 275 t, insulated, I <sub>N</sub> 15 A grey 275 t, insulated, I <sub>N</sub> 15 A grey 275	70.079 in thick 7-339 100 (4×25) 7-341 100 (4×25) 7-341 100 (4×25) 7-340 100 (4×25) 7-340 100 (4×25) 7-342 100 (4×25) 7-470 200 strips 7-471 200 strips 7-402 200 (8×25) 7-409 100 (4×25) 7-409 100 (4×25) 7-409 100 (4×25)	Separator, overs  Insulation stop  Adjacent jumpe	orange grey light grey sized, 2 mm/0.0 orange grey light grey light grey 3, 5 pcs/strip white dark grey str, insulated, I <sub>N</sub> 1 grey yellgreen grey in insulated, I <sub>N</sub> 1 grey yellgreen grey	279-346 100 (4 279-348 100 (4 279-348 100 (4 79 in thick 279-347 100 (4 279-345 100 (4 279-349 100 (4 279-470 200 st 279-471 200 st 279-402 200 (8 279-422 200 (8
Separator, oversi  Insulation stop  Adjacent jumper	diate plate, 2 mm/0. orange 279-3 grey 279-3 light grey 279-3 grey 279-3 grey 279-3 grey 279-3 jight grey 279-3 h, 5 pcs/strip white 279-4 dark grey 279-4 r, insulated, I <sub>N</sub> 15 A grey 279-4	079 in thick 128 100 (4×25) 125 100 (4×25) 130 100 (4×25) 130 100 (4×25) 126 100 (4×25) 131 100 (4×25) 1470 200 strips 1470 200 strips 1470 200 (8×25) 1420 200 (8×25) 1430 100 (4×25) 1441 100 (4×25) 1541 100 (4×25)	Separator, oversition of the separator of the separator oversition of the separator of the separator oversition oversition of the separator oversition oversiti	orange 275 grey 275 light grey 275 zed, 2 mm /0.079 in orange 275 grey 275 grey 275 grey 275 light grey 275 light grey 275 dark grey 275 dark grey 275 v, insulated, I <sub>N</sub> 15 A grey 275 yellgreen 275 r, insulated, I <sub>N</sub> 15 A grey 275	70.079 in thick 7-339 100 (4×25) 7-341 100 (4×25) 7-341 100 (4×25) 7-340 100 (4×25) 7-340 100 (4×25) 7-340 100 (4×25) 7-342 100 (4×25) 7-470 200 strips 7-471 200 strips 7-402 200 (8×25) 7-409 100 (4×25) 7-409 100 (4×25) 7-409 100 (4×25) 7-409 100 (4×25)	Separator, overs  Insulation stop  Adjacent jumpe	orange grey light grey light grey orange grey light grey light grey 3, 5 pcs/strip white dark grey er, insulated, I <sub>N</sub> 1 grey yellgreen er, insulated, I <sub>N</sub> 1 grey  re jumper 3, i L = 60 mm	279-346 100 (4 279-348 100 (4 279-348 100 (4 79 in thick 279-347 100 (4 279-345 100 (4 279-349 100 (4 279-470 200 st 279-471 200 st 5 A 279-402 200 (8 279-409 100 (4 279-409 100 (4
Separator, oversi  Insulation stop  Adjacent jumper	ridiate plate, 2 mm/0. orange 279-3 grey 279-3 light grey 279-3 grey 279-3 grey 279-3 grey 279-3 jight grey 279-4 dark grey 279-4 r, insulated, I <sub>N</sub> 15 A grey 279-4	079 in thick 128 100 (4×25) 125 100 (4×25) 130 100 (4×25) 126 100 (4×25) 126 100 (4×25) 127 200 strips 127 200 (8×25) 127 200	Separator, oversition of the separator of the separator oversition of the separator of the separator oversition oversition of the separator oversition oversiti	orange 275 grey 275 light grey 275 zed, 2 mm /0.079 in orange 275 grey 275 grey 275 grey 275 grey 275 light grey 275 dark grey 275 vhite 275 vinsulated, I <sub>N</sub> 15 A grey 275 yellgreen 275 r, insulated, I <sub>N</sub> 15 A grey 275 grey 275 grey 275	70.079 in thick 7-339 100 (4×25) 7-341 100 (4×25) 7-341 100 (4×25) 7-340 100 (4×25) 7-340 100 (4×25) 7-342 100 (4×25) 7-342 100 (4×25) 7-470 200 strips 7-471 200 strips 7-402 200 (8×25) 7-409 100 (4×25) 7-409 100 (4×25) 7-409 100 (4×25) 7-409 100 (4×25) 7-409 100 (4×25)	Separator, overs  Insulation stop  Adjacent jumpe	orange grey light grey strip white dark grey ler, insulated, I <sub>N</sub> 1 grey yell-green ler, insulated, I <sub>N</sub> 1 grey re jumper (3), i L = 60 mm L = 110 mm	279-346 100 (4 279-348 100 (4 279-348 100 (4 79 in thick 279-347 100 (4 279-345 100 (4 279-349 100 (4 279-470 200 st 279-471 200 st 279-402 200 (8 279-402 100 (4 279-409 100 (4 279-409 100 (4
Separator, oversi  Insulation stop  Adjacent jumper  Alternate jumper	ridiate plate, 2 mm/0. orange 279-3 grey 279-3 light grey 279-3 grey 279-3 grey 279-3 grey 279-3 jight grey 279-4 dark grey 279-4 r, insulated, I <sub>N</sub> 15 A grey 279-4	079 in thick 128 100 (4×25) 125 100 (4×25) 130 (10 (4×25) 126 100 (4×25) 126 100 (4×25) 131 100	Separator, oversition of the state of the st	orange 275 grey 275 light grey 275 gred, 2 mm /0.079 in orange 275 grey 275 grey 275 grey 275 grey 275 light grey 275 j, 5 pcs /strip white 275 dark grey 275 r, insulated, I <sub>N</sub> 15 A grey 275 r, insulated, I <sub>N</sub> 15 A grey 275 r, insulated, I <sub>N</sub> 15 A grey 275 grey 275 r, insulated, I <sub>N</sub> 15 A grey 275	70.079 in thick 7-339 100 (4×25) 7-341 100 (4×25) 7-341 100 (4×25) 7-340 100 (4×25) 7-340 100 (4×25) 7-340 100 (4×25) 7-342 100 (4×25) 7-342 200 strips 7-402 200 (8×25) 7-409 100 (4×25) 7-409 100 (4×25) 7-409 100 (4×25) 7-409 100 (4×25) 7-409 100 (4×25) 7-409 100 (4×25)	Separator, overs  Insulation stop  Adjacent jumpe  Push-in type wi	orange grey light grey strip white dark grey ler, insulated, I <sub>N</sub> 1 grey yellgreen ler, insulated, I <sub>N</sub> 1 grey re jumper 3, i L = 60 mm L = 110 mm L = 250 mm	279-346 100 (4 279-348 100 (4 279-348 100 (4 79 in thick 279-347 100 (4 279-345 100 (4 279-470 200 st 279-471 200 st 279-402 200 (8 279-402 200 (8 279-409 100 (4 279-409 100 (4 279-409 100 (4

<sup>\*</sup> For further approvals with corresponding ratings see section 15.

#### **Double Potential Terminal Blocks** 1.5 mm<sup>2</sup> / AWG 16, Series 279



 $0.08 - 1.5 \text{ mm}^2$ 800 V/8 kV/3 **①** 

AWG 28 - 16 600 V, 10 A **9** 600 V, 10 A ®

Terminal block width 4 mm / 0.157 in **□** 8 − 9 mm / 0.33 in

\* **%** @ ((AKEE N S O 🛡 \( \) & & &

0.08 - 1.5 mm<sup>2</sup> 800 V/8 kV/3 **①** 

AWG 28 - 16 600 V, 10 A **91** 600 V, 10 A **6** 

Terminal block width 4 mm / 0.157 in □ 8 – 9 mm / 0.33 in

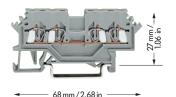
👊 🊳 KEEGA CCAKEEGA 🕞 👺 🗥 BV LR NV 🖟 😥

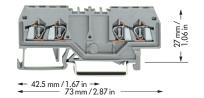
0.08 - 1.5 mm<sup>2</sup> 800 V/8 kV/3 **①** 

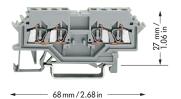
AWG 28 - 16 600 V, 10 A **%** 600 V, 10 A ®

Terminal block width 4 mm / 0.157 in □ 8 – 9 mm / 0.33 in

\* 🗫 @ KEEB (CAKEEB № S) @ 🕞 🛡 🗏 🛦 GL BV LR NV 🛭 🖗 🗟







	Item No.	Pack. unit pcs		Item No.	Pack. unit pcs		Item No.	Pack. unit pcs
4-conductor thre	ough terminal blocks		Double potenti	al terminal block	s, with double mar-	Double potentic	al terminal blo	<b>cks,</b> with marker
grey	279-621	100	ker receptacle in	the center of the	terminal block	receptacle on the	side of the terr	ninal block
blue	279-604 🕗	100	grey	279-826	100	grey	279-626	100
light grey 🖘	279-990 🔘	100	light grey 🖘	279-995	100	light grey 🖘	279-989 🔘	100
	blocks with the same	shape						
double potential								
diode	279-623/	page 7.56			al terminal blocks			ntial terminal blocks
LED	279-624/	page 7.60	cannot be com	moned with adj	acent jumpers!	cannot be comr	noned with a	ljacent jumpers!
End and interme	ediate plate, 2 mm/0	.079 in thick	End and interm	nediate plate, 2 n	nm / 0.079 in thick	End and interme	ediate plate, 2	mm/0.079 in thick
		<b>317</b> 100 (4×25)		orange	<b>279-346</b> 100 (4×25)		orange	279-317 100 (4×25)
	grey <b>279-</b> 3	<b>316</b> 100 (4×25)	The second second	grey	<b>279-344</b> 100 (4×25)		grey	<b>279-316</b> 100 (4×25)
27 29	light grey 279-3	318 100 (4×25)	37.070	light grey	<b>279-348</b> 100 (4×25)	27 29	light grey	<b>279-318</b> 100 (4×25)
Separator, overs	ized, 2 mm/0.079 in th	nick	Separator, oversized, 2 mm/0.079 in thick		Separator, oversized, 2 mm/0.079 in thick			
	orange <b>279-</b> 3	<b>327</b> 100 (4×25)		orange 2	<b>279-347</b> 100 (4×25)		orange	<b>279-327</b> 100 (4×25)
	grey <b>279-</b> 3	<b>337</b> 100 (4×25)		grey	<b>279-345</b> 100 (4×25)		grey	<b>279-337</b> 100 (4×25)
	light grey 279-3	<b>338</b> 100 (4×25)		light grey	<b>279-349</b> 100 (4×25)		light grey	<b>279-338</b> 100 (4×25)
Insulation stop	3, 5 pcs/strip		Insulation stop	3, 5 pcs/strip		Insulation stop	3, 5 pcs/strip	
44	white <b>279-</b> 4	<b>470</b> 200 strips		white 2	<b>279-470</b> 200 strips	****	white	<b>279-470</b> 200 strips
00000	dark grey 279-4	<b>471</b> 200 strips	00000	dark grey	<b>279-471</b> 200 strips	00000	dark grey	<b>279-471</b> 200 strips
N. S.			S.S.			Na.		
Adjacent jumpe	<b>r,</b> insulated, I <sub>N</sub> 15 A		Comb type jum	<b>nper bar 3,</b> insula		Comb type jum		
17	0 ,	<b>402</b> 200 (8 × 25)	COLUMN TO SERVICE STATE OF THE PARTY OF THE	$I_N = I_N$ of ter		(CALLES )		erminal block
T T	yellgreen 279-4	<b>422</b> 200 (8 × 25)	inin	•	<b>279-482</b> 200 (8×25)	inini	2-way	<b>279-482</b> 200 (8 x 25)
iji)					<b>279-483</b> 200 (8×25)		3-way	<b>279-483</b> 200 (8×25)
Alternate jumpe	er, insulated, I <sub>N</sub> 15 A		Alternate comb type jumper bar, insulated,			Alternate comb type jumper bar, insulated,		
R	grey <b>279-</b> 4	<b>409</b> 100 (4×25)		$I_N = I_N$ of ter		1000		erminal block
			1 1	2-way	<b>279-492</b> 200 (8 × 25)	Y Y	2-way	<b>279-492</b> 200 (8×25)
Description to the second	:	-l . O A	0	:		0	:l	
rusn-ın type wi	re jumper <b>3</b> , insulated L = 60 mm <b>249-</b> 1		Operating tool		<b>279-432</b> 1	Operating tool,	2-way	<b>279-432</b> 1
	L = 110 mm <b>249-</b> 1			,	279-432 1 279-433 1			<b>279-432</b> 1 <b>279-433</b> 1
	L = 250 mm <b>249-</b> 1			J-wuy 1	217-400		3-wuy	217-400
Protective warn	ing marker, for 5 term					-		
Jiechive wann	ga.kei, ioi 3 ieili	mid blocks,						

10000 Test plug adapter, suitable f. term. bl. 1.5 mm<sup>2</sup> – 4 mm<sup>2</sup>, 5 mm / 0.197 in wide 280-404 100 (4×25) or. test plug 210-137 (2.3 mm Ø)

yellow

fits into screwdriver slot

279-415 100 (4×25)

Test plug adapter, suitable f. term. bl. 1.5 mm<sup>2</sup> - 10 mm<sup>2</sup>, 8 mm / 0.315 in wide

209-170 50 (2×25) for test plug 4 mm/0.157 in Ø

Comp type jumper bar (see right column)

Double potential terminal blocks are space savers. Two independent through terminal blocks are placed in one insulated housing on one level. The width of the housing is only 4 mm/0.157 in. Compared to standard through terminal blocks, the width is only 2 mm/0.079 in for a total height of only 27 mm/1.063 in from the upper edge of the carrier rail. Input and output contacts of one circuit are placed on the same side of the terminal block. Both circuits can be individually marked according to input and output.

- $\bigcirc$  800 V = rated voltage 8 kV = rated surge voltage 3 = pollution degree (see also section 15)
- Suitable for Ex i applications
- $\langle \overline{\epsilon_{\mathbf{x}}} \rangle$  Suitable for Ex e II applications  $0.2 - 1.5 \text{ mm}^2$ AWG 24 - 16 550 V, 15 A (see also section 13) Èx e/Ex i separator see page 2.13
- 3 See application notes on pages 2.43 - 2.45



# Through/Ground (Earth) Conductor/Shield (Screen) and (Exx) Terminal Blocks 2.5 mm² / AWG 12, Series 280

0.08 **– 2.5** mm<sup>2</sup> 800 V/8 kV/3 **①** 24 A

AWG 28 - 12 600 V, 20 A **%** 600 V, 25 A ®

Terminal block width 5 mm / 0.197 in 8 - 9 mm / 0.33 in

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0.08 - 2.5 mm<sup>2</sup> 800 V/8 kV/3 **①** 24 A AWG 28 - 12 600 V, 20 A **7** 600 V, 25 A ®

Terminal block width 5 mm / 0.197 in ■ 8 - 9 mm / 0.33 in

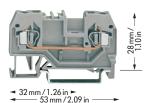
\* 🕦 🏽 KEER CCAKEER 🛈 🚭 🕸 GL BV LR NV 🛭 🐼

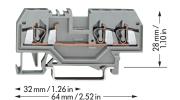
0.08 - **2.5** mm<sup>2</sup> 800 V/8 kV/3 **①** 20 A AWG 28 - 12 600 V, 20 A **7** 600 V, 25 A ®

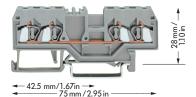
Terminal block width 5 mm / 0.197 in 8—8 - 9 mm / 0.33 in

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test plug adapter, etc. (see page 2.13)







	ltem	Pack. unit		ltem	Pack. unit		Item-	Packui
	No.	pcs		No.	pcs		No.	pcs
2-conductor through terminal blocks			3-conductor thre	•		4-conductor thro	•	
, ,	280-901	100	grey	280-681	100	grey	280-833	100
	280-904 🕗	100	blue	280-684 2	100	blue	280-834 🕗	
	280-902	100	orange	280-650	100	orange	280-835	100
	280-903	100	red	280-653	100	red	280-830	
	280-905	100	black	280-671	100	black	280-831	100
ellow	280-906	100	yellow	280-672	100	yellow	280-832	100
ight grey (Ex)	280-992	100	light grey ⟨ξx⟩	280-993 🔘	100	light grey 🖘	280-994	100
2-conductor grou	nd (earth) tei	minal blocks	3-conductor gro	ound (earth) teri	minal blocks	4-conductor grou	und (earth) te	rminal blocks
green-yellow	280-907 🕕	100	green-yellow	280-687 🕕	100	green-yellow	280-837 🕕	100
green-yellow (Ex)	280-907/99	<b>9-950</b> 🕕 100	green-yellow (Ex)	280-687/999	<b>9-950 (</b> ) 100	green-yellow (Ex)	280-837/99	<b>99-950 (</b> ) 100
						4-conductor shie	ld (screen) te	rminal block
						white	280-838	100
Other terminal bl	ocks with the	same shape	Other terminal I	blocks with the	same shape	Other terminal b	locks with the	e same shape
	280-912	page 7.10	disconnect	280-683	page 7.10	double potential	280-826	page
arrier term. block	280-916	page 7.35	carrier term. blod	k 280-610	page 7.35	disconnect	280-836	page :
diode	280-915/	1 0	diode	280-673/	1 0	disc., test a. meas.		page
		1.0			1.2	carrier term. block		page
						diode	280-815/	
						LED	280-809/	1 0
spacer	280-902/05	6-000	spacer	280-650/056	5-000	spacer	280-835/05	1 0
Accessories S  End and intermed		5 mm/0.098 in thick			SB/WFB (see section mm/0.098 in thick	End and interme	diate plate, 2	2.5 mm/0.098 in th
	orange	<b>280-309</b> 100 (4 x 25)		orange	<b>280-326</b> 100 (4×25)		orange	<b>280-315</b> 100 (4
	grey	<b>280-308</b> 100 (4 x 25)	1 1 1 1 1 1 1 1	grey	<b>280-324</b> 100 (4 x 25)		grey	<b>280-314</b> 100 (4
83.484	light grey	<b>280-356</b> 100 (4 x 25)		light grey	<b>280-358</b> 100 (4 x 25)	19.050	light grey	<b>280-352</b> 100 (4
Separator, oversiz	ed, 2 mm/0.0	79 in thick	Separator, overs	ized, 2 mm/0.07	79 in thick	Separator, oversize	zed, 2 mm/0.0	)79 in thick
	orange	<b>280-311</b> 100 (4 x 25)		orange	<b>280-346</b> 100 (4×25)		orange	<b>280-335</b> 100 (4
1000000	grey	<b>280-310</b> 100 (4 x 25)		grey	<b>280-344</b> 100 (4×25)		grey	<b>280-334</b> 100 (4
	light grey	<b>280-357</b> 100 (4×25)		light grey	<b>280-359</b> 100 (4×25)		light grey	<b>280-353</b> 100 (4
nsulation stop 🕄	, 5 pcs/strip		Insulation stop	<b>3,</b> 5 pcs/strip		Insulation stop €	, 5 pcs/strip	
	white	280-470 200 strips		white	<b>280-470</b> 200 strips	. 4004	white	280-470 200 st
000000	light grey	<b>280-471</b> 200 strips	00000	light grey	<b>280-471</b> 200 strips	00000	light grey	280-471 200 st
000	dark grey	<b>280-472</b> 200 strips	0000	dark grey	<b>280-472</b> 200 strips	000	dark grey	280-472 200 st
Adjacent jumper,	insulated, I <sub>N</sub> 2	4 A, ⟨€x⟩ 23 A	Adjacent jumpe	r, insulated, I <sub>N</sub> 24	1 A, ⟨Ex⟩ 22 A	Adjacent jumper	, insulated, I <sub>N</sub> 2	24 A, 🐼 20 A
<u> </u>	grey	280-402 200 (8 x 25)	<u> </u>	grey	280-402 200 (8 x 25)	in in	grey	<b>280-402</b> 200 (8
	yellgreen	<b>280-422</b> 200 (8 × 25)		yellgreen	<b>280-422</b> 200 (8 × 25)		yellgreen	<b>280-422</b> 200 (8
Staggered jumpe	r <b>3</b> , insulated	, I <sub>N</sub> 24 A, (Ex) 23 A	Staggered jump	er 3, insulated,	I <sub>N</sub> 24 A, (Ex) 22 A	Staggered jumpe	er <b>3</b> , insulated	d, I <sub>N</sub> 24 A, (Ex) 20
	width 5 mm			width 5 mm			width 5 mm	
	from 1 to 2	<b>780-452</b> 100 (4×25)		from 1 to 2	<b>780-452</b> 100 (4×25)		from 1 to 2	<b>780-452</b> 100 (4
		<b>780-453</b> 100 (4×25)			<b>780-453</b> 100 (4×25)			<b>780-453</b> 100 (4
		<b>780-454</b> 100 (4×25)			<b>780-454</b> 100 (4×25)			<b>780-454</b> 100 (4
11 44		<b>780-455</b> 50 (2×25)			<b>780-455</b> 50 (2 × 25)			<b>780-455</b> 50 (2
		· · · · · · · · · · · · · · · · ·	40	5.11 1 10 5	3 C OO (E X 20)	40	5.11 1 10 5	
9						14		
	from 1 to 8	: <b>780-458</b> 50 (2 x 25)	-	from 1 to 8	: <b>780-458</b> 50 (2×25)		from 1 to 8	: 7 <b>80-458</b> 50 (2

test plug adapter, etc. (see page 2.13)

test plug adapter, etc. (see page 2.13)

 $<sup>^{*}</sup>$  For further approvals with corresponding ratings see section 15.

#### **Double Potential Terminal Blocks** 2.5 mm<sup>2</sup> / AWG 12, Series 280



Pack. unit

pcs

0.08 **– 2.5 mm²** 800 V/8 kV/3 **①** 20 A

AWG 28 - 12 600 V, 20 A **%** 600 V, 25 A **®** 

Terminal block width 5 mm / 0.197 in □ 8 – 9 mm / 0.33 in

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0.08 **– 2.5 mm²** 800 V/8 kV/3 **①** 

AWG 28 - 12 600 V, 15 A **9**\(\frac{1}{2}\)
600 V, 15 A **9** 

Terminal block width 5 mm / 0.197 in □ 8 - 9 mm / 0.33 in

ltem

Double potential terminal blocks, with double mar-

ker receptacle in the center of the terminal block 280-826

280-995

Attention! These double potential terminal blocks cannot be commoned with adjacent jumpers!

No.

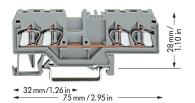
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 $0.08 - 2.5 \text{ mm}^2$ 800 V/8 kV/3 **①** 24 A

AWG 28 - 12 600 V, 15 A **%** 600 V, 20 A ®

Terminal block width 5 mm / 0.197 in □ 8 - 9 mm / 0.33 in

\* 👊 🏽 KEER CCAKEER 🛈 🚭 🖫 GL BV LR NV 🛭 🖼

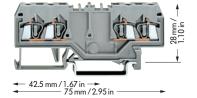


Pack. unit

page 7.61

grey

light grey (Ex)



Pack. unit

100

pcs



	No.	pcs
4-conductor thro	ugh terminal blocks	
grey	280-633	100
blue	280-634 🕗	100
orange	280-603	100
light grey 🖘	280-999 🔘	100
4-conductor grou	und (earth) terminal bl	ocks
green-yellow	280-677 🛑	100
green-yellow (Ex)	280-677/999-950 (	100
4-conductor shie	ld (screen) terminal ble	ock
white	280-678 🔘	100
Other terminal b	locks with the same s	hape
double potential	280-626	page 2.11
disconnect	280-685	page 7.11
disc., test a. meas.	280-649	page 7.11
carrier term. block	280-686	page 7.35
diode	280-655/	page 7.57

280-658/...-...

LED

ltem

41,0	

cannot be com	moned with adjac	ent jumpers!
Attention! The	se double potential	terminal blocks
light grey ⟨€x⟩	280-989 🔘	100
grey	280-626	100
receptacle on th	e side ot the termina	l block

Double potential terminal blocks, with marker

Item

No.

- 800 V = rated voltage 8 kV = rated surge voltage 3 = pollution degree (see also section 15)
- Suitable for Ex i applications
- (Ex) Suitable for Ex e II applications  $0.2 - 2.5 \text{ mm}^2$ AWG 24 - 12 550 V, 20 A (see also section 13)
  When using staggered jumpers the max. rated voltage will be reduced to 275 V. Ex e/Ex i separator see page 2.13
- 3 See application notes

			Te eit
End and intermedic	ate plate, 2	.5 mm/0.098 in thick	En
	orange	<b>280-315</b> 100 (4×25)	_
	grey	<b>280-314</b> 100 (4×25)	
19,020	light grey	<b>280-352</b> 100 (4×25)	
Separator, oversized	d, 2 mm/0.0	79 in thick	Se
	orange	280-335 100 (4×25)	
	grey	<b>280-334</b> 100 (4×25)	
	light grey	280-353 100 (4×25)	
Insulation stop <b>3</b> ,	5 pcs/strip		ln:
4444	white	<b>280-470</b> 200 strips	
000000	light grey	<b>280-471</b> 200 strips	4
000	dark grey	280-472 200 strips	
Adjacent jumper, ir	nsulated, I <sub>N</sub> 2	4 A, ⟨€x⟩ 20 A	Co
lin .		280-402 200 (8 x 25)	
4	yellgreen	280-422 200 (8×25)	
U)XI			
Staggered jumper	<b>3,</b> insulated	, I <sub>N</sub> 24 A, ⟨Ex⟩ 20 A	Al
	width 5 mm	/0.197 in	
	from 1 to 2	<b>780-452</b> 100 (4×25)	
	from 1 to 3	<b>780-453</b> 100 (4×25)	
	from 1 to 4	<b>780-454</b> 100 (4×25)	0
	from 1 to 5	<b>780-455</b> 50 (2 x 25)	
40	:	:	
	from 1 to 8	780-458 50 (2×25)	=

Protective warning marker, comp type jumper bar,

test plug adapter, etc. (see page 2.13)

	4	Maria		on pages 2.38 –	2.45	
	Terminal block marki either with WSB or V					
ı	End and intermedi	ate plate, 2	.5 mm/0.098 in thick	End and intermedic	ate plate, 2	.5 mm/0.098 in thick
)		orange	<b>280-315</b> 100 (4×25)		orange	<b>280-317</b> 100 (4×25)
)		grey	<b>280-314</b> 100 (4 x 25)		grey	<b>280-316</b> 100 (4×25)
)	59,020	light grey	<b>280-352</b> 100 (4×25)		light grey	<b>280-364</b> 100 (4×25)
Ī	Separator, oversize	d, 2 mm/0.0	179 in thick	Separator, oversized	d, 2 mm/0.0	79 in thick
)		orange	<b>280-335</b> 100 (4×25)		orange	<b>280-327</b> 100 (4×25)
)		grey	<b>280-334</b> 100 (4×25)		grey	<b>280-337</b> 100 (4×25)
)		light grey	280-353 100 (4×25)		light grey	280-365 100 (4×25)
1	Insulation stop <b>3</b> ,	5 pcs/strip		Insulation stop 3, 5 pcs/strip		
ı		white	280-470 200 strips		white	280-470 200 strips
ı	000000	light grey	<b>280-471</b> 200 strips	A00000	light grey	<b>280-471</b> 200 strips
1	000	dark grey	<b>280-472</b> 200 strips	0000	dark grey	280-472 200 strips
		1 A ·	ulated.	Comb type jumper	bar <b>3</b> , inst	ulated,
ı	Comb type jumper	bar 😈, insi				
)	Comb type jumper		erminal block	100000		erminal block
i)	Comb type jumper	$I_N = I_N$ of t		m		erminal block 280-482 200 (8×25)
i)	Comb type jumper	$I_N = I_N$ of t	erminal block		$I_N = I_N$ of t	
5)	Comb type jumper	$I_N = I_N \text{ of t}$ 2-way 3-way	erminal block <b>280-482</b> 200 (8 × 25) <b>280-483</b> 200 (8 × 25)	Alternate comb typ	$I_N = I_N \text{ of t}$ 2-way 3-way	280-482 200 (8×25) 280-483 200 (8×25)
j)	m	$I_N = I_N \text{ of t}$ 2-way 3-way	erminal block <b>280-482</b> 200 (8 × 25) <b>280-483</b> 200 (8 × 25)		$I_N = I_N \text{ of t}$ 2-way 3-way pe jumper b	280-482 200 (8×25) 280-483 200 (8×25)
i) i)	m	$I_N = I_N \text{ of t}$ 2-way 3-way	<b>280-482</b> 200 (8 × 25) <b>280-483</b> 200 (8 × 25) <b>280-483</b> 200 (8 × 25) <b>280-483</b> 200 (8 × 25)		$I_N = I_N \text{ of t}$ 2-way 3-way pe jumper b	280-482 200 (8 x 25) 280-483 200 (8 x 25) par, insulated,
i) i)	m	$I_N = I_N \text{ of t}$ 2-way 3-way $I_N = I_N \text{ of t}$	erminal block  280-482 200 (8×25)  280-483 200 (8×25)  par, insulated, erminal block		$I_N = I_N \text{ of t}$ 2-way 3-way De jumper b $I_N = I_N \text{ of t}$	<b>280-482</b> 200 (8 x 25) <b>280-483</b> 200 (8 x 25) <b>280-483</b> 200 (8 x 25) <b>280-483</b> 200 (8 x 25) <b>280-483</b> 200 (8 x 25)
(i) (i) (i)	m	$I_N = I_N \text{ of t}$ 2-way 3-way De jumper b $I_N = I_N \text{ of t}$ 2-way	erminal block  280-482 200 (8×25)  280-483 200 (8×25)  par, insulated, erminal block		$I_N = I_N \text{ of t}$ 2-way 3-way De jumper b $I_N = I_N \text{ of t}$ 2-way	<b>280-482</b> 200 (8 x 25) <b>280-483</b> 200 (8 x 25) <b>280-483</b> 200 (8 x 25) <b>280-483</b> 200 (8 x 25) <b>280-483</b> 200 (8 x 25)
(i) (i) (i) (i)	Alternate comb typ	$I_N = I_N \text{ of t}$ 2-way 3-way De jumper b $I_N = I_N \text{ of t}$ 2-way	erminal block  280-482 200 (8×25)  280-483 200 (8×25)  par, insulated, erminal block	Alternate comb typ	$I_N = I_N \text{ of t}$ 2-way 3-way De jumper b $I_N = I_N \text{ of t}$ 2-way	<b>280-482</b> 200 (8 x 25) <b>280-483</b> 200 (8 x 25) <b>280-483</b> 200 (8 x 25) <b>280-483</b> 200 (8 x 25) <b>280-483</b> 200 (8 x 25)
i) i) ii) ii)	Alternate comb typ	$I_N = I_N \text{ of t}$ 2-way 3-way $I_N = I_N \text{ of t}$ $I_N = I_N \text{ of t}$ 2-way	erminal block 280-482 200 (8×25) 280-483 200 (8×25) Dar, insulated, erminal block 280-492 200 (8×25)	Alternate comb typ	$I_N = I_N$ of the 2-way 3-way be jumper the $I_N = I_N$ of the 2-way blated	280-482 200 (8×25) 280-483 200 (8×25) 200, insulated, erminal block 280-492 200 (8×25)
)) )) )) ))	Alternate comb typ	$I_N = I_N$ of t 2-way 3-way <b>be jumper b</b> $I_N = I_N$ of t 2-way	erminal block  280-482 200 (8×25)  280-483 200 (8×25)  par, insulated, erminal block  280-492 200 (8×25)	Alternate comb typ	$I_N = I_N$ of the 2-way 3-way be jumper to $I_N = I_N$ of the 2-way below 2-way	280-482 200 (8×25) 280-483 200 (8×25) 200, insulated, erminal block 280-492 200 (8×25)



# Through/Ground (Earth) Conductor/Shield (Screen) and (Ex) Terminal Blocks 2.5 mm² / AWG 12, Series 280

0.08 - **2.5** mm<sup>2</sup> 800 V/8 kV/3 **①** 24 A

AWG 28 - 12 600 V, 20 A **9** 600 V, 25 A ®

Terminal block width 5 mm / 0.197 in  $\boxed{\phantom{0}}$  8 - 9 mm / 0.33 in

\* 🕦 🏽 KEER CCAKEER 🛈 🕾 🐨 🗥 GL BV LR NV 🛭 🐼

0.08 - 2.5 mm<sup>2</sup> 800 V/8 kV/3 **①**  AWG 28 - 12 600 V, 15 A % 600 V, 15 A ®

Terminal block width 5 mm / 0.197 in  $\boxed{\phantom{0}}$  8 - 9 mm / 0.33 in

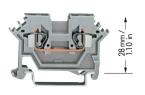
\* 🗫 @ KEER CCAKEER 🛈 🛱 🚭 🗥 GL BV LR NV 🛭 😥

0.08 - 2.5 mm<sup>2</sup> 800 V/8 kV/3 **0** 

AWG 28 - 12 600 V, 20 A **A** 600 V, 25 A ®

Terminal block width 5 mm / 0.197 in 8 – 9 mm / 0.33 in

\* 👊 🍕 CCAKEER 🕦 🛈 🚭 👺 🗥 GL BV LR NV 🛭 🚱



50 mm / 1.97 in → ■



- 73 mm / 2.87 in -



50.5 mm / 1.99 in 
 →

test plug adapter, etc. (see right page)

	Item No.	Pack. unit pcs		Item No.	Pack. unit pcs		Item No.	Pack. unit pcs	
2-conductor through terminal blocks			4-conductor through terminal blocks			3-conductor through terminal blocks			
grey	280-601	100	grey	280-621	100	grey	280-641	100	
blue	280-602 🕗	100	blue	280-604 🕗	100	blue	280-651 2	100	
						orange	280-654	100	
light grey 🕸	280-691 🔾	100	light grey (Ex)	280-990 🔾	100	light grey (Ex)	280-998 🔾	100	
2-conductor ground (earth) terminal blocks						3-conductor gro	und (earth) termin	al blocks	
green-yellow	280-607	100				green-yellow	280-637	100	
green-yellow (Ex)	280-607/999-950	100				green-yellow (Ex)	280-637/999-9	<b>50 (</b> ) 100	
						3-conductor shie	eld (screen) termin	al block	
						white	280-640 🔾	100	
Other terminal I	blocks with the sam	e shape	Other terminal b	olocks with the sam	ne shape	Other terminal blocks with the same shape			
disconnect	280-612	page 7.11	double potential	280-626	page 2.11	spacer	280-654/056-0	00	
carrier term. block	k <b>280-616</b>	page 7.35	disconnect	280-622	page 7.11				
term. bl. f. pl. mod	d. <b>280-618</b>	W4, vol. 3	disc., test a. meas.	280-627	page 7.11				
diode	280-613/	page 7.57	carrier term. block	280-606	page 7.35				
variable transistor	280-615/	page 7.58	term. bl. f. pl. mod	. 280-608	W4, vol. 3				
			diode	280-623/	page 7.57				
			LED	280-624/	page 7.60				

Other terminal blocks with the same shape			Other terminal	blocks with the	e same shape	Other terminal blocks with the same shape			
disconnect	280-612	page 7.11	double potential	280-626	page 2.11	spacer	280-654/05	56-000	
carrier term. block	280-616	page 7.35	disconnect	280-622	page 7.11				
term. bl. f. pl. mod.	280-618	W4, vol. 3	disc., test a. meas	. 280-627	page 7.11				
diode	280-613/	page 7.57	carrier term. bloc	k <b>280-606</b>	page 7.35				
variable transistor	280-615/	page 7.58	term. bl. f. pl. mod	. <b>280-608</b>	W4, vol. 3				
			diode	280-623/	. <b></b> page 7.57				
			LED	280-624/	. <b></b> page 7.60				
Accessories Series 280 Appropriate marking system WMB/WSB/WFB (see section 14)									
End and intermed	diate plate, 2.	.5 mm/0.098 in thick	End and interme	ediate plate, 2	.5 mm/0.098 in thick	End and interme	diate plate, 2	2.5 mm/0.098 in thick	
	orange	<b>280-331</b> 100 (4 x 25)		orange	<b>280-317</b> 100 (4×25)		orange	<b>280-313</b> 100 (4×25)	
4	grey	<b>280-330</b> 100 (4 x 25)		grey	<b>280-316</b> 100 (4×25)		grey	<b>280-312</b> 100 (4×25)	
	light grey	, ,	12 23	light grey	<b>280-364</b> 100 (4×25)		light grey	<b>280-354</b> 100 (4×25)	
Separator, oversized, 2 mm/0.079 in thick			Separator, overs	sized, 2 mm/0.0	179 in thick	Separator, oversize	zed, 2.5 mm/0	0.098 in thick	
	orange	<b>280-328</b> 100 (4 x 25)		orange	<b>280-327</b> 100 (4×25)		orange	<b>280-318</b> 100 (4×25)	
	grey	<b>280-338</b> 100 (4 x 25)		grey	<b>280-337</b> 100 (4×25)	1 1	grey	<b>280-348</b> 100 (4×25)	
	light grey	<b>280-363</b> 100 (4×25)		light grey	<b>280-365</b> 100 (4×25)		light grey	<b>280-355</b> 100 (4×25)	
Insulation stop 🔞	, 5 pcs/strip		Insulation stop 3, 5 pcs/strip			Insulation stop 3, 5 pcs/strip			
-0000	white	<b>280-470</b> 200 strips	-0000 o	white	<b>280-470</b> 200 strips	~0000	white	<b>280-470</b> 200 strips	
200000	light grey	<b>280-471</b> 200 strips	200000	0 0 ,	<b>280-471</b> 200 strips	00000	light grey	<b>280-471</b> 200 strips	
094	dark grey	<b>280-472</b> 200 strips	054		<b>280-472</b> 200 strips	000		<b>280-472</b> 200 strips	
Adjacent jumper,	insulated, I <sub>N</sub> 2	_	Adjacent jumpe	e <b>r,</b> insulated, I <sub>N</sub> 2		Adjacent jumper	, insulated, I <sub>N</sub> :		
li d	grey	<b>280-402</b> 200 (8 x 25)	li 7	grey	<b>280-402</b> 200 (8×25)		grey	<b>280-402</b> 200 (8×25)	
I	yellgreen	<b>280-422</b> 200 (8×25)	T .	yellgreen	<b>280-422</b> 200 (8 × 25)	T	yellgreen	<b>280-422</b> 200 (8×25)	
Staggered jumpe	r <b>3</b> , insulated	, I <sub>N</sub> 24 A, ⟨Ex⟩ 23 A	Staggered jump	<b>er 3,</b> insulated	l, I <sub>N</sub> 24 A, ⟨Ex⟩ 22 A	Staggered jumpe	r <b>3</b> , insulated	l, I <sub>N</sub> 24 A, ⟨Ex⟩ 23 A	
	width 5 mm	/0.197 in		width 5 mm	/0.197 in		width 5 mm	n / 0.197 in	
	from 1 to 2	<b>780-452</b> 100 (4×25)		from 1 to 2	<b>780-452</b> 100 (4×25)		from 1 to 2	<b>780-452</b> 100 (4×25)	
	from 1 to 3	<b>780-453</b> 100 (4×25)		from 1 to 3	<b>780-453</b> 100 (4 x 25)		from 1 to 3	<b>780-453</b> 100 (4×25)	
	from 1 to 4	<b>780-454</b> 100 (4×25)		from 1 to 4	<b>780-454</b> 100 (4×25)		from 1 to 4	<b>780-454</b> 100 (4×25)	
	from 1 to 5	<b>780-455</b> 50 (2 x 25)	AN AN	from 1 to 5	<b>780-455</b> 50 (2 x 25)	111 100	from 1 to 5	<b>780-455</b> 50 (2×25)	
40	:	:	44)	:	:	40	:	:	
	from 1 to 8	<b>780-458</b> 50 (2 x 25)		from 1 to 8	<b>780-458</b> 50 (2 x 25)		from 1 to 8	<b>780-458</b> 50 (2×25)	
Protective warning marker, comp type jumper bar,			Protective warn	arning marker, comp type jumper bar, Protective warning marker, comp type ju			omp type jumper bar,		

test plug adapter, etc. (see right page)

test plug adapter, etc. (see right page)

<sup>\*</sup> For further approvals with corresponding ratings see section 15.



 $0.08 - 2.5 \text{ mm}^2$ 800 V/8 kV/3 **①** 

AWG 28 - 12 600 V, 20 A **%** 600 V, 25 A ®

Terminal block width 5 mm / 0.197 in **□** 8 − 9 mm / 0.33 in

\* 👊 🏽 KEEB CCAKEEB 🛈 🚭 🕸 GL BV LR NV 🛭 🖘

## **Accessories Series 280**



-	50.5	mm	/1	99	in	$\rightarrow$

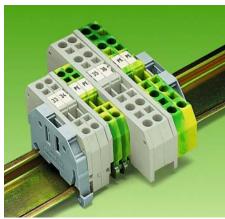
	Item No.	Pack. unit pcs				
4-conductor through terminal blocks						
grey	280-646	100				
blue	280-656 🕗	100				
orange	280-946	100				
light grey 🖘	280-996 🔘	100				

Attention! These terminal blocks cannot be commoned with adjacent jumpers!

- 1 800 V = rated voltage 8 kV = rated surge voltage 3 = pollution degree (see also section 15)
- Suitable for Ex i applications
- Ex Suitable for Ex e II applications 0.2 - 2.5 mm<sup>2</sup> 550 V, 20 A AWG 24 - 12 (see also section 13)

When using staggered jumpers the max. rated voltage will be reduced to 275 V.

See application notes on pages 2.38 - 2.45



In order to meet the air and creepage distances specified for Exe applications it is necessary to insert an end or intermediate plate between a through and a ground (earth) conductor terminal

	Item No.		
Insulation stop <b>3</b> ,	5 pcs/strip		
	white	280-470	200 strips
000000	light grey	280-471	200 strips
000	dark grey	280-472	200 strips

Adjacent jumper, insulated, I<sub>N</sub> 24 A, (Ex) 20 A

280-402 200 (8 x 25) grey yell.-green 280-422 200 (8 x 25)

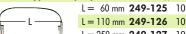
Alternate jumper, insulated, I<sub>N</sub> 24 A, (Ex) 20 A 280-409 100 (4 x 25) grey

Staggered jumper 3, insulated, I<sub>N</sub> 24 A, (Ex) 20 A width 5 mm / 0.197 in from 1 to 2 780-452 100 (4 x 25)

from 1 to 3 780-453 100 (4 x 25) from 1 to 4 780-454 100 (4×25) from 1 to 5 780-455 50 (2 x 25)

: from 1 to 8 780-458 50 (2 x 25)

Push-in type wire jumper 3, insulated, I<sub>N</sub> 9 A



L = 110 mm **249-126** 10 L = 250 mm **249-127** 10

Protective warning marker, for 5 terminal blocks,



fits into screwdriver slot yellow 280-415 100 (4×25)

Comb type jumper bar 3, insulated,

 $I_{\scriptscriptstyle N} = I_{\scriptscriptstyle N}$  of terminal block 280-482 200 (8×25) 2-way 280-483 200 (8 x 25) 3-way

Alternate comb type jumper bar, insulated,



 $I_N = I_N$  of terminal block 280-492 200 (8 x 25)

280-432 1

**280-433** 1

2-way





Separator, oversized, 2.5 mm/0.098 in thick 280-318 100 (4×25) orange 280-348 100 (4×25) grey 280-355 100 (4 x 25) light grey

Insulation stop 3, 5 pcs/strip white 280-470 200 strips **280-471** 200 strips light grey dark grey 280-472 200 strips

Comb type jumper bar 3, insulated,

 $I_N = I_N$  of terminal block 280-482 200 (8 x 25) 2-way 3-way 280-483 200 (8 x 25)

Alternate comb type jumper bar, insulated,

 $I_N = I_N$  of terminal block 280-492 200 (8 x 25) 2-way

Operating tool, insulated

280-432 2-way 1 280-433 3-way

### Test plug module,

testing using conductor entry holes see page 2.38

Exe/Exi separator, 3 mm/0.118 in thick, orange



90 mm wide 209-190 50 (2 x 25) 120 mm w. **209-191** 50 (2 x 25)





## Separator for Exe/Exi applications

According to EN 50020 a minimum distance of 50 mm must be kept between live parts of Ex e and Ex i circuits. When mounting Ex e and Ex i rail-mounted terminal blocks together on a common rail WAGO offers a space saving solution to the problem by using the Ex e/Ex i separators.

Suitable for series 279 to 282. 209-190 for 2-conductor terminal blocks. 209-191 for 2-, 3-, 4-conductor terminal blocks.



Operating tool, insulated



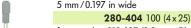
testing using jumper contact slots or conductor entry holes

Test plug, with cable 500 mm/17.7"



 $2 \text{ mm } \emptyset$ , red **210-136** 50 (5 x 10) 2.3 mm Ø, yel. **210-137** 50 (5 x 10)

Test plug adapter, suitable f. term. bl. 1.5 mm<sup>2</sup> – 4 mm<sup>2</sup>, 5 mm / 0.197 in wide



for test plug 210-137 (2.3 mm Ø) Test plug adapter, suitable f. term. bl. 1.5 mm<sup>2</sup> – 10 mm<sup>2</sup>,

8 mm / 0.315 in wide

209-170 50 (2×25) for test plug 4 mm / 0.157 in  $\varnothing$ 

Test plug, 6 mm/0.236 in wide, with CAGE CLAMP® for 0.08 mm<sup>2</sup> - 2.5 mm<sup>2</sup>/AWG 28 - 14 281-407 100 (4×25) I<sub>N</sub> 24 A

Banana plugs, 4 mm/0.157 in Ø, color mixed see page 2.42



## Through and Ground (Earth) Conductor Terminal Blocks, Terminal Block Width 5 mm / 0.197 in, 4 mm<sup>2</sup> / AWG 12 Series 880

0.08 - 4 mm<sup>2</sup>\*\* 800 V/8 kV/3 **①** 25 A

AWG 28 - 12 c**91**′us **1** 

Terminal block width 5 mm / 0.197 in 8 – 9 mm / 0.33 in

\* callus KEDA CCAKEDA GL BV LR

0.08 - 4 mm<sup>2\*\*</sup> 800 V/8 kV/3 **①** 25 A

AWG 28 - 12 c**91**2us **0** 

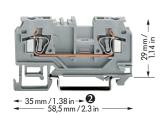
Terminal block width 5 mm / 0.197 in 8 – 9 mm / 0.33 in

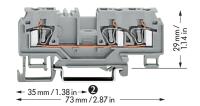
\* c SN us KEDA CCAKEDA GL BV LR

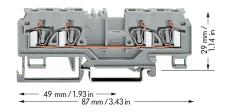
 $0.08 - 4 \text{ mm}^{2**}$ 800 V/8 kV/3 **①** 20 A

AWG 28 - 12 c**92**'us **0** 

Terminal block width 5 mm / 0.197 in 8 – 9 mm / 0.33 in







	ltem No.	Pack. unit pcs		ltem No.	Pack. unit pcs		Item No.	Pack. unit pcs	
Through terminal		rith shield (screen)	•		with shield (screen)	•		with shield (screen)	
contact and test s			contact and test s			contact and test slot for test plug			
Ø 2 mm / 0.079 i for DIN 35 rail	n and Ø 2.3 mm	n / 0.091 in,	Ø 2 mm / 0.079 i for DIN 35 rail	n and Ø 2.3 m	m / 0.091 in,	Ø 2 mm / 0.079 for DIN 35 rail	in and Ø 2.3 n	nm / 0.091 in,	
2-conductor throu	ugh terminal bloo	cks without shield	3-conductor throu	ugh terminal bl	ocks without shield	4-conductor thro	ough terminal b	locks without shield	
grey	880-901	100	grey	880-681	100	grey	880-831	100	
blue	880-904 3	100	blue	880-684 3	100	blue	880-834		
orange	880-902	100	orange	880-682	100	orange	880-832		
orange	000-702	100	ordrige	000-002	100	ordrige	000-032	100	
0	and the second below	المامة المامة المامة	2		a alaa aastala alat alal				
2-conductor throu	•		3-conductor throu						
(screen) contact –	please contact tac	ctory	(screen) contact –	please contact t	actory				
2-conductor grou			3-conductor grou			4-conductor gro	, ,		
green-yellow	880-907 🌔	100	green-yellow	880-687 🌕	100	green-yellow	880-837 🧶	100	
Accessories Series 880 Appropriate marking system WMB/WSB oder Mini-WSB (see section 14)									
End and intermed	<mark>diate plate,</mark> 2.5 m	m/0.098 in thick	End and intermed	liate plate, 2.5	mm/0.098 in thick	End and interme	diate plate, 2.5	mm/0.098 in thick	
	orange 88	0-328 100 (4×25)		orange 8	<b>80-339</b> 100 (4×25)		orange 8	<b>380-346</b> 100 (4×25	
*		0-325 100 (4×25)	· Company of the se		<b>80-308</b> 100 (4×25)			<b>380-344</b> 100 (4×25	
37.75	97			9 /		37.39	9 7	(0	
Separator, oversized, 2 mm/0.079 in thick			Separator, oversiz	ed 2 mm / 0.079	in thick	Separator, oversi	zed 2 mm / 0.079	9 in thick	
Separator, Oversiz	•	<b>0-329</b> 100 (4×25)	Separator, Oversiz		<b>80-340</b> 100 (4×25)	Separator, oversi		380-347 100 (4×25)	
		<b>0-326</b> 100 (4×25)		_	<b>80-309</b> 100 (4 x 25)		, and the second	<b>380-345</b> 100 (4×25)	
	grey 88	U-326 100 (4 x 25)		grey 8	60-309 100 (4 x 25)		grey	100 (4 x 25)	
Insulation stop 4	5 ncs /strin		Insulation stop 4, 5 pcs/strip			Insulation stop 4, 5 pcs/strip			
. All		<b>0-470</b> 200 strips	. All		<b>80-470</b> 200 strips			<b>280-470</b> 200 strips	
40000		<b>0-470</b> 200 strips	00000		80-471 200 strips	00000		280-471 200 strips	
999000	0 0 ,		000000	0 0 ,	•	00000	0 0 ,		
A 1:		<b>0-472</b> 200 strips	A 1:		<b>80-472</b> 200 strips	A 1:		280-472 200 strips	
Adjacent jumper,	,		Adjacent jumper,			Adjacent jumper, insulated, I <sub>N</sub> 24 A			
7	0 ,	<b>0-402</b> 200 (8 x 25)	17	0 ,	<b>80-402</b> 200 (8 x 25)	F	0 ,	280-402 200 (8 x 25)	
	yellgreen 28	<b>0-422</b> 200 (8×25)		yellgreen 2	<b>80-422</b> 200 (8 × 25)	M	yellgreen	<b>280-422</b> 200 (8×25)	
Staggered jumper	<b>4</b> , insulated, I <sub>N</sub> 24	4 A	Staggered jumper	<b>4</b> , insulated, I <sub>N</sub>	24 A	Staggered jumper	r <b>4,</b> insulated, I <sub>N</sub>	24 A	
	width 5 mm / 0.1	97 in		width 5 mm / 0	1.197 in		width 5 mm/	0.197 in	
	from 1 to 2 78	<b>0-452</b> 100 (4×25)		from 1 to 2 <b>7</b>	<b>80-452</b> 100 (4×25)		from 1 to 2	<b>780-452</b> 100 (4×25)	
	from 1 to 3 78	<b>0-453</b> 100 (4×25)		from 1 to 3 7	<b>80-453</b> 100 (4×25)		from 1 to 3	780-453 100 (4×25)	
	from 1 to 4 78	<b>0-454</b> 100 (4×25)		from 1 to 4 <b>7</b>	<b>80-454</b> 100 (4×25)			780-454 100 (4×25)	
		<b>0-455</b> 50 (2×25)	111 48		<b>80-455</b> 50 (2 x 25)			780-455 50 (2×25)	
40	:	:	40	:	:	40	:	:	
		0-458 50 (2×25)			80-458 50 (2×25)			<b>780-458</b> 50 (2×25)	
Push-in type wire		, ,	Push-in type wire		, ,	Push-in type wir			
i osii-iii iype wire	L = 60 mm <b>24</b>		i usii-iii iype wire	L = 60  mm  2	1 14	i usii-iii iype wir		<b>249-125</b> 10	
h -	L = 110 mm <b>24</b>		F -	L = 110 mm 2		F		<b>249-126</b> 10	
n //	L = 250 mm <b>24</b>		41 Al	L = 250 mm <b>2</b>		W W		<b>249-127</b> 10	
Protective warning marker, comp type jumper bar,				-	type jumper bar,	Protective warning marker, comp type jumper ba			
test plug adapter	, etc. (see page 2	2.13)	test plug adapter	, etc. (see page	2.13)	test plug adapter, etc. (see page 2.13)			

<sup>\*</sup> For further approvals with corresponding ratings see section 15.

<sup>\*\*</sup> Max. diameter of insulation: 4.4 mm / 0.173 in

## Through and Ground (Earth) Conductor Terminal Blocks f. Special Cables, Terminal Block Width 5 mm / 0.197 in, 4 mm<sup>2</sup> / AWG 12 Series 880

(AWG 12 with ferrule item no. 216-206)



 $0.08 - 4 \text{ mm}^2$ 800 V/8 kV/3 **①** 25 A

AWG 28 - 12 c**91**2us **0** 

Terminal block width 5 mm / 0.197 in □ 8 – 9 mm / 0.33 in

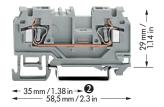
\* c**91**0us

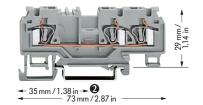
 $0.08 - 4 \text{ mm}^2$ 800 V/8 kV/3 1 AWG 28 - 12 C 21/PC

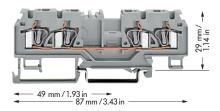
Terminal block width 5 mm / 0.197 in □ 8 – 9 mm / 0.33 in

 $0.08 - 4 \text{ mm}^2$ 800 V/8 kV/3 **①**  AWG 28 - 12 c**91**0s **0** 

Terminal block width 5 mm / 0.197 in □ 8 – 9 mm / 0.33 in







	ltem No.	Pack. unit pcs		ltem No.	Pack. unit pcs		Item No.	Pack. unit pcs
Through terr	minal block withou	ut/with shield (screen)	Through termi	nal block withou	ut/with shield (screen)	Through terminal block without/with shield (screen)		
contact and	test slot for test p	lug	contact and te	ct and test slot for test plug contact and test slot for test plug			lug	
Ø 2 mm/0	.079 in and Ø 2.3	mm / 0.091 in,	Ø 2 mm / 0.07	79 in and Ø 2.3	mm / 0.091 in,	Ø 2 mm/0.	079 in and Ø 2.3	mm / 0.091 in,
for DIN 35 re	ail		for DIN 35 rail			for DIN 35 rd	ıil	
2-conductor through terminal blocks without shield			3-conductor th	3-conductor through terminal blocks without shield 4-conductor through terminal block			blocks without shield	
(screen) contact			(screen) contac	ct		(screen) contact		
grey	880-901/99	<b>9-940 1</b> 00	grey	880-681/99	<b>99-940 1</b> 00	grey	880-831/99	<b>9-940</b> 100
blue	880-904/99	<b>9-940 3</b> 100	blue	880-684/99	<b>99-940 ③</b> 100	blue	880-834/99	<b>9-940 3</b> 100
orange	880-902/99	<b>9-940 1</b> 00	orange	880-682/99	<b>99-940 1</b> 00	orange	880-832/99	<b>9-940 0</b> 100
2-conductor	r through terminal	blocks with shield	3-conductor th	nrough terminal	blocks with shield			
(screen) con	tact – please contac	ct factory	(screen) contac	<b>ct</b> – please contac	ct factory			
2-conductor	r ground (earth) tei	rminal block	3-conductor g	round (earth) te	rminal block	4-conductor	ground (earth) te	minal block
green-yellow	880-907/99	<b>9-940 1</b> 00	green-yellow	880-687/99	<b>99-940 1</b> 00	green-yellow	880-837/99	<b>9-940 1</b> 00
Accessories (see left page, except insulation stop)								
	( :  9-/		7					

Insulation stop, 5 pc



cs/strip				
white	0.08 - 0.2 mm <sup>2</sup>	) / AWG 28 – 24	769-470	200 strips
light grey	$0.25 - 0.5 \text{ mm}^2$	/ AWG 22 - 20	769-471	200 strips
dark grey	$0.75 - 1 \text{ mm}^2$	/ AWG 18	769-472	200 strips

**6** 0.2 mm<sup>2</sup> /AWG 24 "s" (0.14 mm<sup>2</sup> /AWG 26 "f-str")

### **Features**

- 2-, 3- or 4-conductor terminal blocks, 5 mm / 0.197 in wide
- Cross section of the conductor up to 4 mm<sup>2</sup>/AWG 12 (acc. to VDE 0281) or 2.5 mm<sup>2</sup>/AWG 14 with rubber-insulated conductors having a diameter up to 4.4 mm / 0.173 in
- Shield (screen) connection, solder contact/quick-connect contact 6.3 (2 x 2.8) mm
- Test plug, red, 2 mm/0.079 in Ø
- Test plug, yellow, 2.3 mm/0.091 in Ø
- Marking with WMB/WSB system
- Marking with miniature WSB system on both sides
- Commoning with standard WAGO jumper system





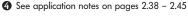
8 kV = rated surge voltage 3 = pollution degree c**91**us 600 V/20 A with shield (screen) contact 400 V/6 kV/3  $_{\circ}$  **3**00 V/10 A (see also section 15)

● 800 V = rated voltage

2 Dimensions with shield (screen) contact 2-conductor terminal blocks **→** 45 mm / 1.77 in − - 79 mm / 3.11 in

3-conductor terminal blocks **4**5 mm / 1.77 in ⋅

- 92.5 mm / 3.64 in 3 Suitable for Ex i applications





# Through/Ground (Earth) Conductor/Shield (Screen) and (Exx) Terminal Blocks 4 mm² / AWG 12, Series 281

0.08 - 4 mm<sup>2</sup> 800 V/8 kV/3 **①** 32 A AWG 28 - 12 600 V, 20 A **%** 600 V, 15 A ®

Terminal block width 6 mm / 0.236 in 9 – 10 mm / 0.37 in

\* 🕦 🏚 KEER CCAKEER (N) (D) 🚭 (B) 🛣 GL BV LR NV (R) (B) 💆 🐼

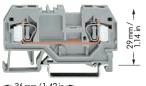
0.08 - 4 mm<sup>2</sup> 800 V/8 kV/3 **①** 32 A AWG 28 - 12 600 V, 20 A **7** 600 V, 15 A ®

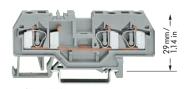
\* 🗫 🍪 KEER CCAKEER 🕦 🛈 🚭 🚱 🛣 GL BV LR NV 🛭 🚱 🐼

0.08 - 4 mm<sup>2</sup> 800 V/8 kV/3 **①** 26 A AWG 28 - 12 600 V, 20 A **%** 600 V, 15 A ®

\* 91. 91. 6 KEE CCAKEE NO (10) @ (20) A GL BV LR NV (10) @ (20)

test plug adapter, etc. (see right page)







<b>→</b> 3	6 mm / 1.42 in → 59 mm / 2.32 in	-	<b>→</b> 37 mr	m / 1.46 in → — 73,5 mm / 2.8°	9 in	-	<b>→</b> 50 m	m / 1.97 in <del></del>	) in ———	
	Item No.	Pack. unit		Item No.		ack. unit cs		Item No.	-	ack. unit cs
2-conductor thre	ough terminal blocks	pes	3-conductor thro			C5	4-conductor thro			C3
grey	281-901	50	grey	281-681	DIOCKS	50	grey	281-652	DIOCKS	50
blue	281-904 2	50	blue	281-684 2		50	blue	281-654 2		50
orange	281-902	50	orange	281-678		50	orange	281-653		50
red	281-903	50	red	281-679		50	red	281-663		50
black	281-905	50	black	281-685		50	black	281-664		50
yellow	281-906	50	yellow	281-686		50	yellow	281-668		50
light grey (Ex)	281-992	50	light grey (Ex)	281-993		50	light grey (Ex)	281-994		50
2-conductor gro	und (earth) terminal b	locks	3-conductor gro	und (earth) tei	rminal blo	cks	4-conductor gro	und (earth) te	rminal blo	cks
green-yellow	281-907 🛑	50	green-yellow	281-687 🕕		50	green-yellow	281-657 🛑		50
green-yellow (Ex)	281-907/999-950 (	50	green-yellow (Ex)	281-687/99	9-950 🕕	50	green-yellow (Ex)	281-657/99	9-950 🕕	50
							4-conductor ship	eld (screen) tei	rminal blo	ck
							white	281-658		50
Other terminal b	olocks with the same s	shape	Other terminal b		e same sh	ape	Other terminal b		e same sh	ape
disconnect	281-912	page 7.12	disconnect	281-683		page 7.12	disconnect	281-659		page 7.12
carrier term. block	281-916	page 7.34	carrier term. block			page 7.34	disc., test a. meas	281-666		page 7.10
diode	281-915/	page 7.58	diode	281-673/		page 7.58	carrier term. block	281-656		page 7.34
							diode	281-665/		page 7.58
Accessories S	Series 281	Appr	opriate marking syste	em WMB/W	/SB/WF	<b>B</b> (see sectio	n 14)			
End and interme	ediate plate, 2.5 mm/0.	.098 in thick	End and interme	diate plate, 2	.5 mm/0.09	98 in thick	End and interme	diate plate, 2	2.5 mm/0.09	98 in thick
	orange <b>281-3</b> 2	29 100 (4×25)		orange	281-326	100 (4 x 25)		orange	281-335	100 (4×25)
	grey <b>281-32</b>	28 100 (4 x 25)	The state of the s	grey	281-324	100 (4 x 25)		grey	281-334	100 (4×25)
38/182	light grey 281-34	<b>19</b> 100 (4×25)	1000 75	light grey	281-355	100 (4 x 25)	37.050	light grey	281-345	100 (4 x 25)
Separator, oversi	zed, 2 mm/0.079 in thic	k	Separator, oversi	zed, 2 mm/0.0	79 in thick		Separator, overs	zed, 2 mm/0.0	79 in thick	
	orange <b>281-3</b> 3	<b>31</b> 100 (4 x 25)		orange	281-346	100 (4 x 25)		orange	281-339	100 (4×25)
	grey <b>281-3</b> 3	<b>30</b> 100 (4 × 25)		grey	281-344	100 (4 x 25)		grey	281-338	100 (4×25)
	light grey 281-35	<b>50</b> 100 (4 x 25)		light grey	281-356	100 (4 x 25)		light grey	281-347	100 (4 x 25)

Accessories Series 281	Accessories Series 281 Appropriate marking system WMB/WSB/WFB (see section 14)								
End and intermediate plate, 2.	.5 mm/0.098 in thick	End and intermed	iate plate, 2	.5 mm/0.098	8 in thick	End and intermediate plate, 2.5 mm/0.098 in thick			
orange	<b>281-329</b> 100 (4×25)		orange	281-326	100 (4 x 25)		orange	281-335	100 (4 x 25)
grey	<b>281-328</b> 100 (4×25)	The Secret State	grey	281-324	100 (4 x 25)		grey	281-334	100 (4 x 25)
light grey	<b>281-349</b> 100 (4×25)	- 100 P	light grey	281-355	100 (4 x 25)	29.050	light grey	281-345	100 (4 x 25)
Separator, oversized, 2 mm/0.0	179 in thick	Separator, oversize	ed, 2 mm/0.0	79 in thick		Separator, oversize	ed, 2 mm/0.0	079 in thick	
orange	<b>281-331</b> 100 (4×25)		orange	281-346	100 (4 x 25)		orange	281-339	100 (4 x 25)
grey	<b>281-330</b> 100 (4×25)		grey	281-344	100 (4 x 25)		grey	281-338	100 (4 x 25)
light grey	<b>281-350</b> 100 (4×25)		light grey	281-356	100 (4 x 25)		light grey	281-347	100 (4 x 25)
Insulation stop 3, 5 pcs/strip		Insulation stop 🔞	, 5 pcs/strip			Insulation stop 3, 5 pcs/strip			
white	<b>281-470</b> 200 strips	-0000 o	white	281-470	200 strips		white	281-470	
light grey	<b>281-471</b> 200 strips		light grey	281-471	200 strips	00000	light grey	281-471	200 strips
<u> </u>	<u>'</u>	09	dark grey			09	dark grey	281-472	
<b>Adjacent jumper,</b> insulated, $I_N$ 3		Adjacent jumper, insulated, I <sub>N</sub> 32 A, (Ex) 26 A			Adjacent jumper, insulated, I <sub>N</sub> 32 A, ⟨Ex⟩ 26 A				
grey	<b>281-402</b> 200 (8×25)	lig.	grey	281-402		F	grey		200 (8 x 25)
yellgreen	<b>281-422</b> 200 (8 x 25)	W	yellgreen	281-422	200 (8 × 25)	W	yellgreen	281-422	200 (8 x 25)
Staggered jumper 3, insulated	, I <sub>N</sub> 32 A, ⟨Ex⟩ 26 A	Staggered jumper	<b>3</b> , insulated	l, I <sub>N</sub> 32 A, &:	x 26 A	Staggered jumper	<b>3</b> , insulated	l, I <sub>N</sub> 32 A, ⟨	x 26 A
width 6 mm	n/0.236 in		width 6 mn	n/0.236 in			width 6 mr	m/0.236 in	
from 1 to 2	<b>781-452</b> 100 (4×25)		from 1 to 2	781-452	100 (4 x 25)		from 1 to 2	781-452	100 (4 x 25)
from 1 to 3	<b>781-453</b> 100 (4×25)		from 1 to 3	781-453	100 (4 x 25)		from 1 to 3	781-453	100 (4 x 25)
from 1 to 4	<b>781-454</b> 100 (4×25)		from 1 to 4	781-454	100 (4 x 25)		from 1 to 4	781-454	100 (4 x 25)
from 1 to 5	<b>781-455</b> 50 (2 × 25)		from 1 to 5	781-455	50 (2 x 25)		from 1 to 5	781-455	50 (2 x 25)
from 1 to 6	<b>781-456</b> 50 (2×25)	44	from 1 to 6	781-456	50 (2 x 25)	40	from 1 to 6	781-456	50 (2 x 25)
Protective warning marker, co	mp type jumper bar,	Protective warning	g marker, co	mp type ju	mper bar,	Protective warning marker, comp type jumper bar,			

test plug adapter, etc. (see right page)

test plug adapter, etc. (see right page)

<sup>\*</sup> For further approvals with corresponding ratings see section 15.



Pack. unit

pcs

 $0.08 - 4 \text{ mm}^2$ 800 V/8 kV/3 **①** 32 A AWG 28 - 12 600 V, 20 A **%** 600 V, 15 A ®

Terminal block width 6 mm / 0.236 in 9 – 10 mm / 0.37 in

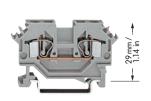
 $0.08 - 4 \text{ mm}^2$ 800 V/8 kV/3 **①** 32 A

AWG 28 - 12 600 V, 20 A **9** 600 V, 15 A ®

Terminal block width 6 mm / 0.236 in 9 – 10 mm / 0.37 in

\* 🕦 🌀 KEER CCAKEER 🛈 🕾 👺 🗥 GL BV LR NV 🛭 🕾 🖘

## **Accessories Series 281**



--- 53 mm / 2.09 in --



61,5 mm / 2.42 in

	Item	Pack. unit		Item	Pack. unit		
	No.	pcs		No.	pcs		
2-conductor thro	ough terminal blocks		3-conductor through terminal blocks				
grey	281-601	50	grey	281-631	100		
blue	281-604 🕗	50	blue	281-651 🕗	100		
light grey (Ex)	281-691	50	light grey (Ex)	281-998	100		
2-conductor ground (earth) terminal blocks			3-conductor gro	und (earth) termino	ıl blocks		
green-yellow	281-607 🕕	50	green-yellow	281-637 🕕	100		
green-yellow (Ex)	281-607/999-950	<b>)</b> 50	green-yellow (Ex)	281-637/999-95	<b>0</b> 🕕 100		

	800 V = rated voltage
	8 kV = rated surge voltage
	3 = pollution degree
	(see also section 15)
	Suitable for Ex i applications
al e e little ed al el	Ex Suitable for Ex e II applications

width 6 mm/0.236 in

page)

from 1 to 2 781-452 100 (4 x 25)

from 1 to 3 781-453 100 (4 x 25)

from 1 to 4 781-454 100 (4 x 25)

from 1 to 5 **781-455** 50 (2 x 25)

from 1 to 6 781-456 50 (2 x 25)

ions

	Insulation stop 📵,	5 pcs/strip		
		white	<b>281-470</b> 200	strips
	20000	light grey	<b>281-471</b> 200	strips
	0000		<b>281-472</b> 200	strips
	Adjacent jumper, in	sulated, I <sub>N</sub> 3	2 A, ⟨€x⟩ 26 A	
	lib.	grey	<b>281-402</b> 200	(8 x 25)
	T T	yellgreen	<b>281-422</b> 200	$(8 \times 25)$
	U/I			
	Alternate jumper, ir	nsulated, I <sub>N</sub> 3	2 A, €x 26 A	
		grey	<b>281-409</b> 100	$(4 \times 25)$
	7 7			
i+				

ltem No.

70 TP			
Staggered jumper (	<b>3,</b> insulated,	Ι <sub>N</sub> 32 Α, (	x 26 A
	width 6 mm	/0.236 in	
	from 1 to $2$	781-452	100 (4 x 25)
	from 1 to 3	781-453	100 (4 x 25)
	from 1 to 4	781-454	100 (4 x 25)
an an	from 1 to 5	781-455	50 (2 x 25)
40	from 1 to 6	781-456	50 (2 x 25)
Push-in type wire j	umper 🚱, i	nsulated, I <sub>N</sub>	9 A
	L = 60  mm	249-125	10



8 mm / 0.315 in wide

Test plug, 6 mm/0.236 in wide, with CAGE CLAMP® for

for test plug 4 mm / 0.157 in  $\varnothing$ 

0.08 mm<sup>2</sup> - 2.5 mm<sup>2</sup>/AWG 28 - 14

I<sub>N</sub> 24 A **281-407** 100 (4 x 25)

Other terminal blocks with the same shape		⟨£x⟩ Suitable for Ex e II applications 0.2 - 4 mm² AWG 24 - 12			200-				
diode	281-603/	•	550 V, 30 A	AVVG 2	4 - 12	Comb type jumpe	<b>r bar (3,</b> in	sulated,	
			(see also section			(S)(E)(S)		terminal bloc	<
			When using staggered jumpers the max. rated voltage will be reduced to 275 V.			m	2-way	281-482	100 (4×25)
			Ex e/Ex i separ				3-way	281-483	100 (4 x 25)
			3 See application		20	Alternate comb ty	pe jumper	bar, insulated	d,
			on pages 2.38				$I_N = I_N$ of	terminal bloc	<
			D /MCD /MED /			Į Į	2-way	281-492	100 (4×25)
1	Approprio	ite marking system <b>WM</b>	D/ VVDD/ VVTD (se	ee section 14)					
End and intermediate plate, 3 mm/0.118 in thick			End and intermed	diate plate, 2	2.5 mm/0.098 in thick	Operating tool, in:	sulated		
	orange	281-317 100 (4×25)		orange	<b>281-313</b> 100 (4×25)		2-way	280-432	1
4	grey	<b>281-316</b> 100 (4×25)		grey	<b>281-312</b> 100 (4×25)		3-way	280-433	1
	light grey	281-353 100 (4×25)		light grey	<b>281-357</b> 100 (4×25)				
Separator, overs	ized, 2 mm/0.	079 in thick	Separator, oversized, 2 mm/0.079 in thick			Test plug module	3,		
	orange	281-327 100 (4×25)		orange	<b>281-318</b> 100 (4×25)	222 2	testing usi	ng jumper cor	tact slots
					001 040 100 // 05\		an aanalus	والووا وستورو والوا	c
	grey	<b>281-337</b> 100 (4×25)	1 1	grey	<b>281-348</b> 100 (4 x 25)	7000 7	or conduc	ctor entry hole	3
	grey light grey	<b>281-337</b> 100 (4×25) <b>281-354</b> 100 (4×25)	.1	grey light grey	<b>281-348</b> 100 (4 x 25) <b>281-358</b> 100 (4 x 25)	744 1	or conduc	cror entry note	3
Insulation stop	light grey	<b>281-354</b> 100 (4×25)	Insulation stop €	light grey	, ,	Test plug, with cab			
Insulation stop	light grey	<b>281-354</b> 100 (4×25)	Insulation stop €	light grey	, ,	Test plug, with cab	e 500 mm/		
Insulation stop	light grey  3, 5 pcs/strip	<b>281-354</b> 100 (4×25) <b>281-470</b> 200 strips	Insulation stop €	light grey  , 5 pcs/strip	<b>281-358</b> 100 (4×25)	Test plug, with cab	e 500 mm / 2 mm Ø, red	1'7.7"	50 (5×10)
09900	light grey  3, 5 pcs/strip white light grey dark grey	281-354 100 (4×25) 281-470 200 strips 281-471 200 strips 281-472 200 strips	00000	light grey ), 5 pcs/strip white light grey dark grey	281-358 100 (4×25) 281-470 200 strips 281-471 200 strips 281-472 200 strips	Test plug, with cab	e 500 mm / 2 mm Ø, red	1'7.7" 210-136	50 (5×10)
Insulation stop	light grey  3, 5 pcs/strip white light grey dark grey	281-354 100 (4×25) 281-470 200 strips 281-471 200 strips 281-472 200 strips	Insulation stop €	light grey ), 5 pcs/strip white light grey dark grey	281-358 100 (4×25) 281-470 200 strips 281-471 200 strips 281-472 200 strips	Test plug, with cab	e 500 mm / 2 mm Ø, rec 2.3 mm Ø, y	17.7" d 210-136 el. 210-137	50 (5×10) 50 (5×10)
09900	light grey  3, 5 pcs/strip white light grey dark grey	281-354 100 (4×25) 281-470 200 strips 281-471 200 strips 281-472 200 strips	00000	light grey ), 5 pcs/strip white light grey dark grey	281-358 100 (4×25) 281-470 200 strips 281-471 200 strips 281-472 200 strips		e 500 mm/ 2 mm Ø, rec 2.3 mm Ø, y suitable f. te	17.7" d 210-136 el. 210-137	50 (5×10) 50 (5×10)
99999 99999	light grey  3, 5 pcs/strip white light grey dark grey r, insulated, I <sub>N</sub> grey	281-470 200 strips 281-471 200 strips 281-471 200 strips 281-472 200 strips 32 A, (£x) 26 A	00000	light grey  , 5 pcs/strip white light grey dark grey insulated, I <sub>N</sub> grey	281-470 200 strips 281-471 200 strips 281-471 200 strips 281-472 200 strips 32 A, ( ) 26 A		e 500 mm/ 2 mm Ø, rec 2.3 mm Ø, y suitable f. te	177" 1 210-136 el. 210-137 erm. bl. 1.5 mn	50 (5×10) 50 (5×10) $n^2 - 4 \text{ mm}^2$ ,
Adjacent jumpe	light grey 3, 5 pcs/strip white light grey dark grey r, insulated, I <sub>N</sub> grey yellgreen	281-470 200 strips 281-471 200 strips 281-471 200 strips 281-472 200 strips 32 A, (£x) 26 A 281-402 200 (8×25)	00000	light grey  , 5 pcs/strip white light grey dark grey insulated, I <sub>N</sub> grey	281-470 200 strips 281-471 200 strips 281-471 200 strips 281-472 200 strips 32 A, ( ) 26 A 281-402 200 (8×25)		e 500 mm/ <sup>2</sup> 2 mm Ø, rec 2.3 mm Ø, y suitable f. te 5 mm/0.	17.7" 210-136 el. 210-137 erm. bl. 1.5 mn 197 in wide 280-404 lug 210-137 (2	50 (5×10) 50 (5×10) 100 (4×25) 3 mm Ø)

width 6 mm/0.236 in

from 1 to 2 781-452 100 (4 x 25)

from 1 to 3 781-453 100 (4 x 25)

from 1 to 4 781-454 100 (4 x 25)

from 1 to 5 781-455 50 (2 x 25)

from 1 to 6 781-456 50 (2 x 25)





**209-170** 50 (2×25)

# Through/Ground (Earth) Conductor and (Ex) Terminal Blocks 6 mm<sup>2</sup> / AWG 10, Series 282

0.2 - 6 mm<sup>2</sup> 800 V/8 kV/3 **①**  AWG 24 - 10 600 V, 30 A **%** 600 V, 40 A ®

Terminal block width 8 mm / 0.315 in 12 – 13 mm / 0.49 in

\* 🕦 🏽 KEER CCAKEER 🕞 🚏 🗥 GL BV LR NV 🛭 🐼

0.2 - 6 mm<sup>2</sup> 800 V/8 kV/3 **①**  AWG 24 - 10 600 V, 30 A **7** 600 V, 40 A ®

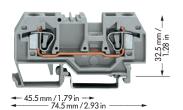
Terminal block width 8 mm / 0.315 in ■ 12 – 13 mm / 0.49 in

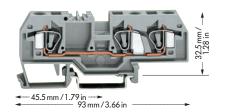
\* 🗫 🍪 KEER CCAKEER 🚱 👺 🙈 GL BV LR NV 🛭 🕾

0.2 - 6 mm<sup>2</sup> 800 V/8 kV/3 **①**  AWG 24 - 10 600 V, 30 A **9** 600 V, 40 A ®

Terminal block width 8 mm / 0.315 in 2 12 − 13 mm / 0.49 in

\* 71 @ KEER CCAKEER OO S & & W & GL BV LR NV & & Z &







 62 mm / 2.44 ir	·

	Item No.	Pack. unit pcs		Item No.	Pack. unit pcs		Item No.	Pack. unit pcs		
2-conductor thre	ough terminal blocks		3-conductor thro	ough terminal blocks		2-conductor through terminal blocks				
grey	282-901	50	grey	282-681	25	grey	282-601	50		
blue	282-904 🕗	50	blue	282-684 2	25	blue	282-604 🕗	50		
orange	282-902	50	orange	282-682	25					
light grey (Ex)	282-992 🔘	50	light grey 🖘	282-993 🔘	25	light grey 🖘	282-691	50		
2-conductor gro	ound (earth) terminal b	locks	3-conductor gro	3-conductor ground (earth) terminal blocks			2-conductor ground (earth) terminal blocks			
green-yellow	282-907 🛑	50	green-yellow	282-687 🕕	25	green-yellow	282-607 🛑	50		
green-yellow (Ex)	282-907/999-950 (	50	green-yellow (Ex)	282-687/999-950	<u>25</u>	green-yellow (Ex)	282-607/999-95	<b>0</b> 0 50		
_			_			_				

- 800 V = rated voltage 8 kV = rated surge voltage 3 = pollution degree (see also section 15)
- Suitable for Ex e II applications 0.5 - 6 mm<sup>2</sup> AWG 20 - 10 550 V, 39 A jumper 35 A (see also section 13) Ex e/Ex i separator see page 2.13

3 = pollution (see also section	on degree	-	550 V, 39 A ju (see also section	13)				
2 Suitable for Ex i	applications		Ex e/Ex i separa	tor see page	2.13			
Accessories Se	eries 282	Appro	opriate marking system	WMB/V	VSB/WFB (see section	n 14)		
End and intermed	iate plate, 2	2.5 mm/0.098 in thick	End and intermedi	ate plate, 2	2.5 mm/0.098 in thick	End and intermediate plate, 4 mm/0.157 in thick		
	orange	<b>282-328</b> 100 (4×25)		orange	<b>282-339</b> 100 (4×25)		orange	<b>282-317</b> 100 (4×25)
	grey	<b>282-325</b> 100 (4×25)	Shirm and the	grey	<b>282-308</b> 100 (4×25)		grey	<b>282-316</b> 100 (4×25)
	light grey	. ,		light grey	· '		<u> </u>	<b>282-318</b> 100 (4×25)
Separator, oversized, 2 mm/0.079 in thick		Separator, oversize	*		Separator, oversize	•		
	orange	<b>282-329</b> 100 (4×25)		orange	<b>282-340</b> 100 (4×25)		orange	<b>282-327</b> 100 (4×25)
	grey	<b>282-326</b> 100 (4×25)		grey	<b>282-309</b> 100 (4×25)		grey	<b>282-337</b> 100 (4×25)
	<del></del>	<b>282-331</b> 100 (4×25)		<del></del>	<b>282-342</b> 100 (4×25)		<del></del>	282-338 100 (4×25)
Adjacent jumper,			Adjacent jumper, in			Adjacent jumper,		. 0
li li	grey	<b>282-402</b> 100 (4×25)	lì	grey	282-402 100 (4×25)	IT	grey	282-402 100 (4×25)
I	, 0	<b>282-422</b> 100 (4×25)		yellgreen	<b>282-422</b> 100 (4×25)		yellgreen	<b>282-422</b> 100 (4×25)
Alternate jumper,	insulated, I <sub>N</sub>	41 A, 🐼 35 A	Alternate jumper, i	nsulated, I <sub>N</sub>	41 A, 🐼 35 A	Alternate jumper,	insulated, $I_N$	41 A, ⟨₤x⟩ 35 A
	grey	<b>282-409</b> 100 (4 × 25)		grey	<b>282-409</b> 100 (4 x 25)		grey	<b>282-409</b> 100 (4 × 25)
Protective warning	<b>marker,</b> fo	or 5 terminal blocks,	Protective warning marker, for 5 terminal blocks,			Protective warning marker, for 5 terminal blocks,		
	fits into scr	rewdriver slot		fits into scr	ewdriver slot		fits into scr	ewdriver slot
1000	yellow	<b>282-415</b> 100 (4×25)	5666	yellow	<b>282-415</b> 100 (4×25)	5666	yellow	<b>282-415</b> 100 (4×25)
Test plug adapter,		m. bl. 1.5 mm² – 10 mm²,	Test plug adapter, s		m. bl. 1.5 mm² – 10 mm²,	Test plug adapter,		m. bl. 1.5 mm² – 10 mm²,
	8 mm / 0.3			8 mm / 0.3			8 mm / 0.3	15 in wide
l V		<b>209-170</b> 50 (2 × 25)	T T		<b>209-170</b> 50 (2 × 25)	Y		<b>209-170</b> 50 (2×25)
	for test plu	ug 4 mm / 0.157 in Ø		for test plu	ıg 4 mm / 0.157 in Ø		for test plu	g 4 mm / 0.157 in Ø
Test plug module		suitable for term. blocks	Test plug module o		suitable for term. blocks	Test plug module		suitable for term. blocks
		6 mm <sup>2</sup> /AWG 24-10	<b>5</b>		6 mm <sup>2</sup> /AWG 24-10			6 mm <sup>2</sup> /AWG 24-10
	8 mm / 0.3		F 100	8 mm / 0.3		F 100	8 mm / 0.3	
	see page		11 100	see page 2			see page 2	
Step down jumper		plate	Step down jumper		plate	Step down jumpe		plate
see pages 2.26 –	2.27		see pages 2.26 – 2	2.27		see pages 2.26 –	2.27	

<sup>\*</sup> For further approvals with corresponding ratings see section 15.

# Through/Ground (Earth) Conductor and (Ex) Terminal Blocks 10 mm<sup>2</sup> / AWG 8, Series 284



0.2 - 10 mm<sup>2</sup> 800 V/8 kV/3 **0**  AWG 24 – 8 600 V, 50 A **%** 600 V, 54 A @

Terminal block width 10 mm / 0.394 in 12 – 13 mm / 0.49 in

\* 🗫 🎕 KEUR CCAKEUR 🚭 🖫 🗥 GL LR NV 🛭 🖼

0.2 - 10 mm<sup>2</sup> 800 V/8 kV/3 **0** 57 A

AWG 24 – 8 600 V, 50 A **93** 600 V, 54 A ®

Terminal block width 10 mm / 0.394 in ■ 12 – 13 mm / 0.49 in

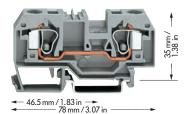
\* 90 GE LR NV @ @ &

0.2 - 10 mm<sup>2</sup> 800 V/8 kV/3 **①** 

AWG 24 – 8 600 V, 50 A **7**\(\frac{1}{2}\) 600 V, 65 A @

Terminal block width 10 mm / 0.394 in 12 – 13 mm / 0.49 in

\* 71 @ KEE CCAKEE O @ ® \$ . GL BV LR NV @ @ # &







- 69 mm / 2.72 in -

Pack. unit Pack. unit Pack. unit Item Item Item No. pcs pcs pcs 2-conductor through terminal blocks 3-conductor through terminal blocks 2-conductor through terminal blocks 284-901 284-681 284-601 25 25 25 grey grey blue 284-904 25 blue 284-684 25 blue 284-604 25 284-902 284-682 25 25 orange orange 284-992 🔘 284-993 🔘 light grey (Ex) 284-691 light grey (Ex) light grey (Ex) 2-conductor ground (earth) terminal blocks 3-conductor ground (earth) terminal blocks 2-conductor ground (earth) terminal blocks green-yellow 284-907 green-yellow 284-687 25 green-yellow 284-607 25 green-yellow (Ex) 284-907/999-950 0 25 green-yellow (Ex) 284-687/999-950 0 25 green-yellow (£x) 284-607/999-950 0 25

800 V = rated voltage 8 kV = rated surge voltage 3 = pollution degree (see also section 15) Ex Suitable for Ex e II applications 0.5 - 10 mm<sup>2</sup> AWG 20 - 8 550 V, 53 A (see also section 13)

(see also section	on 15)		(see also section	13)				
Accessories S	Series 284	Appr	opriate marking system	WMB/W	/SB/WFB (see sectio	n 14)		
End and interme	diate plate, 2	2.5 mm/0.098 in thick	End and intermedi	ate plate, 2	.5 mm/0.098 in thick	End and intermed	liate plate, 2	2.5 mm/0.098 in thick
	orange	284-328 100 (4×25)		orange	<b>284-339</b> 100 (4×25)		orange	284-317 100 (4×25)
	grey	<b>284-325</b> 100 (4×25)	FOR THE PARTY OF	grey	<b>284-308</b> 100 (4×25)	4	grey	284-316 100 (4×25)
	light grey	<b>284-330</b> 100 (4×25)	* **	light grey	<b>284-341</b> 100 (4×25)	177 - 177 - 1	light grey	284-318 100 (4×25)
<b>Separator</b> , oversized, 2 mm/0.079 in thick		Separator, oversize	d, 2 mm/0.0	79 in thick	Separator, oversiz	ed, 2 mm/0.0	079 in thick	
	orange	<b>284-329</b> 100 (4×25)		orange	<b>284-340</b> 100 (4×25)		orange	284-327 100 (4×25)
11	grey	<b>284-326</b> 100 (4×25)		grey	<b>284-309</b> 100 (4×25)		grey	284-337 100 (4×25)
	light grey	<b>284-331</b> 100 (4×25)		light grey	<b>284-342</b> 100 (4×25)		light grey	284-338 100 (4×25)
Adjacent jumper	r, insulated, I <sub>N</sub>	57 A, ⟨€x⟩ 53 A	Adjacent jumper, i	nsulated, I <sub>N</sub> 5	7 A, 🐼 53 A	Adjacent jumper,	insulated, I <sub>N</sub> 3	57 A, €xे 53 A
in the second	grey	<b>284-402</b> 100 (4×25)	lite .	grey	<b>284-402</b> 100 (4×25)	lin .	grey	<b>284-402</b> 100 (4×25)
	yellgreen	<b>284-422</b> 100 (4×25)		yellgreen	<b>284-422</b> 100 (4×25)		yellgreen	<b>284-422</b> 100 (4×25)
Alternate jumpe	<b>r,</b> insulated, I <sub>N</sub>	57 A, ⟨₤x⟩ 53 A	Alternate jumper, insulated, I <sub>N</sub> 57 A, (£x) 53 A			Alternate jumper,	insulated, I <sub>N</sub>	57 A, ⟨₤x⟩ 53 A
	grey	<b>284-409</b> 50 (2×25)		grey	<b>284-409</b> 50 (2×25)		grey	<b>284-409</b> 50 (2×25)
Protective warni	<b>ng marker,</b> fo	or 5 terminal blocks,	Protective warning	marker, for	5 terminal blocks,	Protective warning marker, for 5 terminal blocks,		
	fits into scr	rewdriver slot		fits into scre	ewdriver slot		fits into scr	ewdriver slot
2222	yellow	<b>284-415</b> 50 (2 × 25)	5665	yellow	<b>284-415</b> 50 (2×25)	6666	yellow	<b>284-415</b> 50 (2×25)
Test plug adapte	r, suitable f. ter	m. bl. 1.5 mm² – 10 mm²,	Test plug adapter, s	uitable f. terr	n. bl. 1.5 mm² – 10 mm²,	Test plug adapter,	suitable f. teri	m. bl. 1.5 mm² – 10 mm²,
	8 mm/0.3	15 in wide		8 mm / 0.31	5 in wide		8 mm/0.3	15 in wide
T		<b>209-170</b> 50 (2×25)	Y		<b>209-170</b> 50 (2 × 25)	Y		<b>209-170</b> 50 (2×25)
V	see also p	age 2.41	ll l	see also po	ıge 2.41	II.	see also po	age 2.41
Finger guard cov	•		Finger guard cover	τ,		Finger guard cove	er,	
	serves as t	ouchproof protection		serves as to	ouchproof protection		serves as t	ouchproof protection
1	for unused	d clamping units	8 1	for unused	clamping units		for unused	l clamping units
	yellow	<b>284-400</b> 100 (4×25)		yellow	<b>284-400</b> 100 (4×25)		yellow	<b>284-400</b> 100 (4×25)
Step down jump	er and cover	plate	Step down jumper	and cover	plate	Step down jumpe	r and cover	plate

see pages 2.26 – 2.27



see pages 2.26 – 2.27



see pages 2.26 – 2.27

## Through/Ground (Earth) Conductor and (Ex) Terminal Blocks 16 mm² / AWG 6, Series 283

0.2 - 16 mm<sup>2</sup> 800 V/8 kV/3 **①** 76 A AWG 24 - 6 600 V, 65 A **9** 600 V, 70 A ®

Terminal block width 12 mm / 0.472 in \_\_\_ 16 − 17 mm / 0.65 in

\* 🕦 🏽 KEER CCAKEER 🕞 🚏 🗥 GL BV LR NV 🛭 🐼

 $0.2 - 16 \text{ mm}^2$ 800 V/8 kV/3 **①** 76 A

AWG 24 - 6 600 V, 65 A **9** 600 V, 70 A ®

Terminal block width 12 mm / 0.472 in 16 – 17 mm / 0.65 in

\* 🗫 🎕 KEEB CCAKEEB 🕞 🐨 🗥 GL BV LR NV 🛭 🕾

0.2 - 16 mm<sup>2</sup> 800 V/8 kV/3 **①** 76 A

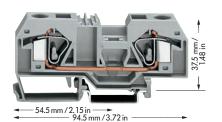
AWG 24 - 6 600 V, 65 A **9** 600 V, 70 A ®

Terminal block width 12 mm / 0.472 in 16 – 17 mm / 0.65 in

\* 71 @ KEER CCAKEER ① S @ W A GL BV LR NV @ @ Z &

ltem

No.

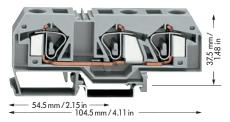


Pack. unit

pcs

ltem

No.

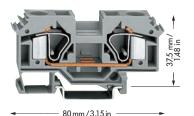


Pack. unit

pcs

Item

No.



Pack. unit

pcs

2-conductor thro										
	ough terminal b	olocks	3-conductor the	ough terminal	blocks		2-conductor thro	ough terminal	blocks	
grey	283-901	20	grey	283-671	)	20	grey	283-601		25
blue	283-904	20	blue	283-674	)	20	blue	283-604		25
orange	283-902	20	orange	283-672	)	20				
light grey (Ex)	283-992	20	light grey (Ex)	283-998	)	20	light grey (Ex)	283-691		25
3 3 7 🖸			3 3 7 💆				3 3 7 💆			
2-conductor gro	ound (earth) tern	ninal blocks	3-conductor gro	ound (earth) te	erminal bloc	:ks	2-conductor gro	und (earth) te	rminal bloc	:ks
green-yellow	283-907	20	green-yellow	283-677	)	20	green-yellow	283-607		25
green-yellow (Ex)	283-907/999	<b>9-950 (</b> ) 20	green-yellow (Ex)	283-677/99	99-950 🕕	20	green-yellow (Ex)	283-607/99	99-950 🕕	25
		-	Attention! These	e terminal blo	cks cannot l	be				
			commoned wit	h adjacent jun	npers!					
8 800 V = rate 8 kV = rate 3 = pollt (see also section	ed surge voltage ution degree on 15)	Appr	Suitable for E 0.5 - 6 mm² 550 V, 68 A (see also sect	AWG 2 jumper 63 A ion 13)	0 – 6	<b>3</b> (see section	n 14)			
End and interme	ediate plate, 2.5	5 mm/0.098 in thick	End and interm	ediate plate, 2	2.5 mm/0.09	8 in thick	End and interme	diate plate, 4	mm/0.157 i	in thick
	orange	<b>283-328</b> 50 (2×25)		orange	283-352	50 (2 x 25)		orange	283-317	
	grey	<b>283-325</b> 50 (2 x 25)	For the second second	grey	283-350	50 (2 x 25)	4	grey	283-316	50 (2 x
****	light grey	<b>283-330</b> 50 (2 x 25)		light grey	283-354	50 (2 x 25)		light grey	283-318	50 (2 x
Separator, overs	sized, 2 mm/0.07	79 in thick	Separator, over	sized, 2 mm/0.0	079 in thick		Separator, oversi	zed, 2 mm/0.0	079 in thick	
	orange	<b>283-329</b> 50 (2 x 25)		orange	283-353	50 (2 x 25)		orange	283-327	50 (2 x
25	grey	<b>283-326</b> 50 (2 x 25)		grey	283-351	50 (2 x 25)		grey	283-337	50 (2 x
	light grey	<b>283-331</b> 50 (2 x 25)		light grey	283-355	50 (2 x 25)		light grey	283-338	50 (2 x
A I:	w inculated 1 70	) A (Ex) 63 A					Adjacent jumper	r inculated L 7	70 Α, ⟨έx⟩ 63	3 A
Adjacent jumpe		_					Adjacem jomper	i, irisulalea, i <sub>N</sub> /	_	
Adjacent jumpe	grey	<b>283-402</b> 50 (2×25)					Aujuceni jompei	grey	283-402	50 (2 x
Adjacent jumpe	grey	_					T T	grey	283-402 283-422	50 (2 x
Ī	grey yellgreen	<b>283-402</b> 50 (2×25) <b>283-422</b> 50 (2×25)					Ī	grey yellgreen	283-422	50 (2 x 50 (2 x
Ī	grey yellgreen	283-402 50 (2×25) 283-422 50 (2×25) 5 A, (2x) 63 A					Alternate jumpe	grey yellgreen	<b>283-422</b> 76 A, ⟨€x⟩ 63	50 (2 x 50 (2 x
Adjacent jumpe	grey yellgreen	<b>283-402</b> 50 (2×25) <b>283-422</b> 50 (2×25)					Ī	grey yellgreen	283-422	50 (2 x 50 (2 x 3 A
Ī	grey yellgreen er, insulated, I <sub>N</sub> 76	283-402 50 (2×25) 283-422 50 (2×25) 5 A, (2x) 63 A					Ī	grey yellgreen r, insulated, I <sub>N</sub>	<b>283-422</b> 76 A, ⟨€x⟩ 63	50 (2 x 50 (2 x
Alternate jumpe	grey yellgreen  er, insulated, I <sub>N</sub> 76 grey	283-402 50 (2×25) 283-422 50 (2×25) 6 A,					Alternate jumpe	grey yellgreen  r, insulated, I <sub>N</sub> grey	283-422 76 A, ⟨͡͡͡ৣ⟩ 63 283-409	50 (2 x 50 (2 x 3 A 50 (2 x
Alternate jumpe	grey yellgreen er, insulated, I <sub>N</sub> 76 grey	283-402 50 (2×25) 283-422 50 (2×25) 6 A,					Ī	grey yellgreen  r, insulated, I <sub>N</sub> grey  r, suitable f. terr	283-422 76 A, (x) 63 283-409 m. bl. 1.5 mm	50 (2 x 50 (2 x 3 A 50 (2 x
Alternate jumpe	grey yellgreen  er, insulated, I <sub>N</sub> 76 grey  er, suitable f. term. 11.6 mm/0.4	283-402 50 (2×25) 283-422 50 (2×25) 6 A,					Alternate jumpe	grey yellgreen  r, insulated, I <sub>N</sub> grey  r, suitable f. terr	283-422 76 A, (x) 63 283-409 m. bl. 1.5 mm	50 (2 x 50 (2 x 3 A 50 (2 x
Alternate jumpe	grey yellgreen er, insulated, I <sub>N</sub> 76 grey er, suitable f. term. 11.6 mm/0.4	283-402 50 (2×25) 283-422 50 (2×25) 6 A,					Alternate jumpe	grey yellgreen  r, insulated, I <sub>N</sub> grey  r, suitable f. tern 11.6 mm/0	283-422 76 A, (x) 63 283-409 m. bl. 1.5 mm 0.457 in wide 283-404	50 (2 x 50 (2 x 3 A 50 (2 x 3 A 50 (2 x
Alternate jumpe	grey yellgreen er, insulated, I <sub>N</sub> 76 grey er, suitable f. term. 11.6 mm/0.4	283-402 50 (2×25) 283-422 50 (2×25) 6 A,					Alternate jumpe	grey yellgreen  r, insulated, I <sub>N</sub> grey  r, suitable f. tern 11.6 mm/0	283-422  76 A, (x) 63  283-409  m. bl. 1.5 mm  0.457 in wide  283-404  g 4 mm/0.1	50 (2 x 50 (2
Alternate jumpe	grey yellgreen er, insulated, I <sub>N</sub> 76 grey er, suitable f. term. 11.6 mm/0.4 for test plug ing marker, for	283-402 50 (2×25) 283-422 50 (2×25) 6 A,	Protective warn				Alternate jumpe	grey yellgreen  r, insulated, I <sub>N</sub> grey  r, suitable f. tern 11.6 mm/0 for test plu ng marker, fo	283-422 76 A, ⟨∑⟩ 60 283-409 m. bl. 1.5 mm 0.457 in wide 283-404 g 4 mm / 0.1 r 5 terminal	50 (2 x 50 (2
Alternate jumpe	grey yellgreen  er, insulated, I <sub>N</sub> 76 grey  er, suitable f. term. 11.6 mm/0.4 for test plug ing marker, for fits into screv	283-402 50 (2×25) 283-422 50 (2×25) 6 A,	Protective warn	fits into scr	rewdriver slo	t	Alternate jumpe	grey yellgreen  r, insulated, I <sub>N</sub> grey  r, suitable f. tern 11.6 mm/0 for test plu ng marker, fo fits into scr	283-422 76 A, ⟨∑⟩ 60 283-409 m. bl. 1.5 mm 0.457 in wide 283-404 tg 4 mm / 0.1 r 5 terminal ewdriver slo	50 (2 x 50 (2 x 50 (2 x 6 ) $\frac{1}{2}$ $\frac{1}{2$
Alternate jumpe	grey yellgreen  er, insulated, I <sub>N</sub> 76 grey  er, suitable f. term. 11.6 mm/0.4 for test plug ing marker, for fits into screv	283-402 50 (2×25) 283-422 50 (2×25) 6 A,	Protective warm		rewdriver slo		Alternate jumpe	grey yellgreen  r, insulated, I <sub>N</sub> grey  r, suitable f. tern 11.6 mm/0 for test plu ng marker, fo	283-422 76 A, ⟨∑⟩ 60 283-409 m. bl. 1.5 mm 0.457 in wide 283-404 g 4 mm / 0.1 r 5 terminal	50 (2 x 50 (2 x 50 (2 x 6 ) $\frac{1}{2}$ $\frac{1}{2$
Alternate jumpe	grey yellgreen  er, insulated, I <sub>N</sub> 76 grey  er, suitable f. term. 11.6 mm/0.4 for test plug ing marker, for fits into screy yellow	283-402 50 (2×25) 283-422 50 (2×25) 6 A,	1000	fits into scr yellow	rewdriver slo	t	Alternate jumpe	grey yellgreen  r, insulated, I <sub>N</sub> grey  r, suitable f. tern 11.6 mm/0 for test plu ng marker, fo fits into scr yellow	283-422 76 A, ⟨∑⟩ 60 283-409 m. bl. 1.5 mm 0.457 in wide 283-404 tg 4 mm / 0.1 r 5 terminal ewdriver slo	50 (2x 50 (2x 3 A 50 (2x 3 A 50 (2x $\frac{1}{2}$ 25 57 in Ø blocks,
Alternate jumpe	grey yellgreen  er, insulated, I <sub>N</sub> 76 grey  er, suitable f. term. 11.6 mm/0.4 for test plug ing marker, for fits into screy yellow	283-402 50 (2×25) 283-422 50 (2×25) 6 A,	Protective warm	fits into scr yellow	rewdriver slo	t 50 (2×25)	Alternate jumpe Test plug adapte Protective warni	grey yellgreen  r, insulated, I <sub>N</sub> grey  r, suitable f. tern 11.6 mm/0 for test plu ng marker, fo fits into scr yellow	283-422 76 A, ⟨∑⟩ 60 283-409 m. bl. 1.5 mm 0.457 in wide 283-404 tg 4 mm / 0.1 r 5 terminal ewdriver slo	50 (2 × 50 (2
Alternate jumpe	grey yellgreen  er, insulated, I <sub>N</sub> 76 grey  er, suitable f. term. 11.6 mm/0.4 for test plug ing marker, for fits into screv yellow  ver, serves as tou	283-402 50 (2×25) 283-422 50 (2×25) 6 A,	1000	fits into scr yellow	rewdriver slo 283-415	t 50 (2×25)	Alternate jumpe Test plug adapte Protective warni	grey yell-green  r, insulated, I <sub>N</sub> grey  r, suitable f. tern 11.6 mm/0 for test plu ng marker, fo fits into scr yellow  ver, serves as t	283-422 76 A, ⟨⟨⟨⟨⟩⟩ 60 283-409 m. bl. 1.5 mm 0.457 in wide 283-404 ag 4 mm / 0.1 r 5 terminal ewdriver slo 283-415	50 (2 x 50 (2
Alternate jumpe	grey yellgreen  er, insulated, I <sub>N</sub> 76 grey  er, suitable f. term. 11.6 mm/0.4 for test plug ing marker, for fits into screy yellow  ver, serves as tou for unused of	283-402 50 (2×25) 283-422 50 (2×25) 6 A,	1000	fits into scr yellow	283-415 touchproof p	t 50 (2×25)	Alternate jumpe Test plug adapte Protective warni	grey yell-green  r, insulated, I <sub>N</sub> grey  r, suitable f. tern 11.6 mm/0 for test plu ng marker, fo fits into scr yellow  ver, serves as t	283-422 76 A, & 65 283-409 m. bl. 1.5 mm 0.457 in wide 283-404 ag 4 mm / 0.1 r 5 terminal ewdriver slo 283-415 ouchproof p	50 (2 x 50 (2
Alternate jumpe	grey yellgreen  er, insulated, I <sub>N</sub> 76 grey  er, suitable f. term. 11.6 mm/0.4 for test plug ing marker, for fits into screy yellow  ver, serves as tou for unused o yellow	283-402 50 (2×25) 283-422 50 (2×25) 6 A,	1000	fits into scr yellow ver, serves as t for unused yellow	283-415 touchproof p	50 (2×25) rotection nits 100 (4×25)	Alternate jumpe Test plug adapte Protective warni	grey yell-green  r, insulated, I <sub>N</sub> grey  r, suitable f. tern 11.6 mm/0 for test plu ng marker, fo fits into scr yellow  ver, serves as t for unused yellow	283-422 76 A, ( 6) 60 283-409 m. bl. 1.5 mm 0.457 in wide 283-404 ag 4 mm/0.1 r 5 terminal rewdriver slo 283-415 ouchproof p clamping ur 283-400	50 (2 x 50 (2

<sup>\*</sup> For further approvals with corresponding ratings see section 15.

# High Current Through/Ground (Earth) Conductor and (Ex) Terminal Blocks 35 mm² / AWG 2, Series 285



6 - 35 mm<sup>2</sup> 1000 V/8 kV/3 **0** 125 A AWG 10 – 2 600 V, 115 A **%** 600 V, 140 A @

Terminal block width 16 mm / 0.63 in 23 mm / 0.91 in [16 mm/0.63 in for 35 mm<sup>2</sup> "str."]

\* **91 ©** CCAKEDA GL &

For terminal blocks with larger cross sections, please see Specialty Products Catalog KSK 1.2

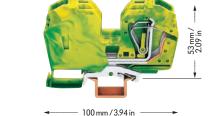
1000 V = rated voltage 8 kV = rated surge voltage 3 = pollution degree (see also section 15)

(Ex) Suitable for Ex e II applications 6 - 35 mm<sup>2</sup> AWG 8 - 2 750 V, 85 A 6 - 25 mm<sup>2</sup> AWG 8 - 4 for ground (earth) terminal blocks

(see also section 13)



100 mm / 3.94 in -



Description				Pack. unit pcs
Rail-mounted hig	h current terminal blocks,	2-conductor thro	ugh terminal blocks	
for DIN 35 rail		with integrated en	d plate	
		grey	285-635	15
		blue	285-634	15
		light grey 🖘	285-992 🔘	15
		2-conductor gro	und (earth) terminal b	locks
		with integrated en	, ,	
		green-yellow		15
		green-yellow (Ex)	285-637/999-950	15
		<b>not</b> to be used on	DIN 35 x 7.5 rail	
Accessories S	eries 285 Appropriate markin		DIN 35 x 7.5 rail  B or Mini-WSB (see	section 14)
Accessories S	eries 285 Appropriate markin			section 14)
Accessories S		g system <b>WMB/WS</b>		
Accessories S	Adjacent jumper,	g system <b>WMB/WS</b>	B or Mini-WSB (see	
Accessories S	Adjacent jumper,	g system <b>WMB/WS</b>	B or Mini-WSB (see	
Accessories S	Adjacent jumper, insulated	g system <b>WMB/WS</b> I <sub>N</sub> 85 A  grey	B or Mini-WSB (see	
Accessories S	Adjacent jumper, insulated Step-down jumper,	J system WMB/WS IN 85 A grey IN 32 A	B or Mini-WSB (see	50 (2×25)
Accessories S	Adjacent jumper, insulated Step-down jumper,	I <sub>N</sub> 85 A grey I <sub>N</sub> 32 A grey	B or Mini-WSB (see 285-435 283-414	50 (2×25)
Accessories S	Adjacent jumper, insulated  Step-down jumper, insulated	J system WMB/WS IN 85 A grey IN 32 A	B or Mini-WSB (see 285-435 283-414	50 (2×25)
Accessories S	Adjacent jumper, insulated  Step-down jumper, insulated	I <sub>N</sub> 85 A grey I <sub>N</sub> 32 A grey	B or Mini-WSB (see 285-435 283-414	50 (2×25) 50 (2×25)
Accessories S	Adjacent jumper, insulated  Step-down jumper, insulated	I <sub>N</sub> 85 A grey I <sub>N</sub> 32 A grey 6 mm/0.236 in w	B or Mini-WSB (see 285-435 283-414	50 (2 × 25) 50 (2 × 25) 100 (4 × 25)

yellow



Connection of conductor 35  $\,\mathrm{mm^2/AWG}$  2



Protective warning markers in operating slots



**Application notes** 

fits into screwdriver slot

Finger guard cover,

for unused clamping units

serves as touchproof protection

Commoning of a series 285 terminal block (35 mm²/AWG 2) with a series 281 terminal block (4 mm²/AWG 12) using step-down jumper 283-414



285-401

100 (4 x 25)

Finger guard cover snapped into unused clamping unit



Terminal blocks of series 285 can be commoned with terminal blocks of series 283: 285-635 and 285-634 with 283-601 and 283-604 resp. jumper required: 285-435.

Please note that the nominal current of the

adjacent jumper should not exceed 63 A.



## 95 mm<sup>2</sup>/AWG 4/0 Rail-Mounted High Current Terminal Blocks . . . with POWER CLAMP Connection, Series 285

Wire connection



Counter-clockwise rotation using a hex wrench. Hold clamp in open position using the latch.

## Commoning



Commoning with adjacent jumper. Insertion of jumper above the conductor entry hole, without tools. Rated cross section is still 95 mm²/AWG 0000.

## **Testing**



Testing with test plug 4 mm/0.157 in diameter, protected against accidental contact.

### Wire connection



Introduce stripped wire into the clamping unit up to the stop and hold it in position . . .

### Wire connection



.. A small counter-clockwise rotation releases the latch 1. Once the operating tool 2 has been removed the conductor is safely clamped.



The POWER CLAMP connection clamps the following copper wires:\*



stranded



## **Assembly**



Snapping a terminal block onto the carrier rail. From the left or from the right.



Removing a terminal block from the carrier rail. To the left or to the right.



Removal

fine-stranded, also with tinned single strands

## ... Description and Handling

## Safety notices



Bend the conductor before stripping! Wire end has to be straight! Note: Stripped length 35 mm



Attention! Health hazard! Keep your fingers out of the conductor entry hole!



Protective warning marker may indicate: Attention! Voltage may be present despite main circuit being switched off!

## Voltage tap





Reliable and simple tap directly onto the power supply. Insert the unwired tap before opening the pressure spring.



fine-stranded, with crimped ferrule (gas tight)

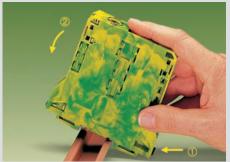
## **Grounding foot**



Contact pressure is distributed symmetrically on all defined contact zones.

## Short circuit currents of more than 11, 400 A per second are grounded safely.

## Ground (earth) conductor terminal blocks



Firmly snap ground (earth) conductor terminal block onto the carrier rail. The grounding foot makes an automatic contact to the rail.

## Touch protection cover



Covers provide touchproof safety by closing unused clamping units and jumper contact slots (detach the cover of the jumper contact slot from the touch protection cover of the clamping unit)



## High Current Through/Ground (Earth) Conductor and (Ex) Terminal Blocks 95 mm²/AWG 4/0, Series 285

## Side-entry

\* 🕦 @ CCAKEDA GL 🐼

25 - 95 mm<sup>2</sup> 1000 V/8 kV/3 **0** 232 A AWG 4 – 4/0 600 V, 200 A **9** 600 V, 210 A ® 25 - 95 mm<sup>2</sup> AWG 4 - 4/0 Terminal block width 25 mm / 0.98 in Terminal block width 25 mm / 0.98 in ∑ 35 mm / 1.38 in

35 mm / 1.38 in

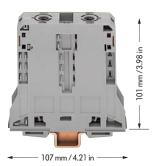
\* 🕦 🍪 CCAKEDA GL 🖘

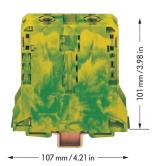
0.2 – 10/16 mm<sup>2</sup> 20 1000 V/8 kV/3 57 A

AWG 24 - 6

Module width 20 mm / 0.787 in

2 max. conductor cross section 16 mm<sup>2</sup>







	Item No.	Pack. unit		Item No.	Po	ıck. unit		Item No.	Pack. uni
2-conductor thro	uah terminal	•	2-conductor gro	und (earth) t			Voltage tap		
grey	285-195	5	green-yellow	285-197		5	grey	285-407	5
blue	285-194	5	green-yellow (Ex)			5	9 7		
light grey (Ex)	285-995	5	green yellow (ex)	200 17777	,,,,,,,	J			
ilgili gicy (cx)	203-773	3							
To be used <b>exclus</b>	ively on DIN 3	35 x 15;	To be used <b>exclus</b>	ively on DIN	1 35 x 15;				
2.3 mm / 0.091 in	-	,	2.3 mm / 0.091 in	-	,				
Accessories			Appropriate mar	king system <b>V</b>	VSB (see se	ction 14)	Appropriate i	marking system <b>WMB</b> .	/WSB
Adjacent jumper	insulated.		Adjacent jumper	r, insulated.					
	I <sub>N</sub> 232 A fo	or 1 jumper			for 1 jumper		1000 V =	rated voltage	
		or 2 to 4 jumpers			for 2 to 4 jun	npers	8 kV =	rated surge voltage	
	grey	<b>285-495</b> 25		grey	285-495	•		pollution degree	
Hex wrench with	<u> </u>		Hex wrench with				_ `	section 15)	
	- p	<b>285-172</b> 1		, p	285-172	1	(Ex) Suitable to 25 − 95 n	or Ex e II applications nm² AWG 4 – 4/	n
							750 V, 19		O
							35 – 70 n	nm² AWG 2 – 00	
Protective warning	ng marker,		Protective warni	ng marker,				d (earth) terminal blocks section 13)	
	with high v	oltage symbol, black		with high	voltage symb	ool, black	(see diso	section 13)	
-	yellow	<b>285-170</b> 50 (2×25)	150	yellow		50 (2 x 25)			
Touch protection	cover, serves	as touchproof protec-	Touch protection	cover, serve	s as touchpro	of protec-			
199	tion for unu	used clamping units	100	tion for u	nused clampii	ng units			
-	yellow	<b>285-169</b> 25	-	yellow	285-169	25			
Test plug, Ø 4 mm	•	ected against accidental	Test plug, Ø 4 mn		-				
		of offered by WAGO	_/		ot offered by				
	•	ti-Contact Deutschland GmbH		e.g. Fa. Mi	ulti-Contact Deut	schland GmbH			
		06 · 79551 Weil am Rhein			306 · 79551 W				
Hegenheimerstraß	e 19 · 79576 W	Veil am Rhein	Hegenheimerstraß	le 19 · 79576	Weil am Rhei	n			

<sup>\*</sup> For further approvals with corresponding ratings see section 15.

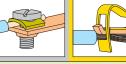
## **Distribution Terminal Blocks, Series 284**

Front-entry/side-entry









 $\begin{array}{c|c} 0.2 - 10 \text{ mm}^2 \text{ 0} \\ 6.0 - 35 \text{ mm}^2 \text{ 0} \\ 800 \text{ V/8 kV/3 } \text{ 0}; 125 \text{ A} \\ \end{array} \right. \begin{array}{c|c} \text{AWG } 24 - 8 \text{ 0} \\ \text{AWG } 10 - 2 \text{ 0} \\ \text{600 V, } 115 \text{ A } \text{ NL} \text{ } \text{ } \end{array}$ 

Terminal block width 17.5 mm / 0.689 in □■ 12 – 14 mm / 0.51 in

\* 👊 🍪 KETA CCAKETA CB GL BV LR NV

- CAGE CLAMP® connection
- 2 Screw-clamp connection
- 800 V = rated voltage
  8 kV = rated surge voltage
  3 = pollution degree
  (see also section 15)
- 4 Individual arrangement 125 A 2 jumpers combined in one clamping unit 100 A



89 mm / 3.5 in

Description			ltem No.	Pack. unit pcs
Distribution term	ninal block, for DIN 35 rail	Distribution	n terminal blocks,	
		with 3 x CA	GE CLAMP® connection (	10 mm <sup>2</sup> /AWG 8
		and 1 x scre	ew-clamp connection <b>2</b> 3	35 mm <sup>2</sup> /AWG 2
		grey	284-621	15
		blue	284-624 🔵	15
Accessories	Appro	priate marking syst	tem <b>WMB/WSB</b> (see	section 14)
Comb type jump	<b>per bar,</b> insulated,	I <sub>N</sub> 125 A <b>4</b>		
	2-way	grey	284-412	100 (4 x 25)
9 0				



Connection of conductor 35 mm²/AWG 2 Screw-clamp connection, side-entry



Connection of conductor 10 mm²/AWG 8 CAGE CLAMP® connection, front-entry



Commoning with comb type jumper bar



Connecting a 35 mm<sup>2</sup>/AWG 2 conductor



Rail-mounted distribution terminal block with  $35~\text{mm}^2/\text{AWG}$  2 and  $3\times10~\text{mm}^2/3\times\text{AWG}$  8 front-entry CAGE CLAMP® connection. To snap onto DIN 35 carrier rails according to EN 60715. The terminal block is closed on both sides, an end or intermediate plate is not necessary. In case of maximum wiring with 3 x 10 mm<sup>2</sup>/3 x AWG 8 on the distribution side the nominal current of 125 A should not

be exceeded.

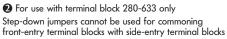


## Step-Down Jumpers for Front-Entry Through Terminal Blocks up to 16 mm<sup>2</sup> / AWG 6\*

Step-down jumper commoning term. bl. 10/6 mm²/AWG 8/10  $\rightarrow$  4/2.5/1.5 mm²/AWG 12/14/16 800 V/8 kV/3; 15 A or 10/6 mm²/AWG 8/10  $\rightarrow$  6/4 mm²/AWG 10/12 800 V/8 kV/3; 30 A

Step-down jumper for commoning terminal blocks 16 mm²/AWG 6 → 4 mm²/AWG 12 800 V/8 kV/3 32 A









Description				Item No.	Pack. uni pcs	t		ltem No.	Pack. unit pcs
Step-down jump	er, insulated	10/6 mm	n <sup>2</sup> / AWG 8/	710 →			16 mm <sup>2</sup> / AW0	$3.6 \rightarrow 4 \text{ mm}^2 / \text{AV}$	VG 12
		4/2.5/1.	5 mm²/AW	/G 12/14/16			I <sub>N</sub> 32 A, grey	283-414	50 (2 x 25)
		I <sub>N</sub> 15 A, gi	rey	284-414	50 (2 x	25)			
		10/6 mm	n <sup>2</sup> /AWG 8/	⁄10 → 6/4 mn	n <sup>2</sup> / AWG 10/1	2			
		I <sub>N</sub> 30 A, g	rey	284-413	50 (2 x	25)			
Accessories		1 100	2001 111				1 (0.000)		
	Cover plate,	I mm/0.0	)39 in thick	_	_		1 mm/0.039 in	thick, for 2-cond. ter	
The state of the s	for 2-, 3- and	grey			284-335 🕗		grey	283-334	25
4	4-conductor terminal blocks	orange	284-344	284-346	284-345 🕗	25	orange	283-336	25
	Cover plate,	1 mm/0.039 in	thick series 282	series 284			1 mm/0.039 in	thick, for 2-cond. ter	minal block 283-90
	for 2-conductor terminal blocks	grey	282-357	284-357		25	grey	283-357	25
-0	282-901 and 284-901	orange	282-367	284-367		25	orange	283-367	25
	A 1 :	1 (0.000)		series 284					
	Cover plate,	1 mm/0.039 in	mick series 282	series 204					
	for 3-conductor terminal blocks	grey		284-358		25			

### **Application notes**

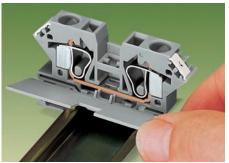
Step-down jumpers may be used for commoning terminal blocks of different sizes, without losing a conductor clamping point. This can be an advantage on long conductor runs where voltage drop can be a problem.

A large conductor can be easily connected to smaller wires at the distribution point.

Step-down jumpers are simply pushed down to full insertion, in the same way as all other push-in jumpers. Commoning may be made in either direction using the special thin end plate to cover the open side. Further terminal blocks of the smaller cross section may be commoned using standard adjacent jumpers. In this case pay attention that:

## 1. the total current flowing does not exceed the rating of the step-down jumper

2. the standard or special thin end plate is applied to the open side of the larger block.



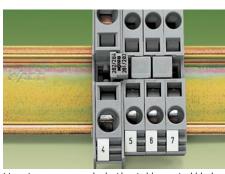
Cover plate snapped onto open side of terminal block



Always use a cover plate also on the other side of the larger terminal block.



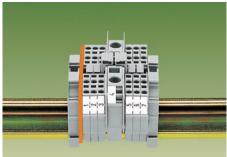
Larger "supply" blocks may be commoned to blocks for smaller wires.
Push jumper down FIRMLY until FULLY inserted!



Note: jumpers are marked with suitable terminal block sizes ensuring they are correctly installed.

## **Examples of Assembly**





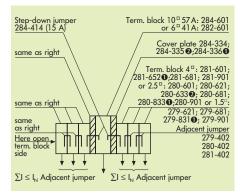
Commoning of front-entry rail-mounted terminal blocks 6 mm²/AWG 10 (series 282) with front-entry rail-mounted terminal blocks 1.5 mm²/AWG 16 (series 279).



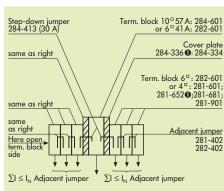
Commoning of front-entry rail-mounted terminal blocks 10 mm²/AWG 8 (series 284) with front-entry rail-mounted terminal blocks 6 mm²/AWG 10 (series 282).



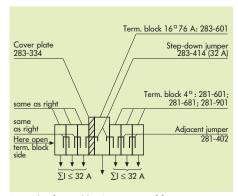
Commoning of front-entry rail-mounted terminal blocks 16 mm²/AWG 6 (series 283) with front-entry rail-mounted terminal blocks 4 mm²/AWG 12 (series 281).



Example of assembly "Commoning of front-entry rail-mounted terminal blocks 10/6 mm²/AWG 8/10 with front-entry rail-mounted terminal blocks 4/2.5/1.5 mm²/AWG 12/14/16 with step-down jumper 284-414."



Example of assembly "Commoning of front-entry rail-mounted terminal blocks 10/6 mm²/AWG 8/10 with front-entry rail-mounted terminal blocks 6/4 mm²/AWG 10/12 with step-down jumper 284-413."



Example of assembly "Commoning of front-entry rail-mounted terminal blocks 16 mm²/AWG 6 with front-entry rail-mounted terminal blocks 4 mm²/AWG 12 with step-down jumper 283-414."



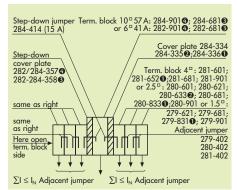
Commoning of front-entry rail-mounted terminal blocks 6 mm²/AWG 10 (series 282) with front-entry rail-mounted terminal blocks 1.5 mm²/AWG 16 (series 279).



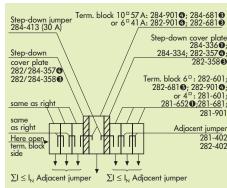
Commoning of front-entry rail-mounted terminal blocks 10 mm²/AWG 8 (series 284) with front-entry rail-mounted terminal blocks 6 mm²/AWG 10 (series 282).



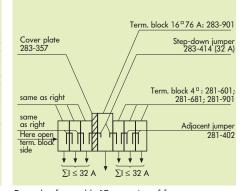
Commoning of front-entry rail-mounted terminal blocks  $16\ mm^2/AWG$  6 (series 283) with front-entry rail-mounted terminal blocks  $4\ mm^2/AWG$  12 (series 281).



Example of assembly "Commoning of front-entry rail-mounted terminal blocks 10/6 mm²/AWG 8/10 with front-entry rail-mounted terminal blocks 4/2.5/1.5 mm²/AWG 12/14/16 with step-down jumper 284-414."



Example of assembly "Commoning of front-entry rail-mounted terminal blocks 10/6 mm²/AWG 8/10 with front-entry rail-mounted terminal blocks 6/4 mm²/AWG 10/12 with step-down jumper 284-413."



Example of assembly "Commoning of front-entry rail-mounted terminal blocks 16 mm²/AWG 6 with front-entry rail-mounted terminal blocks 4 mm²/AWG 12 with step-down jumper 283-414."



## Double and Triple Deck Terminal Blocks with CAGE CLAMP® connection Description and Handling

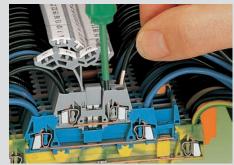
Series 279/280 and 281



Assembly of a terminal block on the rail



Removal of a terminal block from the assembly



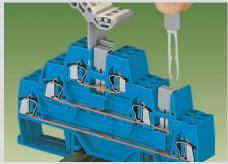
Connection of wires

## Commoning

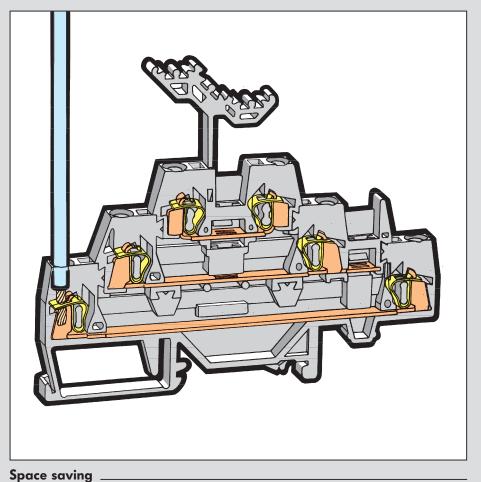


Commoning with adjacent jumpers 280-402.
Push jumper down FIRMLY until FULLY inserted!

## Commoning



Combined horizontal and vertikal commoning



## Marking



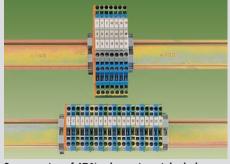
Marking with WMB multi-marking system or WSB quick marking system. For other systems see section 14

CAGE CLAMP® clamps the following copper wires:\*

fine-stranded wire – tip bonded

strand

Space saving of 50 % when using double deck terminal blocks



Space saving of 67 % when using triple deck terminal blocks

fine-stranded wire with crimped ferrule **1** fine-stranded, also with tinned single strands

fine-stranded wire with crimped pin terminal

\* For aluminum wire see notes in section 15!

• When using wires with ferrules, it is necessary to use a terminal block one size larger than the nominal cross section of the wire.

## Double Deck Terminal Blocks 1.5 mm<sup>2</sup> / AWG 16, Series 279



0.08 - 1.5 mm<sup>2</sup> 500 V/6 kV/3 **①** 18 A

AWG 28 - 16

 $0.08 - 1.5 \text{ mm}^2$ 500 V/6 kV/3 **①** 18 A

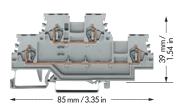
AWG 28 - 16

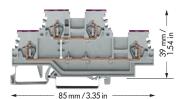
Terminal block width 4 mm / 0.157 in

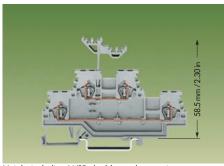
**■** 8 - 9 mm / 0.33 in

Terminal block width 4 mm / 0.157 in \_\_\_\_\_ 8 - 9 mm / 0.33 in

Accessories







	ltem No.	Pack. unit pcs		Item No.	Pack. unit pcs		
Double dec	<b>k terminal block,</b> for DI	N 35 rail	Double deck terminal block, for DIN 35 rail				
Through/th	rough terminal blocks,		4-conductor through terminal block,				
housing colo	or grey		internal commoning, housing color grey,				
			conductor entry position colored in violet				
L/L	279-501	50	L	279-508	50		
N/L	279-512	50					
L/N	279-513	50					

Height including WSB double marker carrier Item

	No.		pcs
End and intermedic	ate plate, 2	2 mm / 0.07	9 in thick
	orange	279-519	100 (4 x 25)
	grey	279-518	100 (4 x 25)
Insulation stop <b>2</b> ,	5 pcs/strip		

\*\*\*\*

white 279-470 200 strips

Pack. unit

dark grey **279-471** 200 strips Adjacent jumper, insulated,  $I_N$  15 A



279-402 200 (8 x 25) yell.-green 279-422 200 (8 x 25)

Alternate jumper, insulated,  $I_N$  15 A grey

279-409 100 (4 x 25)



**Comb type jumper bar \mathbf{Q},** ins.,  $I_N = I_N$  of terminal block 279-482 200 (8×25) 2-way 3-way 279-483 200 (8×25)

10-way 279-490 50 (2 x 25) Alternate comb type jumper bar, insulated,



 $I_N = I_N$  of terminal block 279-492 200 (8×25) 2-way



pcs



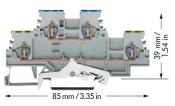
279-432 2-way 3-way **279-433** 1 10-way 279-440



WSB double marker carrier

WSB quick marking system, 10 strips with 10 markers each

see section 14



85 mm / 3.35 in

279-504

Pack. unit

50

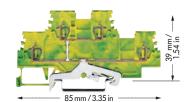
pcs

ltem

Double deck terminal block, for DIN 35 rail

Through/through terminal block,

housing color blue



85 mm / 3.35 in

279-509 3

ltem

No.

Double deck terminal block, for DIN 35 rail

4-conductor through terminal block,

internal commoning, housing color grey,

conductor entry position colored in violet

	ltem No.	Pack. unit pcs	ltem No.	Pack. unit pcs
Double deck te	erminal block, for DI	N 35 rail	Double deck terminal blo	ck, for DIN 35 rail
Ground (earth)	conductor/through	terminal blocks,	4-conductor ground (earl	h) terminal block,
housing color gr	еу		internal commoning, housin	g color green-yellow
PE/N	279-517	50	PE <b>279</b> -	<b>507</b> 50
PE/L	279-527	50		



\*\*\*\*\*\*\*\*\*\*

**279-529** 50 (2 x 25)

- $\bullet$  500 V = rated voltage 6 kV = rated surge voltage
  3 = pollution degree (see also section 15)
- 2 See application notes on pages 2.43 2.44 Suitable for Ex i applications



## Double Deck Terminal Blocks 2.5 $\,\mathrm{mm}^2$ / AWG 12, Series 280

0.08 – **2.5** mm<sup>2</sup> 500 V/6 kV/3 **①** 20 A AWG 28 - 12 300 V, 15 A **%** 300/600 V, 20/5 A ®

Terminal block width 5 mm / 0.197 in 8—8 - 9 mm / 0.33 in

\* 🕦 🏽 KEUR CCAKEUR 🕦 🔘 🚭 📽 🗥 GL BV LR NV 🕲

0.08 - **2.5** mm<sup>2</sup> 500 V/6 kV/3 **0** 20 A

AWG 28 - 12 300 V, 15 A **A** 300/600 V, 20/5 A ®

Terminal block width 5 mm / 0.197 in  $\boxed{\phantom{0}}$  8 - 9 mm / 0.33 in

\* 🗫 🍕 KEER CCAKEER 🕲 🛈 🚭 🕸 GL BV LR NV 🕲

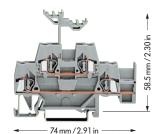
0.08 **– 2.5** mm<sup>2</sup> 500 V/6 kV/3 **①** 20 A

AWG 28 - 12 300 V, 15 A **7**\(\frac{1}{2}\) 300/600 V, 20/5 A @

Terminal block width 5 mm / 0.197 in 8—8 - 9 mm / 0.33 in

\* 🕦 🏽 KEER (CAKEER N) (D) 🕞 🐨 🗥 GL BV LR NV (8)

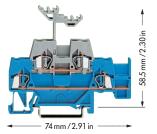






	ltem No.	Pack. unit pcs		Item No.	Pack. unit pcs	ltem No.	Pack. unit pcs	
Double deck terminal block, for DIN 35 rail			Double deck terminal block, for DIN 35 rail			Double deck terminal block, for DIN 35 rail		
Through/through terminal blocks			Through/thro	ugh terminal blocks		Ground (earth) conductor/throug	h terminal blocks	
	horizontal jumpering on lower level							
grey	280-519	50	grey	280-520	50	green-yellow/grey 280-527	50	
blue	280-529 2	50	blue	280-530 2	50	green-yellow/blue 280-537	50	
						-		
Other terminal	Other terminal blocks with the same shape							
diode/LED	280-9xx/	page 7.62						







	ltem No.	Pack. unit pcs		ltem No.	Pack. unit pcs		ltem No.	Pa pc	ck. unit s
Double deck termir	nal block, fo	or DIN 35 rail	Double deck terminal block, for DIN 35 rail			Double deck te	rminal block,	for DIN 35 ra	il
Through/through te	erminal blo	cks	Through/through terminal blocks			4-conductor gr	ound (earth) t	erminal bloc	k,
			horizontal jumperi	ng on lowe	er level	internal commo	oning		
blue/grey (shown)	280-523	50	blue/grey (shown)	280-524	50	green-yellow	280-517		50
grey/blue (not showr	n) <b>280-533</b>	50	grey/blue (not show	n) <b>280-534</b>	50				
End and intermediate plate, 2.5 mm/0.098 in thick			End and intermed		2.5 mm/0.098 in thick	End and interm			
	orange	<b>280-341</b> 100 (4×25)		orange	<b>280-343</b> 100 (4 x 25)		orange	280-341	,
	grey	<b>280-340</b> 100 (4×25)		grey	<b>280-342</b> 100 (4×25)		grey	280-340	100 (4×2
Intermediate plate, 1.1 mm/0.043 in thick			Intermediate plate, 1.1 mm/0.043 in thick			Intermediate p	<b>late,</b> 1.1 mm/(	0.043 in thick	
	orange	<b>280-366</b> 100 (4 x 25)		orange	<b>280-369</b> 100 (4 x 25)		orange	280-366	100 (4×2
Accessories Se	ries 280,	, see page 2.13 for a co	Appropriate overview marking system			WMB/WSB (see section 14)			
Adjacent jumper, ir	nsulated, I <sub>N</sub> 2	24 A	Alternate jumper,	insulated, I <sub>N</sub>	24 A	Vertical jumper	, insulated, I <sub>N</sub> 2	4 A	
lite	grey	280-402 200 (8×25)		grey	<b>280-409</b> 100 (4×25)	- 1	grey	281-421	200 (8 x 2
	yellgreen	<b>280-422</b> 200 (8 x 25)				9			
Comb type jumper	bar <b>4</b> , ins.,	$I_N = I_N$ of terminal block	Alternate comb ty	pe jumper	bar, insulated,	Operating tool	, insulated		
The second second	2-way	280-482 200 (8×25)		$I_N = I_N$ of	terminal block		2-way	280-432	1
	3-way	280-483 200 (8×25)	ų ų	2-way	280-492 200 (8×25)		3-way	280-433	1
	10-way	280-490 50 (2×25)			. ,		10-way	280-440	1

<sup>\*</sup> For further approvals with corresponding ratings see section 15.



0.08 - 2.5 mm<sup>2</sup> 400 V/6 kV/3 **0 3** 6.3 A **3**/10 A

AWG 28 - 12 300 V, 10 A 74 6 300/600 V, 20/5 A @

Terminal block width 5 mm / 0.197 in 8 – 9 mm / 0.33 in

\* 🗫 🍕 KEER (CAKEER NO 🛭 🚭 👺 🗥 GL BV LR NV 🕼

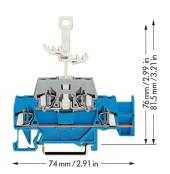
0.08 - 2.5 mm<sup>2</sup> 400 V/6 kV/3 **0 6** 6.3 A **6**/10 A

AWG 28 - 12 300 V, 10 A **% ©** 300/600 V, 20/5 A **®** 

Terminal block width 5 mm / 0.197 in  $\boxed{\phantom{0}}$  8 - 9 mm / 0.33 in

\* 🗫 🍪 KEEB CCAKEEB (N) (D) 🕞 GL BV LR NV (



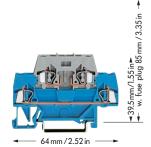


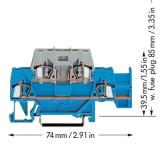
	ltem No.	Pack. unit pcs		Item No.	Pack. unit pcs	
Double deck to	erminal block, for D	IN 35 rail	Double deck terminal block, for DIN 35 rail			
Through/disconnect terminal blocks			Through/disco	nnect terminal bloc	ks	
			horizontal jumpering on lower level			
grey/grey	280-521	50	grey/grey	280-522	50	
blue/grey	280-525	50	blue/grey	280-526	50	



Pulling of disconnecting tab

The double deck terminal blocks enable two circuits of different potentials to be contained in one 2-level terminal block. The lower deck is wider than the upper, for ease of wiring. Different circuits can be differentiated by color coding of either level.





	Item No.	Pack. unit pcs		Item No.	Pack. unit pcs	
Double deck termi	inal block, fo	or DIN 35 rail	Double deck termin	nal block, fo	or DIN 35 rail	
Through/carrier terminal blocks for pluggable fuse			Through/carrier te	rminal bloc	ks for pluggable fuse	
modules 🔞			modules 🚯			
			horizontal jumperi	ng on lowe	r level	
blue/grey (shown)	280-531	50	blue/grey (shown)	280-532	50	
grey/grey (not show	/n) <b>280-514</b>	50	grey/grey (not show	n) <b>280-891</b>	50	
End and intermed	iate plate, 2	2.5 mm/0.098 in thick	End and intermediate plate, 2.5 mm/0.098 in thick			
	orange	<b>280-341</b> 100 (4×25)		orange	280-343 100 (4×25)	
	grey	<b>280-340</b> 100 (4×25)		grey	280-342 100 (4×25)	
Intermediate plate	e, 1.1 mm/0.	043 in thick	Intermediate plate	, 1.1 mm /0.	.043 in thick	
	orange	280-366 100 (4×25)		orange	280-369 100 (4×25)	
Accessories Se	eries 280,	, see page 2.13	Appropriate marking system	WMB/	WSB (see section 14)	



Double deck terminal blocks with fuse plugs

When double deck terminal blocks are used with a fuse plug (width 6 mm / 0.236 in) in the receptacle (top) level, the extra width can be compensated for the 280 series (width 5 mm / 0.197 in) by use of an intermediate plate (thickness 1.1 mm / 0.043 in).

This special intermediate plate still allows jumpering on the lower level when required, by use of the push-in jumpers.

Fuse plug, for miniature metric fuses

5 x 20 mm and

4 mm (0.234 in

5 x 20 mm and 5 x 25 mm 6 mm / 0.236 in wide with pull-tab 281-511 50

Fuse plug, same as above, but with hole for LED

0-0-0

(for self-assembly)
6 mm/0.236 in wide with pull-tab
281-512 50

Fuse plug, same as on the left,



residual current in

case of blown fuse LED 5 – 20 mA with additional indicator lamp, LED, AC/DC 24 V,

Can be used in either polarity direction

6 mm / 0.236 in wide with pull-tab **281-512/281-501** 50

- 1 400/500 V = rated voltage 6 kV = rated surge voltage
  - 6 kV = rated surge voltage 3 = pollution degree (see also section 15)
- 2 Suitable for Ex i applications
- 3 Electrical ratings are given by the fuse or nominal voltage of the indicator lamp respectively see also pages 7.38 7.39
- See application notes on pages 2.43 and 2.44

## Double Deck Terminal Blocks 2.5 mm<sup>2</sup> / AWG 12, Series 280

0.08 - **2.5** mm<sup>2</sup> 500 V/6 kV/3 **①** 20 A

AWG 28 - 12 300 V, 15 A **71** 300/600 V, 20/5 A ®

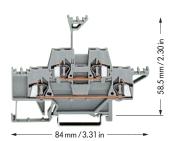
Terminal block width 5 mm / 0.197 in 8 - 9 mm / 0.33 in

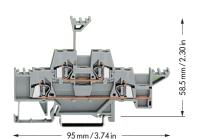
\* 🕦 🏽 KEER CCAKEER 🕲 🕾 🕏 🔊 GL BV LR NV 🛭

0.08 - 2.5 mm<sup>2</sup> 500 V/6 kV/3 **①**  AWG 28 - 12 300 V, 15 A **71** 300/600 V, 20/5 A ®

Terminal block width 5 mm / 0.197 in 8 – 9 mm / 0.33 in

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280-440

10-way

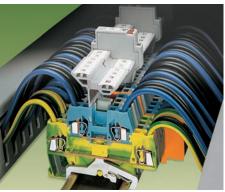
	ltem No.	Pack. unit pcs		ltem No.	Pack. unit pcs	
Double deck te	rminal block, w	ith additional	Double deck terminal block, with additional			
marking possib	ilities on both s	sides of the	marking possibilities on both sides of the			
terminal block,	for DIN 35 rail		terminal block	, for DIN 35 rail		
Through/throug	jh terminal bloc	:k	Through/throu	gh terminal block		
			horizontal jum	pering on lower lev	/el	
grey	280-513	50	grey	280-543	50	
End and interm	ediate plate, 2.	.5 mm/0.098 in thick	End and interr	<b>nediate plate,</b> 2.5 m	m/0.098 in thick	
	orange	<b>280-341</b> 100 (4×25)		orange 28	<b>0-343</b> 100 (4×25	
	grey	<b>280-340</b> 100 (4×25)		grey 28	<b>0-342</b> 100 (4 x 25)	
Intermediate pl	l <b>ate,</b> 1.1 mm/0.0	043 in thick	Intermediate p	<b>plate,</b> 1.1 mm/0.043	in thick	
	orange	<b>280-366</b> 100 (4×25)		orange 28	<b>0-369</b> 100 (4 x 25	
Accessories	•	see page 2.13 for a co	•	ee section 14)		
Adjacent jumpe	er, insulated. I., 2	4 A	Comb type iun	nper bar <b>②,</b> ins., l <sub>N</sub> =	: In of terminal bloc	

Adjacent jumper, ir	nsulated, I <sub>N</sub>	24 A	Comb type jumper	bar <b>2</b> , ins	$I_N = I_N$ of ten	minal b	block
	grey	280-402 200 (8 x 25)		2-way	280-482	200 (8)	x 25)
				3-way	280-483	200 (8)	x 25)
QD)			[1][[][[][]	10-way	280-490	50 (2)	x 25)
Alternate jumper, insulated, I <sub>N</sub> 24 A			Alternate comb type jumper bar, insulated,				
	grey	280-409 100 (4×25)		$I_N = I_N$ of	terminal bloc	k	
77				2-way	280-492	200 (8)	x 25)
Vertical jumper, ins	ulated, I <sub>N</sub> 2	24 A	Operating tool, ins	ulated			
1	grey	281-421 200 (8 x 25)		2-way	280-432	1	
n				3-way	280-433	1	

## **Application notes**

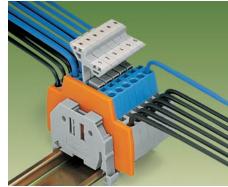


Double deck terminal blocks used for the connection of a three-phase motor



Example of a mixed assembly with double deck terminal blocks

Standard insulated push-in jumpers can be used for commoning. A vertical jumper allows commoning of upper and lower level, giving a 4-conductor commoned through terminal block in one housing. Two adjacent terminals may be commoned together on the same level using a push-in adjacent jumper.



Double deck terminal blocks used as control wire terminals; for ex. for magnetic valves. Upper deck commoned

The flexible marker carrier, which is placed above the wiring level, can be pushed aside during the wiring or commoning operation. The marker carrier has two levels for two different markers relating to the two decks of the terminal blocks.

The double deck terminal blocks, series 280, are available with decks of same or different color according to the function. This is an additional visual aid during wiring or in case of possible service and maintenance work.

With a terminal block width of only 5 mm/0.197 in, an effective width of only 2.5 mm/0.098 in for terminal blocks of same or different potential can be realized at a cross sectional area of 0.08 mm<sup>2</sup> to 2.5 mm<sup>2</sup>/AWG 28 – 14!

- 500 V = rated voltage
   6 kV = rated surge voltage
   3 = pollution degree
   (see also section 15)
- 2 See application notes on pages 2.43 and 2.44

<sup>\*</sup>For further approvals with corresponding ratings see section 15.

## Double Deck Terminal Blocks 4 mm² / AWG 12, Series 281



0.08 - 4 mm<sup>2</sup> 500 V/6 kV/3 **①** 26 A

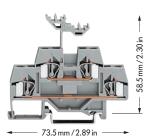
AWG 28 - 12 300 V, 15 A **9** 600 V, 15 A ®

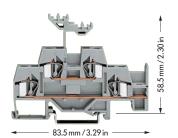
Terminal block width 6 mm / 0.236 in 9 – 10 mm / 0.37 in

\* 🕦 🏽 KEER CCAKEER 🛈 🕾 🐨 🗥 GL BV LR NV 🗞 🛞

0.08 - 4 mm<sup>2</sup> 500 V/6 kV/3 **①** 26 A AWG 28 - 12 300 V, 15 A **9** 600 V, 15 A ®

\* 🕦 🏽 KEER CCAKEER 🛈 🚭 🕸 GL BV LR NV 🗞 🛞



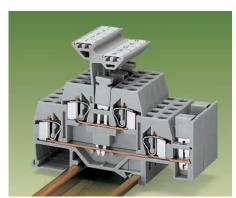


	ltem No.	Pack. unit pcs		ltem No.	Pack. unit pcs	
Double deck termi	inal block, for D	IN 35 rail	Double deck terminal block, for DIN 35 rail			
Through/through	terminal blocks		Through/throu	gh terminal blo	cks	
			horizontal jun	pering on lowe	er level	
grey	281-619	50	grey	281-620	50	
blue	281-629 🕗	50	blue	281-630	2 50	
Other terminal blo	ocks with the so	ame shape				
diode/LED	281-6xx/	page 7.62				
End and intermed	<b>iate plate,</b> 2.5 n	nm/0.098 in thick	End and inter	mediate plate, 2	2.5 mm/0.098 in thick	
	orange 28	<b>31-341</b> 100 (4×25)		orange	281-343 100 (4×25)	
	grey 28	<b>31-340</b> 100 (4×25)		grey	<b>281-342</b> 100 (4×25)	



Wiring

Accessories S	eries 281,	see page 2.1	7 for a con	nplete overview			
				AIAAD AAICD			
	Аррі	ropriate marki	ng system \	WMB/WSB (see	section 14)		
Insulation stop <b>(3</b>	, 5 pcs/strip			Insulation stop	3, 5 pcs/strip		
.0000	white	<b>281-470</b> 2	00 strips		white	281-470	200 strips
20000	light grey	<b>281-471</b> 2	00 strips	20000	light grey	281-471	200 strips
One	dark grey	<b>281-472</b> 2	00 strips	000	dark grey	281-472	200 strips
Adjacent jumper,	insulated, I <sub>N</sub>	32 A		Adjacent jumper	r, insulated, I <sub>N</sub> 3	32 A	
	grey	<b>281-402</b> 2	00 (8 x 25)	lin .	grey	281-402	200 (8 x 25)
The state of the s	yellgreen	<b>281-422</b> 2	00 (8 x 25)	W.	yellgreen	281-422	200 (8 x 25)
QD)				QD.			
Alternate jumper, insulated, I <sub>N</sub> 32 A				Alternate jumpe	<b>r,</b> insulated, I <sub>N</sub>	32 A	
	grey	<b>281-409</b> 1	00 (4 x 25)		grey	281-409	100 (4 x 25
Vertical jumper, in	sulated, I <sub>N</sub> 24	4 A		Vertical jumper,	insulated, I <sub>N</sub> 24	l A	
T T	grey	<b>281-421</b> 2	00 (8 x 25)	Ti I	grey	281-421	200 (8 x 25
n				n			
[]				- 11			
Comb type jumpe	<b>r bar 3,</b> ins.	, $I_N = I_N$ of term	minal block	<b>Comb type jumper bar (3),</b> ins., $I_N = I_N$ of terminal bloc			
	2-way	<b>281-482</b> 1	00 (4 x 25)		2-way	281-482	100 (4 x 25)
	3-way	<b>281-483</b> 1	00 (4 x 25)		3-way	281-483	100 (4 x 25)
[1]]]]]]]	10-way	281-490	50 (2 x 25)	[]]]]]]]]	10-way	281-490	50 (2 x 25)
Alternate comb ty	pe jumper	<b>bar,</b> insulated,	,	Alternate comb	type jumper l	<b>bar,</b> insulated	d,
1000	$I_N = I_N \text{ of } I_N$	terminal block			$I_N = I_N$ of t	erminal bloc	k
	2-way	281-492	00 (4 x 25)	11	2-way	281-492	100 (4 x 25)
	,		, ,				
Operating tool, in	sulated			Operating tool,	insulated		
	2-way	280-432	1		2-way	280-432	1
	3-way	280-433	1		3-way	280-433	1
	5-way	281-440	1		5-way	281-440	1



Commoning of double deck terminal blocks

- 500 V = rated voltage
   6 kV = rated surge voltage
   3 = pollution degree
   (see also section 15)
- Suitable for Ex i applications
- 3 See application notes on pages 2.43 and 2.44



## Triple Deck Terminal Blocks 2.5 $\,\mathrm{mm^2}$ / AWG 12, Series 280

0.08 **− 2.5 mm²** 500 V/6 kV/3 **①** 20 A AWG 28 - 12 300/600 V, 15/5 A SU 300/600 V, 20/5 A ®

Terminal block width 5 mm / 0.197 in 8 - 9 mm / 0.33 in

\* 🕦 🏽 KEER CCAKEER (N) (D) 🕞 🐨 🚵 GL BV LR NV (8)

0.08 **– 2.5** mm<sup>2</sup> 500 V/6 kV/3 **①** 20 A

AWG 28 - 12 300/600 V, 15/5 A **%** 300/600 V, 20/5 A ®

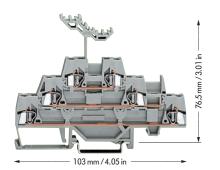
Terminal block width 5 mm / 0.197 in 8 — 9 mm / 0.33 in

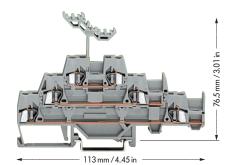
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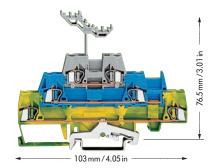
0.08 – **2.5** mm<sup>2</sup> 500 V/6 kV/3 **①** 20 A AWG 28 - 12 300/600 V, 15/5 A **%** 300/600 V, 20/5 A ®

Terminal block width 5 mm / 0.197 in  $\boxed{\phantom{0}}$  8 - 9 mm / 0.33 in

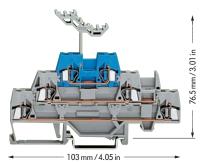
\* 🗫 🍪 KEEB CCAKEEB 🕦 🛈 🚭 🕸 GL BV LR NV 🖗

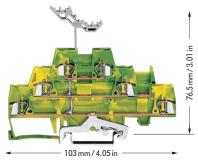






	ltem No.	Pack. unit pcs		ltem No.	Pack. unit pcs		Item No.	Pack. unit pcs	
Triple deck	Triple deck terminal block, for DIN 35 rail			Triple deck terminal block, for DIN 35 rail			Triple deck terminal block, for DIN 35 rail		
Through/th	Through/through/through terminal blocks			Through/through/through terminal block			Ground (earth)/through/through terminal blocks		
			horizontal	horizontal jumpering on lower level			ey <b>280-547</b>	40	
grey	280-549	40	grey	280-550	40	green-yel./grey/gre	ey <b>280-557</b>	40	
blue	280-551	40							
						Shield (screen)/th	rough/through	terminal blocks	
						white/grey/grey	280-548	40	
						white/blue/grey	280-558	40	





	ltem No.	Pack. unit pcs					ltem No.	Pa pc:	ck. unit s
Triple deck termin	al block, for	DIN 35 rail				Triple deck term	i <b>nal block,</b> fo	r DIN 35 rail	
Through/through/	through ter	minal block				6-cond. gr. (earth	n) term. block	, internal cor	mmoning
grey/grey/blue	280-552	40				green-yellow	280-597	'	40
End and intermed	liate plate, 1	2.5 mm/0.098 in thick	End and intermedic	ate plate,	2.5 mm/0.098 in thick	End and interme	ediate plate,	2.5 mm/0.098	3 in thick
	orange	<b>280-304</b> 100 (4 x 25)		orange	<b>280-306</b> 100 (4×25)		orange	280-304	•
	grey	<b>280-303</b> 100 (4×25)		grey	<b>280-305</b> 100 (4×25)		grey	280-303	100 (4 x 25
Intermediate plate	<b>e,</b> 1.1 mm/0		Intermediate plate,	, 1.1 mm/(		Intermediate pla	<b>ite,</b> 1.1 mm/(		
	orange	<b>280-336</b> 100 (4 x 25)		orange	<b>280-339</b> 100 (4×25)		orange	280-336	100 (4 x 25
Accessories S	eries 280	, see page 2.13 for a con	nplete overview		Appropriate marking system	WMB/WSB	see section 14	1)	
Adjacent jumper,	insulated, I <sub>N</sub>	24 A	Alternate jumper, i	nsulated, I <sub>N</sub>	√ 24 A	Vertical jumper,	insulated, I <sub>N</sub> 2	4 A	
lite	grey	280-402 200 (8×25)		grey	280-409 100 (4×25)	- 1	grey	281-421	200 (8 x 25
1	yellgreen	<b>280-422</b> 200 (8 x 25)				Y			
(ID)						il il			
Comb type jumpe	<b>r bar 3,</b> ins.	, $I_N = I_N$ of terminal block	Alternate comb typ	e jumper	bar, insulated,	Operating tool,	insulated		
	2-way	<b>280-482</b> 200 (8 x 25)		$I_N = I_N$ of	terminal block		2-way	280-432	1
111111111111	3-way	<b>280-483</b> 200 (8 × 25)		2-way	<b>280-492</b> 200 (8 x 25)		3-way	280-433	1
[[]]]	10-way	<b>280-490</b> 50 (2 x 25)					10-way	280-440	1

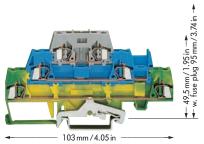


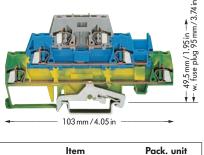
0.08 - **2.5** mm<sup>2</sup> 400 V/6 kV/3 **0 2** 6.3 A **2** / 20 A

AWG 28 - 12 300/600 V, 15/5 A **9\** 600 V, 20 A ®

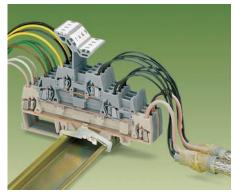
Terminal block width 5 mm / 0.197 in □ 8 - 9 mm / 0.33 in

\* 🗫 🏽 KEER CCAKEER 🕲 🕾 📽 🗥 GL BV LR NV 🛭





3-wire power circuit with additional branch circuit tapping



Shielded (screened) twisted pair cable

Triple deck terminal block, for DIN 35 rail Ground (earth) conductor/through/carrier terminal blocks for pluggable fuse modules

green-yellow/blue/grey

280-510 50 (shown)

grey/grey/grey

(not shown) 280-889 50

End and intermediate plate, 2.5 mm/0.098 in thick



280-304 100 (4×25) orange 280-303 100 (4×25) grey

Intermediate plate, 1.1 mm/0.043 in thick



280-336 100 (4 x 25) oranae

Accessories Series 280, see page 2.13

Appropriate

marking system

WMB/WSB (see section 14)

Adjacent jumper, insulated, I<sub>N</sub> 24 A



280-402 200 (8 x 25) grey yell.-green 280-422 200 (8 x 25)

Alternate jumper, insulated, I<sub>N</sub> 24 A



280-409 100 (4 x 25) grey

Vertical jumper, insulated, I<sub>N</sub> 24 A



281-421 200 (8 x 25)

Fuse plug, for miniature metric fuses



 $5 \times 20$  mm and  $5 \times 25$  mm 6 mm/0.236 in wide with pull-tab **281-511** 50

Fuse plug, same as above, but with hole for LED

grey



(for self-assembly)

6 mm/0.236 in wide with pull-tab **281-512** 50

Fuse plug, same as above,



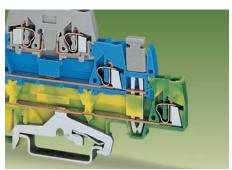
with additional indicator lamp, LED, AC/DC 24 V,

Can be used in either polarity

residual current in case of blown fuse LED 5 – 20 mA 6 mm/0.236 in wide with pull-tab

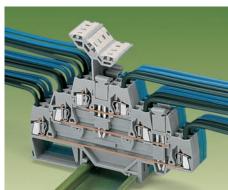
**281-512/281-501** 50

The triple deck terminal blocks enable three circuits of different potentials to be contained in one 3-level terminal block. The lower decks are wider than the upper, for ease of wiring. Different circuits can be differentiated by color coding of any level.



Grounding (earthing) to carrier rail. Connection of N-level to ground (earth) level by vertical jumper

Standard insulated push-in jumpers can be used for commoning. A vertical jumper allows commoning of upper and lower level, giving a 6-conductor commoned through terminal block in one housing. Two adjacent terminals may be commoned together on the same level using a push-in adjacent jumper.



Commoning with vertical and adjacent jumpers



The greater width of the fuse plugs compared to the terminal blocks has to be compensated by use of an intermediate plate (280-336)

The ground (earth) conductor or screen (shield) terminal blocks have a contact foot in the bottom level, ensuring automatically a direct contact to the carrier rail.

The flexible marker carrier, which is placed above the wiring levels, can be pushed aside during the wiring or commoning operation. The marker carrier has three levels for three different markers relating to the three decks of the terminal blocks.

With a terminal block width of only 5 mm/0.197 in an effective width of only 1.67 mm/0.066 in for terminal blocks of same or different potentials can be realized for wire sizes  $0.08 - 2.5 \text{ mm}^2/\text{AWG } 28 - 14.$ 

 $\bigcirc$  400/500 V = rated voltage 6 kV = rated surge voltage 3 = pollution degree (see also section 15)

- 2 Electrical ratings are given by the fuse or nominal voltage of the indicator lamp respectively see also pages 7.38 – 7.39
- 3 See application notes on pages 2.43 and 2.44



## Rail-Mounted Quadruple Deck Terminal Blocks or Rail-Mounted Terminal Blocks for Wiring of Electric Motors, Series 281 36 Description and Handling

In addition to the rail-mounted terminal blocks for electric motor wiring, new versions are now available.

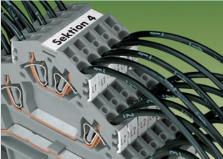
- Terminal block **without** ground (earth) contact and with only 2 potentials.

Especially for additional functions such as engine brakes or temperature probes. Having the same shape, this type can be put next to the appropriate terminal block for electric motor wiring without having to use separator plates. That makes the rail assembly clearer and wiring is easier. Since no clamping unit remains unwired, wiring errors are avoided.

- Terminal block **without** ground (earth) contact and with 3 potentials.

Clear and unambiguous assignment of clamping units is also the main advantage with this type. When using devices with protective insulation for example, there are no open ground (earth) clamping units that could lead to confusion.

## Marking



Marking clamping units with WMB multi-marking system or WSB quick marking system. (see section 14) Group marking with marking strips Item No. 709-196.



3 phases and ground (earth) conductor in one Compact design

CAGE CLAMP® clamps the following copper wires:\*

fine-stranded wire tip bonded

fine-stranded wire with crimped ferrule\*\*

(see also section 15) See application notes

## **Testing**



Testing with test plug 2 mm/0.079 in Ø

- 1 400 V = rated voltage 6 kV = rated surge voltage 3 = pollution degree
- on pages 2.43 and 2.44

\* For aluminum wire see notes in section 15!

fine-stranded. also with tinned fine-stranded wire single strands with crimped pin terminal

\*\* When using wires with ferrules, it is necessary to use a terminal block one size larger than the nominal cross section of the wire.

## Rail-Mounted Quadruple Deck Terminal Blocks or Rail-Mounted Terminal Blocks for Wiring of Electric Motors Series 281



AWG 28 - 12

0.08 - 4 mm<sup>2</sup> 400 V/6 kV/3 **①** 20 A (2.5 mm<sup>2</sup>) 25 A (4 mm<sup>2</sup>)

□ 8 – 9 mm / 0.33 in

AWG 28 - 12 300 V, 20 A

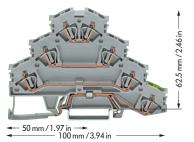
0.08 - 4 mm<sup>2</sup> 400 V/6 kV/3 **①** 20 A (2.5 mm<sup>2</sup>) 25 A (4 mm<sup>2</sup>) Terminal block width 6 mm / 0.236 in

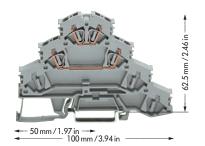
Terminal block width 6 mm / 0.236 in 8 – 9 mm / 0.33 in

0.08 - 4 mm<sup>2</sup> 400 V/6 kV/3 **①** 20 A (2.5 mm<sup>2</sup>) 25 A (4 mm<sup>2</sup>)

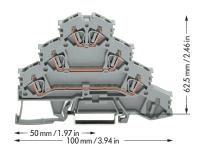
Terminal block width 6 mm / 0.236 in 8 – 9 mm / 0.33 in







AWG 28 - 12



	ltem No.	Pack.	unit		Item No.	Pac pcs	k. unit		Item No.	Pac	ck. unit
Rail-mounted terr	minal block for v	wiring of ele	ectric	Rail-mounted tern	ninal block f	or wiring of		Rail-mounted term	ninal block f	or wiring o	f
motors or				electric motors or				electric motors or			
rail-mounted qua	ıdruple deck teri	minal block	ζ,	rail-mounted qua	druple deck	terminal blo	ock,	rail-mounted qua	druple deck	terminal blo	ock,
for DIN 35 rail				for DIN 35 rail				for DIN 35 rail			
L1 – L2 – L3 – PE				L1 – L2				L1 – L2 – L3			
grey	281-530	50		grey	281-531		50	grey	281-532		50
End and intermed				End and intermed	•			End and intermed	•		
		<b>81-366</b> 100			orange	281-366	, ,		orange	281-366	, ,
	grey 28	<b>81-365</b> 100	$(4 \times 25)$		grey	<b>281-365</b> 1	00 (4 x 25)		grey	281-365	$100 (4 \times 25)$
Accessories S			Ap	opropriate marking sy		/WSB (see	section 14)				
Insulation stop 2				Insulation stop <b>2</b> ,				Insulation stop 2			
A444		<b>81-470</b> 200		A444	white	<b>281-470</b> 2		00000	white	281-470 2	
000000	0 0 ,	<b>81-471</b> 200		20000	light grey	<b>281-471</b> 2		00000	light grey	281-471 2	•
	dark grey 28		strips	(Jan		<b>281-472</b> 2	00 strips	Que en la companya de la companya della companya della companya de la companya della companya de	dark grey		200 strips
Comb type jumpe				Comb type jumper				Comb type jumpe			
COLUMNIC	$I_N = I_N$ of term		( ( 0.5)		., .,	erminal block				erminal block	
1 1 1 1 1 1 1 1 1 1 1 1		<b>81-482</b> 100		777777777	2-way	281-482		77777777	2-way	281-482	. ,
1111111111	,	<b>81-483</b> 100	, ,	11111111111	3-way	281-483 1	, ,	Hilling	3-way	281-483	. ,
	,	<b>81-485</b> 100	` '		5-way	281-485	, ,		5-way	281-485	, ,
A1 1 .		<b>81-490</b> 50	` /	Al	10-way	281-490	, ,	Al	10-way	281-490	, ,
Alternate comb ty			1,	Alternate comb ty			-	Alternate comb ty			-
	$I_N = I_N$ of term		// 05\		., .,	erminal block			., .,	erminal block	
ľ	2-way <b>28</b>	<b>81-492</b> 100	(4 x 25)	11	2-way	<b>281-492</b> 1	00 (4 x 25)	1 1	2-way	281-492	100 (4 x 25)
Onesetine teel in	ام ما اسلام ما			Operating tool, ins	سامه ما			Operating tool, in:	u deste d		
Operating tool, in		<b>80-432</b> 1		Operating tool, in	2-way	280-432	1	Operating tool, in	2-way	280-432	1
	,	80-433			3-way	280-433	1		3-way	280-433	1
	,	81-440			5-way	281-440	1		5-way	281-440	1
Test plug, with cab		01-440		Test plug, with cabl			'	Test plug, with cab			'
rest plog, with eab	2 mm Ø, red <b>21</b>	<b>10-136</b> 50	(5 x 10)	resi piog, will cool		210-136	50 (5 x 10)	iesi piog, wiiii cab		210-136	50 (5 x 10)
	2.3 mm Ø, yel. <b>21</b>					210-137				210-137	
			(0.11.10)				(0.1.10)				(0.11.10)
WMB multi-mark	ing system,			WMB multi-marki	ng system,			WMB multi-marki	ng system,		
MANGED WS8 309-507	10 strips with 1	10 markers ed	ach,	MAGD 19330-501		th 10 markers	s each,	MAGO NSS SIN-SET	0 , .	ith 10 marker	rs each,
1110 0101000	white with blac		,	afatajetajatajajaja,		black printing	-	ilitiale plain alaim		black printing	
11 12 13 15 15 15 15 18 18 25	see section 14	, ,		HERENER THE BEST	see section	14		HIR BENEFICH BENEFIC	see section	14	
WSB quick marking	g system,			WSB quick marking	system,			WSB quick marking	system,		
MANAGE WIR 100-507	10 strips with 1	10 markers ed	ach,	MAGE WS 305-507	10 strips wi	th 10 markers	s each,	WASD VI 10-50	10 strips w	ith 10 marker	rs each,
1121214 21011 110	white with blac	ck printing		pininistationinining	white with I	black printing		district de la constituir de la	white with	black printing	9
11:11:0 11 15:11 15 15:15	see section 14			11 12 2 2 3 11 11 2 2 2	see section	14		H 12 10 N 15 10 11 W 10 25	see section	14	
Marker strips, tran	nsparent, plain, fo	or central mai	rking	Marker strips, tran	sparent, plain	, for central r	marking	Marker strips, tran	sparent, plair	n, for central	marking
					- group mo	arkina –			- group m	arking –	
	– group marki	ing –			0 1						
	- group marki	•			1 m / 3'33"				1 m / 3'33"	long,	
		g,			0 .	long,				long, 295 in wide	
on roll 50 m on roll 300 m	1 m/3'33" long 7.5 mm/0.295	g, i in wide <b>09-177</b>	1	on roll 50 m on roll 300 m	1 m / 3'33"	long,	1	on roll 50 m		0.	1

<sup>\*</sup>For further approvals with corresponding ratings see section 15.



## Test Plug Modules with CAGE CLAMP®, for Testing of Rail-Mounted Terminal Blocks 2.5 mm²/AWG 14 and 4 mm<sup>2</sup>/AWG 12, Using the Conductor Wire Opening

Test plug for rail-mounted terminal blocks of Module width 5 mm / 0.197 in Test voltage 630 V

Test plug for rail-mounted terminal blocks of Module width 6 mm / 0.236 in Test voltage 630 V Test current 6 A

These test plugs are not suitable for Ex e applications



Test current 6 A







Item No.	Pack. unit pcs	ltem No.	Pack. unit pcs	
Test plug module with spring load	led contact pin	Test plug module with spring loads	ed contact pin	
with CAGE CLAMP®,		with CAGE CLAMP®,		
center module, grey, module width 5 r	mm / 0.197 in	center module, grey, module width 6 n	nm / 0.236 in	
249-141	100 (4 x 25)	249-144	100 (4 x 25)	
End module with rigid contact pin		End module with rigid contact pin		
with CAGE CLAMP®,		with CAGE CLAMP®,		
external module, grey, module width 5	5 mm / 0.197 in	external module, grey, module width 6 mm / 0.236 in		
249-142	100 (4 x 25)	249-145	100 (4 x 25)	
Spacer module,		Spacer module,		
for bridging over wired terminal block	s, grey,	for bridging over wired terminal blocks, grey,		
module width 5 mm/0.197 in		module width 6 mm / 0.236 in		
249-143	100 (4 x 25)	249-146	100 (4 x 25)	



Snapping together of test plug, end and spacer modules to assemble a multipole test plug strip (10-pole max.)

### Accessories

D QUICK	Miniature W
V	
1	
٧	
Se	

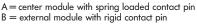
Miniature WSB quick marking system or NMB multi-marking system, 0 strips with 10 markers each, white with black printing ee section 14

## Miniature WSB quick marking system or

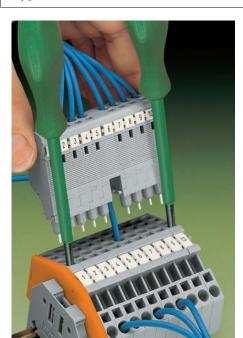


WMB multi-marking system, 10 strips with 10 markers each, white with black printing see section 14





### **Application notes**



For simple testing of terminal block assemblies, the test plug modules with CAGE CLAMP® (version for testing using the conductor wire opening) may be used for testing unwired terminal blocks. For testing, the module is assembled with spring loaded pins in the center positions and rigid pin modules at the ends.

The terminal blocks corresponding to the end position modules are opened using screwdrivers (as shown), these rigid pins are then held in place by the CAGE CLAMP®, the intermediate pins are spring loaded and make contact with the current bars, for test currents up to 6 amps.

Clamping units which need to remain wired may be skipped over by assembling a spacer in the test plug module.

Attention!

Mating direction must be observed (see ill.)



CAGE CLAMP® 0.08 mm<sup>2</sup> - 1.5 mm<sup>2</sup> (AWG 28 - 16), module width 5 mm / 0.197 in 0.08 mm<sup>2</sup> - 2.5 mm<sup>2</sup> (AWG 28 - 14), module width 6 mm / 0.236 in

# Test Plug Modules with CAGE CLAMP<sup>®</sup>, for Testing of Rail-Mounted Terminal Blocks 2.5 mm<sup>2</sup>/AWG 14 and 4 mm<sup>2</sup>/AWG 12, Using Jumper Contact Position in Current Bar

Test current 10 A



Test plug for rail-mounted terminal blocks of series 280

Module width 5 mm / 0.197 in Test voltage 630 V Test current 10 A Test plug for rail-mounted terminal blocks of series 281 Module width 6 mm / 0.236 in Test voltage 630 V

Note

These test plugs are not suitable for Ex e applications





Item No.	Pack. unit pcs	Item No.	Pack. unit pcs	
Test plug module with CAGE CLA	MP <sup>®</sup> ,	Test plug module with CAGE CLA	MP®,	
version using jumper contact position i	n current bar,	version using jumper contact position	in current bar,	
grey, module width 5 mm / 0.197 in,		grey, module width 6 mm/0.236 in, s	uitable for all rail-	
suitable for all rail-mounted terminal b	olocks series 280	mounted terminal blocks series 281 with jumper contact		
with jumper contact slots in the current bar		slots in the current bar		
249-106	100 (4 x 25)	249-147	100 (4 x 25)	
Spacer module,		Spacer module,		
for bridging over commoned terminal	blocks, grey,	for bridging over commoned terminal	blocks, grey,	
module width 5 mm/0.197 in		module width 6 mm/0.236 in		
249-107	100 (4 x 25)	249-148	100 (4 x 25)	



Snapping together of test plug and spacer modules to assemble multi-pole test plug modules (10-pole max.)

### Accessories

Miniature	WSB	quick	marking	system	or



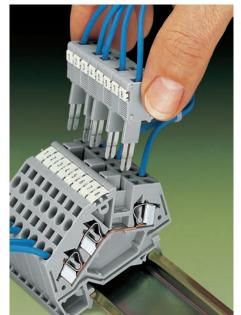
WMB multi-marking system, 10 strips with 10 markers each, white with black printing see section 14

## Miniature WSB quick marking system or



WMB multi-marking system, 10 strips with 10 markers each, white with black printing see section 14

### **Application notes**



For testing of individual circuits WAGO offers a single-pole test plug accessory with CAGE CLAMP® - up to 2.5 mm²/AWG 14 for direct contact with the current bar of a terminal block, or 1-pole test plug adapters for test plugs 4 mm dia.

For serial testing on assembled terminal block assemblies WAGO has developed special multipole (max. 10) modular test plug modules. For testing completely wired terminal blocks (even when using horizontal jumpers) the test plug modules with CAGE CLAMP® (version with testing using jumper contact position in current bar) are the ideal solution. For this type of testing, the structure of the testing plug modules is exactly adaptable to that of the terminal block assembly. The test plug modules make direct contact to the jumper contact slot of the terminal blocks to be tested.



Test plug modules are directly inserted into the jumper contact slots in the current bar



CAGE CLAMP® 0.08 mm² – 1.5 mm² (AWG 28 – 16), module width 5 mm / 0.197 in 0.08 mm² – 2.5 mm² (AWG 28 – 14), module width 6 mm / 0.236 in



## Modular Test Plugs for Rail-Mounted Terminal Blocks 2.5 mm²/AWG 14 and 4 mm²/AWG 12

Test plug for rail-mounted terminal blocks of series 280 Module width 5 mm / 0.197 in Test voltage 400 V Test current 6 A

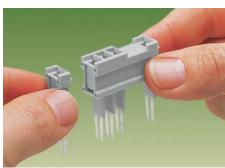
Test plug for rail-mounted terminal blocks of series 281 Module width 6 mm / 0.236 in Test voltage 400 V Test current 6 A Note:

These test plugs are not suitable for Ex e applications



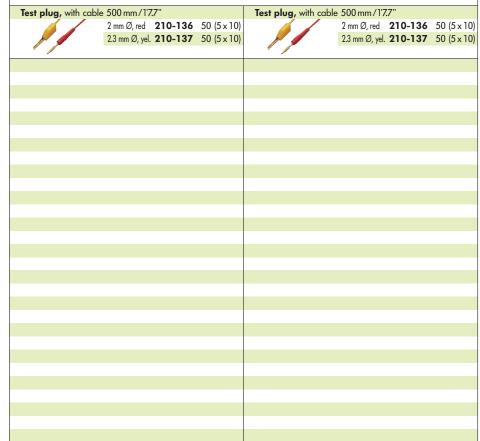


ltem No.	Pack. unit pcs	Item No.	Pack. unit pcs
Test plug, modular, grey,		Test plug, modular, grey,	
module width 5 mm/0.197 in,		module width 6 mm/0.236 in,	
suitable for all rail-mounted terminal b	locks series 280	suitable for all rail-mounted terminal b	olocks series 281
with jumper slots in the current bar		with jumper slots in the current bar	
280-418	100 (4 x 25)	281-418	100 (4 x 25)
Spacer, modular, grey,		Spacer, modular, grey,	
module width 5 mm/0.197 in,		module width 6 mm/0.236 in,	
for bridging over alternate or multiple	terminal blocks	for bridging over alternate or multiple	e terminal blocks
280-419	100 (4 x 25)	281-419	100 (4 x 25)



Assembly of modular test plugs and spacers to multipole test plug strips







The modular test plugs are directly pushed into the jumper slots of the current bar

# Test Plug Modules with CAGE CLAMP®, for Testing of Rail-Mounted Terminal Blocks 6 mm²/AWG 10 and 10 mm²/AWG 8, Using Jumper Contact Position in Current Bar



Test plug module **1** for rail-mounted terminal blocks of series 282 0.2 - 6 mm<sup>2</sup> | AWG 24 - 10 Module width 8 mm / 0.315 in

12 mm / 0.472 in

Spacer plate for test plug module for testing rail-mounted terminal blocks of series 284 Module width 2 mm / 0.079 in Test voltage 800 V/ 8 kV Test current 32 A

Note

These test plugs are not suitable for Ex e applications





	Item No.	Pack. unit pcs		ltem No.	•	ack. unit
Test plug module with CAGE CLAMP®,			Spacer plate,			
version using jumper	contact position	in current bar,	modular, grey, mod	ule width 2	mm/0.079 in	١,
grey, module width 8	8 mm/0.315 in, su	itable for all rail-	snap on test plug m	odules 709	2-310 and spa	cer module
mounted terminal blo	ocks series 282 w	ith jumper slots in	709-311 for testing	of rail-mou	ınted terminal	blocks serie
the current bar			284			
	709-310	100 (4 x 25)		709-31	2	100 (4 x 25)
Spacer module,						
for bridging over commoned terminal blocks,						
grey, module width 8	mm/0.315 in					
	709-311	100 (4 x 25)				
Accessories						
Miniature WSB qui	ck marking syst	em or	Strain relief plate			
	WMB multi-m	arking system,	Prop		6 mm <sup>2</sup>	10 mm <sup>2</sup>
000000000	10 strips with 10	) markers each,		2-way	709-332	709-322
	white with black	c printing	1177	4-way	709-334	709-324
	see section 14			6-way	709-336	709-326



Snapping together of test plug and spacer modules to assemble a multipole test plug strip for series 282 (max. 10 poles)



Snapping together of test plug and spacer modules with spacer plates to assemble a multipole test plug strip for series 284 (max. 10 poles)



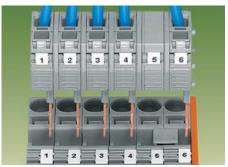
Test plug strips are directly inserted into the jumper contact slots in the current bar (picture shows series 282)



Application notes

For testing of individual circuits WAGO offers as accessory the single-pole test plugs with CAGE CLAMP® up to 6 mm²/AWG 10 for direct contact with the current bar of a terminal block, or single-pole test plug adapters for test plugs 4 mm dia

For serial testing on assembled terminal strips WAGO has developed special multipole (max. 10) modular test plug strips. For testing completely wired terminal strips (also when using horizontal jumpers) the test plug modules with CAGE CLAMP® (version with testing using jumper contact position in current bar) are the ideal solution. For this type of testing the structure of the testing strips is exactly adapted to that of the terminal strip. The contacting of the test plug modules is made directly in the jumper contact position of the terminal blocks to be tested.



Test plug strip with **spacer plates** for testing of rail-mounted terminal blocks series 284 CAGE CLAMP®

0.2 mm<sup>2</sup> - 6 mm<sup>2</sup> AWG 24 - 10



## Banana Plugs (Only for Safety Extra-Low Voltage)

For sockets Ø 4 mm / 0.157 in 0.08 - 2.5 mm<sup>2</sup> 42 V 20 A AWG 28 - 14

0.08 - 2.5 mm<sup>2</sup> 42 V 20 A

For sockets Ø 4 mm / 0.157 in AWG 28 - 14

0.08 - 2.5 mm<sup>2</sup> 42 V 20 A

For sockets Ø 4 mm / 0.157 in AWG 28 - 14

9 – 11 mm / 0.39 in

9 – 11 mm / 0.39 in

9 – 11 mm / 0.39 in







Color	ltem	Pack, unit	Color	Item	Pack. unit
	No.	pcs		No.	pcs
Banana plug	, for sockets Ø 4 mm/0	0.157 in	Banana plug	, for sockets Ø 4 mm/	0.157 in
orange	215-211	50	yellow	215-511	50

Pack. unit ltem pcs Banana plugs, for sockets  $\emptyset$  4 mm/0.157 in 215-111 color mixed 10 each – orange, white, black, blue, yellow





Color	ltem N	Pack. unit	Color	ltem	Pack. unit
	No.	pcs		No.	pcs
Banana plu	g, for sockets Ø 4 mm/0	).157 in	Banana plug	, for sockets Ø 4 mm/	0.157 in
red	215-212	50	blue	215-711	50

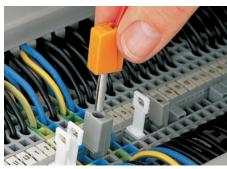


To connect: Press button fully and insert stripped conductor into square entry hole and release.





Color	Item No.	Pack. unit pcs	Color	Item No.	Pack. unit pcs
Banana plug	g, for sockets Ø 4 mm/0	0.157 in	Banana plug	, for sockets Ø 4 mm/	0.157 in
black	215-311	50	grey	215-811	50

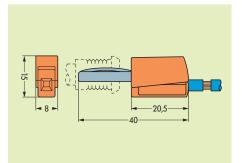


Banana plug used as test plug Picture shows test adapter 209-170





Color	Item No.	Pack. unit pcs	Color	Item No.	Pack. unit pcs	
Banana plug	, for sockets Ø 4 mm/	0.157 in	Banana plug, for sockets Ø 4 mm/0.157 in			
green	215-411	50	green-yellow	215-911	50	
white	215-611	50				



## Insulation Stops for Conductors 0.08 mm<sup>2</sup> - 1.5 mm<sup>2</sup> / AWG 28 - 16



Insulation stop, suitable for all front-entry rail-mounted terminal blocks of series 279

Terminal block width 4 mm / 0.157 in 8 – 9 mm / 0.33 in

Insulation stop, suitable for all front-entry rail-mounted term. blocks of series 280/870 and 880

Terminal block width 5 mm / 0.197 in ■ 8 - 9 mm / 0.33 in Insulation stop, suitable for all front-entry rail-mounted terminal blocks of series 281







	ltem No.	Pack. unit pcs		Item No.	Pack. unit pcs		ltem No.	Pack. unit pcs
Insulation stop, 5 pcs/strip			Insulation stop, 5 pcs /strip			Insulation stop, 5 pcs/strip		
white	279-470	200 strips	white	280-470	200 strips	white	281-470	200 strips
0.08 - 0.2 mm <sup>2</sup> 1 / AWG 28 - 24			0.08 − 0.2 mm <sup>2</sup> <b>1</b> /AWG 28 − 24			0.08 - 0.2 mm <sup>2</sup> <b>1</b> /AWG 28 - 24		
			light grey	280-471	200 strips	light grey	281-471	200 strips
		0.25 - 0.5 mm <sup>2</sup> /AWG 22 - 20			0.25 - 0.5 mm <sup>2</sup> /AWG 22 - 20			
dark grey	279-471	200 strips	dark grey	280-472	200 strips	dark grey	281-472	200 strips
0.25 mm <sup>2</sup> /AWG 22			0.75 - 1 mm <sup>2</sup> /AWG 18			0.75 - 1.5 mm <sup>2</sup> /AWG 18 - 16		
1 0.2 mm <sup>2</sup> /AWG 24 solid			1 0.2 mm <sup>2</sup> /A	WG 24 solid		1 0.2 mm <sup>2</sup> /A	WG 24 solid	
0.14 mm <sup>2</sup> /AWG 26 fine-stranded			0.14 mm <sup>2</sup> //	AWG 26 fine-stranded		0.14 mm <sup>2</sup> //	AWG 26 fine-stranded	

### **Application notes**

For the wiring of programmable logic controllers and microprocessor operated control circuits very small cross sections of fine-stranded conductors are frequently used. These small conductors are so flexible that they deform when pushed against the conductor stop in the terminal blocks. As a result, the conductor insulation may be clamped instead of the copper conductor, resulting in no or very intermittent contact. This problem exists with all types of terminal blocks currently offered on the market. Unnecessary time is spent on fault-tracing as a consequence.

The insulation stop for rail-mounted terminal blocks is the answer to solve these problems. It bundles the cores of fine-stranded conductors automatically when introduced into the clamping unit without any splaying and reduces the conductor entry hole to a defined cross sectional area so that the insulation of these conductors cannot be introduced into the clamping unit.

The insulation stop is available as dividable 5-pole strip for rail-mounted terminal blocks of series 279, 280/870/880 and 281.

With the use of the insulation stop the conductor stripped lengths related to the respective railmounted terminal block, remain unchanged.



Push insulation stop into the conductor entry holes of front-entry rail-mounted terminal blocks.



Introduce stripped, untwisted conductor into insulation stop . . .



... the conductor is bundled ...



 $\dots$  and the conductor insulation is prevented from being pushed into the clamping unit by the positive stop.



## Comb Type Jumper Bars and Alternate Comb Type Jumper Bars Operating Tools

Comb type jumper bar and alternate comb type jumper bar for series 279  $I_N = I_N$  of terminal block

**Operating tool** 

Comb type jumper bar and alternate comb type jumper bar for series 280/769/880  $I_N = I_N$  of terminal block

**Operating tool** 

Comb type jumper bar and alternate comb type jumper bar for series 281  $I_N = I_N$  of terminal block

Operating tool





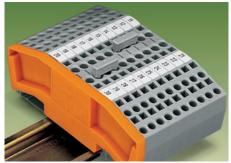


	ltem No.	Pack. unit pcs		ltem No.	Pack. unit pcs		ltem No.	Pack. unit pcs
Comb type jumper bar, insulated			Comb type jumper bar, insulated			Comb type jumper bar, insulated		
2-way	279-482	200 (8 x 25)	2-way	280-482	200 (8 x 25)	2-way	281-482	100 (4 x 25)
3-way	279-483	200 (8 x 25)	3-way	280-483	200 (8 x 25)	3-way	281-483	100 (4 x 25)
10-way	279-490	50 (2 x 25)	10-way	280-490	50 (2 x 25)	5-way	281-485	100 (4 x 25)
						10-way	281-490	50 (2 x 25)
Alternate comb type jumper bar, insulated			Alternate comb type jumper bar, insulated			Alternate comb type jumper bar, insulated		
2-way	279-492	200 (8 x 25)	2-way	280-492	200 (8 x 25)	2-way	281-492	100 (4 x 25)
Operating tool, insulated			Operating tool, insulated			Operating tool, insulated		
2-way	279-432	1	2-way	280-432	1	2-way	280-432	1
3-way	279-433	1	3-way	280-433	1	3-way	280-433	1
10-way	279-440	1	10-way	280-440	1	5-way	281-440	1
see also section 14	4		see also section 1	14		see also section	14	

## **Applications**



Double potential terminal blocks 2-way, 3-way and 10-way comb type jumper bars



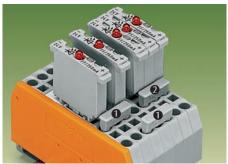
3-conductor double potential terminal blocks Alternate comb type jumper bars



Disconnect terminal blocks for test purposes 10-way comb type jumper bar



4-conductor through terminal blocks, angled version Formation of groups with 3-way comb type jumper bars







Diode terminal blocks 10-way comb type jumper bar

## Push-in Type Wire Jumpers Staggered Jumpers

Wire jumpers

**Conductor lengths:** 

800 V/8 kV/3 Nominal voltage:

Nominal current: 9 A Nominal cross section: 0.75 mm<sup>2</sup>/AWG 18 60/110/250 mm

Staggered jumpers

Nominal voltage: 400 V/6 kV/3





ltem No.	Pack. unit pcs		ltem No.	Pack. unit pcs	
Push-in type wire jumpers,		Staggered jumpers, insulated,			
insulated, grey, conductor cross sectio	n	for terminal blocks series 280, 769 and 880			
0.75 mm <sup>2</sup> /AWG 18,		I <sub>N</sub> 24 A, ⟨Ex⟩ 23 A – 2-conductor terminal blocks			
suitable for rail-mounted terminal block	cks	22 A – 3-conductor terminal blocks			
series 279 (1.5 mm²/AWG 16),		20 A – 4-conductor terminal blocks			
280 (2.5 mm <sup>2</sup> /AWG 14) and		from 1 to 2	780-452	100 (4 x 25)	
281/769/880 (4 mm <sup>2</sup> /AWG 12)		from 1 to 3	780-453	100 (4 x 25)	
		from 1 to 4	780-454	100 (4 x 25)	
Wire length		from 1 to 5	780-455	50 (2 x 25)	
60 mm/2.362 in 249-125	10	from 1 to 6	780-456	50 (2 x 25)	
		from 1 to 7	780-457	50 (2 x 25)	
Wire length		from 1 to 8	780-458	50 (2 x 25)	
110 mm/4.331 in 249-126	10				
		for terminal bloc	cks series 281		
Wire length		I <sub>N</sub> 32 A, ⟨Ex⟩ 26	A		
250 mm/9.843 in 249-127	10	from 1 to 2	781-452	100 (4 x 25)	
		from 1 to 3	781-453	100 (4 x 25)	
		from 1 to 4	781-454	100 (4 x 25)	
		from 1 to 5	781-455	50 (2 x 25)	
		from 1 to 6	781-456	50 (2 x 25)	
Note:					
Push wire jumper down FIRMLY until F	FULLY inserted!				

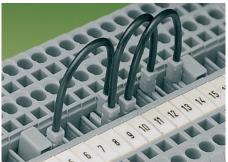
## Wire jumpers

When installing machines or control systems, it is often necessary to make an additional connection between two terminal blocks that are not directly adjacent on the rail. In such cases, the new plug-in, touchproof wire jumper is of great help.

Suitable for rail-mounted terminal blocks series 279 (1.5 mm²/AWG 16), 280 (2.5 mm²/AWG 14) and 281/769 and 880 (4 mm²/AWG 12), this jumper is available in 3 different wire lengths: 60 mm, 110 mm and 250 mm. This allows up to 60 terminal blocks between the two blocks being commoned (see table below) table below).

"n" = number of series 279, 280/769/880 and 281 terminal blocks which can be skipped with a wire jumper.

## **Application notes**



Series 280 and 281 will accept two wire jumpers, so it is possible to bridge several terminal blocks together. Since series 279 will only accept one wire jumper per terminal block, the bridging of several terminal blocks is not possible. Series 280, 769, 281 and 880 permit the introduction of a wire jumper and a adjacent jumper into the same block at the same time.



Staggered jumper for sophisticated wiring jobs

Terminal blocks Series	Wire jumpers Item No.	"n"
279 1.5 mm <sup>2</sup> /AWG 16	249-125 249-126 249-127	13 25 60
280 2.5 mm <sup>2</sup> /AWG 14 769, 880 4 mm <sup>2</sup> /AWG 12	249-125 249-126 249-127	10 20 48
281 4 mm²/AWG 12	249-125 249-126 249-127	9 17 40





Compact and versatile: WAGO front-entry rail-mounted terminal blocks of series 870

## **COMPACT Rail-Mounted Terminal Blocks**





Through terminal blocks and ground (earth) conductor terminal blocks

- for DIN 35 and DIN 15 0.08 mm² to 2.5 mm²/4 mm² / AWG 28 - 12 Series 870 \_\_\_\_\_\_ 3.6 - 3.7



Double potential terminal blocks 0.08 mm<sup>2</sup> to 2.5 mm<sup>2</sup>/4 mm<sup>2</sup> / AWG 28 – 12 Series 870 \_\_\_\_\_\_ 3.7



## Multilevel terminal blocks

- Double deck 0.08 mm<sup>2</sup> to 2.5 mm<sup>2</sup>/4 mm<sup>2</sup> / AWG 28 – 12 Series 870 \_\_\_\_\_\_ 3.8 - Triple deck 0.08 mm<sup>2</sup> to 2.5 mm<sup>2</sup>/4 mm<sup>2</sup> / AWG 28 – 12 Series 870 \_\_\_\_\_\_ 3.9



### Accessories

- Insulation stops \_\_\_\_\_\_ 2.43 - Secondary connection modules \_\_\_\_\_\_ 3.11

- Group marker carriers \_\_\_\_\_\_ 3.11



# COMPACT Rail-Mounted Terminal Blocks, Series 870 – Product Summary –

Series 870 Through terminal blocks for DIN 35 rail



2-conductor terminal block mm²/AWG 2.5/4/12



3-conductor terminal block mm²/AWG | 2.5/4/12 | Page | 3.6



4-conductor terminal block mm²/AWG | 2.5/4/12 | Page | 3.6

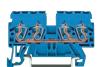
#### Series 870 Ex i through terminal blocks for DIN 35 rail



2-conductor terminal block mm²/AWG | 2.5/4/12 | Page | 3.6



 $\begin{array}{c|c} \text{3-conductor terminal block} \\ \hline \text{mm}^2/\text{AWG} & 2.5/4/12 \\ \hline \text{Page} & 3.6 \\ \end{array}$ 



4-conductor terminal block mm²/AWG | 2.5/4/12 | Page | 3.6

#### Series 870 Ground (earth) conductor terminal blocks for DIN 35 rail



 2-conductor terminal block mm²/AWG
 2.5/4/12

 Page
 3.6



 $\begin{array}{c|c} \text{3-conductor terminal block} \\ \hline \text{mm}^2/\text{AWG} & 2.5/4/12 \\ \hline \text{Page} & 3.6 \\ \end{array}$ 



4-conductor terminal block mm²/AWG | 2.5/4/12 Page | 3.6

#### Series 870 Double potential terminal blocks for DIN 35 rail



Double potential terminal block mm²/AWG | 2.5/4/12 Page 3.7

## Series 870 Through terminal blocks for DIN 15 rail



 2-conductor terminal block mm²/AWG | 2.5/4/12

 Page | 3.7

#### Series 870 Ex i through terminal blocks for DIN 15 rail



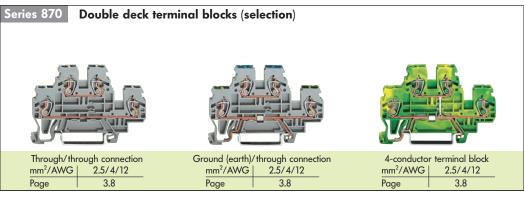
 $\begin{array}{c|c} \text{2-conductor terminal block} \\ \underline{\text{mm}^2/\text{AWG}} & 2.5/4/12 \\ \hline \text{Page} & 3.7 \\ \end{array}$ 

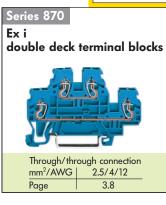
#### Series 870 Ground (earth) conductor terminal blocks for DIN 35 rail

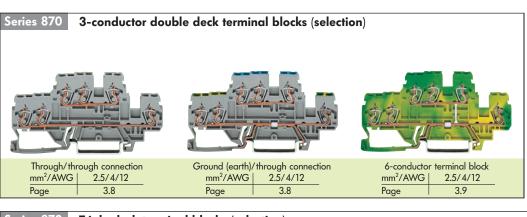


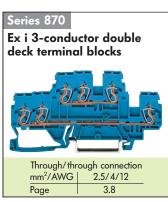
 $\begin{array}{c|c} \text{2-conductor terminal block} \\ \hline \text{mm}^2/\text{AWG} & 2.5/4/12 \\ \hline \text{Page} & 3.7 \\ \end{array}$ 

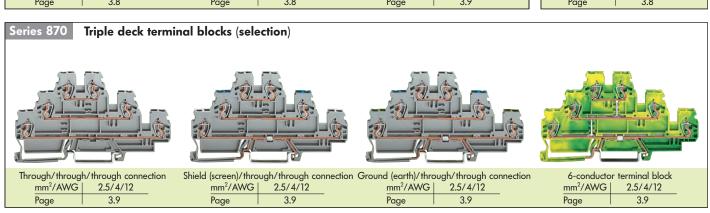


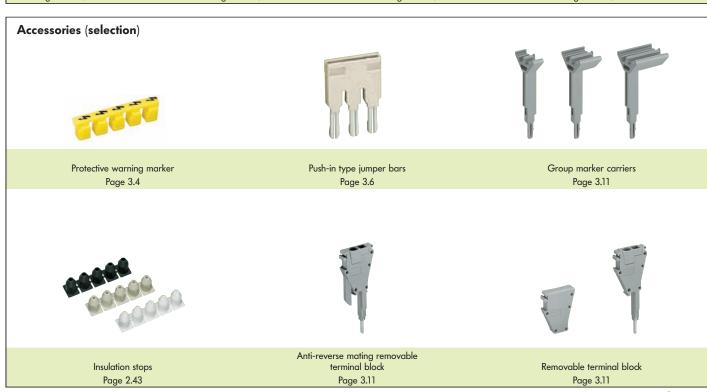






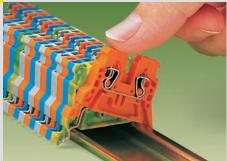






## COMPACT Rail-Mounted Terminal Blocks with CAGE CLAMP® for DIN 15 and DIN 35 Rails, Series 870 . . .

#### **Assembly**



Assembly of a rail-mounted terminal block on the DIN 35 rail

#### Removal



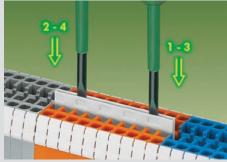
Removal of a terminal block from the assembly

#### Insulation stop



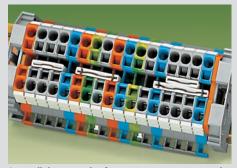
Insertion of insulation stop. (see page 2.43)

#### Push-in type jumper bar system



Push jumper bars down firmly until fully inserted! When using multi-pole bars, push alternately on right and then left side, successively until installed.
Push-in type jumper bars
1 – 3 – 5 – 7.../1 – – 4 – – 7 upon request

#### Push-in type jumper bar system



2 parallel receptacles for jumpers in one terminal

**Testing** 



Testing is possible using a wired strip in the very same way as test plugs



**CAGE CLAMP®** clamps the following copper wires:\*

\* For aluminum wire see notes in section 15!

#### Protective warning marker



Protective warning marker for 5 terminal blocks yellow – Item No. 280-405



stranded

#### Commoning



Terminal blocks with larger cross sections can be commoned to term. bl. with smaller cross sections

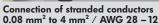


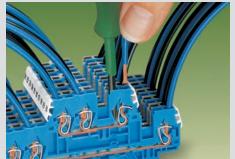
fine stranded, also with tinned single strands

## ... Description and Handling

### CAGE CLAMP® connection





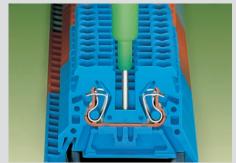


## Multi-level and multi-connector terminal blocks



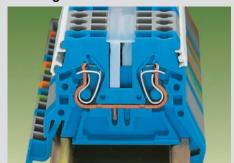
Double and triple deck terminal blocks with internal commoning acting as 4- and 6-conductor terminal blocks

#### **Testing**



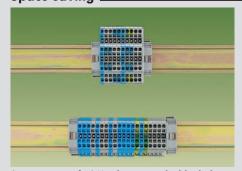
Testing with phase testing device, possible with 1-pole voltage tester too

#### Marking

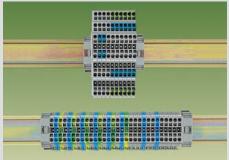


Marking with WMB multi-marking system or miniature WSB quick marking system

#### Space saving



Space saving of 50 % when using double deck terminal blocks



Space saving of 67 % when using triple deck terminal blocks



fine-stranded wire with crimped ferrule

#### Marker strips



Transparent marker strips (note: jumpers below may be viewed)



fine-stranded wire with crimped pin terminal





## Through/Ground (Earth) Conductor and Double Potential Terminal Blocks 2.5 mm<sup>2</sup>/4 mm<sup>2</sup> / AWG 12 Series 870

0.08 **– 2.5** mm<sup>2</sup>/4 mm<sup>2</sup> **0**500 V/6 kV/3 **2**24 A

\* calus Keda CCAKeda 🚭 🐨 GL LR

□ 6 – 7 mm / 0.26 in

AWG 28 - 12 300/600 V, 20/5 A\*\*

Terminal block width 5 mm / 0.197 in

0.08 **- 2.5** mm<sup>2</sup>/4 mm<sup>2</sup> **1** 500 V/6 kV/3 **2** 

AWG 28 - 12 300/600 V, 20/5 A\*\*

0.08 **– 2.5 mm<sup>2</sup>/4 mm<sup>2</sup> 0**500 V/6 kV/3 **2**24 A

Terminal block width 5 mm / 0.197 in

□ 6 – 7 mm / 0.26 in

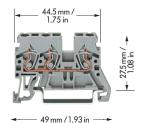
AWG 28 - 12 300/600 V, 20/5 A\*\*

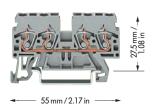
Terminal block width 5 mm / 0.197 in  $\bigcirc$  6 – 7 mm / 0.26 in

\* c911 us CCAKEDA 💖 GL LR

\* a**91**0 us 🍪 🐨 GL LR







	ltem No.	Pack. unit pcs		Item No.	Pack. unit pcs		ltem No.	Pack. unit pcs
2-conductor throu	gh terminal block	s, for DIN 35 rail	3-conductor thro	ugh terminal b	locks, for DIN 35 rail	4-conductor thr	ough terminal k	olocks, for DIN 35 rd
grey	870-901	100	grey	870-681	100	grey	870-831	100
blue	870-904 3	100	blue	870-684 3	100	blue	870-834 🕙	100
orange	870-902 🛑	100	orange	870-682	100	orange	870-832	100
light grey (Ex)	870-909 🔘	100						
2-conductor grou	nd (earth) term. b	I., for DIN 35 rail	3-conductor grou	und (earth) terr	n. bl., for DIN 35 rail	4-conductor gro	ound (earth) terr	<b>n. bl.,</b> for DIN 35 rd
green-yellow	870-907 🌔	100	green-yellow	870-687 🌔	100	green-yellow	870-837 🌔	100
green-yellow (Ex)	870-907/999-95	<b>0</b> 🕕 100						
Attention! These	ground (earth) con	ductor terminal	Attention! These	ground (earth)	conductor terminal	Attention! These	e ground (earth)	conductor termina
blocks cannot be			block cannot be	commoned!		block cannot be	e commoned!	
Accessories s	erie 870	Appr	opriate marking syste	em WMB/M	ini-WSB (see sectio	n 14)		
End and intermed	liate plate, 2 mm/	0.079 in thick	End and interme	diate plate, 1 r	nm/0.039 in thick	End and interm	ediate plate, 1	mm/0.039 in thick
	orange 870	<b>-924</b> 100 (4×25)		orange	<b>870-934</b> 100 (4×25)		orange	870-944 100 (4×2
	grey <b>870</b>	<b>-923</b> 100 (4×25)		grey	<b>870-933</b> 100 (4 x 25)		grey	<b>870-943</b> 100 (4×25
Separator, oversiz	ed, 2 mm/0.079 in	thick	Separator, oversize	zed, 1 mm/0.03	9 in thick	Separator, overs	sized, 1 mm/0.03	9 in thick
		<b>-929</b> 100 (4×25)		orange	<b>870-947</b> 100 (4 x 25)		orange	<b>870-949</b> 100 (4×2)
	grey <b>870</b>	<b>-928</b> 100 (4×25)		grey	<b>870-946</b> 100 (4×25)		grey	<b>870-948</b> 100 (4×25
Insulation stop			Insulation stop 4, 5 pcs/strip			Insulation stop	· .	
A0000		<b>-470</b> 200 strips	A0000		<b>280-470</b> 200 strips	A0000		<b>280-470</b> 200 strips
2000000	light grey 280	<b>-471</b> 200 strips	2000000	light grey	<b>280-471</b> 200 strips	1000000	light grey	<b>280-471</b> 200 strips
0955	dark grey 280	<b>-472</b> 200 strips	09	dark grey	<b>280-472</b> 200 strips	000	dark grey	<b>280-472</b> 200 strips
Push-in type jum	<b>per bars,</b> light grey	, insulated,	Push-in type jum	<b>per bars,</b> light	grey, insulated,	Push-in type jumper bars, light grey, insulated,		
	I <sub>N</sub> 18 A			I <sub>N</sub> 18 A			I <sub>N</sub> 18 A	
	2-way <b>870</b>	<b>-402</b> 200 (8 × 25)		2-way	<b>870-402</b> 200 (8 x 25)		2-way	<b>870-402</b> 200 (8 x 2
	3-way <b>870</b>	<b>-403</b> 200 (8×25)		3-way	<b>870-403</b> 200 (8 x 25)		3-way	870-403 200 (8×2
	4-way <b>870</b>	<b>-404</b> 200 (8 × 25)		4-way	<b>870-404</b> 200 (8 × 25)		4-way	870-404 200 (8×2
# # #	5-way <b>870</b>	<b>-405</b> 100 (4×25)	# # #	5-way	<b>870-405</b> 100 (4×25)	000	5-way	870-405 100 (4×25
	:	:		:	:		:	:
	10-way <b>870</b>	<b>-410</b> 100 (4×25)		10-way	<b>870-410</b> 100 (4×25)		10-way	870-410 100 (4×2
Push-in type jum	<b>per bars,</b> light grey	, insulated,	Push-in type jum		grey, insulated,	Push-in type jui	<b>mper bars,</b> light	grey, insulated,
	I <sub>N</sub> 18 A			I <sub>N</sub> 18 A			I <sub>N</sub> 18 A	
	from 1 to 3 <b>870</b>	<b>-433</b> 200 (8 x 25)		from 1 to 3	<b>870-433</b> 200 (8 x 25)		from 1 to 3	870-433 200 (8×25
= = = =	from 1 to 4 870	<b>-434</b> 200 (8 x 25)	= = = =	from 1 to 4	<b>870-434</b> 200 (8 x 25)	= = = = = = = = = = = = = = = = = = = =	from 1 to 4	870-434 200 (8×2
Jucultury.	from 1 to 5 870	<b>-435</b> 100 (4×25)	Juculeury	from 1 to 5	<b>870-435</b> 100 (4 x 25)	(Alegania)	from 1 to 5	870-435 100 (4×25
	:	:		:	:	U	:	:
	from 1 to 10 <b>870</b>	<b>-440</b> 100 (4×25)		from 1 to 10	<b>870-440</b> 100 (4×25)		from 1 to 10	<b>870-440</b> 100 (4×25
Marker strips, tra	nsparent, for centra	l marking	Marker strips, tra	insparent, for ce	ntral marking	Marker strips, to	ransparent, for ce	entral marking
	1 m / 3'33" long;			1 m / 3'33" lo	ong;		1 m / 3'33" ld	ong;
	i iii o oo long,							
	7.5 mm / 0.295 in	wide		7.5 mm / 0.29	95 in wide		7.5 mm / 0.2°	95 in wide

Ex Ex e II application in preperation

4 See application notes on page 2.43

3 Suitable for Ex i applications

1 Max. diameter of insulation 4.4 mm/0.173 in

2 500 V = rated voltage

(see also section 15)

6 kV = rated surge voltage 3 = pollution degree



0.08 **– 2.5** mm²/4 mm² **①** 500 V/6 kV/3 **②** 24 A

AWG 28 – 12 300 V, 20 A\*\* 300 V, 25 A\*\*

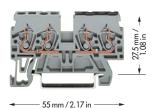
Terminal block width 5 mm / 0.197 in

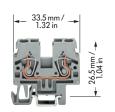
6 – 7 mm / 0.26 in

0.08 **– 2.5 mm<sup>2</sup>/4 mm<sup>2</sup> 0**500 V/6 kV/3 **9**24 A

AWG 28 - 12 300/600 V, 20/5 A\*\*

Terminal block width 5 mm / 0.197 in □ 6 – 7 mm / 0.26 in





**◄** 34.5 mm / 1.36 in ►

	ltem No.	Pack. unit pcs			Item No.	Pack. unit pcs
Double pote	ential terminal blo	ock, for DIN 35 rail		2-conductor t	hrough terminal	blocks, for DIN 15 re
grey	870-826 🥘	100		grey	870-911	100
				blue	870-914 ③	100
				orange	870-912 🛑	100
				2-conductor g	round (earth) te	rm. bl., for DIN 15 r
				green-yellow	870-917 🌔	100
Attention!						
These doub	ole potential termi	nal block cannot be		Attention! The	se ground (eart	h) conductor termin
commoned!	!			block cannot l	be commoned!	
Accessor	ies serie 870	Арр	priate marking system WMB/Mini-WSB (s	see section 14)		
		App 1 mm/0.039 in thick	oriate marking system <b>WMB/Mini-WSB</b> (s		mediate plate, 2	? mm / 0.079 in thick
			oriate marking system <b>WMB/Mini-WSB</b> (s		mediate plate, 2	
	termediate plate,	1 mm/0.039 in thick	oriate marking system <b>WMB/Mini-WSB</b> (s		•	2 mm / 0.079 in thick <b>870-924</b> 100 (4×2 <b>870-923</b> 100 (4×2
	termediate plate, orange	1 mm/0.039 in thick 870-944 100 (4×25)	oriate marking system <b>WMB/Mini-WSB</b> (s		orange	<b>870-924</b> 100 (4×2
End and int	termediate plate, orange	1 mm/0.039 in thick 870-944 100 (4×25) 870-943 100 (4×25)	oriate marking system <b>WMB/Mini-WSB</b> (s	End and inter	orange	<b>870-924</b> 100 (4×2 <b>870-923</b> 100 (4×2
End and int	termediate plate, orange grey	1 mm/0.039 in thick 870-944 100 (4×25) 870-943 100 (4×25)	oriate marking system <b>WMB/Mini-WSB</b> (s	End and inter	orange grey	<b>870-924</b> 100 (4×2 <b>870-923</b> 100 (4×2
End and int	orange grey	1 mm/0.039 in thick <b>870-944</b> 100 (4×25) <b>870-943</b> 100 (4×25) 039 in thick	oriate marking system <b>WMB/Mini-WSB</b> (s	End and inter	orange grey	870-924 100 (4×2 870-923 100 (4×2



Terminal block marking directly on the terminal block either with miniature WSB or WMB markers

WAGO front-entry double potential terminal blocks are space savers. Two independent through terminal blocks are placed in one insulated housing on one level. The width of the housing is only 5 mm/0.197 in. Compared to standard through terminal blocks, the width is only 2.5 mm/0.098 in for a total height of only 27.5 mm/1.08 in from the upper edge of the carrier rail. Input and output contacts of one circuit are placed on the same side of the terminal block. Both circuits can be individually marked according to input and output.



Protective warning marker for 5 terminal blocks yellow 280-405  $100 (4 \times 25)$ 



**Assembly**Snap individual terminal blocks onto carrier rail DIN 15 and engage.

Open assembly by laterally sliding terminal blocks with a screwdriver and remove them from the rail.



### Double Deck and Triple Deck Terminal Blocks 2.5 mm<sup>2</sup>/4 mm<sup>2</sup>/ AWG 12, Series 870

0.08 **-2.5** mm<sup>2</sup>/4 mm<sup>2</sup> **0** 500 V/6 kV/3 **2** 24 A

AWG 28 - 12 300/600 V, 20/5 A\*\*

Terminal block width 5 mm / 0.197 in □**■** 6 – 7 mm / 0.26 in

\* CAKETA CCAKETA © W GL BV LR NV

 $0.08 - 2.5 \text{ mm}^2 / 4 \text{ mm}^2$ 500 V/6 kV/3 **2** 

Terminal block width 5 mm / 0.197 in 3 = 6 - 7 mm / 0.26 in

\* 🗫 us Keda CCAKEDA 🕞 🐨 GL BV LR NV

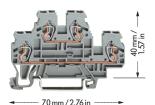
0.08 **- 2.5** mm<sup>2</sup>/4 mm<sup>2</sup> **0** 500 V/6 kV/3 **2** AWG 28 - 12 300/600 V, 20/5 A\*\*

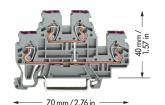
300/600 V, 20/5 A\*\* Terminal block width 5 mm / 0.197 in

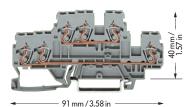
AWG 28 - 12

□ 6 – 7 mm / 0.26 in

\* c911us CCAIKEDA 💝 GL LR







	Item No.	Pack. unit pcs	ltem No.	Pack. u pcs	nit		Item No.	Pack. unit pcs
Double deck te	rminal block, for DIN 35	rail rail	Double deck terminal block, for DIN 35 rail			3-cond. double deck terminal block, for DIN 35 rail		
Through/through terminal blocks,			4-conductor through terminal block,			Through/through t	erminal blocks,	
housing color gre	<b>Э</b> У		internal commoning, housing	color grey,		housing color grey		
L/L	870-501	50	conductor entry position color	ed in violet		L/L	870-531	50
N/L	870-502	50	L 870-5	<b>D8</b> 50		N/L	870-532	50
L/N	870-503	50				L/N	870-533	50
housing color blu	Je		4-conductor through termin	nal block,		housing color blue		
N/N	870-504 🜖	50	internal commoning, housing	color blue,		N/N	870-534 🜖	50
housing color lig	ht grey		conductor entry position color	red in violet				
L/L €x	870-961	50	N 870-5	<b>09  6</b> 50				
Other terminal	Other terminal blocks with the same shape							
diode/LED	870-5xx/	page 7.64						







-	70 mm/2.7	76 in	<b>→</b> 70 mm / 2.76 in →			4		
	Item No.	Pack. unit pcs		Item No.	Pack. unit pcs		Item No.	Pack. unit pcs
Double deck terminal block, for DIN 35 rail			Double deck te	<mark>rminal block,</mark> f	or DIN 35 rail	3-cond. dou	ble deck terminal b	<b>block,</b> for DIN 35 rail
Ground (earth) c	onductor/thro	ough terminal blocks,	4-conductor gr	ound (earth) te	rminal block,	Ground (ear	th) conductor/throu	gh terminal blocks,
housing color grey	у		internal common	ing, housing col	or green-yellow	housing color	grey	
PE/N	870-517	50	PE	870-507	50	PE/N	870-535	50
PE/L	870-527	50				PE/L	870-536	50
End and interme	ediate plate, 2	2 mm/0.079 in thick	End and intermediate plate, 2 mm/0.079 in thick			End and intermediate plate, 2 mm/0.079 in thick		
	orange	<b>870-519</b> 100 (4×25)		orange	<b>870-519</b> 100 (4×25)		orange	870-574 100 (4×25)
	grey	<b>870-518</b> 100 (4×25)		grey	<b>870-518</b> 100 (4×25)		grey	870-573 100 (4×25)
Accessories	serie 870	Appr	opriate marking sy	stem <b>WMB</b> /	Mini-WSB (see section	14)		
Insulation stop	3, 5 pcs/strip		Marker strips,	transparent, for	central marking			
. 4000	white	<b>280-470</b> 200 strips		1 m / 3'33"	long;	<ul><li>Max. diam</li></ul>	eter of insulation 4.4	4 mm / 0.173 in
000000000	light grey	<b>280-471</b> 200 strips		7.5 mm/0	.295 in wide	2 500 V = rated voltage		
009	dark grey	<b>280-472</b> 200 strips		plain	<b>709-196</b> 1		rated surge voltage pollution degree	
Push-in type jun	ner hars ligh	t arey insulated L. 18 A	Push-in type in	mper hare lia	nt arey insulated	/aaa alaa a		

Push-in type jumper bars, light grey, insulated,

MULLICH

I<sub>N</sub> 18 A

from 1 to 3 870-433 200 (8 x 25)

from 1 to 4 870-434 200 (8 x 25)

from 1 to 5 870-435 100 (4 x 25)

from 1 to 10 870-440 100 (4 x 25)

Push-in type jumper bars, light grey, insulated, I<sub>N</sub> 18 A

2-way

3-way

4-way

5-way

10-way

870-402 200 (8 x 25)

870-403 200 (8 x 25)

870-404 200 (8 x 25)

870-405 100 (4×25)

870-410 100 (4×25)

(see also section 15)

(Ex) Ex e II application in preparation

**4** See application notes on page 2.43

3 Suitable for Ex i applications

<sup>\*</sup> For further approvals with corresponding ratings see section 15.

<sup>\*\* 10</sup> A for push-in type jumper bars with different potentials, placed in parallel



0.08 **– 2.5** mm<sup>2</sup>/4 mm<sup>2</sup> **0** 500 V/6 kV/3 **2** 24 A

AWG 28 - 12 300/600 V, 20/5 A\*\*

 $0.08 - 2.5 \text{ mm}^2/4 \text{ mm}^2$ 500 V/6 kV/3 **②** 

AWG 28 - 12 300/600 V, 20/5 A\*\*

0.08 **– 2.5 mm<sup>2</sup>/4 mm<sup>2</sup> ①**500 V/6 kV/3 **②**24 A

Terminal block width 5 mm / 0.197 in

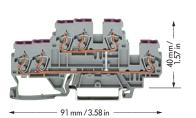
AWG 28 - 12 300/600 V, 20/5 A\*\*

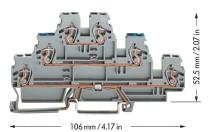
Terminal block width 5 mm / 0.197 in \_\_\_\_ 6 - 7 mm / 0.26 in

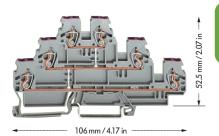
□ 6 – 7 mm / 0.26 in <sup>k</sup> ₀¶us Keda CCAKEDA 🧐 ❤️ GL BV LR NV

\_\_\_\_ 6 - 7 mm / 0.26 in \* calus CCAKEDA 💝 GL LR \* 🗫 us Kedâ CCAKEDÂ 🚭 👺 GL BV LR NV

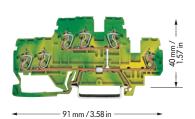
Terminal block width 5 mm / 0.197 in

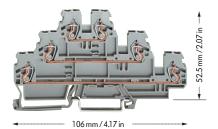


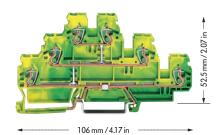




	ltem No.	Pack. unit pcs		Item No.	Pack. unit pcs		Item No.	Pack. unit pcs
Double de	eck terminal block, for DIN	35 rail	Triple deck terminal block, for DIN 35 rail			Triple deck terminal block, for DIN 35 rail		
6-conductor through terminal block,			Shield (screen)/th	nrough/through terr	ninal blocks,	6-conductor thr	ough terminal blo	ck,
internal commoning, housing color grey,			housing color grey	,		internal commoni	ng, housing color gr	-еу,
conductor entry position colored in violet			Shield(scr.)/N/L	870-558	50	conductor entry	position colored in vi	iolet
L	870-538	50	Shield(scr.)/L/L	870-559	50	L	870-556	50
6-conduct	tor through terminal block,		Ground (earth)/t	hrough/through ter	minal blocks,			
internal co	mmoning, housing color blue,		housing color grey	,				
conductor	entry position colored in viole	et	PE/N/L	870-567	50			
Ν	870-539 🜖	50	PE/L/L	870-577	50			
			Other terminal b	locks with the same	e shape			
			diode/LED	870-5xx/	. page 7.66			







	ltem No.	Pack. unit pcs		ltem No.	Po po	ick. unit		ltem No.	Pack. unit pcs
Double deck terminal block, for DIN 35 rail			Through/through/through terminal blocks,			s,	Triple deck terr	<b>ninal block,</b> for	DIN 35 rail
6-conductor ground (earth) terminal block,			housing color gr	еу			6-conductor gr	ound (earth) te	rminal block,
internal commoning, housing color green-yellow			L/L/L	870-551		50	internal common	ing, housing col	or green-yellow
PE	870-537	50	L/L/N	870-553		50	PE	870-557	50
			housing color lig	ht grey					
			L/L/L €x	870-951		50			
End and intermed	liate plate, 2	2 mm/0.079 in thick	End and intermediate plate, 2 mm/0.079 in thick			End and intermediate plate, 2 mm/0.079 in thick			
	orange	<b>870-574</b> 100 (4×25)		orange	870-569	50 (2 x 25)		orange	<b>870-569</b> 50 (2 x 25
	grey	<b>870-573</b> 100 (4×25)	THE REAL PROPERTY.	grey	870-568	50 (2 x 25)		grey	<b>870-568</b> 50 (2 x 25
Accessories se	erie 870	Appr	opriate marking sy	stem WMB/N	Nini-WSE	(see section	14)		
Insulation stop 4	, 5 pcs/strip		Marker strips,	transparent, for a	entral mark	ing			
4000	white	280-470 200 strips		1 m / 3'33"	long;		Max. diameter of insulation 4.4 mm/0.173 in		
000	16 1 .	000 477 000		75 (0)	2051		500 V − rat	ad valtage	



7.5 mm / 0.295 in wide **709-196** 1 plain

Push-in type jumper bars, light grey, insulated,

I<sub>N</sub> 18 A from 1 to 3 870-433 200 (8 x 25) from 1 to 4 870-434 200 (8 x 25) ucuccu from 1 to 5 870-435 100 (4 x 25)

from 1 to 10 870-440 100 (4 x 25)

- 500 V = rated voltage 6 kV = rated surge voltage 3 = pollution degree
- (see also section 15) Ex Ex e II application in preperation
- 3 Suitable for Ex i applications
- **4** See application notes on page 2.43



### Removable Terminal Block Modules with CAGE CLAMP®, Series 870 **Description**

Assembly .



Snap together individual terminal blocks and spacer modules to create custom removable terminal block modules (10-pole max.)



Removable terminal block module with CAGE CLAMP® connection (0.25 mm² - 2.5 mm² / AWG 24 – 14), with strain relief plate and marker position for miniature WSB or WMB marking.



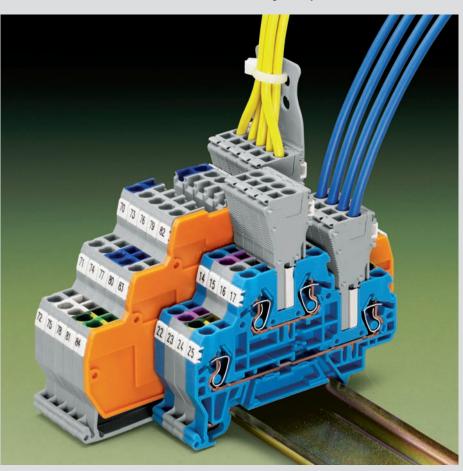
The removable term. bl. modules can be directly inserted into the jumper contact slot in the current bar of the receiving rail-mounted term. block.

Term. blocks can also be commoned utilizing a comb style jumper parallel to the jumper contact slot being used by the removable term. bl. module.

#### CAGE CLAMP® connection



These modules are used when additional or removable connections are required (can be used as a permanent connection or a test plug). Wiring of the removable terminal block module is possible whether or not the module is plugged into the railmounted terminal block assembly.



#### Anti-reverse mating modules





Use anti-reverse mating modules at both ends of the remov. term. bl. module to prevent reverse mating. Three anti-reverse mating modules are necessary when snapping more than 7 modules together.



**CAGE CLAMP®** clamps the following copper wires:\*



stranded

#### **Testing**



Testing is also possible using a prewired removable terminal block module just like traditional test



fine-stranded, also with tinned single strands

### Accessories for Series 870, Removable Terminal Block Modules and Group Marker Carriers



0.25 **– 2.5** mm<sup>2</sup> 500 V/6 kV/3 18 A

\_\_\_\_\_ 10 mm / 0.38 in

AWG 24 - 14

18 A | Module width 5 mm / 0.197 in 0.25 - **2.5** mm<sup>2</sup> 500 V/6 kV/3 18 A AWG 24 - 14

Module width 5 mm / 0.197 in 10 mm / 0.38 in

WAGO group marker carriers for terminal blocks series 869, 870

Module width 5 mm / 0.197 in Module width 10 mm / 0.394 in Module width 15 mm / 0.591 in









ltem No.	Pack. unit pcs	Item No.	Pack. unit pcs	Item No.	Pack. unit pcs
Anti-reverse mating removable t	erminal block	Removable terminal block with C	AGE CLAMP®,	Group marker carrier,	
with CAGE CLAMP®,				using jumper contact position in curre	nt bar
version using jumper contact position	n in current bar,	version using jumper contact position	in current bar,	5 mm/0.197 in wide <b>870-184</b>	50
grey, module width 5 mm/0.197 in,		grey, module width 5 mm/0.197 in,		10 mm/0.394 in wide <b>870-183</b>	50
suitable for all rail-mounted termina	blocks series 870	suitable for all rail-mounted terminal	blocks series 870	15 mm/0.591 in wide <b>870-182</b>	50
with jumper contact slots in current b	oar	with jumper contact slots in the curre	nt bar		
870-425	100 (4 x 25)	870-426	100 (4 x 25)		
		Spacer module,		Attention!	
		for bridging over terminal blocks, gre	÷y,	Ground (earth) conductor terminal	blocks and
		module width 5 mm/0.197 in		double potential terminal blocks h	ave no jumper
		870-427	100 (4 x 25)	contact slots!	

-				
Δ	-	cer	<b>NPI</b>	00

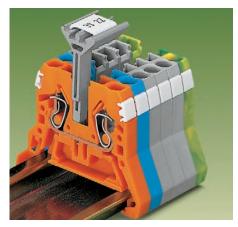
Miniature WSB quid	k marking card,		Miniature WSB quic	k marking card	l,
	10 strips with 10 r	narkers each,		10 strips with 10	) markers each,
	white with black p	orinting		white with black printing	
	see section 14			see section 14	
5 mm/0.197 in wide	248-5	5 cards	5 mm/0.197 in wide	248-5	5 cards
10 mm/0.394 in wide	264-9	5 cards	10 mm/0.394 in wide	264-9	5 cards
WMB multi marking	system,		WMB multi marking	system,	_
Control Co.	10 strips with 10 markers each,		WASD \$10.507	10 strips with 10	) markers each,
	white with black printing		atatat datatuntatu,	white with black printing	
	see section 14		HIR CANAL TO BE	see section 14	
5 mm/0.197 in wide	793-5	5 cards	5 mm/0.197 in wide	793-5	5 cards
Strain relief plate, g	ırey		Strain relief plate, g	ırey	
00	can be snapped	onto secondary	00	can be snapped onto secondary	
00	connection modu	les	00	connection modules	
6 mm/0.236 in wide	734-327	100 (4×25)	6 mm/0.236 in wide	734-327	100 (4×25)
12.5 mm/0.492 in wide	e <b>734-328</b>	100 (4×25)	12.5 mm/0.492 in wid	e <b>734-328</b>	100 (4×25)
25 mm/0.984 in wide	e <b>734-329</b>	100 (4×25)	25 mm/0.984 in wide	e <b>734-329</b>	100 (4×25)
35 mm/1.38 in wide	734-326	100 (4×25)	35 mm/1.38 in wide	734-326	100 (4×25)

#### **Application notes**

For additional-wire connections, as well as serial testing on terminal block assemblies, WAGO has developed special multi-pole modular removable terminal blocks.

The structure of the removable terminal block module can be specifically adapted to the terminal block assembly using spacer modules if necessary (see left page).

The connection of the modules is made directly in the jumper contact positions of the terminal blocks to be tested / tapped, even though a comb style jumper bar is already being used.



In addition to the plastic marker strips, group marker carriers are now available for the WMB and WSB marking systems. They can be mounted in parallel to a comb style jumper bar using the open jumper contact slot. It is also very useful if the marker receptacles on the side of the terminal block are hidden.

The marker carrier is available in 5 mm/0.197 in, 10 mm/0.394 in and 15 mm/0.591 in widths.

#### Attention

Marker carriers are not suitable for ground (earth) conductor terminal blocks and double potential terminal blocks as they have no jumper contact slots.





Ideal for confined spaces: WAGO miniature rail-mounted terminal blocks.

### Miniature Rail-Mounted Terminal Blocks





Through terminal blocks and ground (earth) conductor terminal blocks – for DIN 35 and DIN 15 0.08 mm² to 2.5 mm² / AWG 28 – 12 Series 264 \_\_\_\_\_\_\_ 4.4 – 4.5



## Miniature Rail-Mounted Terminal Blocks, Series 264 - Product Summary -

Series 264

Miniature through terminal blocks for DIN 35 rail





2- and 4-conductor terminal blocks mm<sup>2</sup>/AWG | 2.5

Page

2- and 4-conductor terminal blocks mm<sup>2</sup>/AWG | 2.5 Page

Miniature through terminal blocks for DIN 35 rail for hazardous environments Ex i and Ex e II

Miniature ground (earth) conductor terminal blocks for DIN 35 rail





2- and 4-conductor terminal blocks mm²/AWG | 2.5 Page

4-conductor terminal block mm<sup>2</sup>/AWG | 2.5 Page

Series 264 Miniature through terminal blocks for DIN 15 rail





2- and 4-conductor terminal blocks  $\begin{array}{c|c} \text{mm}^2/\text{AWG} & 2.5 \end{array}$ 

2- and 4-conductor terminal blocks mm²/AWG 2.5

Miniature through terminal blocks for DIN 15 rail for hazardous environments Ex i and Ex e II

Miniature ground (earth) conductor terminal blocks for DIN 15 rail



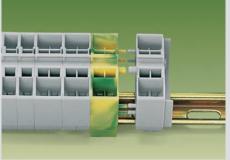


2- and 4-conductor terminal blocks  $\begin{array}{c|c} \text{mm}^2/\text{AWG} & 2.5 \end{array}$ Page

4-conductor terminal block mm²/AWG | 2.5

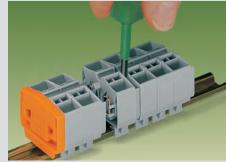
# Miniature Rail-Mounted Terminal Blocks with CAGE CLAMP® for DIN 15 and DIN 35 Rails, Series 264 – Description and Handling

#### **Assembly**



Quick assembly keys prevent reverse mounting

#### Removal .



Separate terminal strip and slide individual terminal block laterally . . .



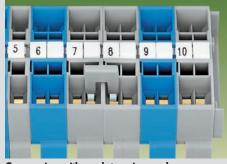
... and remove from the carrier rail

#### Commoning

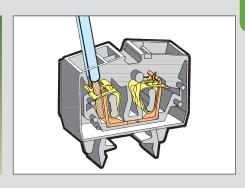


Commoning with comb type jumper bar

#### Commoning



Commoning with comb type jumper bar



#### **CAGE CLAMP®** connection



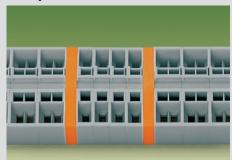
**Connection of conductors** 

#### **Testing**



Testing by quick contact to the CAGE CLAMP\* spring (limited to 0.5 A max.)

#### **Group formation**



Indication of groups by use of intermediate plates

#### **Application**



Easy handling with minimum space in small enclosures

**CAGE CLAMP®** clamps the following copper wires:\*

\* For aluminum wire see notes in section 15!

#### T marker tag



Marking with T marker tag

#### Mixing/Marking



Mixing of 2- and 4-conductor terminal blocks. Marking with miniature WSB quick marking system

fine stranded, also with tinned single strands

fine-stranded wire tip bonded

fine-stranded wire with crimped ferrule fine-stranded wire with crimped pin terminal



## Miniature Through/Ground (Earth) Conductor and (Ex) Terminal Blocks 2.5 mm²/AWG 12 for DIN 35 Rail, Series 264

 $0.08 - 2.5 \text{ mm}^2$ 800 V/8 kV/3 1

AWG 28 - 12 600 V, 20 A **%** 600 V, 20 A **®** 

Terminal block width 6 mm / 0.236 in □**===** 8 – 9 mm / 0.33 in

\* 👊 🏽 VDE 🕃 KEER CCAKEER 🛈 🐨 GL BV LR 🕃 🕾

 $2 \times 0.08 - 2.5 \text{ mm}^2$ 800 V/8 kV/3 **①** 

2 x AWG 28 - 12 600 V, 20 A **%** 600 V, 20 A ®

Terminal block width 10 mm / 0.394 in □ 8 – 9 mm / 0.33 in

₹¥ VDE KEER CCAKEER S ® ® € ♥ ♠ GL BV LR NV ® ® €

Accessories series 264 for DIN 35 rail





— 38 mm / 1.5 in -

<b></b> ;	38	mm.	/1	.5	in		-
-----------	----	-----	----	----	----	--	---

	Item No.	Pack. unit pcs		ltem No.	Pack. unit pcs
2-conductor tl	hrough terminal bloc	ks, for DIN 35 rail	4-conductor th	rough terminal bloc	ks, for DIN 35 rail
grey	264-711	100	grey	264-731	100
blue	264-714 🕗	100	blue	264-734 🕗	100
orange	264-716	100	orange	264-736	100
light grey (Ex)	264-125 🔘	100	light grey 🖘	264-225 🔘	100

- 1 800 V = rated voltage 8 kV = rated surge voltage 3 = pollution degree (see also section 15)
- Suitable for Ex i applications
- (Ex) Suitable for Ex e II applications  $0.5 - 2.5 \text{ mm}^2$ AWG 20 - 12 750 V, 23 A (see also section 13)
- 3 Test current in case of touch contacting 0.5 A max., 6 A if the test pins are firmly connected in the clamping units.

Max. test voltage 400 V/800 V only in test equipment, respecting relevant air and creepage distances. In case of touch contacting the max. test voltage must not exceed 48 V, test pins are not touchproof.

For marking possibilities see section 14. Direct printing of assemblies contact factory.

24.5 mm /	0.96 in
-----------	---------

— 46.5 mm/1.83 in —

Item No.	Pack, unit pcs
4-conductor ground (earth) term. I	ol., for DIN 35 rail
green-yellow 264-737 🕕	100
green-yellow (£x) 264-737/999-9	<b>50</b> 🕕 100

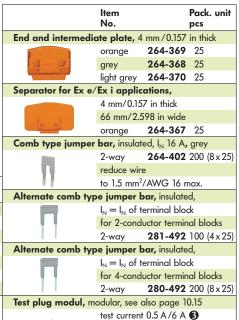
#### Application notes

#### Separator for Ex e/Ex i applications for miniature terminal blocks

According to EN 50020 a minimum distance of 50 mm must be kept between live parts of Ex e and Exi i circuits. When mounting Ex e and Ex i rail-mounted terminal blocks together on the same rail, offers a space saving solution to the problem by using the new Ex e/Ex separators.

The separators are snapped onto the miniature rail-mounted terminal blocks and therefore cannot be removed independently from the carrier rail.





for 2-conductor terminal blocks 6 mm wide **249-136** 100 (4 x 25) test voltage 400 V/48 V 3 for 4-conductor terminal blocks

10 mm wide **249-139** 100 (4 x 25) test voltage 800 V/48 V 3

Test plug, with cable 500 mm/1'7.7"

2 mm Ø, red **210-136** 50 (5 x 10) 2,3 mm Ø, yel. **210-137** 50 (5 x 10)

Operating tool, insulated,

for comp type jumper bar 2-way **280-432** 1

#### Miniature WSB quick marking card,

10 strips with 10 markers each, white with black printing see section 14

Screwless end stop, for DIN 35 rail



6 mm wide 249-116 100 (4 x 25) 10 mm wide **249-117** 50 (2×25)

Carrier rail DIN 35, 35×7.5 mm/1.38×0.30 in, 1 mm/0.039 in thick, acc. to DIN EN 60715, steel, zinc

plated a.yellow chromated, 2 m/6'6" long slotted 210-112 Carrier rail DIN 35,  $35 \times 7.5 \,\text{mm} / 1.38 \times 0.30 \,\text{in}$ ,  $1 \,\text{mm} / 0.039 \,\text{in}$ 

thick, acc. to DIN EN 60715, steel, zinc plated a.yellow chromated, 2 m/6'6" long unslotted 210-113

Carrier rail DIN 35, 35 x 7.5 mm/1.38 x 0.30 in, 1.5 mm/0.059 in thick, acc. to DIN EN 60715, aluminum 2 m/6'6" long



210-196 unslotted 10

# Miniature Through/Ground (Earth) Conductor and (Ex) Terminal Blocks 2.5 mm²/AWG 12 for DIN 15 Rail, Series 264



0.08 - 2.5 mm<sup>2</sup> 800 V/8 kV/3 **①** 

AWG 28 - 12 600 V, 20 A **%** 600 V, 20 A ®

Terminal block width 6 mm / 0.236 in 8 – 9 mm / 0.33 in

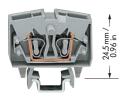
\* 🕦 VDE 🗺 CCAKEE 🕪 S 🛈 🚭 🛣 GL BV LR NV 🛭 🗗 🗟

2 x 0.08 - 2.5 mm<sup>2</sup> 800 V/8 kV/3 **0**  2 x AWG 28 - 12 600 V, 20 A **7U** 600 V, 20 A **6** 

Terminal block width 10 mm / 0.394 in 8 – 9 mm / 0.33 in

\* 91 @ VDE KEER CCAKEER (N) (S) (D) \*\* (A) GL BV LR NV (8) (8) (E)

Accessories series 264 for DIN 15 rail







32 mm / 1.26 in →

	Item No.	Pack. unit pcs		Item No.	Pack. unit pcs
2-conductor th	rough terminal bloc	ks, for DIN 15 rail	4-conductor th	rough terminal bloc	ks, for DIN 15 rail
grey	264-701	100	grey	264-721	100
blue	264-704 🕗	100	blue	264-724 🕗	100
orange	264-706	100	orange	264-726	100
light grey (Ex)	264-120 🔘	100	light grey (Ex)	264-220 🔘	100

- 800 V = rated voltage 8 kV = rated surge voltage 3 = pollution degree (see also section 15)
- Suitable for Ex i applications
- (Ex) Suitable for Ex e II applications 0.5 - 2.5 mm<sup>2</sup> AWG 20 - 12 750 V, 23 A (see also section 13)
- Test current in case of touch contacting 0.5 A max., 6 A if the test pins are firmly connected in the clamping units.

Max. test voltage 400 V/800 V only in test equipment, respecting relevant air and creepage distances. In case of touch contacting the max. test voltage must not exceed 48 V, test pins are not touchproof.

For marking possibilities see section 14. Direct printing of assemblies contact factory.



**←** 32 mm/1.26 in **→** 

Ì			
		ltem	Pack. unit
		No.	pcs
	4-conductor grou	und (earth) term. bl.	, for DIN 15 rail
	green-yellow	264-727 🛑	100
	green-vellow (Ex)	264-727/999-950	100

## contact factory.

## Application notes



Testing using CAGE CLAMP® connection on the current bar – max. nominal current 6 A. The CAGE CLAMP® clamps individual test contacts.



Testing with touch contact at the CAGE CLAMP® connection made of spring steel – limited to a current of 0.5 A max.

	ltem No.		Pack. unit pcs			
End and intermediate plate, 4 mm/0.157 in thick						
	orange	264-369	25			
	grey	264-368	25			
	light grey	264-370	25			
	/F · I:					

Separator for Ex e	·/Ex i appli	cations,	
	4 mm/0.1	57 in thick	
1	66 mm/2	.598 in wide	
A P	orange	264-367	2

Comb type jumper bar, insulated, I<sub>N</sub> 16 A, grey

2-way

264-402 200 (8 x 25)

reduce wire

to 1.5 mm²/AWG 16 max.

Alternate comb type jumper bar, insulated,

I<sub>N</sub> = I<sub>N</sub> of terminal block

for 2-conductor terminal blocks
2-way 281-492 100 (4×25)

Alternate comb type jumper bar, insulated,

 $I_N = I_N$  of terminal block for 4-conductor terminal blocks 2-way **280-492** 200 (8×25)

Test plug modul, modular, see also page 10.15 test current 0.5 A / 6 A 3

for 2-conductor terminal blocks
6 mm wide **249-136** 100 (4×25)
test voltage 400 V/48 V **3**for 4-conductor terminal blocks
10 mm wide **249-139** 100 (4×25)

10 mm wide **249-139** 100 (4x25) test voltage 800 V/48 V **3** 

Test plug, with cable 500 mm / 17.7"



2 mm Ø, red **210-136** 50 (5 x 10) 2,3 mm Ø, yel. **210-137** 50 (5 x 10)

Operating tool, insulated,

for comp type jumper bar 2-way 280-432 1

Miniature WSB quick marking card,



10 strips with 10 markers each, white with black printing see section 14

Screwless end stop, for DIN 15 rail
6 mm wide 249-101 25



Carrier rail DIN 15, 15x5.5mm/0.59x0.217 in, 1 mm/0.039 in thick, acc. to DIN EN 60715, steel, zinc plated a. yellow chromated, 2 m/6'6" long slotted 210-111 1

Carrier rail DIN 15, 15 x 5.5 mm/0.59 x 0.217 in, 1 mm/0.039 in thick, acc. to DIN EN 60715, steel, zinc plated a.yellow chromated, 2 m/6'6" long unslotted 210-295 1

Carrier rail DIN 15, 15x5.5mm/0.59x0.217 in/ 1 mm/0.039 in thick, acc. to DIN EN 60715, aluminum, 2 m/6'6" long unslotted 210-296 1



## topJob® Rail-Mounted Terminal Blocks





Through terminal blocks 0.08 mm $^2$  to 35 mm $^2$  / AWG 28 - 2 Ground (earth) conductor terminal blocks 0.08 mm $^2$  to 35 mm $^2$  / AWG 28 - 2 Shield (screen) terminal blocks 0.08 mm $^2$  to 2,5 mm $^2$  / AWG 28 - 12

Series 780 - 785

Series 780 - 785

Series 780



see Full Line Catalog W4, Volume 1, Section 5 (German version)





For more than 20 years, the WAGO rail-mounted side-entry terminal blocks (as well as WAGO disconnect terminal blocks for test and measurement) with CAGE CLAMP® connection technology, have been providing safe connections.

## Rail-Mounted Terminal Blocks (Side-Entry)





Through terminal blocks and ground (earth) conductor terminal blocks  $0.08~\text{mm}^2$  to  $16~\text{mm}^2$  / AWG 28-6 Series 279-28Series 279 – 283 \_\_\_\_\_ 6.6 – 6.7



High current terminal blocks 25 mm<sup>2</sup> – 95 mm<sup>2</sup> / AWG 4 – 000 Series 285 \_\_\_\_\_

2.22 - 2.24



#### Accessories

Accessories	
- Busbar terminal blocks	11.20 – 11.21
- Comb type jumper bars	2.44
- Insulations stops	2.43
- Wire jumpers	2.45
- Test plug modules	2.38 - 2.4
- Step-down jumpers for through terminal blocks	6.3
- Staggered jumpers	2.45





### **Rail-Mounted Terminal Blocks** - Product Summary -



Series 279 – 284 Through terminal blocks



2-conductor terminal blocks mm²/AWG | 1.5/16| 2.5/12| 4/12| 6/10| 10/8 | 16/6 Page 6. 6 6 6 7 7 7

Series 279 – 282 Ex i through terminal blocks



2-conductor terminal blocks mm<sup>2</sup>/AWG| 1.5/16| 2.5/12| 4/12| 6/10 Page 6. 6 6 7

Series 279 – 284 Ground (earth) conductor terminal blocks



2-conductor terminal blocks mm²/AWG|2.5/12 | 4/12 | 6/10 | 10/8 |16/6 Page 6. 6 6

Accessories (selection)



Adjacent jumpers Page 6.6









Alternate jumper Page 6.6

Protective warning marker Page 6.6

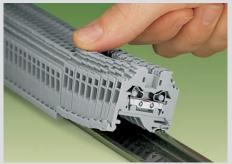
Insulation stops Page 2.43

Page 6.3

Step-down jumper Comb type jumper bar Page 2.44

### Rail-Mounted Terminal Blocks with CAGE CLAMP® Series 279 to 283

Assembly \_



Snapping rail-mounted terminal blocks with side-entry wiring onto the carrier rail

Quick assembly keys prevent reverse mounting

#### Removal



Continued →

Removal from the carrier rail

### CAGE CLAMP® connection



Connection of wires

#### **Testing**



Testing with test plug adapter

## Commoning



Commoning with adjacent jumpers. Push jumper down FIRMLY until FULLY inserted!



CAGE CLAMP® clamps the following copper wires:\*



#### Commoning with step-down jumpers



Commoning of side-entry rail-mounted terminal blocks with step-down jumpers



stranded



fine stranded, also with tinned single strands

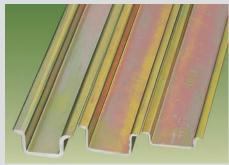


## Rail-Mounted Terminal Blocks with CAGE CLAMP® Series 279 to 283

#### **Fuse terminal blocks**



Replacing a fuse

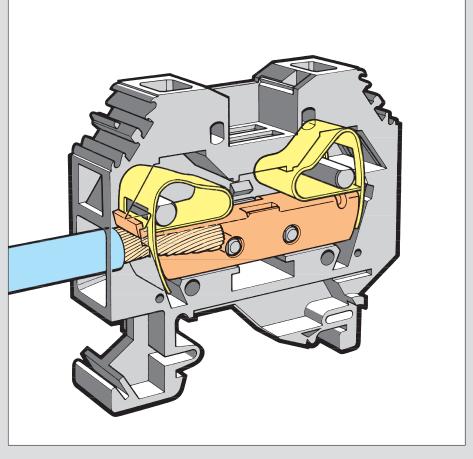


Suitable for all carrier rails DIN 35

## Disconnect terminal blocks for test purposes



Shifting the disconnect slide link



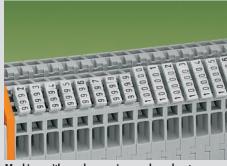
#### Marking



Marking with WMB Multi marking system or WSB Quick marking system



Marking with marker branches



Marking with marker carriers and marker tags



CAGE CLAMP® clamps the following copper wires: fine-stranded wire – tip bonded



fine-stranded wire with crimped ferrule **1** 



fine-stranded wire with crimped pin terminal

# Step-Down Jumpers for Through Terminal Blocks, Side-Entry



Step-down jumpers f. commoning term. bl. 10/6 mm²/AWG 8/10 → 4/2.5/1.5 mm²/AWG 12/14/16 800 V/8 kV/3; 15 A or 10/6 mm²/AWG 8/10 → 6/4 mm²/AWG 10/12 800 V/8 kV/3; 30 A

Step-down jumper for commoning terminal blocks 16 mm $^2$ /AWG 6  $\rightarrow$  4 mm $^2$ /AWG 12 800 V/8 kV/3 32 A





Side-entry terminal blocks and front-entry terminal blocks cannot be commoned with step-down jumpers. Commoning front-entry terminal blocks with step-down jumpers see pages 2.26 – 2.27.

Description		ltem No.	Pack. unit pcs		Item No.	Pack. unit pcs
Step-down jumper, insulated	10/6 mm <sup>2</sup> /AW	/G 8/10 →		16 mm <sup>2</sup> /AWG 6	$5 \rightarrow 4 \text{ mm}^2/\text{AWG } 12$	
	4/2.5/1.5 mm <sup>2</sup>	/ AWG 12/14/16		I <sub>N</sub> 32 A, grey	283-414	50 (2 x 25)
	I <sub>N</sub> 15 A, grey	284-414	50 (2 x 25)			
	10/6 mm <sup>2</sup> /AW	/G 8/10 → 6/4 mi	n <sup>2</sup> / AWG 10/12			
	I <sub>N</sub> 30 A, grey	284-413	50 (2 x 25)			
Accessories						
Cassas plata	1 mm /0.030 in +	bick		1 mm /0 030 in th	niele	

	Cover plate	1 mm / 0.039 in thick			1 mm / 0.039 in thick		
		grey	284-333	100 (4 x 25)	grey	283-333	100 (4 x 25)
		orange	284-343	100 (4 x 25)	orange	283-335	100 (4 x 25)
	Intermediate plate, for	1 mm/0.039 in thic	:k				
( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( )	terminal blocks 4/2.5/1.5 mm <sup>2</sup> /	grey	281-333	100 (4 x 25)			
	AWG 12/14/16 only	orange	281-336	100 (4 x 25)			
		•		•			

#### **Application notes**



Step-down jumpers may be used for commoning terminal blocks ① of different sizes, without losing a conductor clamping point. This can be an advantage on long conductor runs where voltage drop can be a problem. A large conductor can be easily connected to smaller wires at the distribution point.

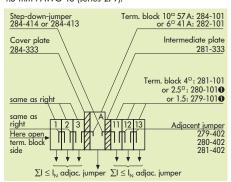
Step-down jumpers are simply pushed down to full insertion, in the same way as all other push-in jumpers. Commoning may be made in either direction using the special thin end plate to cover the open side. Further terminal blocks of the smaller cross section may be commoned using standard adjacent jumpers. In this case pay attention that:

## 1. the total current flowing does not exceed the rating of the step-down jumper

2. the standard or special thin end plate is applied to the open side of the larger block.



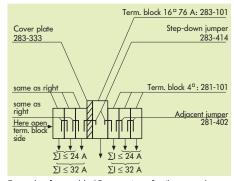
Commoning of rail-mounted terminal blocks 6 mm<sup>2</sup> / AWG 10 (series 282) with rail-mounted terminal blocks 1.5 mm<sup>2</sup>/AWG 16 (series 279).



Example of assembly "Commoning of side-entry rail-mounted terminal blocks 10/6 mm²/AWG 8/10 with side-entry rail-mounted terminal blocks 4/2.5/1.5 mm²/AWG 12/14/16 with step-down jumper 284-414."



Commoning of rail-mounted terminal blocks 16 mm² / AWG 6 (series 283) with rail-mounted terminal blocks 4 mm²/AWG 12 (series 281).



Example of assembly "Commoning of rail-mounted terminal blocks 16 mm²/AWG 6 with rail-mounted terminal blocks 4 mm²/AWG 12 with step-down jumper 283-414."

• Commoning of side-entry rail-mounted terminal blocks 10 mm²/AWG 8, item no. 284-101, with 2.5 mm²/AWG 14, item no. 280-101, or with 1.5 mm²/AWG 16, item no. 279-101, in direction of rear side is not possible (see example: terminal block A with terminal block 11).



## Through and Ground (Earth) Conductor Terminal Blocks 1.5 mm<sup>2</sup> to 16 mm<sup>2</sup> / AWG 16 – 6, **Series 279 bis 283**

0.08 - 1.5 mm<sup>2</sup> 800 V/8 kV/3 **①** 18 A

AWG 28 - 16 600 V, 10 A **9** 600 V, 10 A **9** 

Terminal block width 4 mm / 0.157 in 8 – 9 mm / 0.33 in

\* 71 @ KEER CCAKEER NO SOOS @ VES AS GL BV LR NV @ @

 $0.08 - 2.5 \text{ mm}^2$ 800 V/8 kV/3 **①** 

AWG 28 - 12 600 V, 20 A **9** 600 V, 20 A ®

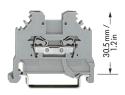
Terminal block width 5 mm / 0.197 in 8 – 9 mm / 0.33 in

\* 👊 🍪 KEEB (CAKEEB (N (D) 😤 🕞 💝 🗏 🖺 🗥 GL BV LR NV () ()

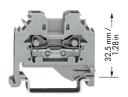
 $0.08 - 4 \text{ mm}^2$ 800 V/8 kV/3 1 AWG 28 - 12 600 V, 20 A **%** 600 V, 25 A ®

Terminal block width 6 mm / 0.236 in 9 – 10 mm / 0.37 in

\* **91 6** KEE 0 0 8 6 7 5 A GL BV LR NV 0







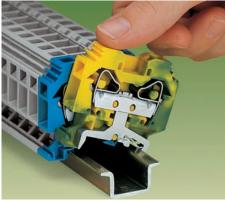
42.5 mm / 1.67 in →		<del>&lt;</del> 42.5 mm / 1.67 in →		← 42.5 mm / 1.67 in ←					
	Item No.	Pack. unit pcs		Item No.	Pack. unit		ltem No.	Pack. unit	
2-conductor	through terminal bloc	ks	2-conductor the	rough terminal blo	ocks	2-conductor th	nrough terminal k	olocks	
grey	279-101	100	grey	280-101	100	grey	281-101	100	
blue	279-104 2	100	blue	280-104 🕗	100	blue	281-104 🤄	100	
			2-conductor gr	2-conductor ground (earth) terminal block			2-conductor ground (earth) terminal block		
			green-yellow	280-107	100	green-yellow	281-107	100	
End and inte	rmediate plate, 2.5 mn	n/0.098 in thick	End and intermediate plate, 2.5 mm/0.098 in thick		End and intermediate plate, 3 mm/0.118 in thick		mm/0.118 in thick		
	orange 280	<b>302</b> 100 (4 x 25)		orange 2	<b>80-302</b> 100 (4×25)		orange	281-302 100 (4×25)	
	grey <b>280</b>	<b>301</b> 100 (4 x 25)		grey 2	<b>80-301</b> 100 (4 x 25)		grey	281-301 100 (4×25)	
Separator, ov	versized, 2 mm/0.079 in	thick	Separator, over	sized, 2 mm/0.079	in thick	Separator, ove	ersized, 2 mm/0.07	9 in thick	
	orange 280	<b>322</b> 100 (4×25)		orange 2	<b>80-322</b> 100 (4×25)		orange	281-322 100 (4×25)	
				_			_	//	

Separator, oversize	d, 2 mm/0.0	)79 in thick	Separator, oversized, 2 mm/0.079 in thick		Separator, oversize	d, 2 mm/0.0	179 in thick	
	orange	<b>280-322</b> 100 (4×25)		orange	<b>280-322</b> 100 (4 x 25)		orange	281-322 100 (4×25)
	grey	<b>280-332</b> 100 (4×25)		grey	<b>280-332</b> 100 (4×25)		grey	281-332 100 (4×25)
Accessories	Accessories			tem <b>WMB</b>	/WSB (see section 14)			
Adjacent jumper,	nsulated, I <sub>N</sub> 1	15 A	Adjacent jumper, ir	nsulated, I <sub>N</sub> 2	4 A	Adjacent jumper, i	nsulated, I <sub>N</sub> 3	32 A
lin In	grey	<b>279-402</b> 200 (8×25)	lite .	grey	<b>280-402</b> 200 (8 x 25)	lite .	grey	281-402 200 (8 x 25)
	yellgreen	<b>279-422</b> 200 (8×25)		yellgreen	<b>280-422</b> 200 (8 x 25)		yellgreen	281-422 200 (8 x 25)
(IJX)			([0]			QD		
Protective warning	<b>marker,</b> fo	r 5 terminal blocks,	Protective warning	marker, for	5 terminal blocks,	Protective warning	marker, fo	r 5 terminal blocks,
	fits into scr	ewdriver slot		fits into scre	ewdriver slot	fits into screwdriver slot		ewdriver slot
E6666	yellow	<b>279-415</b> 100 (4×25)	56666	yellow	<b>280-405</b> 100 (4 x 25)	56666	yellow	281-405 100 (4×25)
Accessories series	279		Accessories series	280		Accessories series	281	
see page 2.9			see page 2.13			see page 2.17		

#### **Application notes**

Carrier rail	ltem-	Curren	t β acc. to
	No.	[A]	mm <sup>2</sup> /AWG Cu
DIN 35 x 7.5 (	steel)		
slotted	210-112	76	16/6
unslotted	210-113	76	16/6
DIN 35 x 15 (	steel)		
1.5 mm/			
0.059 in thick	210-114	125	35/2
2.3 mm/			
0.091 in thick	210-118	125	35/2
DIN 35 x 7.5 (	Alu)		
unslotted	210-196	76	16/6
DIN 35 x 15 (	Cu) 2.3 mn	n/	
0.091 in thick	210-198	309	150/6/0
3 applies to 1	rails of 1 m	/3'3" lenç	gth

If it is required to use standard carrier rails as ground (earth) conductor busbars, please refer to the **maximum current capacities** listed above.



Assembly on the carrier rail

Ground (earth) conductor terminal blocks snap onto the rail like through terminals, but automatically make a direct electrical connection

Sliding on the rail is not then possible.

When mounting on the rail, ensure that open sides of terminal blocks face in the same direction.

Visual control is possible, that all screwdriver removal slots are on the same side.

283-402 50 (2 x 25)



0.2 - 6 mm<sup>2</sup> 800 V/8 kV/3 **①** 41 A

AWG 24 - 10 600 V, 30 A **9** 600 V, 40 A ®

Terminal block width 8 mm / 0.315 in 12 – 13 mm / 0.49 in

\* 🕦 🍪 KEEB (CAKEEB (N) (D) 😤 🕞 🛡 🗒 🗥 GL BV LR NV () (8)

0.2 - 10 mm<sup>2</sup> 800 V/8 kV/3 **①** 

AWG 24 - 8 600 V, 50 A **9** 600 V, 65 A ®

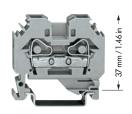
Terminal block width 10 mm / 0.394 in □ 12 – 13 mm / 0.49 in

\* 👊 🏽 KEEB CCAKEEB 🛈 🕾 🟶 🛣 GL BV LR NV 🕯 🖰

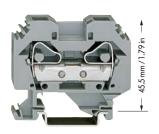
0.2 - 16 mm<sup>2</sup> 800 V/8 kV/3 **①** 76 A

AWG 24 - 6 600 V, 65 A **%** 600 V, 90 A ®

Terminal block width 12 mm / 0.472 in 6 KE (CAKE № 0 % © ♥ 🗒 & GL BV IR NV 🗞







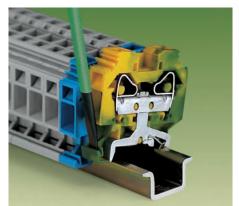
-	52 mm / 2.05 in	

	ltem No.	Pack. unit pcs		ltem No.		Pack. unit ocs		ltem No.	Po po	ack. unit :s
2-conductor throu	ıgh terminal k	olocks	2-conductor through terminal blocks				2-conductor thr	ough termina	l blocks	
grey	282-101 (	50	grey	284-101		50	grey	283-101		50
olue	282-104 🤅	50	blue	284-104		50	blue	283-104		50
2-conductor grou	nd (earth) terr	minal block	2-conductor gre	ound (earth) to	erminal blo	ock	2-conductor ground (earth) terminal block			
green-yellow	282-107 (	50	green-yellow	284-107	′ 🛑	50	green-yellow	283-107		50
nd and intermed	liate plate, 4	mm/0.157 in thick	End and interm	ediate plate,	2.5 mm/0.0	198 in thick	End and intermediate plate, 4 mm/0.157 in thick			
	orange	282-302 100 (4×25)		orange	284-302	2 100 (4 x 25)		orange	283-302	50 (2 x 25
	grey	282-301 100 (4×25)		grey	284-30	1 100 (4 x 25)		grey	283-301	50 (2 x 25
<b>Separator,</b> oversiz	ed, 2 mm/0.07	9 in thick	Separator, oversized, 2 mm/0.079 in thick				Separator, oversized, 2 mm/0.079 in thick			
	orange	282-322 100 (4×25)		orange	284-322	2 100 (4 x 25)		orange	283-322	50 (2 x 25
	grey	282-332 100 (4×25)		grey	284-332	2 100 (4 x 25)		grey	283-332	50 (2 x 25
		۸.	opropriate marking		R/WCR	/200 20stian 14	١			

	yellgreen <b>282-422</b> 100 (4 x 25)		yellgreer	284-422	100 (4×25)	V	yellgreer	283-422	50 (2 x 25)	
Protective warning	marker, for 5 terminal blocks,	Protective warning	g marker, f	or 5 terminal	blocks,	Protective warning	<b>ng marker,</b> fo	or 5 terminal	blocks,	
	fits into screwdriver slot		fits into sc	rewdriver slo	t		fits into sc	rewdriver slo	t	
25660	yellow <b>282-405</b> 100 (4 x 25)	55660	yellow	284-405	50 (2 x 25)	55666	yellow	283-405	50 (2 x 25)	
Accessories series	<b>282</b> see page 2.18	Accessories series 284 see page 2.19				Accessories series 283 see page 2.20				
Step down jumper	see page 6.5	Step down jumper see page 6.5				Step down jumper see page 6.5				

grey

**284-402** 100 (4×25)



282-402 100 (4×25)

Removal from the carrier rail

grey



Push jumper down FIRMLY until FULLY inserted!

Commoning of ground (earth) conductor terminal blocks with through terminal blocks is possible in one direction only using adjacent jumpers. In addition to the required marking of these terminal blocks we recommend the use of the yellowgreen adjacent jumpers to indicate ground (earth) connection.

grey

- 800 V = rated voltage 8 kV = rated surge voltage 3 = pollution degree (see also section 15)
- Suitable for Ex i applications

According to EN 60947-7-2 [VDE 0611, part 3] steel mounting rails may not be used for ground/earth (PEN) applications.





transformer substation.

## **Function Terminal Blocks**

	Disconnect terminal blocks for test and meas	surement Series 280	7.8 – 7.9
the Mark	Disconnect terminal blocks for test and meas with disconnecting tab		
	Disconnect terminal blocks for test and meas of transformer circuits	urement Series 282	7.18 – 7.19
	Transverse switching terminal blocks and lor switching disconnect terminal blocks	gitudinal Series 282	7.20 - 7.21
	Ground (earth) conductor disconnect terminal blocks	Series 282	7.23 / 7.27
	Fused disconnect terminal blocks	Series 281	700 700
	with pivoting holder Fuse plugs	Series 280/281	
	for carrier terminal blocks Fuse terminal blocks for	Series 282	
	mini-automative blade-type fuses		
	· · · · · · · · · · · · · · · · · · ·	Series 282	
	Technical details fuse terminal blocks and pl	uggable fuse modules	7.38 – 7.39
	Sensor and actuator terminal blocks	Series 270	7.41 – 7.43
	Sensor and actuator terminal blocks	Series 280	7.46 – 7.55
	Diode terminal blocks	Series 279/280/281	7.56 – 7.58
in this	LED terminal blocks	Series 279/280	
ion lati	Double deck diode and LED terminal blocks		
	Double deck diode and LED terminal blocks		
	Pluggable modules -	Series 280	



## **Function Terminal Blocks** Disconnect Terminal Blocks with CAGE CLAMP® Connection

– Product Summary –

Series 280 Disconnect terminal blocks for test and measurment, with knife disconnect and integrated test slot



mm<sup>2</sup>/AWG | 2.5/12 Page 7.



with shield (screen) contact mm<sup>2</sup>/AWG | 2.5/12 Page 7.



4-conductor terminal block mm<sup>2</sup>/AWG 2.5/12 Page 7. 9



with shield (screen) contact mm<sup>2</sup>/AWG | 2.5/12 Page 7.

#### **Series 280/281** Disconnect terminal blocks with disconnect tab



2-conductor terminal blocks mm<sup>2</sup>/AWG | 2.5/12 | 4/12 Page 7. 10 - 11 12

Series 282



3-conductor terminal blocks mm<sup>2</sup>/AWG | 2.5/12 | 4/12 Page 7. 10 - 11 12



4-conductor terminal blocks mm<sup>2</sup>/AWG | 2.5/12 | 4/12 Page 7. 10 - 11 12

#### Series 280/281

Disconnect term. blocks for test and measurment, with disconnect



2-conductor terminal blocks mm<sup>2</sup>/AWG | 2.5/12 | 4/12 Page 7. 10 - 11 12

#### Disconnect terminal blocks for test and measurement, through terminal blocks



for example for current transformator circuits mm<sup>2</sup>/AWG 6/10 mm<sup>2</sup>/AWG Page 7. 18 Page 7.



for example for voltage transformator circuits mm<sup>2</sup>/AWG 6/10 mm<sup>2</sup>/AWG Page 7. Page 7. 19

#### Series 282 Transverse switching terminal blocks and longitudinal switching disconnect terminal blocks



2-conductor transverse switching mm<sup>2</sup>/AWG 6/10 terminal



2-cond. longitudinal switching disconnect mm<sup>2</sup>/AWG| 6/10 Page 7.

Series 282 Disconnect terminal blocks Ground (earth) conductor disconnect terminal blocks



2-conductor terminal blocks mm<sup>2</sup>/AWG| 6/10 Page 7.



Ground (earth) conductor disconnect mm<sup>2</sup>/AWG 6/10 Page 7. 23

#### Series 282 Disconnect terminal blocks for test purposes



mm²/AWG 6/10 Page 7. 26 - 27

#### Series 282 Ground (earth) conductor disconnect terminal blocks



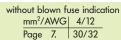
mm<sup>2</sup>/AWG | 6/10 Page 7.

## Fuse Terminal Blocks with CAGE CLAMP® Connection



#### Series 281 Fused disconnect terminal blocks with pivoting holder







with blown fuse indication mm²/AWG 4/12
Page 7. 30 - 33



Disconnect terminal block mm²/AWG 4/12
Page 7. 31

#### Series 280/281 Fuse plugs for carrier terminal blocks



Pages 7.34 and 7.35



2-conductor terminal blocks mm²/AWG | 2.5/14 | 4/12 Page 7. | 35 | 34





4-conductor terminal blocks mm²/AWG | 2.5/14 | 4/12 Page 7. | 35 | 34

#### Series 286 Fuse modules on carrier terminal blocks



see volume 3 "ELECTRONICC"



Carrier terminal block with 2-conductor terminal blocks see volume 3 "ELECTRONICC"

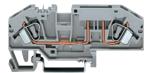


Carrier terminal block with 4-conductor terminal blocks see volume 3 "ELECTRONICC"

#### Series 282 Fuse terminal blocks for mini-automotive blade-type fuses



with blown fuse indication  $\frac{\text{mm}^2/\text{AWG} \mid 6/10}{\text{Page} \quad 7. \quad 24}$ 



 $\begin{tabular}{ll} without blown fuse indication \\ \hline $mm^2/AWG \mid 6/10$ \\ \hline $Page \quad 7. \quad 25$ \\ \hline \end{tabular}$ 

#### Series 282 Fuse terminal blocks

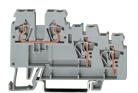


mm²/AWG 6/10 Page 7. 36 - 37



## Sensor/Actuator Terminal Blocks with CAGE CLAMP® Connection

#### Series 270 Sensor/actuator terminal blocks



Sensor terminal blocks with/without LED and/or ground (earth)/shield (screen) connection Pages 7.41 – 7.42



Sensor supply terminal block with/without LED Pages 7.41 – 7.42



Actuator terminal blocks with/without LED with ground (earth)/shield (screen) connection Page 7.43



Actuator supply terminal blocks

Page 7.43

#### 80 Sensor terminal blocks



 $\begin{array}{c|c} \text{for 3-conductor sensors} \\ \underline{\text{mm}^2/\text{AWG}} & 2.5/12 \\ \hline \text{Page} & 7. & 46-47 \end{array}$ 



for fuse plugs mm²/AWG | 2.5/12 Page 7. | 46



f. 3-conductor sensors w. ground (earth) connection  $\frac{\text{mm}^2/\text{AWG} \mid 2.5/12}{\text{Page} \quad 7. \quad |48-49|}$ 



 $\begin{array}{c|c} \text{for 4-conductor sensors} \\ \underline{\text{mm}^2/\text{AWG}} & 2.5/12 \\ \hline \text{Page} & 7. & 49-50 \\ \end{array}$ 

#### Series 280 Actuator terminal blocks



e. g. for magnetic valves etc. mm²/AWG | 2.5/12 Page 7. | 54 - 55



e.g. for servomotors w. ground (earth) connection  $\frac{\text{mm}^2/\text{AWG}}{\text{Page}} \;\; \frac{2.5/12}{54 - 55}$ 



e.g. for pressure switches etc.  $\frac{\text{mm}^2/\text{AWG} \mid 2.5/12}{\text{Page} \quad 7. \quad \quad 52}$ 



e.g. for thermocouples etc.  $\frac{\text{mm}^2/\text{AWG} \mid 2.5/12}{\text{Page} \quad 7. \quad |52-53|}$ 

#### Accessories (selection)



Adjacent jumpers



Alternate jumper



Staggered jumper Page 2.45



Wire jumper Page 2.45



Comb type jumper bar Page 2.44



Insulation stops Page 2.43



Modular test plug Page 2.40



Test plug module Page 2.38



Test plug module Page 2.39



Test plugs Page 7.8

# Rail-Mounted Terminal Blocks with Electronic Components and CAGE CLAMP $^{\circledR}$ Connection







2-conductor terminal blocks mm²/AWG | 1.5/16 | 2.5/14 | 4/12 Page 7. | 56 | 57 | 58



3-conductor terminal blocks mm²/AWG | 1.5/16 | 2.5/14 | 4/12 Page 7. | 56 | 57 | 58



4-conductor terminal blocks mm²/AWG | 1.5/16 | 2.5/14 | 4/12 Page 7. | 56 | 57 | 58

#### Series 279/280 LED terminal blocks



 $\begin{array}{c|c} \text{3-conductor terminal blocks} \\ \underline{\text{mm}^2/\text{AWG} \mid 1.5/16} \\ \overline{\text{Page} \quad 7.} \quad & 60 \end{array}$ 



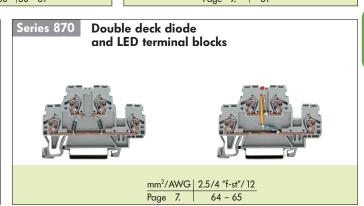
4-conductor terminal blocks mm²/AWG | 1.5/16 | 2.5/14 Page 7. | 60 | 60 - 61

# Series 280 Variable resistor terminal blocks

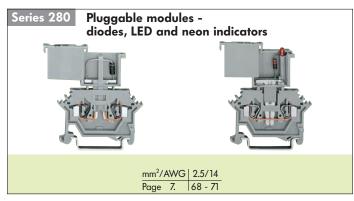


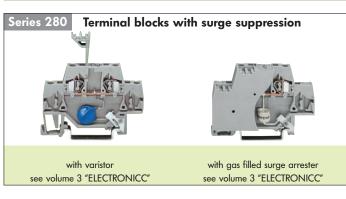
mm²/AWG | 1.5/16 Page 7. | 61

# 













# Disconnect Terminal Blocks for Test and Measurement with CAGE CLAMP $^{\rm B}\dots$ Series 280 and 281

#### ... with knife disconnect

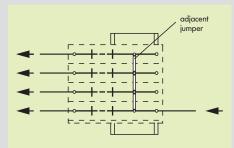




Movable knife disconnect clearly indicates the circuit state . . .

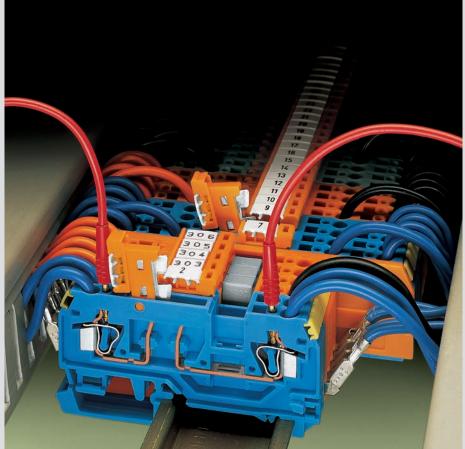


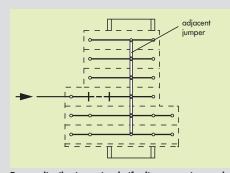
... by defined, notched positions "ON" → "OFF"



Power distribution using commoning jumpers. Knife disconnect used to disconnect individual outputs.







Power distribution using knife disconnect in supply line, disconnection of all outputs.





staggered

Staggered jumper for sophisticated wiring jobs. Push jumpers down FIRMLY until FULLY inserted.



stranded

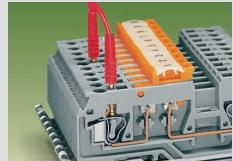


\* For aluminum wire see notes in section 15!

## ... Description and Handling



Shield (screen) contact: with solder/crimp quick disconnect terminal (2.8 x 0.8) mm

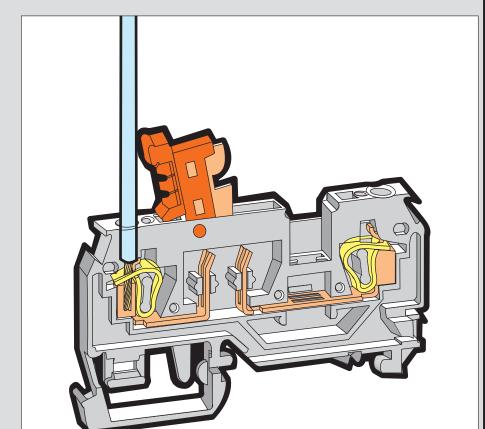


Test slot: for test plug Ø 2 mm/0.079 in or Ø 2.3 mm/0.091 in – with direct contact to the current bar

#### ... with disconnect tab



Disconnect terminal block with colored tab to indicate the switching condition (red = disconnected)
Disconnect lock see page 7.13





Pulling the disconnect tab with screwdriver



Pulling the disconnect tab by hand



Terminal bl. marking: with WSB Quick marking or WCB Combi marking (center position) and Miniature WSB (on the sides) – see also section 14 –.





fine-stranded wire with crimped ferrule **1** 



Commoning with comb type jumper bars



fine-stranded wire with crimped pin terminal



# Disconnect Terminal Blocks for Test and Measurement with Knife Disconnect 2.5 mm<sup>2</sup> / AWG 12, Series 280

0.08 – **2.5** mm<sup>2</sup> 400 V/6 kV/3 **①** 16 A AWG 28 - 12 600 V, 15 A **9** 300 V, 15 A ®

Terminal block width 5 mm / 0.197 in 8 – 9 mm / 0.33 in

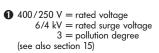
\* 🗫 🍪 KEDA CCAKEDA 🕞 🐨 🙈 GL BV LR NV

0.08 **– 2.5** mm<sup>2</sup> 250 V/4 kV/3 **①** 16 A

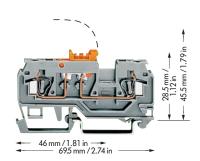
AWG 28 - 12 600 V, 15 A **9** 300 V, 15 A **9** 

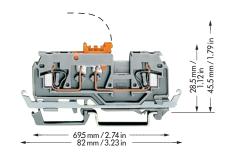
Terminal block width 5 mm / 0.197 in 8—8 8 - 9 mm / 0.33 in

\* 🕦 🏽 KEUR CCAKEUR 🕞 🐨 🗥 GL BV NV 🏶 🛭



- Suitable for Ex i applications
- See application notes on pages 2.38 – 2.45





Description					ltem No.	Pack. unit pcs			Item No.	Pack. unit pcs	
Disconnect termin	al block for test and		2-cond. d	isc. term. blo	ocks for test and	l measurem.	2-conductor disconnect terminal blocks for test				
	h knife disconnect,		term. block	knife			and meas	urement with	n shield (screen	connection	
	2 mm/0.079 in and		housing	disconnect	_		term. block				
Ø 2.3 mm/0.091	in, for DIN 35 rail		grey	orange	280-870	100	housing	disconnect	_		
			grey	grey	280-868	100	grey	orange	280-871	50	
			blue	orange	280-876 🕗	100	grey	grey	280-869	50	
			orange	orange	280-879	100	orange	orange	280-880	50	
Accessories		Appropriate	marking syste	m WMB/V	VSB or Minia	ture WSB (se	e section 14)				
	End and		2.5 mm/0.	098 in thick			2.5 mm/0.	098 in thick			
The state of the state of	intermediate plate		orange		280-371	100 (4 x 25)	orange		280-371	100 (4 x 2	
1000			grey		280-374	100 (4 x 25)	grey		280-374	100 (4 x 2	
- THO	Screwless										
1	end stop			236 in wide	249-116	100 (4 x 25)		236 in wide	249-116	100 (4 x 2	
(3)			10 mm / 0.3		249-117	50 (2 x 25)	10 mm / 0.3		249-117	50 (2 x 2	
A444	Insulation stop <b>3</b> ,	white	0.08 - 0.2		280-470	200 strips	0.08 - 0.2		280-470	200 strips	
0000000	5 pcs/strip	light grey	0.25 - 0.5		280-471	200 strips	0.25 - 0.5		280-471	200 strips	
Oliver		dark grey	0.75 – 1 m	m <sup>2</sup>	280-472	200 strips	0.75 – 1 m	m <sup>2</sup>	280-472	200 strips	
Ī	Adjacent jumper,		I <sub>N</sub> 24 A				I <sub>N</sub> 24 A				
	insulated		grey		280-402	200 (8 x 25)	grey		280-402	200 (8 x 2	
UN.			yellow-gree	en	280-422	200 (8 x 25)	yellow-gree	en	280-422	200 (8 x 2	
	Staggered jumper 3,		I <sub>N</sub> 24 A		780-452	100 (4 x 25)	I <sub>N</sub> 24 A		780-452	100 (4 x 2	
	insulated,	from 1 to 3			780-453	100 (4 x 25)			780-453	100 (4 x 2	
	width 5 mm/0.197 in				780-454	100 (4 x 25)			780-454	100 (4 x 2	
		from 1 to 5			780-455	50 (2 x 25)			780-455	50 (2 x 2	
		:			:	50 (0 05)			:	FO /O O	
	C 1	from 1 to 8	0		780-458	50 (2 x 25)	0		780-458	50 (2 x 2	
	Comb type jumper b	oar <b>6</b> ,	2-way		280-482 280-483	200 (8 x 25)	2-way		280-482 280-483	200 (8 x 2	
	insulated,	alı	3-way		280-490	200 (8 x 25) 50 (2 x 25)	3-way		280-490	200 (8 x 2 50 (2 x 2	
	$I_N = I_N$ of terminal blocal Alternate comb type		10-way		200-470	30 (2 x 23)	10-way		200-470	JU (2 X 2	
П	jumper bar <b>3</b> ,	2	2-way		280-492	200 (8 x 25)	2-way		280-492	200 (8 x 2	
	insulated, $I_N = I_N$ of ter	rminal block	2 way		200-472	200 (0 X 23)	2 way		200-472	200 (0 X 2	
•	Operating tool,	THINGI DIOCK	2-way		280-432	1	2-way		280-432	1	
	insulated		3-way		280-433	1	3-way		280-433	1	
			10-way		280-440	1	10-way			1	
	Protective warning r	narker,							280-440		
55666	for 5 terminal blocks,		yellow		280-415	100 (4 x 25)	yellow		280-415	100 (4 x 2	
	fits into screwdriver slot					,					
	Test plug, w. cable 50	0 mm/1'7.7"									
	2 mm	red		210-136	50 (5 x 10)	red		210-136	50 (5 x 1		
	2.3 mm	/0.091 in Ø	yellow		210-137	50 (5 x 10)	yellow		210-137	50 (5 x 1	



0.08 **– 2.5** mm<sup>2</sup> 400 V/6 kV/3 **①** 16 A

AWG 28 - 12 600 V, 15 A **N** 300 V, 15 A **®** 

Terminal block width 5 mm / 0.197 in 8 - 9 mm / 0.33 in

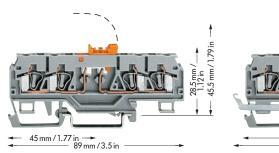
\* 🕦 🏽 KEUR CCAKEUR 🕑 🐨 🗥 GL BV LR NV 🕲

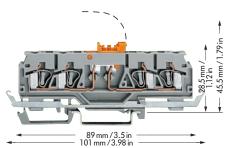
0.08 **– 2.5** mm<sup>2</sup> 250 V/4 kV/3 **①** 16 A

AWG 28 - 12 600 V, 15 A **%** 300 V, 15 A **®** 

Terminal block width 5 mm / 0.197 in 8 – 9 mm / 0.33 in

\* 🗫 🍪 KEUR CCAKEUR 🕞 🐨 GL BV LR NV 🖗





			Pack. unit pcs			Item No.	Pack. unit
		ocks for test and	measurem.			t terminal block	
term. block	knife					h shield (screen	) connection
housing	disconnect			term. block			
grey	orange	280-874	50	housing	disconnect		
grey	grey	280-881	50	grey	orange	280-875	50
blue	orange	280-885 2	50	grey	grey	280-882	50
orange	orange	280-883	50	orange	orange	280-884	50
		opriate marking sy	ystem <b>WMB</b> /			SB (see section	14)
2.5 mm / 0.0	098 in thick			2.5 mm/0.	098 in thick		
orange		280-373	100 (4 x 25)	orange		280-373	100 (4 x 25)
grey		280-376	100 (4 x 25)	grey		280-376	100 (4 x 25)
	236 in wide	249-116	100 (4 x 25)		236 in wide	249-116	100 (4 x 25)
10 mm / 0.3		249-117	50 (2 x 25)	10 mm / 0.3		249-117	50 (2 x 25)
0.08 - 0.2		280-470	200 strips	0.08 - 0.2		280-470	200 strips
0.25 - 0.5		280-471	200 strips	0.25 - 0.5		280-471	200 strips
0.75 – 1 mi	m <sup>2</sup>	280-472	200 strips	0.75 – 1 m	m <sup>2</sup>	280-472	200 strips
2-way		280-482	200 (8 x 25)	2-way		280-482	200 (8 x 25)
3-way		280-483	200 (8 x 25)	3-way		280-483	200 (8 x 25)
10-way		280-490	50 (2 x 25)	10-way		280-490	50 (2 x 25)
2-way		280-492	200 (8 x 25)	2-way		280-492	200 (8 x 25)
2-way		280-432	1	2-way		280-432	1
3-way		280-433	1	3-way		280-433	1
10-way		280-440	1	10-way		280-440	1
yellow		280-415	100 (4 x 25)	yellow		280-415	100 (4 × 25)
,				•			, ,
red		210-136	50 (5 x 10)	red		210-136	50 (5 x 10)
yellow		210-137	50 (5 x 10)	yellow		210-137	50 (5 x 10)
JOHOTT		210 107	50 (5 X 10)	7011011		210 107	50 (5 X 10)



### Disconnect Terminal Blocks for Test and Measurement 2.5 mm<sup>2</sup> / AWG 12, Series 280

0.08 **– 2.5 mm²** 400 V/6 kV/3 **①** 10 A

AWG 28 - 12 300 V, 15 A **9**\(\frac{12}{300}\) V, 15 A (\textit{1})

Terminal block width 5 mm / 0.197 in **■** 8 – 9 mm / 0.33 in

\* 🕦 🍕 KEEB CCAKEEB 🕦 🛈 🚭 🙈 GL BV LR NV 🏶 🕄

0.08 - 2.5 mm<sup>2</sup> 400 V/6 kV/3 **①** 10 A

AWG 28 - 12 300 V, 15 A **%** 600 V, 15 A **®** 

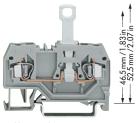
Terminal block width 5 mm / 0.197 in **■** 8 – 9 mm / 0.33 in

\* 🗫 🏽 KEUR CCAKEUR 🖭 📽 🗥 GL BV LR NV 🛭

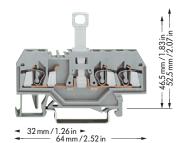
0.08 **– 2.5** mm<sup>2</sup> 400 V/6 kV/3 **①** 10 A

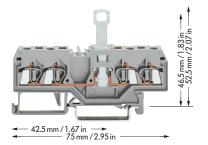
AWG 28 - 12 300 V, 15 A **9** 600 V, 15 A **9** 

Terminal block width 5 mm / 0.197 in □ 8 – 9 mm / 0.33 in









	ltem No.	Pack. unit pcs		ltem No.	Pack. unit pcs		ltem No.	Pack. unit pcs	
2-conductor disconnect terminal blocks			3-conduct	or disconnect terminal	block	4-conductor disconnect terminal blocks			
grey	280-912	50	grey	280-683	50	grey	280-836	50	
blue	280-914 🔵	50				blue	280-839 🔵	50	
orange	280-913	50				orange	280-805 🛑	50	



1 400 V = rated voltage 6 kV = rated surge voltage 3 = pollution degree (see also section 15)

	No.	pcs		ltem No.	Pack. unit pcs		ltem No.	Pack. unit pcs
						2-conducto	or disconnect termin	al block for test and
						measureme	ent with integrated	test sockets
						grey	280-829	50
hrough termin	nal block with the		Through ter	minal block with t		Through te	rminal block with th	•
rey	280-901	page 2.10	grey	280-681	page 2.10	grey	280-833	page 2.10
Accessories	Series 280 (se	ee page 7.13)	A	ppropriate marking	system WMB/WSB	/WFB (see se	ection 14)	
nd and interr	nediate plate, 2.5	mm/0.098 in thick	End and int	ermediate plate, 2	2.5 mm/0.098 in thick	End and intermediate plate, 2.5 mm/0.098 in this		
	orange 2	<b>80-309</b> 100 (4×25)		orange	<b>280-326</b> 100 (4×25)		orange	280-315 100 (4×25
	grey 2	<b>80-308</b> 100 (4×25)	* - 1 Jan 19	grey	<b>280-324</b> 100 (4×25)		grey	280-314 100 (4×25
55,355	light grey 2	<b>80-356</b> 100 (4×25)	V8 3	light grey	<b>280-358</b> 100 (4 x 25)	55,050	light grey	280-352 100 (4×25
<b>eparator,</b> ove	rsized, 2 mm/0.079	in thick	Separator,	oversized, 2 mm/0.0	)79 in thick	Separator,	oversized, 2 mm/0.02	79 in thick
	orange 2	2 <b>80-311</b> 100 (4 x 25)		orange	<b>280-346</b> 100 (4×25)		orange	<b>280-335</b> 100 (4×25
	grey 2	<b>80-310</b> 100 (4 x 25)		grey	<b>280-344</b> 100 (4×25)		grey	280-334 100 (4×25
	light grey 2	80-357 100 (4×25)		light grey	280-359 100 (4 x 25)		light grey	280-353 100 (4x25



0.08 **– 2.5** mm<sup>2</sup> 400 V/6 kV/3 **①** 10 A

AWG 28 - 12 300 V, 15 A **9** 600 V, 15 A ®

Terminal block width 5 mm / 0.197 in **■** 8 – 9 mm / 0.33 in

\* 🕦 🏽 KEDA CCAKEDA 🕞 🐨 🗥 GL BV LR NV 🕲

0.08 **– 2.5** mm<sup>2</sup> 400 V/6 kV/3 **①** 10 A

AWG 28 - 12 300 V, 15 A **9** 600 V, 15 A ®

Terminal block width 5 mm / 0.197 in 8 – 9 mm / 0.33 in

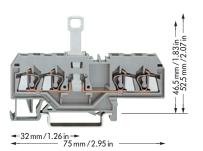
\* 🗚 🁀 🕬 🚭 🚭 🛦 GL BV LR NV 🕲

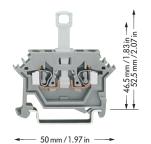
0.08 **– 2.5** mm<sup>2</sup> 400 V/6 kV/3 **①** 10 A

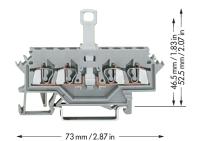
AWG 28 - 12 300 V, 15 A **9** 600 V, 15 A ®

Terminal block width 5 mm / 0.197 in 8 – 9 mm / 0.33 in

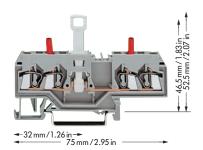
\* 🗫 🎕 KEGA CCAKEGA 🕦 🚭 📽 🗥 GL BV LR NV 🕄

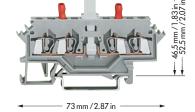






	ltem No.	Pack. unit pcs		Item No.	Pack. unit pcs		ltem No.	Pack. unit pcs		
4-conductor disconnect terminal blocks			2-conduct	2-conductor disconnect terminal blocks			4-conductor disconnect terminal blocks			
grey	280-685	50	grey	280-612	50	grey	280-622	50		
blue	280-676	50	blue	280-614 🔵	50	blue	280-632 🔵	50		
orange	280-695	50								





	ltem No.	Pack. unit pcs		Item No.	Pack. unit pcs		ltem No.	Pack. unit pcs
2-conducto	r disconnect termino	al block for test and			-	2-conductor	disconnect termine	al block for test and
neasureme	nt with integrated t	est sockets				measuremen	t with integrated t	est sockets
grey	280-649	50				grey	280-627	50
Through terminal block with the same shape			Through termine		•	Through term	ninal block with th	•
grey	280-633	page 2.11	grey	280-601	page 2.12	grey	280-621	page 2.12
					-			
		Appr	opriate marking syst	em WMB/W	/SB/WFB (see section	n 14)		
End and int	ermediate plate, 2.5	5 mm/0.098 in thick	End and interm	ediate plate, 2	.5 mm/0.098 in thick	End and inte	rmediate plate, 2.5	5 mm/0.098 in thick
	orange	<b>280-315</b> 100 (4×25)		orange	<b>280-331</b> 100 (4×25)		orange	280-317 100 (4×25
	grey	<b>280-314</b> 100 (4×25)	4	grey	<b>280-330</b> 100 (4×25)		grey	280-316 100 (4×25
50,000	light grey	<b>280-352</b> 100 (4×25)	-13 -17	light grey	<b>280-362</b> 100 (4×25)		light grey	280-364 100 (4×25
Separator, oversized, 2 mm/0.079 in thick			Separator, overs	sized, 2 mm/0.0		Separator, ov	versized, 2 mm/0.07	
		<b>280-335</b> 100 (4×25)		orange	<b>280-328</b> 100 (4×25)			<b>280-327</b> 100 (4×2)
	0 /	<b>280-334</b> 100 (4×25)		grey	<b>280-338</b> 100 (4×25)		0 /	<b>280-337</b> 100 (4×2)
	light grey	280-353 100 (4 x 25)		light grey	<b>280-363</b> 100 (4×25)	1	light grey	280-365 100 (4x2)



## 2

## Disconnect Terminal Blocks for Test and Measurement 4 mm² / AWG 12, Serie 281

0.08 - 4 mm<sup>2</sup> 400 V/6 kV/3 **①** 10 A AWG 28 - 12 300 V, 15 A **9** 300 V, 15 A ®

Terminal block width 6 mm / 0.236 in 9 – 10 mm / 0.37 in

\* 🕦 🍕 KEEB CCAKEEB 🕦 🛈 🚭 🙈 GL BV LR NV 🏶 🕄

0.08 - 4 mm<sup>2</sup> 400 V/6 kV/3 **①** 10 A AWG 28 - 12 300 V, 15 A **7**0 600 V, 15 A ®

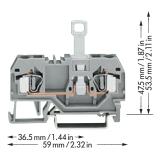
Terminal block width 6 mm / 0.236 in 9 - 10 mm / 0.37 in

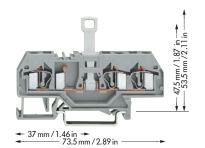
\* 🗫 🏽 KEER CCAKEER 🚭 📽 🗥 GL BV LR NV 🏽 🛭

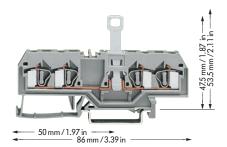
0.08 - 4 mm<sup>2</sup> 400 V/6 kV/3 **①** 10 A AWG 28 - 12 300 V, 15 A **7** 600 V, 15 A ®

Terminal block width 6 mm / 0.236 in 9 – 10 mm / 0.37 in

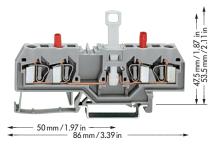
\* 🕦 🍕 KEER (CAKEER (N) (D) 🚭 🐨 🗥 GL BV LR NV 🏶 🚳







	ltem No.	Pack. unit pcs		Item No.	Pack. unit pcs		ltem No.	Pack. unit pcs		
2-conductor disconnect terminal block			3-conduct	3-conductor disconnect terminal block			4-conductor disconnect terminal blocks			
grey	281-912	50	grey	281-683	50	grey	281-659	50		
						blue	281-660 🔵	50		



1 400 V = rated voltage 6 kV = rated surge voltage 3 = pollution degree (see also section 15)

	ltem No.	Pack. unit pcs		ltem No.	Pack. unit pcs		ltem No.	Pack. unit pcs
						2-conducto	or disconnect termin	al block for test and
						measurem	ent with integrated t	test sockets
						grey	281-666	50
Through ter	minal block with the	same shape	Through termine	al block with t	he same shape	Through te	rminal block with th	e same shape
grey	281-901	page 2.16	grey	281-681	page 2.16	grey	281-652	page 2.16
Accessori	es Series 281 (se	ee page 7.13)	Appro	opriate marking	system WMB/WSB	/WFB (see s	ection 14)	
End and inte	ermediate plate, 2.5	mm/0.098 in thick	End and interm	ediate plate, 2	.5 mm/0.098 in thick	End and in	termediate plate, 2.	5 mm/0.098 in thick
	orange 2	2 <b>81-329</b> 100 (4×25)		orange	<b>281-326</b> 100 (4×25)		orange	281-335 100 (4×25)
	grey	281-328 100 (4×25)	· Charles	grey	<b>281-324</b> 100 (4×25)		grey	281-334 100 (4×25)
357,52	light grey 2	2 <b>81-349</b> 100 (4×25)	100 B	light grey	<b>281-355</b> 100 (4×25)		light grey	281-345 100 (4×25)
Separator,	Separator, oversized, 2 mm/0.079 in thick		Separator, overs	sized, 2 mm/0.0	79 in thick	Separator,	oversized, 2 mm/0.07	79 in thick
	orange 2	<b>281-331</b> 100 (4 x 25)		orange	<b>281-346</b> 100 (4×25)		orange	<b>281-339</b> 100 (4×25)
	grey	<b>281-330</b> 100 (4 x 25)		grey	<b>281-344</b> 100 (4×25)		grey	281-338 100 (4×25)
		281-350 100 (4×25)		light grey	281-356 100 (4 x 25)		light grey	281-347 100 (4×25)



#### **Accessories series 280**

see also pages 2.43 and 2.44

#### Accessories series 281

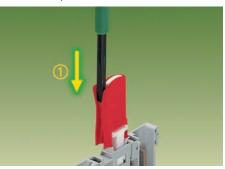
see also pages 2.43 and 2.44

#### **Application notes**

	Item No.	Pack. unit pcs		Item No.		Pack. unit pcs
Insulation stop, 5 p	cs/strip		Insulation stop, 5 p	cs/strip		
. 4000	white	<b>280-470</b> 200 strips	.0000	white	281-470	200 strips
20000	light grey	<b>280-471</b> 200 strips	000000	light grey	281-471	200 strips
0000	dark grey	<b>280-472</b> 200 strips	Ode	dark grey	281-472	200 strips
Comb type jumper	<b>bar,</b> insulat	ed,	Comb type jumper	<b>bar</b> , insulate	ed,	
	$I_N = I_N$ of t	erminal block		$I_N = I_N$ of te	erminal blo	ck
[[]]]]]]]	2-way	<b>280-482</b> 200 (8×25)		2-way	281-482	100 (4 x 25)
	3-way	280-483 200 (8×25)		3-way	281-483	100 (4 x 25)
				5-way	281-485	50 (2 x 25)
	10-way	<b>280-490</b> 50 (2×25)		10-way	281-490	50 (2 x 25)
Alternate comb typ	oe jumper k	oar, insulated,	Alternate comb typ	oe jumper b	<b>ar,</b> insulate	d,
1000	$I_N = I_N$ of t	erminal block		$I_N = I_N$ of te	erminal blo	ck
	2-way	<b>280-492</b> 200 (8 x 25)	11	2-way	281-492	100 (4 x 25)
Operating tool, inst	ulated		Operating tool, ins	ulated		
	2-way	<b>280-432</b> 1		2-way	280-432	1
	3-way	<b>280-433</b> 1		3-way	280-433	1
	10-way	<b>280-440</b> 1		5-way	281-440	1
Protective warning	marker, fo	r 5 terminal blocks,	Protective warning	marker, for	5 terminal	blocks,
	fits into scr	ewdriver slot		fits into scre	ewdriver slo	ot
52660	yellow	<b>280-415</b> 100 (4×25)		yellow	281-415	100 (4 x 25)
Test socket, insulate	d		Test socket, insulate	d		
# # D D	2 mm Ø, red	<b>209-107</b> 100 (2×50)	<b>A A A A</b>	2 mm Ø, red	209-107	100 (2 x 50)
	2.3 mm Ø, yel	. <b>209-108</b> 100 (2×50)		2.3 mm Ø, yel.	209-108	100 (2 x 50)
/ / / / /	.,		/ / / /	.,		, ,
Test plug, with cable	e 500 mm/1"	7.7"	Test plug, with cable	e 500 mm / 1'7	7.7"	
		210-136 50 (5 x 10)				50 (5 x 10)
	2.3 mm Ø, vel	. <b>210-137</b> 50 (5 x 10)		2.3 mm Ø. vel.	210-137	50 (5 x 10)
						( /
Disconnect lock, for	r disconnect	tab of series	Disconnect lock, fo	r disconnect t	tab of serie	S
		lisconnect terminal		280/281 di		
	blocks			blocks		
	red	709-170 200 (8×25)		red	709-170	200 (8 × 25)
		(C X 20)				(0 / 20)



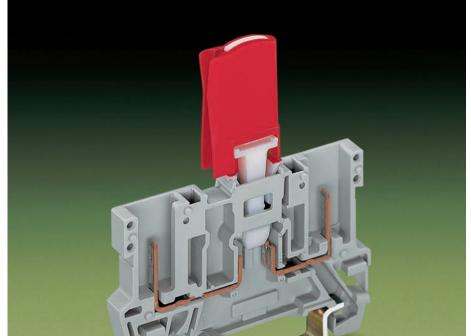
The lock is put on the disconnect tab of the disconnect terminal block (the picture shows a 2-pin base receptacle block series 769)



① Unlocking of disconnect lock



2 Removing of disconnect lock



#### **Double safety**

The disconnect tab has been designed to provide maximum operational safety.

As soon as the disconnect tab is in the disconnect position, it can be further protected against unintentional reconnection by using the disconnect lock.

Only by means of a conscious act, and the use of a tool, can the disconnect lock be removed, and the circuit reconnected.

#### Features/Benefits:

- Easy handling
- The disconnect lock can be easily installed
- Clear identification with the position of the disconnect tab
- Increases safety
- Reconnecting the circuit requires a conscious act



# Disconnect Terminal Blocks for Test and Measurement of Transformer Circuits, with CAGE CLAMP $^{\rm B}$ , Series 282 . . .

Preparing the shorting path for the current transformer.







**TEST** 

Terminal strip permanently prepared for current transformer circuits

Ι

Insertion of insulated, touchproof adjacent jumpers into the protected shorting position

#### Positive action



Lock-out has "snap" action into two notched positions preventing accidental operation of the disconnect link

#### Locking cover for disconnect links



Transparent locking cover for 1–4 disconnect links

- can be snapped on
  a) for mechanical interlocking for multipole switching b) for protecting markers

#### Interlocking link



Interlocking link for mechanical interlocking of several links for multipole switching



**CAGE CLAMP®** clamps the following copper wires:\*

\* For aluminum wire see notes in section 15!

#### **Touchproof test sockets**



For touchproof test plugs Ø 4 mm (for example mfd by Multi-Contact)



stranded

#### Marking



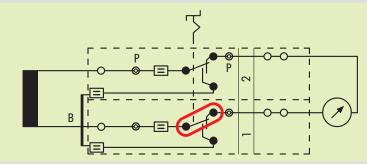
Marking with WMB Multi marking system, WSB Quick marking system or WCB Combi marking system.



fine stranded, also with tinned single strands

#### ... Description and Handling

#### Disconnect link in notched position "I" (terminal blocks 1+2)

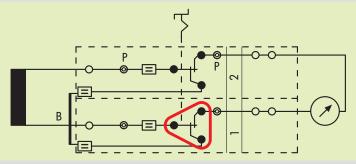


In position '' I" the measuring instrument is connected to the transformer secondary

B = shorting jumper, P = test socket



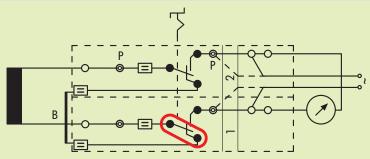
#### Disconnect link in transition from "I" → "TEST" (terminal blocks 1+2)



By moving the interlocked disconnect links from " $\mathbf{I}$ " to "TEST" the shorting path is activated without disconnection of the measuring instrument yet.



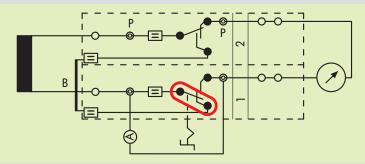
#### Disconnect link in notched position "TEST" (terminal blocks 1+2)



The measuring instrument is electrically disconnected from the transformer. In this position, if necessary, an external voltage can be applied via the sockets or the  $2^{nd}$  CAGE CLAMP\* connection for relay testing in transformer protection circuits



## Disconnect link in notched position "I" (terminal block 2) Disconnect link in notched position "TEST" (terminal block 1)



Measured value test. Before moving the disconnect link of terminal block 1 into the notched position "TEST" the reference current meter must be inserted into the test socket of terminal block 1!





fine-stranded wire – tip bonded



fine-stranded wire with crimped ferrule 1



fine-stranded wire with crimped pin terminal



#### **Examples of Circuit Configuration**

**CAGE CLAMP®** connection

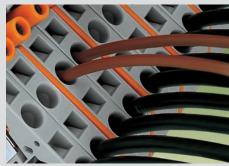
#### Measuring set for a single-phase current transformer

(without testing facility for measured value test)



Connection of conductors with screwdriver  $(5.5 \times 0.8)$  mm

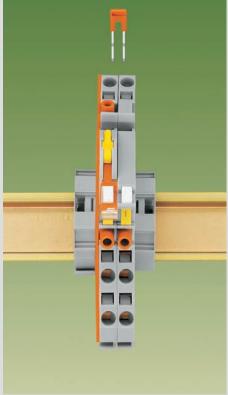
#### Additional CAGE CLAMP® connection



Additional CAGE CLAMP® connection on the side of the measuring instrument For example: connecting wire commoning chains or applying an external voltage

# 

Terminal blocks required:



1x disconnect/test terminal block 1x through terminal block 1x jumper, orange 1x end plate, orange in addition locking cover, lock-out

282-870 282-865 282-424 282-386

#### Commoning



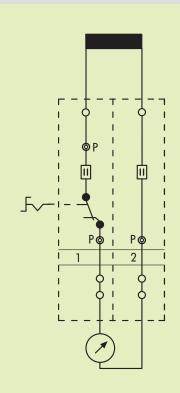
Additional commoning possibility with adjacent jumper. For example: 'Y' ≜ star point

#### Lock-out seal

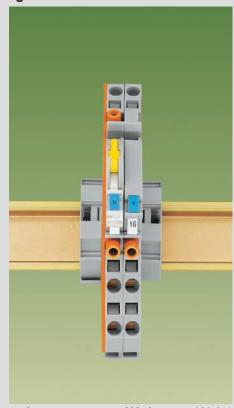


A lock-out seal can be used on the disconnect link in notched position "I"

#### Measuring set for a single-phase voltage transformer



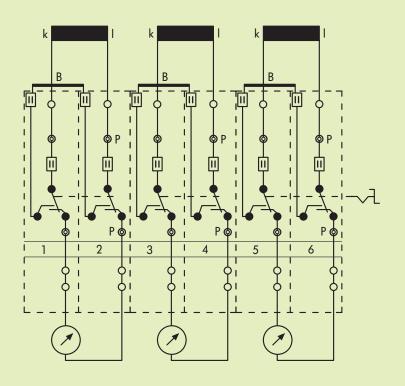
Terminal blocks required: 1x disconnect/test terminal block



1x disconnect/test terminal block
1x through terminal block
1x end plate, orange
in addition locking cover, lock-out

282-860 282-866 282-386

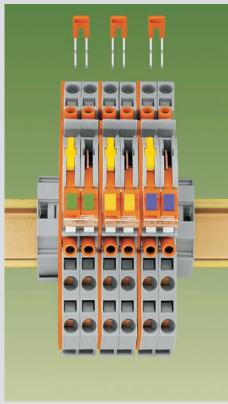
#### Measuring set for a 3-phase current transformer



Pairs of disconnect links are interlocked by means of the locking covers.

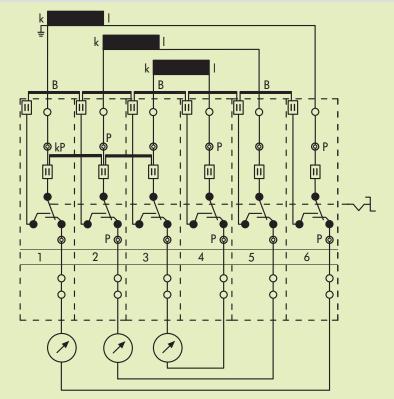
Termin After the interlocking has been released testing of the measured value is also possible. Terminal blocks required:

B = shorting jumper, P = test socket

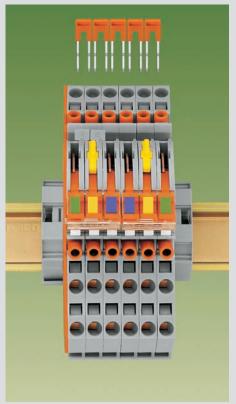


6x disconnect/test terminal block 282-870 282-424 282-386 3x end plate, orange 282-38 in addition locking links, locking covers, lock-outs

#### Measuring set for a 3-phase current transformer with 'Y' point



All 6 disconnect links are interlocked by means of the interlocking link. kP = 'Y' point jumpers



Terminal blocks required: 6x disconnect/test terminal block 5x through terminal block, orange 282-870 282-424 282-402 2x jumper, grey 282-40
1x end plate, orange 282-38
in addition locking links, locking covers, lock-outs 282-386



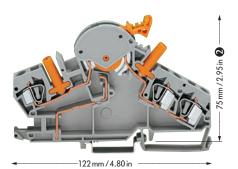
# Disconnect/Test Terminal Blocks 6 mm<sup>2</sup> (AWG 10)/30 A, Through Terminal Blocks, Series 282 for Example for Current Transformer Circuits

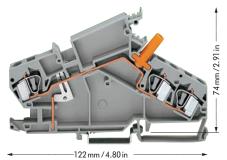
0.2 - 6 mm<sup>2</sup> 500 V/6 kV/3 **①** 30 A AWG 24 - 10 600 V, 30 A **9**V 0.2 - 6 mm<sup>2</sup> 500 V/6 kV/3 **①** 30 A AWG 24 - 10 600 V, 30 A 恥

Terminal block width 8 mm / 0.315 in 12 − 13 mm / 0.49 in

\* 🕦 KEGA CCAKEGA 🕞 GL BV LR NV 🛭

\* 🕦 KEDA CCAKEDA 🕞 GL BV LR NV 🖗





500 V = rated voltage
6 kV = rated surge voltage
3 = pollution degree
(see also section 15)

2 = section 15

2 max. height when rotating disconnect, incl. locking cover, is 92 mm/3.62 in.

Description			Item No.	Pack. unit pcs		ltem No.	Pack. unit pcs	
Disconnect/test to	erminal block	Disconnect/test t	erminal block,		Through tern	ninal block,		
and		example for currer	nt transformer circ	uits	example for current transformer circuits			
Through terminal	block, for DIN 35 rail	with touch-proof test plug 4 mm/0.157 in Ø,			with touch-proof test plug 4 mm / 0.157 in Ø,			
		disconnect link ora	nge					
		grey	282-870	20	grey	282-865	20	
Accessories	Арр	ropriate marking syste	m WMB/WSI	B/WCB (see sectio	n 14)			
	End and intermediate plate,	1.5 mm / 0.059 in t	hick					
	without use of lock-out seal	orange	282-386	50 (5 x 10)				
		grey	282-391	50 (5 x 10)				
	End and intermediate plate,	1.5 mm / 0.059 in t		(				
4	for use of lock-out seal	orange	282-387	50 (5 x 10)				
	Tor osc or lock our scar	grey	282-392	50 (5 x 10)				
	End and	grey	202 072	50 (5 X 10)	1.5 mm / 0.059	9 in thick		
	intermediate plate				orange	282-385	50 (5 x 1	
	illierilledidie pidie				_	282-390	50 (5 x 1	
	Lock-out,				grey	202-370	30 (3 X I	
			202 204	100 /F 20\				
	for disconnect link	yellow	282-384	100 (5 x 20)				
•	Locking cover,	transparent						
	for mechanical locking	1-pole	282-881	50 (5 x 10)				
	of several links	2-pole	282-882	50 (5 x 10)				
MAD		3-pole	282-883	20 (2 x 10)				
		4-pole	282-884	20 (2 x 10)				
	Interlocking link,	1 m/3'3" long						
	for mechanical locking	transparent	210-254	1				
	of several links							
	Adjacent jumper,	I <sub>N</sub> 41 A			I <sub>N</sub> 41 A			
	insulated	grey	282-402	100 (4 x 25)	grey	282-402	100 (4 x 2	
Į Į		orange	282-424	100 (4 x 25)	orange	282-424	100 (4 x 2	
	Alternate jumper,	I <sub>N</sub> 41 A			I <sub>N</sub> 41 A			
	insulated	grey	282-409	100 (4 x 25)	grey	282-409	100 (4 x 2	
l u								
$\bigcirc\bigcirc\bigcirc$	Wire commoning chain,	spacing			spacing			
1 1 1	insulated, black,	3 x 80 mm / 3.15 ir	709-110	1	3 x 80 mm/3	.15 in <b>709-110</b>	1	
	4 connections, 24 A, 2.5 mm <sup>2</sup>							
$\bigcirc$	Wire commoning chain,	spacing			spacing			
/ Y 1	insulated, black,	2 x 90 mm/3.54	in <b>709-111</b>	1	2 x 90 mm/	3.54 in <b>709-111</b>	1	
	3 connections, 24 A, 2.5 mm <sup>2</sup>	2 x 150 mm / 5.91	in <b>709-112</b>	1	2 x 150 mm/	5.91 in <b>709-112</b>	1	
-	Protective warning marker,							
56666	for 5 terminal blocks,	yellow	282-415	100 (4 x 25)	yellow	282-415	100 (4 x 2	
200	fits into screwdriver slot							
h///	<b>Test plug,</b> 4 mm/0.157 in ∅,	for ex. mfd by Mu	ti-Contact Deutsc	hland GmbH	for ex. mfd by	Multi-Contact Deutsch	land GmbH	
	touch-proof,	not offered by WA			not offered by			
	· b · · · ›							
	WSB Marker card,	yellow			yellow			
Contract Contract	10 strips with 10 markers each,							
16494444	with printing	k/l (50 each)	249-553/000		k/l (50 each)	249-553/000		
	Operating sticker		210-412	100		210-415	100	

<sup>\*</sup> For further approvals with corresponding ratings see section 15.

# Disconnect/Test Terminal Blocks 6 mm² (AWG 10)/30 A, Through Terminal Blocks, Angled Type; Series 282 for Example for Voltage Transformer Circuits



0.2 - 6 mm<sup>2</sup> 500 V/6 kV/3 **①** 30 A

AWG 24 - 10 600 V, 30 A **9**0

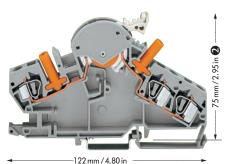
Terminal block width 8 mm / 0.315 in 2 = 13 mm / 0.49 in

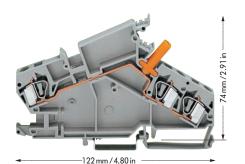
\* 🕦 KEUR CCAKEUR 🕞 GL BV LR NV 🛭

0.2 - 6 mm<sup>2</sup> 500 V/6 kV/3 **①** 30 A AWG 24 - 10 600 V, 30 A **9** 

\* 🕦 KEDA CCAKEDA 🕞 GL BV LR NV 🛭

Colored marker cards vertical/horizontal marking for terminal block width > 5 mm/0.197 in







	122111117 4.00111			122111117 4.00111			
	Item No.	Pack. unit pcs		Item No.	Pack. unit	Color	Item No.
Disconnect/test terminal block,			Through ter	minal block,		Colored Mar	ker cards
example for vo	ltage transformer circui	its	example for voltage transformer circuits			All markings ir	n section 14 are also available with black
with touchproof	f test plug 4 mm / 0.157	in Ø,	with touchpro	oof test plug 4 mm/0.157	in Ø,	printing on co	lored marker cards.
disconnect link	light grey						
grey	282-860	20	grey	282-866	20		
	Appropriate man	rking system <b>WM</b>	B/WSB/W	CB (see section 14)			
1.5 mm / 0.059	in thick					Add. item nos	. for colored marker cards
orange	282-386	50 (5 x 10)				yellow	/000-002
grey	282-391	50 (5 x 10)				red	/000-005
1.5 mm / 0.059	in thick					blue	/000-006
orange	282-387	50 (5 x 10)				grey	/000-007
	000 000	EO (E 30)					(000 070

orange	282-386	50 (5 x 10)			I	yellow	/000-002
grey	282-391	50 (5 x 10)				red	/000-005
1.5 mm / 0.059 in	thick					blue	/000-006
orange	282-387	50 (5 x 10)				grey	/000-007
grey	282-392	50 (5 x 10)				orange	/000-012
			1.5 mm / 0.05	i9 in thick		green	/000-023
			orange	282-385	50 (5 x 10)	violet	/000-024
			grey	282-390	50 (5 x 10)		
						Ordering exc	mple
yellow	282-384	100 (5 x 20)				Marking 1	. 50 on red card
							209-566/000-005
transparent							
1-pole	282-881	50 (5 x 10)				Note:	
2-pole	282-882	50 (5 x 10)				Please note th	nat colored marker cards are normally on
3-pole	282-883	20 (2 x 10)				longer delive	ry and more expensive than standard
4-pole	282-884	20 (2 x 10)				cards.	
1 m/3'3" long							
		_					

210-413

3-pole	282-883	20 (2 x 10)			
4-pole	282-884	20 (2 x 10)			
1 m / 3'3" long					
transparent	210-254	1			
I <sub>N</sub> 41 A			I <sub>N</sub> 41 A		
grey	282-402	100 (4 x 25)	grey	282-402	100 (4 × 25)
I <sub>N</sub> 41 A			I <sub>N</sub> 41 A		
grey	282-409	100 (4 x 25)	grey	282-409	100 (4 x 25)
spacing			spacing		
3 x 80 mm / 3.15 in	709-110	1	3 x 80 mm/3.15 in	709-110	1
spacing			spacing		
2 x 90 mm/3.54 ir	709-111	1	2 x 90 mm/3.54 in	709-111	1
2 x 150 mm / 5.91 ir	709-112	1	2 x 150 mm/5.91 in	709-112	1
yellow	282-415	100 (4 x 25)	yellow	282-415	100 (4 x 25)
for ex. mfd by Multi	-Contact Deutschland	GmbH	for ex. mfd by Multi-	-Contact Deutschland (	GmbH
not offered by WAC	90		not offered by WAG	O	
blue			blue		
U/V (50 each)	249-554/000-006	<b>5</b> 1 card	U/V (50 each)	249-554/000-006	1 card

210-414

100



**Group marker carriers** 

- angled

**209-144** Pack.-unit 50

The group marker carriers make it possible to mark subgroups in confined places.

They can be snapped into the jumper contact positions of the terminal block housing.

The marking can be done with either the WAGO WSB Quick marking system, WAGO WMB Multi marking system or the WAGO WCB Combi marking system.



## Transverse Switching Terminal Blocks and Longitudinal Switching Disconnect Terminal Blocks with CAGE CLAMP<sup>®</sup>, Series 282 – Description

#### Commoning



Transverse switching terminal blocks

• Adjacent jumper for commoning of switching

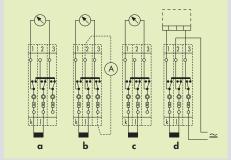
Commoning with orange jumper

#### **Switch positions**



closed

Current transformer circuit with transverse switching term. blocks



a = Normal operationb = Measured value test d = Relay test c = Transformer short-circuit

#### **Testing**



Testing with touchproof test plug 4 mm/0.157 in Ø

#### Lock-out Coupling Adjacent device device jumper for switching Jumper lever Transverse switching terminal block

#### **CAGE CLAMP®** connection



Connecting wire

Lock-out device Coupling device **Jumper** Jumper in disconnect position Longitudinal switching disconnect terminal block

#### **Switching lock-out**



Inserting lock-out device



**CAGE CLAMP®** clamps the following copper wires:\*

\* For aluminum wire see notes in section 15!

#### Commoning

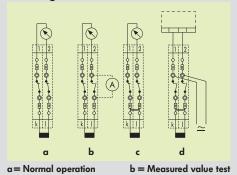


Longitudinal switching disconnect terminal blocks with jumper 1 in connected and 2 in disconnect position



stranded

Current transformer circuit with longitudinal switching disconnect terminal blocks



c = Transformer short-circuit

d = Relay test



fine stranded, also with tinned single strands

# Transverse Switching Terminal Blocks and Longitudinal Switching Disconnect Terminal Blocks , 6 mm² / AWG 10, Series 282 for Example for Current Transformer Circuits



 $0.2 - 6 \text{ mm}^2$ 500 V/6 kV/3 **①**  AWG 24 - 10 600 V, 30 A 94

Terminal block width 8 mm / 0.315 in □ 12 – 13 mm / 0.49 in

\* WENN CCAKENN

0.2 - 6 mm<sup>2</sup> 500 V/6 kV/3 **①** 30 A

AWG 24 - 10 600 V, 30 A 94

Terminal block width 8 mm / 0.315 in 12 – 13 mm / 0.49 in

KEMA CCAKEMA



 $89\,\mathrm{mm}/3.5\,\mathrm{in}$ 



 $98\,\mathrm{mm}/3.86\,\mathrm{in}$ 

Description		ltem No.	Pack. unit pcs		ltem No.	Pack. unit pcs
Transverse switching terminal block	2-conduc	tor transverse switchin	g terminal block,	2-conductor longitudinal switching disconnec		
and	with (oran	ge) touchproof test plug	4 mm/0.157 in Ø	terminal l	olock,	
longitudinal switching disconnect terminal block,	grey	282-811	20	with (orang	ge) touchproof test plugs	4 mm/0.157 in Ø
for DIN 35 rail				grey	282-821	20

Transverse switch	ing terminal block	2-conductor tro	ınsverse switching terr	ninal block,	2-conductor longitudinal switching disconnect		
and		with (orange) tou	chproof test plug 4 mm/	0.157 in Ø	terminal block,		
longitudinal swite	ching disconnect terminal block,	grey	282-811	20	with (orange) tou	uchproof test plugs 4 mm/	/0.157 in Ø
for DIN 35 rail					grey	282-821	20
Accessories	Appropriate ma	rking system <b>WME</b>	3/WSB/WCB/Min	iature WSB	(see section 14)		
	End and intermediate plate,	1.5 mm/0.059 in	thick				
	for 2-conductor transverse	orange	282-366	50 (5 x 10)			
	switching terminal blocks	grey	282-361	50 (5 x 10)			
4	End and intermediate plate,				1.5 mm/0.059 in	thick	
	for 2-cond. longitudinal switching				orange	282-365	50 (5 x 10)
	disconnect terminal blocks				grey	282-360	50 (5 x 10)
4	Lock-out device,						
	for switching lever	yellow	282-370	100 (4 x 25)	yellow	282-370	100 (4 x 25)
	Coupling device, yellow,	2-way	282-372	50 (5 x 10)	2-way	282-372	50 (5 x 10)
	to couple	3-way	282-373	50 (5 x 10)	3-way	282-373	50 (5 x 10)
nn n	several switching levers	4-way	282-374	50 (5 x 10)	4-way	282-374	50 (5 x 10)
	Jumper, orange, I <sub>N</sub> 30 A	2-way	282-432	50 (5 x 10)	2-way	282-432	50 (5 x 10)
Tu.	insulated	3-way	282-433	50 (5 x 10)	3-way	282-433	50 (5 x 10)
HH	Jumper, special design	4-way	282-434	50 (5 x 10)	4-way	282-434	50 (5 x 10)
	for ex. 3-way (1-3-5)	5-way	282-435	50 (5 x 10)	5-way	282-435	50 (5 x 10)
	please contact factory	-	:			:	
		10-way	282-440	50 (5 x 10)	10-way	282-440	50 (5 x 10)
	Adjacent jumper for switching	2-way	282-442	50 (5 x 10)	•		· ,
	<b>lever,</b> orange, I <sub>N</sub> 30 A, for trans.	3-way	282-443	50 (5 x 10)			
	switching term. blocks, insulated	4-way	282-444	50 (5 x 10)			
	Protective warning marker,	,		, ,			
55666	for 5 terminal blocks,	yellow	282-415	100 (4 x 25)	yellow	282-415	100 (4 x 25)
	fits into screwdriver slot	,			,		. ,
<b>a</b> ///	<b>Test plug,</b> 4 mm/0.157 in Ø,	for ex. mfd by M	Aulti-Contact Deutschland	I GmbH	for ex. mfd by M	Aulti-Contact Deutschland	GmbH
	touch-proof,				•		
	not offered by WAGO						
	WMB Marker card, 10 strips						
******	with 10 markers each, blue	U/V (50 each)	794-554/000-006	1 card	U/V (50 each)	794-554/000-006	1 card
	with printing yellow	k/l (50 each)	794-553/000-002	1 card	k/l (50 each)	794-553/000-002	1 card
	Collective carrier for jumpers,				. ,		
	see page 14.37		282-369	25		282-369	25
	. 0						
	Operating sticker		210-424	100		210-423	100
	, J						



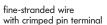
 $\bullet$  500 V = rated voltage

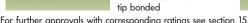
2 max. height when rotating disconnect,

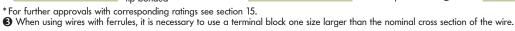
incl. coupling device, 45 mm/1.77 in











# Disconnect Terminal Blocks 6 mm<sup>2</sup> (AWG 10)/30 A, and Through Terminal Blocks of Same Shape, Series 282

0.2 - 6 mm<sup>2</sup> 400 V/6 kV/3 **①**  AWG 24 - 10 600 V, 30 A **9** 300 V, 40 A ®

Terminal block width 8 mm / 0.315 in 12 – 13 mm / 0.49 in

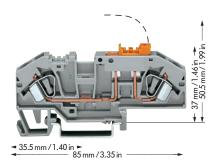
\* 🗫 @ KEDA CCAKEDA 🚭 GL BV LR NV

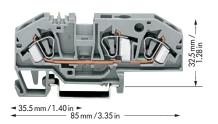
0.2 - 6 mm<sup>2</sup> 800 V/8 kV/3 **0** 41 A

AWG 24 - 10 600 V, 30 A **%** 600 V, 40 A ®

Terminal block width 8 mm / 0.315 in 12 - 13 mm / 0.49 in

\* 🗫 @ CCAKETA 🕞 GL BV LR NV 🕲





■ 400/800 V = rated voltage 6/8 kV = rated surge voltage 3 = pollution degree (see also section 15)

Description			ltem No.	Pack. unit pcs		ltem No.	Pack. unit pcs
Disconnect tern	ninal block,	2-conductor	disconnect terminal	blocks,	3-conductor through terminal blocks,		
ground (earth)	conductor disconnect terminal block	with testing facility,			with testing facility,		
and		disconnect lin	k orange		of same shape	e as disconnect termino	al blocks at the left
through termine	al block, for DIN 35 rail	grey	282-697	25	grey	282-699	25
		blue	282-695	25	blue	282-694	25
Accessories	A	Appropriate mar	king system <b>WMB/V</b>	<b>VSB</b> (see section 14	)		
	End plate	2 mm / 0.079	in thick		2 mm / 0.079	in thick	
		orange	282-333	100 (4 x 25)	orange	282-333	100 (4 x 2
		grey	282-334	100 (4 x 25)	grey	282-334	100 (4 x 2
i i	Adjacent jumper	I <sub>N</sub> 41 A		, ,	I <sub>N</sub> 41 A		,
	insulated	grey	282-402	100 (4 x 25)	grey	282-402	100 (4 x 2
		0 ,		, ,	0 ,		,
	Alternate jumper,	I <sub>N</sub> 41 A			I <sub>N</sub> 41 A		
	insulated	grey	282-409	100 (4 x 25)	grey	282-409	100 (4 x 2
l I							
	Test plug adapter,	8 mm / 0.315	in wide		8 mm/0.315 i	n wide	
Y	suitable for terminal blocks		209-170	50 (2 x 25)		209-170	50 (2 x 2
II.	1.5 mm <sup>2</sup> - 10 mm <sup>2</sup> /AWG 16 - 8	for test plug 4	4 mm ∕ 0.157 in Ø		for test plug 4	mm/0.157 in Ø	

#### Application notes



Testing using the conductor wire opening . . .



... or the jumper contact position in current bar.



Supply via disconnect. All-pole disconnection of the commoned fuse terminal blocks.

<sup>\*</sup> For further approvals with corresponding ratings see section 15.

### Ground (Earth) Conductor Disconnect Terminal Blocks 6 mm<sup>2</sup> (AWG 10)/30 A Series 282



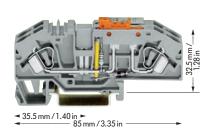
 $0.2 - 6 \text{ mm}^2$ 400 V/6 kV/3 **①** 

f. AC/DC 230 V

grey

AWG 24 - 10

Terminal block width 16 mm / 0.630 in □**■** 12 – 13 mm / 0.49 in



	İtem	Pack. unit
	No.	pcs
Ground (earth) co	ond. disconnect t	erm. blocks, grey
f. AC/DC 24 V	282-640	12
f. AC/DC 48 V	282-641	12
f. AC/DC 120 V	282-638	12

282-639

Appropriate marking system	WMB/WSB	(see section 14)
2 mm / 0.079 in thick	(	
orange	282-333	100 (4 x 25)
grey	282-334	100 (4 x 25)
I <sub>N</sub> 41 A		
grey	282-402	100 (4 x 25)
I <sub>N</sub> 41 A		

8 mm / 0.315 in wide	
209-170	50 (2 x 25)
for test plug 4 mm/0.157 in Ø	

100 (4 x 25)

282-409



Ground (earth) conductor disconnect terminal block

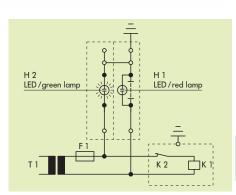
IEC 204-1:1992 "Electrical equipment of industrial machines, part 1: General requirements" 9.4.3.1

Earth faults on control circuits shall not cause unintentional starting, hazardous movements, or prevent stopping of the machine.

In order to fulfill this requirement, bonding to the protective bonding circuit shall be provided in accordance with 8.2 and the devices shall be connected as described in 9.1.4. Control circuits fed from a transformer and not connected to the protective bonding circuit shall be provided with an insulation monitoring device (e. g. residual current device) which either indicates an earth fault or interrupts the circuit automatically after an earth fault.

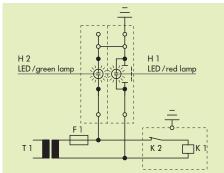
In the case of electronic circuits, the connection of one side of the control circuit to the protective bonding circuit in accordance with 9.1.4 can prevent unintentional operation. When this does not help, or if due to other reasons electronic circuits cannot be connected to the protective bonding circuit, other measures shall be taken to achieve the same level of safety.

Where the control circuit is directly connected between the phase conductors of the supply or between a phase conductor and a neutral conductor which is either not earthed or earthed through a high impedance, multi-pole control switches which interrupt all live conductors shall be used for start or stop of those machine functions which can cause a hazardous condition or damage to the machine or to the work in progress, in the event of unintentional starting or failure to stop.

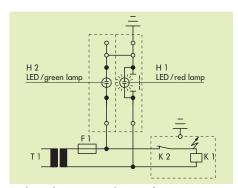


Operating condition

slide link closed, auxiliary circuit grounded (earthed), green lamp lights.



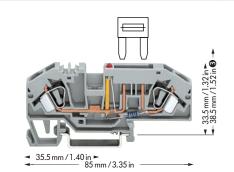
Test condition - no grounding (earthing) slide link open, auxiliary circuit not grounded (earthed).

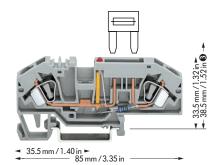


Fault condition - grounding (earthing) slide link open, auxiliary circuit not grounded (earthed), red lamp lights.



## Fuse Terminal Blocks for Mini-Automotive Blade-Type Fuses, 6 mm<sup>2</sup> /AWG 10 Series 282

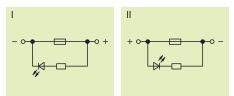
0.2 - 6 mm<sup>2</sup>
400 V/6 kV/3 • • | AWG 24 - 10
12 V, 30 A • | 400 V/6 kV/3 • • | 24 V, 30 A • | 12 


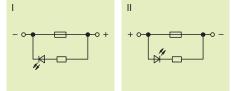


- 400 V = rated voltage
   6 kV = rated surge voltage
   3 = pollution degree
   (see also section 15)
- Electrical data are determined by the fuse. (Blade-type cartridges, for 42 V and more touchproof protection)

Current consumption LED 4.8 mA

3 with inserted fuse





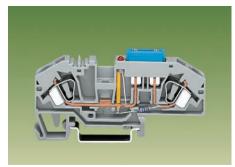
Description			Item No.	Pack. unit pcs		Item No.	Pack. unit pcs
Terminal block fo	or mini-autom. blade-type fuses,	2-cond. fuse ter	m. bl. for mini-autom	otive fuses,	2-cond. fuse	term. bl. for mini-auton	notive fuses,
for DIN 35 rail		12 V, with blown	fuse indication by LED,		24 V, with blo	wn fuse indication by LED	,
		with testing facility	У		with testing fac	cility	
		Circuit I, grey	282-698/281-429	25	Circuit I, grey	282-698/281-41	<b>3</b> 25
		Circuit II, grey	282-698/281-449	25	Circuit II, grey	282-698/281-43	4 25
Accessories	A	Appropriate marking	system WMB/WSB	(see section 14	)		
End plate		2 mm / 0.079 in th	nick		2 mm / 0.079 ii	n thick	
	· ·	orange	282-333	100 (4 x 25)	orange	282-333	100 (4 x 2
4		grey	282-334	100 (4 x 25)	grey	282-334	100 (4 x 25
lin .	Adjacent jumper,	I <sub>N</sub> 41 A			I <sub>N</sub> 41 A		
4	insulated	grey	282-402	100 (4 x 25)	grey	282-402	100 (4 x 2
Up)							
	Alternate jumper,	I <sub>N</sub> 41 A			I <sub>N</sub> 41 A		
	insulated	grey	282-409	100 (4 x 25)	grey	282-409	100 (4 x 2
l a							
	Test plug adapter,	8 mm / 0.315 in w	ide		8 mm / 0.315 ir	n wide	
Y	suitable for terminal blocks		209-170	50 (2 x 25)		209-170	50 (2 x 2
W.	1.5 mm <sup>2</sup> – 10 mm <sup>2</sup> /AWG 16 – 8	for test plug 4 mr	n/0.157 in Ø		for test plug 4 mm/0.157 in Ø		
(C)	Blade-type fuse cartridges,						
Ti no	acc. to DIN 72581-3c/ISO 8820	not offered by W	/AGO		not offered by	WAGO	
<b>a</b>	Excess-current circuit-breaker,	not offered by W	AGO. Recommended ex	cess-current circ	cuit-breakers of E	TA	
	thermal,	/ 1	610-21 or 1610-22,				
1000	mfd by ETA	individual or bloc	k arrangement up to 25	A for conducto	r cross section 4 r	nm²/AWG 12	



Insertion of a fuse.



Blown fuse indication by LED.



 $\ensuremath{\text{2-conductor}}$  fuse terminal block with mini-automotive blade-type fuse.

#### **Current-Carrying Capacity Curves**



0.2 - 6 mm<sup>2</sup> 400 V/6 kV/3 **0 2** 25/30 A **2 6** 

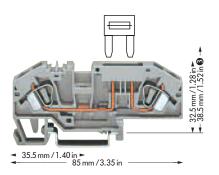
AWG 24 - 10 600 V, 30 A **90** 24 V, 30 A ®

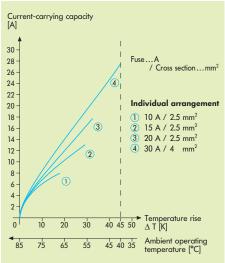
Terminal block width 8 mm / 0.315 in 12 - 13 mm / 0.49 in

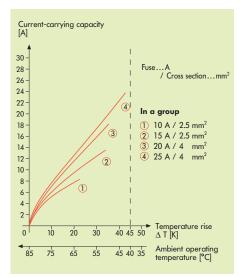
\* 91 @

 Higher ambient temperatures (T<sub>amb</sub>) are an additional burden on fuse cartridaes.

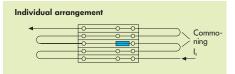
Therefore, the reduction of the rated current according to the following diagrams and tables (see factor  $F_T$ ) should be taken into account in such applications:

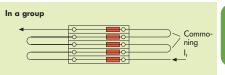


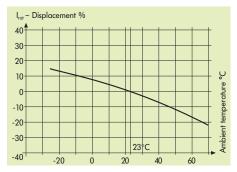




	Item No.	Pack. unit pcs
2-cond. fuse to	erm. bl. for mini-au	tomotive fuses,
without blown-fo	use indication,	
with testing facil	ity	
grey	282-696	25
Appropriate marking system	WMB/WSI	<b>3</b> (see section 14)
2 mm / 0.079 in	thick	
orange	282-333	100 (4 x 25
grey	282-334	100 (4 x 25
I <sub>N</sub> 41 A		
grey	282-402	100 (4 x 25
I <sub>N</sub> 41 A		
grey	282-409	100 (4 x 25
8 mm / 0.315 in	wide	
	209-170	50 (2 x 25
for test plug 4 n	nm / 0.157 in Ø	
not offered by \	WAGO	
	<del>.</del>	
not offered by \	WAGO.	
Recommended e	excess-current circuit-	breakers of ETA







Information from the mini-automotive blade-type fuse manufacturers

Derating		
T <sub>amb</sub> /°C	%	F <sub>T</sub>
- 25	14	0.877
- 20	13	0.885
- 15	12	0.893
- 10	11	0.901
- 5	10	0.909
0	9	0.917
5	8	0.926
10	6	0.943
15	4	0.962
20	2	0.980
23	0	1.000
30	- 2	1.020
35	- 4	1.042
40	- 6	1.064
45	- 8	1.087
50	- 10	1.111
55	- 13	1.149
60	- 16	1.190
65	- 19	1.235
70	- 22	1.282

The rated currents of the fuse cartridges are defined differently in international standards.

Due to the different current rating definitions, the recommended current-carrying permanent capacity of the fuses is max. 80% of their rated current according to DIN 72581 part 3 (for an ambient operating temperature of 23°C).

Selecting the correct fuse cartrigde is important for product safety within applications as well as the service life/operational reliability of the fuse cartrigdes. Fuse cartrigdes can operate perfectly as protection (break-off point) if they are properly selected and are used in accordance with the manufacturers specifications.

In general it is necessary to test fuse cartridges under normal conditions and operational failures within your application.



Insertion of a fuse.

With regard to the product safety, it is in general necessary to test the fuse in the appliance under normal conditions and operational failures.



#### Disconnect Terminal Blocks for Test Purposes, Ground (Earth) Conductor Disconnect Terminal Blocks 6 mm², Series 282

0.2 - 6 mm<sup>2</sup> 400 V/6 kV/3 **①** 41 A AWG 24 - 10 300 V, 30 A **90** 300 V, 40 A @ 0.2 - 6 mm<sup>2</sup> 400 V/6 kV/3 **0** 41 A AWG 24 - 10 300 V, 30 A **3** 300 V, 40 A **3** 

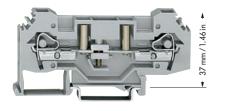
Terminal block width 8 mm / 0.315 in 12 – 13 mm / 0.49 in

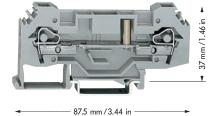
\* 🗫 🎕 KEER CCAKEER 🕲 🕾 🐨 GL BV LR NV 🛭 🕙

12 – 13 mm / 0.49 in

Terminal block width 8 mm / 0.315 in

\* 🕦 🌀 KEUR CCAKEUR 🕦 🖭 🙈 GL BV LR NV 🛞





■ 400 V = rated voltage
 6 kV = rated surge voltage
 3 = pollution degree
 (see also section 15)

for DIN 35 rail

ltem No.	Pack. unit pcs	Item No.	Pack. unit pcs
Disconnect terminal block for test pur	poses		
	No.		No. pcs No.

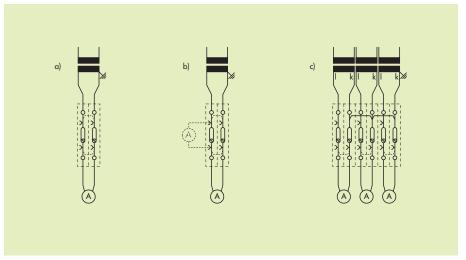
87.5 mm/3.44 in

with test sockets 4 mm/0.157 in Ø

					grey	282-133	25
Accessories		Appropriate marking sys	tem WMB/V	VSB (see section 14)			
	End and	4 mm / 0.157 in thick			4 mm/0.157 i	n thick	
1.00	intermediate plate	orange	282-315	50 (2 x 25)	orange	282-315	50 (2 x 25)
		grey	282-314	50 (2 x 25)	grey	282-314	50 (2 x 25)
- CL 107	Screwless						
-1111-	end stop	6 mm / 0.236 in wide	249-116	100 (4 x 25)	6 mm / 0.236	in wide <b>249-116</b>	100 (4 x 25)
		10 mm / 0.394 in wide	249-117	50 (2 x 25)	10 mm / 0.394	in wide <b>249-117</b>	50 (2 x 25)
lite .	Adjacent jumper,	I <sub>N</sub> 41 A			I <sub>N</sub> 41 A		
T T	insulated	grey	282-402	100 (4 x 25)	grey	282-402	100 (4 x 25)
UH .							
	Alternate jumper,	I <sub>N</sub> 41 A			I <sub>N</sub> 41 A		
7 1	insulated	grey	282-409	100 (4 x 25)	grey	282-409	100 (4 x 25)
	Test plug adapter,	8 mm / 0.315 in wide			8 mm / 0.315 i	n wide	
W.	suitable for terminal blocks	0 111117 0.013 III WIGE	209-170	50 (2 x 25)	0 111117 0.013 1	209-170	50 (2 x 25)
Ī	1.5 mm <sup>2</sup> - 10 mm <sup>2</sup> /AWG 16-8	for test plug 4 mm/0	).157 in Ø	.,	for test plug 4	mm / 0.157 in Ø	,
	Lock-out, snap-in type,						
	to prevent reclosing of slide link	orange	282-137	100 (4 x 25)			
4-							

#### **Examples of circuit configuration**

- a) Current transformer circuit with current path separation and commoning possibility.
- b) Current transformer circuit with the connection of a second test unit through test sockets.
- c) Transformer test circuit, K-conductors of the transformers connected.



<sup>\*</sup> For further approvals with corresponding ratings see section 15.



0.2 - 6 mm<sup>2</sup> 400 V/6 kV/3 **①** 

AWG 24 - 10 300 V, 30 A **%** 300 V, 40 A ®

Terminal block width 8 mm / 0.315 in 12 - 13 mm / 0.49 in

\* 🕦 🏽 KEEB CCAKEEB 🕦 🕾 🐨 🗥 GL BV LR NV 🕯 🚳

 $0.2 - 6 \text{ mm}^2$ 

AWG 24 - 10

\* KETA CCAKETA 🚭 🐨 🗥 GL BV LR NV 🛞



87.5 mm / 3.44 in



4	87.5	mm	/3.44	in

	Item No.	Pack. unit pcs		Item No.	Pack. unit pcs
Disconnect termina	l block for test	purposes	Ground (earth) con	d. disconnect	term. blocks, grey
grey	282-135	25	f. AC/DC 24 V	282-140	12
without test sockets			f. AC/DC 48 V	282-141	12
			f. AC/DC 120 V	282-138	12
			f. AC/DC 230 V	282-139	12
	Appropria	te marking system <b>V</b>	/MB/WSB (see sect	tion 14)	
4 mm / 0.157 in thick			4 mm / 0.157 in thick		
orange	282-315	50 (2 x 25)	orange	282-315	50 (2 x 25)
grey	282-314	50 (2 x 25)	grey	282-314	50 (2 x 25)
6 mm / 0.236 in wide	249-116	100 (4 x 25)	6 mm / 0.236 in wide	249-116	100 (4 x 25)
10 mm/0.394 in wide	249-117	50 (2 x 25)	10 mm / 0.394 in wide	249-117	50 (2 x 25)
I <sub>N</sub> 41 A			I <sub>N</sub> 41 A		
grey	282-402	100 (4 x 25)	grey	282-402	100 (4 x 25)
I <sub>N</sub> 41 A					
grey	282-409	100 (4 x 25)			
8 mm / 0.315 in wide			8 mm / 0.315 in wide		
	209-170	50 (2 x 25)		209-170	50 (2 x 25)
for test plug 4 mm/0	.157 in Ø		for test plug 4 mm/0	).157 in Ø	
orange	282-137	100 (4 x 25)	orange	282-137	100 (4 x 25)

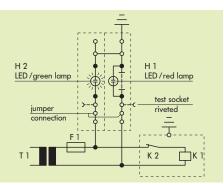
IEC 204-1:1992 "Electrical equipment of industrial machines, part 1: General requirements" 9.4.3.1

Earth faults on control circuits shall not cause unintentional starting, hazardous movements, or prevent stopping of the machine.

In order to fulfil this requirement, bonding to the protective bonding circuit shall be provided in accordance with 8.2 and the devices shall be connected as described in 9.1.4. Control circuits fed from a transformer and not connected to the protective bonding circuit shall be provided with an insulation monitoring device (e. g. residual current device) which either indicates an earth fault or interrupts the circuit automatically after an earth fault.

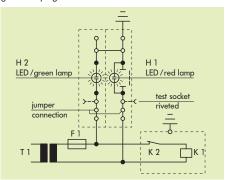
In the case of electronic circuits, the connection of one side of the control circuit to the protective bonding circuit in accordance with 9.1.4 can prevent unintentional operation. When this does not help, or if due to other reasons electronic circuits cannot be connected to the protective bonding circuit, other measures shall be taken to achieve the same level of safety.

Where the control circuit is directly connected between the phase conductors of the supply or between a phase conductor and a neutral conductor which is either not earthed or earthed through a high impedance, multi-pole control switches which interrupt all live conductors shall be used for start or stop of those machine functions which can cause a hazardous condition or damage to the machine or to the work in progress, in the event of unintentional starting or failure to stop.

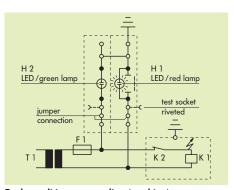


Operating condition

slide link closed, auxiliary circuit grounded (earthed), green lamp lights.



Test condition – no grounding (earthing) slide link open, auxiliary circuit not grounded (earthed).



Fault condition – grounding (earthing) slide link open, auxiliary circuit not grounded (earthed), red lamp lights.



## Fused Disconnect Terminal Blocks for Miniature Fuses with CAGE CLAMP $^{\mathbb{R}}$ connection, Series 281 . . .

#### **Blown fuse indication**



Blown fuse indication by LED or neon lamp

#### Exchange of fuse.



Before exchanging the fuse, pivot the fuse holder in the locked open position



One end of the fuse is automatically ejected from the holder when opening the cover . . .

#### **CAGE CLAMP®** connection



Connection of conductors Front-entry

#### Commoning



Distribution of current to several fuse protected circuits by using insulated touchproof jumpers

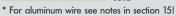
#### **Testing**



Voltage test, either at input or output with fuse holder in closed position (live)



CAGE CLAMP® clamps the following copper wires:\*





Through test with fuse holder in open position (no voltage)



stranded



Voltage test at input in the test slot of the current bar



fine stranded, also with tinned single strands

#### ... Description and Handling

#### Exchange of fuse (continued)



... and can be easily removed by hand. Insert new fuse ...



. . . and snap the cover closed

#### Spare fuse



Storage of spare fuse (fuse holder without blown fuse indication)

#### Touchproof protection



"Touchproof" protection in all positions of the fuse holder

#### **Locked position**



Also in vertical assembly of the fused blocks safe locking of the fuse holder in pivoted open position

#### Testing (continued)



Testing of voltage at the output through separate test slot



Current measuring between jumper slot and separate test slot



Voltage testing at input with test plug adapter 280-404 (shown) or test plug 281-407



fine-stranded wire – tip bonded



fine-stranded wire with crimped ferrule **1** 



fine-stranded wire with crimped pin terminal



# Fused Disconnect Terminal Blocks 4 mm $^2$ /AWG 12, for Miniature Metric Fuses 5 x 20 mm, 5 x 25 mm, 5 x 30 mm Series 281

0.08 - 4 mm<sup>2</sup> 800 V/8 kV/3 **1 2** AW 10 A max. **2** 

AWG 28 - 12 600 V, 10 A **2 9 9**  0.08 - 4 mm<sup>2</sup> AWG 28 - 12 800 V/8 kV/3 **0 2** 30/65 V, 10 A **2 3 6 3** 

Terminal block width 8 mm / 0.315 in 9 – 10 mm / 0.37 in

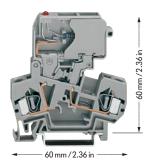
Terminal block width 8 mm / 0.315 in 9 - 10 mm / 0.37 in

\* **91 @** KECA N O GL BV

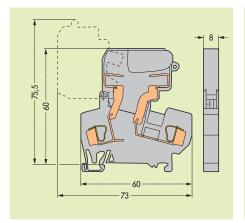
\* 91 @ KEUR N

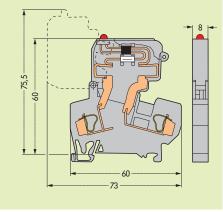
- 8 8 V = rated voltage
  8 kV = rated surge voltage
  3 = pollution degree
  (see also section 15)
- Nominal voltage and current are given by the LED or fuse Technical details see pages 7.38 - 7.39
- 3 Leakage current in case of blown fuse: LED 6 mA, neon lamp < 0.4 mA





Description			Item No.	Pack. unit pcs		ltem No.	Pack. unit pcs
Fused disconne	ct terminal block	without blown fo	use indication		with blown fuse	indication by LED	
with pivotable	fuse holder,						
for DIN 35 rail,							
for miniature met	for miniature metric fuses 5 x 20 mm		281-611	50	grey $15-30  \text{V} \simeq$	281-611/281-54	<b>1</b> 50
	5 x 20 mm	orange	281-616	50	grey 30 - 65 V≃	<b>3</b> 281-611/281-54	<b>2</b> 50
	5 x 25 mm	grey	281-612	50	grey 15-30 V≃	3 281-612/281-54	1 50
	5 x 25 mm				grey $30-65\mathrm{V}{\simeq}$	281-612/281-54	<b>2</b> 50
	5 x 30 mm	grey	281-622	50	grey $15-30 \mathrm{V} \simeq$	281-622/281-54	1 50
	5 x 30 mm				grey 30 - 65 V≃	<b>3</b> 281-622/281-54	<b>2</b> 50
Accessories	,	Appropriate marking	system <b>WMB</b> /V	VSB (see section 14)	)		
	End and		thick		2.5 mm / 0.098 in	thick	
	intermediate plate	orange	281-309	100 (4 x 25)	orange	281-309	100 (4 x 25)
		grey	281-311	100 (4 x 25)	grey	281-311	100 (4 x 25)
lin .	Adjacent jumper,	I <sub>N</sub> 32 A			I <sub>N</sub> 32 A		
	insulated	grey	281-402	200 (8 x 25)	grey	281-402	200 (8 x 25)
	Test plug adapter,	5 mm / 0.197 in wie			5 mm/0.197 in w		
T T	suitable for terminal blocks		280-404	100 (4 x 25)		280-404	100 (4 x 25)
	1.5 mm <sup>2</sup> – 4 mm <sup>2</sup> /AWG 16 – 12	for test plug 210-1	37 (2.3 mm/0.091	in Ø)		137 (2.3 mm / 0.091 in (	<b>Ø</b> )
	Test plug, 6 mm/0.236 in wide,	I <sub>N</sub> 24 A			I <sub>N</sub> 24 A		
T	with CAGE CLAMP® for		281-407	100 (4 x 25)		281-407	100 (4 x 25)
	0.08 mm <sup>2</sup> – 2.5 mm <sup>2</sup> /AWG 28-14						
	Connecting strip, for ganging						
	several fuse holders,	transparent	210-254	1	transparent	210-254	1
	length 1 m/3'3"						
	Miniature metric fuse		contact facto	ry		contact factory	





Dimensions (in mm)

<sup>\*</sup> For further approvals with corresponding ratings see section 15.



0.08 - 4 mm<sup>2</sup> | AWG 28 - 12 800 V/8 kV/3 **0 2** | 110/220 V, 10 A **2 3 3 3 4 10** A max. **2** 

Terminal block width 8 mm / 0.315 in 9 - 10 mm / 0.37 in

\* **91** @ N

0.08 **– 4 mm²** 800 V/8 kV/3 **①** 16 A AWG 28 - 12 600 V, 10 A **9**1 ®

Terminal block width 8 mm / 0.315 in 9 - 10 mm / 0.37 in

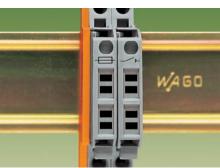
\* 🗫 @ CCAKEER 🕦 🛈 🚭 GL BV LR NV 🛭

**Application notes** 





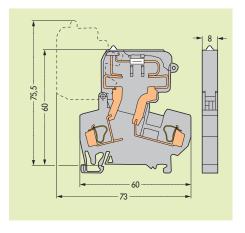
	Item No.	Pack. unit pcs		ltem No.	Pack. unit pcs
with blown fuse in	ndication by neon la	mp	Disconnect terr	minal blocks with "	knife" disconnect
		_	grey	281-624	50
			orange	281-672	50
grey 230 V≃ <b>❸</b>	281-611/281-417	50			
grey 120 V≃ <b>3</b>	281-611/281-418	50			
grey 230 V≃ <b>3</b>	281-612/281-417	50			
0 /	281-612/281-418				
grey 120 V≃ <b>③</b>	281-012/281-418	50			
grey 230 V≃ <b>3</b>	281-622/281-417	50			
grey 120 V≃ <b>3</b>	281-622/281-418	50			
		rking system <b>V</b>	VMB/WSB (see	e section 14)	
2.5 mm / 0.098 in th	ick		2.5 mm/0.098 i	n thick	
orange	281-309	100 (4 x 25)	orange	281-309	100 (4 x 25)
grey	281-311	100 (4 x 25)	grey	281-311	100 (4 x 25)
I <sub>N</sub> 32 A			I <sub>N</sub> 32 A		
grey	281-402	200 (8 x 25)	grey	281-402	200 (8 x 25)
5 mm / 0.197 in wide	<u> </u>		5 mm / 0.197 in v	wide	
· · · · · · · · · · · · · · · · · · ·	280-404	100 (4 x 25)	•	280-404	100 (4 x 25)
for test plug 210-137	7 (2.3 mm / 0.091 in Ø	, ,	for test plug 210	)-137 (2.3 mm/0.091	, ,
I <sub>N</sub> 24 A	•		I <sub>N</sub> 24 A	,	,
	281-407	100 (4 x 25)		281-407	100 (4 x 25)
transparent	210-254	1	transparent	210-254	1
	contact factory				



Fused or fused disconnect terminal blocks with a width of 8 mm/0.315 in can be assembled adjacent to each other. At the end of an assembly, if there is **no** adjacent fused or fused disconnect terminal block, an end or intermediate plate must be used.



Fuse holders are printed with correct fuse size and . . .





 $\dots$  are fitted with stops on the inside of the cover. For types 5 x 20 mm, 5 x 25 mm and  $1\!/4"$  x 1"



# Fused Disconnect Terminal Blocks 4 mm<sup>2</sup> /AWG 12, for Miniature Metric Fuses ¼" x 1", ¼" x 1¼", Series 281

 $\begin{array}{c|c} 0.08 - 4 \ mm^2 \\ 800 \ V/8 \ kV/3 \ \textcircled{00} \ | \ 600 \ V, 10 \ A \ \textcircled{2} \ \ \textcircled{3L} \ \textcircled{6} \\ 10 \ A \ max. \ \textcircled{2} \end{array}$ 

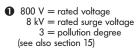
Terminal block width 10 mm / 0.394 in 9 – 10 mm / 0.37 in

\* **71. @** KESSA (N) (D) GL BV

 $\begin{array}{c|c} 0.08-4 \ mm^2 \\ 800 \ V/8 \ kV/3 \ \textcircled{0} \ \textcircled{0} \end{array} \ | \ AWG \ 28-12 \\ 800 \ V/8 \ kV/3 \ \textcircled{0} \ \textcircled{0} \ | \ 30/65 \ V, 10 \ A \ \textcircled{0} \ \ \r{N} \ \textcircled{0} \ \end{array}$ 

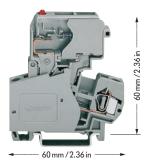
Terminal block width 10 mm / 0.394 in 9 – 10 mm / 0.37 in

\* 91 @ KEMA N

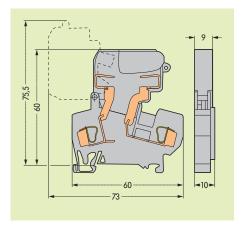


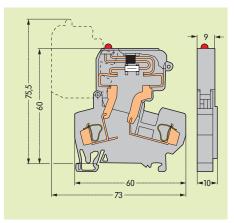
- Nominal voltage and current are given by the LED or fuse Technical details see pages 7.38 – 7.39
- 3 Leakage current in case of blown fuse: LED 6 mA, neon lamp < 0.4 mA





Description			Item No.	Pack. unit pcs			Pack. unit pcs
Fused disconnect terminal block,		without blown fus	e indication		with blown fuse in	ndication by LED	
with pivotable fus	e holder,						
for DIN 35 rail,	1/4" x 1"	grey	281-613	50	grey 15 − 30 V ≃ <b>③</b>	281-613/281-541	50
for miniature fuses	1/4" x 1"				grey 30 - 65 V≃ <b>③</b>	281-613/281-542	50
	1/4" x 11/4"	grey	281-623	50	grey 15-30 V≃ <b>❸</b>	281-623/281-541	50
	1/4" x 11/4"				grey 30 − 65 V ≃ <b>3</b>	281-623/281-542	50
Accessories	A	appropriate marking sys	stem WMB/WSB	(see section 14	)		
	End and	2.5 mm / 0.098 in this	ck		2.5 mm / 0.098 in th	ick	
	intermediate plate	orange	281-309	100 (4 x 25)	orange	281-309	100 (4 x 25
	·	grey	281-311	100 (4 x 25)	grey	281-311	100 (4 x 25
in .	Adjacent jumper,	I <sub>N</sub> 32 A		, ,	I <sub>N</sub> 32 A		,
T.	insulated	grey	281-402	200 (8 x 25)	grey	281-402	200 (8 x 25
(8)		0 /		` ′	<b>3</b> ,		•
	Test plug adapter,	5 mm / 0.197 in wide			5 mm / 0.197 in wide	)	
	suitable for terminal blocks		280-404	100 (4 x 25)		280-404	100 (4 x 25
T	1.5 mm <sup>2</sup> – 4 mm <sup>2</sup> /AWG 16 – 12	for test plug 210-137	(2.3 mm/0.091 in Ø	Ø)	for test plug 210-13	7 (2.3 mm / 0.091 in Ø	)
	Test plug, 6 mm/0.236 in wide,	I <sub>N</sub> 24 A			I <sub>N</sub> 24 A		
- 4	with CAGE CLAMP® for		281-407	100 (4 x 25)		281-407	100 (4 x 25
T	0.08 mm <sup>2</sup> – 2.5 mm <sup>2</sup> /AWG 28-14						
	Connecting strip, for ganging						
	several fuse holders,	transparent	210-254	1	transparent	210-254	1
	length 1 m/3'3"						
	Miniature metric fuse						
			contact factory			contact factory	
Dimensions (in	mm)						





<sup>\*</sup> For further approvals with corresponding ratings see section 15.



0.08 - 4 mm<sup>2</sup> AWG 28 - 12 800 V/8 kV/3 **10** 110/220 V, 10 A **2 71 10** A max. **2** 

Terminal block width 10 mm / 0.394 in 9 – 10 mm / 0.37 in

\* **91 6** KEMA N

Application notes



		Pack. unit pcs
with blown fuse in	ndication by neon la	mp
grey 230 V≃ <b>3</b>	281-613/281-417	50
grey 120 V≃ <b>3</b>	281-613/281-418	50
grey 230 V≃ <b>3</b>	281-623/281-417	50
grey 120 V≃ <b>3</b>	281-623/281-418	50
Appropriate marking system	WMB/WSB (see	section 14)
2.5 mm / 0.098 in thi	ick	
orange	281-309	100 (4 x 25)
grey	281-311	100 (4 x 25)
I <sub>N</sub> 32 A		
grey	281-402	200 (8 x 25)
5 mm / 0.197 in wide		
	280-404	100 (4 x 25)
	7 (2.3 mm / 0.091 in Ø)	1
I <sub>N</sub> 24 A		
	281-407	100 (4 x 25)
transparent	210-254	1
	contact factory	
	confact factory	

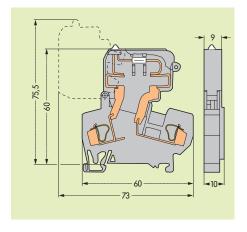


In case of 10 mm/0.394 in wide fused terminal blocks a spacer is part of the terminal block and will be supplied as a standard.

At the end of an assembly or if there is **no** adjacent fused terminal block, an end or intermediate plate must be used.



2 marker receptacles each per fuse holder for individual WMB Multi marking or WSB Quick marking (example: 8 mm/0.315 in terminal blocks)





Ganging of several fuse holders with a connecting strip (example: 8 mm/0.315 in terminal blocks)

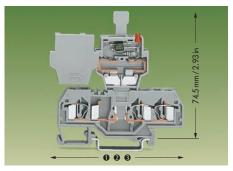


#### Pluggable Fuse Modules for Replaceable Miniature Fuses 4 mm<sup>2</sup> /AWG 12, Series 281

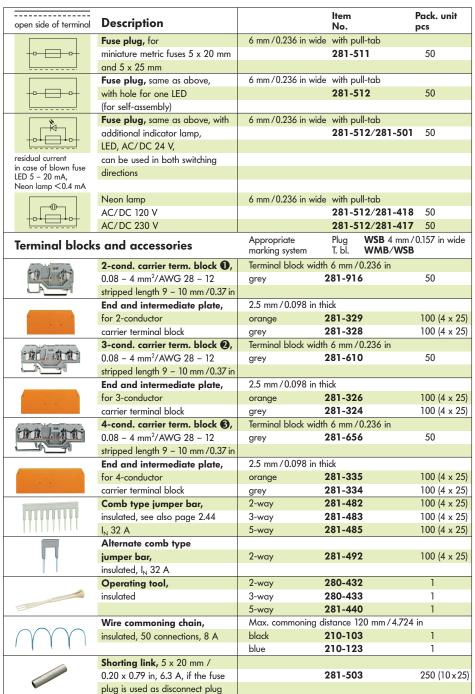
Pluggable fuse modules on terminal blocks for pluggable modules Item No. 286-890 see W4, Volume 3

250 V max.\* 6.3 max.

\* Electrical ratings are given by the fuse or nomi-nal voltage of the indicator lamp respectively. Technical details see pages 7.38 – 7.39.









The use of pluggable fuse holders with rail mounted terminal blocks for protection of control circuits offers many advantages to the user since the function and the wiring are accomplished by two separate parts:

- no additional cost for assembly and wiring
- no risk of accidental contact with live parts during disconnection of fuse plug
- in case of exchanging a defective fuse the fuse plug is completely separated from the carrier terminal block
- therefore safe exchange of the fuse away from current carrying parts
- the fuse plug can be taken away by the serviceman avoiding unintentional reclosing of the circuit by another person
- quick exchange of a fuse by using a prepared stand-by plug.

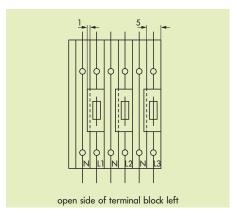
Further advantages:

- optional LED indicates blown fuse
- marking facility on the fuse plug for clear coordination to the correct carrier terminal block (WSB-Quick Marking System 4 mm/0.157 in)
- two touchproof test slots
- high density with only 6 mm/0.236 in width of terminal block/fuse plug

  instead of a fuse, a shorting link may be used
- as a disconnect plug.

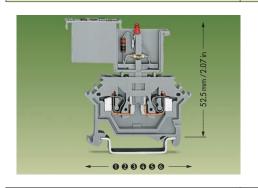
When corresponding Neutral-circuit is adjacent to a fuse plug, a 5 mm/0.197 in. wide space saving terminal block may be used, as a 6 mm/0.236 in. fuse plug may overlap the terminal block. See right page for 5 mm/0.197 in wide carrier terminal blocks (can be used with end plate, for example).

- 1 59 mm / 2.32 in
- 2 73.5 mm / 2.89 in
- 3 86 mm/3.39 in





125 V max.\* 5 A\* \* Electrical ratings are given by the fuse or nominal voltage of the indicator lamp respectively. Technical details see pages 7.38 – 7.39.





Fuse plug, 5 mm / 0.197 in wide, with soldered minicture fuse  1 A FF 280-854 100  1 A FF 280-855 100  2 A FF 280-855 100  1 A FF 280-855 100  2 A FF 280-856 100  2 A FF 280-856 100  3 A FF 280-856 100  2 A FF 280-856 100  3 A FF 280-856 100  3 A FF 280-856 100  4 A FF 280-856 100  5 MA FF 280-856/281-413 100  1 A FF 280-856/281-413 100  2 A FF 280-856/281-413 100  1 A FF 280-856/281-413 100  2 A FF 280-856/281	open side of terminal	Description		Item No.	Pack. unit pcs
Fuse plug, same as above, with additional indicator lamp, LED, DC 15 − 30 V  I A FF 280-856 100  250 mA FF 280-852/281-413 100  LED, DC 15 − 30 V  I A FF 280-852/281-413 100  1 A FF 280-852/281-413 100  2 A FF 280-854/281-413 100  2 A FF 280-854/281-413 100  2 A FF 280-856/281-413 100  2 A FF 280-854/281-413 100  2 A FF 280-854/281-413 100  2 A FF 280-854/281-413 100  3 A FF 280-856/281-413 100  3 A FF 280-856/281-413 100  4 A FF 280-852/281-413 100  4 A FF 280-852/281-413 100  4 A FF 280-852/281-413 100  4 A FF 280-856/281-413 100  4 A S B FF 280-856/281-413 100  4 A S B S FF 280-856/281-413 100  4 A S B S FF 280-856/281-413 100  4 A S B FF 280		Fuse plug, 5 mm/0.197in wide,	250 mA FF	280-850	100
2 A FF 280-856 100			500 mA FF	280-852	100
Fuse plug, same as above, with additional indicator lamp, LED, DC 15 − 30 V  Terminal blocks and accessories    Appropriate marking system   WMB/WSB (see section 14)			1 A FF	280-854	100
with additional indicator lamp, IED, DC 15 - 30 V			2 A FF	280-856	100
LED, DC 15 - 30 V	<b>%</b> .	Fuse plug, same as above,	250 mA FF	280-850/281-413	100
Terminal blocks and accessories		with additional indicator lamp,	500 mA FF	280-852/281-413	100
Appropriate marking system   WMB/WSB (see section 14)		LED, DC 15 - 30 V	1 A FF	280-854/281-413	100
Appropriate marking system   WMB/WSB (see section 14)	residual current in case of blown fuse		2 A FF	280-856/281-413	100
2-cond. carrier term. block, 0.08 - 2.5 mm²/AWG 28 - 14 stripped length 8 - 9 mm / 0.33 in block 280-916	LED 5 - 20 mA				
## 100 #	Terminal block	s and accessories	marking system		section 14)
stripped length 8 − 9 mm / 0.33 in  End and intermediate plate, for 2-conductor carrier terminal block 280-916  2-cond. carrier term. block, 0.08 − 2.5 mm²/AWC 28 − 14 stripped length 8 − 9 mm / 0.33 in  End and intermediate plate, for 2-conductor carrier terminal block 280-616  3-cond. carrier term. block, 0.08 − 2.5 mm²/AWC 28 − 14 stripped length 8 − 9 mm / 0.33 in  End and intermediate plate, for 2-conductor carrier terminal block 280-616  3-cond. carrier term. block, 0.08 − 2.5 mm²/AWC 28 − 14 stripped length 8 − 9 mm / 0.33 in  End and intermediate plate, for 3-conductor carrier terminal block 280-610  4-cond. carrier term. block, 0.08 − 2.5 mm²/AWC 28 − 14 stripped length 8 − 9 mm / 0.33 in grey  280-324  100 (4 × 25)  4-cond. carrier term. block, 0.08 − 2.5 mm²/AWC 28 − 14 stripped length 8 − 9 mm / 0.33 in grey  280-316  100  End and intermediate plate, for 4-conductor carrier terminal blocks  4-cond. carrier term. block, 0.08 − 2.5 mm²/AWC 28 − 14 stripped length 8 − 9 mm / 0.33 in grey  280-316  100  End and intermediate plate, for 4-conductor carrier terminal block width 5 mm / 0.197 in grey  280-315  100 (4 × 25)  2.5 mm / 0.098 in thick for 4-conductor carrier terminal block width 5 mm / 0.197 in grey  280-315  100 (4 × 25)  2.5 mm / 0.098 in thick for 4-conductor carrier terminal block width 5 mm / 0.197 in grey  280-315  100 (4 × 25)  2.5 mm / 0.098 in thick for 4-conductor carrier terminal block width 5 mm / 0.197 in grey  280-616  100  2.5 mm / 0.098 in thick for 4-conductor carrier terminal block width 5 mm / 0.197 in grey  280-616  100  2.5 mm / 0.098 in thick for 4-conductor carrier terminal block width 5 mm / 0.197 in grey  280-616  100  2.5 mm / 0.098 in thick for 4-conductor carrier terminal block 280-606  grey  280-315  100 (4 × 25) grey  280-616  100  2.5 mm / 0.098 in thick for 4-conductor carrier terminal block 280-606  50 grey  280-315  100 (4 × 25) grey  280-616  50 grey  28	4 4 4	2-cond. carrier term. block,	Terminal block width	5 mm / 0.197 in	
End and infermediate plate, for 2-conductor carrier terminal block 280-916  2-cond. carrier term. block, 0.08 - 2.5 mm²/AWG 28 - 14 stripped length 8 - 9 mm /0.33 in  End and intermediate plate, for 3-conductor carrier terminal block width 5 mm /0.197 in grey 280-330 100 (4 x 25)  2-cond. carrier term. block, 0.08 - 2.5 mm²/AWG 28 - 14 stripped length 8 - 9 mm /0.33 in  End and intermediate plate, for 3-conductor carrier terminal block width 5 mm /0.197 in grey 280-610 100  3-cond. carrier term. block, 0.08 - 2.5 mm²/AWG 28 - 14 stripped length 8 - 9 mm /0.33 in  End and intermediate plate, for 3-conductor carrier terminal block width 5 mm /0.197 in grey 280-324 100 (4 x 25)  4-cond. carrier term. block, 0.08 - 2.5 mm²/AWG 28 - 14 stripped length 8 - 9 mm /0.33 in grey 280-324 100 (4 x 25)  End and intermediate plate, for 4-conductor carrier terminal block width 5 mm /0.197 in grey 280-316 100  End and intermediate plate, for 4-conductor carrier terminal block width 5 mm /0.197 in grey 280-315 100 (4 x 25)  End and intermediate plate, for 4-conductor carrier terminal block width 5 mm /0.197 in grey 280-315 100 (4 x 25)  End and intermediate plate, for 4-conductor carrier terminal block width 5 mm /0.197 in grey 280-315 100 (4 x 25)  End and intermediate plate, for 4-conductor carrier terminal block width 5 mm /0.197 in grey 280-316 100 (4 x 25)  2.5 mm/0.098 in thick orange 280-315 100 (4 x 25)  End and intermediate plate, for 4-conductor carrier terminal block width 5 mm /0.197 in grey 280-480 100  End and intermediate plate, for 4-conductor carrier terminal block width 5 mm /0.197 in grey 280-480 100  End and intermediate plate, for 4-conductor carrier terminal block width 5 mm /0.197 in grey 280-480 100 (4 x 25)  End and intermediate plate, for 4-conductor carrier terminal block width 5 mm /0.197 in grey 280-480 100 (4 x 25)  End and intermediate plate, for 4-conductor carrier terminal block width 5 mm /0.197 in grey 280-616  100 (4 x 25)  End and intermediate plate, for 4-conductor carrier terminal block w	11	0.08 - 2.5 mm <sup>2</sup> /AWG 28 - 14	grey	280-916 🛈	100
for 2-conductor carrier terminal block 280-916  2-cond. carrier term. block, 0.08 - 2.5 mm²/AWG 28 - 14 stripped length 8 - 9 mm / 0.33 in  End and intermediate plate, for 2-conductor carrier terminal block 280-616  3-cond. carrier term. block, 0.08 - 2.5 mm²/AWG 28 - 14 stripped length 8 - 9 mm / 0.33 in  End and intermediate plate, for 3-conductor carrier terminal block 280-610  5-cond. carrier term. block, 0.08 - 2.5 mm²/AWG 28 - 14 stripped length 8 - 9 mm / 0.33 in  End and intermediate plate, for 3-conductor carrier terminal block 280-610  4-cond. carrier term. block, 0.8 - 2.5 mm²/AWG 28 - 14 stripped length 8 - 9 mm / 0.33 in  End and intermediate plate, for 4-conductor carrier term. block, 0.8 - 2.5 mm²/AWG 28 - 14 stripped length 8 - 9 mm / 0.33 in  End and intermediate plate, for 4-conductor carrier term. block, 0.8 - 2.5 mm²/AWG 28 - 14 stripped length 8 - 9 mm / 0.33 in  End and intermediate plate, for 4-conductor carrier term. block, 0.08 - 2.5 mm²/AWG 28 - 14 stripped length 8 - 9 mm / 0.33 in  End and intermediate plate, for 4-conductor carrier term. block, 0.08 - 2.5 mm²/AWG 28 - 14 stripped length 8 - 9 mm / 0.33 in  End and intermediate plate, for 4-conductor carrier term. block, 0.08 - 2.5 mm²/AWG 28 - 14 stripped length 8 - 9 mm / 0.33 in  End and intermediate plate, for 4-conductor carrier terminal block width 5 mm / 0.197 in grey 280-686 100 (4 x 25) (2.5 mm / 0.098 in thick orange 280-315 100 (4 x 25) (2.5 mm / 0.098 in thick orange 280-317 100 (4 x 25) (2.5 mm / 0.098 in thick orange 280-316 100 (4 x 25) (2.5 mm / 0.098 in thick orange 280-316 100 (4 x 25) (2.5 mm / 0.098 in thick orange 280-316 100 (4 x 25) (2.5 mm / 0.098 in thick orange 280-316 100 (4 x 25) (2.5 mm / 0.098 in thick orange 280-317 100 (4 x 25) (2.5 mm / 0.098 in thick orange 280-316 100 (4 x 25) (2.5 mm / 0.098 in thick orange 280-316 100 (4 x 25) (2.5 mm / 0.098 in thick orange 280-316 100 (4 x 25) (2.5 mm / 0.098 in thick orange 280-316 100 (4 x 25) (2.5 mm / 0.098 in thick orange 280-316 100 (4 x 25) (2.5 mm / 0.0					
for 2-conductor carrier terminal block 280-916  2-cond. carrier term. block, 0.08 - 2.5 mm²/AWG 28 - 14 stripped length 8 - 9 mm / 0.33 in  End and intermediate plate, for 2-conductor carrier terminal block 280-616  3-cond. carrier term. block, 0.08 - 2.5 mm²/AWG 28 - 14 stripped length 8 - 9 mm / 0.33 in  End and intermediate plate, for 3-conductor carrier terminal block 280-610  5-cond. carrier term. block, 0.08 - 2.5 mm²/AWG 28 - 14 stripped length 8 - 9 mm / 0.33 in  End and intermediate plate, for 3-conductor carrier terminal block 280-610  4-cond. carrier term. block, 0.8 - 2.5 mm²/AWG 28 - 14 stripped length 8 - 9 mm / 0.33 in  End and intermediate plate, for 4-conductor carrier term. block, 0.8 - 2.5 mm²/AWG 28 - 14 stripped length 8 - 9 mm / 0.33 in  End and intermediate plate, for 4-conductor carrier term. block, 0.8 - 2.5 mm²/AWG 28 - 14 stripped length 8 - 9 mm / 0.33 in  End and intermediate plate, for 4-conductor carrier term. block, 0.08 - 2.5 mm²/AWG 28 - 14 stripped length 8 - 9 mm / 0.33 in  End and intermediate plate, for 4-conductor carrier term. block, 0.08 - 2.5 mm²/AWG 28 - 14 stripped length 8 - 9 mm / 0.33 in  End and intermediate plate, for 4-conductor carrier term. block, 0.08 - 2.5 mm²/AWG 28 - 14 stripped length 8 - 9 mm / 0.33 in  End and intermediate plate, for 4-conductor carrier terminal block width 5 mm / 0.197 in grey 280-686 100 (4 x 25) (2.5 mm / 0.098 in thick orange 280-315 100 (4 x 25) (2.5 mm / 0.098 in thick orange 280-317 100 (4 x 25) (2.5 mm / 0.098 in thick orange 280-316 100 (4 x 25) (2.5 mm / 0.098 in thick orange 280-316 100 (4 x 25) (2.5 mm / 0.098 in thick orange 280-316 100 (4 x 25) (2.5 mm / 0.098 in thick orange 280-316 100 (4 x 25) (2.5 mm / 0.098 in thick orange 280-317 100 (4 x 25) (2.5 mm / 0.098 in thick orange 280-316 100 (4 x 25) (2.5 mm / 0.098 in thick orange 280-316 100 (4 x 25) (2.5 mm / 0.098 in thick orange 280-316 100 (4 x 25) (2.5 mm / 0.098 in thick orange 280-316 100 (4 x 25) (2.5 mm / 0.098 in thick orange 280-316 100 (4 x 25) (2.5 mm / 0.0		End and intermediate plate,	2.5 mm/0.098 in thi	ck	
2-cond. carrier term. block, 0.08 - 2.5 mm²/AWG 28 - 14 stripped length 8 - 9 mm / 0.33 in look width 5 mm / 0.197 in grey 280-616			orange	280-309	100 (4 x 25)
0.08 - 2.5 mm²/AWG 28 - 14 stripped length 8 - 9 mm / 0.33 in  End and intermediate plate, for 2-conductor carrier terminal block 280-616  3-cond. carrier term. block, 0.08 - 2.5 mm²/AWG 28 - 14 stripped length 8 - 9 mm / 0.33 in  End and intermediate plate, for 3-conductor carrier terminal block 280-610  4-cond. carrier term. block, 0.08 - 2.5 mm²/AWG 28 - 14 stripped length 8 - 9 mm / 0.33 in  End and intermediate plate, for 4-conductor carrier terminal block width 5 mm / 0.197 in grey  280-326  100 (4 x 25) grey  280-326  100 (4 x 25) grey  280-326  100 (4 x 25) grey  280-316 ⑤ 100  End and intermediate plate, for 4-conductor carrier term. block, 0.08 - 2.5 mm²/AWG 28 - 14 stripped length 8 - 9 mm / 0.33 in grey  280-686 ⑥ 100  End and intermediate plate, for 4-conductor carrier terminal blocks  4-cond. carrier term. block, 0.08 - 2.5 mm²/AWG 28 - 14 stripped length 8 - 9 mm / 0.33 in  End and intermediate plate, for 4-conductor carrier terminal block width 5 mm / 0.197 in grey  280-315  100 (4 x 25) grey  280-315  100 (4 x 25) grey  280-316 ⑥ 100  4-cond. carrier term. block, 0.08 - 2.5 mm²/AWG 28 - 14 stripped length 8 - 9 mm / 0.33 in  End and intermediate plate, for 4-conductor carrier terminal block width 5 mm / 0.197 in grey  280-606 ⑥ 100  5 mm²/AWG 28 - 14 stripped length 8 - 9 mm / 0.33 in  End and intermediate plate, for 4-conductor carrier terminal block width 5 mm / 0.197 in grey  280-606 ⑥ 100  4-cond. carrier term. block, 0.08 - 2.5 mm²/AWG 28 - 14 stripped length 8 - 9 mm / 0.33 in  End and intermediate plate, for 4-conductor carrier terminal block 280-606 ⑥ 100  4-cond. carrier term. block, 0.08 - 2.5 mm²/AWG 28 - 14 stripped length 8 - 9 mm / 0.33 in grey  280-486 ② 100  2.5 mm / 0.098 in thick orange  280-315 100 (4 x 25)	557,550	block 280-916	grey	280-308	100 (4 x 25)
stripped length 8 − 9 mm/0.33 in  End and intermediate plate, for 2-conductor carrier terminal black 280-616  3-cond. carrier term. block, 0.08 − 2.5 mm²/AWG 28 − 14 stripped length 8 − 9 mm/0.33 in  End and intermediate plate, for 3-conductor carrier terminal black 280-610  4-cond. carrier term. block, 0.08 − 2.5 mm²/AWG 28 − 14 stripped length 8 − 9 mm/0.33 in  End and intermediate plate, for 3-conductor carrier terminal black 280-610  grey  280-326  100 (4 x 25) grey  280-324  100 (4 x 25) grey  280-324  100 (4 x 25) grey  280-324  100 (4 x 25) grey  280-316 € 100 grey  280-316 € 100 grey  280-315  100 (4 x 25) grey  280-316  100 (4 x 25) grey  280-317  100 (4 x 25) grey  280-317  100 (4 x 25) grey  280-316  100 (4 x 25) grey  280-317  100 (4 x 25) grey  280-318  100-way  280-482  200 insulated, see also page 2.44 l <sub>N</sub> 24 A  10-way  280-483  200 insulated, see also page 2.44 insulated 3-way  280-433  1 10-way  280-433  1 10-way  280-440  1  Wire commoning chain, insulated, 50 connections, 8 A	No all the Asset	2-cond. carrier term. block,	Terminal block width	5 mm / 0.197 in	
End and intermediate plate, for 2-conductor carrier terminal block 280-616 grey 280-331 100 (4 x 25)  3-cond. carrier term. block, 0.08 - 2.5 mm²/AWG 28 - 14 grey 280-610 100  End and intermediate plate, for 3-conductor carrier terminal block 280-610 grey 280-324 100 (4 x 25)  4-cond. carrier term. block, 0.08 - 2.5 mm²/AWG 28 - 14 grey 280-324 100 (4 x 25)  4-cond. carrier term. block, 0.08 - 2.5 mm²/AWG 28 - 14 grey 280-816 100  End and intermediate plate, for 4-conductor carrier terminal block width 5 mm/0.197 in grey 280-816 100  End and intermediate plate, for 4-conductor carrier terminal blocks grey 280-314 100 (4 x 25)  4-cond. carrier term. block, 0.08 - 2.5 mm²/AWG 28 - 14 grey 280-816 100  End and intermediate plate, for 4-conductor carrier terminal block width 5 mm/0.197 in grey 280-606 100  End and intermediate plate, for 4-conductor carrier terminal block width 5 mm/0.197 in grey 280-314 100 (4 x 25)  4-cond. carrier term. block, 0.08 - 2.5 mm²/AWG 28 - 14 grey 280-315 100 (4 x 25)  5-comb type jumper bar, insulated, see also page 2.44 10-way 280-448 200  Insulated, see also page 2.44 10-way 280-483 200  Insulated 3-way 280-433 1  10-way 280-433 1  10-way 280-440 1  Wire commoning chain, insulated, 50 connections, 8 A	THE WAY	0.08 - 2.5 mm <sup>2</sup> /AWG 28 - 14	grey	280-616 🛭	100
for 2-conductor carrier terminal block 280-616 grey 280-330 100 (4 x 25)  3-cond. carrier term. block, 0.08 - 2.5 mm²/AWG 28 - 14 stripped length 8 - 9 mm / 0.33 in block 280-610 grey 280-326 100 (4 x 25)  4-cond. carrier terminal block width 5 mm / 0.197 in grey 280-324 100 (4 x 25)  4-cond. carrier terminal block width 5 mm / 0.197 in grey 280-324 100 (4 x 25)  4-cond. carrier terminal block width 5 mm / 0.197 in grey 280-324 100 (4 x 25)  4-cond. carrier term. block, 0.08 - 2.5 mm²/AWG 28 - 14 grey 280-816  100  End and intermediate plate, for 4-conductor carrier terminal blocks grey 280-315 100 (4 x 25)  5-conductor carrier terminal blocks grey 280-315 100 (4 x 25)  4-cond. carrier term. block, 0.08 - 2.5 mm²/AWG 28 - 14 grey 280-314 100 (4 x 25)  4-cond. carrier term. block, 0.08 - 2.5 mm²/AWG 28 - 14 grey 280-315 100 (4 x 25)  4-cond. carrier term. block, 0.08 - 2.5 mm²/AWG 28 - 14 grey 280-316 100 (4 x 25)  4-cond. carrier term. block, 0.08 - 2.5 mm²/AWG 28 - 14 grey 280-316 100 (4 x 25)  5-cond type jumper bar, 100 (4 x 25)  6-cond type jumper bar, 100 (4 x 25)  6-cond type jumper bar, 100 (4 x 25)  1-conductor carrier terminal block width 5 mm / 0.197 in grey 280-316 100 (4 x 25)  1-conductor carrier terminal block width 5 mm / 0.197 in grey 280-316 100 (4 x 25)  1-conductor carrier terminal block width 5 mm / 0.197 in grey 280-316 100 (4 x 25)  1-conductor carrier terminal block width 5 mm / 0.197 in grey 280-316 100 (4 x 25)  1-conductor carrier terminal block width 5 mm / 0.197 in grey 280-316 100 (4 x 25)  1-conductor carrier terminal block width 5 mm / 0.197 in grey 280-316 100 (4 x 25)  1-conductor carrier terminal block width 5 mm / 0.197 in grey 280-314 100 (4 x 25)  1-conductor carrier terminal block width 5 mm / 0.197 in grey 280-314 100 (4 x 25)  1-conductor carrier terminal block width 5 mm / 0.197 in grey 280-314 100 (4 x 25)  1-conductor carrier terminal block width 5 mm / 0.197 in grey 280-314 100 (4 x 25)  1-conductor carrier terminal block width 5 mm / 0.197 in grey 280-314 100 (4 x 2		stripped length 8 - 9 mm/0.33 in			
block 280-616  3-cond. carrier term. block, 0.08 - 2.5 mm²/AWG 28 - 14 stripped length 8 - 9 mm / 0.33 in  End and intermediate plate, for 3-conductor carrier terminal block 280-610  4-cond. carrier term. block, 0.08 - 2.5 mm²/AWG 28 - 14 stripped length 8 - 9 mm / 0.33 in  End and intermediate plate, for 3-conductor carrier terminal block 280-610  4-cond. carrier term. block, 0.08 - 2.5 mm²/AWG 28 - 14 stripped length 8 - 9 mm / 0.33 in  End and intermediate plate, for 4-conductor carrier terminal blocks  9rey  280-816  100  2.5 mm / 0.098 in thick  orange  280-315  100 (4 x 25)  100  End and intermediate plate, for 4-conductor carrier terminal blocks  9rey  280-315  100 (4 x 25)  100  Erminal block width 5 mm / 0.197 in grey  280-314  100 (4 x 25)  100  100  100  100  100  100  100  1		End and intermediate plate,	2.5 mm/0.098 in thi	ck	
3-cond. carrier term. block, 0.08 - 2.5 mm²/AWG 28 - 14 stripped length 8 - 9 mm /0.33 in  End and intermediate plate, for 3-conductor carrier terminal block width 5 mm /0.197 in grey 280-326 100 (4 x 25) grey 280-324 100 (4 x 25)  4-cond. carrier term. block, 0.08 - 2.5 mm²/AWG 28 - 14 grey 280-816 100  End and intermediate plate, for 4-conductor carrier terminal blocks grey 280-866 100  End and intermediate plate, for 4-conductor carrier term. block, 0.08 - 2.5 mm²/AWG 28 - 14 grey 280-816 100  End and intermediate plate, for 4-conductor carrier term. block, 0.08 - 2.5 mm²/AWG 28 - 14 grey 280-315 100 (4 x 25)  4-cond. carrier term. block, orange 280-315 100 (4 x 25)  End and intermediate plate, for 4-conductor carrier term. block, 0.08 - 2.5 mm²/AWG 28 - 14 grey 280-606 100  End and intermediate plate, for 4-conductor carrier terminal block width 5 mm /0.197 in grey 280-606 100  End and intermediate plate, for 4-conductor carrier terminal block width 5 mm /0.197 in grey 280-606 100  End and intermediate plate, for 4-conductor carrier terminal block width 5 mm /0.197 in grey 280-606 100  End and intermediate plate, for 4-conductor carrier term. block, grey 280-316 100 (4 x 25)  End and intermediate plate, for 4-conductor carrier terminal block width 5 mm /0.197 in grey 280-480 200  Insulated, 50 conductor carrier terminal block width 5 mm /0.197 in grey 280-482 200  Insulated 3-way 280-482 200  Insulated 3-way 280-483 100 (4 x 25)  Wire commoning chain, insulated, 50 connections, 8 A black 210-103 1		for 2-conductor carrier terminal	orange	280-331	100 (4 x 25)
0.08 - 2.5 mm²/AWG 28 - 14 stripped length 8 - 9 mm / 0.33 in  End and intermediate plate, for 3-conductor carrier terminal block 280-610 grey 280-324 100 (4 x 25) grey 280-324 100 (4 x 25) grey 280-324 100 (4 x 25)  4-cond. carrier term. block, 0.08 - 2.5 mm²/AWG 28 - 14 stripped length 8 - 9 mm / 0.33 in  End and intermediate plate, for 4-conductor carrier terminal blocks grey 280-315 100 (4 x 25)  4-cond. carrier term. block, 0.08 - 2.5 mm²/AWG 28 - 14 stripped length 8 - 9 mm / 0.33 in  End and intermediate plate, for 4-cond. carrier term. block, 0.08 - 2.5 mm²/AWG 28 - 14 stripped length 8 - 9 mm / 0.33 in  End and intermediate plate, for 4-conductor carrier term. block, 0.08 - 2.5 mm²/AWG 28 - 14 stripped length 8 - 9 mm / 0.33 in  End and intermediate plate, for 4-conductor carrier terminal block width 5 mm / 0.197 in grey 280-606 100  End and intermediate plate, 0.08 - 2.5 mm²/AWG 28 - 14 stripped length 8 - 9 mm / 0.33 in  End and intermediate plate, for 4-conductor carrier terminal block width 5 mm / 0.197 in grey 280-606 100  End and intermediate plate, 0.08 - 2.5 mm²/AWG 28 - 14 stripped length 8 - 9 mm / 0.33 in  End and intermediate plate, for 4-conductor carrier terminal block width 5 mm / 0.197 in grey 280-606 100 (4 x 25) grey 280-314 100 (4 x 25) grey 280-431 100 (4 x 25)  Comb type jumper bar, insulated, see also page 2.44 10-way 280-482 200 insulated 3-way 280-483 200 10-way 280-443 1 10-way 280-440 1  Wire commoning chain, insulated, 50 connections, 8 A  Wire commoning chain, insulated, 50 connections, 8 A	- 77 - 77 -	block 280-616	grey	280-330	100 (4 x 25)
### stripped length 8 - 9 mm / 0.33 in   End and intermediate plate, for 3-conductor carrier terminal block 280-610   grey	Cab (5 ) 313 de de 3	3-cond. carrier term. block,	Terminal block width	5 mm / 0.197 in	
End and intermediate plate, for 3-conductor carrier terminal block 280-610  4-cond. carrier term. block, 0.08 - 2.5 mm/2/AWG 28 - 14 grey 280-816 100  End and intermediate plate, for 4-conductor carrier term. block, orange 280-315 100 (4 x 25)  4-cond. carrier term. block, orange 280-816 100  End and intermediate plate, for 4-conductor carrier terminal block width 5 mm/0.197 in grey 280-816 100  End and intermediate plate, for 4-conductor grey 280-314 100 (4 x 25)  4-cond. carrier term. block, orange 280-315 100 (4 x 25)  4-cond. carrier term. block, orange 280-314 100 (4 x 25)  End and intermediate plate, for 4-conductor carrier terminal block width 5 mm/0.197 in grey 280-606 100  End and intermediate plate, for 4-conductor carrier terminal orange 280-317 100 (4 x 25)  block 280-606 grey 280-316 100 (4 x 25)  Comb type jumper bar, 2-way 280-482 200  insulated, see also page 2.44 3-way 280-483 200  Operating tool, 10-way 280-440 1  Wire commoning chain, insulated, 50 connections, 8 A black 210-103 1	DROW WIND	0.08 - 2.5 mm <sup>2</sup> /AWG 28 - 14	grey	280-610 🚱	100
for 3-conductor carrier terminal block 280-610 grey 280-324 100 (4 x 25) grey 280-816 \$\mathbb{G}\$ 100 stripped length 8 - 9 mm/0.33 in grey 280-686 \$\mathbb{G}\$ 100 (4 x 25) grey 280-686 \$\mathbb{G}\$ 100 grey 280-686 \$\mathbb{G}\$ 100 (4 x 25) grey 280-315 100 (4 x 25) grey 280-315 100 (4 x 25) grey 280-314 100 (4 x 25) grey 280-314 100 (4 x 25) grey 280-314 100 (4 x 25) grey 280-606 \$\mathbb{G}\$ 100 (4 x 25) grey 280-606 \$\mathbb{G}\$ 100 stripped length 8 - 9 mm/0.33 in grey 280-606 \$\mathbb{G}\$ 100 stripped length 8 - 9 mm/0.33 in grey 280-606 \$\mathbb{G}\$ 100 stripped length 8 - 9 mm/0.33 in grey 280-316 100 (4 x 25) grey 280-482 200 grey 280-483 10-way 280-490 50 grey 280-433 1 grey 280-433 1 grey 280-440 1 grey 280-44		stripped length 8 - 9 mm / 0.33 in			
block 280-610 grey 280-324 100 (4 x 25)  4-cond. carrier term. block, 0.08 - 2.5 mm²/AWG 28 - 14 grey 280-816 \$ 100  End and intermediate plate, for 4-cond. carrier terminal blocks grey 280-315 100 (4 x 25)  4-cond. carrier term. block, 0.08 - 2.5 mm²/AWG 28 - 14 grey 280-315 100 (4 x 25)  4-cond. carrier term. block, 0.08 - 2.5 mm²/AWG 28 - 14 grey 280-606 \$ 100  End and intermediate plate, for 4-conductor carrier terminal block width 5 mm / 0.197 in grey 280-606 \$ 100  End and intermediate plate, for 4-conductor carrier terminal block width 5 mm / 0.197 in grey 280-606 \$ 100  End and intermediate plate, for 4-conductor carrier terminal block width 5 mm / 0.197 in grey 280-606 \$ 100  End and intermediate plate, for 4-conductor carrier terminal block width 5 mm / 0.197 in grey 280-606 \$ 100  End and intermediate plate, for 4-conductor carrier terminal block width 5 mm / 0.197 in grey 280-606 \$ 100  End and intermediate plate, for 4-conductor carrier terminal block width 5 mm / 0.197 in grey 280-606 \$ 100  End and intermediate plate, for 4-conductor carrier terminal block width 5 mm / 0.197 in grey 280-606 \$ 100  End and intermediate plate, for 4-conductor carrier terminal block width 5 mm / 0.197 in grey 280-606 \$ 100  End and intermediate plate, for 4-conductor carrier terminal block width 5 mm / 0.197 in grey 280-606 \$ 100  End and intermediate plate, for 4-conductor carrier terminal block width 5 mm / 0.197 in grey 280-606 \$ 100  End and intermediate plate, for 4-conductor carrier terminal block width 5 mm / 0.197 in grey 280-606 \$ 100  End and intermediate plate, for 4-conductor carrier terminal block width 5 mm / 0.197 in grey 280-606 \$ 100  End and intermediate plate, for 4-conductor carrier terminal block width 5 mm / 0.197 in grey 280-606 \$ 100  End and intermediate plate, for 4-conductor carrier terminal block width 5 mm / 0.197 in grey 280-606 \$ 100  End and intermediate plate, for 4-conductor carrier terminal block width 5 mm / 0.197 in grey 280-606 \$ 100  End and intermediate plate, for 4-conductor		End and intermediate plate,	2.5 mm/0.098 in thi	ck	
4-cond. carrier term. block, 0.08 - 2.5 mm²/AWG 28 - 14 stripped length 8 - 9 mm/0.33 in  End and intermediate plate, for 4-cond. carrier term. block, 0.08 - 2.5 mm²/AWG 28 - 14 stripped length 8 - 9 mm/0.33 in  End and intermediate plate, for 4-conductor carrier terminal blocks  4-cond. carrier term. block, 0.08 - 2.5 mm²/AWG 28 - 14 stripped length 8 - 9 mm/0.33 in  End and intermediate plate, for 4-conductor carrier terminal block 280-606  End and intermediate plate, for 4-conductor carrier terminal block 280-606  Comb type jumper bar, insulated, see also page 2.44  10-way  280-483  200  Insulated  3-way  280-433  10-way  280-440  1  Wire commoning chain, insulated, 50 connections, 8 A  Doparating tool, insulated, 50 connections, 8 A	* March 18	for 3-conductor carrier terminal	orange	280-326	100 (4 x 25)
0.08 - 2.5 mm²/AWG 28 - 14 grey 280-816	726.50	block 280-610	grey	280-324	100 (4 x 25)
stripped length 8 − 9 mm / 0.33 in grey 280-686  100  End and intermediate plate, for 4-conductor carrier terminal blocks grey 280-315 100 (4 × 25)  4-cond. carrier term. block, 0.08 − 2.5 mm²/AWG 28 − 14 grey 280-606  100  End and intermediate plate, for 4-conductor carrier terminal block width 5 mm / 0.197 in grey 280-606  100  End and intermediate plate, for 4-conductor carrier terminal block 280-606 grey 280-317 100 (4 × 25)  Comb type jumper bar, 2-way 280-482 200 insulated, see also page 2.44 3-way 280-483 200  I <sub>N</sub> 24 A 10-way 280-433 1 insulated 3-way 280-433 1 10-way 280-440 1  Wire commoning chain, insulated, 50 connections, 8 A black 210-103 1	1 4 6 6	4-cond. carrier term. block,	Terminal block width	5 mm / 0.197 in	
End and intermediate plate, for 4-conductor carrier terminal blocks grey 280-314 100 (4 x 25)  4-cond. carrier term. block, 0.08 - 2.5 mm²/AWG 28 - 14 grey 280-606 100  End and intermediate plate, for 4-conductor carrier terminal block width 5 mm / 0.197 in grey 280-606 100  End and intermediate plate, for 4-conductor carrier terminal block 280-606 grey 280-317 100 (4 x 25) block 280-606 grey 280-316 100 (4 x 25)  Comb type jumper bar, 2-way 280-482 200 insulated, see also page 2.44 3-way 280-483 200 I <sub>N</sub> 24 A 10-way 280-490 50  Operating tool, 2-way 280-432 1 insulated 3-way 280-433 1 10-way 280-440 1  Wire commoning chain, insulated, 50 connections, 8 A black 210-103 1		0.08 - 2.5 mm <sup>2</sup> /AWG 28 - 14	grey	280-816 🜀	100
for 4-conductor carrier terminal blocks  4-cond. carrier term. block, 0.08 - 2.5 mm²/AWG 28 - 14 stripped length 8 - 9 mm/0.33 in  End and intermediate plate, for 4-conductor carrier terminal block 280-606 grey 280-606 100  End and intermediate plate, for 4-conductor carrier terminal block 280-606 grey 280-317 100 (4 × 25) block 280-606 grey 280-317 100 (4 × 25) block 280-606 grey 280-316 100 (4 × 25) block 280-406  Comb type jumper bar, insulated, see also page 2.44 3-way 280-483 200 l <sub>N</sub> 24 A 10-way 280-490 50  Operating tool, insulated 3-way 280-433 1 10-way 280-440 1 Wire commoning chain, insulated, 50 connections, 8 A black 210-103 1		stripped length 8 - 9 mm / 0.33 in	grey	280-686 🕢	100
Carrier terminal blocks   grey   280-314   100 (4 x 25)		End and intermediate plate,	2.5 mm/0.098 in thi	ck	
4-cond. carrier term. block, 0.08 - 2.5 mm²/AWG 28 - 14 stripped length 8 - 9 mm / 0.33 in  End and intermediate plate, for 4-conductor carrier terminal block 280-606  Comb type jumper bar, insulated, see also page 2.44  In 24 A  Operating tool, insulated  Wire commoning chain, insulated, 50 connections, 8 A  Terminal block width 5 mm / 0.197 in grey 280-606  100  100  100  2.5 mm / 0.098 in thick orange 280-317 100 (4 × 25) 280-316 280-316	* Mac as I *	for 4-conductor	orange	280-315	100 (4 x 25)
0.08 - 2.5 mm²/AWG 28 - 14 stripped length 8 - 9 mm / 0.33 in  End and intermediate plate, for 4-conductor carrier terminal block 280-606  Comb type jumper bar, insulated, see also page 2.44  In 24 A  Operating tool, insulated  Wire commoning chain, insulated, 50 connections, 8 A  grey  280-606  100  100  2.5 mm / 0.098 in thick orange 280-317  100 (4 × 25) 280-482 200 280-482 200 280-483 200 280-483 200 280-490 50  Wire commoning chain, insulated 3-way 280-433 1 10-way 280-440 1  Max. commoning distance 120 mm / 4.724 in black black 210-103 1	170 B	carrier terminal blocks	grey	280-314	100 (4 x 25)
Stripped length 8 - 9 mm / 0.33 in	The state and the fire		Terminal block width	5 mm / 0.197 in	
End and intermediate plate, for 4-conductor carrier terminal block 280-606   grey   280-316   100 (4 x 25)	THE REAL PROPERTY.	0.08 - 2.5 mm <sup>2</sup> /AWG 28 - 14	grey	280-606 🜀	100
for 4-conductor carrier terminal block 280-606 grey 280-316 100 (4 x 25) grey 280-316 100 (4 x 25) grey 280-482 200 insulated, see also page 2.44 3-way 280-483 200 I <sub>N</sub> 24 A 10-way 280-490 50 Operating tool, insulated 3-way 280-432 1 insulated 3-way 280-433 1 10-way 280-440 1  Wire commoning chain, insulated, 50 connections, 8 A black 210-103 1		stripped length 8 - 9 mm/0.33 in			
Diock 280-606   grey   280-316   100 (4 x 25)		End and intermediate plate,	2.5 mm/0.098 in thi	ck	
Comb type jumper bar, insulated, see also page 2.44 3-way 280-482 200 10-way 280-483 200 10-way 280-490 50 2-way 280-432 1 10-way 280-433 1 10-way 280-440 1 10		for 4-conductor carrier terminal	orange	280-317	100 (4 x 25)
insulated, see also page 2.44  I <sub>N</sub> 24 A  Operating tool, insulated  3-way 280-483 200 10-way 280-490 50  Operating tool, insulated  3-way 280-432 1 10-way 280-433 1 10-way 280-440 1  Wire commoning chain, insulated, 50 connections, 8 A  black  210-103 1		block 280-606	grey	280-316	
I <sub>N</sub> 24 A   10-way   280-490   50		Comb type jumper bar,	2-way	280-482	200
Operating tool,   2-way   280-432   1	11111111111	insulated, see also page 2.44	3-way	280-483	
3-way 280-433   1   10-way 280-440   1		.,	<u> </u>		
Wire commoning chain, insulated, 50 connections, 8 A black 210-103 1		Operating tool,	2-way	280-432	1
Wire commoning chain, insulated, 50 connections, 8 A  Max. commoning distance 120 mm/4.724 in black 210-103  1		insulated	3-way	280-433	1
insulated, 50 connections, 8 A black 210-103 1					
	0.005	Wire commoning chain,	•		
blue <b>210-123</b> 1	( Y Y Y )	insulated, 50 connections, 8 A	black		
	1 1 1 1		blue	210-123	1

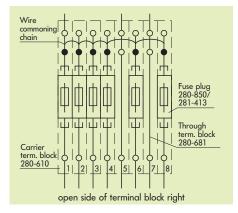


The use of pluggable fuse holders with rail mounted terminal blocks for protection of control circuits offers many advantages to the user since the function and the wiring are accomplished by two separate parts:

- no additional cost for assembly and wiring
- no risk of accidental contact with live parts during disconnection
- quick exchange of fuse plug in case of blown fuse
- the fuse plug can be taken away by the serviceman avoiding unintentional reclosing of the circuit by another person

Further advantages

- extremely high density with only 5 mm/0.197 in width of terminal block/fuse plug
- optional LED indicates blown fuse



Terminal block width

- 1 53 mm / 2.09 in
- 2 50 mm / 1.97 in
- **3** 64 mm / 2.52 in
- Terminal block marking in center position right 75 mm/2.95 in
- ★ Terminal block marking in center position left 75 mm/2.95 in
- **6** Terminal block marking on both sides 73 mm/2.87 in



#### Fuse Terminal Blocks 6 mm<sup>2</sup> /AWG 10, Series 282

0.2 - 6 mm<sup>2</sup>
500 V/6 kV/3 max. 0 600 V, 10 A 0 %
10 A max. 0 250 V, 10 A 0 6

0.2 - 6 mm<sup>2</sup> 500 V/6 kV/3 max. **1** 10 A max. **1** 

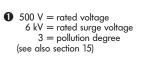
AWG 24 - 10 600 V, 10 A **0 %** 250 V, 10 A **0 ©** 

Terminal block width 13 mm / 0.512 in 12 – 13 mm / 0.49 in

\* 94 @ KEDA 🛞

Terminal block width 13 mm / 0.512 in □ 12 – 13 mm / 0.49 in

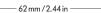
\* 91 @ KEUA 🛞



Nominal voltage and current are given by the LED or fuse

Technical details see pages 7.38 - 7.39







Description			Item No.	Pack. unit pcs		Item No.	Pack. unit
Fuse terminal bla	ock, for DIN 35 rail,	Fuse terminal blo	ck, without indicator		Fuse terminal bloc	ks, without indicator	•
for cartridges		grey, 5 x 20 mm	282-122	40	grey, ¼" x 1"	282-120	40
					grey, ¼" x 1¼"	282-128	40
Accessories		Appropriate marking s	ystem <b>WMB/WSI</b>	<b>3</b> (see section 14)			
	End and	4 mm / 0.157 in this	ck		4 mm / 0.157 in thick	(	
	intermediate plate	orange	282-312	50 (2 x 25)	orange	282-312	50 (2 × 25
	·	grey	282-311	50 (2 x 25)	grey	282-311	50 (2 x 25
-Arriva	Screwless end stop,	-					
711	for DIN 35 rail	6 mm / 0.236 in wi	de <b>249-116</b>	100 (4 x 25)	6 mm / 0.236 in wid	e <b>249-116</b>	100 (4 x 25
P		10 mm/0.394 in wi	de <b>249-117</b>	50 (2 x 25)	10 mm / 0.394 in wid	e <b>249-117</b>	50 (2 x 2
lit	Adjacent jumper,	I <sub>N</sub> 41 A			I <sub>N</sub> 41 A		
1	insulated	grey	282-402	100 (4 x 25)	grey	282-402	100 (4 x 25
(ID)							
	Test plug adapter,	8 mm / 0.315 in wid	de		8 mm/0.315 in wide	е	
T	suitable for terminal blocks		209-170	50 (2 x 25)		209-170	50 (2 x 2
II.	1.5 mm <sup>2</sup> - 10 mm <sup>2</sup> /AWG 16 - 8	for test plug 4 mm	/0.157 in Ø		for test plug 4 mm/	0.157 in Ø	
	Test plug, 6 mm/0.236 in wide,	I <sub>N</sub> 24 A			I <sub>N</sub> 24 A		
	with CAGE CLAMP® for		281-407	100 (4 x 25)		281-407	100 (4 x 2
T	0.08 mm <sup>2</sup> - 2.5 mm <sup>2</sup> /AWG 28 - 14						
	Miniature metric fuse,						
	5 x 20 mm, without indicator,		282-451	200 (20 x10)			
	6.3 A / 250 V, medium slow						
	Miniature metric fuse,						
	5 x 25 mm, with indicator,						
	6.3 A / 250 V, medium slow						
	Miniature metric fuse,						
	5 x 25 mm, with indicator,						
	10 A /450 V, quick acting						
	Miniature fuse,						
	1/4" x 1", without indicator,					282-458	200 (20 x1
	10 A / 240 V, acc. to BS 1362						
	Miniature fuse,						
	1/4" x 11/4", without indicator,					282-457	200 (20 x1
	10 A / 250 V, medium slow						
	Miniature fuse,						
	$\frac{1}{4}$ " x $1\frac{1}{4}$ ", without indicator,					282-454	200 (20 x1
	10 A /500 V, very quick acting						

 $<sup>\</sup>ensuremath{^*}$  For further approvals with corresponding ratings see section 15.



0.2 - 6 mm<sup>2</sup> 500 V/6 kV/3 max.**①** 10 A max. **①** 

AWG 24 - 10 600 V, 10 A **0 %** 250 V, 10 A **0 ®** 

Terminal block width 13 mm / 0.512 in 12 – 13 mm / 0.49 in

\* 91 @ KEDA GL @

 $0.2 - 6 \text{ mm}^2$   $120 \text{ V} \simeq$   $10 \text{ A max. } \mathbf{0}$ 

AWG 24 - 10 24/110 V, 10 A **0** % 24/110 V, 10 A **0** ®

Terminal block width 13 mm / 0.512 in 12 – 13 mm / 0.49 in

\* **91** @ KEDA

 $0.2 - 6 \text{ mm}^2$ 250 V  $\simeq$ 10 A max.  $\bullet$  Terminal block width 13 mm / 0.512 in  $\fbox{12-13~mm}$  / 0.49 in

\* 91 @ KECR @







	Item No.	Pack. unit pcs		ltem No.	Pack. unit pcs		ltem No.	Pack. unit pcs
Fuse terminal blo	ock, with indicator		Fuse terminal bl	ocks,		Fuse terminal blocks,		
grey, 5 x 25 mm	282-126	40	with neon lamp A	C/DC 120 V		with neon lamp AC	250 V/DC 220 V	
			grey, 1/4" x 11/4"	282-128/281-418	<b>3</b> 40	grey, 5 x 20 mm	282-124 2	40
			with LED DC 24 V			grey, ¼" x 1¼"	282-128/281-	<b>4176</b> ) 40
			grey, ¼" x 1¼"	282-128/281-413	<b>3</b> 40			
		A	Appropriate marking	system WMB/WSB	(see section 14	)		
4 mm / 0.157 in thi	ick		4 mm / 0.157 in th	ick		4 mm / 0.157 in this	ck	
orange	282-312	50 (2 x 25)	orange	282-312	50 (2 x 25)	orange	282-312	50 (2 x 2
grey	282-311	50 (2 x 25)	grey	282-311	50 (2 x 25)	grey	282-311	50 (2 x 2
/ /0.00/:		700 // 05		1 040 774	- 00 // OF		1	

		A	Appropriate mar	king system <b>WMB/V</b>	<b>VSB</b> (see section 14)			
4 mm / 0.157 i	in thick		4 mm / 0.157	in thick		4 mm / 0.157	in thick	
orange	282-312	50 (2 x 25)	orange	282-312	50 (2 x 25)	orange	282-312	50 (2 x 25
grey	282-311	50 (2 x 25)	grey	282-311	50 (2 x 25)	grey	282-311	50 (2 x 25
6 mm/0.236	in wide <b>249-116</b>	100 (4 x 25)	6 mm/0.236	in wide <b>249-116</b>	100 (4 x 25)	6 mm/0.236	in wide <b>249-116</b>	100 (4 x 25
	in wide <b>249-117</b>	50 (2 x 25)	10 mm/0.394	in wide <b>249-117</b>	50 (2 x 25)	10 mm/0.394	in wide <b>249-117</b>	50 (2 x 2
I <sub>N</sub> 41 A			I <sub>N</sub> 41 A			I <sub>N</sub> 41 A		
grey	282-402	100 (4 x 25)	grey	282-402	100 (4 x 25)	grey	282-402	100 (4 x 2
8 mm / 0.315 i			8 mm/0.315			8 mm / 0.315		
	209-170	50 (2 x 25)		209-170	50 (2 x 25)		209-170	50 (2 x 2
	mm / 0.157 in Ø			4 mm / 0.157 in Ø			1 mm / 0.157 in Ø	
I <sub>N</sub> 24 A			I <sub>N</sub> 24 A			I <sub>N</sub> 24 A		
	281-407	100 (4 x 25)		281-407	100 (4 x 25)		281-407	100 (4 x 2
							282-451	200 (20 x1
							202-431	200 (20 X I
	282-452	200 (20 ×10)						
	282-453	200 (20 ×10)						
				282-457	200 (20×10)		282-457	200 (20 x 1
				282-454	200 (20×10)		282-454	200 (20 x1
				202 101	200 (20 X 10)		202 101	200 (20 X

#### Notes on the Use of Terminal Blocks for Miniature Metric Fuses

Terminal blocks for miniature metric fuses tested acc. to IEC or EN 60947-7-3/VDE 0611-6

When selecting miniature metric fuses, the maximum power loss listed below should not be exceeded.

The power loss is determined according to IEC or EN 60947-7-3/VDE 0611-6 at 23°C.

The temperature rise of the terminal blocks must be checked according their application and mounting.

Higher ambient temperatures represent an additional impact on miniature metric fuses. Therefore, in such applications the rated current must be reduced if necessary.

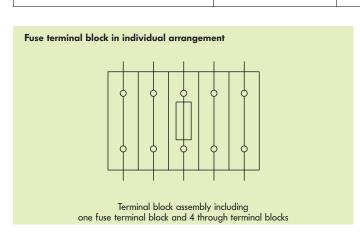
More details from the manufacturer.

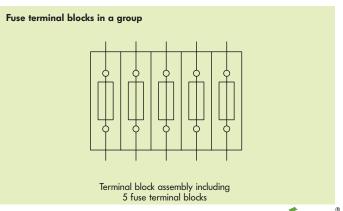
#### Miniature metric fuses 5 x 20

Series Item No.	Overl and short circu		Short circuit protection only		
	Individual arrangement	In a group	Individual arrangement	In a group	
Fu	use terminal blocks (with s	crew cap) front-entry	(5 x 20 mm)		
282-122 282-124	2.5 W	2.5 W	4 W	4 W	
281-611/281-541 281-611/281-542 281-611/281-417 281-611/281-418	2.5 W	1.6 W	4 W	4 W	
201 011/ 201 110					
	uggable fuse modules for	miniature metric fuse	s (5 × 20 mm)		

#### Miniature metric fuses 6.3 x 32

Series Item No.	Overload and short circuit protection		Short circuit protection only					
	Individual arrangement	In a group	Individual arrangement	In a group				
Fuse termin	Fuse terminal blocks (with screw cap) front-entry ( $\frac{1}{4}$ " x $1^{\frac{1}{4}}$ " $\approx$ 6.3 x 32 mm)							
282-128 282-128/281-418 282-128/281-413 282-128/281-417	2.5 W	2.5 W	4 W	4 W				
Fused disconnec	t terminal blocks for m	iniature metric fuses (¹	/ <sub>4</sub> " x 1 <sup>1</sup> / <sub>4</sub> " ≈ 6.3 x 32 m	ım)				
281-623 281-623/281-541 281-623/281-542 281-623/281-417 281-623/281-418	2.5 W	1.6 W	4 W	2,5 W				







# Sensor Terminal Blocks and Actuator Terminal Blocks with CAGE CLAMP $^{\mathbb{R}},$ Description and Handling, Series 270

#### Commoning



Insertion of a jumper



Commoning of supply voltage using uninsulated push-in type jumper bars, 2- to 9-way or 17-way (2 x 8 bits), depending on application



Commoning of signal level voltage using insulated push-in type jumper bars – series 870, 2- to 9-way, depending on application Sensor LED terminal blocks cannot be commoned on the signal level!

#### Sensor terminal blocks

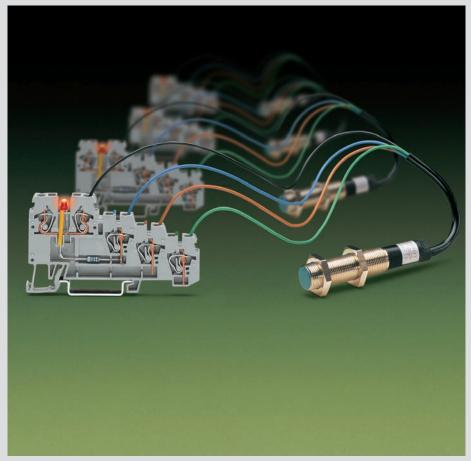


Terminal block assembly Sensor terminal blocks

#### Sensor LED terminal blocks



Terminal block assembly Sensor LED terminal blocks



#### **Actuator LED terminal blocks**



Terminal block assembly Actuator LED terminal blocks

CAGE CLAMP® clamps the following copper wires:\*

fine-stranded, also with tinned single strands

Sensor-LED terminal block

fine-stranded wire tip bonded

fine-stranded wire with crimped ferrule 1 fine-stranded wire with crimped pin terminal

\* For aluminum wire see notes in section 15!

When using wires with ferrules, it is necessary to use a terminal block one size larger than the nominal cross section of the wire.

#### Sensor Terminal Blocks, for 4-Conductor Sensors and Sensor LED Terminal Blocks, for 4-Conductor Sensors, Series 270



0.08 **– 2.5** mm<sup>2</sup> 250 V/4 kV/3 **①** 18 A **②** 

AWG 28 - 12 300 V, 10 A 0.08 **– 2.5** mm<sup>2</sup> DC 24 V **⑤**  AWG 28 - 12

0.08 **– 2.5** mm<sup>2</sup> DC 24 V **⑤** 

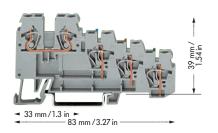
AWG 28 - 12

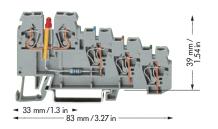
Terminal block width 5 mm / 0.197 in

6 – 7 mm / 0.26 in

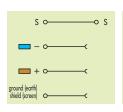
Terminal block width 5 mm / 0.197 in 6 — 7 mm / 0.26 in

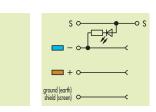
KEDA CCAKEDA

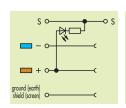




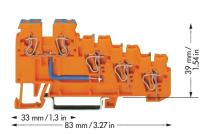


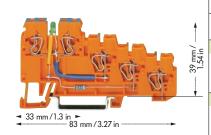






ltem No.	Pack. unit pcs		ltem No.	Pack. unit pcs		ltem No.	Pack. unit pcs
4-conductor sensor terminal blo	4-cond. sens	or LED terminal block,	for DIN 35 rail	4-cond. sensor LED terminal block, for DIN 35 rai			
270-570	50	for PNP (positi	ive) switching sensors		for NPN (nega	tive) switching sensors	
		LED red	270-570/281-434	50	LED yellow	270-570/281-507	50
1 250 V = rated voltage							
4 kV = rated surge voltage							
3 = pollution degree	3 Other voltages – contact factory			3 Other voltages – contact factory			
(see also section 15)		Power cons	sumption LED: 4.8 mA		Power consu	umption LED: 4.8 mA	

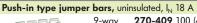






Appropriate marking system WMB/Mini-WSB (see section 14)

End and intermediate plate, 1 mm/0.039 in thick
orange 270-322 100 (4 x 25)
grey 270-320 100 (4 x 25)

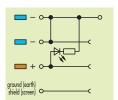


9-way **270-409** 100 (4 x 25) 17-way **270-417** 100 (4 x 25)

80-way **270-480** 10

Jumpers can be cut using side cutting pliers.

- 0
+ 0
ground (earth) shield (screen) O————————————————————————————————————



	ltem No.	Pack. unit pcs		Item No.	Pack. unit pcs
4-conductor se	nsor supply termi	nal block,	4-conductor s	ensor LED supply termin	nal block,
for DIN 35 rail			for DIN 35 rail		
	270-574	10	LED green	270-574/281-483	10
2 Internal comm	nonig 9 A				
2 Internal comm		10	LED green	270-574/281-483	10

-								
	Push-in type jumpe	<b>er bars,</b> lig	ht grey, insul	ated, I <sub>N</sub> 18 A				
		2-way	870-402	200 (8 x 25)				
		3-way	870-403	200 (8 x 25)				
		4-way	870-404	200 (8 x 25)				
		5-way	870-405	100 (4 x 25)				
		:	:					
		9-way	870-409	100 (4 x 25)				
	Sensor LED term. bl. ca	nnot be cor	nmoned on th	e signal level!				
	Screwdriver with partially insulated shaft,							
	(3.5 x 0.5) mm							
			210-620	1				

<sup>\*</sup>For further approvals with corresponding ratings see section 15.

# Sensor Terminal Blocks, for 3-Conductor Sensors and Sensor LED Terminal Blocks, for 3-Conductor Sensors, Series 270

0.08 **– 2.5** mm<sup>2</sup> 250 V/4 kV/3 **①** 18 A **②** 

AWG 28 - 12 300 V, 10 A

Terminal block width 5 mm / 0.197 in \_\_\_\_ 6 − 7 mm / 0.26 in

 $0.08 - 2.5 \text{ mm}^2$ DC 24 V 🔞

AWG 28 - 12

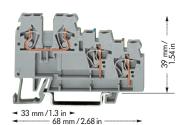
Terminal block width 5 mm / 0.197 in 6 – 7 mm / 0.26 in

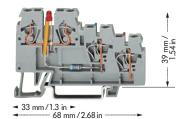
0.08 - 2.5 mm<sup>2</sup> DC 24 V 🕄

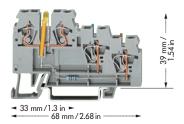
AWG 28 - 12

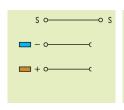
Terminal block width 5 mm / 0.197 in

6 – 7 mm / 0.26 in

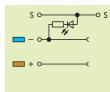


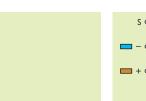


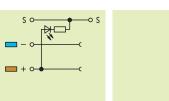




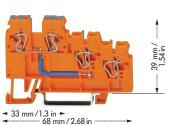


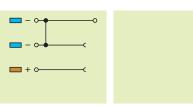






Item No.	Pack. unit pcs		N	Pack. unit pcs		ltem No.	Pack. unit pcs
3-conductor sensor terminal blo	ock, for DIN 35 rail	3-cond. sens	<b>or LED terminal block,</b> for	DIN 35 rail	3-cond. senso	or LED terminal block,	for DIN 35 rail
270-560	50	for PNP (positi	ve) switching sensors		for NPN (nega	tive) switching sensors	
		LED red	270-560/281-434	50	LED yellow	270-560/281-507	<b>7</b> 50
1 250 V = rated voltage							
4 kV = rated surge voltage							
3 = pollution degree		3 Other volta	ages – contact factory		3 Other voltag	ges – contact factory	
(see also section 15)		Power cons	sumption LED: 4.8 mA		Power consu	umption LED: 4.8 mA	





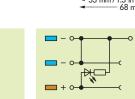
Item

for DIN 35 rail

2 Internal commonig 9 A

3-conductor sensor supply terminal block,

270-564



for DIN 35 rail

LED green

Pack. unit

33 mm/1.3 in F	39 mm/ 1.54 in
◆ 68 mm / 2.68 in	

- 0	
+ 0	

3-conductor sensor LED supply terminal block,

270-564/281-483

Item

Pack, unit

pcs

Accessories for 3-conductor terminal blocks							
Appropriate marking system WMB/Mini-WSB (see section 14)							
End and intermed	diate plate, 1	mm/0.039 in thick					
	orange	<b>270-321</b> 100 (4 × 25)					
	grey	<b>270-319</b> 100 (4 x 25)					
Insulation stop, 5	pcs/strip	see page 2.43					
.000	white	<b>280-470</b> 200 strips					
20000	light grey	<b>280-471</b> 200 strips					
000	dark grey	<b>280-472</b> 200 strips					
Push-in type jum	<b>per bars,</b> uni	nsulated, I <sub>N</sub> 18 A					
	9-way	<b>270-409</b> 100 (4 x 25)					
	17-way	<b>270-417</b> 100 (4 x 25)					
	80-way	<b>270-480</b> 10					
Jumpers can be cut	t using side cu	tting pliers.					
Push-in type jum	<b>per bars,</b> ligh	nt grey, insulated, I <sub>N</sub> 18 A					
	2-way	<b>870-402</b> 200 (8 x 25)					
	3-way	<b>870-403</b> 200 (8 x 25)					
1.1	4-way	<b>870-404</b> 200 (8 x 25)					
	5-way	<b>870-405</b> 100 (4 x 25)					
(   (   4)	:	:					
	9-way	<b>870-409</b> 100 (4 × 25)					
Sensor LED termino							
Screwdriver with		·					
	$(3.5 \times 0.5)$						
		<b>210-620</b> 1					

<sup>\*</sup> For further approvals with corresponding ratings see section 15.

#### 3-Conductor Actuator Terminal Blocks and 3-Conductor Actuator LED Terminal Blocks, Series 270



0.08 **– 2.5 mm²** 250 V/4 kV/3 **①** 18 A

AWG 28 - 12 300 V, 10 A

0.08 **– 2.5 mm²** 250 V/4 kV/3 **①** 18 A

AWG 28 - 12 300 V, 10 A

0.08 **– 2.5** mm<sup>2</sup> DC 24 V **②** 

Terminal block width 5 mm / 0.197 in

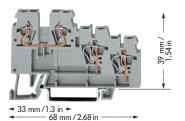
AWG 28 - 12

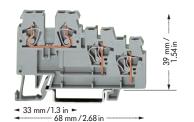
Terminal block width 5 mm / 0.197 in 6 – 7 mm / 0.26 in

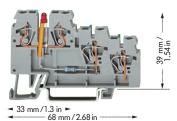
Terminal block width 5 mm / 0.197 in 6 – 7 mm / 0.26 in

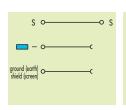
6 – 7 mm / 0.26 in

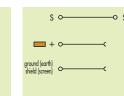
\* KEDA CCAKEDA













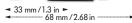
ground (earth) shield (screen)	

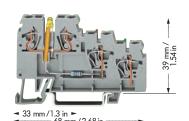
Item No.	Pack. unit pcs	Item No.	Pack. unit pcs	ltem No.	Pack. unit pcs
3-conductor actuator terminal l	<b>block,</b> for DIN 35 rail	3-conductor actuator terminal l	lock, for DIN 35 rail	3-conductor actuator LED termina	al block, for DIN
270-572	50	270-585	50	35 rail, for PNP (positive) switching a	ctuators
				LED red <b>270-572/281-</b> 4	<b>134</b> 50
1 250 V = rated voltage				3-cond. actuator supply term. blo	ock, for DIN 35 rail
4 kV = rated surge voltage				270-577	10
3 = pollution degree				Other voltages – contact factory	
(see also section 15)				Power consumption LED: 4.8 mA	

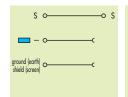




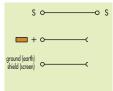














oo mm	2.00 In
s o s	
ground (earth) shield (screen)	

	Item No.	Pack. unit pcs	ltem No.	Pack. unit pcs		Item No.	Pack. unit pcs
3-conductor actuator supply terminal block,		3-conductor actuator supply te	rminal block,	3-conductor of	actuator LED terminal blo	ock, for DIN	
for DIN 35 rail			for DIN 35 rail		35 rail, for NPI	N (negative) switching actu	ators
	270-577	10	270-586	10	LED yellow	270-585/281-507	50
					3-cond. actua	itor supply term. block, i	or DIN 35 rail
						270-586	10
					2 Other volta	ges – contact factory	
					Power cons	umption LED: 4.8 mA	





#### Sensor Terminal Blocks and Actuator Terminal Blocks with CAGE CLAMP® . . . Series 280

Assembly \_



Assembly on the carrier rail. Terminal blocks with ground (earth) connection automatically establish a direct contact to the rail.



Removal from the carrier rail. Attention - remove jumper contacts first!

#### CAGE CLAMP® connection



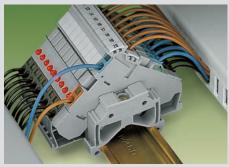
Connection of conductors with straight screw-driver 210-120

#### Commoning



Commoning with adjacent jumpers. Push jumper down FIRMLY until FULLY inserted!

#### Voltage supply to assembly

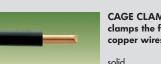


Sensor terminal blocks. Voltage supply from control panel side

#### Voltage supply to assembly



Sensor terminal blocks. Voltage supply from sensor side



CAGE CLAMP® clamps the following copper wires:\*



Actuator terminal blocks and a thermocouple and shield (screen) connection



fine stranded, also with tinned single strands

#### ... Description and Handling

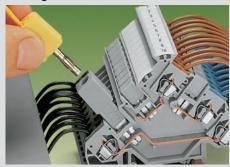
Connection of conductors with angled screwdriver 210-258

#### Marking



Marking with WMB Multi marking system or WSB Quick marking system. For other systems see section 14.

#### **Testing**



Testing with banana plug and adapter 209-170

#### Testing



Testing with voltage tester directly on the current

#### Fuse plugs



Actuator terminal blocks with fuse plugs 281-511 (requires additional intermediate plates)



Actuator terminal block with thermocouple

fine-stranded wire -



fine-stranded wire with crimped ferrule **1** 

#### **Component plugs**



Actuator terminal blocks with component plugs 280-801



fine-stranded wire with crimped pin terminal



# Sensor Terminal Blocks 2.5 mm<sup>2</sup> /AWG 12, for 3-Conductor Sensors Series 280

0.08 - **2.5** mm<sup>2</sup> 400 V/6 kV/3 **①** 20 A

AWG 28 - 12 300 V, 15 A **9** 300 V, 15 A ®

Terminal block width 5 mm / 0.197 in 8 - 9 mm / 0.33 in

0.08 - 2.5 mm<sup>2</sup> 250 V/4 kV/3 **0 0** 6 A **0** 

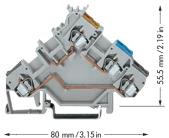
AWG 28 - 12 300 V, 6 A **9** 300 V, 15 A ®

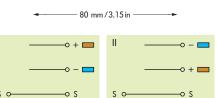
Terminal block width 5 mm / 0.197 in ■ 8 – 9 mm / 0.33 in

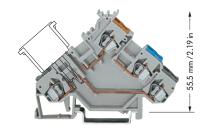
0.08 **– 2.5** mm<sup>2</sup> 400 V/6 kV/3 **①** 10 A

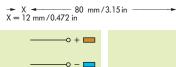
AWG 28 - 12 300 V, 10 A **9** 300 V, 15 A ®

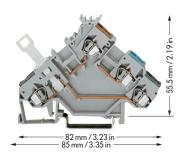
Terminal block width 5 mm / 0.197 in 8 - 9 mm / 0.33 in

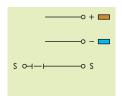




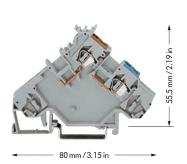


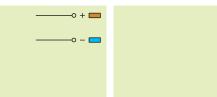






	ltem No.	Pack. unit pcs	ltem No.	Pack. unit pcs	ltem No.	Pack. unit pcs
Sensor terminal blocks		Sensor terminal block,		Sensor disconnect terminal block,		
I	280-560	50	for component plugs		for signal interruption	
II	280-553	50	280-561	50	280-563	50
			Empty component plug housing see	W4, volume 3		
			Fuse plug see page 7.35			
			Appropriate marking system <b>WMB/V</b>	VSB (see section 14	.)	





ltem No.	Pack. unit pcs
Sensor supply terminal block,	
voltage supply from sensor side	

ltem No.	Pack. unit pcs
Sensor supply terminal block,	
voltage supply from sensor side	
280-564	10
Accessories Series 280	

End and intermediate plate, 1 mm/0.039 in thick			
	for triple deck terminal blocks		
	orange	280-321 100 (4×25	)
	grey	280-319 100 (4×25)	)







Sensor terminal block, with 3-conductor sensor

Insulation stop, 5 pcs/strip		see page 2.43	
000000 00000	white	280-470	200 strips
	light grey	280-471	200 strips
	dark grey	280-472	200 strips

Adjacent jump	<b>er,</b> insulated, I <sub>N</sub>	↓24 A	
	grey	280-402	200 (8 x 25)



0.08 **– 2.5** mm<sup>2</sup> 400 V/6 kV/3 **①** 20 A

AWG 28 - 12 300 V, 15 A **9** 300 V, 15 A ®

Terminal block width with end plate 6 mm / 0.236 in 8 - 9 mm / 0.33 in

0.08 **– 2.5** mm<sup>2</sup> DC 24 V **⑤** 20 A

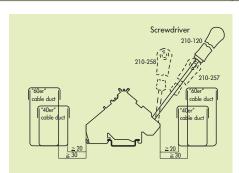
AWG 28 - 12 24 V, 15 A **9** 300 V, 15 A ®

Terminal block width 5 mm / 0.197 in 8 – 9 mm / 0.33 in

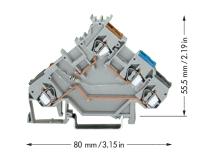
**Spacer** 

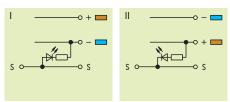
Spacer width 5 mm / 0.197 in

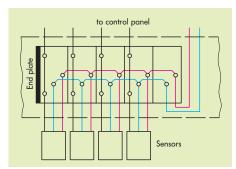
\* 66 (N) R



Min. mounting distance - terminal blocks to cable duct

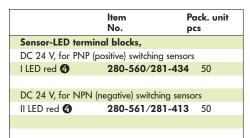


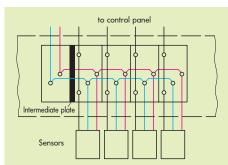




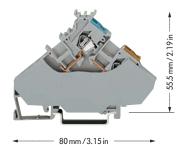
Voltage supply from sensor side

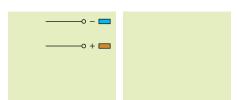
- 400/250 V = rated voltage 6/4 kV = rated surge voltage 3 = pollution degree (see also section 15)
- Electrical ratings are given by the fuse or components used in the component plug (see also page 7.35 and Full Line Catalog W4, volume 3)
- 3 Other voltages contact factory
- **4.8** Power consumption LED: 4.8 mA

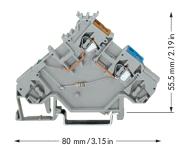


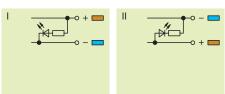


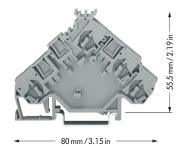
Voltage supply from control panel side











_	
_	
-	

	ltem No.	Pack. unit pcs		ltem No.	Pack. unit pcs	Item No.	Pack. unit pcs
Sensor supply te	erminal block,		Sensor-LED supp	ly terminal blocks,		Spacer, same shape as	
voltage supply fro	m control panel sid	e,	voltage supply from	n sensor side,		3-conductor sensor or actuato	r
with end plate	280-567	20	DC 24 V, for PNP	(positive) switching se	nsors	terminal blocks	
			I LED green 🕢	280-564/281-4	<b>183</b> 10	280-55	<b>9</b> 50
			voltage supply from	n sensor side,		Spacers allow clear separation	of groups of
			DC 24 V, for NPN	(negative) switching :	sensors	sensors or actuators, especially	if they are supplied
			II LED green 4	280-566/281-4	<b>196</b> 10	from different voltage sources.	



## Sensor Terminal Blocks 2.5 mm<sup>2</sup> /AWG 12, for 3-Conductor Sensors with Ground (Earth) Connection Series 280

0.08 - 2.5 mm<sup>2</sup> 400 V/6 kV/3 0 300 V, 15 A 30 20 A 300 V, 15 A 30 Terminal block width 5 mm / 0.197 in (with end plate 6 mm / 0.236 in) 8 - 9 mm / 0.33 in 0.08 **– 2.5** mm<sup>2</sup> 250 V/4 kV/3 **①** ② 6 A ②

AWG 28 - 12 300 V, 6 A **A** 300 V, 15 A ®

Terminal block width 5 mm / 0.197 in
8 – 9 mm / 0.33 in

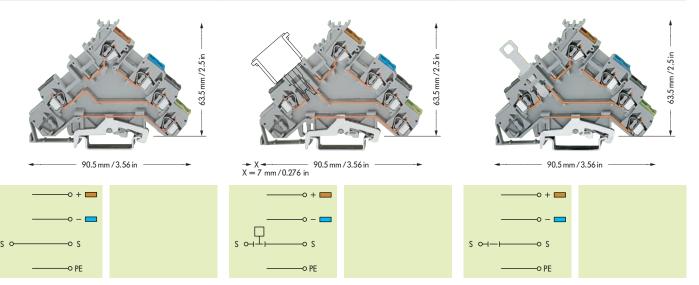
\* **91 6** N BV

0.08 - 2.5 mm<sup>2</sup> 400 V/6 kV/3 **①** 

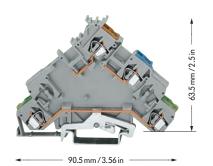
AWG 28 - 12 300 V, 10 A **%** 300 V, 15 A ®

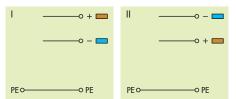
Terminal block width 5 mm / 0.197 in 8—8 8 - 9 mm / 0.33 in

\* **91** 6 N

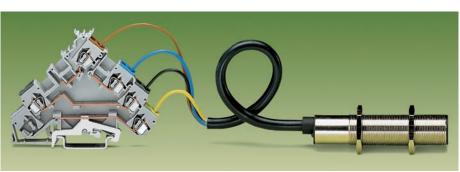


ltem No.	Pack. unit pcs	Item No.	Pack. unit pcs	Item No.	Pack. unit pcs
Sensor terminal block with	ground (earth)	Sensor terminal block with groun	nd (earth)	Sensor disconnect terminal block	with ground
connection		connection, for component plugs		(earth) connection, plus signal inter	ruption
280-57	<b>'0</b> 50	280-571	50	280-573	50
		Empty component plug housing see	W4, volume 3		
		Fuse plug see page 7.35			
		Appropriate marking system WMB/V	<b>VSB</b> (see section 14	4)	

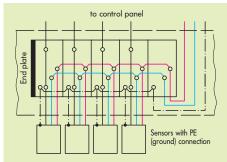




	ltem No.	Pack. unit pcs
Sensor supply to	erminal block with	ground (earth)
connection, volta	age supply from sens	sor side
	280-574	10
Sensor supply to	erminal block with	ground (earth)
connection, volta	age supply from con	trol panel side,
with end plate	280-577	20
Accessories	see page 7.51 Insulation stop and	Liumper

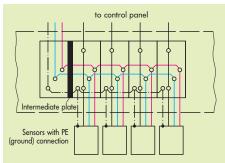


Sensor terminal block, with 3-conductor sensor with ground (earth) connection



Voltage supply from sensor side

■ 400/250 V = rated voltage 6/4 kV = rated surge voltage 3 = pollution degree (see also section 15)



Voltage supply from control panel side

- ② Electrical ratings are given by the fuse or components used in the component plug (see also page 7.35 and Full Line Catalog W4, volume 3)
- 3 Other voltages contact factory
- 4 Power consumption LED: 4.8 mA

### Sensor Terminal Blocks 2.5 mm<sup>2</sup> /AWG 12, for 4-Conductor Sensors Series 280



0.08 **– 2.5** mm<sup>2</sup> DC 24 V **③** 20 A

AWG 28 - 12 24 V, 15 A **%** 300 V, 15 A ®

Terminal block width 5 mm / 0.197 in (with end plate 6 mm / 0.236 in)

8 – 9 mm / 0.33 in

\* **91** 6 N

0.08 – **2.5** mm<sup>2</sup> 400 V/6 kV/3 **①** 20 A

AWG 28 - 12 300 V, 15 A **9** 300 V, 15 A **9** 

Terminal block width 5 mm / 0.197 in (with end plate 6 mm / 0.236 in)

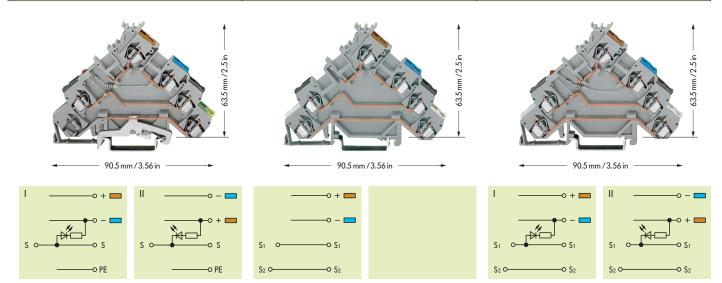
8 – 9 mm / 0.33 in

0.08 **– 2.5** mm<sup>2</sup> DC 24 V **⑤** 20 A

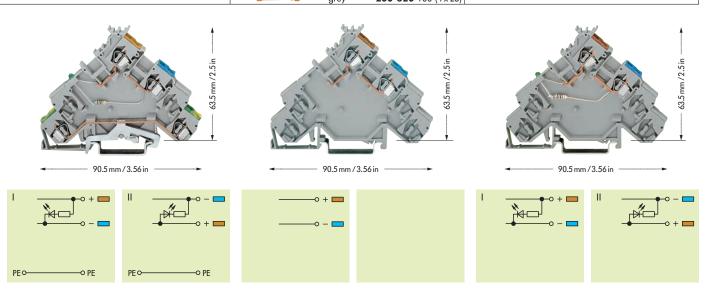
AWG 28 - 12 24 V, 15 A **%** 300 V, 15 A ®

Terminal block width 5 mm / 0.197 in 8 - 9 mm / 0.33 in

\* 91 6 N



	ltem No.	Pack. unit pcs		ltem No.	Pack. unit pcs		ltem No.	Pack. unit pcs
Sensor-LED term	ninal blocks,		Sensor terminal	block		Sensor LED terr	ninal blocks,	
DC 24 V, for PNP	(positive) switching	sensors		280-580	50	DC 24 V, for PNI	P (positive) switchin	g sensors
I LED red 4	280-570/281	<b>-434</b> 50				I LED red 🕢	280-580/28	<b>31-434</b> 50
DC 24 V, for NPN	l (negative) switching	g sensors	End and interme	diate plate,	1 mm/0.039 in thick	DC 24 V, for NPI	N (negative) switch	ing sensors
II LED red 🏈	280-571/281	<b>-413</b> 50		for quadr	uple deck terminal blocks	II LED red 🕢	280-581/28	<b>31-413</b> 50
				orange	<b>280-323</b> 100 (4 x 25)			
				arev	280-320 100 (4×25)			



	ltem No.	Pack. unit pcs		ltem No.	Pack. unit pcs		ltem No.	Pack. unit pcs
Sensor-LED supp	ly terminal blocks w	ith ground	Sensor supply ter	minal blocks,		Sensor LED supp	ly terminal bloc	ks,
(earth) connection	<b>1,</b> voltage supply from	n sensor side,	voltage supply from	n sensor side,		voltage supply fro	n sensor side,	
DC 24 V, for PNP (	positive) switching sen	sors	without end plate	280-584	10	DC 24 V, for PNP	(positive) switching	sensors
I LED green 🕢	280-574/281-48	<b>83</b> 10				I LED green 🕢	280-584/28	<b>1-483</b> 10
DC 24 V, for NPN	(negative) switching se	ensors	voltage supply from	n control panel side	€,			
II LED green <b>4</b>	280-576/281-49	<b>96</b> 10	with end plate	280-587	20	DC 24 V, for NPN	(negative) switchi	ng sensors
Voltage supply from	m control panel side,					II LED green 4	280-586/28	<b>1-496</b> 10
DC 24 V, for PNP (	positive) switching sen	sors				-		
I LED green 4								
with end plate	280-577/281-49	<b>96</b> 20						



### Sensor Terminal Blocks 2.5 mm<sup>2</sup> /AWG 12, for Fuse Plugs for 3- and 4-Conductor Sensors Series 280

0.08 **− 2.5** mm<sup>2</sup> 125 V/5 A **①** 

AWG 28 - 12 250 V; 6,3 A **9** 300 V, 15 A ®

Terminal block width 5 mm / 0.197 in (with end plate 6 mm / 0.236 in)

■ 8 – 9 mm / 0.33 in

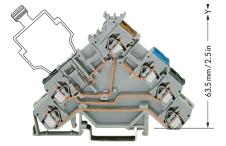
0.08 **– 2.5** mm<sup>2</sup> DC 24 V **②** 20 A

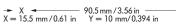
AWG 28 - 12 300/24 V, 15 A **93** 300 V, 15 A ®

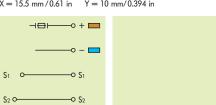
Terminal block width 5 mm / 0.197 in (with end plate 6 mm / 0.236 in) □ 8 – 9 mm / 0.33 in

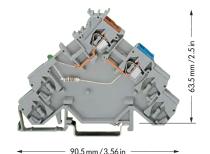
Spacer

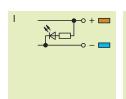
Spacer width 5 mm / 0.197 in















	Item No.	Pack. unit pcs		ltem No.	Pack. unit pcs	Item No.	Pack. unit pcs
Sensor terminal b	locks, for fuse plugs,		Sensor-LED suppl	y terminal block,		Spacer, same shape as	
for PNP (positive) sv	vitching sensors		voltage supply from	sensor side, DC 24	V,	4-conductor sensor terminal blocks,	
without end plate	280-588	50	for PNP (positive) sv	witching sensors		3-conductor sensor terminal blocks with	
			I LED green 3	280-584/281-4	<b>83</b> 10	ground (earth) connection or the	
with end plate			Sensor supply ter	minal block, (see ill.	page 7.49)	corresponding actuator terminal blocks	
grey	280-588/280-32	<b>o</b> 50	voltage supply from	n sensor side,		280-582	50
orange	280-588/280-32	<b>3</b> 50	II 300 V	280-584	10		
			Sensor supply ter	minal block, (see ill.	page 7.49)		
			voltage supply from	control panel side,			
			II with end plate	280-587	20		

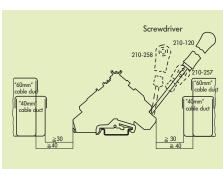


Sensor terminal block, with fuse plug, with 3-conductor sensor

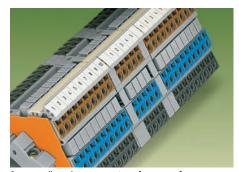


The fuse plug is 1 mm/0.039 in wider than the terminal block. This means an intermediate plate has to be fitted.

- Electrical ratings are given by the fuse or components used in the component plug (see also pages 7.34 and 7.35 Full Line Catalog W4, volume 3)
- 2 Other voltages contact factory
- 3 Power consumption LED: 4.8 mA



Min. mounting distance - terminal blocks to cable duct



Spacers allow clear separation of groups of sensors or actuators, especially if they are supplied from different voltage sources.

Accessories	see page 7.51 Insulation stop and jumper	Appropriate marking system

WMB/WSB (see section 14)

<sup>\*</sup> For further approvals with corresponding ratings see section 15.

# Actuator Terminal Blocks 2.5 mm<sup>2</sup> / AWG 12, for Actuators with Shield (Screen) Connection and for Actuators with Shield (Screen) Conductor Through Contact (for Thermocouples etc.) Series 280



0.08 - 2.5 mm<sup>2</sup> 400 V/6 kV/3 **①** 20 A

AWG 28 - 12 300 V, 15 A **9** 300 V, 15 A ®

20 A 300 V, 15 A ®
Terminal block width 5 mm / 0.197 in
(with end plate 6 mm / 0.236 in)

8 – 9 mm / 0.33 in

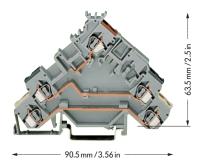
\* **93** @ ® BV

0.08 – **2.5** mm<sup>2</sup> 400 V/6 kV/3 **①** 20 A AWG 28 - 12 300 V, 15 A **9** 300 V, 15 A ®

Terminal block width 5 mm / 0.197 in (with end plate 6 mm / 0.236 in)

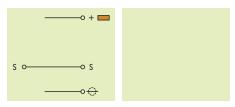
8 – 9 mm / 0.33 in

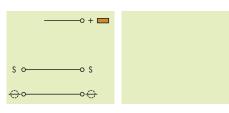






Green-yellow clamping unit = shield (screen) connection





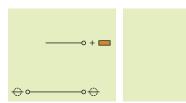
400 V = rated voltage 6 kV = rated surge voltage 3 = pollution degree (see also section 15)

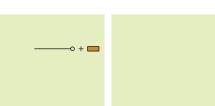
	ltem No.	Pack. unit pcs	Item No.	Pack. unit pcs
Actua	itor terminal block with shie	eld (screen)	Actuator terminal block with shield	l (screen)
conne	ection		conductor through contact	
	280-585	50	280-583	50





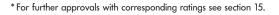






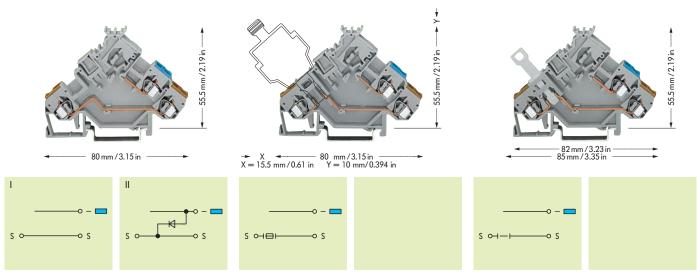
White clamping unit = shield (screen) conductor through contact

	ltem No.	Pack. unit pcs		Item No.	Po po	ack. unit			
Actuator supply	terminal blo	ck with shield (screen)	Actuator supply	terminal block	k,				
connection, voltag	ge supply from	n control panel side,	voltage supply from	m control panel	l side,				
with end plate	280-586	20	with end plate	280-515		20			
		20	Willi Cha plaic	200-313		20			
Accessories S		-	Appropriate marking s		/WSB (s				
Accessories S	eries 280	-	•	system <b>WMB</b>			Adjacent jump	<b>oer,</b> insulated, I <sub>1</sub>	<sub>N</sub> 24 A
Accessories S	eries 280 diate plate,	)	Appropriate marking s	system <b>WMB</b>		ee section 14)		<b>er,</b> insulated, l <sub>i</sub> grey	<sub>N</sub> 24 A <b>280-402</b> 200 (8×25
Accessories S	eries 280 diate plate,	1 mm/0.039 in thick	Appropriate marking s	system <b>WMB</b>	se	ee section 14)			

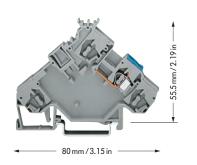




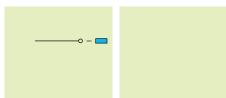
## Actuator Terminal Blocks 2.5 mm<sup>2</sup> / AWG 12, (for Pressure Switches, Thermocouples etc.) Series 280



	N.I.	Pack. unit pcs		ltem No.	Pack. unit pcs	Item No.	Pack. unit pcs
Actuator t	terminal block		Actuator terminal	blocks, for fuse plugs	<b>• 4</b> ,	Actuator disconnect terminal block,	
I	280-562	50	for fuse protection of	of line voltage,		for interruption of line	
			without end plate	280-565	50	280-566	50
Actuator t	terminal block,		with end plate				
with recove	ery diode 1 N 4007 <b>2</b>		grey	280-565/280-31	<b>9</b> 50		
II	280-562/281-411	50	orange	280-565/280-32	<b>1</b> 50		
			Appropriate marking sy	vstem WMB/WSB	(see section 14	.)	



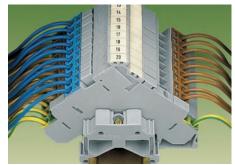




	ltem No.	Pack. unit pcs
Actuator supply	terminal block,	
voltage supply fro	om actuator side	
	280-592	10
Accessories	see page 7.53 Insulation stop and	l jumper







\* For further approvals with corresponding ratings see section 15.



0.08 **– 2.5** mm<sup>2</sup> DC 24 V **⑤** 20 A

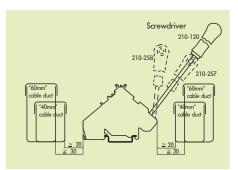
AWG 28 - 12 24 V, 15 A **%** 300 V, 15 A ®

Terminal block width 5 mm / 0.197 in 8 – 9 mm / 0.33 in

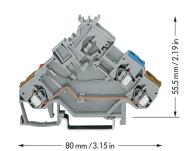
0.08 - 2.5 mm<sup>2</sup> 400 V/6 kV/3 **①** 20 A AWG 28 - 12 300 V, 15 A **9** 300 V, 15 A **9** 

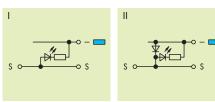
Terminal block width with end plate 6 mm / 0.236 in 8 – 9 mm / 0.33 in

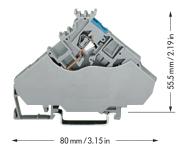
\* 50 6 N RV

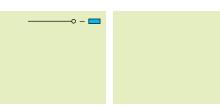


Min. mounting distance - terminal blocks to cable duct

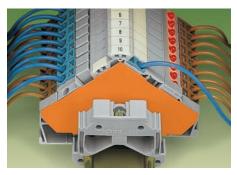




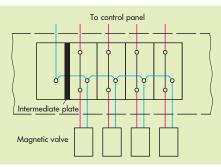




	Item No.	Pack. unit pcs		Item No.	Pack. unit pcs
Actuator LED te	rminal block, DC 24 V	Actuator supply terminal block,			
I LED red 6	280-562/281-43	<b>4</b> 50	voltage supply fro	om control panel side,	
			with end plate	280-568	20
Actuator LED te	r <mark>minal block,</mark> DC 24 V,				
with recovery dio	de 1 N 4007				
II LED red 6	280-562/281-42	<b>o</b> 50			



- 1 400/250 V = rated voltage 6/4 kV = rated surge voltage 3 = pollution degree (see also section 15)
- with recovery diode
- Electrical ratings are given by the fuse or components used in the component plug (see also pages 7.34 and 7.35 and Full Line Catalog W4, volume 3)
- The fuse plug is 1 mm/0.039 in wider than the terminal block. This means an intermediate plate has to be fitted.
- 6 Other voltages contact factory
- 6 Power consumption LED: 4.8 mA



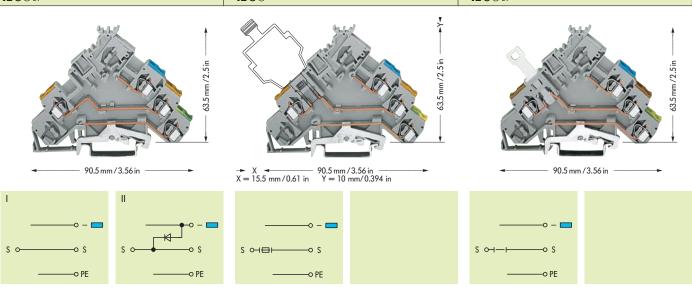
■ Voltage supply from control panel side

Accessories Series 280			Appropriate marking sy	stem <b>WMB</b>	S/WSB (se	e section 14)			
End and intermediate plate, 1 mm/0.039 in thick			Insulation stop, 5 pcs/strip		see page 2.43		Adjacent jumper, insulated, I <sub>N</sub> 24 A		I <sub>N</sub> 24 A
	for triple	deck terminal blocks	A00000	white	280-470	200 strips		grey	280-402 200 (8×25)
	orange	<b>280-321</b> 100 (4 x 25)		light grey	280-471	200 strips			
	grey	280-319 100 (4 x 25)	Ode	dark grey	280-472	200 strips	((1)		



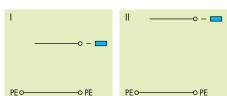
## Actuator Terminal Blocks with Ground (Earth) Connection 2.5 mm<sup>2</sup> / AWG 12, (for Magnetic Valves, Servomotors etc.) Series 280

0.08 - 2.5 mm<sup>2</sup> | AWG 28 - 12 | 300 V, 15 A 7\frac{1}{2} | 250 V/6 kV/3, 20 A 1 | 300 V, 15 A 1 | 250 V/6.3 A 1 | 250 V/6.3 A 1 | 300 V, 15 A



	NI.	Pack. unit pcs		Item No.	Pack. unit pcs	ltem No.	Pack. unit pcs
Actuator t	terminal blocks		Actuator terminal	blocks		Actuator disconnect terminal block	
with grou	nd (earth) connection,	with ground (earth) connection,			with ground (earth) connection,		
1	280-572	50	for fuse plugs <b>4</b> , fo	or fuse protection of	ine,	for interruption of line	
			without end plate	280-575	50	280-576	50
and recove	ery diode 1 N 4007						
II	280-572/281-411	<b>I</b> 50	with end plate				
			grey	280-575/280-3	<b>20</b> 50		
			orange	280-575/280-3	<b>23</b> 50		

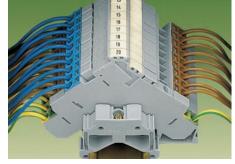




	Item No.	Pack. unit pcs
Actuator discon	nect terminal bloc	ks
with ground (ea	rth) connection,	
voltage supply fro	om the actuator side	
I	280-593	10
voltage supply fro	om the control panel	side,
with end plate		
II	280-578	20
Accessories	see page 7.55 Insulation stop and	d jumper







<sup>\*</sup> For further approvals with corresponding ratings see section 15.



0.08 **– 2.5** mm<sup>2</sup> DC 24 V **⑤** 20 A

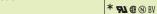
AWG 28 - 12 24 V, 15 A **%** 300 V, 15 A ®

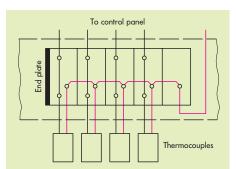
Terminal block width 5 mm / 0.197 in 8 – 9 mm / 0.33 in

0.08 - 2.5 mm<sup>2</sup> 400 V/6 kV/3 **2** 20 A AWG 28 - 12 300 V, 15 A **9** 300 V, 15 A **9** 

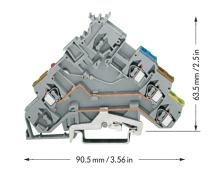
Terminal block width 5 mm / 0.197 in (with end plate 6 mm / 0.236 in)

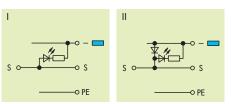
8 – 9 mm / 0.33 in

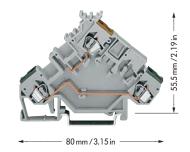


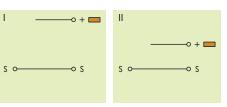


Voltage supply from actuator side





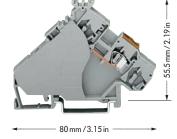


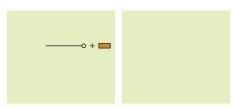


	Item No.	Pa pc	ck. unit s		Item No.
End and intermedi	ate plate, 1	mm/0.039	in thick	Actuator LED termin	nal blocks
	for triple d	eck terminal	blocks	with ground (earth)	connection,
	orange	280-321	100 (4 x 25)	I LED red 🏈	280-572/28
	grey	280-319	100 (4 x 25)		
End and intermedi	ate plate, 1	mm/0.039	in thick	with recovery diode 1	N 4007
	for quadru	ıple deck teri	minal blocks	II LED red 🕢	280-572/28
	orange	280-323	100 (4 x 25)		
	grey	280-320	100 (4 x 25)		
Insulation stop, 5 p	ocs/strip	see	page 2.43		
. 4004	white	280-470	200 strips		
20000	light grey	280-471	200 strips		
000	dark grey	280-472	200 strips		
Adjacent jumper, i	nsulated, I <sub>N</sub> 2	24 A			
lin .	grey	280-402	200 (8 x 25)		

WMB/WSB (see section 14)

		ltem No.	Po	ack. unit s		ltem No.	Pack. unit pcs
	Actuator LED ter	rminal blocks			Actuator to	erminal block	
	with ground (ea	rth) connection,	DC 24 V		I	280-555	50
(5)	I LED red 🕢	280-572/28	31-434	50			
(5)					Actuator to	erminal block, not shown	
	with recovery diod	de 1 N 4007			II	280-554	50
cks	II LED red 🕢	280-572/28	31-420	50			
(5)							
(5)							





- 400/250 V = rated voltage 6/4 kV = rated surge voltage 3 = pollution degree (see also section 15)
- 2 with recovery diode

Appropriate

marking system

- Selectrical ratings are given by the fuse or components used in the component plug (see also pages 7.34 and 7.35 and Full Line Catalog W4, volume 3)
- The fuse plug is 1 mm/0.039 in wider than the terminal block. This means an intermediate plate has to be fitted.

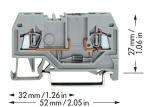
	ltem No.	Pack. unit pcs		
Actuator supply	terminal block, in	connection with:		
280-555 → voltag	ge supply from contr	ol panel side		
280-554 → voltage supply from actuator side				
with end plate	280-556	20		

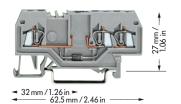


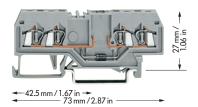
## Diode Terminal Blocks 1.5 mm<sup>2</sup> / AWG 16, Series 279

 $\begin{array}{c|c} 0.08 - 1.5 \text{ mm}^2 & | \text{ AWG } 28 - 16 \\ \text{U}_{\text{N}} \ 250 \ \text{V}; \ \text{U}_{\text{RM}} \ 1000 \ \text{V} \\ 1 \ \text{N} \ 4007 - 0.5 \ \text{A} \ \text{continuous current} \\ \text{Terminal block width } 4 \ \text{mm} \ / \ 0.157 \ \text{in} \\ \hline & & & & 8 - 9 \ \text{mm} \ / \ 0.33 \ \text{in} \\ \end{array}$ 

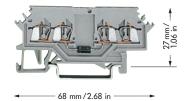
0.08 − 1.5 mm<sup>2</sup> | AWG 28 − 16 U<sub>N</sub> 250 V; U<sub>RM</sub> 1000 V 1 N 4007 − 0.5 A continuous current Terminal block width 4 mm / 0.157 in 8 − 9 mm / 0.33 in \* KEBI ((AKEBI © 💇 🛱 BV NV 🗑 💮 0.08 - 1.5 mm<sup>2</sup> | AWG 28 - 16 U<sub>N</sub> 250 V; U<sub>RM</sub> 1000 V 1 N 4007 - 0.5 A continuous current Terminal block width 4 mm / 0.157 in 8 - 9 mm / 0.33 in \* KER (CAKER © \* \*\* EN IR NV ®

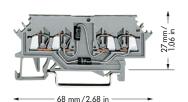






	Item No.	Pack. unit pcs		Item No.	Pack. unit pcs		Item No.	Pack. unit pcs	
2-conductor di	ode terminal blocks		3-conductor di	ode terminal blocks		4-conductor di	ode terminal blocks		
with diode 1 N	l 4007		with diode 1 N	I 4007		with diode 1 N	l 4007		
Circuit I, grey	279-915/281-410	100	Circuit I, grey	279-673/281-410	100	Circuit I, grey	279-815/281-410	100	
Circuit II, grey	279-915/281-411	100	Circuit II, grey	279-673/281-411	100	Circuit II, grey	279-815/281-411	100	
Examples of circ	Examples of circuit configuration see page 7.59			uit configuration see pag	ge 7.59	Examples of circ	uit configuration see pag	e 7.59	
Through termin	nal block with the same	e shape	Through terminal block with the same shape			Through terminal block with the same shape			
grey	279-901	page 2.8	grey	279-681	page 2.8	grey	279-831	page 2.8	
		Ā		g system <b>WMB/WS</b> rker width 4 mm/0.157 in		)			
End and interm	nediate plate, 2 mm/0.	079 in thick	End and interm	nediate plate, 2 mm/0	.079 in thick	End and intern	nediate plate, 2 mm/0.	079 in thick	
	orange <b>279-3</b> 2	<b>28</b> 100 (4 × 25)		orange <b>279-3</b>	<b>39</b> 100 (4 × 25)		orange <b>279-3</b>	<b>46</b> 100 (4 × 25)	
	grey <b>279-3</b> 2	<b>25</b> 100 (4 × 25)		grey <b>279-3</b>	<b>08</b> 100 (4 × 25)		grey <b>279-3</b>	<b>44</b> 100 (4 × 25)	





		Item No.	Pack. unit pcs		Item No.	Pack. unit pcs
	4-conductor dia	de terminal blocks		4-conductor di	ode terminal block	(
	with diode 1 N	4007		with 2 diodes	1 N 4007	
	Circuit I, grey	279-623/281-410	100	grey	279-620/281-4	<b>408</b> 100
	Circuit II, grey	279-623/281-411	100	(for lamp test cir	cuits up to 60 V)	
	Examples of circu	it configuration see po	ge 7.59			
	Through termin	al block with the sar	ne shape	Through terminal block with the same shape		
	grey	279-621	page 2.9	grey	279-621	page 2.9
		Appropriate	marking system <b>V</b> Marker width	VMB/WSB (see 4 mm/0.157 in	e section 14)	
	End and interm	ediate plate, 2 mm/	0.079 in thick	End and intern	nediate plate, 2 mn	n/0.079 in thick
		orange <b>279</b> -	<b>317</b> 100 (4 × 25)		orange <b>27</b>	<b>'9-317</b> 100 (4 x 25
	•	grey <b>279</b> -	<b>316</b> 100 (4 × 25)	•	grey 27	<b>'9-316</b> 100 (4 x 25
	2 2			25 25		
Accessories Series 279, see page 7.59						

## Diode Terminal Blocks 2.5 mm<sup>2</sup> / AWG 12, Series 280



 $\begin{array}{c|c} 0.08 - \textbf{2.5} \ \text{mm}^2 & | \ \text{AWG} \ 28 - 12 \\ \text{U}_{\text{N}} \ 250 \ \text{V;} \ \text{U}_{\text{RM}} \ 1000 \ \text{V} \\ 1 \ \text{N} \ 4007 - 0.5 \ \text{A} \ \text{continuous current} \\ \text{Terminal block width} \ 5 \ \text{mm} \ / \ 0.197 \ \text{in} \\ \end{array}$ 

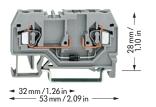
8 – 9 mm / 0.33 in

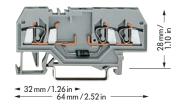
\* KEMA 🔊

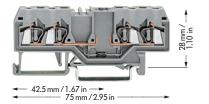
\* KEDA CCAKEDA ® S BV LR NV ®

 $\begin{array}{c|c} 0.08 - \textbf{2.5} \ \text{mm}^2 & | \ \text{AWG} \ 28 - 12 \\ \text{U}_{\text{N}} \ 250 \ \text{V}; \ \text{U}_{\text{RM}} \ 1000 \ \text{V} \\ 1 \ \text{N} \ 4007 - 0.5 \ \text{A} \ \text{continuous current} \\ \text{Terminal block width} \ 5 \ \text{mm} \ / \ 0.197 \ \text{in} \\ \hline & \blacksquare \gg 8 - 9 \ \text{mm} \ / \ 0.33 \ \text{in} \\ \end{array}$ 

\* KEMA &







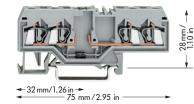
	Item No.	Pack. unit pcs		ltem No.	Pack. unit pcs		Item No.	Pack. unit pcs
2-conductor dio	de terminal blocks		3-conductor diode terminal blocks			4-conductor di	ode terminal blocks	
with diode 1 N	4007		with diode 1 N	I 4007		with diode 1 N	I 4007	
Circuit I, grey	280-915/281-410	100	Circuit I, grey	280-673/281-4	<b>10</b> 100	Circuit I, grey	280-815/281-410	100
Circuit II, grey	280-915/281-411	100	Circuit II, grey	280-673/281-4	<b>11</b> 100	Circuit II, grey	280-815/281-411	100
Examples of circuit configuration see page 7.59			Examples of circ	uit configuration see	page 7.59	Examples of circ	uit configuration see pag	e 7.59
						·		
Through termina	I block with the sam	e shape	Through terminal block with the same shape			Through terminal block with the same shape		
grey	280-901	page 2.10	grey	280-681	page 2.10	grey	280-833	page 2.
		A		g system <b>WMB/W</b> rker width 5 mm/0.19		.)		
End and interme	ediate plate, 2.5 mm/	0.098 in thick	End and interm	nediate plate, 2.5 m	m/0.098 in thick	End and intern	nediate plate, 2.5 mm/(	0.098 in thick
	orange <b>280-3</b>	<b>09</b> 100 (4 × 25)		orange 28	<b>0-326</b> 100 (4 × 25)		orange <b>280-3</b>	<b>15</b> 100 (4 x 2
•	grey 280-3	08 100 (4 x 25)	· Harris In .	grey 28	<b>0-324</b> 100 (4 × 25)	The Samuel of th	grey 280-3	<b>14</b> 100 (4 x :
357.50	-		100 100	-	, ,	100.000		



◆ 50 mm / 1.97 in →



— 73 mm/2.87 in —



	Item No.	Pack. unit pcs		Item No.	Pack. unit pcs		ltem No.	Pack. unit pcs	
2-conductor di	iode terminal blocks		4-conductor diode terminal blocks			4-conductor di	ode terminal blocks		
with diode 1 N	N 4007		with diode 1 N	4007		with diode 1 N	l 4007		
Circuit I, grey	280-613/281-410	100	Circuit I, grey	280-623/281-41	<b>0</b> 100	Circuit I, grey	280-655/281-410	100	
Circuit II, grey	280-613/281-411	100	Circuit II, grey	280-623/281-41	<b>1</b> 100	Circuit II, grey	280-655/281-411	100	
Examples of circuit configuration see page 7.59			Examples of circ	uit configuration see po	age 7.59	Examples of circ	uit configuration see pag	e 7.59	
Through termin	nal block with the sam	e shape	Through termin	al block with the sa	me shape	Through terminal block with the same shape			
grey	280-601	page 2.12	grey	280-621	page 2.12	grey	280-633	page 2.1	
		A		g system <b>WMB/W</b> rker width 5 mm/0.197		)			
End and intern	nediate plate, 2.5 mm/	0.098 in thick	End and interm	rediate plate, 2.5 mm	/0.098 in thick	End and intern	nediate plate, 2.5 mm/(	0.098 in thick	
	orange <b>280-3</b>	<b>31</b> 100 (4 x 25)		orange 280-	<b>317</b> 100 (4 x 25)		orange <b>280-3</b>	<b>15</b> 100 (4 x 2	
	grey <b>280-3</b>	<b>30</b> 100 (4 x 25)		grey <b>280</b> -	<b>316</b> 100 (4 x 25)		grey <b>280-3</b>	14100 (4 x 2	



Accessories Series 280, see page 7.59

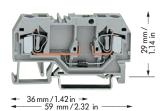


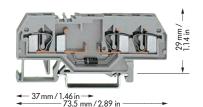
#### Diode Terminal Blocks 4 mm<sup>2</sup> / AWG 12 and Variable Resistor Terminal Blocks 2.5 mm<sup>2</sup> / AWG 12, Series 281 and Series 280

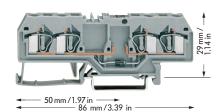
 $0.08 - 4 \text{ mm}^2$ AWG 28 - 12 U<sub>N</sub> 250 V; U<sub>RM</sub> 1000 V 1 N 4007 – 0.5 A continuous current 1 N 5408 – 1.5 A continuous current Terminal block width 6 mm / 0.236 in 9 – 10 mm / 0.37 in \* KEDA CCAKEDA 🖭 🐨 BV LR NV (

 $0.08 - 4 \text{ mm}^2$ AWG 28 - 12 U<sub>N</sub> 250 V; U<sub>RM</sub> 1000 V 1 N 4007 – 0.5 A continuous current 1 N 5408 – 1.5 A continuous current Terminal block width 6 mm / 0.236 in 9 – 10 mm / 0.37 in KEDA CCAKEDA 🖭 🐨 BV LR NV

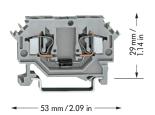
 $0.08 - 4 \text{ mm}^2$ AWG 28 - 12  $U_N$  250 V;  $U_{RM}$  1000 V 1 N 4007 – 0.5 A continuous current 1 N 5408 – 1.5 A continuous current Terminal block width 6 mm / 0.236 in 9 – 10 mm / 0.37 in \* KEDA CCAKEDA 🖭 🐨 BV LR NV







	ltem No.	Pack. unit pcs		Item No.	Pack. unit pcs		Item No.	Pack. unit pcs	
2-conductor die	ode terminal blocks		3-conductor diode terminal blocks			4-conductor die	ode terminal blocks		
with diode 1 N	I 4007		with diode 1 N 4007			with diode 1 N	4007		
Circuit I, grey	281-915/281-410	50	Circuit I, grey	281-673/281-410	50	Circuit I, grey	281-665/281-410	50	
Circuit II, grey	281-915/281-411	50	Circuit II, grey	281-673/281-411	50	Circuit II, grey	281-665/281-411	50	
2-conductor die	ode terminal blocks		3-conductor diode terminal blocks			4-conductor diode terminal blocks			
with diode 1 N	I 5408		with diode 1 N	5408		with diode 1 N 5408			
Circuit I, grey	281-915/281-400	50	Circuit I, grey	281-673/281-400	50	Circuit I, grey	281-665/281-400	50	
Circuit II, grey	281-915/281-401	50	Circuit II, grey	281-673/281-401	50	Circuit II, grey	281-665/281-401	50	
Through termin	al block with the same	e shape	Through terminal block with the same shape			Through terminal block with the same shape			
grey	281-901	page 2.16	grey	281-681	page 2.16	grey	281-652	page 2.16	
		A		system <b>WMB/WS</b> ker width 5 mm/0.197 i					
End and interm	nediate plate, 2.5 mm/0	0.098 in thick	End and interm	ediate plate, 2.5 mm/	0.098 in thick	End and interm	ediate plate, 2.5 mm/(	0.098 in thick	
	orange <b>281-3</b> 2	<b>29</b> 100 (4 x 25)		orange <b>281-</b> 3	<b>326</b> 100 (4 x 25)		orange <b>281-3</b> 3	<b>35</b> 100 (4 × 25)	
	grey <b>281-32</b>	<b>28</b> 100 (4 x 25)		grey <b>281-</b> 3	<b>324</b> 100 (4 × 25)		grey <b>281-3</b> 3	<b>34</b> 100 (4 × 25)	



Variable Resistor Terminal Blocks 2.5 mm<sup>2</sup> / AWG 14, Series 280



50 mm / 1.97 in

0.08 **– 2.5** mm<sup>2</sup> AWG 28 – 14

Terminal block width 5 mm / 0.197 in ■ 8 – 9 mm / 0.33 in

	Item No.	Pack. unit pcs	ltem Pack. unit No. pcs				
2-conductor di	ode terminal blocks		Variable resistor term. block, w. balancing resistance				
with diode 1 N	4007		0.5 Ω – 20 Ω, 0.75 W <b>①</b>				
Circuit I, grey	281-603/281-410	100	grey <b>280-615/281-412</b> 100				
Circuit II, grey	281-603/281-411	100	Variable resistor term. block, w. balancing resistance				
2-conductor di	ode terminal blocks		0.5 Ω – 20 Ω, 0.75 W <b>①</b>				
with diode 1 N	5408		blue <b>280-645/281-412 2</b> 100				
Circuit I, grey	281-603/281-400	100	Variable resistor term. block, w. balancing resistance				
Circuit II, grey	281-603/281-401	100	20 Ω – 1 kΩ, 0.75 W <b>①</b>				
Through terminal block with the same shape			grey <b>280-615/281-428</b> 100				
grey	281-601	page 1.23					
	Annuanieta e	aulina autom V	/MR/WSR (see section 14)				

Appropriate marking system **WMB/WSB** (see section 14) Marker width 5 mm/0.197 in

End and intermediate plate, 2.5 mm/0.098 in thick 281-317 100 (4 x 25) orange

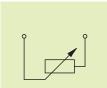
281-316100 (4 x 25) grey

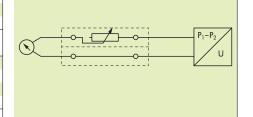
End and intermediate plate, 2.5 mm/0.098 in thick 280-331 100 (4 x 25) orange 280-330 100 (4 x 25)

Accessories Series 280, see page 7.59

 For other resistor values - contact factory If used with intermediate plate

280-331 also suitable for Ex i-applications





Trimming circuit for differential pressure sensor

Accessories Series 281, see page 7.59

<sup>\*</sup> For further approvals with corresponding ratings see section 15.

## Accessories and Examples of Circuit Configuration Diode Terminal Blocks, Series 279/280/281



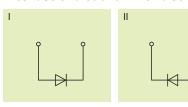


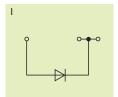
Accessories So	eries 279	•	Accessories Se	)	Accessories Series 281			
	Item No.	Pack. unit pcs		Item No.	Pack. unit pcs		Item No.	Pack. unit pcs
Comb type jumpe	er bar, insulc	ated, see page 2.44	Comb type jumper bar, insulated, see page 2.44		Comb type jumpe	<b>r bar,</b> insul	ated, see page 2.44	
THE RESERVED	$I_N = I_N$ of	terminal block		$I_N = I_N$ of	terminal block			f terminal block
[[]]]	2-way	<b>279-482</b> 200 (8 x 25)	[]]]]]]]]	2-way	<b>280-482</b> 200 (8 × 25)	[]]]]]]]]	2-way	281-482 100 (4 x 25
	3-way	<b>279-483</b> 200 (8 x 25)		3-way	<b>280-483</b> 200 (8 × 25)		3-way	281-483 100 (4 x 25
							5-way	281-485 100 (4 x 25
	10-way	<b>279-490</b> 50 (2 x 25)		10-way	<b>280-490</b> 50 (2 x 25)		10-way	<b>281-490</b> 50 (2 x 25
Alternate comb ty	pe jumper	bar, insulated,	Alternate comb type jumper bar, insulated,			Alternate comb type jumper bar, insulated,		
	$I_N = I_N$ of	terminal block		$I_N = I_N$ of	terminal block	$I_N = I_N$ of termin		f terminal block
ų ų	2-way	<b>279-492</b> 200 (8 x 25)	I I	2-way	<b>280-492</b> 200 (8 x 25)	ų ų	2-way	<b>281-492</b> 100 (4 x 25
Operating tool, in	sulated		Operating tool, ins	sulated		Operating tool, in	sulated	
	2-way	<b>279-432</b> 1		2-way	<b>280-432</b> 1		2-way	280-432
10	3-way	<b>279-433</b> 1		3-way	<b>280-433</b> 1		3-way	280-433
	10-way	<b>279-440</b> 1		10-way	<b>280-440</b> 1		5-way	281-440
			Wire commoning of	<b>chain,</b> insulc	ited, 50 connections, 8 A	Wire commoning	<b>chain,</b> insul	ated, 50 connections, 8 A
			- 0 0 -	black	<b>210-103</b> 1	- 0 0 -	black	210-103
			$\bigcirc$	blue	210-123	$\bigcirc$	blue	210-123

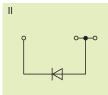
#### 2-conductor diode terminal block

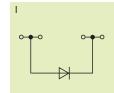
#### 3-conductor diode terminal block

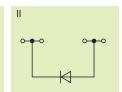
#### 4-conductor diode terminal block



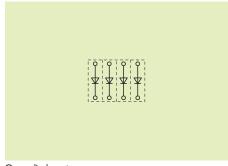


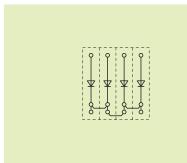


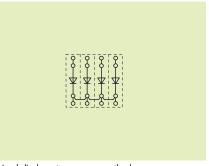




	ltem No.	Pack. unit pcs		ltem No.	Pack. unit pcs		ltem No.	Pack. unit pcs
Circuit I	279-915/281-410	100	Circuit I	279-673/281-410	100	Circuit I	279-815/281-410	100
Circuit II	279-915/281-411	100	Circuit II	279-673/281-411	100	Circuit II	279-815/281-411	100
						Circuit I	279-623/281-410	100
						Circuit II	279-623/281-411	100
Circuit I	280-915/281-410	100	Circuit I	280-673/281-410	100	Circuit I	280-815/281-410	100
Circuit II	280-915/281-411	100	Circuit II	280-673/281-411	100	Circuit II	280-815/281-411	100
Circuit I	280-613/281-410	100				Circuit I	280-655/281-410	100
Circuit II	280-613/281-411	100				Circuit II	280-655/281-411	100
						Circuit I	280-623/281-410	100
						Circuit II	280-623/281-411	100
Circuit I	281-915/281-410	50	Circuit I	281-673/281-410	50	Circuit I	281-665/281-410	50
Circuit II	281-915/281-411	50	Circuit II	281-673/281-411	50	Circuit II	281-665/281-411	50
Circuit I	281-915/281-400	50	Circuit I	281-673/281-400	50	Circuit I	281-665/281-400	50
Circuit II	281-915/281-401	50	Circuit II	281-673/281-401	50	Circuit II	281-665/281-401	50







Open diode gate

Polarized diode gate, common cathode

Polarized diode gate, common cathode



## LED Terminal Blocks 1.5 $\text{mm}^2$ / AWG 16 and 2.5 $\text{mm}^2$ / AWG 12, Series 279 and 280

0.08 - 1.5 mm<sup>2</sup> | AWG 28 - 16 DC 24 V I<sub>F</sub> 25 mA max.

Terminal block width 4 mm / 0.157 in 8 - 9 mm / 0.33 in

0.08 - **1.5** mm<sup>2</sup> | AWG 28 - 16 DC 24 V I<sub>F</sub> 25 mA max.

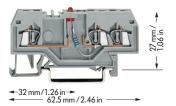
Terminal block width 4 mm / 0.157 in 8 – 9 mm / 0.33 in

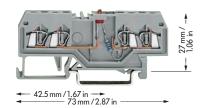
\* KEUR (CAKEUR S) (S) (S) (S) BV LR NV (R)

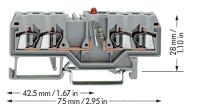
0.08 – 2.5 mm  $^2~\mid$  AWG 28 – 12 DC 24 V  $_{\rm I_F}$  25 mA max.

Terminal block width 5 mm / 0.197 in  $\boxed{\phantom{0}}$  8 - 9 mm / 0.33 in

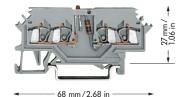
\* 👊







	Item No.	Pack. unit pcs		Item No.	Pack. unit pcs		Item No.	Pack. unit pcs
3-conductor LED terminal blocks			4-conductor LED terminal blocks			4-conductor LE	D terminal blocks	
with red LED, D	OC 24 V		with red LED, D	C 24 V		with red LED, D	C 24 V	
Circuit I, grey	279-674/281-434	100	Circuit I, grey	279-809/281-43	<b>4</b> 100	Circuit I, grey	280-809/281-434	100
Circuit II, grey	279-674/281-413	100	Circuit II, grey	279-809/281-413	<b>3</b> 100	Circuit II, grey	280-809/281-413	100
Examples of circu	uit configuration see pag	e 7.61	Examples of circu	uit configuration see po	ıge 7.61	Examples of circu	uit configuration see pag	e 7.61
Through termin	al block with the same	e shape	Through termin	al block with the sai	ne shape	Through termin	al block with the sam	e shape
grey	279-681	page 2.8	grey	279-831	page 2.8	grey	280-833	page 2.10
	Appropriate m	arking system <b>V</b> Marker width	<b>VMB/WSB</b> (see 4 mm/0.157 in	section 14)		Appropriate markinç Mai	g system <b>WMB/WSB</b> ker width 5 mm/0.197 in	(see section 14)
End and interm	nediate plate, 2 mm/0.	079 in thick	End and interm	ediate plate, 2 mm/	0.079 in thick	End and interm	ediate plate, 2.5 mm/(	0.098 in thick
	orange <b>279-3</b> 3	<b>39</b> 100 (4 x 25)		orange <b>279-</b>	<b>346</b> 100 (4 x 25)		orange <b>280-3</b>	<b>15</b> 100 (4 × 25)
	grey <b>279-3</b> 0	<b>08</b> 100 (4 × 25)		grey <b>279</b> -	<b>344</b> 100 (4 × 25)		grey <b>280-3</b>	<b>14</b> 100 (4 × 25)





73 mm/2.87 in

	Item No.	Pack. unit		Item No.	Pack. unit pcs
4-conductor LEI	D terminal blocks		4-conductor LE	D terminal blocks	
with red LED, D	C 24 V		with red LED, D	C 24 V	
Circuit I, grey	279-624/281-434	100	Circuit I, grey	280-624/281-434	100
Circuit II, grey	279-624/281-413	100	Circuit II, grey	280-624/281-413	100
Examples of circu	it configuration see pag	e 7.61	Examples of circu	uit configuration see pag	e 7.61
Through termino	al block with the sam	e shape	Through termin	al block with the same	e shape
grey	279-621	page 2.9	grey	280-621	page 2.12
Appropriate marking Mar	system <b>WMB/WSE</b> ker width 4 mm/0.157 in	(see section 14)	Appropriate marking Mar	g system <b>WMB/WSB</b> ker width 5 mm/0.197 in	(see section 14
End and interme	ediate plate, 2 mm/0.	079 in thick	End and interm	ediate plate, 2.5 mm/(	0.098 in thick
	orange <b>279-3</b>	<b>17</b> 100 (4 × 25)		orange <b>280-3</b>	<b>17</b> 100 (4 x 25)
	grey <b>279-3</b>	<b>16</b> 100 (4 × 25)		grey <b>280-3</b>	<b>16</b> 100 (4 × 25)
Accessories	Series 279, see pa	ge 7.61	Accessories	Series 280, see pag	ge 7.61

## Accessories and Examples of Circuit Configuration LED Terminal Blocks, Series 279 and 280



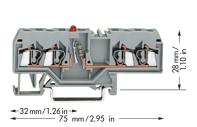
0.08 - 2.5 mm $^2$  | AWG 28 - 14 DC 24 V I<sub>F</sub> 25 mA max.

Terminal block width 5 mm / 0.197 in 8 – 9 mm / 0.33 in

\* KEDA CCAKEDA 🕾 🐨 🗥 BV LR NV 🚳

**Accessories Series 279** 

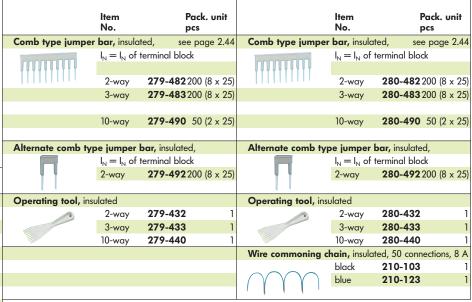
**Accessories Series 280** 



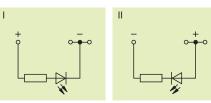
	ltem No.	Pack. unit pcs
4-conductor LED	terminal blo	cks
with red LED, DO	C 24 V	
Circuit I, grey	280-658/28	<b>31-434</b> 100
Circuit II, grey	280-658/28	<b>31-413</b> 100
Examples of circui	t configuration	see page 7.61
Through termino	I block with	the same shape
grey	280-633	page 2.11
	system <b>WME</b> cer width 5 mm	<b>3/WSB</b> (see section 14) / 0.197 in
End and interme	ediate plate, 2	2.5 mm/0.098 in thick
	orange	280-315 100 (4 x 25)

grey

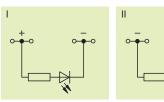
280-314100 (4 x 25)



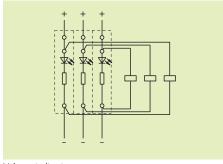
#### 3-conductor LED terminal block



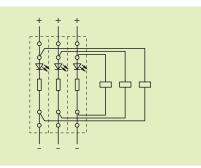
#### 4-conductor LED terminal block



	ltem No.	Pack. unit pcs		ltem No.	Pack. unit pcs
Circuit I	279-674/281-434	100	Circuit I	279-809/281-434	100
Circuit II	279-674/281-413	100	Circuit II	279-809/281-413	100
			Circuit I	279-624/281-434	100
			Circuit II	279-624/281-413	100
			Circuit I	280-809/281-434	100
			Circuit II	280-809/281-413	100
			Circuit I	280-658/281-434	100
			Circuit II	280-658/281-413	100
			Circuit I	280-624/281-434	100
			Circuit II	280-624/281-413	100







Voltage indication



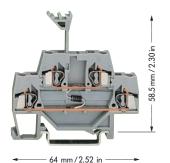
#### **Double Deck Diode Terminal Blocks** Double Deck LED Terminal Blocks 2.5 mm<sup>2</sup> / AWG 14 and 4 mm<sup>2</sup> / AWG 12 Series 280 and 281

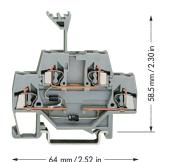
 $0.08 - 2.5 \text{ mm}^2$ AWG 28 - 14 U<sub>N</sub> 250 V; U<sub>RM</sub> 1000 V 1 N 4007 – 0.5 A continuous current Terminal block width 5 mm / 0.197 in □ 8 – 9 mm / 0.33 in \* KEDA CCAKEDA 🖭 🐨 🗥 BV LR NV 🕲

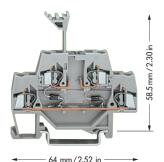
 $\begin{array}{c|c} 0.08 - 2.5 \ mm^2 & | \ AWG \ 28 - 14 \\ U_N \ 250 \ V; \ U_{RM} \ 1000 \ V \\ 1 \ N \ 4007 - 0.5 \ A \ continuous current \end{array}$ Terminal block width 5 mm / 0.197 in □ 8 – 9 mm / 0.33 in

\* KECA CCAKECA 🖭 🐨 🗥 BV LR NV 🚳

 $\begin{array}{c|c} 0.08 - \textbf{2.5 mm}^2 & \text{AWG 28} - 14 \\ \textbf{U}_{\text{N}} \ 250 \ \textbf{V}; \ \textbf{U}_{\text{RM}} \ 1000 \ \textbf{V} \\ 1 \ \textbf{N} \ 4007 - 0.5 \ \textbf{A} \ \text{continuous current} \end{array}$ Terminal block width 5 mm / 0.197 in □ 8 - 9 mm / 0.33 in







	Item No.	Pack. unit pcs		Item No.	Pack. unit pcs		Item No.	Pack. unit pcs
Double deck die	de terminal blocks		Double deck diode terminal blocks			Double deck diode terminal blocks		
with diode 1 N	4007		with 2 diodes 1	N 4007		with 2 diodes 1	N 4007	
Circuit I, grey	280-940/281-410	50	Circuit I, grey	280-941/281-492	2 50	Circuit I, grey	280-942/281-487	50
Circuit II, grey	280-940/281-411	50	Circuit II, grey	280-941/281-491	50	Circuit II, grey	280-942/281-488	50
Through termino	al blocks with the sam	e shape and	Through termino	al blocks with the sam	e shape and	Through termino	al blocks with the sam	e shape and
accessories			accessories			accessories		
grey	280-519	page 2.30	grey	280-519	page 2.30	grey	280-519	page 2.30

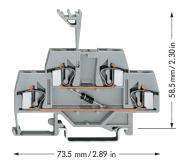
 $0.08 - 4 \text{ mm}^2$ AWG 28 – 12 U<sub>N</sub> 250 V; U<sub>RM</sub> 1000 V 1 N 4007 – 0.5 A continuous current Terminal block width 6 mm / 0.236 in 9 – 10 mm / 0.37 in

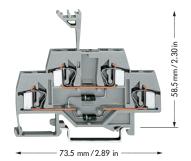
\* KEUR CCAKEUR 🖭 🐨 🗥 BV LR NV 🍥 🚷

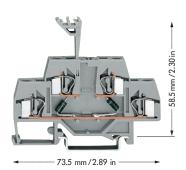
 $0.08 - 4 \text{ mm}^2$ AWG 28 - 12 U<sub>N</sub> 250 V; U<sub>RM</sub> 1000 V 1 N 4007 – 0.5 A continuous current Terminal block width 6 mm / 0.236 in 9 – 10 mm / 0.37 in

\* KEUR CCAKEUR 🖭 🐨 🗥 BV LR NV 🏶 🚷

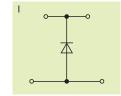
 $0.08 - 4 \text{ mm}^2$ AWG 28 – 12 U<sub>N</sub> 250 V; U<sub>RM</sub> 1000 V 1 N 4007 – 0.5 A continuous current Terminal block width 6 mm / 0.236 in □ 9 – 10 mm / 0.37 in \* KEDA CCAKEDA 🖭 🐨 🗥 BV LR NV 🏶 🚳

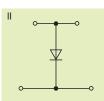


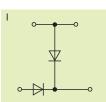


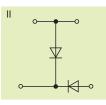


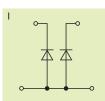
	Item No.	Pack. unit pcs		Item No.	Pack. unit pcs		Item No.	Pack. unit pcs		
Double deck die	Double deck diode terminal blocks			Double deck diode terminal blocks			Double deck diode terminal blocks			
with diode 1 N	with diode 1 N 4007			N 4007		with 2 diodes 1	N 4007			
Circuit I, grey	281-633/281-410	50	Circuit I, grey	281-635/281-492	2 50	Circuit I, grey	281-636/281-487	50		
Circuit II, grey	281-633/281-411	50	Circuit II, grey	281-635/281-49	I 50	Circuit II, grey	281-636/281-488	50		
Through termino	al blocks with the sam	e shape and	Through termino	ıl blocks with the san	ne shape and	Through termina	I blocks with the sam	e shape and		
accessories			accessories			accessories				
grey	281-619	page 2.33	grey	281-619	page 2.33	grey	281-619	page 2.33		

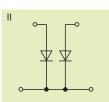














 $\begin{array}{c|cccc} 0.08 - \textbf{2.5} & \text{mm}^2 & \text{AWG } 28 - 14 \\ \text{U}_{\text{N}} & 250 & \text{V}; & \text{U}_{\text{RM}} & 1000 & \text{V} \\ 1 & \text{N} & 4007 - 0.5 & \text{A continuous current} \end{array}$ 

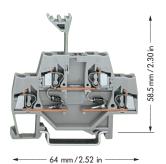
■ 8 – 9 mm / 0.33 in

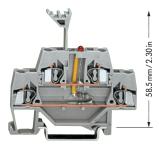
DC 24 V I<sub>F</sub> 25 mA max. Terminal block width 5 mm / 0.197 in

Terminal block width 5 mm / 0.197 in ■ 8 – 9 mm / 0.33 in

0.08 - 2.5 mm<sup>2</sup> | AWG 28 - 14

\star KEUR CCAKEUR 🖭 🐨 🗥 BV LR NV 🚳

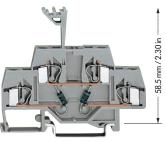




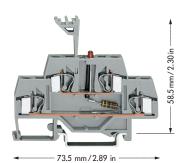
◄	64	mm/2.52	in	

	Item No.	Pack. unit pcs		ltem No.	Pack. unit pcs
Double deck die	ode terminal blocks		Double deck LE	ED terminal blocks	
with 2 diodes 1	N 4007		with red LED, [	OC 24 V	
Circuit I, grey	280-941/281-489	50	Circuit I, grey	280-943/281-434	<b>4</b> 50
Circuit II, grey	280-941/281-490	50	Circuit II, grey	280-943/281-413	<b>3</b> 50
Through termino	al blocks with the sam	e shape and	Through termin	al blocks with the sam	ne shape and
accessories			accessories		
grey	280-519	page 2.30	grey	280-519	page 2.3

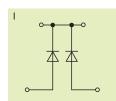
 $\begin{array}{c|cccc} 0.08 - 4 & mm^2 & \mid \text{AWG } 28 - 12 \\ \text{U}_{\text{N}} & 250 \text{ V}; \text{U}_{\text{RM}} & 1000 \text{ V} \\ 1 & \text{N} & 4007 - 0.5 \text{ A continuous current} \end{array}$  $0.08 - 4 \text{ mm}^2$ AWG 28 - 12 DC 24 V I<sub>F</sub> 25 mA max. Terminal block width 6 mm / 0.236 in Terminal block width 6 mm / 0.236 in 9 – 10 mm / 0.37 in 9 – 10 mm / 0.37 in \* KEDA CCAKEDA 🖭 🐨 🗥 BV LR NV 🏶 🕃 \* KEDA CCAKEDA 🖭 🐨 🗥 BV LR NV 🏶 🕃

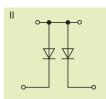


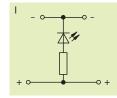


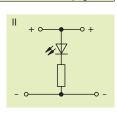


	Item No.	Pack. unit pcs		ltem No.	Pack. unit pcs
Double deck die	de terminal blocks		Double deck LE	D terminal blocks	
with 2 diodes 1	N 4007		with red LED, D	C 24 V	
Circuit I, grey	281-635/281-489	<b>9</b> 50	Circuit I, grey	281-634/281-4	<b>34</b> 50
Circuit II, grey	281-635/281-490	50	Circuit II, grey	281-634/281-4	<b>13</b> 50
Through termino	al blocks with the sam	ne shape and	Through termin	al blocks with the so	ame shape and
accessories			accessories		
grey	281-619	page 2.33	grey	281-619	page 2.33

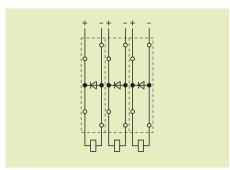




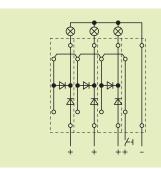




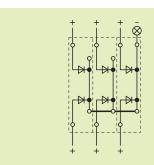
#### **Examples of circuit configuration**



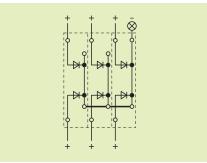
Used as recovery diodes



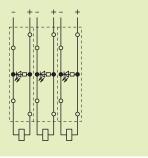
Used in lamp test circuit



Used in lamp test circuit



Used as collective fault indication



Voltage indication



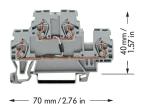
### **Double Deck Diode Terminal Blocks** Double Deck LED Terminal Blocks 2.5 mm<sup>2</sup>/4 mm<sup>2</sup> / AWG 12 Series 870

Terminal block width 5 mm / 0.197 in 6 – 7 mm / 0.26 in

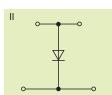
Terminal block width 5 mm / 0.197 in 6 – 7 mm / 0.26 in

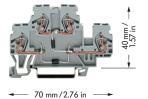


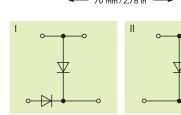
Through terminal blocks with the same shape see page 3.8





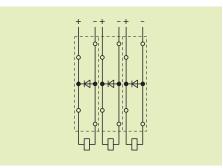




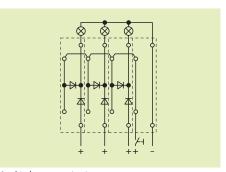


1 Max. diameter of insulation: 4.4 mm/0.173 in

Description			ltem No.	Pack. unit pcs		Item No.	Pack. unit pcs
Double deck diod	le terminal block	Double deck di	ode terminal blocks		Double deck die	ode terminal blocks	
and		with diode 1 N	4007		with 2 diodes 1	N 4007	
double deck LED terminal block, for DIN 35 rail		Circuit I, grey	870-540/281-410	50	Circuit I, grey	870-541/281-492	50
		Circuit II, grey	870-540/281-411	50	Circuit II, grey	870-541/281-491	50
Accessories	Ар	propriate marking sys	tem WMB/Mini-W	SB (see section	n 14)		
	End and	2 mm / 0.079 in t	hick		2 mm/0.079 in the	nick	
	intermediate plate	grey	870-518	100 (4 x 25)	grey	870-518	100 (4 x 2
		orange	870-519	100 (4 x 25)	orange	870-519	100 (4 x 2
	Push-in type jumper bars,	2-way	870-402	200 (8 x 25)	2-way	870-402	200 (8 x
	light grey, insulated,	3-way	870-403	200 (8 x 25)	3-way	870-403	200 (8 x
n 1	I <sub>N</sub> 18 A	4-way	870-404	200 (8 x 25)	4-way	870-404	200 (8 x
		5-way	870-405	100 (4 x 25)	5-way	870-405	100 (4 x
() () ()		:	:		:	:	
		10-way	870-410	100 (4 x 25)	10-way	870-410	100 (4 x 2
	Push-in type jumper bars,						
	light grey, insulated,	from 1 to 3	870-433	200 (8 x 25)	from 1 to 3	870-433	•
	71 1 1	from 1 to 4	870-434	200 (8 x 25)	from 1 to 4	870-434	200 (8 x 2
Junung	light grey, insulated,		870-434 870-435	, ,	from 1 to 4 from 1 to 5	870-434 870-435	200 (8 x 2
furing	light grey, insulated,	from 1 to 4	870-434	200 (8 x 25)	from 1 to 4	870-434	200 (8 x 2 200 (8 x 2 100 (4 x 2



Used as recovery diodes



Used in lamp test circuit



0.08 – 2.5 mm $^2/4$  mm $^2$  "f-st"  $\bullet$  | AWG 28 – 12 U $_{\rm N}$  250 V; U $_{\rm RM}$  1000 V 1 N 4007 – 0.5 A continuous current

Terminal block width 5 mm / 0.197 in 6 – 7 mm / 0.26 in

0.08 – 2.5 mm $^2$ /4 mm $^2$ "f-st" $\bullet$  AWG 28 – 12 U $_{\rm N}$  250 V; U $_{\rm RM}$  1000 V 1 N 4007 – 0.5 A continuous current

Terminal block width 5 mm / 0.197 in

6 – 7 mm / 0.26 in

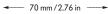
0.08 - 2.5 mm<sup>2</sup>/4 mm<sup>2</sup> "f-st" ( AWG 28 - 12 DC 24 V I<sub>F</sub> 25 mA max.

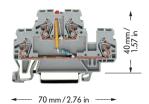
Terminal block width 5 mm / 0.197 in 6 - 7 mm / 0.26 in

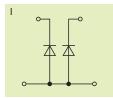


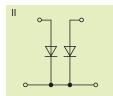


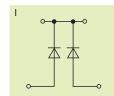


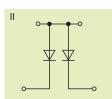


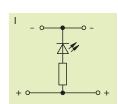


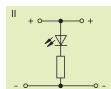




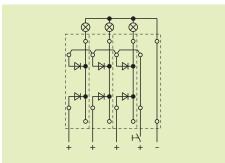




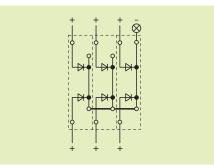




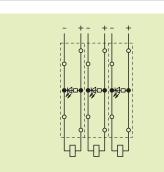
		Pack. unit pcs		Item No.	Pack. unit pcs		Item No.	Pack. unit pcs
Double deck diode	e terminal blocks		Double deck diod	e terminal blocks		Double deck LED	terminal blocks	
with 2 diodes 1 N	4007		with 2 diodes 1 N	4007		with red LED, DC 24 V		
Circuit I, grey	870-542/281-487	50	Circuit I, grey	870-541/281-489	50	Circuit I, grey	870-543/281-434	50
Circuit II, grey	870-542/281-488	50	Circuit II, grey	870-541/281-490	50	Circuit II, grey	870-543/281-413	50
		Appr	opriate marking systen	wMB/Mini-W	SB (see section	14)		
2 mm / 0.079 in thick			2 mm / 0.079 in thick	(		2 mm/0.079 in thick	(	
grey	870-518	100 (4 x 25)	grey	870-518	100 (4 x 25)	grey	870-518	100 (4 x 25)
orange	870-519	100 (4 x 25)	orange	870-519	100 (4 x 25)	orange	870-519	100 (4 x 25)
2-way	870-402	200 (8 x 25)	2-way	870-402	200 (8 x 25)	2-way	870-402	200 (8 x 25)
3-way	870-403	200 (8 x 25)	3-way	870-403	200 (8 x 25)	3-way	870-403	200 (8 x 25)
4-way	870-404	200 (8 x 25)	4-way	870-404	200 (8 x 25)	4-way	870-404	200 (8 x 25)
5-way	870-405	100 (4 x 25)	5-way	870-405	100 (4 x 25)	5-way	870-405	100 (4 x 25)
:	:		:	:		:	:	
10-way	870-410	100 (4 x 25)	10-way	870-410	100 (4 x 25)	10-way	870-410	100 (4 x 25)
from 1 to 3	870-433	200 (8 x 25)	from 1 to 3	870-433	200 (8 x 25)	from 1 to 3	870-433	200 (8 x 25)
from 1 to 4	870-434	200 (8 x 25)	from 1 to 4	870-434	200 (8 x 25)	from 1 to 4	870-434	200 (8 x 25)
from 1 to 5	870-435	100 (4 x 25)	from 1 to 5	870-435	100 (4 x 25)	from 1 to 5	870-435	100 (4 x 25)
:	:		:	:		:	:	
from 1 to 10	870-440	100 (4 x 25)	from 1 to 10	870-440	100 (4 x 25)	from 1 to 10	870-440	100 (4 x 25)



Used in lamp test circuit



Used for collective fault indication



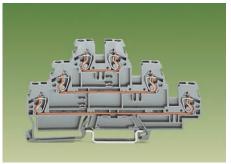
Used for voltage indication



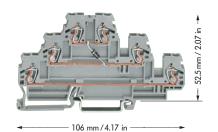
# Triple Deck Diode Terminal Blocks Triple Deck LED Terminal Blocks 2.5 mm²/4 mm² / AWG 12 Series 870

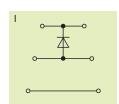
Terminal block width 5 mm / 0.197 in 6 – 7 mm / 0.26 in

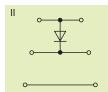
Terminal block width 5 mm / 0.197 in 6 – 7 mm / 0.26 in

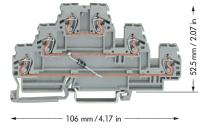


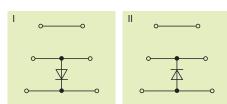
Through terminal blocks with the same shape see page 3.9











1 Max. diameter of insulation: 4.4 mm/0.173 in

Description			Item No.	Pack. unit pcs		Item No.	Pack. unit pcs
Triple deck diode	terminal block	Triple deck diod	le terminal block	s	Triple deck diod	de terminal block	· · · · · · · · · · · · · · · · · · ·
and		with diode 1 N			with diode 1 N 4007		
Triple deck LED te	erminal block, for DIN 35 rail	Circuit I, grey	870-590/28	<b>1-410</b> 50	Circuit I, grey	870-590/28	<b>1-675</b> 50
•		Circuit II, grey	870-590/28	<b>1-411</b> 50	Circuit II, grey	870-590/28	<b>1-676</b> 50
					, ,		
Accessories	Ар	propriate marking sys	tem WMB/Mi	ni-WSB (see section	n 14)		
	End and	2 mm / 0.079 in th	nick		2 mm / 0.079 in t	hick	
	intermediate plate	grey	870-568	100 (4 x 25)	grey	870-568	100 (4 x 25
	•	orange	870-569	100 (4 x 25)	orange	870-569	100 (4 × 25
	Push-in type jumper bars,	2-way	870-402	200 (8 x 25)	2-way	870-402	200 (8 x 25
	light grey, insulated,	3-way	870-403	200 (8 x 25)	3-way	870-403	200 (8 x 25
	I <sub>N</sub> 18 A	4-way	870-404	200 (8 x 25)	4-way	870-404	200 (8 x 25
		5-way	870-405	100 (4 x 25)	5-way	870-405	100 (4 x 25
900		:	:		:	:	
		10-way	870-410	100 (4 x 25)	10-way	870-410	100 (4 x 25)
	Push-in type jumper bars,						
	light grey, insulated,	from 1 to 3	870-433	200 (8 x 25)	from 1 to 3	870-433	200 (8 x 25)
	I <sub>N</sub> 18 A	from 1 to 4	870-434	200 (8 x 25)	from 1 to 4	870-434	200 (8 x 25)
jununy		from 1 to 5	870-435	100 (4 x 25)	from 1 to 5	870-435	100 (4 x 25)
0		:	:		:	:	
		from 1 to 10	870-440	100 (4 x 25)	from 1 to 10	870-440	100 (4 x 25)

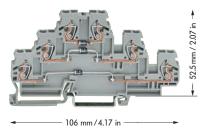


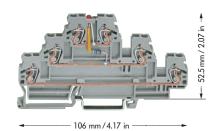
Terminal block width 5 mm / 0.197 in

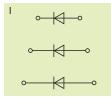
6 – 7 mm / 0.26 in

0.08 – 2.5 mm  $^2/4$  mm  $^2$  "F-st"  $\blacksquare$  | AWG 28 – 12 DC 24 V I  $_{\text{F}}$  25 mA max.

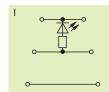
Terminal block width 5 mm / 0.197 in 6 – 7 mm / 0.26 in

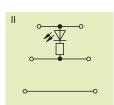












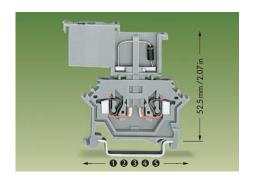
		Pack. unit pcs		Item No.	Pack. unit pcs	
Triple deck dioc	de terminal blocks	pes	Triple deck LFD	terminal blocks	pes	
with 3 diodes 1			with red LED, D			
Circuit I, grey	870-596/281-673	50	Circuit I, grey	870-593/281	<b>-434</b> 50	
Circuit II, grey	870-596/281-674		Circuit II, grey	870-593/281		
2 co, g. c,	0,00,00,00		G co 1., g. c,	0,00,00,00		
	Appropriate marking	g system <b>WM</b>	B/Mini-WSB	(see section 14)		
mm/0.079 in the	hick		2 mm / 0.079 in t	hick		
jrey	870-568	100 (4 x 25)	grey	870-568	100 (4 x 25)	
orange	870-569	100 (4 x 25)	orange	870-569	100 (4 x 25)	
2-way	870-402	200 (8 x 25)	2-way	870-402	200 (8 x 25)	
3-way	870-403	200 (8 x 25)	3-way	870-403	200 (8 x 25)	
4-way	870-404	200 (8 x 25)	4-way	870-404	200 (8 x 25)	
5-way	870-405	100 (4 x 25)	5-way	870-405	100 (4 x 25)	
:	:		:	:		
10-way	870-410	100 (4 x 25)	10-way	870-410	100 (4 x 25)	
from 1 to 3	870-433	200 (8 x 25)	from 1 to 3	870-433	200 (8 x 25)	
from 1 to 4	870-434	200 (8 x 25)	from 1 to 4	870-434	200 (8 x 25)	
from 1 to 5	870-435	100 (4 x 25)	from 1 to 5	870-435	100 (4 × 25)	
:	:	(,	:	:	( ==,	
from 1 to 10	870-440	100 (4 x 25)	from 1 to 10	870-440	100 (4 × 25)	



### Pluggable Modules – Diodes on Carrier Terminal Blocks 2.5 mm<sup>2</sup> / AWG 14, Series 280

Diode module: diode 1 N 4007  $\rm V_N$  250 V;  $\rm V_{RM}$  1000 V; 1 A max. LED  $\rm I_F$  25 mA

Module width 5 mm / 0.197 in



**3** 64 mm / 2.52 in



-	open side of term. block	Description		ltem No.	Pack. unit pcs
		Diode module,			
	+	5 mm / 0.197 in wide,		280-801/281-411	100
		diode 1 N 4007			
		Diode module, 5 mm / 0.197 in			
	+	wide, diode 1 N 4007 as	DC 24 V	280-801/281-420	100
		free-wheeling diode and LED	DC 48 V	280-801/281-421	100

Carrier termino	al blocks for pluggable me	odules and a		ng accessories tion 14)
	2-cond. carrier term. block,	Terminal block v	vidth 5 mm / 0.197 in	
世上一位	0.08 - 2.5 mm <sup>2</sup> /AWG 28 - 14	grey	280-916 🛈	100
	stripped length 8 - 9 mm / 0.33 in			
	End and intermediate plate,	2.5 mm / 0.098	in thick	
	for 2-conductor carrier terminal	orange	280-309	100 (4 x 25)
	block 280-916	grey	280-308	100 (4 x 25)
The same of the Same	2-cond. carrier term. block,	Terminal block v	vidth 5 mm / 0.197 in	
THE WALL	0.08 - 2.5 mm <sup>2</sup> /AWG 28 - 14	grey	280-616 🕗	100
	stripped length 8 - 9 mm / 0.33 in			
	End and intermediate plate,	2.5 mm / 0.098	in thick	
	for 2-conductor carrier terminal	orange	280-331	100 (4 x 25)
	block 280-616	grey	280-330	100 (4 x 25)
Cab ( 121 de de 3	3-cond. carrier term. block,	Terminal block v	vidth 5 mm / 0.197 in	
DECEMBER 1890 W.	0.08 - 2.5 mm <sup>2</sup> /AWG 28 - 14	grey	280-610 🚱	100
	stripped length 8 - 9 mm / 0.33 in			
	End and intermediate plate,	2.5 mm / 0.098	in thick	
	for 3-conductor carrier terminal	orange	280-326	100 (4 x 25)
	block 280-610	grey	280-324	100 (4 x 25)
of ab ab as de de de	4-cond. carrier term. block,	Terminal block width 5 mm / 0.197 in		
TRUE GOLD	0.08 - 2.5 mm <sup>2</sup> /AWG 28 - 14	grey		
	stripped length 8 - 9 mm / 0.33 in	280-606 🕢	280-686 😉	100
	End and intermediate plate,	2.5 mm / 0.098	in thick	
	for 4-conductor orange	280-317	280-315	100 (4 x 25)
30 50	carrier terminal blocks grey	280-316	280-314	100 (4 x 25)
	Comb type jumper bar,	2-way	280-482	200 (8 x 25)
	insulated, see page 2.44	3-way	280-483	200 (8 x 25)
[[]]]]]]]]	$I_N = I_N$ of terminal block	10-way	280-490	50 (2 x 25)
1000	Alternate comb type			
ų ų	jumper bar, insulated,	2-way	280-492	200 (8 x 25)
	$I_N = I_N$ of terminal block			
	Operating tool,	2-way	280-432	1
	insulated	3-way	280-433	1
		10-way	280-440	1
- 0 0 -	Wire commoning chain,		ance max. 120 mm/4.7	72 in
$\bigcap \bigcap $	insulated,	black	210-103	1
1 1 1 1	50 connections, 8 A	blue	210-123	1
1 53 mm / 2.09 in		Term. block r	narking on both sides 7	3 mm / 2.87 in
2 50 mm / 1.97 in		<b>6</b> Terminal bloo	ck marking in center po	sition
O // / O = 0 .				

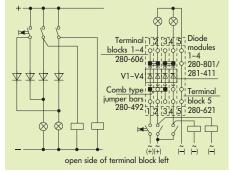
75 mm / 2.95 in



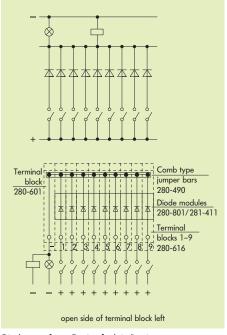
These diode modules, specially designed for the individual construction of, for example, lamp test circuits or collective fault indicating systems, offer the following advantages to the user:

- Separation into functional and wiring layer
- Polarized direction of switching
   High density with only 5 mm / 0.197 in width of terminal block and module.
- Quick and easy exchange of modules

#### **Examples of circuit configuration**



Lamp test circuit with blocking diodes



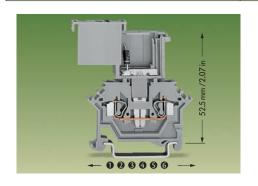
Diode gate for collective fault indication

### Pluggable Modules – Diodes on Through Terminal Blocks 2.5 mm<sup>2</sup> / AWG 14, Series 280



Diode module: diode 1 N 4007  $V_N$  250 V;  $V_{\text{RM}}$  1000 V; 1 A max.

Module width 10 mm / 0.394 in



3 Terminal block marking in center position

4 Term. block marking on both sides 73 mm / 2.87 in **5** Terminal block marking in center position

**6** Term. bl. marking on both sides 42.5 mm / 1.67 in

64 mm / 2.52 in

75 mm / 2.95 in



Description			Item No.	Pack. unit pcs
_ — — —	Diode module, 10 mm / 0.394 in			
.   \(\pi\)	wide, diode 1 N 4007 as		280-803/281-411	50
+ + +	free-wheeling diode			
	Diode module, 10 mm / 0.394 in			
<b>▼</b>	wide, diode 1 N 4007 as	DC 24 V	280-803/281-420	50
+++++++	free-wheeling diode and LED	DC 48 V	280-803/281-421	50

Through terminal blocks for pluggable modules and accessories (Marking accessories

Through termin	nal blocks for pluggable n	nodules and a	ccessories see section	on 14)		
	Front-entry 2-cond. term. block,	Terminal block wi	dth 5 mm / 0.197 in			
10. 10	0.08 - 2.5 mm <sup>2</sup> /AWG 28 - 12	grey				
	stripped length 8 - 9 mm / 0.33 in	280-601 🛈	280-901 2	100		
	End and intermediate plate,	2.5 mm / 0.098 ii	n thick			
	for 2-conductor orange	280-331	280-309	100 (4 x 25)		
	terminal blocks grey	280-330	280-308	100 (4 x 25)		
C 40 40 40 40 40 40 40 40 40 40 40 40 40	Front-entry 3-cond. term. block,	Terminal block wi	dth 5 mm / 0.197 in			
THE STATE	0.08 - 2.5 mm <sup>2</sup> /AWG 28 - 12	grey	280-681 🚱	100		
	stripped length 8 - 9 mm / 0.33 in					
	End and intermediate plate,	2.5 mm / 0.098 in	n thick			
	for 3-conductor terminal block	orange	280-326	100 (4 x 25)		
	280-681	grey	280-324	100 (4 x 25)		
with all the de the	Front-entry 4-cond. term. block,					
TOTAL SITUE	0.08 - 2.5 mm <sup>2</sup> /AWG 28 - 12	grey				
	stripped length 8 - 9 mm / 0.33 in	280-621 🕢	280-833 🜀	100		
	End and intermediate plate,	2.5 mm / 0.098 ii	n thick			
	for 4-conductor orange	280-317	280-315	100 (4 x 25)		
26-16-	terminal blocks grey	280-316	280-314	100 (4 x 25)		
	Side-entry terminal block,	Terminal block wi	dth 5 mm / 0.197 in			
15-Est	0.08 - 2.5 mm <sup>2</sup> /AWG 28 - 12	grey	280-101 <b>ઉ</b>	100		
6	stripped length 8 - 9 mm / 0.33 in					
	End and intermediate plate,	2.5 mm / 0.098 ii	n thick			
	for side-entry terminal block	orange	280-302	100 (4 x 25)		
	280-101	grey	280-301	100 (4 x 25)		
lig .	Adjacent jumper,	I <sub>N</sub> 24 A				
	insulated	grey	280-402	200 (8 x 25)		
U/A						
	Wire commoning chain,		nce max. 120 mm / 4.75			
I (Y Y Y)	insulated,	black	210-103	1		
1 1 1 1 1	50 connections, 8 A	blue	210-123	1		
_	ing on both sides 50 mm / 1.97 in					
	arking in center position					
53 mm / 2.09 in						



These diode modules are simply pushed into the contact slots of the current bars of two adjacent through terminal blocks like a push-in jumper.

This offers the following advantages to the user:
• The modules are suitable for **all** through

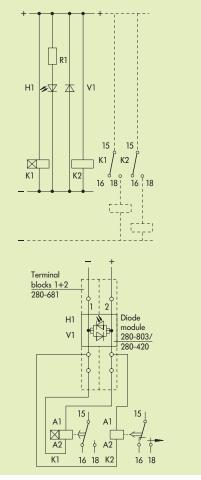
- terminal blocks of series 280.

  Existing terminal block assemblies can be
- refitted with diode modules without any problem.

Further advantages:

- Separation into functional and wiring layer.
- Modules can be replaced quick by other types of modules

#### **Example of circuit configuration**



Free-wheeling diode and voltage check

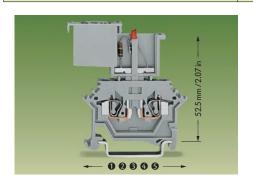


### Pluggable Modules – LED and Neon Indicators on Carrier Terminal Blocks 2.5 mm<sup>2</sup> / AWG 14, Series 280

LED module:  $I_N \le 5.6$  mA;  $I_F \le 25$  mA

Neon indicator module:  $I_N \leq 0.5 \text{ mA}$ 

Module width 5 mm / 0.197 in



**3** 64 mm / 2.52 in



open side of term. block	Description		Item No.	Pack. unit pcs	
	LED module,				
-++	5 mm / 0.197 in wide,	DC 24 V	280-801/281-413	100	
	with red LED	DC 48 V	280-801/281-414	100	
	LED module,				
~ ~ ~	5 mm / 0.197 in wide,	AC/DC 24 V	280-801/281-415	100	
	with red LED	AC/DC 48 V	280-801/281-416	100	
	Neon indicator module,				
~ + 0 - 10 - 0 - ~	5 mm / 0.197 in wide	AC/DC 110 V	280-801/281-418	100	
		AC/DC 230 V	280-801/281-417	100	
Carrier terminal blocks for pluggable modules and accessories (Marking accessories					

	2-cond. carrier term. block,	Torminal block w	idth 5 mm / 0.197 in		
is the Direction	0.08 – 2.5 mm <sup>2</sup> /AWG 28 – 14		280-916	100	
		grey	200-910	100	
	stripped length 8 - 9 mm / 0.33 in	2.5 mm / 0.098 in thick			
	End and intermediate plate,			100 /4 05\	
	for 2-conductor carrier terminal	orange	280-309	100 (4 x 25)	
	block 280-916	grey	280-308	100 (4 x 25)	
The other	2-cond. carrier term. block,		idth 5 mm / 0.197 in	100	
	0.08 - 2.5 mm <sup>2</sup> /AWG 28 - 14	grey	280-616 🕢	100	
	stripped length 8 - 9 mm / 0.33 in				
	End and intermediate plate,	2.5 mm / 0.098 i			
(19)	for 2-conductor carrier terminal	orange	280-331	100 (4 x 25)	
	block 280-616	grey	280-330	100 (4 x 25)	
5-15 1 1 to - to -	3-cond. carrier term. block,	Terminal block w	idth 5 mm / 0.197 in		
	0.08 - 2.5 mm <sup>2</sup> /AWG 28 - 14	grey	280-610 🚱	100	
	stripped length 8 - 9 mm / 0.33 in				
	End and intermediate plate,	2.5 mm / 0.098	in thick		
	for 3-conductor carrier terminal	orange	280-326	100 (4 x 25)	
	block 280-610	grey	280-324	100 (4 x 25)	
and the second	4-cond. carrier term. block,	Terminal block w	idth 5 mm / 0.197 in		
THE REAL PROPERTY.	0.08 - 2.5 mm <sup>2</sup> /AWG 28 - 14	grey			
	stripped length 8 - 9 mm / 0.33 in	280-606 🕢	280-686 😉	100	
	End and intermediate plate,	2.5 mm / 0.098	in thick		
	for 4-conductor orange	280-317	280-315	100 (4 x 25)	
200 56	carrier terminal blocks grey	280-316	280-314	100 (4 x 25)	
	Comb type jumper bar,	2-way	280-482	200 (8 x 25)	
	insulated, see page 2.44	3-way	280-483	200 (8 x 25)	
[[]]]]]]]]	$I_N = I_N$ of terminal block	10-way	280-490	50 (2 x 25)	
1000	Alternate comb type				
	jumper bar, insulated,	2-way	280-492	200 (8 x 25)	
	$I_N = I_N$ of terminal block				
	Operating tool,	2-way	280-432	1	
	insulated	3-way	280-433	1	
		10-way	280-440	1	
	Wire commoning chain,	,	ance max. 120 mm/4.72	! in	
	insulated,	black	210-103	1	
	50 connections, 8 A	blue	210-123	1	
1 53 mm / 2.09 in		4 Term. block m	narking on both sides 73	mm / 2.87 in	
2 50 mm / 1.97 in		_	k marking in center posit		

75 mm / 2.95 in



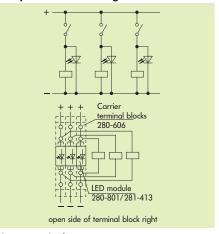
The monitoring of control and operating current circuits with LED and neon indicator modules on rail-mounted terminal blocks offers various advantages to the user:

- No additional time and material cost
- Separation into functional and wiring layer
  Modules can be replaced quick and easily by other types of modules.

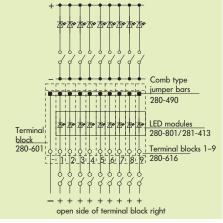
#### Futher advantages:

- Polarized direction of switching
   High density with only 5 mm / 0.197 in width of terminal block/fuse module.

#### **Examples of circuit configuration**



Voltage control refers to current circuits



LED gate for collect. fault indication - individual display

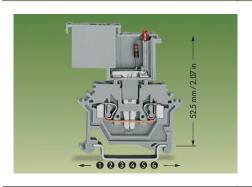
# Pluggable Modules – LED and Neon Indicators on Through Terminal Blocks 2.5 mm<sup>2</sup> / AWG 14, Series 280



LED module:  $I_{N} \leq 5.6$  mA;  $I_{F} \leq 25$  mA

Neon indicator module:  $I_N \leq 0.5 \text{ mA}$ 

Module width 10 mm / 0.394 in



64 mm / 2.52 in

75 mm / 2.95 in

Term. block marking on both sides 73 mm / 2.87 in
 Terminal block marking in center position

**6** Term. bl. marking on both sides 42.5 mm / 1.67 in



	Description			ltem No.	Pack. unit pcs
	+	LED module,			
	·   🖈   ·	10 mm / 0.394 in wide,	DC 24 V	280-803/281-413	50
		with red LED	DC 48 V	280-803/281-414	50
Г	~	LED module,			
		10 mm / 0.394 in wide,	AC/DC 24 V	280-803/281-415	50
	~ + + + + + + + + + + + + + + + + + + +	with red LED	AC/DC 48 V	280-803/281-416	50
	~	Neon indicator module,			
	-   - ⊕ -	10 mm / 0.394 in wide	AC/DC 110 V	280-803/281-418	50
	~ — 6 — ~		AC/DC 230 V	280-803/281-417	50

Carrier termino	al blocks for pluggable mo	odules and ac		king accessories ection 14)
	Front-entry 2-cond. term. block,	Terminal block wi	dth 5 mm / 0.197 in	
	0.08 - 2.5 mm <sup>2</sup> /AWG 28 - 12	grey		
	stripped length 8 - 9 mm / 0.33 in	280-601 ①	280-901 2	100
	End and intermediate plate,	2.5 mm / 0.098 i	n thick	
	for 2-conductor orange	280-331	280-309	100 (4 x 25)
	terminal blocks grey	280-330	280-308	100 (4 x 25)
Cable de de	Front-entry 3-cond. term. block,	Terminal block wi	dth 5 mm / 0.197 in	
THE	0.08 - 2.5 mm <sup>2</sup> /AWG 28 - 12	grey	280-681 🚱	100
	stripped length 8 - 9 mm / 0.33 in			
	End and intermediate plate,	2.5 mm / 0.098 i	n thick	
	for 3-conductor terminal block	orange	280-326	100 (4 x 25)
	280-681	grey	280-324	100 (4 x 25)
We also also the de the	Front-entry 4-cond. term. block,	Terminal block wi	dth 5 mm / 0.197 in	
TOTOL REPORT	0.08 - 2.5 mm <sup>2</sup> /AWG 28 - 12	grey		
	stripped length 8 - 9 mm / 0.33 in	280-621 🕢	280-833 😉	100
	End and intermediate plate,	2.5 mm / 0.098 i	n thick	
	for 4-conductor orange	280-317	280-315	100 (4 x 25)
2/4 66	terminal blocks grey	280-316	280-314	100 (4 x 25)
- A-1	Side-entry terminal block,	Terminal block wi	dth 5 mm / 0.197 in	
<b>学</b>	0.08 - 2.5 mm <sup>2</sup> /AWG 28 - 12	grey	280-101 🜀	100
4	stripped length 8 - 9 mm / 0.33 in			
	End and intermediate plate,	2.5 mm / 0.098 i	n thick	
	for side-entry terminal block	orange	280-302	100 (4 x 25)
	280-101	grey	280-301	100 (4 x 25)
in the	Adjacent jumper,	I <sub>N</sub> 24 A		
The state of the s	insulated	grey	280-402	200 (8 x 25)
(II)				
	Wire commoning chain,	Commoning dista	ance max. 120 mm /	4.72 in
$I \cap Y \cap I$	insulated,	black	210-103	1
'	50 connections, 8 A	blue	210-123	1
1 Term. block mark	ing on both sides 50 mm / 1.97 in			
2 Terminal block me	arking in center position			
53 mm / 2.09 in				
3 Terminal block ma	arking in center position			



These LED and neon indicator modules are simply pushed into the contact slots of the current bars of two adjacent through terminal blocks like a push-in jumper.

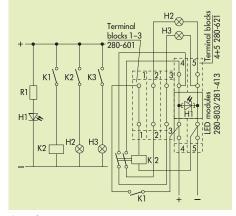
This offers the following advantages to the user:

- The modules are suitable for **all** through terminal blocks of series 280.
- Existing terminal block assemblies can be refitted with diode modules without any problem.

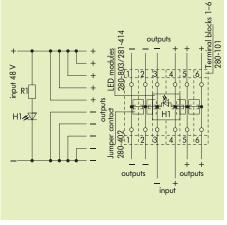
Further advantages:

- Separation into functional and wiring level.
- Modules can be replaced quick by other types of modules.

#### **Example of circuit configuration**

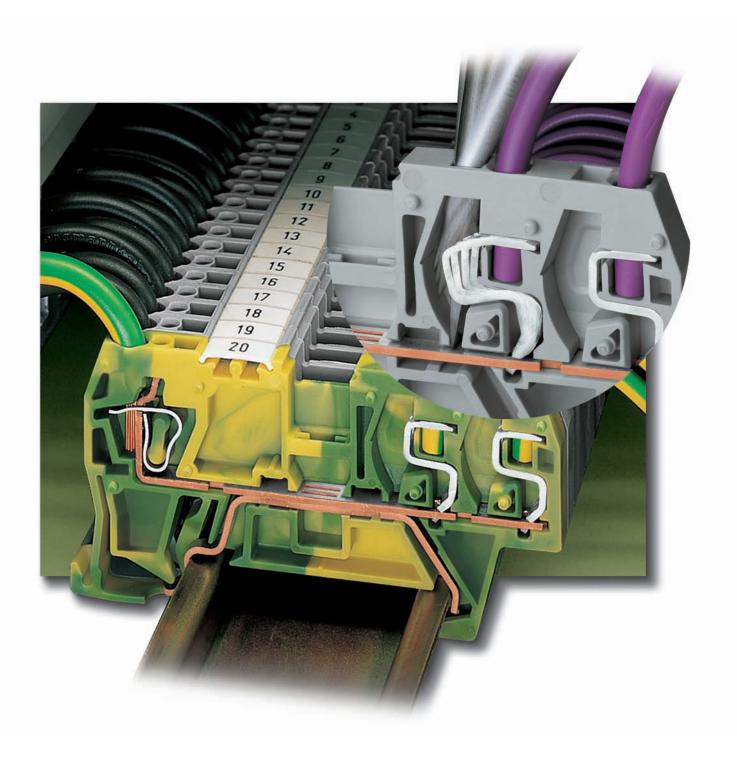


Control unit



Multiple outputs with illuminated indicator





Unique combination of connection technologies: WAGO rail-mounted terminal blocks with FIT CLAMP connection for the factory wiring and CAGE CLAMP® connection for the "field wiring".

### Rail-Mounted Terminal Blocks with IDC-Connection (FIT CLAMP)





Through terminal blocks and ground (earth) conductor terminal blocks with CAGE CLAMP®/FIT CLAMP connection Series 290 \_\_\_\_\_\_\_ 8.7

with FIT CLAMP connection Series 290 \_\_\_\_\_\_ 8.6



#### **Accessories**

- Banana plugs	2.42
- Busbar terminal blocks	11.20 – 11.2
- Comb type jumper bars	2.44
- Insulations stops	2.43
- Wire jumpers	2.45
- Test plug modules	2.38 - 2.4
- Staggered jumpers	2.45



### Rail-Mounted Terminal Blocks with IDC-Connection (FIT CLAMP) Product Summary –



Series 290 Through terminal blocks AWG 22 - 18 (0.31 mm<sup>2</sup> - 1.0 mm<sup>2</sup>) "s"/ AWG 22 - 16 (0.34 mm<sup>2</sup> - 1.5 mm<sup>2</sup>) "f-st"



2-conductor terminal block 1 x FIT CLAMP/1 x FIT CLAMP



3-conductor terminal block 1 x FIT CLAMP/2 x FIT CLAMP Page 8.6



4-conductor terminal block 2 x FIT CLAMP/2 x FIT CLAMP Page 8.6

Ex i Through terminal blocks AWG 22 - 18 (0.31 mm² - 1.0 mm²) "s"/ AWG 22 - 16 (0.34 mm² - 1.5 mm²) "f-st"



2-conductor terminal block 1 x FIT CLAMP/1 x FIT CLAMP Page 8.6



3-conductor terminal block 1 x FIT CLAMP/2 x FIT CLAMP Page 8.6



4-conductor terminal block 2 x FIT CLAMP/2 x FIT CLAMP Page 8.6

Ground (earth) conductor terminal blocks AWG 22 - 18 (0.31 mm² - 1.0 mm²) "s"/ AWG 22 - 16 (0.34 mm² - 1.5 mm²) "f-st"



2-conductor terminal block 1 x FIT CLAMP/1 x FIT CLAMP Page 8.6



3-conductor terminal block 1 x FIT CLAMP/2 x FIT CLAMP Page 8.6



4-conductor terminal block 2 x FIT CLAMP/2 x FIT CLAMP Page 8.6

#### Accessories (selection)



Adjacent jumpers Page 8.6



Alternate jumper Page 2.13



Staggered jumper Page 2.45



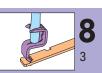
Wire jumper Page 2.45



Comb type jumper bar Page 2.44

## Rail-Mounted Terminal Blocks with CAGE CLAMP®/IDC-Connection (FIT CLAMP)





Series 290 Through terminal blocks AWG 22 - 18 (0.31 mm<sup>2</sup> - 1.0 mm<sup>2</sup>) "s"/ AWG 22 - 16 (0.34 mm<sup>2</sup> - 1.5 mm<sup>2</sup>) "f-st"



2-conductor terminal block 1 x CAGE CLAMP\*\*/1 x FIT CLAMP Page 8.7

3-conductor terminal block 1 x CAGE CLAMP\*/2 x FIT CLAMP Page 8.7

Ex i Through terminal blocks AWG 22 - 18 (0.31 mm<sup>2</sup> - 1.0 mm<sup>2</sup>) "s"/ AWG 22 - 16 (0.34 mm<sup>2</sup> - 1.5 mm<sup>2</sup>) "f-st"



2-conductor terminal block 1 x CAGE CLAMP®/1 x FIT CLAMP Page 8.7



3-conductor terminal block 1 x CAGE CLAMP\*\*/2 x FIT CLAMP Page 8.7

Ground (earth) conductor terminal blocks AWG 22 - 18 (0.31 mm<sup>2</sup> - 1.0 mm<sup>2</sup>) "s"/ AWG 22 - 16 (0.34 mm<sup>2</sup> - 1.5 mm<sup>2</sup>) "f-st"



2-conductor terminal block 1 x CAGE CLAMP\*\*/1 x FIT CLAMP Page 8.7



3-conductor terminal block 1 x CAGE CLAMP®/2 x FIT CLAMP Page 8.7





Test plug modules using cond. wire opening Page 2.38



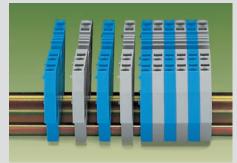
Test plug modules using jumper contact position Page 2.39



Test plugs Page 2.40



#### **Mounting**



Snap individual terminal blocks onto carrier rail and slide to adjacent terminal block

#### Removal



Unlock assembly with screwdriver – remove terminal block from the rail

#### **FIT CLAMP connection**



FIT CLAMP connection without stripping

#### Types of conductors



Conductors of PVC (e. g. H05V) or TPE (e. g. H05Z) will be safely connected, other conductors upon request

## 10 10 11 12 13 15 16 16 19 20

#### Types of conductors



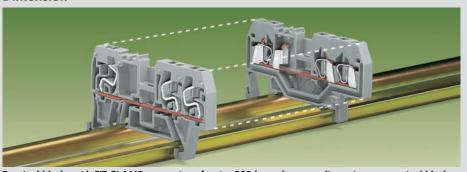
Fine-stranded conductors from 0.34  $\rm mm^2/AWG~22$  up to 1.5  $\rm mm^2/AWG~16$  can be used

**Dimension** 



Solid conductors from 0.31 mm²/AWG 22 up to 1.0 mm²/AWG 18 can be used

With FIT CLAMP connection the following copper wires can be connected:

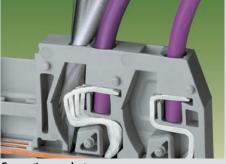


Terminal blocks with FIT CLAMP connection of series 290 have the same dimensions as terminal blocks with CAGE CLAMP\* connection of series 280. They have the same terminal block width: 5 mm/0.197 in!





### ... Description and Handling



Connecting conductors.
Introduce the conductor into the clamping unit until it is fully inserted. Then insert a 3.5 mm/0.138 in screwdriver into the operating slot, aiming the blade away from the conductor, and slide it until fully inserted



Disconnecting conductors. Insert the screwdriver into the operating slot, aiming the blade towards the conductor until it makes contact with the corner of the FIT CLAMP. Then press on the FIT contact and pivot the swrewdriver towards the conductor



If the connected conductor is to be re-used, the conductor end should be cut square. To re-connect use only the same type of conductors with the same cross section

#### Mixed assembly



 $\begin{array}{ll} \text{Internal} &= \text{FIT CLAMP connection (factory wiring)} \\ \text{External} &= \text{CAGE CLAMP}^* \text{ connection} \end{array}$ 

Mixed assembly

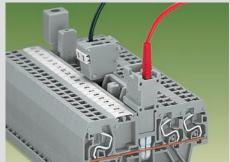


Depending on the connection system there are different conductor entry holes



Accessories as for instance jumper contacts and test plug adapters of series 280 can be used

#### **Testing**



Testing with accessories of series 280



#### Through and Ground (Earth) Conductor Terminal Blocks with FIT CLAMP Connection, Series 290

0.34 – 1.5 mm<sup>2</sup>"f-st" **1** AWG 22 – 16"str." **1** 0.31 – 1.0 mm<sup>2</sup>"s" **1** AWG 22 – 18"sol." **1** 

500 V/6 kV/3 **③** 13.5 A **①** 

300 V, 10 A : 914 us

Terminal block width 5 mm / 0.197 in \* calus Kena CCAKENA GL LR

0.34 – **1.5** mm<sup>2</sup> "f-st" **1** AWG 22 – 16" str." **1** 0.31 – **1.0** mm<sup>2</sup> "s" **1** AWG 22 – 18" sol." **1** 

500 V/6 kV/3 **❸** 300 V, 10 A . 741 us 13.5 A **0** 

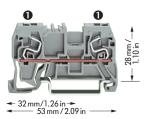
Terminal block width 5 mm / 0.197 in c PAL us KEDA CCAKEDA GL LR

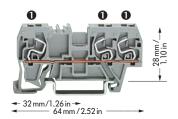
0.34 – 1.5 mm<sup>2</sup> "f-st" **1** AWG 22 – 16" str." **1** 0.31 – 1.0 mm<sup>2</sup> "s" **1** AWG 22 – 18" sol." **1** 

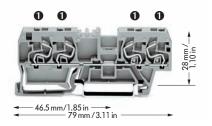
300 V, 10 A

500 V/6 kV/3 **❸** 13.5 A **0** 

Terminal block width 5 mm / 0.197 in







	ltem No.	Pack. unit pcs		ltem No.	Pack. unit pcs		Item No.	Pack. unit pcs
1 FIT CLAMP/	1 FIT CLAMP		1 FIT CLAMP/ 2 FIT CLAMP		2 FIT CLAMP/ 2 FIT CLAMP			
Through termine	al blocks		Through terminal blocks		Through terminal blocks			
grey	290-961	100	grey	290-661	100	grey	290-861	100
blue	290-964 👍	100	blue	290-664 👍	100	blue	290-864 👍	100
Ground (earth)			Ground (earth) t			Ground (earth) terminal block		
green-yellow	290-967 🌔	100	green-yellow	290-667 🛑	100	green-yellow	290-867 🛑	100
4 Suitable for E	x i applications		4 Suitable for Ex	c i applications		4 Suitable for Ex	x i applications	
Accessories,	see also series 280 p	page 2.13 Appr	opriate marking syst	em WMB/WSB	WFB (see sectio	n 14)		
End and interm	ediate plate, 1.1 mm	1/0.043 in thick	End and interme	ediate plate, 1.1 mn	n/0.043 in thick	End and intermediate plate, 1.1 mm / 0.043 in thick		
	orange 290	<b>)-306</b> 100 (4×25)		orange 290	<b>)-302</b> 100 (4 x 25)		orange 29	<b>0-310</b> 100 (4×25)
	grey <b>290</b>	<b>)-305</b> 100 (4×25)		grey <b>290</b>	<b>)-301</b> 100 (4 x 25)		grey 29	<b>0-309</b> 100 (4×25)
· ·						Y		
Adjacent jumpe	<b>er,</b> insulated, I <sub>N</sub> 24 A		Adjacent jumpe	<b>r,</b> insulated, I <sub>N</sub> 24 A		Adjacent jumper, insulated, I <sub>N</sub> 24 A		
Ī	0 ,	<b>1-402</b> 200 (8 x 25)	F	0 ,	<b>)-402</b> 200 (8 x 25)	lig.	0 ,	<b>0-402</b> 200 (8 x 25)
T T	yellgreen 280	<b>)-422</b> 200 (8 x 25)		yellgreen 280	<b>0-422</b> 200 (8 × 25)		yellgreen 28	<b>0-422</b> 200 (8 x 25)
UN .			UN .			IIII		
Staggered jump	<b>Der 6,</b> insulated, I <sub>N</sub> 2		Staggered jump	er <b>6</b> , insulated, I <sub>N</sub> 2		Staggered jump	er <b>6</b> , insulated, I <sub>N</sub>	
	width 5 mm / 0.19			width 5 mm / 0.19			width 5 mm / 0.1	
		<b>)-452</b> 100 (4×25)			<b>)-452</b> 100 (4×25)			<b>0-452</b> 100 (4×25)
		<b>100</b> (4 × 25)			<b>0-453</b> 100 (4×25)			<b>0-453</b> 100 (4×25)
		0-454 100 (4×25)	m (4)		0-454 100 (4 × 25)	m 44		<b>0-454</b> 100 (4×25)
1		<b>)-455</b> 50 (2 × 25)	-		<b>)-455</b> 50 (2 × 25)	1		<b>0-455</b> 50 (2×25)
	:	:		:	:		:	:
All I I		<b>)-458</b> 50 (2 × 25)	All 1		<b>)-458</b> 50 (2 × 25)	All 1 1		<b>0-458</b> 50 (2×25)
All test plug mod	test plug modules and test plugs  All test plug modules and test plugs  for testing using jumper contact  for testing using jumper contact		All test plug modules and test plugs  for testing using jumper contact					
222				0 0		WI		
777	slots or conducto	, ,		slots or conducte	, .		slots or conduct	
220	item nos and ap	plication notes	see pages 2.39 -	item nos and ap	pplication notes	see pages 2.39 -	item nos and a	pplication notes
see pages 2.39 – 2.40		see pages 2.39 -	2.40		see pages 2.39 -	2.40		

- FIT CLAMP connection only with standard EN harmonized PVC or PE insulation for factory wiring
- 2 CAGE CLAMP® connection for external wiring
- **3** 500 V = rated voltage 6 kV = rated surge voltage 3 = pollution degree (see also section 15)
- **S** See application notes on pages 2.43 2.45



### Through and Ground (Earth) Conductor Terminal Blocks with CAGE CLAMP® / FIT CLAMP Connection, Series 290





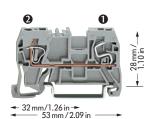
13.5 A **0**/24 A **2** 

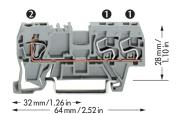
Terminal block width 5 mm / 0.197 in 8 – 9 mm / 0.33 in **2** 

13.5 A **0**/24 A **0** 

Terminal block width 5 mm / 0.197 in 8 – 9 mm / 0.33 in **2** 

Application criteria For the WAGO FIT CLAMP connection





A special series of rail-mounted terminal blocks combines FIT CLAMP and CAGE CLAMP® connections. The CAGE CLAMP® connection is made for external wiring, the FIT CLAMP connection is made for factory wiring (note: both CAGE CLAMP and FIT CLAMP are UL, CSA rated for factory and field wiring). As conductors do not have to be stripped, considerable time can be saved.

	ltem No.	Pack. unit pcs		ltem No.	Pack. unit pcs
CAGE CLAMP	®/ 1 FIT CLAMP		1 CAGE CLAM	P®/ 2 FIT CLAMP	-
hrough termina			Through termin		
grey	290-901	100	grey	290-681	100
olue	290-904 4	100	blue	290-684 4	100
Ground (earth) t	erminal block		Ground (earth)	terminal block	
green-yellow	290-907	100	green-yellow	290-687 🕕	100
Suitable for Ex	· i annlications		4 Suitable for E	y i applications	
3 Sullable for Ex		rking system <b>WM</b>	B/WSB/WFB	• • • • • • • • • • • • • • • • • • • •	
nd and interme	ediate plate, 1.1 mm			ediate plate, 1.1 mm	1/0.043 in thick
	-	-306 100 (4×25)		-	0-302 100 (4 x 25
	J	-305 100 (4×25)		Ü	<b>0-301</b> 100 (4×25
	9.07	100 (17/20)		9.07	100 (172
nsulation stop			Insulation stop		
A444		<b>-470</b> 200 strips	A0800		<b>)-470</b> 200 strips
000000		<b>-471</b> 200 strips	00000		<b>)-471</b> 200 strips
099	dark grey 280	<b>-472</b> 200 strips	09		<b>)-472</b> 200 strips
Adjacent jumpe	r, insulated, I <sub>N</sub> 24 A		Adjacent jumpe	<b>er,</b> insulated, I <sub>N</sub> 24 A	
17	0 /	<b>-402</b> 200 (8 x 25)	lig.	0 /	<b>)-402</b> 200 (8 x 25
W	yellgreen 280	<b>-422</b> 200 (8 x 25)		yellgreen 280	<b>)-422</b> 200 (8 x 25
Staggered jump	er <b>6</b> , insulated, I <sub>N</sub> 2	4 A	Staggered jump	<b>per 6</b> , insulated, I <sub>N</sub> 2	4 A
	width 5 mm / 0.19	7 in		width 5 mm / 0.19	97 in
	from 1 to 2 780	- <b>452</b> 100 (4×25)		from 1 to 2 780	<b>)-452</b> 100 (4×25
	from 1 to 3 <b>780</b>	-453 100 (4×25)		from 1 to 3 <b>780</b>	<b>)-453</b> 100 (4×25
7 11		- <b>454</b> 100 (4×25)	K II		<b>)-454</b> 100 (4×25
11 68		-455 50 (2×25)			<b>)-455</b> 50 (2 × 25
40	:	:	40		:
		- <b>458</b> 50 (2 × 25)			<b>)-458</b> 50 (2 x 25
Protective warni	ng marker, for 5 te	<u> </u>	Protective warn	ing marker, for 5 te	
	fits into screwdri			fits into screwdri	
E6666		- <b>415</b> 100 (4×25)	20000		<b>)-415</b> 100 (4×25
All test plug modu	les and test plugs		All test plug mod	ules and test plugs	
plogou	for testing using	iumper contact	miles ping mod	for testing using	iumper contact
	slots or conducto			slots or conducte	
777	item nos and ap		799 1	item nos and ap	
see pages 2.38 – 2.40		see pages 2.38 -		-pconon noics	

Nominal cross section	Types of conductors and reduced rated currents		conductors and reduced rated		Overall dia- meter of the con- ductor insulation up to
mm <sup>2</sup>	s	f-st	mm		
0.31	4.0 A	-	2.0		
0.34	-	2.0 A	2.0		
0.5	6.0 A	4.0 A	2.3		
0.75	9.0 A	6.0 A	2.5		
1.0	13.5 A	9.0 A	2.6		
1.5	-	13.5 A	3.0		

AWG	sol.	str.	in / mm
22	4.0 A	2.0 A	0.67/1.7 <b>6</b>
20	6.0 A	4.0 A	0.75/1.9 🜀
18	9.0 A	6.0 A	0.87/2.2 <b>6</b>
16	-	9.0 A	0.98/2.5 🜀

6 max. overall diameter of conductor insulation 0.017 in /43 mm

#### Conductors used:

**PVC** insulated wires

(e.g. H05V, UL Style 1007/1569.1061)

TPE insulated wires

(e.g. H05Z, UL Style 3199.3265.3266)

#### **AWG** wires

stranded ≤ 26 individual cores

**PVC** insulation Conductor: △DIN/VDE 0281/HD 21.1 S3

**TPE** insulation

∧DIN/VDE 0282/HD 22.1 S3

Shore hardness A (standard value):

70 - 90

Temperature range for the conductor connection: 10 - 40°C

In accordance with test specification DIN EN 60998-2-3, to re-connect use only the same type of conductors with the same cross section within the rated cross section

The terminal block profile is similar to that of the 280 series WAGO rail-mounted terminal blocks with CAGE CLAMP® connection up to 2.5 mm /AWG 12. Accessories for the 280 series, including the jumpers, can also be used for the 290 series FIT CLAMP.

The FIT CLAMP connection is designed to be factory-wired but is also approved for field wiring by UL and CSA. In order to achieve a terminal block width of only 5 mm, there is a small reduction of the rated current of the respective wire cross section (see table).





### X-COM®-SYSTEM

	Current-carrying capacity curves (derating curves)  - Receptacle terminal blocks and female plugs  - Headers, male connectors and female plugs	9.48 - 9.49 9.50 - 9.51
	Diode and LED receptacle terminal blocks  — 1-conductor/1-pin  — 2-pin	9.24 9.24
	Diode and LED receptacle terminal blocks with 2 jumper positions - 1-conductor/1-pin	9.25 9.25
0	Disconnect receptacle terminal blocks with/without shield - 1-conductor/1-pin 2-pin	(screen) contact 9.22 9.22
	Disconnect receptacle terminal blocks with/without shield with 2 jumper positions - 1-conductor/1-pin	9.23
	Double deck terminal blocks  — 1-conductor/1-pin	9.34 – 9.35
	- 2-conductor/2-pin  Female plugs - 1-conductor, straight	9.44
SACIAL STATES	<ul> <li>1-conductor, with locking levers</li> <li>1-conductor, angled</li> <li>2-conductor</li> </ul>	9.46
	Headers with solder pins  – with fixing flanges  – with fixing flanges for feedthrough application	9.41
ill in	Male connectors with CAGE CLAMP® connection  – for flying leads  – with fixing flanges  – with fixing flanges for feedthrough application	9.38
A. William	– with snap-in mounting feet – with snap-in flanges	9.38 9.39
	Operating tool – Handling –  Receptacle terminal blocks – 1-conductor/1-pin	9.12 - 9.13
	- 2-pin	9.14 - 9.15 9.16 - 9.17 9.18 - 9.19
= 100	Receptacle terminal blocks for pluggable modules with 2 jumper positions - 1-conductor/1-pin	9.28 / 9.30 9.28 / 9.30
; <del> </del>	- 2-pin	9.32
	- 1-conductor/1-pin	
	Snap-on type strain relief housings	9.47



## Product Summary X-COM®-SYSTEM – . . . Receptacle Terminal Blocks

#### Series 769 1-conductor/1-pin . . .





without/with shield (screen) contact

Ground (earth) terminal block

Page 9.12

Page 9.12

1-conductor/1-pin . . .





Disconnect

Disconnect shield (screen)

Diode

Page 9.24

LED

Page 9.22

1-conductor/1-pin . . . ... with 2 jumper positions





Disconnect shield (screen)

Diode LED

Page 9.23

Page 9.25

1-conductor/1-pin . . . ... with 2 jumper positions





for 5 mm / 0.197 in wide plugswith electronic components Page 9.28

for plugs with electronic components  $10~\text{mm}\,/0.394\,\text{in},\,15~\text{mm}\,/0.591\,\text{in},\,20~\text{mm}\,/0.787\,\text{in},\,25~\text{mm}/0.984\,\text{in}$  wide Page 9.30

1-conductor/1-pin . . . ... with 3 jumper positions



Page 9.20

Series 769 2-pin . . .





without/with shield (screen) contact

Ground (earth) terminal block

Page 9.14

Page 9.14

2-pin . . .





LED

Disconnect

2-pin . . .

Disconnect shield (screen)

Diode

Page 9.24

Page 9.22

... with 2 jumper positions





2-pin . . .

Disconnect shield (screen)

Diode LED

Page 9.25

Page 9.23

... with 2 jumper positions



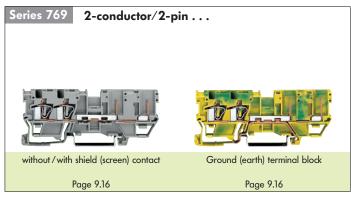


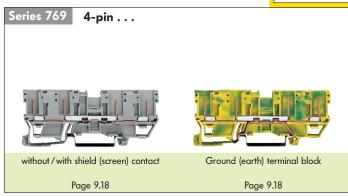
for 5 mm/0.197 in wide plugs with electronic components Page 9.28

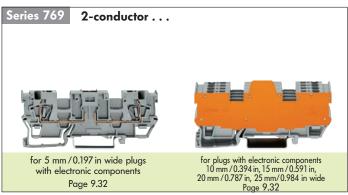
for plugs with electronic components 10 mm / 0.394 in, 15 mm / 0.591 in, 20 mm / 0.787 in, 25 mm / 0.984 in wide Page 9.30

# ... Receptacle Terminal Blocks

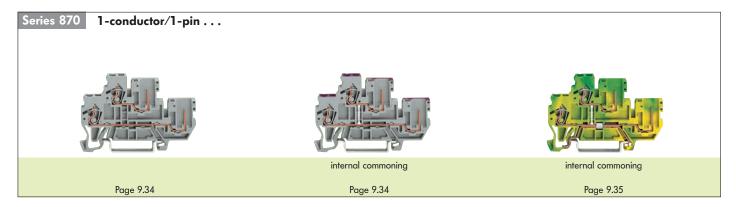








# ... Double Deck Receptacle Terminal Blocks





# X-COM®-SYSTEM

# ... Headers and Male Connectors

Series 769 Headers with straight solder pins

with fixing flanges
Fage 9.40 Page 9.41 Page 9.42

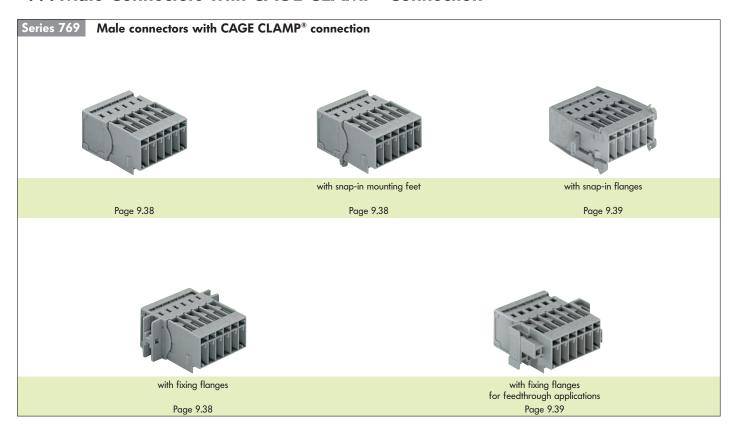
With fixing flanges
Fage 9.40

Headers with right angle solder pins

with fixing flanges
for feedthrough applications
Page 9.41

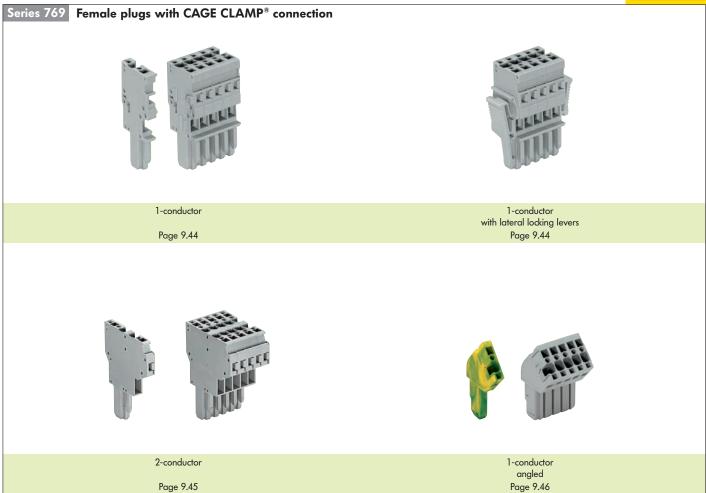
Page 9.42

# ... Male Connectors with CAGE CLAMP® Connection

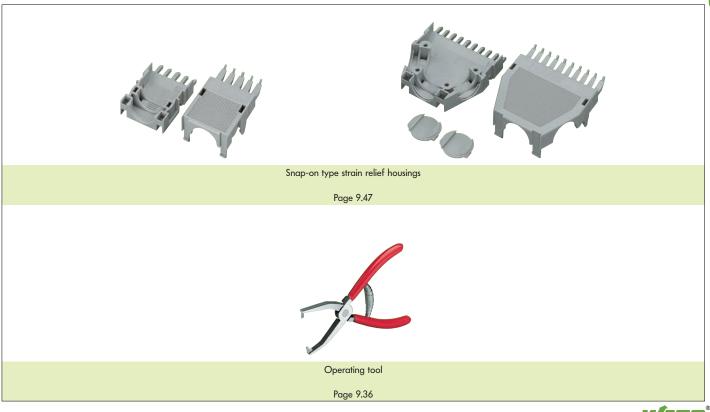


# ... Female Plugs





# ... Accessories





# WAGO X-COM®-SYSTEM

## **COM-bination of Connectors and Rail-Mounted Terminal Blocks**

The WAGO X-COM®-SYSTEM is mostly used in switchgear and control applications.

It is designed for a rated current up to 16/32 A at  $U_N$  500 V and AWG 12 / 4 mm² rated cross section (up to 600 V, 10 A, and 12 AWG UL)

offering an alternative to heavy duty rectangular and circular connectors used in power wiring applications where electrical compliance is more important than a high degree of protection.

Pre-assembly of connector systems offers the following advantages to the user:

- During manufacturing: Pre-assembled part or function assemblies can be tested before assembly.
- During assembly: Pre-assembled pluggable cable harnesses help solve time and space issues on site. Connector systems with protection against mismating can be handled by persons of all skill levels.
- During servicing: Sub-assemblies can be replaced very quickly and without failures.

The X-COM®-SYSTEM consists of base receptacle rail-mounted terminal blocks, male connectors and female plugs with different types of mounting systems as well as headers with solder pins. Pin spacing is generally 5 mm/0.197 in.

# Protection against mismating and accidental contact

The WAGO X-COM®-SYSTEM is fully protected against accidental contact - even when plugs are disconnected. As a result, considerations on how to plan the power distribution become easier. Furthermore, the whole system is 100 % protected against mismating. Coded, without the lose of any poles, prevents mismating of male connectors and female plugs having the same number of poles.

#### Base receptacle terminal blocks

Base receptacle terminal blocks are available as through terminal blocks, double deck terminal blocks as well as ground (earth) conductor terminal blocks with automatic contact to the carrier rail. Base receptacle terminal blocks with special functions are available in disconnect, diode and LED versions. To use all the functions of **pluggable electronic modules** which include a wide range of relays, optocoupler modules and converters, etc., some base receptacle terminal blocks have an additional plug-in slot.

Depending on the type of terminal block, the base receptacle terminal blocks are equipped with one to three jumper positions for commoning of signals using insulated plug-in jumpers.

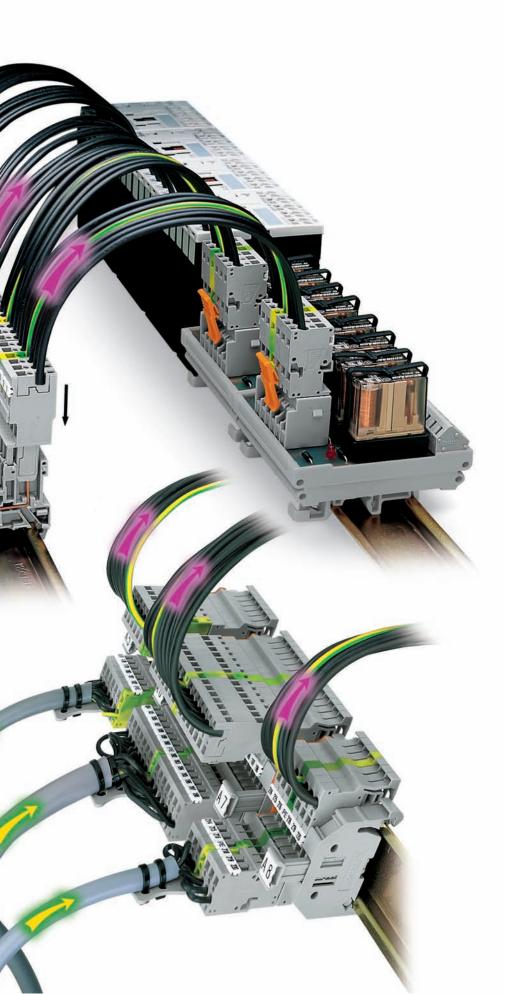


Types of application

Equipment connection with the WAGO X-COM®-SYSTEM for:

- Frequency converters
- Thyristor actuators
- Soft start motor controllers
- Motors
- Phase filter
- Power sub-assemblies
- Power units
- Uninterruptible Power Supply (UPS)
- Wiring of removable doors on enclosures and cabinets
- Pluggable feedthrough connections
- Flying leads





#### Female plugs

The mating half of the base receptacle terminal blocks are modular 1- to 15-pole, 1-conductor and 2-conductor straight or angled female plugs. Angled female plugs combined with double deck terminal blocks offer high density wiring and a reduced overall terminal block height. Using the jumper slot, the distribution of a potential is made simple - even on the female plugs. This makes the commoning of supply lines particularly interesting as the voltage supply of downstream subassemblies is maintained even after female plugs have been removed.

#### 1-pole female plugs

Special 1-pole female plugs can carry the full rated current of the terminal blocks allowing many different applications:

- as test adapters,
- as connectors for motor lead tests,
- for all types of patchboard applications.
- for the creation of multi-pole prototypes,
- for phase selection in a three-phase network without interfering with the wiring or
- for one-pole voltage supply in commercial vehicles. The grounding of all electrical components is connected through the chassis.

#### Male connectors

Additional male connectors are available with mounting feet for surface mounting, with fixing flanges for feed-through applications or without mounting elements for flying leads. Strain relief plates are available as accessories. Sub-assemblies on printed circuit boards can be integrated into the system wiring using headers with solder pins. As a result, parts can be exchanged quickly without wiring failures.

#### Protection degree

mated: IP 20 unmated: IP 20 Temperature range - 35°C to +100°C



# X-COM®-SYSTEM Receptacle Terminal Blocks and Female Plugs Series 769 . . .

## Assembly

Snap individual base receptacle terminal blocks onto carrier rail

#### Removal



Unlock assembly with screwdriver (3.5 x 0.5) mm and remove terminal block via release lever

#### CAGE CLAMP® connection .



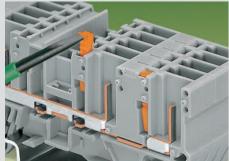
Receptacle terminal block: connection/removal of conductor with screwdriver (3.5  $\times$  0.5) mm

## Coding



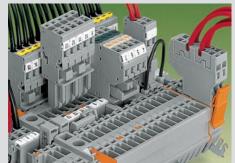
Coding a female plug – removal of coding finger(s). Do <u>not</u> break off the first and last latch position coding finger!

#### Coding



Snap coding pin in proper direction on receptacle terminal block. Removal of a coding pin from receptacle terminal block

## Commoning



Commoning with adjacent jumper, or alternatively with staggered jumper. Push jumper down FIRMLY until FULLY inserted!



CAGE CLAMP®
connects the following
copper wires: \*

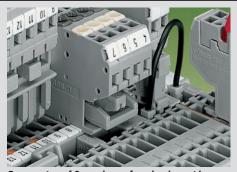




Commoning of receptacle terminal block with staggered jumper



stranded



Commoning of 2-conductor female plug with staggered jumper and commoning of receptacle terminal block with adjacent jumper



fine stranded, also with tinned single strands



Female plug: connection/removal of conductor. Operation 90° to wire also possible



Testing with test plug Ø 2 mm/0.079 in (red) or Ø 2.3 mm/0.091 in (yellow)



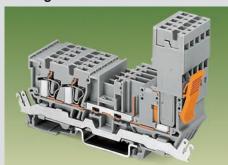
Snapping in /removal of locking lever

# Note: Connectors used according to the regulations should not be connected or disconnected under load.

**Testing** 



## Locking lever



Female plug secured with locking lever in external area of receptacle terminal block

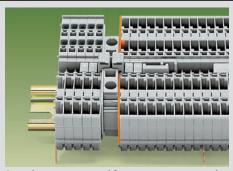
#### Strain relief



Removal of female plug, wires provided with strain relief plate



Commoning of receptacle terminal blocks with push-in type wire, or adjacent jumpers, also over the intermediate plate



Step-down jumper used for commoning terminal blocks of different sizes (max. 10 mm²/AWG 8)



Commoning of 1-conductor female plugs with miniature adjacent jumpers



fine-stranded wire tip bonded



fine-stranded wire with crimped ferrule 1



fine-stranded wire with crimped pin terminal



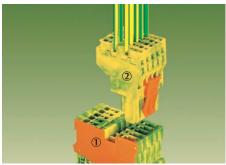
# X-COM®-SYSTEM, Series 769, Product Summary Receptacle Terminal Blocks and Female Connectors



- 1-conductor/1-pin receptable terminal block
   1-conductor female plug, straight\*



- 1) 2-pin shield (screen) receptacle terminal block
  2) 2-conductor female plug
- 3 1-conductor female plug, straight\*



- 1 l-conductor/1-pin ground (earth) receptacle terminal block
- 2 2-conductor female plug

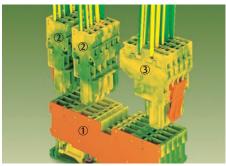




- 1 4-pin receptacle terminal block
- 2 2-conductor female plugs
- 3 1-conductor female plug, straight



- 1) 2-conductor/2- pin shield (screen) receptacle
- 2-conductor female plug
- 3 1-conductor female plug, straight



- 1 4-pin ground (earth) receptacle terminal block
- 2 1-conductor female plugs
- 3 2-conductor female plug



- ① 1-conductor/1-pin disconnect receptacle terminal block
- 2 1-conductor female plug, straight\*



- 1 2-pin diode receptacle terminal block
- 1-conductor female plugs, straight\*



- 2-pin LED receptable terminal block
   1-conductor female plugs, straight\*

#### \* or 1-conductor female plug, angled



- 2-pin disconnect receptacle terminal block with 2 jumper positions
   1-conductor female plugs, straight\*
- \* or 1-conductor female plug, angled



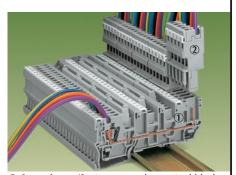
- 1-conductor/1-pin diode receptacle terminal block with 2 jumper positions
  2 2-conductor female plug



- 2-pin LED receptacle terminal block with 2 jumper positions
   2-conductor female plug
   1-conductor female plug, straight\*

## **Headers and Male Connectors**





- 1 1-conductor/1-pin receptacle terminal block with 3 jumper positions
  2 1-conductor female plug, straight\*

#### \* or 1-conductor female plug, angled



- 1 1-conductor/1-pin receptacle terminal block with 2 jumper positions
- 2 1-conductor female plug, straight\*
   3 Fuse plug, 6 mm/0.236 in wide (every other terminal block)
- \* or 1-conductor female plug, angled



- 1 2-pin terminal block for pluggable modules\* with 2 jumper positions
- 2 1-conductor female plugs, straight\*\*
  3 Relay plug 25 mm/0.9843 in wide
- with separator plate
- \*\* or 1-conductor female plug, angled



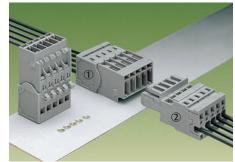
- 1 conductor/1 pin double deck terminal block
- 2 1 conductor female plug, angled
- \* or 1-conductor female plug, straight



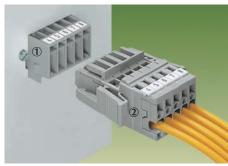
- 1 Male connector with CAGE CLAMP® connec-
- 2 1-conductor female plug



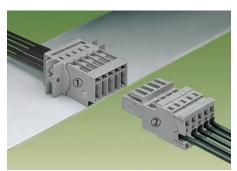
- Header with straight solder pins
   1-conductor female plug



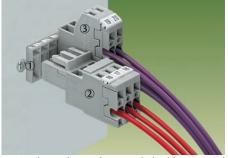
- 1) Male connector with CAGE CLAMP® connection and mounting feet
- 1-conductor female plug



- 1) Header with straight or angled solder pins and fixing flanges
- 2 1-conductor female plug straight with locking



- ① Male connector with CAGE CLAMP® connection and fixing flanges
  2 1-conductor female plug

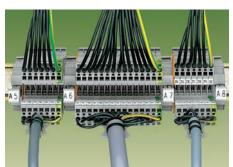


- 1) Header with straight or angled solder pins and fixing flanges for feedthrough applications
- 2 1-conductor female plug
- 3 2-conductor female plug





Cable entry in the base of the switchgear cabinet, with separate strain relief, movable IP54 bottom plates sealed with sponge rubber (e.g. by Rittal)



Introduction of the cables in the switchboard

The cables are introduced in the switchboard cabinet with the connected female plugs and are directly plugged in the receptacle terminal blocks.

# X-COM®-SYSTEM 1-Conductor/1-Pin Receptacle Terminal Blocks

0.08 – 4 mm<sup>2</sup> 500 V/6 kV/3 **①** 250 V/4 kV/3 **①** 32 A\*\*

AWG 28 - 12 300/600 V, 10/5 A **%** 300 V, 10 A ®

Terminal block width 5 mm / 0.197 in 8 – 9 mm / 0.33 in

\* 🗫 @ CCAKEDA 💖 LR 🏵

 $0.08 - 4 \text{ mm}^2$ 

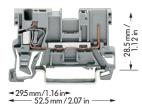
AWG 28 - 12

Terminal block width 5 mm / 0.197 in 8 - 9 mm / 0.33 in

\* 🗫 🍪 CCAIKEDA 💖 LR 🍥

1 500 V = rated voltage
6 kV = rated surge voltage
3 = pollution degree
250 V/4 kV/3 = rated voltage
with shield (screen) contact
(see also section 15)

2 See application notes on pages 2.43 – 2.45



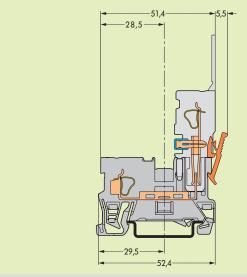


**39.5** mm/1.16 in **52.5** mm/2.07 in

Description			Item No.	Pack. unit pcs		No.	Pack. unit pcs
•	receptacle terminal block,	1-conductor/1-pin	•			oin ground (earth) rece	ptacle
suitable for DIN 35	rail acc. to EN 60715	grey	769-176	100	terminal block		
		1-conductor/1-pin	•		green-yellow	769-237	100
		with shield (screen					
		grey	769-231	50			
Accessories		Appropriate marking sy	ystem <b>Mini-W</b>	<b>SB</b> (see section 14)			
	End and	1.1 mm / 0.043 in this	ck		1.1 mm/0.043 in	thick	
	intermediate plate	grey	769-307	100 (4 x 25)	grey	769-307	100 (4 x 2
		orange	769-308	100 (4 x 25)	orange	769-308	100 (4 x 2
OTTO	Screwless						
	end stop	6 mm / 0.236 in wide		100 (4 x 25)	6 mm / 0.236 in w		100 (4 x 2
		10 mm / 0.394 in wide		50 (2 x 25)	10 mm / 0.394 in w		50 (2 x 2
000	Insulation stop 2, white	0.08 - 0.2 mm <sup>2</sup>	769-470	200 strips	0.08 - 0.2 mm <sup>2</sup>	769-470	200 strips
00000	5 pcs/strip light grey	0.25 - 0.5 mm <sup>2</sup>	769-471	200 strips	0.25 - 0.5 mm <sup>2</sup>	769-471	200 strips
A Same	dark grey	0.75 – 1 mm²	769-472	200 strips	0.75 – 1 mm <sup>2</sup>	769-472	200 strips
	Adjacent jumper, I <sub>N</sub> 24 A	grey	280-402	200 (8 x 25)	grey	280-402	200 (8 x 25
	insulated						
the III	Alternate jumper	grey	280-409	100 (4 x 25)	grey	280-409	100 (4 x 25
	Staggered jumper 2, from 1 to 2	I <sub>N</sub> 24 A	780-452	100 (4 x 25)	I <sub>N</sub> 24 A	780-452	100 (4 x 25
	insulated, from 1 to 3		780-453	100 (4 x 25)		780-453	100 (4 x 2
	width 5 mm/0.197 in from 1 to 4		780-454	100 (4 x 25)		780-454	100 (4 x 25
	from 1 to 5		780-455	50 (2 x 25)		780-455	50 (2 x 25
	:		:			:	
	from 1 to 8		780-458	50 (2 x 25)		780-458	50 (2 x 25
	Push-in type wire jumper 2,	L = 60  mm / 2.362  in		10	L = 60  mm / 2.362		10
L	insulated, 9 A – conductor	L = 110  mm / 4.331  in		10	L = 110  mm / 4.331		10
ll //	cross section 0.75 mm <sup>2</sup> /AWG 18	L = 250  mm / 9.843  in	249-127	10	L = 250  mm / 9.843	in <b>249-127</b>	10
	Coding pin,						
	for coding of female plugs	orange	769-435	100 (4 x 25)	orange	769-435	100 (4 x 25
	Protective warning marker,						
25660	for 5 terminal blocks,	yellow	280-415	100 (4 x 25)			
	fits into screwdriver slot						
	<b>Test plug,</b> w. cable 500 mm/17.7"						
	2 mm / 0.079 in Ø	red	210-136	50 (5 x 10)	red	210-136	50 (5 x 10
* /	2.3 mm/0.091 in Ø	yellow	210-137	50 (5 x 10)	yellow	210-137	50 (5 x 10
222 2	Test plug module,	Application notes an	•			and part numbers	
THE S	for test using jumper position in	see pages 2.38 – 2.4	40		see pages 2.38 –	2.40	
י וון	current bar or cond. wire opening						
	Test plug adapter,	5 mm/0.197 in wide			5 mm/0.197 in wi		
W	see also pages 2.38 – 2.40		280-404	100 (4 x 25)		280-404	100 (4 x 25
- U		or test plug 210-137	(2.3 mm/0.091	in Ø)	or test plug 210-1	37 (2.3 mm/0.091 in Ø)	
	1-conductor female plug, straight or angled	see pages 9.44/9.46	5		see pages 9.44/9	.46	
lin.	2-conductor female plug						
		0.45			O 4F		
		see page 9.45			see page 9.45		
		see page 9.45			see page 9.45		

# Types of Assembly 1-Conductor/1-Pin Receptacle Terminal Blocks and 1-/2-Conductor Female Plugs

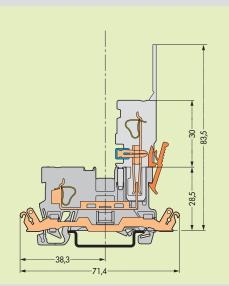




Receptacle terminal block



1-conductor female plug Commoning possibility of receptacle terminal blocks with jumper contact systems, series 280 and 780, and testing possibility with test plug adapter 280-4..

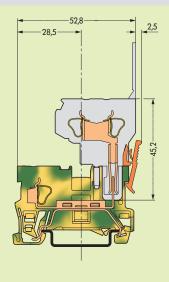


Receptacle terminal block with shield (screen) contact



2-conductor female plug

Commoning possibility of receptacle terminal blocks only with adjacent jumpers and alternate jumpers, series 280



Ground (earth) receptacle terminal block



# X-COM®-SYSTEM 2-Pin Receptacle Terminal Blocks

500 V/6 kV/3 **①** 250 V/4 kV/3 **①** 32 A\*\*

300/600 V, 10/5 A **%** 300 V, 10 A ®

Terminal block width 5 mm / 0.197 in

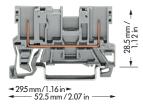
\* 🗫 @ CCAKEDA 🐨 LR

Terminal block width 5 mm / 0.197 in

\* 🗫 @ CCAKEDA 💖 LR

● 500 V = rated voltage
6 kV = rated surge voltage
3 = pollution degree
250 V/4 kV/3 = rated voltage
with shield (screen) contact
(see also section 15)

2 See application notes on page 2.45





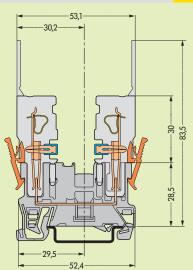
Description			ltem No.	Pack. unit pcs		ltem No.	Pack. unit pcs
2-pin receptacle t	erminal block,	2-pin receptacle	terminal block		2-pin ground	l (earth) receptacle te	rminal block
suitable for DIN 35	rail acc. to EN 60715	grey	769-156	100	green-yellow	769-227	100
		2-pin receptacle	terminal block				
		with shield (scree	en) contact, (no pict	ure)			
		grey	769-221	50			
Accessories		Appropriate marking	system Mini-WS	<b>B</b> (see section 14)			
	End and	1.1 mm / 0.043 in the	nick		1.1 mm/0.043	in thick	
	intermediate plate	grey	769-305	100 (4 x 25)	grey	769-305	100 (4 x 2
The second second		orange	769-306	100 (4 x 25)	orange	769-306	100 (4 x 2
Anth	Screwless						
11,10	end stop	6 mm / 0.236 in wi	de <b>249-116</b>	100 (4 x 25)	6 mm / 0.236	in wide <b>249-116</b>	100 (4 x 2
· 43	·	10 mm / 0.394 in wi	de <b>249-117</b>	50 (2 x 25)	10 mm / 0.394	in wide <b>249-117</b>	50 (2 x 2
	Adjacent jumper, I <sub>N</sub> 24 A	grey	280-402	200 (8 x 25)	grey	280-402	200 (8 x 2
4	insulated	<b>3</b> ,		, ,	,		
W	Alternate jumper	grey	280-409	100 (4 x 25)	grey	280-409	100 (4 x 2
	Staggered jumper 2, from 1 to 2	I <sub>N</sub> 24 A	780-452	100 (4 x 25)	I <sub>N</sub> 24 A	780-452	100 (4 x 2
	insulated, from 1 to 3	-N = 171	780-453	100 (4 x 25)	-N =	780-453	100 (4 x 2
	width 5 mm / 0.197 in from 1 to 4		780-454	100 (4 x 25)		780-454	100 (4 x 2
	from 1 to 5		780-455	50 (2 x 25)		780-455	50 (2 x 2
	:		:	30 (2 x 23)		:	JU (2 X 2
	from 1 to 8		780-458	50 (2 × 25)		780-458	50 (2 x 2
	Push-in type wire jumper 2,	L = 60 mm/2.362 i		10 (2 x 23)	I = 60 mm /2	362 in <b>249-125</b>	10
	insulated, 9 A – conductor	L = 110  mm / 4.331  i		10		331 in <b>249-126</b>	10
- L		L = 110  mm / 4.3311 L = 250  mm / 9.8431		10		843 in <b>249-126</b>	10
W W	cross section 0.75 mm²/AWG 18	L = 230 mm / 9.043	n 247-12/	10	L = 250 mm/9.	043 IN <b>247-12</b> 7	10
	Coding pin,		7/0 /07	100 (4 05)		7/0 /05	100 // 0
	for coding of female plugs	orange	769-435	100 (4 x 25)	orange	769-435	100 (4 x 2
	Test plug,						
	with cable 500 mm/1'7.7"						
	2.3 mm/0.091 in Ø	yellow	210-137	50 (5 x 10)	yellow	210-137	50 (5 x 1
222 2	Test plug module,	Application notes of	and part numbers		Application no	ites and part numbers	
	for test using jumper position in	see pages 2.39 - 2	2.40		see pages 2.39	9 – 2.40	
י ווין	current bar or cond. wire opening						
	Test plug adapter,	5 mm / 0.197 in wid	de		5 mm / 0.197 ir	n wide	
	see also pages 2.39 - 2.40		280-404	100 (4 x 25)		280-404	100 (4 x 2
T		or test plua 210-13	7 (2.3 mm / 0.091 in	, ,	or test plua 21	0-137 (2.3 mm/0.091 i	
lh.	1-conductor female plug,	1 1 1 1 1		,	<u> </u>		
1 5	straight	see page 9.44			see page 9.44		
1	-·· -··ʊ···	-00 200 7111			see page 7.44		
4	1-conductor female plug,						
À	angled	see page 9.46			see page 9.46		
T	angica	500 page 7.40			300 page 7:40		
lts.	2-conductor female plug						
	_ conductor remain prog	see page 9.45			see page 9.45		
100		300 page 7.43			300 page 7.43		
₩							

# Types of Assembly 2-Pin Receptacle Terminal Blocks and 1-/2-Conductor Female Plugs





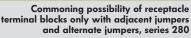
2 x 1-conductor female plugs Commoning possibility of receptacle terminal blocks with jumper contact systems, series 280 and 780, and testing possibility with test plug adapter 280-4..

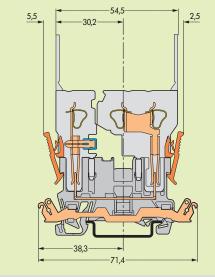


Receptacle terminal block



1-conductor female plug left 2-conductor female plug right

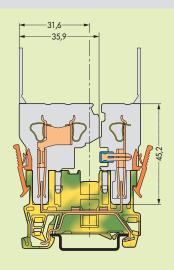




Receptacle terminal block with shield (screen) contact



2-conductor female plug left
1-conductor female plug right
series 280 and 780, and testing possibility with test plug adapter 280-4...



Ground (earth) receptacle terminal block



# X-COM®-SYSTEM 2-Conductor/2-Pin Receptacle Terminal Blocks

0.08 – 4 mm<sup>2</sup> 500 V/6 kV/3 **①** 250 V/4 kV/3 **①** 32 A\*\*

AWG 28 - 12 300/600 V, 10/5 A **%** 300 V, 10 A ®

 $0.08 - 4 \text{ mm}^2$ 

AWG 28 - 12

Terminal block width 5 mm / 0.197 in 8 – 9 mm / 0.33 in

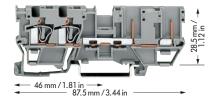
\* 🗫 🍪 KEDA CCAKEDA 💖 GL LR

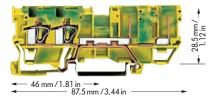
Terminal block width 5 mm / 0.197 in  $\boxed{\phantom{0}}$  8 - 9 mm / 0.33 in

\* 91 @ KEDA CCAKEDA 💖 LR

1 500 V = rated voltage
6 kV = rated surge voltage
3 = pollution degree
250 V/4 kV/3 = rated voltage
with shield (screen) contact
(see also section 15)

2 See application notes on pages 2.43 – 2.45

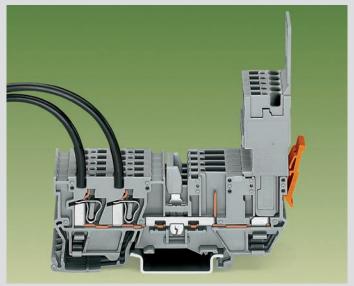




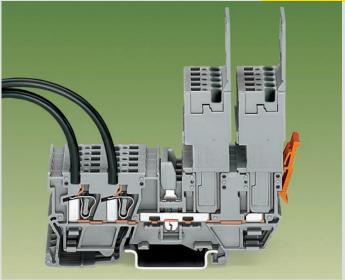
Description			ltem No.	Pack. unit pcs		Item No.	Pack. unit pcs
2-conductor/2-pi	in receptacle terminal block,	2-conductor/2-pi	n receptacle term	inal block	2-conductor/2-p	oin ground (earth) re	ceptacle
suitable for DIN 35	5 rail acc. to EN 60715	grey	769-171	50	terminal block		
		2-conductor/2-pin	receptacle termi	nal block	green-yellow	769-217	50
		with shield (screer	n) contact, (no pict	ure)	,		
		grey	769-211	50			
Accessories		Appropriate marking s	system <b>Mini-WS</b>	<b>B</b> (see section 14)			
	End and	1.1 mm / 0.043 in thi	ick		1.1 mm/0.043 in	thick	
	intermediate plate	grey	769-303	100 (4 x 25)	grey	769-303	100 (4 x :
		orange	769-304	100 (4 x 25)	orange	769-304	100 (4 x
Arth	Screwless	-			-		
117.	end stop	6 mm / 0.236 in wid	e <b>249-116</b>	100 (4 x 25)	6 mm / 0.236 in w	ride <b>249-116</b>	100 (4 x
· 43		10 mm / 0.394 in wid	e <b>249-117</b>	50 (2 x 25)	10 mm / 0.394 in w	ide <b>249-117</b>	50 (2 x
	Insulation stop 2, white	0.08 - 0.2 mm <sup>2</sup>	769-470	200 strips	0.08 - 0.2 mm <sup>2</sup>	769-470	200 strips
0000	5 pcs/strip light grey	0.25 - 0.5 mm <sup>2</sup>	769-471	200 strips	0.25 - 0.5 mm <sup>2</sup>	769-471	200 strips
COLUM	dark grey	0.75 - 1 mm <sup>2</sup>	769-472	200 strips	0.75 - 1 mm <sup>2</sup>	769-472	200 strips
	Adjacent jumper, I <sub>N</sub> 24 A	grey	280-402	200 (8 x 25)	grey	280-402	200 (8 x
	insulated						
ilia II II	Alternate jumper	grey	280-409	100 (4 x 25)	grey	280-409	100 (4 x
	Staggered jumper 2, from 1 to 2	I <sub>N</sub> 24 A	780-452	100 (4 x 25)	I <sub>N</sub> 24 A	780-452	100 (4 x
	insulated, from 1 to 3	.,	780-453	100 (4 x 25)		780-453	100 (4 x
	width 5 mm/0.197 in from 1 to 4		780-454	100 (4 x 25)		780-454	100 (4 x
	from 1 to 5		780-455	50 (2 × 25)		780-455	50 (2 x
W AB	:		:			:	
40	from 1 to 8		780-458	50 (2 x 25)		780-458	50 (2 x
	Push-in type wire jumper 2,	L = 60 mm / 2.362 in	249-125	10	L = 60 mm/2.362	in <b>249-125</b>	10
(—L—)	insulated, 9 A – conductor	L = 110 mm /4.331 in	249-126	10	L = 110 mm / 4.331	in <b>249-126</b>	10
T T	cross section 0.75 mm²/AWG 18	L = 250  mm / 9.843  in	249-127	10	L = 250  mm / 9.843	in <b>249-127</b>	10
	Coding pin,						
	for coding of female plugs	orange	769-435	100 (4 x 25)	orange	769-435	100 (4 x
	0 1 0	· ·		, ,	0		•
-	Protective warning marker,						
55666	for 5 terminal blocks,	yellow	280-415	100 (4 x 25)			
900	fits into screwdriver slot						
	<b>Test plug,</b> w. cable 500 mm/1'7.7"						
	2 mm / 0.079 in Ø	red	210-136	50 (5 x 10)	red	210-136	50 (5 x
	2.3 mm / 0.091 in Ø	yellow	210-137	50 (5 x 10)	yellow	210-137	50 (5 x
222 2	Test plug module,	Application notes ar	nd part numbers	, ,	Application notes	and part numbers	
	for test using jumper position in	see pages 2.38 – 2.	.40		see pages 2.38 -	2.40	
111	current bar or cond. wire opening	. 0					
	Test plug adapter,	5 mm/0.197 in wide	9		5 mm/0.197 in wi	de	
	see also pages 2.38 – 2.40		280-404	100 (4 x 25)		280-404	100 (4 x
Ī		or test plug 210-137	7 (2.3 mm / 0.091 in	, ,	or test plug 210-1	37 (2.3 mm / 0.091 in Q	
În	1-conductor female plug,					·	
1 2	straight	see page 9.44			see page 9.44		
T		angled – cannot be	used		angled – cannot k	oe used	
Ît-	2-conductor female plug						
		see page 9.45			see page 9.45		
II.							

# Types of Assembly 2-Conductor/2-Pin Receptacle Terminal Blocks and 1-/2-Conductor Female Plugs

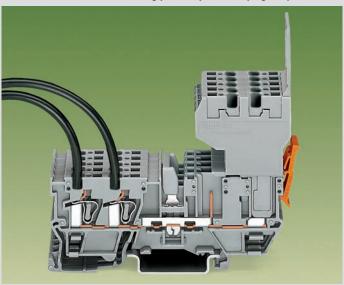




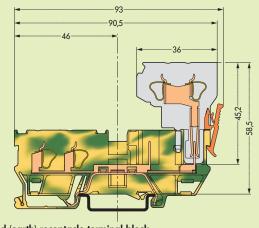
1-conductor female plug Commoning possibility of receptacle terminal blocks with jumper contact systems, series 280 and 780, and testing possibility with test plug adapter 280-4..



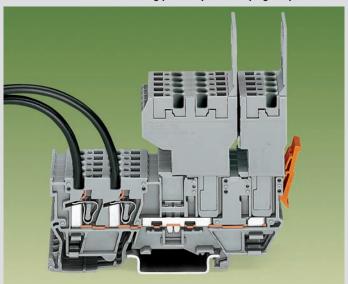
2 x 1-conductor female plugs Commoning possibility of receptacle terminal blocks with jumper contact systems, series 280 and 780, and testing possibility with test plug adapter 280-4..



2-conductor female plug Commoning possibility of receptacle terminal blocks with jumper contact systems, series 280 and 780, and testing possibility with test plug adapter 280-4..

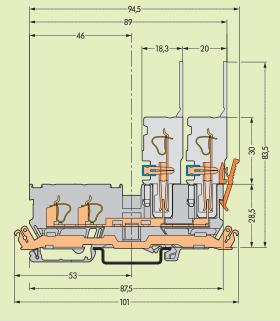


Ground (earth) receptacle terminal block



1-conductor female plug and 2-conductor female plug

Commoning possibility of receptacle terminal blocks only with adjacent jumpers and alternate jumpers, series 280



Receptacle terminal block with shield (screen) contact



# X-COM®-SYSTEM 4-Pin Receptacle Terminal Blocks

500 V/6 kV/3 **①** 250 V/4 kV/3 **①** 32 A\*\*

300/600 V, 10/5 A **%** 300 V, 10 A ®

Terminal block width 5 mm / 0.197 in

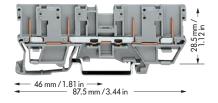
\* 🗫 🍪 KEDA CCAKEDA 💖 GL LR

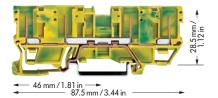
Terminal block width 5 mm / 0.197 in

\* 🕦 🏽 KEDA CCAKEDA 🐨 GL LR

● 500 V = rated voltage
6 kV = rated surge voltage
3 = pollution degree
250 V/4 kV/3 = rated voltage
with shield (screen) contact
(see also section 15)

2 See application notes on page 2.45



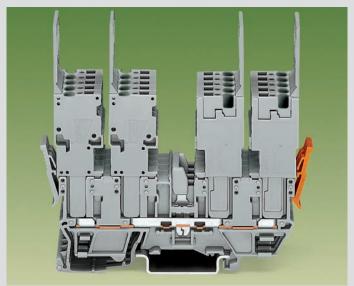


Description			Item No.	Pack. unit pcs		ltem No.	Pack. unit pcs
4-pin receptacle		4-pin receptacle			4-pin ground	(earth) receptacle te	rminal block
suitable for DIN 35	rail acc. to EN 60715	grey	769-151	50	green-yellow	769-207	50
		4-pin receptacle	terminal block				
		with shield (scree	n) contact, (no p	icture)			
		grey	769-201	50			
Accessories		Appropriate marking	system <b>Mini-W</b>	SB (see section 14)			
	End and	1.1 mm / 0.043 in th	nick		1.1 mm/0.043	in thick	
	intermediate plate	grey	769-301	100 (4 x 25)	grey	769-301	100 (4 x 25
<u> </u>	·	orange	769-302	100 (4 x 25)	orange	769-302	100 (4 x 25
	Screwless			, ,			•
.111	end stop	6 mm / 0.236 in wid	de <b>249-116</b>	100 (4 x 25)	6 mm / 0.236 ir	wide <b>249-116</b>	100 (4 × 25
A)		10 mm / 0.394 in wid	de <b>249-117</b>	50 (2 × 25)	10 mm / 0.394 ir	wide <b>249-117</b>	50 (2 x 25
	Adjacent jumper, I <sub>N</sub> 24 A	grey	280-402	200 (8 x 25)	grey	280-402	200 (8 x 25
44	insulated	3 7			9 7		
	Alternate jumper	grey	280-409	100 (4 x 25)	grey	280-409	100 (4 x 25
4. 4.4	Staggered jumper 2, from 1 to 2	I <sub>N</sub> 24 A	780-452	100 (4 x 25)	I <sub>N</sub> 24 A	780-452	100 (4 x 25
	insulated. from 1 to 3	I <sub>N</sub> Z4 / (	780-453	100 (4 x 25)	I <sub>N</sub> Z+ / (	780-453	100 (4 x 25
	width 5 mm/0.197 in from 1 to 4		780-454	100 (4 x 25)		780-454	100 (4 x 25
			780-455			780-455	
	from 1 to 5			50 (2 × 25)			50 (2 x 25
	:		:	50 (0 05)		:	50 /0 05
	from 1 to 8		780-458	50 (2 x 25)		780-458	50 (2 x 25
	Push-in type wire jumper 2,	L = 60 mm / 2.362 i		10		62 in <b>249-125</b>	10
F	insulated, 9 A – conductor	L = 110 mm /4.331 ii		10		31 in <b>249-126</b>	10
N //	cross section 0.75 mm <sup>2</sup> /AWG 18	L = 250 mm / 9.843 i	n <b>249-127</b>	10	L = 250 mm/9.8	43 in <b>249-127</b>	10
	Coding pin,						
	for coding of female plugs	orange	769-435	100 (4 x 25)	orange	769-435	100 (4 x 25
	Test plug,						
	with cable 500 mm/1'7.7"						
	2.3 mm/0.091 in Ø	yellow	210-137	50 (5 x 10)	yellow	210-137	50 (5 x 10
222 2	Test plug module,	Application notes a	ind part numbers		Application not	es and part numbers	
	for test using jumper position in	see pages 2.39 - 2	.40		see pages 2.39	- 2.40	
יוון	current bar or cond. wire opening						
	Test plug adapter,	5 mm / 0.197 in wid	е		5 mm / 0.197 in	wide	
	see also pages 2.39 – 2.40		280-404	100 (4 x 25)		280-404	100 (4 x 25
		or test plug 210-13	7 (2.3 mm / 0.091	in Ø)	or test plug 210	)-137 (2.3 mm/0.091 i	in Ø)
în	1-conductor female plug,						
1 1	straight	see page 9.44			see page 9.44		
The state of		angled – cannot be	e used		angled – canno	ot be used	
lto	2-conductor female plug	-					
T. C.	. ,	see page 9.45			see page 9.45		
II.					1 .5		
4							

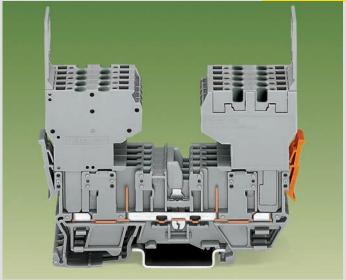
<sup>\*</sup> For further approvals with corresponding ratings see section 15.

# Types of Assembly 4-Pin Receptacle Terminal Blocks and 1-/2-Conductor Female Plugs

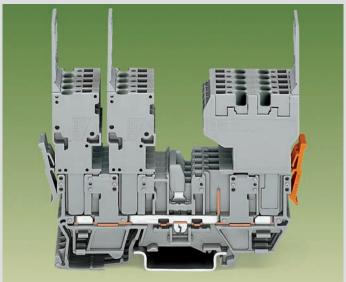




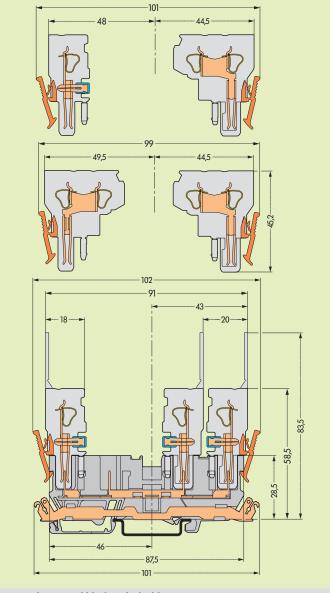
4 x 1-conductor female plugs Commoning possibility of receptacle terminal blocks with jumper contact systems, series 280 and 780, and testing possibility with test plug adapter 280-4..



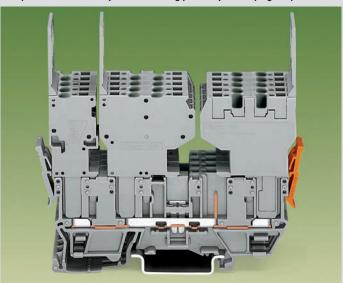
2 x 2-conductor female plugs Commoning possibility of receptacle terminal blocks with jumper contact systems, series 280 and 780, and testing possibility with test plug adapter 280-4...



2 x 1-cond. fem. plugs left
Commoning possibility of receptacle term.
1 x 2-cond. female plug right
blocks w. jumper contact systems, series 280 a. 780,
Also possible the other way round a. testing possibility w. test plug adapter 280-4...



Receptacle terminal block with shield (screen) contact



1-conductor and 2-conductor female plugs left Commoning possibility of 2-conductor female plug right receptacle terminal blocks only with adjacent Also possible the other way round jumpers and alternate jumpers, series 280



# X-COM®-SYSTEM 1-Conductor/1-Pin Receptacle Terminal Blocks with 3 Jumper Positions

0.08 - 4 mm<sup>2</sup> 500 V/6 kV/3 **①** 32 A\*\*

AWG 28 - 12 300/600 V, 10/5 A **9**\(\sqrt{1}\) 300 V, 10 A ((1)

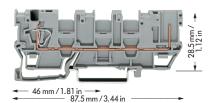
Types of assembly with 1-/2-conductor female plugs

Terminal block width 5 mm / 0.197 in 8 – 9 mm / 0.33 in

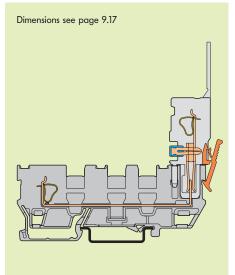
\* 🗫 🍪 CCAKEDA 💖 LR

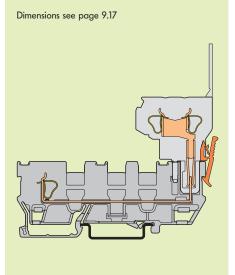
1 500 V = rated voltage 6 kV = rated surge voltage 3 = pollution degree (see also section 15)





Description			ltem No.	Pack. unit pcs
1-conductor/1-pin	receptacle terminal block	1-conductor/1-p	oin receptacle ter	minal block
with 3 jumper pos	itions,	with 3 jumper p	ositions	
suitable for DIN 35	rail acc. to EN 60715	grey	769-214	50
Accessories	Appropriate markir	ng system <b>Mini-W</b>	SB (see section 14	·)
	End and	1.1 mm / 0.043 in t	hick	
	intermediate plate	grey	769-315	100 (4 x 25)
		orange	769-316	100 (4 x 25)
-0110	Screwless			
113	end stop	6 mm/0.236 in w	ide <b>249-116</b>	100 (4 x 25)
		10 mm/0.394 in w	ide <b>249-117</b>	50 (2 x 25)
~ P	Insulation stop 2, white	0.08 - 0.2 mm <sup>2</sup>	769-470	200 strips
0000	5 pcs/strip light grey	0.25 - 0.5 mm <sup>2</sup>	769-471	200 strips
Charles	dark grey	0.75 – 1 mm <sup>2</sup>	769-472	200 strips
	Adjacent jumper, I <sub>N</sub> 24 A	grey	280-402	200 (8 x 25)
77	insulated			
QH	Alternate jumper	grey	280-409	100 (4 x 25
	Staggered jumper 2, from 1 to 2	I <sub>N</sub> 24 A	780-452	100 (4 x 25)
	insulated, from 1 to 3		780-453	100 (4 x 25
	width 5 mm/0.197 in from 1 to 4		780-454	100 (4 x 25)
	from 1 to 5		780-455	50 (2 x 25)
	:		:	
	from 1 to 8		780-458	50 (2 x 25
$\overline{\qquad}$	Push-in type wire jumper 2,	L = 60  mm / 2.362	in <b>249-125</b>	10
	insulated, 9 A – conductor	L = 110  mm / 4.331	in <b>249-126</b>	10
II II	cross section 0.75 mm²/AWG 18	L = 250  mm / 9.843	in <b>249-127</b>	10
	Coding pin,			
	for coding of female plugs	orange	769-435	100 (4 x 25)
	Protective warning marker,			
55666	for 5 terminal blocks,	yellow	280-415	100 (4 x 25)
	fits into screwdriver slot			
	<b>Test plug,</b> w. cable 500 mm/1'7.7"			
	2 mm / 0.079 in Ø	red	210-136	50 (5 x 10)
	2.3 mm/0.091 in Ø	yellow	210-137	50 (5 x 10)
222 2	Test plug module,	Application notes	and part numbers	
	for test using jumper position in	see pages 2.38 -	2.40	
י וון	current bar or cond. wire opening			
	Test plug adapter,	5 mm/0.197 in wi	de	
W	see also pages 2.38 – 2.40		280-404	100 (4 x 25)
IJ		or test plug 210-13	37 (2.3 mm / 0.091	in Ø)
h A	1-conductor female plug,			
	straight or angled	see pages 9.44/9	.46	
- U				
1	2-conductor female plug	0.45		
N. W.		see page 9.45		

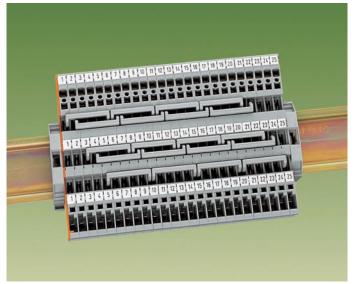




<sup>\*</sup> For further approvals with corresponding ratings see section 15.

# **Applications**







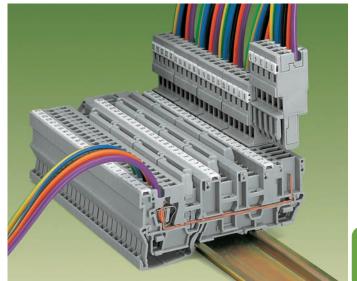
# 1-conductor/1-pin receptacle terminal blocks with 3 jumper positions

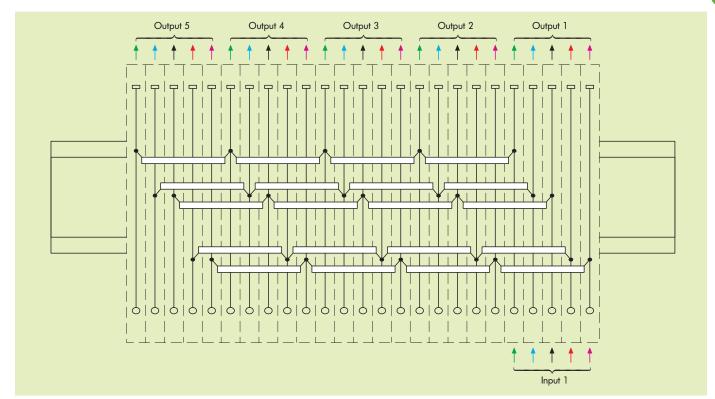
The 3 jumper positions allow up to six jumpering possibilities for staggered jumpers.

The pictures opposite and the wiring scheme demonstrate the supply of a 5-wire input to 5 identical pluggable outputs.

#### Application examples:

- Muliplication of three-phase circuits L1-L2-L3-N-PE with pluggable outputs; for example, use with motors, frequency converters, power units, etc.
- voltage supplies to multiple locations
   ± 15 V, 0 V, + 5 V, + 12 V, + 24 V
- Various wire-to-wire interfacing possibilities







# X-COM®-SYSTEM 1-Conductor/1-Pin and 2-Pin Disconnect Receptacle Terminal Blocks

0.08 - 4 mm<sup>2</sup> 400 V/6 kV/3 **①** 250 V/4 kV/3 **①** 16 A\*\*

AWG 28 - 12 300/600 V, 10/5 A **9**\sqrt{3} 300 V, 10 A @

16 A\*\*
Terminal block width 5 mm / 0.197 in
\$\times 8 - 9 mm / 0.33 in

\* 🗫 @ CCAKEDA 🐨 LR

400 V/6 kV/3 **①** 300 250 V/4 kV/3 **①** 300 16 A\*\*

300/600 V, 10/5 A **N** 300 V, 10 A ®

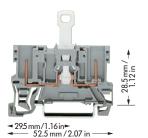
Terminal block width 5 mm / 0.197 in

\* 🗫 🏽 CCAKEDA 💖 LR

400 V = rated voltage
6 kV = rated surge voltage
3 = pollution degree
250 V/4 kV/3 = rated voltage
with shield (screen) contact
(see also section 15)

2 See application notes on page 2.43





Description				Item No.	Pack. unit pcs		Item No.	Pack. unit pcs
1-conductor/1-pi	n and 2-pin disconnet	receptacle	1-cond./1-pin d	lisconnect recepto	icle term. block	2-pin discon	nect receptacle termi	
terminal block			grey	769-232	50	grey	769-222	50
	eld (screen) contact,		1-conductor/1-p	oin disconnect re	eptacle terminal	2-pin discon	nect receptacle termi	nal block with
suitable for DIN 35	rail acc. to EN 60715		block with shield	d (screen) contac	(no picture)	shield (scree	n) contact (no picture)	
			grey	769-233	50	grey	769-223	50
Accessories			Appropriate markinç	g system <b>Mini-W</b>	<b>/SB</b> (see section 14)			
	End and		1.1 mm / 0.043 in	thick		1.1 mm/0.043	3 in thick	
	intermediate plate		grey	769-307	100 (4 x 25)	grey	769-305	100 (4 x 2
			orange	769-308	100 (4 x 25)	orange	769-306	100 (4 x 2
-	Screwless							
	end stop		6 mm/0.236 in w	ride <b>249-116</b>	100 (4 x 25)	6 mm / 0.236	in wide <b>249-116</b>	100 (4 x 2
· /3			10 mm/0.394 in w	ride <b>249-117</b>	50 (2 x 25)	10 mm / 0.394	in wide <b>249-117</b>	50 (2 x 2
~~~~~	Insulation stop <b>Q</b> ,	white	0.08 - 0.2 mm <sup>2</sup>	769-470	200 strips			
0000	5 pcs/strip	light grey	0.25 - 0.5 mm <sup>2</sup>	769-471	200 strips			
		dark grey	0.75 - 1 mm <sup>2</sup>	769-472	200 strips			
	Coding pin,							
	for coding of female p	olugs	orange	769-435	100 (4 x 25)	orange	769-435	100 (4 x 2
	Protective warning r	marker,						
55666	for 5 terminal blocks,		yellow	280-415	100 (4 x 25)			
	fits into screwdriver slo	ot						
	Test plug, w. cable 500	0 mm/1'7.7"						
		′0.079 in Ø	red	210-136	50 (5 x 10)			
	2.3 mm/	′0.091 in Ø	yellow	210-137	50 (5 x 10)	yellow	210-137	50 (5 x 1
În	1-conductor female	plug,						
1 23	straight		see page 9.44			see page 9.44	ļ	
The second								
A	1-conductor female	pluq,						
3	angled		see page 9.46			see page 9.46	•	
T .	· ·		1 0			, 0		
lt <sub>~</sub>	2-conductor female	pluq						
The state of the s		. •	cannot be used			cannot be use	d	
Tr.								
	Disconnect lock,		see also page 7.13	3		see also page	7.13	
	for disconnecting tab of	of	red	709-170	200 (8 x 25)	red	709-170	200 (8 x 2
	disconnect terminal blo	ocks						

Dimensions and types of assembly (see page 9.26)

# 1-Conductor/1-Pin and 2-Pin Disconnect Receptacle Terminal Blocks with 2 Jumper Positions



0.08 – 4 mm<sup>2</sup> 400 V/6 kV/3 **①** 250 V/4 kV/3 **①** 16 A\*\*

AWG 28 - 12 300/600 V, 10/5 A **9\** 300 V, 10 A ®

Terminal block width 5 mm / 0.197 in

8 - 9 mm / 0.33 in

\* 9\( \) @ ((\) | \( \) | \( \) |

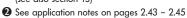
400 V/6 kV/3 **0** 250 V/4 kV/3 **0** 16 A\*\*

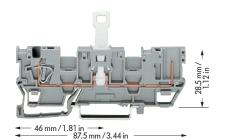
300/600 V, 10/5 A **7\** 300 V, 10 A ®

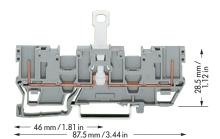
Terminal block width 5 mm / 0.197 in

\* 🗫 @ CCAKETA 💖 LR

■ 400 V = rated voltage 6 kV = rated surge voltage 3 = pollution degree 250 V/4 kV/3 = rated voltage with shield (screen) contact (see also section 15)







Description			Item No.	Pack. unit pcs		ltem No.	Pack. unit pcs	
•	n and 2-pin disconnet receptacle	1-cond./1-pin c	lisconnect recept		2-pin discor	nect receptacle termi		
terminal block		grey	769-212	50	grey	769-202	50	
	eld (screen) contact,			ceptacle terminal	2-pin discor	2-pin disconnect receptacle terminal block with		
suitable for DIN 35	rail acc. to EN 60715	block with shiel	d (screen) contac	t (no picture)	shield (scree	n) contact (no picture)		
		grey	769-213	50	grey	769-203	50	
Accessories		Appropriate marking	g system <b>Mini-V</b>	<b>VSB</b> (see section 14)				
	End and	1.1 mm/0.043 in	thick		1.1 mm/0.04	3 in thick		
	intermediate plate	grey	769-311	100 (4 x 25)	grey	769-309	100 (4 x 25)	
		orange	769-312	100 (4 x 25)	orange	769-310	100 (4 x 25)	
	Separator plate,	1.1 mm/0.043 in	thick		1.1 mm/0.04	3 in thick		
	oversized	orange	769-314	100 (4 x 25)	orange	769-313	100 (4 x 25)	
		-			-			
	Screwless							
111	end stop	6 mm / 0.236 in v	vide <b>249-116</b>	100 (4 x 25)	6 mm/0.236	in wide <b>249-116</b>	100 (4 x 25)	
·		10 mm / 0.394 in v	vide <b>249-117</b>	50 (2 x 25)	10 mm / 0.394	in wide <b>249-117</b>	50 (2 x 25)	
	Insulation stop 2, white	0.08 - 0.2 mm <sup>2</sup>	769-470	200 strips				
00000	5 pcs/strip light grey	0.25 - 0.5 mm <sup>2</sup>	769-471	200 strips				
COL	dark grey	0.75 – 1 mm <sup>2</sup>	769-472	200 strips				
P (P)	Adjacent jumper, I <sub>N</sub> 24 A	grey	280-402	200 (8 x 25)	grey	280-402	200 (8 x 25)	
	insulated	3 17		( ,	3 ,		( ,	
W	Alternate jumper	grey	280-409	100 (4 x 25)	grey	280-409	100 (4 x 25)	
	Staggered jumper 2, from 1 to 2	I <sub>N</sub> 24 A	780-452	100 (4 x 25)	I <sub>N</sub> 24 A	780-452	100 (4 x 25)	
	insulated, from 1 to 3	N	780-453	100 (4 x 25)	IN .	780-453	100 (4 x 25)	
	width 5 mm/0.197 in from 1 to 4		780-454	100 (4 x 25)		780-454	100 (4 x 25)	
	from 1 to 5		780-455	50 (2 x 25)		780-455	50 (2 x 25)	
			:	00 (2 X 20)		:	00 (2 x 20)	
40	from 1 to 8		780-458	50 (2 x 25)		780-458	50 (2 x 25)	
	Coding pin,			- (= 11 = -)		1 2 2 1 2 2		
	for coding of female plugs	orange	769-435	100 (4 x 25)	orange	769-435	100 (4 x 25)	
10000	rer county or remain proge	5. dg5	707 100	100 (1 X 20)	orango	767 166		
	Protective warning marker,							
	for 5 terminal blocks,	yellow	280-415	100 (4 x 25)				
200	fits into screwdriver slot	,						
	<b>Test plug,</b> w. cable 500 mm/1'7.7"							
	2 mm/0.079 in Ø	red	210-136	50 (5 x 10)				
	2.3 mm/0.091 in Ø	vellow	210-137	50 (5 x 10)	yellow	210-137	50 (5 x 10)	
	Test plug module,	5 mm/0.197 in w		00 (0 11 10)	5 mm/0.197		22 (2 11 12)	
	see also pages 2.38 - 2.40		280-404	100 (4 x 25)		280-404	100 (4 × 25)	
Ī		or test plua 210-1	37 (2.3 mm / 0.09)	, ,	or test plug 2	10-137 (2.3 mm / 0.091		
h A	1-conductor female plug,			/		,	<b>/</b>	
4	straight or angled	see pages 9.44/9	2.46		see pages 9.4	14/9.46		
- W W	0 1 . ( )							
1	2-conductor female plug	see page 9.45			see page 9.4	5		
1		Jee page 7.40			see page 7.4			
-47	Disconnect lock, for disconnec-	see also page 7.13	3		see also page	e 7.13		
	ting tab of disconnect term. blocks	red	709-170	200 (8 x 25)	red	709-170	200 (8 x 25)	
D: :				(/			()	
Dimensions a	nd types of assembly (see po	age 9.27)						



# X-COM®-SYSTEM 1-Conductor/1-Pin and 2-Pin Diode and LED Receptacle Terminal Blocks

 $0.08 - 4 \text{ mm}^2$ AWG 28 - 12 Terminal block width 5 mm / 0.197 in Terminal block width 5 mm / 0.197 in □ 8 – 9 mm / 0.33 in

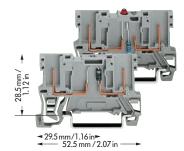
\* 91 @

#### Technical data

Diode

U<sub>N</sub> 250 V; U<sub>RM</sub> 1000 V 300/600 V, 10/5 A **NX** 1 N 4007 – 0.5 A constant current 300 V, 10 A @

LED DC 24 V IF 25 mA max. 300/600 V, 10/5 A 🕦 300 V, 10 A @ **329.5** mm/1.16 in **52.5** mm/2.07 in



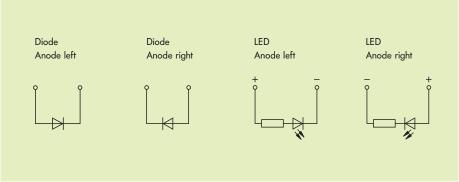
1 For information on use of insulation stops and wire

range, see page	2.43		52.5 mm/ 2.0/ m			32.3 mm / 2.07 m		
Description			ltem No.	Pack. unit pcs		ltem No.	Pack. unit pcs	
1-conductor/1-pin	diode receptacle terminal block,	1-cond./1-pin diode receptacle term. blocks, grey			2-pin diode receptacle terminal blocks, grey			
2-pin diode recept	acle terminal block,	Anode left	769-238/281	<b>-410</b> 100	Anode left	769-228/28	<b>1-410</b> 100	
		Anode right	769-238/281	<b>-411</b> 100	Anode right	769-228/28	<b>1-411</b> 100	
1-conductor/1-pin	LED receptacle terminal block,							
2-pin LED receptor	cle terminal block	1-cond./1-pin	LED receptacle ter	m. blocks, grey	2-pin LED rece	ptacle terminal b	ocks, grey	
		Anode right	769-239/281	<b>-413</b> 100	Anode right	769-229/28	<b>1-413</b> 100	
suitable for DIN 35 r	rail acc. to EN 60715	Anode left	769-239/281	<b>-434</b> 100	Anode left	769-229/28	<b>1-434</b> 100	
Accessories		Appropriate marki	ing system <b>Mini-W</b>	/SB (see section 14)				
	End and	1.1 mm / 0.043 i	n thick		1.1 mm/0.043 ii	n thick		
	intermediate plate	grey	769-307	100 (4 x 25)	grey	769-305	100 (4 x 25)	
•		orange	769-308	100 (4 x 25)	orange	769-306	100 (4 x 25)	
- 1117	Screwless							

Accessories			Appropriate marking	g system <b>//\ini-\</b>	<b>VSB</b> (see section 14)			
	End and		1.1 mm / 0.043 in	thick		1.1 mm/0.043	3 in thick	
	intermediate plate		grey	769-307	100 (4 x 25)	grey	769-305	100 (4 x 25)
			orange	769-308	100 (4 x 25)	orange	769-306	100 (4 x 25)
-0.00	Screwless							
1111	end stop		6 mm/0.236 in w	vide <b>249-116</b>	100 (4 x 25)	6 mm / 0.236	in wide <b>249-116</b>	100 (4 x 25)
P (3)			10 mm/0.394 in w	vide <b>249-117</b>	50 (2 x 25)	10 mm / 0.394	in wide <b>249-117</b>	50 (2 x 25)
	Insulation stop <b>()</b> ,	white	0.08 - 0.2 mm <sup>2</sup>	769-470	200 strips			
00000	5 pcs/strip	light grey	0.25 - 0.5 mm <sup>2</sup>	769-471	200 strips			
Children of the Control of the Contr		dark grey	0.75 - 1 mm <sup>2</sup>	769-472	200 strips			
	Coding pin,							
	for coding of female	plugs	orange	769-435	100 (4 x 25)	orange	769-435	100 (4 x 25)
-	Protective warning	marker,						
10000	for 5 terminal blocks,		yellow	280-415	100 (4 x 25)			
	fits into screwdriver sl	ot						
	Test plug, w. cable 50	0 mm/1'7.7"						
	2 mm	/0.079 in Ø	red	210-136	50 (5 x 10)			
	2.3 mm	/0.091 in Ø	yellow	210-137	50 (5 x 10)	yellow	210-137	50 (5 x 10)
	1-conductor female	plug,						
W P	straight or angled		see pages 9.44/9.46			see pages 9.44/9.46		
U U								
lin.	2-conductor female	plug						
- 1			cannot be used			cannot be use	ed	

Dimensions and types of assembly (see page 9.26)

#### **Connection schemes**



<sup>\*</sup> For further approvals with corresponding ratings see section 15.

# 1-Conductor/1-Pin and 2-Pin Diode and LED Receptacle Terminal Blocks with 2 Jumper Positions



0.08 - 4 mm<sup>2</sup> | AWG 28 - 12

Terminal block width 5 mm / 0.197 in 8 – 9 mm / 0.33 in

\* == 6

\* 91 6

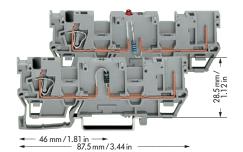
#### Technical data

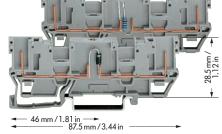
Diode

 $U_N$  250 V;  $U_{RM}$  1000 V 300/600 V, 10/5 A **9X** 1 N 4007 – 0.5 A constant current 300 V, 10 A ®

LED DC 24 V IF 25 mA max.

300/600 V, 10/5 A **N** 300 V, 10 A **©** 





Terminal block width 5 mm / 0.197 in

1 See application notes on pages 2.43 – 2.45

Description			Item No.	Pack. unit pcs		Item No.	Pack. unit pcs
1-conductor/1-pi	n diode receptacle terminal block,	1-cond./1-pin dio	de receptacle ter	m. blocks, grey	2-pin diode re	ceptacle terminal bloc	<b>ks,</b> grey
2-pin diode recep	otacle terminal block,	Anode left	769-218/281-4	<b>410</b> 50	Anode left	769-208/281-41	<b>o</b> 50
		Anode right	769-218/281-4	<b>411</b> 50	Anode right	769-208/281-41	<b>1</b> 50
1-conductor/1-pi	n LED receptacle terminal block,						
2-pin LED receptor	acle terminal block	1-cond./1-pin LED	receptacle term	. blocks, grey	2-pin LED rece	ptacle terminal blocks	
		Anode right	769-219/281-4	<b>413</b> 50	Anode right	769-209/281-41	<b>3</b> 50
suitable for DIN 35	rail acc. to EN 60715	Anode left	769-219/281-4	<b>434</b> 50	Anode left	769-209/281-43	<b>4</b> 50
Accessories	,	Appropriate marking s	system <b>Mini-W</b> S	<b>B</b> (see section 14)			
	End and	1.1 mm / 0.043 in thi	ick		1.1 mm / 0.043 ir	n thick	
	intermediate plate	grey	769-311	100 (4 x 25)	grey	769-309	100 (4 x 25)
		orange	769-312	100 (4 × 25)	orange	769-310	100 (4 x 25)
	Separator plate,	1.1 mm / 0.043 in thi	ick		1.1 mm / 0.043 ir	n thick	
	oversized	orange	769-314	100 (4 × 25)	orange	769-313	100 (4 x 25)
	0.1013.200			( ==,	9-		( ==)
	Screwless						
111	end stop	6 mm/0.236 in wide	e <b>249-116</b>	100 (4 x 25)	6 mm / 0.236 in	wide <b>249-116</b>	100 (4 x 25
· 4		10 mm / 0.394 in wide	e <b>249-117</b>	50 (2 x 25)	10 mm / 0.394 in	wide <b>249-117</b>	50 (2 × 25
	Insulation stop 2, white	0.08 - 0.2 mm <sup>2</sup>	769-470	200 strips			,
00000	5 pcs/strip light grey	0.25 - 0.5 mm <sup>2</sup>	769-471	200 strips			
COL	dark grey	0.75 - 1 mm <sup>2</sup>	769-472	200 strips			
	Adjacent jumper, I <sub>N</sub> 24 A	grey	280-402	200 (8 x 25)	grey	280-402	200 (8 x 25
The second second	insulated	0 ,		, ,	0 ,		,
(A)	Alternate jumper	grey	280-409	100 (4 × 25)	grey	280-409	100 (4 x 25
	Staggered jumper 2, from 1 to 2	I <sub>N</sub> 24 A	780-452	100 (4 x 25)	I <sub>N</sub> 24 A	780-452	100 (4 × 25
	insulated, from 1 to 3	N	780-453	100 (4 × 25)	IN .	780-453	100 (4 × 25
	width 5 mm / 0.197 in from 1 to 4		780-454	100 (4 × 25)		780-454	100 (4 × 25
	from 1 to 5		780-455	50 (2 × 25)		780-455	50 (2 × 25
	:		:			:	
40	from 1 to 8		780-458	50 (2 × 25)		780-458	50 (2 x 25
	Coding pin,						
	for coding of female plugs	orange	769-435	100 (4 x 25)	orange	769-435	100 (4 x 25
	3	0		, ,	<u> </u>		,
-	Protective warning marker,						
I I	for 5 terminal blocks,	yellow	280-415	100 (4 × 25)			
	fits into screwdriver slot			,			
	<b>Test plug,</b> w. cable 500 mm/1'7.7"						
	2 mm / 0.079 in Ø	red	210-136	50 (5 x 10)			
	2.3 mm / 0.091 in Ø	yellow	210-137	50 (5 x 10)	yellow	210-137	50 (5 x 10)
	Test plug adapter,	5 mm/0.197 in wide	)		5 mm/0.197 in v	vide	· · ·
	see pages 2.38 -2.40		280-404	100 (4 × 25)		280-404	100 (4 × 25)
T		or test plug 210-137	(2.3 mm / 0.091 in		or test plug 210-	137 (2.3 mm/0.091 in Q	
h A	1-conductor female plug,						
P	straight or angled	see pages 9.44/9.4	6		see pages 9.44/	9.46	
lts.	2-conductor female plug						
100	_ semestic remain plog	see page 9.45			see page 9.45		
A.							
D: :							
Dimensions a	nd types of assembly (see pa	ge 9.27)					

<sup>\*</sup> For further approvals with corresponding ratings see section 15.



# Types of Assembly 1-Conductor/1-Pin and 2-Pin Receptable Terminal Blocks and 1-Conductor Female Plugs



1-conductor female plug

The commoning of disconnect receptacle terminal blocks is not possible



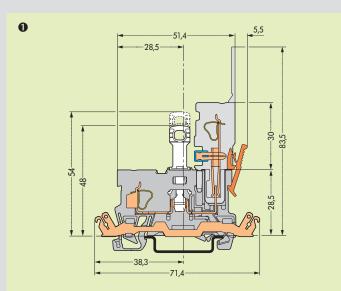
2 x 1-conductor female plugs

The commoning of disconnect receptacle terminal blocks is not possible



1-conductor female plug

The commoning of diode receptacle terminal blocks is not possible



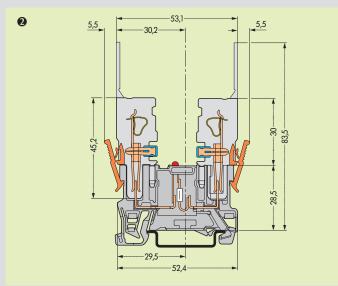
Disconnect receptacle terminal block with shield (screen) contact

Please see also page 9.13 for further dimensions.



2 x 1-conductor female plugs

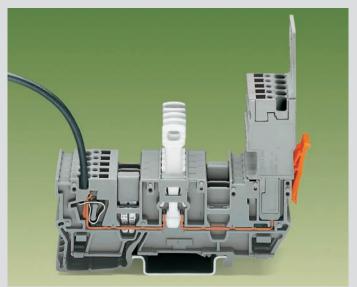
The commoning of LED receptacle terminal blocks is not possible



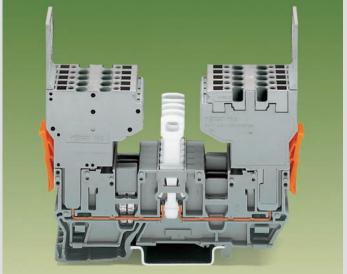
LED receptacle terminal blockPlease see also page 9.15 for further dimensions

# Types of Assembly 1-Conductor/1-Pin and 2-Pin Receptacle Terminal Blocks with 2 Jumper Positions and 1-/2-Conductor Female Plugs



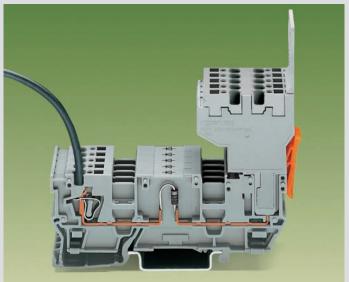


1-conductor female plug Commoning possibility of disconnect receptacle terminal block with jumper contact systems, series 280 and 780, and testing possibility with test plug adapter 280-4...

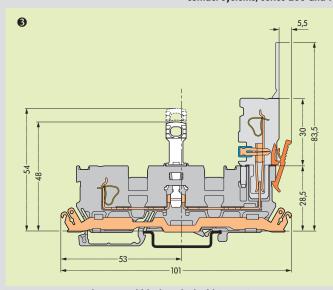


2-conductor female plug, left 2-conductor female plug, right

Commoning possibility of disconnect receptacle terminal blocks with jumper contact systems, series 280 and 780



Commoning possibility of disconnect receptacle terminal blocks with jumper contact systems, series 280 and 780, and testing possibility with test plug adapter 280-4...



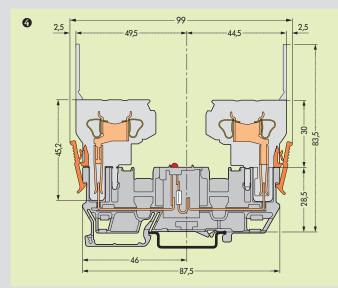
Disconnect receptacle terminal block with shield (screen) contact

3 Please see also page 9.17 for further dimensions.



2-conductor female plug, left 1-conductor female plug, right Vice versa possible too

Commoning possibility of LED receptacle term. bl. w. jumper contact systems, series 280 and 780, and testing possibility w. test plug adapter 280-4...



**LED receptacle terminal block**Please see also page 9.19 for further dimensions



# X-COM®-SYSTEM Receptacle Terminal Blocks with 2 Jumper Positions Used for Pluggable Modules, Series 280 and 281

0.08 - 4 mm<sup>2</sup> 400 V/6 kV/3 **0** 16 A\*\*

AWG 28 - 12 300/600 V, 10/5 A **9** 300 V, 10 A ®

Terminal block width 5 mm / 0.197 in  $\boxed{\phantom{0}}$  8 - 9 mm / 0.33 in

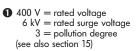
\* 🗫 @ CCAKEDA 🐨 LR

400 V/6 kV/3 **①** 16 A\*\*

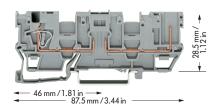
300/600 V, 10/5 A **A** 300 V, 10 A ®

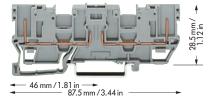
Terminal block width 5 mm / 0.197 in

\* 🗫 🏽 CCAKEDA 💖 LR



2 See application notes on pages 2.43 – 2.45

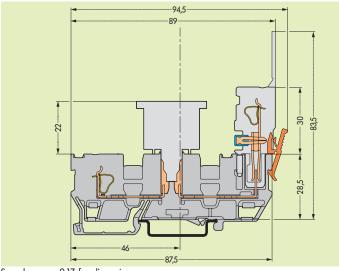


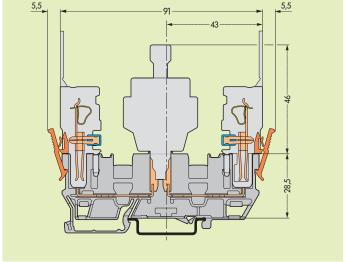


Description	•		Item No.	Pack. unit pcs		ltem No.	Pack. unit pcs
•	n receptacle terminal block	•	•	terminal block, grey		t <mark>acle terminal block,</mark> g	,
and		2 poles	769-181	50	2 poles	769-161	50
2-pin receptacle to							
suitable for DIN 35	rail acc. to EN 60715						
Accessories			•	-WSB (see section 14)			
	End and	1.1 mm / 0.043 in th	ick		1.1 mm/0.04	3 in thick	
	intermediate plate	grey	769-311	100 (4 x 25)	grey	769-309	100 (4 x 25)
		orange	769-312	100 (4 x 25)	orange	769-310	100 (4 x 25)
	Separator plate,	1.1 mm / 0.043 in th			1.1 mm / 0.04		
	oversized	orange	769-314	100 (4 x 25)	orange	769-313	100 (4 x 25)
- CITE	Screwless						
1 1	end stop	6 mm/0.236 in wid		100 (4 x 25)		in wide <b>249-116</b>	100 (4 x 25
		10 mm/0.394 in wid	-	50 (2 x 25)	10 mm / 0.394	in wide <b>249-117</b>	50 (2 x 25
~ P	<b>Insulation stop 2,</b> white	0.08 - 0.2 mm <sup>2</sup>	769-470	200 strips			
0000	5 pcs/strip light grey	0.25 - 0.5 mm <sup>2</sup>	769-471	200 strips			
(III)	dark grey	0.75 - 1 mm <sup>2</sup>	769-472	200 strips			
	Adjacent jumper, I <sub>N</sub> 24 A	grey	280-402	200 (8 x 25)	grey	280-402	200 (8 x 25)
	insulated						
ipi    II	Alternate jumper	grey	280-409	100 (4 x 25)	grey	280-409	100 (4 x 25)
	Staggered jumper ②, from 1 to 2	I <sub>N</sub> 24 A	780-452	100 (4 x 25)	I <sub>N</sub> 24 A	780-452	100 (4 x 25)
	insulated, from 1 to 3		780-453	100 (4 x 25)		780-453	100 (4 x 25)
	width 5 mm / 0.197 in from 1 to 4		780-454	100 (4 x 25)		780-454	100 (4 x 25)
	from 1 to 5		780-455	50 (2 x 25)		780-455	50 (2 x 25)
	:		:			:	
All	from 1 to 8		780-458	50 (2 x 25)		780-458	50 (2 x 25)
	Push-in type wire jumper ②,	L = 60 mm/2.362 ir	249-125	10	L = 60 mm/2	2.362 in <b>249-125</b>	10
<u> </u>	insulated, 9 A – conductor	L = 110 mm /4.331 ir	249-126	10	L = 110  mm/4	4.331 in <b>249-126</b>	10
T U	cross section 0.75 mm <sup>2</sup> /AWG 18	L = 250 mm / 9.843 ir	249-127	10	L = 250  mm/9	9.843 in <b>249-127</b>	10
	Coding pin,						
	for coding of female plugs	orange	769-435	100 (4 x 25)	orange	769-435	100 (4 x 25
-	Protective warning marker,						
	for 5 terminal blocks,	yellow	280-415	100 (4 x 25)			
	fits into screwdriver slot						
	<b>Test plug,</b> w. cable 500 mm/1'7.7"						
	2 mm / 0.079 in Ø	red	210-136	50 (5 x 10)			
	2.3 mm / 0.091 in Ø	yellow	210-137	50 (5 x 10)	yellow	210-137	50 (5 x 10)
Ît	1-conductor female plug,						
1	straight	see page 9.44			see page 9.4	4	
ľ							
A	1-conductor female plug,						
*	angled	see page 9.46			see page 9.4	6	
T							
lia.	2-conductor female plug						
The state of the s		cannot be used			cannot be use	ed	
II.							
-							

# Types of Assembly with 1-Conductor Female Plugs and Selection of Pluggable Modules (see also Full Line Catalog W4, Volume 3)







See also page 9.17 for dimensions

See also page 9.19 for dimensions









Open side of term. block		Pack. unit pcs	Open side of term. block	Item No.	Pack. unit pcs	Open side of term. block	Item Pac No. pcs	k. unit
Fuse plug, 5 mm / 0.197	in wide,		Diode module, 5 mm/0	0.197 in wide,		LED modules, 5 mm/0.	197 in wide,	
	with soldered miniature fuse		+	Diode 1N 4007 280-801/281		+	with red LED	
						DC 24 V	280-801/281-413	100
250 mA FF	280-850	100				DC 48 V	280-801/281-414	100
500 mA FF	280-852	100	Diode module, 5 mm/0	0.197 in wide,		LED modules, 5 mm/0.	197 in wide,	
1 A FF	280-854	100		Diode 1N 4007,	as a recovery		with red LED	
2 A FF	280-856	100	++	diode, LED addi	tionally	~		
Fuse plug, 5 mm / 0.197			DC 24 V	280-801/281		AC/DC 24 V	280-801/281-415	
	additionally with	LED,	DC 48 V	280-801/281	I- <b>421</b> 100	AC/DC 48 V	280-801/281-416	100
	DC 15 – 30 V					Neon lamp modules, 5	mm / 0.197 in wide,	
Residual current in case of defective fuse LED 5 – 20 mA						~		
250 mA FF	280-850/281-4	<b>113</b> 100				AC/DC 120 V	280-801/281-418	100
500 mA FF	280-852/281-4	<b>113</b> 100				AC/DC 230 V	280-801/281-417	100
1 A FF	280-854/281-4	<b>113</b> 100						
2 A FF	280-856/281-4	<b>113</b> 100						
Fuse plug with pull-tab, 6 mm/0.236 in wide,								
for miniature metric fuse 5 x 20 mm and 5 x 25 mm								
	281-511	50						
<del> </del>	LED (self assembl	y)						
	281-512	50						
Fuse plug with pull-tab	Fuse plug with pull-tab, 6 mm/0.236 in wide,			receptacle term	width		ചി	

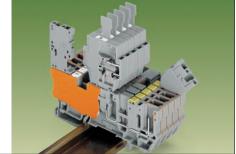
Residual current in case of defective fuse LED 5 - 20 mA, neon lamp < 0.4 mA



additionally with LED AC/DC 24 V 281-512/281-501 50 Use in both switching directions Neon lamps AC/DC 120 V 281-512/281-418

AC/DC 230 V 281-512/281-417 blocks for fuse plugs requires that the width of the fuse plugs (6 mm/0.236 in) compared to that of the terminal blocks (5 mm/0.197 in) be compensated for by using intermediate plates (1.1 mm/0.043 in).

The use of intermediate plates requires adjacent jumpers from series 280 to be used when commoning adjacent terminal blocks.





# X-COM®-SYSTEM Receptacle Terminal Blocks with 2 Jumper Positions for Pluggable Modules, Series 286 (Relay Modules, Optocoupler Modules etc.)

0.08 - 4 mm<sup>2</sup> 400 V/6 kV/3 **0** 16 A\*\*

AWG 28 - 12 300/600 V, 10/5 A **9** 300 V, 10 A ®

Terminal block width 5 mm / 0.197 in  $\boxed{\phantom{0}}$  8 - 9 mm / 0.33 in

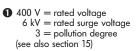
\* • •

400 V/6 kV/3 **①** 16 A\*\*

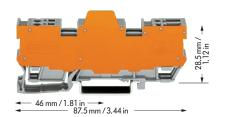
300/600 V, 10/5 A **%** 300 V, 10 A ®

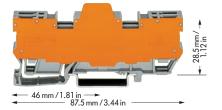
Terminal block width 5 mm / 0.197 in

\* 🗫 🏵 CCAKEDA 💖 LR



2 See application notes on pages 2.43 – 2.45



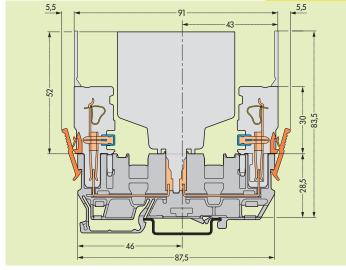


Description				Item No.	Pack. unit pcs		Item No.	Pack. unit pcs
1-conductor /1-pin receptacle terminal block			1-cond./1-pin re	ceptacle terminal bl	ocks, grey	2-pin recepto	icle terminal blocks,	grey
and		width	with orange sep	arator plate		with orange	separator plate	
2-pin receptacle	terminal block,	11.1 mm	4 poles	769-182/769-31	<b>4</b> 10	4 poles	769-162/769	<b>313</b> 10
suitable for DIN 35	rail acc. to EN 60715	16.1 mm	6 poles	769-183/769-31	<b>4</b> 5	6 poles	769-163/769	· <b>313</b> 5
		21.1 mm	8 poles	769-184/769-31	<b>4</b> 5	8 poles	769-164/769	<b>313</b> 5
		26.1 mm	10 poles	769-185/769-31	<b>4</b> 5	10 poles	769-165/769	· <b>313</b> 5
Accessories				system Mini-WSB	(see section 14)			
	End and		1.1 mm / 0.043 in the			1.1 mm / 0.043		
	intermediate plate		grey	769-311	100 (4 x 25)	grey	769-309	100 (4 x 25
			orange	769-312	100 (4 × 25)	orange	769-310	100 (4 x 25
	Separator plate,		1.1 mm / 0.043 in the			1.1 mm / 0.043		
	oversized		orange	769-314	100 (4 × 25)	orange	769-313	100 (4 x 25
OTTO	Screwless							
	end stop		6 mm / 0.236 in wid		100 (4 x 25)		n wide <b>249-116</b>	100 (4 x 25
			10 mm / 0.394 in wid		50 (2 x 25)	10 mm / 0.394 i	n wide <b>249-117</b>	50 (2 x 25
	Insulation stop <b>Q</b> ,	white	0.08 - 0.2 mm <sup>2</sup>	769-470	200 strips			
00000	5 pcs/strip	light grey	0.25 - 0.5 mm <sup>2</sup>	769-471	200 strips			
Children of the Control of the Contr		dark grey	0.75 – 1 mm²	769-472	200 strips			
	Adjacent jumper,	I <sub>N</sub> 24 A	grey	280-402	200 (8 x 25)	grey	280-402	200 (8 x 25
	insulated							
() ()	Alternate jumper		grey	280-409	100 (4 x 25)	grey	280-409	100 (4 x 25
	Staggered jumper 2	, from 1 to 2	I <sub>N</sub> 24 A	780-452	100 (4 x 25)	I <sub>N</sub> 24 A	780-452	100 (4 x 25
	insulated,	from 1 to 3		780-453	100 (4 x 25)		780-453	100 (4 x 25
	width 5 mm / 0.197 in	from 1 to 4		780-454	100 (4 x 25)		780-454	100 (4 x 25
		from 1 to 5		780-455	50 (2 x 25)		780-455	50 (2 x 25
M db		:		:			:	
40		from 1 to 8		780-458	50 (2 x 25)		780-458	50 (2 x 25
	Push-in type wire j	jumper <b>②</b> ,	L = 60 mm/2.362 i	in <b>249-125</b>	10	L = 60  mm/2.	362 in <b>249-125</b>	10
<u> </u>	insulated, 9 A - cond	ductor	L = 110  mm / 4.331  i	in <b>249-126</b>	10	L = 110  mm / 4.	331 in <b>249-126</b>	10
T U	cross section 0.75 mm	n²/AWG 18	L = 250 mm / 9.843 i	in <b>249-127</b>	10	L = 250  mm / 9.	843 in <b>249-127</b>	10
	Coding pin,							
	for coding of female	plugs	orange	769-435	100 (4 x 25)	orange	769-435	100 (4 x 25
	Protective warning	marker,						
	for 5 terminal blocks	,	yellow	280-415	100 (4 x 25)			
	fits into screwdriver s							
	Test plug, w. cable 5	500 mm/1'7.7"						
		n/0.079 in Ø	red	210-136	50 (5 x 10)			
	2.3 mm	n/0.091 in Ø	yellow	210-137	50 (5 x 10)	yellow	210-137	50 (5 x 10
h A	1-conductor female	e plug,						
	straight or angled		see pages 9.44/9.4	46		see pages 9.44	4/9.46	
T T								
1	2-conductor female	e plug						
J.			cannot be used			cannot be use	d	
II.								

# Types of Assembly with 1-Conductor Female Plugs and Selection of Pluggable Modules (see also Full Line Catalog W4, Volume 3)







See also pages 9.17 and 9.19 for dimensions







	Item Pack. unit		Item Pack. unit		Item Pack. unit
A1 13	Switching relay module	A1 7 11	Pulse relay modules,	A11	Optocoupler module
+ 100	286-364	Al Liz	<b>286-570</b> 230 V AC 1	+ —   _   — — +	Input 24 V DC,
本	24 V DC,	→ H → −i3	<b>286-571</b> 24 V DC 1	A <sup>2</sup> → ▼	Output 24 V DC / 500 mA
A2 ]     1	1 make contact	A2 + \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	1 break contact,	A2     \\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	<b>286-752</b> 1
^2 <u>14</u>	Module width 10 mm	Ã2	1 make contact		Module width 15 mm
A1 NA	Switching relay module		Module width 20 mm		
+ 111	<b>286-304</b> 1	A1 +7 4		<sup>A1</sup> -□₁ □!	Optocoupler module
<b>本上</b>	24 V DC,	A1 + H H + + + + + + + + + + + + + + + +		T     +	Input 24 V DC,
A2 $A2$ $A2$ $A2$ $A2$	1 change-over contact	本 本 中 二 13		A <sup>2</sup> <sub>1</sub> ¥ <b>≠</b> (	Output 24 V DC / 4 A
<u>^</u> 2	Module width 15 mm	A2 1 14		A2 1 1 1 2 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	<b>286-723</b>
A1	Switching relay module	<u>~</u> 2		- <del>+Kl</del> , ——	Module width 15 mm
	<b>286-508</b> 1		- "		
A2 112	230 V AC/DC,	+24V	Current flow	A1	Optocoupler module
A2 12	1 change-over contact	Out	monitoring module	+	Input 24 V DC,
~	Module width 15 mm	AC OUT	24 V AC	A <sup>2</sup> ¬ ¥ <b>=</b> (  5   ★     -2	Output 230 V AC / 50 mA-1A
12	Switching relay module	o put ov	80 mA – 6 A		<b>286-734</b> 1
A1 H	<b>286-312</b> 1		<b>286-661</b> 1	- <del>-•K1</del> ,	Module width 15 mm
本	24 V DC,		Module width 20 mm		7
A2	2 change-over contacts  Module width 20 mm			–+UB	Temperature transduce modules with wire break
12 — — — — — — — — — — — — — — — — — — —	Switching relay module			/ -out	controlling (4-20 mA),
Г <sub>А1</sub>	286-516			ERROR	Thermocouple J: 0-750 °C
14	230 V AC.			-0V	<b>286-867</b>
<b>→</b>	2 change-over contacts				Thermocouple K: 0-1000 °C
A2	Module width 20 mm		Transient suppression		<b>286-868</b> 1
12 — 11	Switching relay module	Lour	module		Module width 20 mm
A1 - HD - 13	<b>286-336</b> 1	N TO THE PART N	230 V DC ± 10 %		Widdle Wall 20 Hill
A2 A	24 V DC. 2 break contacts	— 4\BT	286-842		
23 21	and 2 make contacts	PE PE	Module width 25 mm		Temperature transducer
24\22	Module width 25 mm			-+24V	modules
A1 N 12	Switching relay module	LIN + LOUT	Transient suppression	OUT	from -30 °C to +150 °C (PT 100)
A2 11	<b>286-375</b> 24 V DC 1	4 4 ··	module	U,I LOV	<b>286-862/150-030</b> 1
$3\overline{2}$ $14$ $22$	<b>286-578</b> 110/120 V AC 1	N T T N	230 V AC	vv	from 0 °C to + 300 °C (PT 100)
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	<b>286-579</b> 230 V AC 1		<b>286-835</b> 1		<b>286-862/000-300</b> 1
41 44	4 change-over contacts	PE PE	Module width 15 mm	for PT 100 and	from 0 °C to + 100 °C (PT 1000)
	Module width 35 mm		completely with special	PT 1000 elements	<b>286-875</b> 1
			receptacle terminal block		Module width 20 mm

# X-COM®-SYSTEM

# 1-Conductor/1-Conductor Receptacle Terminal Blocks with 2 Jumper Positions for Pluggable Modules (Fuse Plugs, Relay Modules, Optocoupler Modules etc.)

0.08 - 4 mm<sup>2</sup> 400 V/6 kV/3 **①** 16 A\*\* AWG 28 - 12 300/600 V, 10/5 A **9** 300 V, 10 A ® 0.08 - 4 mm<sup>2</sup> 400 V/6 kV/3 **0** 16 A\*\* AWG 28 - 12 300/600 V, 10/5 A **%** 300 V, 10 A ®

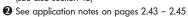
Terminal block width 5 mm / 0.197 in 8 = 9 mm / 0.33 in

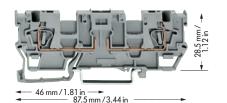
\* • • •

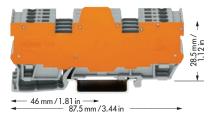
Terminal block width 5 mm / 0.197 in 8 – 9 mm / 0.33 in

\* 91 6

■ 400 V = rated voltage
 6 kV = rated surge voltage
 3 = pollution degree
 (see also section 15)



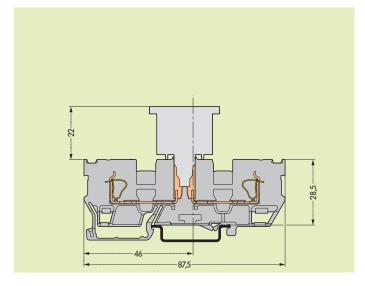


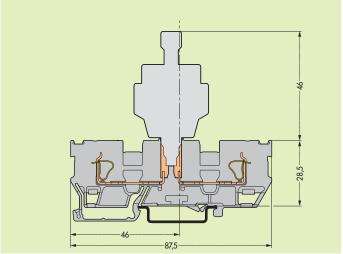


Description			Item No.	Pack. unit pcs		ltem No.	Pack. unit pcs
	onductor receptacle terminal block		conductor recepto	icle terminal			
and		<b>block,</b> grey					
	nductor receptacle terminal block	2 poles	769-191	50		nductor receptacle to	erminal
for pluggable mo	•				blocks for plugga	,	
suitable for DIN 35	rail acc. to EN 60715				with orange sepa	•	
						769-192/769-319	
					•	769-193/769-319	
					8 poles, 21.1 mm		
					10 poles, 26.1 mm	769-195/769-319	5
Accessories		Appropriate marking	g system <b>Mini-W</b>	/SB (see section 14)			
	End and	1.1 mm / 0.043 in	thick		1.1 mm / 0.043 in th	ick	
	intermediate plate	grey	769-317	100 (4 x 25)	grey	769-317	100 (4 x 2
		orange	769-318	100 (4 x 25)	orange	769-318	100 (4 x 2
	Separator plate,	1.1 mm / 0.043 in	thick		1.1 mm / 0.043 in th		
	oversized	orange	769-319	100 (4 x 25)	orange	769-319	100 (4 x 2
	Screwless						
1 11	end stop	6 mm / 0.236 in w	vide <b>249-116</b>	100 (4 x 25)	6 mm / 0.236 in wid	e <b>249-116</b>	100 (4 x
P		10 mm / 0.394 in w	vide <b>249-117</b>	50 (2 x 25)	10 mm / 0.394 in wid	e <b>249-117</b>	50 (2 x 1
~ M	<b>Insulation stop 2,</b> white	0.08 - 0.2 mm <sup>2</sup>	769-470	200 strips	0.08 - 0.2 mm <sup>2</sup>	769-470	200 strips
0000	5 pcs/strip light grey	0.25 - 0.5 mm <sup>2</sup>	769-471	200 strips	0.25 - 0.5 mm <sup>2</sup>	769-471	200 strips
COLUM	dark grey	0.75 – 1 mm <sup>2</sup>	769-472	200 strips	0.75 – 1 mm <sup>2</sup>	769-472	200 strips
	Adjacent jumper, $I_N 24 A$	grey	280-402	200 (8 x 25)	grey	280-402	200 (8 x 2
	insulated						
thr (1 f)	Alternate jumper	grey	280-409	100 (4 x 25)	grey	280-409	100 (4 x 2
	Staggered jumper <b>2</b> , from 1 to 2	I <sub>N</sub> 24 A	780-452	100 (4 x 25)	I <sub>N</sub> 24 A	780-452	100 (4 x 2
	insulated, from 1 to 3		780-453	100 (4 x 25)		780-453	100 (4 x 2
	width 5 mm / 0.197 in from 1 to 4		780-454	100 (4 x 25)		780-454	100 (4 x 2
in III	from 1 to 5		780-455	50 (2 x 25)		780-455	50 (2 x 2
40	:		:			:	
	from 1 to 8		780-458	50 (2 x 25)		780-458	50 (2 x 2
	Push-in type wire jumper 2,	L = 60 mm/2.362		10	L = 60 mm / 2.362 ir		10
L	insulated, 9 A – conductor	L = 110  mm / 4.331		10	L = 110  mm / 4.331  ir		10
ll //	cross section 0.75 mm <sup>2</sup> /AWG 18	L = 250 mm / 9.843	in <b>249-127</b>	10	L = 250 mm / 9.843 ir	249-127	10
-	Protective warning marker,						
55000	for 5 terminal blocks,	yellow	280-415	100 (4 x 25)	yellow	280-415	100 (4 x 2
	fits into screwdriver slot						
	<b>Test plug,</b> w. cable 500 mm/1'7.7"			50 (5 50)			50 /5
	2 mm / 0.079 in Ø	red	210-136	50 (5 x 10)	red	210-136	50 (5 x
	2.3 mm/0.091 in Ø	yellow	210-137	50 (5 x 10)	yellow	210-137	50 (5 x 1

# Types of Assembly with Selection of Pluggable Modules (see also Full Line Catalog W4, Volume 3)

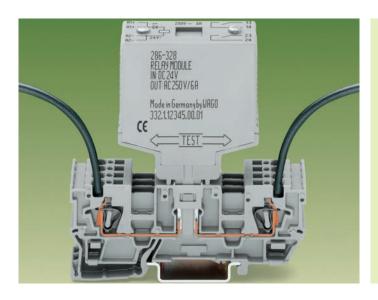


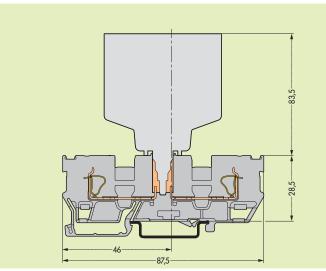
















Electrical data are determined by the electronic components.



## X-COM®-SYSTEM 1-Conductor/1-Pin Double Deck Receptacle Terminal Blocks Series 870

0.08 – **2.5** mm<sup>2</sup>/4 mm<sup>2</sup>"f-st" 500 V/6 kV/3 **①** 16 A

AWG 28 - 12 300/600 V, 20/5 A

0.08 **− 2.5** mm²/4 mm²"f-st" | AWG 28 − 12 500 V/6 kV/3 **①** | 300/600 V, 16 A | 20/5 A

Terminal block width 5 mm / 0.197 in 6 – 7 mm / 0.26 in

\* c931 us CCAKEDA 🐨 GL LR

Terminal block width 5 mm / 0.197 in 6 – 7 mm / 0.26 in

\* cSA CCAKEDA 💝 GL LR

You can find double deck terminal blocks of series 870

- 1 500 V = rated voltage 6 kV = rated surge voltage 3 = pollution degree (see also section 15)
- 2 Suitable for Ex i applications
- 3 See application notes on page 2.43







**→** 70 mm / 2.76 in →

Description				ltem No.	Pack. unit pcs		ltem No.	Pack. unit
-cond./1-pin dou	ble deck receptacle term	inal block,	Through/through	terminal blocks,		2-conductor/2-p	in through termin	al block,
uitable for DIN 35	rail Printing 1st lev.	2 <sup>nd</sup> lev.	housing color grey	/		internal commonir	ng, housing color gi	·ey,
	_	-	L/L	870-101	50	conductor entry p	osition colored in v	olet
	blue	-	N/L	870-102	50	L	870-108	50
	-	blue	L/N	870-103	50			
			housing color blue	•		2-conductor/2-p	in through termin	al block,
	-	-	N/N	870-104 🕗	50	internal commonir	ng, housing color bl	ue,
						conductor entry p	osition colored in v	olet
						N	870-109	50
Accessories		Anni	ropriate marking syst	em WMR/Mini	-WSB (see section	. 14)		
-10003301103		7,000			(see seemon			
	End and		1 mm/0.039 in th			1 mm/0.039 in th		
	intermediate plate		grey	870-118	100 (4 x 25)	grey	870-118	100 (4 x
			orange	870-119	100 (4 x 25)	orange	870-119	100 (4 x
A0000	Insulation stop 🕄,	white	0.08 - 0.2 mm <sup>2</sup>	280-470	200 strips	0.08 - 0.2 mm <sup>2</sup>	280-470	200 strip
09000	5 pcs/strip	light grey	0.25 - 0.5 mm <sup>2</sup>	280-471	200 strips	0.25 - 0.5 mm <sup>2</sup>	280-471	200 strip
		dark grey	0.75 – 1 mm <sup>2</sup>	280-472	200 strips	0.75 – 1 mm²	280-472	200 strij
	Push-in type jumper	bars,	2-way	870-402	200 (8 x 25)	2-way	870-402	200 (8 x
	light grey, insulated,		3-way	870-403	200 (8 x 25)	3-way	870-403	200 (8 x
	I <sub>N</sub> 18 A		4-way	870-404	200 (8 x 25)	4-way	870-404	200 (8 x
			5-way	870-405	100 (4 x 25)	5-way	870-405	100 (4 x
() () w			:	:		:	:	
			10-way	870-410	100 (4 x 25)	10-way	870-410	100 (4 x
	Push-in type jumper	bars,						
	light grey, insulated,		from 1 to 3	870-433	200 (8 x 25)	from 1 to 3	870-433	200 (8 x
	I <sub>N</sub> 18 A		from 1 to 4	870-434	200 (8 x 25)	from 1 to 4	870-434	200 (8 x
munny			from 1 to 5	870-435	100 (4 x 25)	from 1 to 5	870-435	100 (4 x
U			:	:		:	:	
			from 1 to 10	870-440	100 (4 x 25)	from 1 to 10	870-440	100 (4 x
MAGO YEN NE	WAGO WMB multi-	_						
1(1)3(4)4(4)	system, fits in all minic	ature WSB	see section 14			see section 14		
Harts of Magazine and Managar.	receptacles							
	Miniature WSB quick							
	card, 10 strips with 10		see section 14			see section 14		
CHARLESTON	each, white with black							
-	1-connector female	plug,						
	straight		see page 9.44			see page 9.44		
1								
<u> </u>	1-connector female	plug,						
	1-connector female   angled	plug,	see page 9.46			see page 9.46		
<u> </u>	angled		see page 9.46			see page 9.46		
<u> </u>			see page 9.46			see page 9.46		

<sup>\*</sup> For further approvals with corresponding ratings see section 15.



0.08 **– 2.5** mm²/4 mm² "f-st" | AWG 28 – 12 500 V/6 kV/3 **①** | 300/600 V, 16 A | 20/5 A

Terminal block width 5 mm / 0.197 in \_\_\_\_ 6 − 7 mm / 0.26 in

\* calus CCAKEDA 💝 GL LR

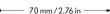
0.08 - 2.5 mm<sup>2</sup>/4 mm<sup>2</sup>"f-st" | AWG 28 - 12

Terminal block width 5 mm / 0.197 in \_\_\_\_ 6 - 7 mm / 0.26 in

\* c 🗫 us CCAKEDA 🐨 GL LR

Types of assembly

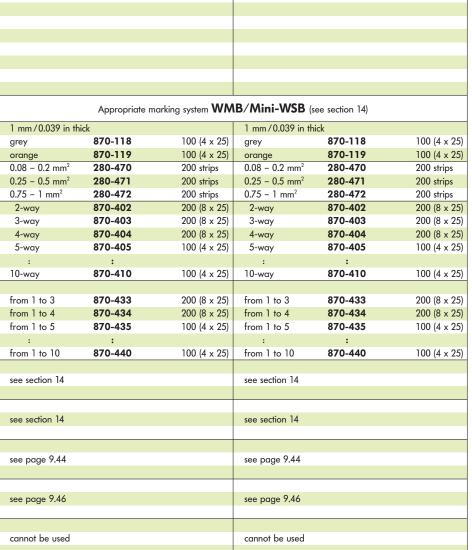






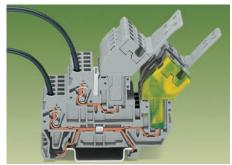
- 70 mm / 2.76 in -

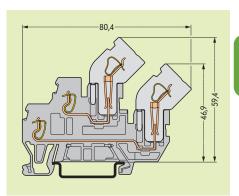
	Item No.	Pack. unit pcs		Item No.	Pack. unit pcs	
Ground (ea	rth) conductor/through	terminal blocks,	2-conductor/2-	pin ground (earth	) conductor	
housing colo	r grey		terminal block,			
PE/N	870-117	50	internal commoni	ng, housing color g	reen-yellow	
PE/L	870-127	50	PE	870-107	50	
	Appropriate n	narking system <b>WM</b>	B/Mini-WSB (	see section 14)		

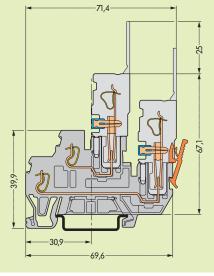




Using a push-in type jumper bar with double deck terminal block 870-501 and 1-conductor/1-pin double deck terminal block 870-101







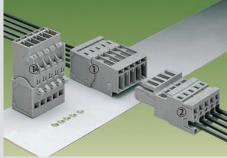


# X-COM®-SYSTEM Male Connectors, Headers and Female Plugs Series 769 . . .

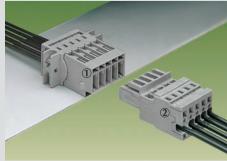
#### Male connectors with CAGE CLAMP® connection



- Male connector with CAGE CLAMP<sup>®</sup> connection
   1-conductor female plug



- 1 Male connector with CAGE CLAMP® connection and mounting feet
- 2 1-conductor female plug



- 1 Male connector with CAGE CLAMP® connection and fixing flanges
  2 1-conductor female plug

## Male connectors with CAGE CLAMP® connection and snap-in flanges



Snap-in mounting without tools: Male connectors with snap-in flanges



#### **Operating tool**



Connection of the conductor - lateral wiring with operating tool

## Strain relief plates



Strain relief plates, can be snapped in male connectors with CAGE CLAMP® connection

1 pole	769-410	100 (4 x 25
2 to 3 poles	769-411	100 (4 x 25)
4 to 5 poles	769-412	100 (4 x 25
6 to 9 poles	769-413	100 (4 x 25
10 to 15 poles	769-414	100 (4 x 25)

## **Operating tool**



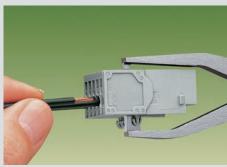
Connection of the conductor with operating tool Item No. 210-490



**CAGE CLAMP®** connects the following







Connection of the conductor with operating tool (which can also be used with male connectors with CAGE CLAMP® connection and mounting feet)



stranded



fine stranded, also with tinned single strands

# ... Description and Handling

## Coding



Coding a female plug – removal of coding finger(s). Do <u>not</u> break off the first and last latch position coding finger! (see also page 9.8)

## Locking lever



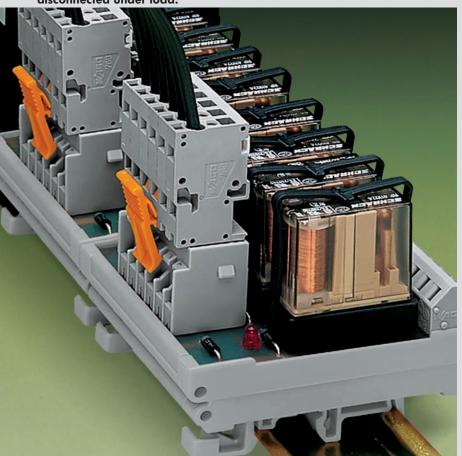
Snapping in /removal of locking lever

### Commonig

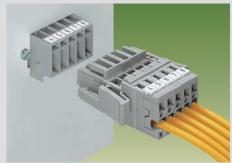


Commoning of 1-conductor female plugs with miniature adjacent jumpers

#### Note: Connectors used according to the regulations should not be connected or disconnected under load.



### Connection of a female plug



Header and 1-conductor female plug with lateral locking levers



Headers with solder pins for printed circuit boards

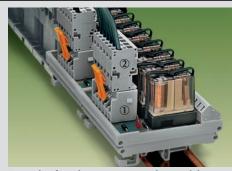
## Pluggable PCB connection



fine-stranded wire -

tip bonded

Connection to a relay module inside the switchgear cabinet



Example of application using a relay module

① Headers with straight solder pins
② 1-conductor female plugs



fine-stranded wire with crimped ferrule  $oldsymbol{0}$ 



Headers with solder pins: Integration of PCB sub-assemblies into the system wiring



fine-stranded wire with crimped pin terminal



## X-COM®-SYSTEM Male Connectors with CAGE CLAMP® Connection Pin Spacing 5 mm / 0.197 in

Pin spacing 5 mm / 0.197 in, grey 0.08 – 4 mm<sup>2</sup> AWG 28 – 12 500 V/6 kV/3 300/600V,10/5 A FM 32 A\*\* 300 V, 10 A @

**□** 8 − 9 mm / 0.33 in

\* 71 @

Pin spacing 5 mm / 0.197 in, grey 0.08 – 4 mm<sup>2</sup> AWG 28 – 12 500 V/6 kV/3 300/600V,10/5 A 74 32 A\*\* 300 V, 10 A @

□ 8 – 9 mm / 0.33 in

Pin spacing 5 mm / 0.197 in, grey 0.08 – 4 mm<sup>2</sup> AWG 28 – 12 500 V/6 kV/3 300/600V,10/5 A FM 32 A\*\* 300 V, 10 A @

**□** 8 − 9 mm / 0.33 in







No. of poles	Item No.	Packunit pcs	No. of poles	ltem No.	Packunit pcs	No. of poles	ltem No.	Packunit pcs
Male con	nectors with CAGE (	CLAMP® connection,	Male con	nectors with CAGE CLAMP	® connection and	Male con	nectors with CAGE CLAM	P <sup>®</sup> connection
grey			snap-in r	nounting feet, f. plate thickne	ss 0.6 – 1.2 mm,	and fixin	<b>g flanges,</b> for screw or simila	ar types of
			fixing hole	Ø 3.5 mm, w. mounting adap	ter 209-137	fixing, for	vertical or horizontal fixing, g	jrey
2	769-602	100	2	769-602/001-000	100	2	769-602/002-000	100
3	769-603	100	3	769-603/001-000	100	3	769-603/002-000	50
4	769-604	100	4	769-604/001-000	100	4	769-604/002-000	50
5	769-605	50	5	769-605/001-000	50	5	769-605/002-000	50
6	769-606	50	6	769-606/001-000	50	6	769-606/002-000	50
7	769-607	25	7	769-607/001-000	25	7	769-607/002-000	25
8	769-608	25	8	769-608/001-000	25	8	769-608/002-000	25
9	769-609	25	9	769-609/001-000	25	9	769-609/002-000	25
10	769-610	25	10	769-610/001-000	25	10	769-610/002-000	25
11	769-611	25	11	769-611/001-000	25	11	769-611/002-000	25
12	769-612	25	12	769-612/001-000	25	12	769-612/002-000	25
13	769-613	15	13	769-613/001-000	15	13	769-613/002-000	15
14	769-614	15	14	769-614/001-000	15	14	769-614/002-000	10
15	769-615	10	15	769-615/001-000	10	15	769-615/002-000	10
Accessories Appropriate marking system Mini-WSB (see section 14)								
1 1111	For female	e plugs	To State	For female plug	gs	1000	For female plug	js .
TELL		911 - 916	7 78.00	see pages 9.44	0.16	TETAL	- N. P sappa ses	0.16

The second second	For female plugs			
i inti	see pages 9.44 - 9.	46		
4	Code pin, orange,			
	for coding the female plugs			
	769-435	100 (4 x 25)		
	Operating tool			
	210-490	1		
100	Strain relief plate			

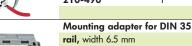
Strain relief plate
see page 9.36

-	*** E 3	199

see pages 9.44 – 9.46 Code pin, orange,



for coding the female plugs 769-435 100 (4 x 25) Operating tool 210-490 1



209-137



see pages 9.44 – 9.46

210-490

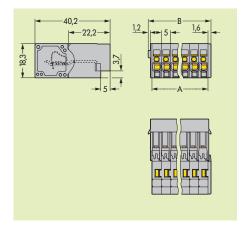


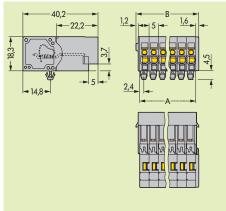
Code pin, orange, for coding the female plugs 769-435 100 (4 x 25) Operating tool

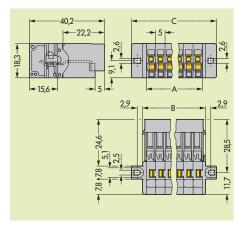


Fixing screw, M 2.5 x 16 and hexagon nut M 2.5 769-499 100 (4 x 25)

#### Dimensions (in mm)









 $\begin{array}{c|c} Pin \ spacing \ 5 \ mm \ / \ 0.197 \ in, \ grey \\ 0.08 - 4 \ mm^2 \\ 500 \ V/6 \ kV/3 \ & AWG \ 28 - 12 \\ 300/600 \ V, 10/5 \ A \ \ V_A \end{array}$ 32 A\*\* 300 V, 10 A @

**■** 8 – 9 mm / 0.33 in

\* 91 @

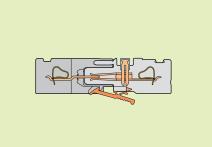
Pin spacing 5 mm / 0.197 in, grey 0.08 – 4 mm<sup>2</sup> S00 V/6 kV/3 AWG 28 – 12 32 A\*\*

\_\_\_\_ 8 – 9 mm / 0.33 in

Male connectors with CAGE CLAMP® connection



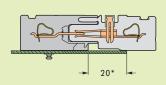




No. of poles	ltem No.	Packunit pcs	No. of poles	ltem No.	Packunit pcs
Male con	Male connectors with CAGE CLAMP® connection			nectors with CAGE CLAM	P® connection
for feedth	<b>rough applications,</b> for scr	ew or similar	and snap	o-in flanges,	
types of fix	xing, for vertical or horizonta	l fixing, grey	for mount	ing without tools, grey	
2	769-602/004-000	100	2	769-602/005-000	50
3	769-603/004-000	50	3	769-603/005-000	50
4	769-604/004-000	25	4	769-604/005-000	25
5	769-605/004-000	25	5	769-605/005-000	25
6	769-606/004-000	25	6	769-606/005-000	25
7	769-607/004-000	25	7	769-607/005-000	25
8	769-608/004-000	25	8	769-608/005-000	20
9	769-609/004-000	25	9	769-609/005-000	20
10	769-610/004-000	25	10	769-610/005-000	20
11	769-611/004-000	25	11	769-611/005-000	15
12	769-612/004-000	15	12	769-612/005-000	15
13	769-613/004-000	15	13	769-613/005-000	15
14	769-614/004-000	10	14	769-614/005-000	10
15	769-615/004-000	10	15	769-615/005-000	10

Appropriate marking system Mini-WSB (see section 14)

Male connectors with CAGE CLAMP® connection and mounting feet



\* Maximum dimensions when using 1-conductor female pluas

A STATE OF THE PARTY OF THE PAR	For female plugs
i initia	see pages 9.44 – 9.
	Code pin, orange,
	for coding the femo
	769-435
	Operating tool
	210-490

ee pages 9.44 - 9.46 ode pin, orange, r coding the female plugs 69-435 100 (4 x 25) perating tool 10-490 1

Code pin, orange, for coding the female plugs 769-435 100 (4 x 25) Operating tool

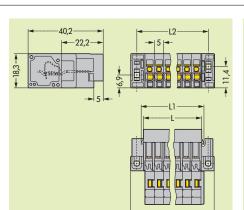
1

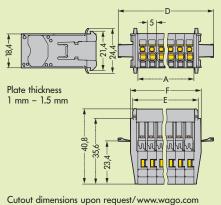
For female plugs

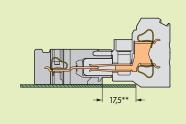
210-490

see pages 9.44 – 9.46

Male connectors with CAGE CLAMP® connection and fixing flanges







- \*\* Maximum dimensions when using 2-conductor female
- A = No. of poles x pin spacing B = A + 3.6 mm

E = A + 4.9 mm F = A + 8.1 mm = A + 15.4 mmC = A + 21.3 mm

= (No. of poles - 1) x pin spacing + 6.2 mm

L 1 = L + 2.4 mm L 2 = L + 7 mm L 3 = L + 13.5 mm



# Y-COM®-SYSTEM Headers with Solder Pins Pin Spacing 5 mm / 0.197 in

Pin spacing 5 mm / 0.197 in, grey
250 V/4 kV/3
500 V/4 kV/2
32 A\*\*

Pin spacing 5 mm / 0.197 in, grey
250 V/4 kV/3
500 V/4 kV/2
32 A\*\*

Pin spacing 5 mm / 0.197 in, grey
250 V/4 kV/3
500 V/4 kV/2
300 V, 10 A ®
300 V, 10 A ®
\*9\( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \(





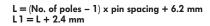
No. of poles	ltem No.	Pack. unit pcs	No. of poles	ltem No.	Pack. unit pcs		
Headers with	straight solder pins	, grey,	Headers with	right angle solder p	oins, grey,		
solder pin	1 x 1 mm		solder pin	1 x 1 mm			
2	769-632	200	2	769-662	200		
3	769-633	100	3	769-663	100		
4	769-634	50	4	769-664	50		
5	769-635	50	5	769-665	50		
6	769-636	50	6	769-666	50		
7	769-637	50	7	769-667	50		
8	769-638	25	8	769-668	25		
9	769-639	25	9	769-669	25		
10	769-640	25	10	769-670	25		
11	769-641	25	11	769-671	25		
12	769-642	25	12	769-672	25		
13	769-643	25	13	769-673	25		
14	769-644	25	14	769-674	25		
15	769-645	25	15	769-675	25		
Accessories	s						
	For female pl	ugs	to see the	For female pl	ugs		
1100	see pages 9.44	•	i inti				
THE LESS			1111		222 pages 7.11 7.10		

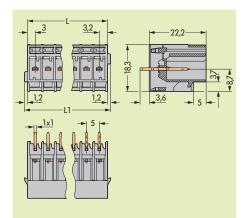


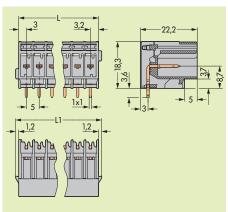
Connection to a relay module inside the switchgear

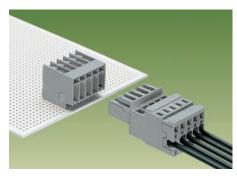


Accessories						
	For female plugs			-2000A	For female plug	js .
i initia	see pages 9.44 - 9.4	46	i inti	TELLE TELLE	see pages 9.44 -	- 9.46
	Code pin, orange, for coding the female plugs			Code pin, orange,		
				for coding the female plugs		
	769-435	100 (4 x 25)			769-435	100 (4 x 25)
Dimensions (in mm) Diameter of drilled hole: 1.4 +0.1 mm						









<sup>\*</sup> For further approvals with corresponding ratings see section 15.

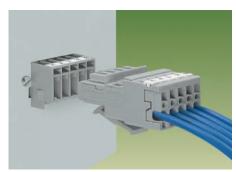
# Headers with Solder Pins and Fixing Flanges Pin Spacing 5 mm/ 0.197 in

Pin spacing 5 mm / 0.197 in, grey
250 V/4 kV/3 | 300/600V, 10/5 A 91 | 250 V/4 kV/2 | 300 V, 10 A ® | 300/600V, 10/5 A 91 | 300 V, 10 A ® | 30





No. of poles	ltem No.	Pack. unit pcs	No. of poles	Item No.	Pack. unit pcs
Headers w	ith straight solder pins		Headers w	rith right angle solder pin	ıs
with fixing	flanges, grey,		with fixing	flanges, grey,	
solder pin	1 x 1 mm		solder pin	1 x 1 mm	
2	769-632/003-000	100	2	769-662/003-000	100
3	769-633/003-000	100	3	769-663/003-000	100
4	769-634/003-000	50	4	769-664/003-000	50
5	769-635/003-000	50	5	769-665/003-000	50
6	769-636/003-000	25	6	769-666/003-000	25
7	769-637/003-000	25	7	769-667/003-000	25
8	769-638/003-000	25	8	769-668/003-000	25
9	769-639/003-000	25	9	769-669/003-000	25
10	769-640/003-000	25	10	769-670/003-000	25
11	769-641/003-000	25	11	769-671/003-000	25
12	769-642/003-000	25	12	769-672/003-000	25
13	769-643/003-000	15	13	769-673/003-000	15
14	769-644/003-000	15	14	769-674/003-000	15
15	769-645/003-000	15	15	769-675/003-000	15



Header and 1-conductor female plug with locking levers

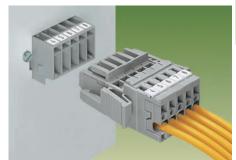
#### **Accessories**



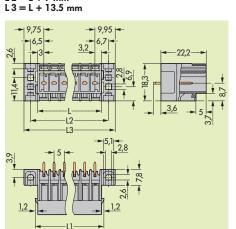
Dimensions (in mm)

Diameter of drilled hole: 1.4 + 0.1 mm

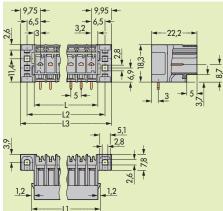
L4 = No. of poles x pin spacing + 1.7 mm L5 = L4 + 6.6 mm L6 = L4 + 2.6 mm

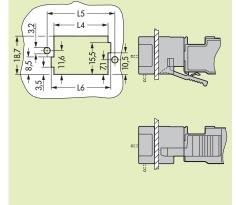


Header and 1-conductor female plug with lateral locking levers



 $L = (No.\ of\ poles - 1)\ x\ pin\ spacing\ +\ 6.2\ mm$  L 1 = L + 2.4 mm L 2 = L + 7 mm







<sup>\*</sup>For further approvals with corresponding ratings see section 15.

<sup>\*\*</sup> See current-carrying capacity curves page 9.50 and www.wago.com  $\,$ 

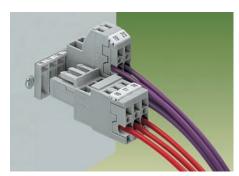
# Y-COM®-SYSTEM Headers with Solder Pins and Fixing Flanges for Feedthrough Applications Pin Spacing 5 mm / 0.197 in

Pin spacing 5 mm / 0.197 in, grey 250 V/4 kV/3   300/600V, 10/5 A 74   300 V, 10 A ® 32 A**	Pin spacing 5 mm / 0.197 in, grey 250 V/4 kV/3 500 V/4 kV/2 32 A**    300/600V,10/5 A 74 300 V, 10 A ®	Examples of application
* 91 @	* 91 @	



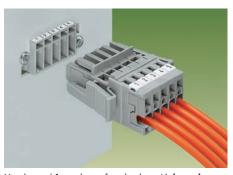


No. of poles	Item No.	Pack. unit pcs	No. of poles	Item No.	Pack. unit pcs
Headers w	ith straight solder pins w	ith fixing	Headers w	ith right angle solder pir	s with fixing
flanges for	feedthrough application	s, grey,	flanges for	feedthrough application	s, grey,
solder pin	1 x 1 mm		solder pin	1 x 1 mm	
2	769-632/004-000	100	2	769-662/004-000	100
3	769-633/004-000	100	3	769-663/004-000	100
4	769-634/004-000	50	4	769-664/004-000	50
5	769-635/004-000	50	5	769-665/004-000	50
6	769-636/004-000	25	6	769-666/004-000	25
7	769-637/004-000	25	7	769-667/004-000	25
8	769-638/004-000	25	8	769-668/004-000	25
9	769-639/004-000	25	9	769-669/004-000	25
10	769-640/004-000	25	10	769-670/004-000	25
11	769-641/004-000	25	11	769-671/004-000	25
12	769-642/004-000	25	12	769-672/004-000	25
13	769-643/004-000	15	13	769-673/004-000	15
14	769-644/004-000	15	14	769-674/004-000	15
15	769-645/004-000	15	15	769-675/004-000	15

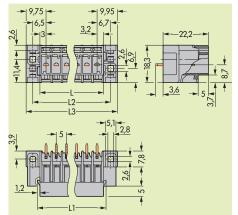


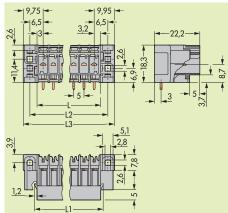
Header and 1-and 2-conductor female plugs

Accessories					
	For female plugs		For female plugs		
in the second	see pages 9.44 – 9.46	i intil	see pages 9.44 – 9.46		
	Code pin, orange,		Code pin, orange,		
	for coding the female plugs		for coding the female plugs		
	<b>769-435</b> 100 (4 × 25)		<b>769-435</b> 100 (4 × 25)		
Dimensions (in mm) Diameter of drilled hole: 1.4 +0.1 mm					



Header and 1-conductor female plug with **lateral** locking levers





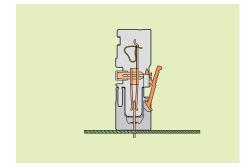
 $L=(No.\ of\ poles\ -1)\ x\ pin\ spacing\ +6.2\ mm$   $L\ 1=L+2.4\ mm$   $L\ 2=L+7\ mm$   $L\ 3=L+13.5\ mm$ 

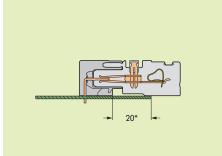
 $<sup>^{*}</sup>$  For further approvals with corresponding ratings see section 15.

<sup>\*\*</sup> See current-carrying capacity curves page 9.50 and www.wago.com

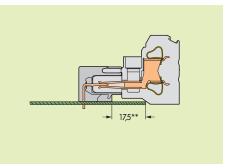
# Types of Application Headers with Solder Pins with 1-/2-Conductor Female Plugs

Headers with straight solder pins Headers with right angle solder pins Headers with right angle solder pins

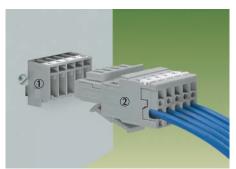




\* Maximum dimension when using 1-conductor female plugs



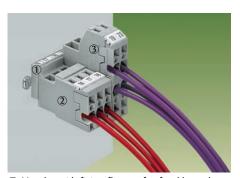
\*\* Maximum dimension when using 2-conductor female plugs



Header with fixing flanges
 1-conductor female plug with
 bottom-mounted locking levers



Header with fixing flanges
 1-conductor female plug with
 lateral locking levers



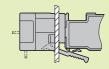
- ① Header with fixing flanges for feedthrough application
- 2 1-conductor female plug
- 3 2-conductor female plug

Dimensions (in mm)

Cutouts for headers with fixing flanges for feedthrough applications and locking levers

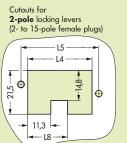
0

#### Female plugs with bottom-mounted locking levers

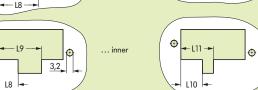


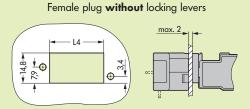
Cutouts for

single pole locking levers

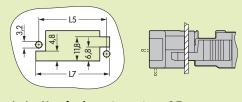


Layout for locking levers outer...





## Female plug with **lateral** locking levers



L 4 = No. of poles x pin spacing + 1.7 mm

L 5 = L4 + 6.6

L 7 = L4 + 9.4

L 8 = No. of poles V x pin spacing – 0.3 mm

L 9 = L8 + 11.6

L10 = No. of poles  $V \times pin spacing + 0.6 mm$ 

L11 = L10 + 5.4 mm

No. of poles V: Number of poles before the pole with the locking lever attached



# X-COM®-SYSTEM 1-Conductor Female Plugs

# Female Plugs with Locking Levers

0.08 - 4 mm<sup>2</sup> 500 V/6 kV/3 **①** 32 A\*\* AWG 28 - 12 300/600 V, 10/5 A **9**\(\sqrt{1}\) 300 V, 10 A @

Module width 5 mm / 0.197 in 8 - 9 mm / 0.33 in

\* 🗫 🍪 KEMA CCAKEMA 🐨 GL LR

0.08 - 4 mm<sup>2</sup> 500 V/6 kV/3 **①** 32 A\*\*

AWG 28 - 12 300/600 V, 10/5 A **9** 300 V, 10 A ®

Module width 5 mm / 0.197 in 8 - 9 mm / 0.33 in

@ /**#** 





● 500 V = rated voltage
 6 kV = rated surge voltage
 3 = pollution degree
 (see also section 15)

2 See application notes on page 2.43

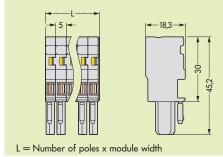
Description			No. of poles	ltem No.		Pack. unit pcs	No. of poles	ltem No.	Pack. unit pcs
1-conductor femo	ale plug,		1-conductor fem	ale plugs,	with coding f	ingers, grey,	1-conductor fer	nale plugs with latera	l locking
to be fixed on rece	eptacle terminal blocks		commoning possib	ility with mir	niature adjac	ent jumpers	levers, with codi	ng fingers, grey,	
or male connectors	5		1 pole	769-101		200	commoning possi	bility with miniature adja	cent jumpers
			2 poles	769-102		100	<ul> <li>only to be us</li> </ul>	ed for male connector	s –
			3 poles	769-103		50	2 poles	769-102/021-000	50
			:	:			3 poles	769-103/021-000	25
			14 poles	769-114		10	4 poles	769-104/021-000	25
			15 poles	769-115		10	:	:	
1-conductor femo	ale plug, green-yellow	,	1-conductor fem	ale plug,			9 poles	769-109/021-000	20
Higher number of	poles and/or mixed		with coding finger	s, green-yell	ow,		:	:	
(grey/green-yellow	) on request		commoning possib	ility with mir	niature adjac	ent jumpers	14 poles	769-114/021-000	10
			1 pole	769-101/	000-016	200	15 poles	769-115/021-000	10
Accessories			Appropriate marking		ni-WSB (				
00000	Insulation stop <b>Q</b> ,	white	0.08 - 0.2 mm <sup>2</sup>	769-470		200 strips	0.08 - 0.2 mm <sup>2</sup>	769-470	200 strips
00000	5 pcs/strip	light grey	0.25 - 0.5 mm <sup>2</sup>	769-471		200 strips	0.25 - 0.5 mm <sup>2</sup>	769-471	200 strips
1		dark grey	0.75 – 1 mm <sup>2</sup>	769-472		200 strips	0.75 – 1 mm <sup>2</sup>	769-472	200 strips
	Miniature adjacent		I <sub>№</sub> 24 A				I <sub>N</sub> 24 A		
70	insulated, suitable for		grey	769-402		100 (4 x 25)	grey	769-402	100 (4 x
I) <sup>II</sup>	1-conductor female p	olugs							
	Locking levers,		Female plugs with		2 poles an				
200	can be snapped on f	emale plugs	grey	769-428		100 (4 x 25)			
		_	orange	769-429	769-431	100 (4 x 25)			
	Protective warning								
200 an	for 5 terminal blocks,		yellow	280-415		100 (4 x 25)	yellow	280-415	100 (4 x :
	fits into screwdriver s								
	Test plug, w. cable 5								
		1/0.079 in Ø	red	210-136		50 (5 x 10)	red	210-136	50 (5 x
		1/0.091 in Ø	yellow	210-137		50 (5 x 10)	yellow	210-137	50 (5 x
	Strain relief plate,		grey				grey		
	snap-on typ,		1 pole	769-410		100 (4 x 25)	1 pole	769-410	100 (4 x :
	for 1-conductor femo	ale plugs	2 to 3 poles	769-411		100 (4 x 25)	2 to 3 poles	769-411	100 (4 x :
Waleto III			4 to 5 poles	769-412		100 (4 x 25)	4 to 5 poles	769-412	100 (4 x :
			6 to 9 poles	769-413		100 (4 x 25)	6 to 9 poles	769-413	100 (4 x 2
			10 to 15 poles	769-414		100 (4 x 25)	10 to 15 poles	769-414	100 (4 x 2

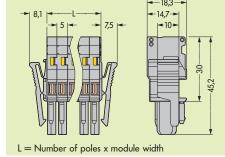
Dimensions (in mm)

1-pole female plug for example

• for phase selection in three-phase network

- as a test plug with rated current capability
- simplified circuit expansion addition of base circuits requires only female plugs to be plugged in





<sup>\*</sup> For further approvals with corresponding ratings see section 15.

<sup>\*\*</sup> See current-carrying capacity curves pages 9.48 – 9.51 and www.wago.com

# 2-Conductor Female Plugs

0.08 - 4 mm<sup>2</sup> 500 V/6 kV/3 **①** 32 A\*\* AWG 28 - 12 300/600 V, 10/5 A **%** 300 V, 10 A ®

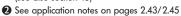
Module width 5 mm / 0.197 in ■ 8 - 9 mm / 0.33 in

\* 🗫 @ CCAKEDA 💖 GL LR

**Application notes** 

Dimensions of the female plugs



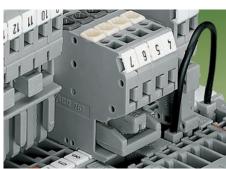






## 2-conductor female plugs

- commoning of signals from one sub-assembly to the other (bus structure)
- use as a T-wire branch tap connection, as for example use in lighting wiring
- higher number of connection possibilities

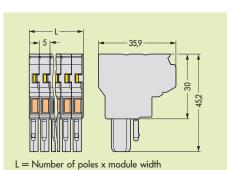


## Commoning possibility of female plugs

- after de-plugging commoned potentials still remain commoned
- use of the plug jumper instead of additional wired jumpers
- can be used as a "hardware" key for safety
- as a commoning jumper for sensor circuits or machine programming

Description	No. of poles	ltem No.	Pack. unit pcs				
2-conductor female plug,	2-cond. fem	2-cond. female plugs, with coding fingers, grey,					
to be fixed on receptacle terminal blocks	commoning pos	ssibility w. adjacent jumpe	ers a. staggered jumper				
or male connectors	1 pole	769-121	100				
	2 poles	769-122	50				
	3 poles	769-123	25				
	4 poles	769-124	25				
	5 poles	769-125	25				
	6 poles	769-126	10				
	7 poles	769-127	10				
	8 poles	769-128	10				
	9 poles	769-129	10				
	10 poles	769-130	10				
	11 poles	769-131	5				
	12 poles	769-132	5				
	13 poles	769-133	5				
	14 poles	769-134	5				
	15 poles	769-135	5				
2-conductor female plug, green-yellow	2-conductor	female plug,					
Higher number of poles and/or mixed	with coding fi	ngers, green-yellow, c	ommoning possibility				
(grey/green-yellow) on request	with adjacent	jumpers and staggere	ed jumpers				
	1 pole	769-121/000-	<b>016</b> 100				

			15 po	ies	769-135		3
2-conductor female plug, green-yellow			2-conductor female plug,				
Higher number of po	oles and/or mixed		with c	oding finger	s, green-yell	ow, common	ing possibility
(grey/green-yellow)	on request		with adjacent jumpers and staggered jumpers				
			1 po	le	769-121/	000-016	100
Accessories	Appro	opriate markir	ng system	Mini-W	SB (see sect	ion 14)	
~400L.	Insulation stop <b>2</b> ,	white	0.08 -	- 0.2 mm <sup>2</sup>	769-470		200 strips
OCCUPATION OF THE PARTY OF THE	5 pcs/strip	light grey	0.25 -	- 0.5 mm <sup>2</sup>	769-471		200 strips
		dark grey	0.75 -	- 1 mm <sup>2</sup>	769-472		200 strips
in the second	Adjacent jumpers,	insulated,	<sub>N</sub> 24 A	١			
	suitable for 2-conduct	tor female	grey		280-402		200 (8 x 25)
	plugs						
	Staggered jumper 2,	from 1 to 2	I <sub>N</sub> 24 /	A	780-452		100 (4 x 25)
	insulated,	from 1 to 3			780-453		100 (4 x 25)
	width 5 mm / 0.197 in,	from 1 to 4			780-454		100 (4 x 25)
	suitable for 2-conduc-	from 1 to 5			780-455		50 (2 x 25)
	tor female plugs	:			:		
40		from 1 to 8			780-458		50 (2 x 25)
	Locking levers,		Femal	e plugs with	1 pole	2 poles an	d more
37	can be snapped on fe	emale plugs	grey		769-428	769-430	100 (4 x 25)
			orang	е	769-429	769-431	100 (4 x 25)
The state of the s	Protective warning	marker,					
5566	for 5 terminal blocks,		yellow	,	280-415		100 (4 x 25)
	fits into screwdriver sl	ot					
	Test plug, w. cable 50						
	2 mm	/0.079 in Ø	red		210-136		50 (2 x 25)
	2.3 mm	/0.091 in Ø	yellow	′	210-137		50 (2 x 25)
	Strain relief plate,		grey				
00	snap-on typ,		1 po	le	769-410		100 (4 x 25)
	for 2-conductor fema	le plugs	2 to	3 poles	769-411		100 (4 x 25)
17791-1-1-1			4 to	5 poles	769-412		100 (4 x 25)
			6 to	9 poles	769-413		100 (4 x 25)
			10 to	15 poles	769-414		100 (4 x 25)



<sup>\*</sup> For further approvals with corresponding ratings see section 15.

<sup>\*\*</sup> See current-carrying capacity curves pages 9.48 - 9.51 and www.wago.com

0.08 - 4 mm<sup>2</sup> 500 V/6 kV/3 **①** 32 A\*\* AWG 28 - 12 300/600 V, 10/5 A **%** 300 V, 10 A ®

Module width 5 mm / 0.197 in ■ 8 - 9 mm / 0.33 in

ltem

769-101/022-000

No.

1-conductor angled female plugs,

\* 🗫 @ CCAKEDA 💖 LR

**Examples of application** 

Dimensions of the female plugs



with coding fingers, grey

No. of poles



Pack. unit

pcs

1 500 V = rated voltage 6 kV = rated surge voltage 3 = pollution degree (see also section 15)

**Description** 

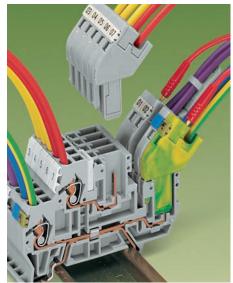
Angled female plug,

870 or male connectors

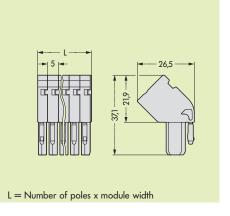
2 See application notes on page 2.43

for use with receptacle terminal blocks of series 769 and

or or male connec	1013	i pole	707-1017022-000	200
		2 poles	769-102/022-000	100
		3 poles	769-103/022-000	50
		4 poles	769-104/022-000	50
		5 poles	769-105/022-000	50
		6 poles	769-106/022-000	25
		7 poles	769-107/022-000	25
		8 poles	769-108/022-000	25
		9 poles	769-109/022-000	25
		10 poles	769-110/022-000	25
		11 poles	769-111/022-000	20
		12 poles	769-112/022-000	20
		13 poles	769-113/022-000	10
		14 poles	769-114/022-000	10
		15 poles	769-115/022-000	10
		13 poles	767-113/022-000	10
Analad famala		1 aanduste: ::::	ulas famula uluu	
Angled female pl			igles female plug,	
Higher number of p		with coding finge		100
(grey/green-yellow)	on request	1 pole	769-101/022-016	100
Accessories	Appropriate marking sy	stem Mini-WSB	/WMB (see section 14	)
~~~~~	Insulation stop 2, white	0.08 - 0.2 mm <sup>2</sup>	769-470	200 strips
0000	5 pcs/strip light grey	0.25 - 0.5 mm <sup>2</sup>	769-471	200 strips
A COLOR	dark grey	0.75 - 1 mm <sup>2</sup>	769-472	200 strips
	Protective warning marker,			
	for 5 terminal blocks,	yellow	280-415	100 (4 x 2
200	fits into screwdriver slot	,		
	<b>Test plug,</b> w. cable 500 mm/1'7.7"			
	2 mm/0.079 in Ø	red	210-136	50 (5 x 1
	2.3 mm/0.091 in Ø	yellow	210-137	50 (5 x 1
-	Strain relief plate,	grey	210 107	00 (0 X 1
	snap-on typ,	1 pole	769-410	100 (4 × 2
	for 1-conductor female plugs	2 to 3 poles	769-411	100 (4 x 2
	101 1-conductor female plugs	4 to 5 poles	769-412	100 (4 x 2
			769-413	100 (4 x 2
	11/4 00 11/14 Lt	10 to 15 poles	769-414	100 (4 x 2
MAGO VS120-307	WAGO WMB multi-marking			
H 12 10 N 6 H 07 W W 22	system, fits in all miniature WSB	see section 14		
000000000000000000000000000000000000000	receptacles			
	Miniature WSB quick marking			
	card, 10 strips with 10 markers	see section 14		
	each, white with black printing			







<sup>\*</sup> For further approvals with corresponding ratings see section 15.

# Snap-on Type Strain Relief Housings for Series 769 Female Plugs and Male Connectors with CAGE CLAMP® Connection



- Snap-on type strain relief housings suitable for 
   straight and angled female plugs with CAGE CLAMP® connection 
   male connectors with CAGE CLAMP®
- connection

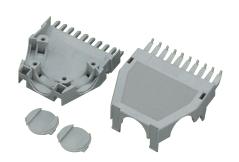
2 - 5 poles

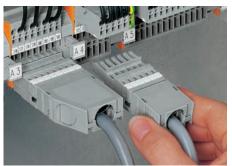
Snap-on type strain relief housings suitable for – straight and angled female plugs with CAGE CLAMP\* connection – male connectors with CAGE CLAMP\*

- connection

6 - 15 poles



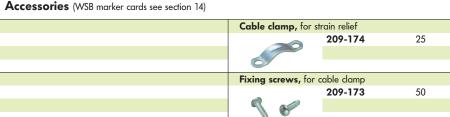




No. of poles	ltem No.	Pack. unit pcs	No. of poles	ltem No.	Pack. unit pcs		
Snap-on ty	pe strain relief housings,		Snap-on ty	pe strain relief housings,			
pin spacing	5 mm/0.197 in, grey		pin spacing 5 mm/0.197 in, grey				
consisting of:	: strain relief support		consisting of: strain relief support				
	strain relief housing		strain relief housing				
2	769-1602 🛈	25	6	769-1606 🛈	25		
3	769-1603 🛈	25	7	769-1607 🛈	25		
4	769-1604 🛈	25	8	769-1608 🕗	25		
5	769-1605 🛈	25	9	769-1609 🕗	25		
			10	769-1610 🕄	25		
			11	769-1611 🚱	25		
			12	769-1612 🚱	25		
			13	769-1613 🚱	25		
			14	769-1614 🚱	25		
			15	769-1615 🚱	25		
<b>1</b> cable o	outlet rear, 2- to 5-pole only	suitable for					
cable ties	s (Fa. Hellermann – not offe	red by WAGO)	1 cable o	utlet rear			
not for co	able clamp		<b>2</b> 2 cable o	outlets, 1 cover			
			<b>3</b> 3 cable 0	outlets, 2 covers			
Accessor	ies (WSB marker cards see	section 14)					
			Cable clam	p, for strain relief			
				209-174	25		



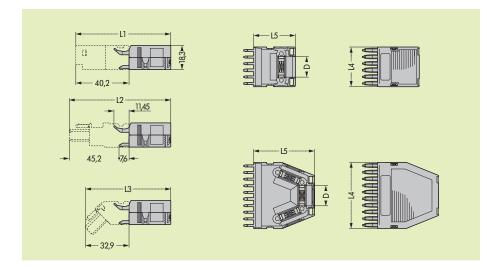
Snapping on strain relief housing





Female connector with strain relief housing



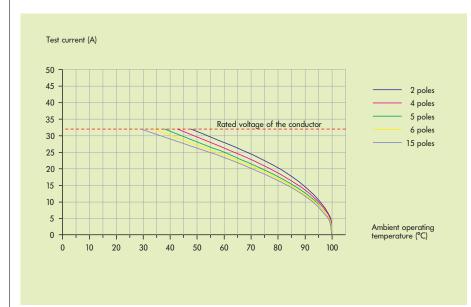


#### Dimensions for strain relief housings

No. of poles	L,	L <sub>2</sub>	L <sub>3</sub>	L <sub>4</sub>	L <sub>5</sub>	D
2	71.7	76.7	64.4	10	31.5	5
3	71.7	76.7	64.4	15	31.5	9.7
4	71.7	76.7	64.4	20	31.5	14
5	71.7	76.7	64.4	25	31.5	14
6	71.7	76.7	64.4	30	31.5	15.5
7	76.7	81.7	69.4	35	36.5	15.5
8	86.2	91.2	78.9	40	46	15.5
9	86.2	91.2	78.9	45	46	15.5
10	86.2	91.2	78.9	50	46	15.5
11	86.2	91.2	78.9	55	46	15.5
12	86.2	91.2	78.9	60	46	15.5
13	86.2	91.2	78.9	65	46	15.5
14	86.2	91.2	78.9	70	46	15.5
15	86.2	91.2	78.9	75	46	15.5



# X-COM®-SYSTEM Current-Carrying Capacity Curves for 1-Conductor/1-Pin and 2-Pin Receptacle Terminal Blocks and 1-Conductor Female Plugs



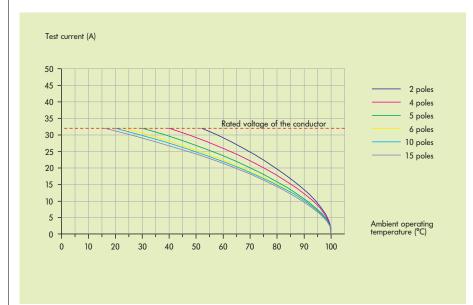


1-conductor/ 1-pin receptacle terminal block Cross section of conductor: 1-conductor female plugs Cross section of conductor:

Length of the conductor:

4 mm<sup>2</sup>/AWG 12 769-102 to 769-115 4 mm<sup>2</sup>/AWG 12 1 m

769-176



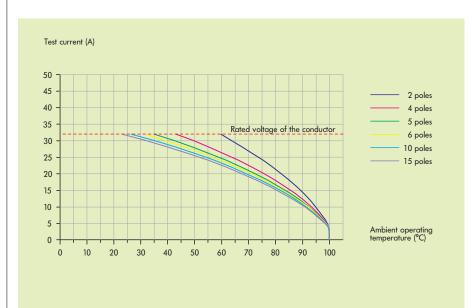


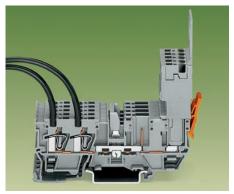
2-pin receptacle terminal block 769-156

1-conductor female plugs Cross section of conductor: Length of the conductor: 769-102 to 769-115 4 mm²/AWG 12 1 m

# Current-Carrying Capacity Curves for 2-Conductor/2-Pin and 4-Pin Receptacle Terminal Blocks and 1-Conductor Female Plugs







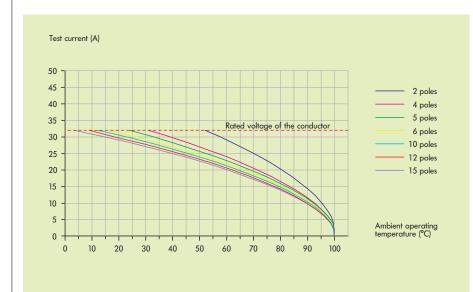
2-conductor/
2-pin receptacle terminal block

Cross section of conductor: 4 mm²// 1-conductor female plugs 769-102 Cross section of conductor: 4 mm²//

Length of the conductor:

4 mm<sup>2</sup>/AWG 12 769-102 to 769-115 4 mm<sup>2</sup>/AWG 12

769-171





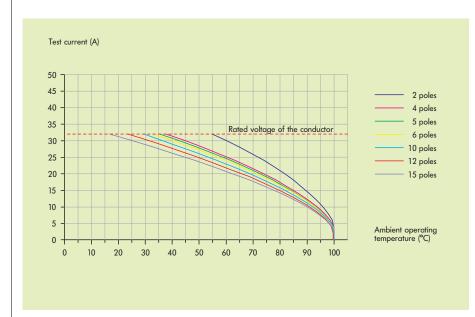
4-pin receptacle terminal block 769-151

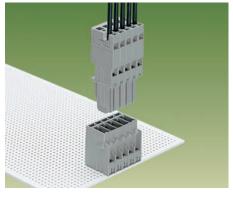
1-conductor female plugs 769-102 to 769-115 Cross section of conductor: 4 mm²/AWG 12 Length of the conductor: 1 m



# X-COM®-SYSTEM

# Current-Carrying Capacity Curves for Headers with Straight and Right Angle Solder Pins and 1-Conductor Female Plugs



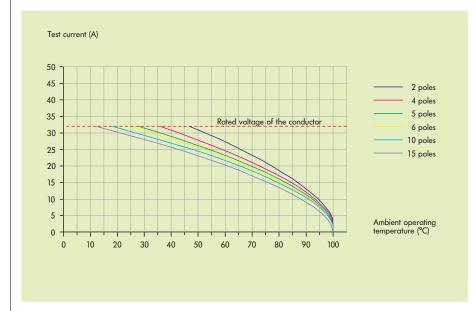


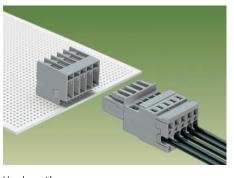
Headers with straight solder pin

1-conductor female plugs Cross section of conductor: Length of the conductor:

769-632 to 769-645

769-102 to 769-115 4 mm<sup>2</sup>/AWG 12 1 m





Headers with right angle solder pins

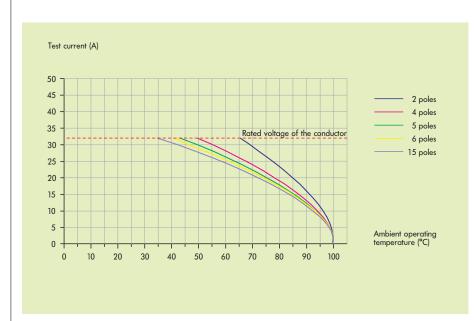
1-conductor female plugs Cross section of conductor: Length of the conductor:

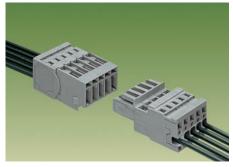
769-662 to 769-675

769-102 to 769-115 4 mm<sup>2</sup>/AWG 12 1 m

# Current-Carrying Capacity Curves for Male Connectors with CAGE CLAMP® Connection and 1-Conductor Female Plugs





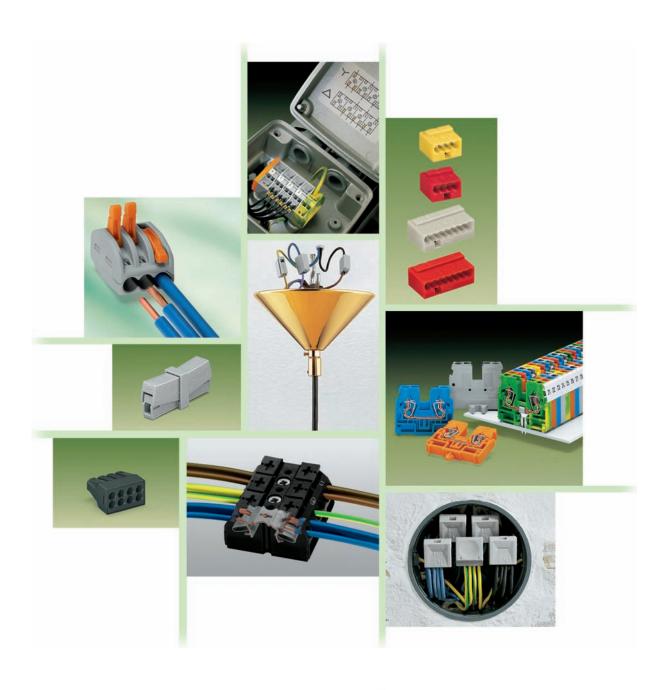


Male connectors with CAGE CLAMP® connection Cross section of conductor:

1-conductor female plugs Cross section of conductor: Length of the conductor: 769-602 to 769-615 4 mm²/AWG 12

769-102 to 769-115 4 mm<sup>2</sup>/AWG 12 1 m





For special or standard connection applications: WAGO terminal strips and connectors.

# **Terminal Strips and Connectors**





**Terminal strips** 0.5 mm<sup>2</sup> to 4 mm<sup>2</sup> / AWG 20 - 12

Series 862 \_\_\_\_\_ 10.40 - 10.43



Modular terminal blocks and terminal strips with CAGE CLAMP® connection, with fixing flanges or snap-in mounting feet,

Front-entry wiring,
- 2.5 mm<sup>2</sup>/4 mm<sup>2</sup> / AWG 12

Series 869 \_\_\_\_\_ 10.6 - 10.9

- 2.5 mm<sup>2</sup> / AWG 12

Series 264 \_\_\_\_\_ 10.10 - 10.14

- Test plug adapters for terminal strips, series 264

Series 249 \_\_\_\_\_\_ 10.15



Side-entry wiring,
- 1.5 mm<sup>2</sup> / AWG 16 Series 260
4 mm<sup>2</sup> / AWG 12 Series 262 2.5 mm<sup>2</sup> / AWG 14 Series 261

10.16 - 10.27

- Test plug adapters for terminal strips

Series 260, 261 and 262 \_\_\_\_\_ 10.28



Lighting connectors, "service" connectors - 2.5 mm<sup>2</sup> / AWG 14

Series 224 \_\_\_\_\_\_ 10.30 - 10.31



#### MICRO push-wire connectors for junction boxes - 0.8 Ø mm / AWG 20

Push-wire connectors for junction boxes

Series 243 \_\_\_\_\_ 10.34 - 10.35



 $-1.5 \text{ mm}^2 + 2.5 \text{ mm}^2 / \text{AWG } 16 + 12$ 

Series 273 and 773 \_\_\_\_\_ 10.36 - 10.37



Compact connectors for flexible conductors - 2.5 mm<sup>2</sup> / AWG 12 Series 222 \_\_\_\_\_\_ 10.38 - 10.39



# Modular Terminal Blocks and Terminal Strips – Product Summary –



### Compact block terminal strips







mm²/AWG 2.5/14 / 4/12 Page 10.8 – 10.9 
 with fixing flanges

 mm²/AWG
 2.5/14 / 4/12

 Page
 10.7

with snap-in mounting feet mm²/AWG | 2.5/14 / 4/12 | Page | 10.7

#### Ex i Modular terminal blocks



mm²/AWG 2.5/14 / 4/12 Page 10.8 – 10.9

## Ex i Compact block terminal strips



 with fixing flanges

 mm²/AWG
 2.5/14 / 4/12

 Page
 10.7



 with snap-in mounting feet

 mm²/AWG
 2.5/14 / 4/12

 Page
 10.7

## Series 264 Modular terminal blocks and terminal strips



2- and 4-conductor terminal blocks mm²/AWG | 2.5/14 Page | 10.12 - 10.13



with fixing flanges mm²/AWG | 2.5/14 Page 10.14



with snap-in mounting feet mm²/AWG | 2.5/14 Page 10.14

Ex i Modular terminal blocks and terminal strips Ex e II Modular terminal blocks and terminal strips



2- and 4-conductor terminal blocks mm²/AWG | 2.5/14 Page | 10.12 - 10.13



with fixing flanges mm²/AWG | 2.5/14 Page | 10.14



with snap-in mounting feet mm²/AWG | 2.5/14 Page 10.14

# Series 260 – 262 Modular terminal blocks and terminal strips with fixing flanges or snap-in mounting feet with miniature WSB marker receptacle



 2-conductor modular terminal blocks and terminal strips

 mm²/AWG
 1.5/16
 2.5/14
 4/12

 Page
 10.18 - 10.19 | 10.20 - 10.21 | 10.26 - 10.27



4-conductor modular terminal blocks and terminal strips mm²/AWG | 1.5/16 | 2.5/14 | 4/12 | Page | 10.18 - 10.19 | 10.20 - 10.21 | 10.26 - 10.27



 $\begin{array}{c|c} \text{2-conductor modular terminal blocks and terminal strips} \\ & \underline{\frac{mm^2/AWG}{Page}} & 2.5/14 \\ \hline Page & 10.24-10.25 \\ \end{array}$ 

Ex i Modular terminal blocks and terminal strips with fixing flanges or snap-in mounting feet Ex e II Modular terminal blocks and terminal strips with fixing flanges or snap-in mounting feet









2- and 4-conductor modular terminal blocks mm<sup>2</sup>/AWG | 2.5/14 | 4/12 Page 10.20 10.26

2-conductor terminal strips mm<sup>2</sup>/AWG | 2.5/14 | 4/12 10.21 10.27 Page

4-conductor terminal strips mm<sup>2</sup>/AWG | 2.5/14 | 4/12 10.21 10.27 Page

Modular terminal blocks and terminal strips with push buttons on one side, fixing flanges or snap-in mounting feet with miniature WSB marker receptacle







2-conductor modular terminal blocks and terminal strips mm<sup>2</sup>/AWG 2.5/14 10.22 - 10.23 Page

4-conductor modular terminal blocks and terminal strips  $mm^2/AWG$ 2.5/14 10.22 - 10.23 Page

2-conductor modular terminal blocks and terminal strips mm<sup>2</sup>/AWG| 2.5/14 Page 10.22 - 10.23

Ex i Modular term. blocks and term. strips, with push buttons on one side, fixing flanges or snap-in mounting feet









2- and 4-conductor modular terminal blocks  $mm^2/AWG \mid 2.5/14$ 10.22

2-conductor terminal strips  $mm^2/AWG \mid 2.5/14$ 10.23

4-conductor terminal strips  $mm^2/AWG \mid 2.5/14$ Page 10.23

10

Modular terminal blocks and terminal strips, with push buttons on both sides, fixing flanges or snap-in mounting feet with miniature WSB marker receptacle









2-conductor modular terminal blocks and terminal strips  $$\operatorname{mm^2/AWG}| = 2.5/14$ 

10.22 - 10.23

4-conductor modular terminal blocks and terminal strips mm²/AWG| 2.5/14 10.22 - 10.23

2-conductor modular terminal blocks and terminal strips  $$\operatorname{mm^2/AWG}| = 2.5/14$$ mm²/AWG 10.22 - 10.23

Ex i Modular term. blocks and term. strips, with push buttons on both sides, fixing flanges or snap-in mounting feet









2- and 4-conductor modular terminal blocks mm<sup>2</sup>/AWG | 2.5/14 10.22 Page

2-conductor terminal strips mm<sup>2</sup>/AWG | 2.5/14 10.23

4-conductor terminal strips mm<sup>2</sup>/AWG | 2.5/14 Page



# 10 Lighting connectors Push-Wire and MICRO Push-Wire Connectors for Junction Boxes Product Summary –

Series 224 Lighting connectors Service connector

2-conductor connectors Page 10.31 Page 10.31 Page 10.31 Series 243 MICRO push-wire connectors for junction boxes

> 4-conductor connectors Page 10.34



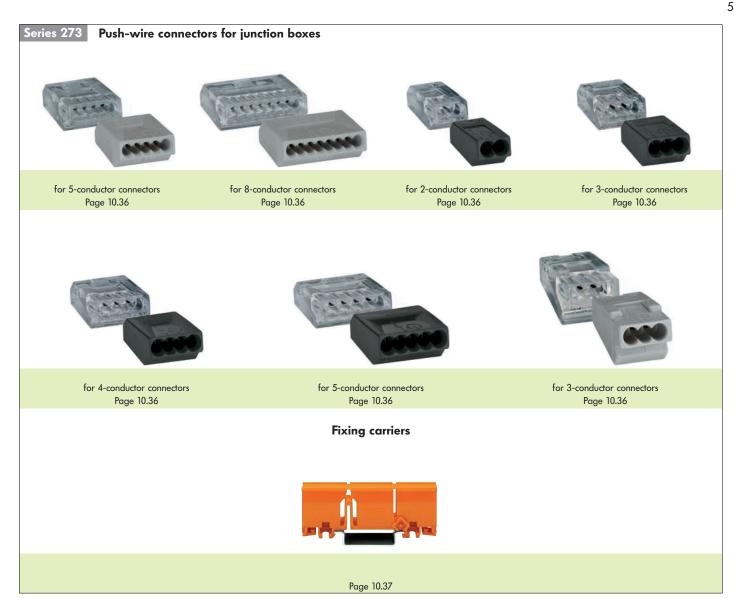
8-conductor connectors Page 10.34

**Mounting carriers** 



Page 10.35

Series 222 **Compact connectors** for 3-conductor connectors for 5-conductor connectors Page 10.39 Page 10.39





## Push-wire connectors for junction boxes



Page 10.36



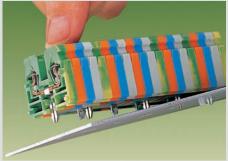


# Compact Terminal Strips with CAGE CLAMP COMPACT Connection Description and Handling – Series 869

Fixing



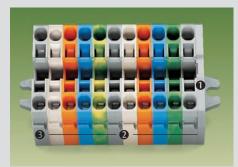
Terminal strip with fixing flange, screw fixing



Terminal strip with snap-in mounting feet, fixing in holes



Terminal strip with snap-in mounting feet, assembly onto special aluminum rail

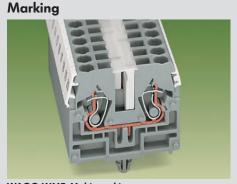


Terminal strip with fixing flanges, consisting of: end plate with fixing flange **()** center terminal blocks 2
end terminal blocks with fixing flange 3



Terminal strip with mounting feet, consisting of: end plate **3** / center terminal blocks with/without snap-in mounting feet **5** / end terminal block with/without snap-in mounting foot **5** 

## Push-in type jumper system



WAGO WMB Multi-marking system or WAGO miniature WSB Quick marking system

CAGE CLAMP® connects the following copper wires:\*



single strands

fine-stranded, tip bonded

Push jumper bars down firmly until fully inserted!

When using multi-pole bars, push alternately on right and then left side, successively until installed.

with crimped ferrule\*\*

fine-stranded, with crimped pin terminal

Terminal strips assembled by means of assembly

device Item No. for the device 298-635

fine-stranded, also with tinned

fine-stranded,

\*For aluminum wire see notes in section 15!
\*\*When using ferrules, the max. conductor cross section which can be accommodated is one size smaller than max. rating of terminal block

# Compact Terminal Strips 2.5 mm<sup>2</sup>/4 mm<sup>2</sup> / AWG 12 with Fixing Flanges or Snap-in Mounting Feet, Series 869



0.08**-2.5** mm<sup>2</sup>/4 mm<sup>2</sup>"f-st" **1** AWG 28 - 12 300 /600 V, 24 A

Pole width 5 mm / 0.197 in **──** 6 – 7 mm / 0.26 in

\* PAN KEMA CCAKEMA NV

Pole width 5 mm / 0.197 in **──** 6 – 7 mm / 0.26 in

\* **SN** KEDA CCAKEDA NV

- 1 Max. diameter of insulation 4.4 mm/0.173 in
- 2 500 V = rated voltage 6 kV = rated surge voltage 3 = pollution degree (see also section 15)
- 3 For longer strips and /or assemblies of different colors contact factory.
- 4 Suitable for Ex i applications with blue insulating housings





# **Description**

Terminal strips with fixing flanges M3 or M4, for screw fixing or similar methods, fixing hole diameter

3.2 mm Ø flange M3 4.2 mm Ø flange M4



Terminal strips with snap-in mounting feet, for plate thickness 0.6 – 1.2 mm, fixing hole diameter 3.5  $^{+\,0.1}$  mm  $\varnothing$ 

No. of poles	ltem No.	ltem No.	Packunit pcs	No. of poles	Item No.	Item No.	Packunit pcs		
Terminal strips with fixing flanges M 3,				Terminal strips with snap-in mounint feet,					
	grey	light green	ey		grey	light gre	ey		
2	869-102	869-132	100	2	869-152	869-182	100		
3	869-103	869-133	100	3	869-153	869-183	100		
4	869-104	869-134	100	4	869-154	869-184	100		
5	869-105	869-135	100	5	869-155	869-185	100		
6	869-106	869-136	50	6	869-156	869-186	50		
7	869-107	869-137	50	7	869-157	869-187	50		
8	869-108	869-138	50	8	869-158	869-188	50		
9	869-109	869-139	50	9	869-159	869-189	50		
10	869-110	869-140	25	10	869-160	869-190	25		
11	869-111	869-141	25	11	869-161	869-191	25		
12 🔞	869-112	869-142	25	12 3	869-162	869-192	25		

Termina	l strips with fixir	ng flanges M	4,	
	grey	light grey	,	
2	869-202	869-232	100	
3	869-203	869-233	100	
4	869-204	869-234	100	
5	869-205	869-235	100	
6	869-206	869-236	50	
7	869-207	869-237	50	
8	869-208	869-238	50	
9	869-209	869-239	50	
10	869-210	869-240	25	
11	869-211	869-241	25	
12 🔞	869-212	869-242	25	

#### Dimensions for terminal strips (in mm)

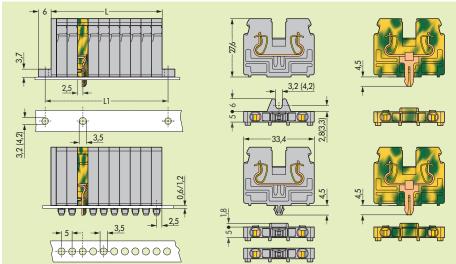
Modular terminal blocks and terminal with fixing flanges

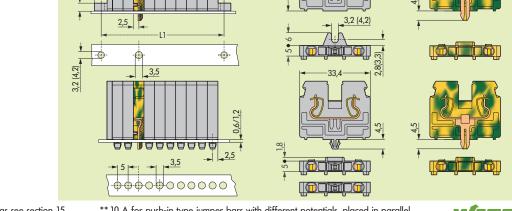
 $L = (No. \ of \ poles \ x \ pole \ width) + 2.5 \ mm$   $L_1 = L + 5.6 \ mm$ , with flange M 4 6.6 mm

Additional item nos. for terminal strips .../000-006 🕘 green-yellow .../000-017

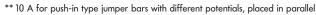
Modular terminal blocks and terminal strips with fixing flanges

 $L = (No. of poles \times pole \ width) + 2.5 \ mm$ 











## Modular Terminal Blocks with Fixing Flange 2.5 mm<sup>2</sup>/4 mm<sup>2</sup> / AWG 12, Series 869

Factory-assembled terminal strips, please contact factory for order form

Removable terminal blocks see pages 3.10 - 3.11

0.08**-2.5** mm²/4 mm² "f-st" **1** AWG 28 - 12 500 V/6 kV/3 **2** 300 /600 V, 24 A 20/5 A\*\*

Terminal block width 5 mm / 0.197 in \_\_\_\_ 6 - 7 mm / 0.26 in

\* c**91**us Kena (CAKENA NV

0.08**-2.5** mm²/4 mm² "f-st" **1** AWG 28 - 12 300 /600 V, 24 A

Terminal block width 5 mm / 0.197 in \_\_\_\_ 6 - 7 mm / 0.26 in

\* cSN us KEMA CCAKEMA NV

- 1 Max. diameter of insulation 4.4 mm/0.173 in
- 2 500 V = rated voltage
  6 kV = rated surge voltage
  3 = pollution degree
  (see also section 15)
- 3 Please see application notes on page 10.29
- 4 Suitable for Ex i applications





Description		Color	ltem No.	Packunit pcs	Color	ltem No.	Packunit pcs
Center terminal b	locks,	Center terminal	blocks		End terminal blo	cks with fixing flar	ige M 3,
needed for termina	ıl strips with	grey	869-321	100	3.2 mm Ø		
fixing flanges between	een end plate	blue	869-324 😃	100	grey	869-301	100
and end terminal b	lock	orange	869-326 🛑	100	blue	869-304 🕢	100
		green-yellow	869-327 🕕	100	green-yellow	869-307 🕕	100
		lichtgrau	869-329	100	light grey	869-309	100
		Center terminal	block with automo	ıtic push-			
		connect ground	earth contact,	-	End terminal blo	cks with fixing flar	ige M 4,
End terminal bloc	ks with fixing	diameter of drille	d hole: 3.5 +0.1 mm,		4.2 mm Ø		
flange M3 or M4	4, for screw		annot be commoned	!	grey	869-351	100
fixing or similar me	•	green-yellow	869-328	100	blue	869-354 4	100
hole diameter 3.2 r		3 ,			green-yellow	869-357	100
or 4.2 mm Ø (M 4)	, ,				light grey	869-359 🔾	100
					g g /		
Accessories	for modular terminal blocks and terminal strips App	ropriate marking sys	tem WMB/Mini-	-WSB (see section	n 14)		
End plate with fix	cing flange M3	grey	869-385	100 (4 x 25)	grey	869-385	100 (4 x 2
	2.5 mm / 0.098 in thick	blue	869-388	100 (4 x 25)	blue	869-388	100 (4 x 2
1		green-yellow	869-389	100 (4 x 25)	green-yellow	869-389	100 (4 x 2
		light grey	869-387	100 (4 x 25)	light grey	869-387	100 (4 x 2
End plate with fix	cina flanae M 4	grey	869-395	100 (4 x 25)	grey	869-395	100 (4 x 2
	2.5 mm / 0.098 in thick	blue	869-398	100 (4 x 25)	blue	869-398	100 (4 x 2
5 1 3		green-yellow	869-399	100 (4 x 25)	green-yellow	869-399	100 (4 x 2
		light grey	869-397	100 (4 x 25)	light grey	869-397	100 (4 x 2
Ana	Insulation stop 3, white	0.08 - 0.2 mm <sup>2</sup>	280-470	200 strips	0.08 - 0.2 mm <sup>2</sup>	280-470	200 strips
444000	5 pcs/strip light grey	0.25 - 0.5 mm <sup>2</sup>	280-471	200 strips	0.25 - 0.5 mm <sup>2</sup>	280-471	200 strips
00000	dark grey	0.75 – 1 mm <sup>2</sup>	280-472	200 strips	0.75 – 1 mm <sup>2</sup>	280-472	200 strips
	Push-in type jumper bar,	2-way	870-402	200 (8 x 25)	2-way	870-402	200 (8 x 2
	light grey,	3-way	870-403	200 (8 x 25)	3-way	870-403	200 (8 x 2
	insulated,	4-way	870-404	200 (8 x 25)	4-way	870-404	200 (8 x 2
	I <sub>N</sub> 18 A	+-wdy	:	200 (6 X 23)	4-wuy	:	200 (0 X 2
M M (II	I <sub>N</sub> 10 A	10-way	870-410	100 (4 x 25)	10-way	870-410	100 /4 2
dh dh .	Push-in type jumper bar,	from 1 to 3	870-433	200 (8 x 25)	from 1 to 3	870-433	100 (4 x 2 200 (8 x 2
	2	from 1 to 3	870-434	, ,	from 1 to 3	870-434	
and 200 M	light grey,			200 (8 x 25)			200 (8 x 2
muny	insulated,	from 1 to 5	870-435	100 (4 × 25)	from 1 to 5	870-435	100 (4 x 2
Addana.	I <sub>N</sub> 18 A	:	:	100 // 65	:	:	100 // 0
W.		from 1 to 10	870-440	100 (4 x 25)	from 1 to 10	870-440	100 (4 x 2
	Marker strip, transparent,	1 m/3'.3" long, 7			1 m /3'.3" long, 7.5		
	for central marking	plain	709-196	10	plain	709-196	10
	– group marking –						
FFF	Group marker carrier,						
111	insert in jumper contact slot of	see page 3.11			see page 3.11		
1 1 1	current bars	not suitable for S	eries 269-328				
	Assembly device, for the						
	assembly of terminal strips		298-635	1		298-635	1
	Protective warning marker,		200 405	100 // 05		200 405	100 /: 1
20000	for 5 terminal blocks,	yellow	280-405	100 (4×25)	gelb	280-405	100 (4×2
	fits into screwdriver slot						

<sup>\*</sup> For further approvals with corresponding ratings see section 15.

<sup>\*\* 10</sup> A for push-in type jumper bars with different potentials, placed in parallel

# Modular Terminal Blocks with Snap-in Mounting Foot 2,5 mm<sup>2</sup>/4 mm<sup>2</sup>, Series 869

Factory-assembled terminal strips, please contact factory for order form



Removable terminal blocks see pages 3.10 - 3.11

Terminal block width 5 mm / 0.197 in \_\_\_\_ 6 - 7 mm / 0.26 in

\* calus Keda CCAKEDA NV

Terminal block width 5 mm / 0.197 in \_\_\_\_ 6 - 7 mm / 0.26 in

k carus Kena CCAKENA NV

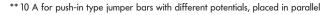
- 1 Max. diameter of insulation 4.4 mm/0.173 in
- 2 500 V = rated voltage
  6 kV = rated surge voltage
  3 = pollution degree
  (see also section 15)
- 3 Please see application notes on page 10.29
- 4 Suitable for Ex i applications





Description			Color	ltem No.	Packunit pcs	Color	ltem No.	Packunit pcs	
End terminal block	ks		End terminal blo	cks with snap-in n	nounting foot	Center terminal l	olocks with snap-i	in mounting foot	
with/without sna	p-in		grey	869-331 🔵	100	grey	869-311 🔵	100	
mounting foot,			blue	869-334 😃	100	blue	869-314 🕧	100	
for plate thickness 0			green-yellow	869-337 🌔	100	orange	869-316 🛑	100	
fixing hole diameter	3.5 +0.1 mm Ø		light grey	869-339 🔘	100	green-yellow	869-317 🕒	100	
						light grey	869-319 🔘	100	
			End terminal blo	cks without snap-i	n mounting foot	Center term. blo	cks without snap-	in mounting foot	
			grey	869-341	100	grey	869-321 🔘	100	
			blue	869-344 👍	100	blue	869-324 👍	100	
Center terminal bl	ocks		green-yellow	869-347 🌔	100	orange	869-326 🛑	100	
with/without sna	p-in		light grey	869-349 🔘	100	green-yellow	869-327 🕒	100	
mounting foot,						light grey	869-329 🔘	100	
for plate thickness 0	.6 – 1.2 mm,					with automatic push	n-connect ground (ear	th) contact, diamete	
fixing hole diameter	3.5 <sup>+0.1</sup> mm Ø					of drilled hole: 3.5 +0.1 r	of drilled hole: 3.5 +0.1 mm Ø Terminal blocks cannot be commo		
						green-yellow	869-328 🕕	100	
Accessories	for modular terminal blocks and terminal st	rine Appr	opriate marking syste	em WMB/Mini-	WSB (see section	n 14)			
End plate for termi	nal blocks with snap-in	rips ' '	grey	869-375	100 (4 x 25)	grey	869-375	100 (4 x 25)	
Ena plate for fermi	mounting foot		blue	869-378	100 (4 x 25)	blue	869-378	100 (4 x 25)	
4 5 6		0.098 in thick	green-yellow	869-379	100 (4 x 25)	green-yellow	869-379	100 (4 x 25)	
	2.3 111117	U.U76 III IIIICK	light grey	869-377	100 (4 x 25)	light grey	869-377	100 (4 x 25)	
•	Insulation stop (3),	white	0.08 – 0.2 mm <sup>2</sup>	280-470	200 strips	0.08 – 0.2 mm <sup>2</sup>	280-470	200 strips	
00000			0.06 - 0.2 mm <sup>2</sup>	280-470		0.06 - 0.2 mm <sup>2</sup>	280-471	•	
	5 pcs/strip	light grey			200 strips	0.75 – 0.5 mm <sup>2</sup>		200 strips	
	D. I. t. t.	dark grey	0.75 – 1 mm <sup>2</sup>	280-472	200 strips		280-472	200 strips	
	Push-in type jumpe	er bar,	2-way	870-402	200 (8 x 25)	2-way	870-402	200 (8 x 25)	
	light grey,		3-way	870-403	200 (8 x 25)	3-way	870-403	200 (8 x 25)	
	insulated,		4-way	870-404	200 (8 x 25)	4-way	870-404	200 (8 x 25)	
	I <sub>N</sub> 18 A		:	:	7.00 (/ 0.5)	:	:	700// 05	
000			10-way	870-410	100 (4 x 25)	10-way	870-410	100 (4 x 25)	
	Push-in type jumpe	er bar,			222 (2 25)			200 (0	
	light grey,		from 1 to 3	870-433	200 (8 × 25)	from 1 to 3	870-433	200 (8 x 25)	
Juliery	insulated,		from 1 to 4	870-434	200 (8 × 25)	from 1 to 4	870-434	200 (8 x 25)	
DOGG GARAL	I <sub>N</sub> 18 A		from 1 to 5	870-435	100 (4 x 25)	from 1 to 5	870-435	100 (4 x 25)	
U			:	:	7.00 (/ 0.5)	:	:		
			from 1 to 10	870-440	100 (4 x 25)	from 1 to 10	870-440	100 (4 x 25)	
	Aluminum carrier ra				_			_	
	3'.3" long, 18 mm/0.	/09 in wide,		210-154	1		210-154	1	
-	7 mm / 0.276 in high						•		
	Plastic end stop, wi		6 mm / 0.236 in wi			6 mm / 0.236 in wi			
	WSB marking facility		grey	209-122	25	grey	209-122	25	
	for aluminum rail 210								
	Marker strip, transp	arent,	1 m / 3'.3" long, 7.5			1 m / 3'.3" long, 7.5			
	for central marking		plain	709-196	10	plain	709-196	10	
	- group marking -								
FFF	Group marker carr								
111	insert in jumper conto	act slot of	see page 3.11			see page 3.11			
1 1 1	current bars					not suitable for Se	ries 269-328		
	Assembly device, f	or the							
-	assembly of terminal	strips		298-635	1		298-635	1	

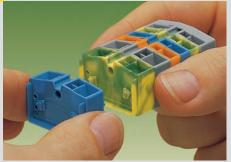






# Modular Terminal Blocks and Terminal Strips with CAGE CLAMP® . . . Series 264

Assembly \_



Assembly of modular terminal blocks to terminal strips



Mounting of an "end terminal block" with fixing flange



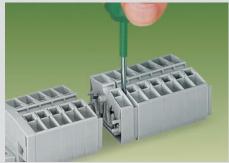
Mounting of an end plate

#### CAGE CLAMP® connection

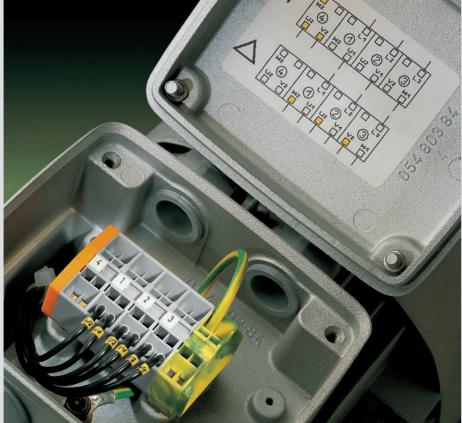


**Connection of conductors** 

#### Removal



Removal of a terminal block



## Commoning



Commoning with a jumper bar



T marker tag

Marking



Marking
with miniature WSB Quick marking system



CAGE CLAMP® connects the following copper wires:\*



stranded



fine stranded, also with tinned single strands

# ... Description and Handling

## **Fixing**



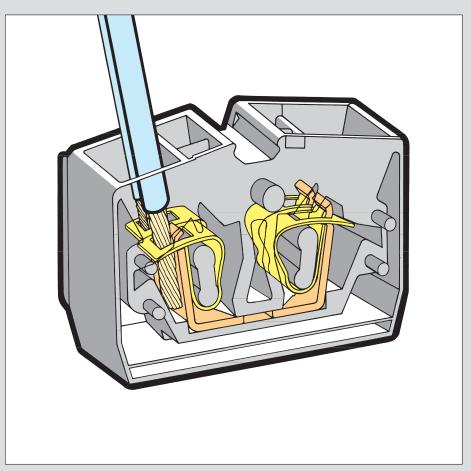
Terminal strip with fixing flange, screw fixing



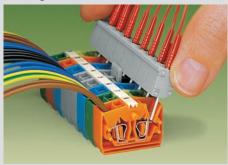
Terminal strip with snap-in mounting feet, fixing in holes



Terminal strip with snap-in mounting feet, assembly onto special aluminum rail



**Testing** 



Testing with modular test plug adapters – touch contact



Testing with modular test plug adapter – fully clamped by CAGE CLAMP\*



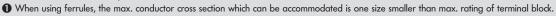
fine-stranded wire – tip bonded



fine-stranded wire with crimped ferrule **1** 



fine-stranded wire with crimped pin terminal





# Modular Terminal Blocks with Fixing Flange 2.5 mm² / AWG 12, Series 264

Test plug modules see page 10.15

0.08 - **2.5** mm<sup>2</sup> 800 V/8 kV/3 **0** 24 A AWG 28 - 12 600 V, 20 A **9**1 ®

0.08 - 2.5 mm<sup>2</sup> 800 V/8 kV/3 **0** 24 A AWG 28 - 12 600 V, 20 A **91** ®

Term. bl. width 6 (10) mm / 0.236 (0.394) in 8 – 9 mm / 0.33 in

Term. bl. width 6 (10) mm / 0.236 (0.394) in 8 - 9 mm / 0.33 in

' 🗫 ⑥ VDE CCAKEER № ⑤ ۞ 🕞 🚏 🗥 GL BV LR NV 🛭 🖗 🐼

\* 🕦 🍕 VDE 🖼 CCAKEER 🛇 🛈 🚭 🛣 GL BV LR NV 🛭 🕸 🐼

- 800 V = rated voltage 8 kV = rated surge voltage 3 = pollution degree (see also section 15)
- Please find all marking related item nos. in section 14. Direct printing of fully assembled terminal strips upon request
- 3 Suitable for Ex i applications
- Suitable for Ex e II applications 0.5 - 2.5 mm<sup>2</sup> AWG 20 - 12 750 V, 23 A (see also section 13)









Description		Color	Item No.	Packunit pcs	Color	ltem No.	Packunit pcs
Center terminal l	<b>plocks,</b> used between end terminal	2-conductor cente	r terminal blocks		2-conductor end to	erm. blocks with fi	xing flange
	block and end plate with fixing	6 mm/0.236 in wide	е		6 mm/0.236 in wide	•	
一一	flanges.	grey	264-321	100	grey	264-301	100
	(see also application notes)	blue	264-324 🕙	100	blue	264-304 🕙	100
1		orange	264-326 🛑	100	orange	264-306	100
		green-yellow	264-327 🌔	100	green-yellow	264-307 🌑	100
		light grey 🖘	264-131 🔘	100	light grey (Ex)	264-130 🔘	100
End terminal blo	cks with fixing flange,	4-conductor cente	r terminal blocks		4-conductor end to	erm. blocks with fi	xing flange
-	for screw fixing or similar	10 mm / 0.394 in wid	de		10 mm/0.394 in wid	е	
百百	methods,	grey	264-351	100	grey	264-331	100
	fixing hole diameter 3.2 mm.	blue	264-354 🕙	100	blue	264-334 🕙	100
	(see also application notes)	orange	264-356	100	orange	264-336	100
		green-yellow	264-357 🛑	100	green-yellow	264-337 🛑	100
		light grey (Ex)	264-231	100	light grey (Ex)	264-230 🔘	100
Accessories f	or modular terminal blocks						
1	End plate with fixing	grey	264-361	25	grey	264-361	25
	flange	orange	264-364	25	orange	264-364	25
	4 mm/0.157 in thick	light grey	264-363	25	light grey	264-363	25
	Comb type jumper bar,	I <sub>N</sub> 16 A		222 (2 25)	I <sub>N</sub> 16 A		222 (2 25)
7.7	2-way, insulated	grey	264-402	200 (8 x 25)	grey	264-402	200 (8 x 25)
U		reduce wire to 1.5 n	nm²/AWG 16 max.		reduce wire to 1.5 mm²/AWG 16 max.		
	Alternate comb type	2-way			2-way		
7 7	jumper bar, insulated,	for 4-cond. term. bl.	280-492	200 (8 x 25)	for 4-cond. term. bl.	280-492	200 (8 x 25)
	$I_N = I_N$ of terminal block	for 2-cond. term. bl.	281-492	100 (4 × 25)	for 2-cond. term. bl.	281-492	100 (4 x 25)
	Operating tool,						
	insulated	2-way	280-432	1	2-way	280-432	1
	Miniature WSB Quick marker						
S1000000000000000000000000000000000000	card, 10 strips with 10 markers	for 2-cond. term. bl.	248-5 🥹	5 cards	for 2-cond. term. bl.	248-5 🥹	5 cards
	each, white with black printing	for 4-cond. term. bl.	264-9 🕗	5 cards	for 4-cond. term. bl.	264-9 2	5 cards
and the same	T marker tag,	from 5 mm/0.197 ir	n to 6 mm/0.236 in		from 5 mm/0.197 in	to 6 mm/0.236 in	
Lindelphoto	6 characters per marker,	plain	209-290	50	plain	209-290	50
AAAA	30 markers per tag	Pre-printed markers	on request		Pre-printed markers	on request	
	notes (Dimensions see page 10.14)	P	- 4		p sa	45.55	

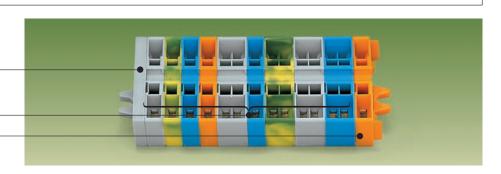
**Application notes** (Dimensions see page 10.14)

Complete terminal strips assembly with fixing flanges, consisting of:

End plate with fixing flange

Center terminal blocks

End terminal block with fixing flange



<sup>\*</sup> For further approvals with corresponding ratings see section 15.

# Modular Terminal Blocks w. Snap-in Mounting Foot 2.5 mm<sup>2</sup> / AWG 12, Series 264



**Test plug modules** see page 10.15

0.08 - 2.5 mm<sup>2</sup> 800 V/8 kV/3 **①** 24 A

AWG 28 - 12 600 V, 20 A 71 @

Term. bl. width 6 (10) mm / 0.236 (0.394) in  $3 - 9 \, \text{mm} / 0.33 \, \text{in}$ 

\* 🕦 🔊 WDE 🐯 VDE 🖼 CCAKEE NO 🛇 🛈 🚭 🗥 GL BV LR NV 🗞 🚱

0.08 **– 2.5 mm**<sup>2</sup> 800 V/8 kV/3 **①** 

AWG 28 - 12 600 V, 20 A **FN** ®

Term. bl. width 6 (10) mm / 0.236 (0.394) in  $3 - 9 \, \text{mm} / 0.33 \, \text{in}$ 

\* 🕦 🔊 🚳 VDE 🗺 (CAKEE NO 🛇 👁 👺 GL BV LR NV 🗞 🏵 😥

- 800 V = rated voltage 8 kV = rated surge voltage 3 = pollution degree (see also section 15)
- 2 Please find all marking related item nos. in section 14. Direct printing of fully assembled terminal strips upon request
- 3 Suitable for Ex i applications
- Ex Suitable for Ex e II applications 0.5 – 2.5 mm<sup>2</sup> 750 V, 23 A AWG 20 - 12 (see also section 13)





Description		Color	ltem No.	Packunit pcs	Color	Item No.	Packuni pcs	
Terminal blocks v	with snap-in mounting foot,	2-conductor terr	minal blocks with sn	ap-in	4-conductor tern	4-conductor terminal blocks with snap-in		
	for plate thickness 0.6 – 1.2 mm,	mounting foot,	6 mm / 0.236 in wide			0 mm / 0.394 in wide	•	
E 1	fixing hole diameter 3.5 mm	grey	264-311	100	grey	264-341	100	
Part L		blue	264-314 🕙	100	blue	264-344 🕙	100	
3		orange	264-316	100	orange	264-346	100	
		green-yellow	264-317	100	green-yellow	264-347	100	
		light grey (Ex)	264-180 🔾	100	light grey (Ex)	264-280 🔾	100	
Accessories f	or modular terminal blocks	and terminal	strips Appropriate	marking system	Mini-WSB (see se	ection 14)		
	End plate, for terminal blocks	grey	264-371	25	grey	264-371	25	
	with snap-in mounting foot	orange	264-374	25	orange	264-374	25	
	4 mm/0.157 in thick	light grey	264-373	25	light grey	264-373	25	
	Comb type jumper bar,	I <sub>N</sub> 16 A			I <sub>N</sub> 16 A			
П	2-way, insulated	grey	264-402	200 (8 x 25)	grey	264-402	200 (8 :	
		reduce wire to 1.5	mm²/AWG 16 max.		reduce wire to 1.5	mm²/AWG 16 max.		
	Alternate comb type							
11	jumper bar, insulated,	2-way	281-492	100 (4 x 25)	2-way	280-492	200 (8 :	
	$I_N = I_N$ of terminal block							
	Operating tool,							
	insulated	2-way	280-432	1	2-way	280-432	1	
	Miniature WSB Quick marker							
200000000000000000000000000000000000000	card, 10 strips with 10 markers		248-5 🕗	5 cards		264-9 🕗	5 car	
	each, white with black printing							
	Aluminum carrier rail,							
	1000 x 18 x 7 mm		210-154	1		210-154	1	
4	3'3" x 0.709 x 0.276 in							
Plastic end stop,		6 mm / 0.236 in w	ride		6 mm / 0.236 in wi	ide		
-	11 14 (CD   11 (C 11)	grey	209-122	25	grey	209-122	25	
	with WSB marking facility,				,			
	for aluminum rail 210-154							
	0 7:	from 5 mm/0.197	7 in to 6 mm/0.236 in		from 5 mm/0.197	in to 6 mm/0.236 in		
	for aluminum rail 210-154	from 5 mm/0.197	7 in to 6 mm/0.236 in <b>209-290</b>	50	from 5 mm/0.197	in to 6 mm/0.236 in <b>209-290</b>	50	

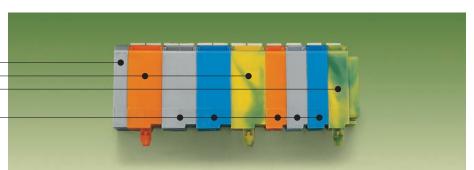
Complete terminal strip assembly with snap-in mounting feet, consisting of:

End plate -

4-conductor term. block with snap-in mounting foot<sup>1)</sup>

2-conductor term. block with snap-in mounting foot  $^{\! 1)}$ 

Center terminal blocks



<sup>1)</sup> at every 4th or 5th terminal block of the strip



<sup>\*</sup> For further approvals with corresponding ratings see section 15.

## Terminal Strips with Fixing Flanges or Snap-in Mounting Feet 2.5 mm<sup>2</sup>/AWG 12, Series 264

0.08 - 2.5 mm<sup>2</sup> 800 V/8 kV/3 **①** 

AWG 28 - 12 600 V, 20 A 71 @

Pole width 6 mm / 0.236 in **□**■ 8 – 9 mm / 0.33 in

₹¥ ® VDE KEER CCAKEER № ⑤ ® ® & GL BV LR NV ® ® ®

 $2 \times 0.08 - 2.5 \text{ mm}^2 | 2 \times AWG 28 - 12$ 800 V/8 kV/3 **①** 

600 V, 20 A 74 @

Pole width 10 mm / 0.394 in □ 8 – 9 mm / 0.33 in

\* 🗫 🏽 VDE KEER CCAKEER 🐿 🚭 🕸 GL BV LR NV 🕯 🚱 🗟

- 1 800 V = rated voltage 8 kV = rated surge voltage 3 = pollution degree (see also section 15)
- For longer strips and /or assemblies of different colors, contact factory.
- 3 Suitable for Ex i applications with blue insulating housings
- Ex Suitable for Ex e II applications 0.5 – 2.5 mm<sup>2</sup> 750 V, 23 A AWG 20 - 12 (see also section 13)





# Description

Terminal strips with fixing flanges, for screw fixing or similar methods, fixing hole diameter 3.2 mm

	N.			
	86	借	6	6

Terminal strips with snap-in mounting feet, for plate thickness 0.6 - 1.2 mm, fixing hole diameter 3.5 mm

	No. of poles	Item No.	Item No.	Packunit pcs	No. of poles	ltem No.	ltem No.	Packunit pcs
2-conductor terminal strips with fixing flanges,				4-condu	ctor terminal st	rips with fixi	ng flanges,	
		grey	light green	ey (Ex)		grey	light green	y Ex
	2	264-102	264-132	100	2	264-202	264-232	100
	3	264-103	264-133	100	3	264-203	264-233	100
	4	264-104	264-134	100	4	264-204	264-234	100
	5	264-105	264-135	100	5	264-205	264-235	100
	6	264-106	264-136	100	6	264-206	264-236	100
	7	264-107	264-137	100	7	264-207	264-237	100
	8	264-108	264-138	100	8	264-208	264-238	100
	9	264-109	264-139	50	9	264-209	264-239	50
	10	264-110	264-140	50	10	264-210	264-240	50
	11	264-111	264-141	25	11	264-211	264-241	25
	12 🕗	264-112	264-142	25	12 2	264-212	264-242	25

2-condu	ctor terminal st	rips with snap	-in mounting	4-conductor terminal strips with snap-in mounting				
feet,	grey	light grey	/ ⟨€x⟩	feet,	grey	<ul><li>light grey</li></ul>	√ (Ex)	
2	264-152	264-182	100	2	264-252	264-282	100	
3	264-153	264-183	100	3	264-253	264-283	100	
4	264-154	264-184	100	4	264-254	264-284	100	
5	264-155	264-185	100	5	264-255	264-285	100	
6	264-156	264-186	100	6	264-256	264-286	100	
7	264-157	264-187	100	7	264-257	264-287	100	
8	264-158	264-188	100	8	264-258	264-288	50	
9	264-159	264-189	50	9	264-259	264-289	50	
10	264-160	264-190	50	10	264-260	264-290	50	
11	264-161	264-191	25	11	264-261	264-291	25	
12 2	264-162	264-192	25	12 2	264-262	264-292	25	

#### Dimensions for modular terminal blocks and terminal strips (in mm)

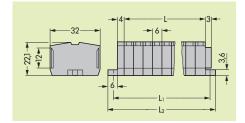
Modular terminal blocks and terminal strips with fixing flanges

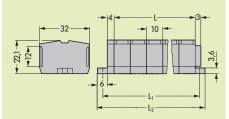
L = No. of poles x pole width  $L_1 = L + 9.6$  mm

 $L_2 = L + 16 \text{ mm}$ 

Additional item nos. for colored terminal strips

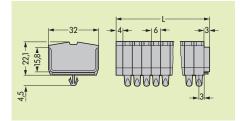
blue .../000-006 🕙

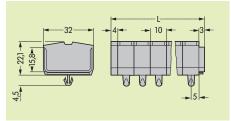




Modular terminal blocks and terminal strips with snap-in mounting feet

 $L = (No. of poles \times pole width) + 7 mm$ 





# Test Plug Modules for Modular Terminal Blocks and Terminal Strips, Series 264



Module width 6 mm / 0.236 in Test voltage 400 V ① / 48 V ② Test current 0.5 A / 6 A ⑤

Average contact pressure 2.2 N per pin

Module width 10 mm / 0.394 in Test voltage 800 V ♠ / 48 V ❷ Test current 0.5 A / 6 A ❸

Average contact pressure 2.2 N per pin

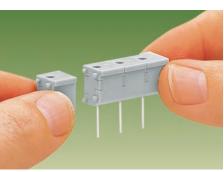




	ltem No.	Packunit pcs		ltem No.	Packunit pcs
Test plug m	odule,		Test plug mod	lule,	
Module width	n 6 mm / 0.236 in,		Module width 1	10 mm / 0.394 in,	
for 2-conduc	tor terminal blocks		for 4-conductor	r terminal blocks	
grey	249-136	100 (4 x 25)	grey	249-139	100 (4 x 25)

#### Accessories

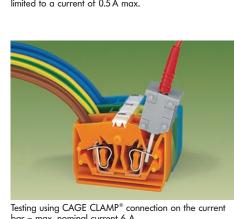
Test plug, with cable	500 mm/1'7	7.7"		Test plug, with cable	500 mm / 1'7	7.7"	
			50 (5 x 10)		2 mm Ø, red		
	2.3 mm Ø, yel.	<b>210-137</b> 50 (5 x 10)			2.3 mm Ø, yel.	210-137	50 (5 x 10)



Assembly of multipole test plug module strips



Testing with touch contact at the CAGE CLAMP® connection made of spring steel -limited to a current of 0.5 A max.



bar – max. nominal current 6 A.
The CAGE CLAMP® clamps individual test contacts.

- Max. test voltage 400 V/800 V only in test equipment, respecting the relevant air and creepage distances
- 2 In case of touch contacting, the max. test voltage must not exceed 48 V, test pins are not touchproof
- 3 Test current in case of touch contacting 0.5 A max., 6 A if the test pins are firmly connected in the clamping units



# Modular Terminal Blocks and Terminal Strips with CAGE CLAMP<sup>®</sup> . . . Series 260 to 262

Assembly \_



Assembly of modular terminal blocks to terminal strips



Mounting of an end plate

## Fixing \_



Terminal strip with fixing flange, screw fixing

### **CAGE CLAMP®** connection



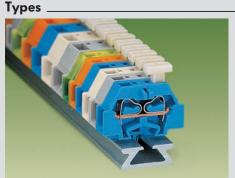
**Connection of conductors** 



## **CAGE CLAMP®** connection



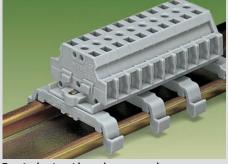
Connection of conductors, with push-buttons



Terminal strip with push-buttons on one side

\* For aluminum wire see notes in section 15!





Terminal strip with marker receptacle for miniature WSB Quick marking system



stranded

## Commoning



Commoning with jumper bar



fine stranded, also with tinned single strands



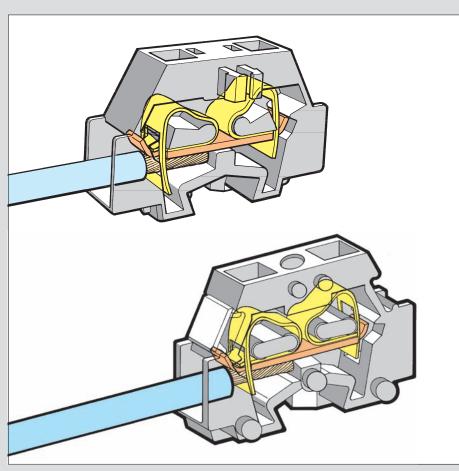
Terminal strip with snap-in mounting feet, fixing in holes



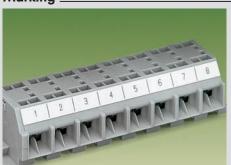
Terminal strip with snap-in mounting feet, on special aluminum rail



Terminal strip with fixing flange, screw fixing of mounting adapter 209-123<sup>1)</sup>



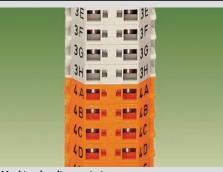
Marking



fine-stranded wire -

tip bonded

Marking with self-adhesive marker strips



Marking by direct printing



fine-stranded wire with crimped ferrule 1

## **Fixing**



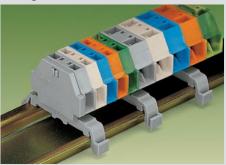
Terminal strip with fixing flange, on DIN 35 rail

## **Fixing**



Terminal strip with snap-in mounting feet, assembly of mounting adapter 209-120<sup>1)</sup> The distance between mounting adapters should be 35 – 40 mm / 1.378 – 1.575 in max.

## **Fixing**



Terminal strip with snap-in mounting feet on DIN 35 rail



fine-stranded wire with crimped pin terminal



• When using conductors with ferrules, it is necessary to use a terminal block one size larger than the nominal cross section of the conductor.



# Modular Terminal Blocks with Fixing Flange or Snap-in Mounting Foot 1.5 mm<sup>2</sup> / AWG 16, Series 260

Test plug modules see page 10.28

0.08 - 1.5 mm² | AWG 28 - 16 | 300 V, 10 A 74 | 400 V/6 kV/3 18 A | 300 V, 15 A 18 A | 300 V,

\* 👊 🏽 VDE KEER CCAKEER 🕦 S 🛈 🚭 GL BV LR NV 🛭 🏵





\* 🕦 🏽 VDE KEER CCAKEER 🕦 S 🛈 🚭 🚏 GL BV LR NV 🛭 🕙

400 V = rated voltage 6 kV = rated surge voltage 3 = pollution degree (see also section 15)

Accessories for me with the control of the control	er screw fixing or similar ethods, fixing hole ameter 3.2 mm (with mounting dapter 209-123 also for IN 35 rail) snap-in mounting foot, or plate thickness 0.6 – 1.2 mm, king hole diameter 3.5 mm to aluminum rail 210-154 or with ounting adapter 209-120 for IN 35 rail) , thou tixing foot, for terminal rips with snap-in mounting feet are dimensioned drawings on age 10.19)	2-conductor te grey light grey blue orange green-yellow  and terminal	260-301	300 (6 × 50) 300 (6 × 50)		260-331	300 (6 × 50) 300 (6 × 50) 300 (6 × 50) 300 (6 × 50) 300 (6 × 50) 300 (6 × 50) 300 (6 × 50) 300 (6 × 50) 300 (6 × 50) 300 (6 × 50) 300 (6 × 50) 300 (6 × 50) 300 (6 × 50) 300 (6 × 50) 300 (6 × 50) 300 (6 × 50) 300 (6 × 50)
Accessories for me with the control of the control	ethods, fixing hole ameter 3.2 mm (with mounting dapter 209-123 also for IN 35 rail) snap-in mounting foot, or plate thickness 0.6 - 1.2 mm, king hole diameter 3.5 mm ts aluminum rail 210-154 or with ounting adapter 209-120 for IN 35 rail) , ithout fixing foot, for terminal rips with snap-in mounting feet are dimensioned drawings on age 10.19)  modular terminal blocks and plate eith fixing flange	light grey blue orange green-yellow  2-conductor te grey light grey blue orange green-yellow  2-conductor te grey light grey blue orange green-yellow  and terminal	260-303	300 (6 x 50) 300 (6 x 50)	light grey blue orange green-yellow  4-conductor ter grey light grey blue orange green-yellow  4-conductor ter grey ight grey blue orange grey ight grey blue orange green-yellow	260-333	300 (6 x 50) 300 (6 x 50)
Accessories for menus	ameter 3.2 mm (with mounting dapter 209-123 also for IN 35 rail) snap-in mounting foot, or plate thickness 0.6 – 1.2 mm, sing hole diameter 3.5 mm ts aluminum rail 210-154 or with counting adapter 209-120 for IN 35 rail) ithout fixing foot, for terminal rips with snap-in mounting feet are dimensioned drawings on age 10.19)  modular terminal blocks and plate ith fixing flange	blue orange green-yellow  2-conductor te grey light grey blue orange green-yellow  2-conductor te grey light grey blue orange green-yellow  and terminal	260-304	300 (6 x 50) 300 (6 x 50)	blue orange green-yellow  4-conductor ter grey light grey blue orange green-yellow  4-conductor ter grey ight grey blue orange grey ight grey blue orange green-yellow	260-334	300 (6 x 50) 300 (6 x 50)
Accessories for me	dapter 209-123 also for IN 35 rail) snap-in mounting foot, or plate thickness 0.6 - 1.2 mm, king hole diameter 3.5 mm Its aluminum rail 210-154 or with counting adapter 209-120 for IN 35 rail) ithout fixing foot, for terminal rips with snap-in mounting feet are dimensioned drawings on age 10.19)  modular terminal blocks and plate rith fixing flange	orange green-yellow  2-conductor te grey light grey blue orange green-yellow  2-conductor te grey light grey blue orange grey light grey blue orange green-yellow  and terminal	260-306	300 (6 x 50) 300 (6 x 50)	orange green-yellow  4-conductor ter grey light grey blue orange green-yellow  4-conductor ter grey ight grey blue orange grey grey lue orange green-yellow	260-336	300 (6 x 50 300 (6 x 50
End terminal block of street of stre	in 35 rail)  snap-in mounting foot, or plate thickness 0.6 - 1.2 mm, king hole diameter 3.5 mm  Its aluminum rail 210-154 or with counting adapter 209-120 for IN 35 rail)  ithout fixing foot, for terminal rips with snap-in mounting feet are dimensioned drawings on age 10.19)  modular terminal blocks and plate rith fixing flange	green-yellow  2-conductor te grey light grey blue orange green-yellow  2-conductor te grey light grey blue orange green grey light grey blue orange green-yellow  and terminal	260-307	300 (6 x 50)	green-yellow  4-conductor ter grey light grey blue orange green-yellow  4-conductor ter grey ight grey blue orange green-yellow  14)	260-337	300 (6 x 50 300 (6 x 50
Accessories for me win series	proposition of the control of the co	2-conductor te grey light grey blue orange green-yellow 2-conductor te grey light grey blue orange green-yellow and terminal	rminal blocks 260-311 260-313 260-314 260-316 260-317  rminal blocks 260-321 260-323 260-324 260-326 260-327  strips (Marking acc	300 (6 x 50) 300 (6 x 50)	4-conductor ter grey light grey blue orange green-yellow 4-conductor ter grey ight grey blue orange green-yellow	rminal blocks 260-341 260-343 260-344 260-346 260-347  rminal blocks 260-351 260-353 260-354 260-357	300 (6 x 50 300 (6 x 50
Accessories for memory with the part of th	or plate thickness 0.6 – 1.2 mm, sing hole diameter 3.5 mm  Its aluminum rail 210-154 or with counting adapter 209-120 for IN 35 rail)  It without fixing foot, for terminal rips with snap-in mounting feet are dimensioned drawings on age 10.19)  In odular terminal blocks and plate  It fixing flange	grey light grey blue orange green-yellow  2-conductor te grey light grey blue orange green-yellow  and terminal	260-311	300 (6 x 50) 300 (6 x 50)	grey light grey blue orange green-yellow  4-conductor ter grey ight grey blue orange green-yellow	260-341	300 (6 x 50 300 (6 x 50
Accessories for m	ting hole diameter 3.5 mm ts aluminum rail 210-154 or with ounting adapter 209-120 for IN 35 rail) , ithout fixing foot, for terminal rips with snap-in mounting feet are dimensioned drawings on arge 10.19)  modular terminal blocks and plate rith fixing flange	grey light grey blue orange green-yellow  2-conductor te grey light grey blue orange green-yellow  and terminal	260-311	300 (6 x 50) 300 (6 x 50)	grey light grey blue orange green-yellow  4-conductor ter grey ight grey blue orange green-yellow	260-341	300 (6 x 50 300 (6 x 50
Accessories for me	ts aluminum rail 210-154 or with ounting adapter 209-120 for IN 35 rail)  tithout fixing foot, for terminal rips with snap-in mounting feet are dimensioned drawings on age 10.19)  modular terminal blocks and plate  tith fixing flange	light grey blue orange green-yellow  2-conductor te grey light grey blue orange green-yellow  and terminal	260-313	300 (6 x 50) 300 (6 x 50)	light grey blue orange green-yellow  4-conductor ter grey ight grey blue orange green-yellow	260-343	300 (6 x 50 300 (6 x 50
Accessories for m	ounting adapter 209-120 for IN 35 rail) , ithout fixing foot, for terminal rips with snap-in mounting feet see dimensioned drawings on age 10.19)  nodular terminal blocks and plate rith fixing flange	blue orange green-yellow  2-conductor te grey light grey blue orange green-yellow  and terminal	260-314	300 (6 x 50) 300 (6 x 50)	blue orange green-yellow  4-conductor ter grey ight grey blue orange green-yellow  14)	260-344	300 (6 x 50 300 (6 x 50
Accessories for m	ithout fixing foot, for terminal rips with snap-in mounting feet see dimensioned drawings on age 10.19)	orange green-yellow  2-conductor te grey light grey blue orange green-yellow  and terminal	260-316	300 (6 x 50) 300 (6 x 50)	orange green-yellow  4-conductor ter grey ight grey blue orange green-yellow	260-346	300 (6 x 50 300 (6 x 50
Accessories for m	ithout fixing foot, for terminal rips with snap-in mounting feet see dimensioned drawings on age 10.19)  nodular terminal blocks and plate rith fixing flange	green-yellow  2-conductor te grey light grey blue orange green-yellow  and terminal	260-317 rminal blocks 260-321 260-323 260-324 260-326 260-327 strips (Marking acc	300 (6 x 50) 300 (6 x 50) sessories see section	green-yellow  4-conductor ter grey ight grey blue orange green-yellow	260-347 orminal blocks 260-351 orminal blocks 260-353 orminal blocks 260-354 orminal blocks 260-354 orminal blocks 260-357 orminal blocks	300 (6 x 50 300 (6 x 50
Accessories for m	ithout fixing foot, for terminal rips with snap-in mounting feet see dimensioned drawings on age 10.19)  nodular terminal blocks and plate rith fixing flange	2-conductor te grey light grey blue orange green-yellow and terminal	rminal blocks 260-321	300 (6 x 50) 300 (6 x 50)	4-conductor ter grey ight grey blue orange green-yellow	260-351	300 (6 x 50 300 (6 x 50 300 (6 x 50 300 (6 x 50 300 (6 x 50
Accessories for m	rips with snap-in mounting feet ee dimensioned drawings on age 10.19)  modular terminal blocks and plate with fixing flange	grey light grey blue orange green-yellow  and terminal	260-321	300 (6 x 50) 300 (6 x 50) 300 (6 x 50) 300 (6 x 50) 300 (6 x 50) eessories see section	grey ight grey blue orange green-yellow	260-351	300 (6 x 50 300 (6 x 50 300 (6 x 50 300 (6 x 50
Accessories for m	rips with snap-in mounting feet ee dimensioned drawings on age 10.19)  modular terminal blocks and plate with fixing flange	grey light grey blue orange green-yellow  and terminal	260-321	300 (6 x 50) 300 (6 x 50) 300 (6 x 50) 300 (6 x 50) 300 (6 x 50) eessories see section	grey ight grey blue orange green-yellow	260-351	300 (6 x 50 300 (6 x 50 300 (6 x 50 300 (6 x 50
Accessories for m	nodular terminal blocks nd plate ith fixing flange	light grey blue orange green-yellow and terminal	260-323 260-324 260-326 260-327 strips (Marking acc	300 (6 x 50) 300 (6 x 50) 300 (6 x 50) 300 (6 x 50) 300 (6 x 50) eessories see section	ight grey blue orange green-yellow	260-353 260-354 260-356 260-357	300 (6 x 50 300 (6 x 50 300 (6 x 50 300 (6 x 50
Accessories for m	nodular terminal blocks nd plate ith fixing flange	light grey blue orange green-yellow and terminal	260-324	300 (6 x 50) 300 (6 x 50) 300 (6 x 50) 300 (6 x 50) 300 (6 x 50) eessories see section	ight grey blue orange green-yellow	260-354	300 (6 x 50 300 (6 x 50 300 (6 x 50 300 (6 x 50
Accessories for m	nodular terminal blocks nd plate rith fixing flange	blue orange green-yellow and terminal	260-324	300 (6 x 50) 300 (6 x 50) 300 (6 x 50) cessories see section	blue orange green-yellow	260-354	300 (6 x 50 300 (6 x 50 300 (6 x 50
En wi	nd plate ith fixing flange	orange green-yellow and terminal	260-326 260-327 Strips (Marking acc	300 (6 x 50) 300 (6 x 50) essories see section	orange green-yellow	260-356 <b>2</b> 60-357 <b>1</b>	300 (6 x 50 300 (6 x 50
En wi	nd plate ith fixing flange	green-yellow and terminal	260-327 Strips (Marking acc	300 (6 x 50)	green-yellow 14)	260-357	300 (6 x 50
En wi	nd plate ith fixing flange	and terminal	strips (Marking acc	essories see section	14)		
En wi	nd plate ith fixing flange					260-361	100 /0 5/
En me	rith fixing flange	grey	260-361	100 (2 x 50)	gray	260-361	100 /0 50
En mo		grey	260-361	100 (2 x 50)	arev	260-361	
Cc				(=)	grey	••	100 (2 × 50
Cc							
Co	nd plate with snap-in			()			
- F	ounting foot	grey	260-371	100 (2 × 50)	grey	260-371	100 (2 × 50
	_						
ins	omb type jumper bar,	I <sub>N</sub> 10 A			I <sub>N</sub> 10 A		
	sulated, 2-way	grey	260-402	25	grey	260-402	25
		reduce wire to 1	mm²/AWG 18 max.		reduce wire to 1	mm²/AWG 18 max.	
	perating tool, insulated,						
	r connecting the comb type	2-way	209-132	1	2-way	209-132	1
	mper bar						
	luminum carrier rail,						
10	000 x 18 x 7 mm		210-154	1		210-154	1
3'3	3" x 0.709 x 0.276 in						
Plo	astic end stop,	6 mm / 0.236 in			6 mm/0.236 in v		
A STATE OF THE PERSON NAMED IN	ith WSB marking facility,	grey	209-122	25	grey	209-122	25
	r aluminum rail 210-154						
	lounting adapter, for terminal	6 mm / 0.236 in			6 mm/0.236 in v		
blo	ocks with snap-in mounting	grey	209-120	25	grey	209-120	25
fo	ot, for DIN 35 rail						
M	lounting adapter with	6 mm/0.236 in	wide		6 mm/0.236 in v	wide	
sc	rew, for terminal blocks with	grey	209-123	25	grey	209-123	25
	king flange, for DIN 35 rail						
	ounting adapter	6.5 mm / 0.256 i	n wide		6.5 mm / 0.256 in	n wide	
	COLLING GOODIE						
ca	r DIN 35 rail,	grey	209-137	25	grey	209-137	25

 $<sup>^{*}</sup>$  For further approvals with corresponding ratings see section 15.

# **Terminal Strips with** Fixing Flanges or Snap-in Mounting Feet 1.5 $\,\mathrm{mm^2}$ / AWG 16, Series 260



**Test plug modules** see page 10.28

0.08 - 1.5 mm<sup>2</sup> 400 V/6 kV/3 **①** 

AWG 28 - 16 300 V, 10 A **9**\(\frac{1}{2}\)
300 V, 15 A (@

Pole width 5 mm / 0.197 in **──** 8 – 9 mm / 0.33 in

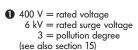
\* 🕦 @ VDE KEEB CCAKEEB (N 🛇 (O 😤 🕞 🐨 GL BV LR NV (8) (8)

 $2 \times 0.08 - 1.5 \text{ mm}^2$ 400 V/6 kV/3 **①** 

2 x AWG 28 - 16 300 V, 10 A **%** 300 V, 15 A **®** 

Pole width 8 mm / 0.315 in 8 – 9 mm / 0.33 in

\* 🗫 ₲ VDE KEEB CCAKEEB № © 🌣 🚭 GL BV LR NV 🛭 🖗



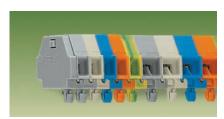
2 For longer strips and /or assemblies of different colors, please contact factory





Description

Terminal strips with fixing flanges, for screw fixing or similar methods, fixing hole diameter 3.2 mm (with mounting adapter 209-123 also for DIN 35 rail)



Terminal strips with snap-in mounting feet, for plate thickness 0.6 – 1.2 mm, fixing hole diameter 3.5 mm (fits aluminum rail 210-154 or with mounting adapter 209-120 for DIN 35 rail)

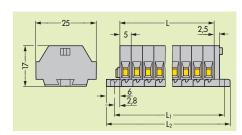
No. of poles	ltem No.	Packunit pcs	No. of poles	ltem No.	Packunit pcs
2-conductor	terminal strips with f	ixing flanges,	4-conducto	r terminal strips with fi	xing flanges,
grey			grey		
2	260-102	100	2	260-202	100
3	260-103	100	3	260-203	100
4	260-104	100	4	260-204	100
5	260-105	100	5	260-205	100
6	260-106	50	6	260-206	50
7	260-107	50	7	260-207	50
8	260-108	50	8	260-208	50
9	260-109	50	9	260-209	50
10	260-110	25	10	260-210	25
11	260-111	25	11	260-211	25
12 🕗	260-112	25	12 🕗	260-212	25

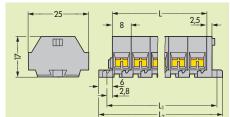
12 😉	200-112	23	12 6	200-212	25
2-conductor t	terminal strips with s	nap-in	4-conducto	r terminal strips with sr	nap-in
mounting fee	t, grey		mounting fe	eet, grey	
2	260-152	100	2	260-252	100
3	260-153	100	3	260-253	100
4	260-154	100	4	260-254	100
5	260-155	100	5	260-255	100
6	260-156	50	6	260-256	50
7	260-157	50	7	260-257	50
8	260-158	50	8	260-258	50
9	260-159	50	9	260-259	50
10	260-160	25	10	260-260	25
11	260-161	25	11	260-261	25
12 2	260-162	25	12 🕗	260-262	25

#### Dimensions for modular terminal blocks and terminal strips (in mm)

Modular terminal blocks and terminal strips with fixing flanges

L = No. of poles x pole width  $L_1 = L + 8.1$  mm  $L_2 = L + 14.5$  mm

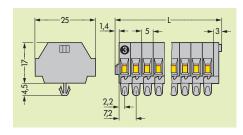


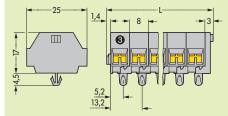


Modular terminal blocks and terminal strips with snap-in mounting feet

3 End terminal block; see page 10.18

L = (No. of poles x pole width) + 4.4 mm









# **Modular Terminal Blocks with** Fixing Flange or Snap-in Mounting Foot 2.5 mm<sup>2</sup> / AWG 14, Series 261

**Test plug modules** see page 10.28

 $\bullet$  500 V = rated voltage

6 kV = rated surge voltage 3 = pollution degree (see also section 15)

0.08 - **2.5** mm<sup>2</sup> 500 V/6 kV/3 **①** 24 A

AWG 28 - 14 300/600 V, 15/5 A **%** 300/600 V, 20/5 A ®

Terminal block width 6 mm / 0.236 in 8 – 9 mm / 0.33 in

\* 👊 🏽 VDE 🧺 CCAKEER 🕦 🕲 🕲 🚭 🦓 GL BV LR NV 🛭 🕙

2 x 0.08 – **2.5 mm**<sup>2</sup> | 2 x AWG 28 – 14 500 V/6 kV/3 **0** | 300/600 V, 15/5 A **9**\(\frac{1}{2}\) 24 A

Terminal block width 10 mm / 0.394 in 8 – 9 mm / 0.33 in

\* 91 @ VDE KEER CCAKEER NO S (D) @ \$\frac{1}{2} \text{ (CAKEER NO S) (D) } @ \$\frac{1}{2} \text{ (S) BV LR NV (D) } @ \$





Description		Color	ltem No.	Packunit pcs	Color	ltem No.	Packunit pcs
Terminal blocks	with fixing flange,	2-conductor terminal blocks			4-conductor ter	rminal blocks	
	for screw fixing or similar	grey	261-301	200 (4 x 50)	grey	261-331	200 (4 x 50
The same	methods, fixing hole	light grey	261-303 🔘	200 (4 x 50)	light grey	261-333	200 (4 x 50
	diameter 3.2 mm (with mounting	blue	261-304 🕗	200 (4 x 50)	blue	261-334 🕗	200 (4 x 50
	adapter 209-123 also for	orange	261-306	200 (4 x 50)	orange	261-336	200 (4 x 5)
	DIN 35 rail)	green-yellow	261-307	200 (4 x 50)	green-yellow	261-337	200 (4 × 5
erminal blocks	with snap-in mounting foot,						
	for plate thickness 0.6 – 1.2 mm,	2-conductor te	rminal blocks		4-conductor ter	rminal blocks	
1.1	fixing hole diameter 3.5 mm	grey	261-311	200 (4 x 50)	grey	261-341	200 (4 x 5
	(fits aluminum rail 210-154 or with	light grey	261-313	200 (4 x 50)	light grey	261-343	200 (4 x 5
	mounting adapter 209-120 for	blue	261-314 🕗	200 (4 x 50)	blue	261-344 🕗	200 (4 x 5)
	DIN 35 rail)	orange	261-316	200 (4 x 50)	orange	261-346	200 (4 x 5
nd terminal blo	ock 🜖,	green-yellow	261-317	200 (4 x 50)	green-yellow	261-347	200 (4 x 5
	without fixing foot, for terminal						
ESE	strips with snap-in mounting feet	2-conductor te	rminal blocks		4-conductor ter	rminal blocks	
50	(see dimensioned drawings on	grey	261-321	200 (4 x 50)	grey	261-351	200 (4 x 50
	page 10.21)	light grey	261-323	200 (4 × 50)	light grey	261-353	200 (4 x 5
		blue	261-324 🕗	200 (4 x 50)	blue	261-354 🕗	200 (4 x 50
		orange	261-326	200 (4 x 50)	orange	261-356	200 (4 x 5)
		green-yellow	261-327	200 (4 x 50)	green-yellow	261-357	200 (4 x 5
ccessories	or modular terminal blocks	and terminal	strips (Marking acce	essories see section	14)		
	for modular terminal blocks	and terminal	strips (Marking acce	essories see section	14)		
Accessories	End plate					261-361	100 (2 x 50
		grey	strips (Marking acce	100 (2 x 50)	grey	261-361	100 (2 x 50
	End plate					261-361	100 (2 x 50
	End plate with fixing flange					261-361 261-371	
	End plate with fixing flange End plate with snap-in	grey	261-361	100 (2 × 50)	grey		
	End plate with fixing flange End plate with snap-in	grey	261-361	100 (2 × 50)	grey		
	End plate with fixing flange End plate with snap-in mounting foot	grey	261-361	100 (2 × 50)	grey		
	End plate with fixing flange  End plate with snap-in mounting foot  Comb type jumper bar,	grey  grey  I <sub>N</sub> 16 A grey	261-361 261-371	100 (2 × 50) 100 (2 × 50)	grey  grey  I <sub>N</sub> 16 A grey	261-371	100 (2 x 5
	End plate with fixing flange  End plate with snap-in mounting foot  Comb type jumper bar,	grey  grey  I <sub>N</sub> 16 A grey	261-361 261-371 261-402	100 (2 × 50) 100 (2 × 50)	grey  grey  I <sub>N</sub> 16 A grey	261-371 261-402	100 (2 x 5
	End plate with fixing flange  End plate with snap-in mounting foot  Comb type jumper bar, insulated, 2-way	grey  grey  I <sub>N</sub> 16 A grey	261-361 261-371 261-402	100 (2 × 50) 100 (2 × 50)	grey  grey  I <sub>N</sub> 16 A grey	261-371 261-402	100 (2 x 5
	End plate with fixing flange  End plate with snap-in mounting foot  Comb type jumper bar, insulated, 2-way  Operating tool, insulated,	grey  grey  I <sub>N</sub> 16 A grey reduce wire to 1.	261-361 261-371 261-402 5 mm²/AWG 16 max.	100 (2 × 50) 100 (2 × 50) 25	grey  grey  I <sub>N</sub> 16 A grey reduce wire to 1.	<b>261-371 261-402</b> 5 mm²/AWG 16 max.	100 (2 x 50 25
	End plate with fixing flange  End plate with snap-in mounting foot  Comb type jumper bar, insulated, 2-way  Operating tool, insulated, for connecting the comb type	grey  grey  I <sub>N</sub> 16 A grey reduce wire to 1.	261-361 261-371 261-402 5 mm²/AWG 16 max.	100 (2 × 50) 100 (2 × 50) 25	grey  grey  I <sub>N</sub> 16 A grey reduce wire to 1.	261-371 261-402 5 mm²/AWG 16 max. 209-132	100 (2 x 50 25
	End plate with fixing flange  End plate with snap-in mounting foot  Comb type jumper bar, insulated, 2-way  Operating tool, insulated, for connecting the comb type jumper bar	grey  grey  I <sub>N</sub> 16 A grey reduce wire to 1.	261-361 261-371 261-402 5 mm²/AWG 16 max.	100 (2 × 50) 100 (2 × 50) 25	grey  grey  I <sub>N</sub> 16 A grey reduce wire to 1.	<b>261-371 261-402</b> 5 mm²/AWG 16 max.	100 (2 x 50 25
	End plate with fixing flange  End plate with snap-in mounting foot  Comb type jumper bar, insulated, 2-way  Operating tool, insulated, for connecting the comb type jumper bar  Aluminum carrier rail,	grey  grey  I <sub>N</sub> 16 A grey reduce wire to 1.	261-361  261-371  261-402 5 mm²/AWG 16 max.  209-132	100 (2 × 50) 100 (2 × 50) 25	grey  grey  I <sub>N</sub> 16 A grey reduce wire to 1.	261-371 261-402 5 mm²/AWG 16 max. 209-132	1
	End plate with fixing flange  End plate with snap-in mounting foot  Comb type jumper bar, insulated, 2-way  Operating tool, insulated, for connecting the comb type jumper bar  Aluminum carrier rail, 1000 x 18 x 7 mm	grey  grey  I <sub>N</sub> 16 A grey reduce wire to 1.	261-361  261-371  261-402 5 mm²/AWG 16 max.  209-132  210-154	100 (2 × 50) 100 (2 × 50) 25	grey  grey  I <sub>N</sub> 16 A grey reduce wire to 1.	261-371  261-402 5 mm²/AWG 16 max.  209-132  210-154	100 (2 x 50 25
	End plate with fixing flange  End plate with snap-in mounting foot  Comb type jumper bar, insulated, 2-way  Operating tool, insulated, for connecting the comb type jumper bar  Aluminum carrier rail, 1000 x 18 x 7 mm 3'3" x 0.709 x 0.276 in	grey  I <sub>N</sub> 16 A grey reduce wire to 1.  2-way	261-361  261-371  261-402 5 mm²/AWG 16 max.  209-132  210-154	100 (2 × 50) 100 (2 × 50) 25	grey  I <sub>N</sub> 16 A grey reduce wire to 1.  2-way	261-371  261-402 5 mm²/AWG 16 max.  209-132  210-154	100 (2 x 50 25
	End plate with fixing flange  End plate with snap-in mounting foot  Comb type jumper bar, insulated, 2-way  Operating tool, insulated, for connecting the comb type jumper bar  Aluminum carrier rail, 1000 x 18 x 7 mm 3'3" x 0.709 x 0.276 in  Plastic end stop,	grey  IN 16 A grey reduce wire to 1.  2-way	261-361  261-371  261-402 5 mm²/AWG 16 max.  209-132  210-154	100 (2 × 50)  100 (2 × 50)  25  1	grey  I <sub>N</sub> 16 A grey reduce wire to 1.  2-way	261-371  261-402 5 mm²/AWG 16 max.  209-132  210-154	100 (2 x 50 25 1
	End plate with fixing flange  End plate with snap-in mounting foot  Comb type jumper bar, insulated, 2-way  Operating tool, insulated, for connecting the comb type jumper bar  Aluminum carrier rail, 1000 x 18 x 7 mm 3'3" x 0.709 x 0.276 in  Plastic end stop, with WSB marking facility,	grey  IN 16 A grey reduce wire to 1.  2-way	261-361  261-371  261-402 5 mm²/AWG 16 max.  209-132  210-154  wide 209-122	100 (2 × 50)  100 (2 × 50)  25  1	grey  I <sub>N</sub> 16 A grey reduce wire to 1.  2-way	261-371  261-402 5 mm²/AWG 16 max.  209-132  210-154  wide 209-122	100 (2 x 50 25 1
	End plate with fixing flange  End plate with snap-in mounting foot  Comb type jumper bar, insulated, 2-way  Operating tool, insulated, for connecting the comb type jumper bar  Aluminum carrier rail, 1000 x 18 x 7 mm 3'3" x 0.709 x 0.276 in  Plastic end stop, with WSB marking facility, for aluminum rail 210-154	grey  I <sub>N</sub> 16 A grey reduce wire to 1.  2-way  6 mm/0.236 in v grey	261-361  261-371  261-402 5 mm²/AWG 16 max.  209-132  210-154  wide 209-122	100 (2 × 50)  100 (2 × 50)  25  1	grey  I <sub>N</sub> 16 A grey reduce wire to 1.  2-way  6 mm/0.236 in v grey	261-371  261-402 5 mm²/AWG 16 max.  209-132  210-154  wide 209-122	100 (2 x 50 25 1
	End plate with fixing flange  End plate with snap-in mounting foot  Comb type jumper bar, insulated, 2-way  Operating tool, insulated, for connecting the comb type jumper bar  Aluminum carrier rail, 1000 x 18 x 7 mm 3'3" x 0.709 x 0.276 in  Plastic end stop, with WSB marking facility, for aluminum rail 210-154  Mounting adapter, for terminal	grey  I <sub>N</sub> 16 A grey reduce wire to 1.  2-way  6 mm/0.236 in v grey 6 mm/0.236 in v grey	261-361  261-371  261-402 5 mm²/AWG 16 max.  209-132  210-154  wide 209-122  wide 209-120	100 (2 × 50)  100 (2 × 50)  25  1  1  25	grey  I <sub>N</sub> 16 A grey reduce wire to 1.  2-way  6 mm/0.236 in v grey 6 mm/0.236 in v grey	261-371  261-402 5 mm²/AWG 16 max.  209-132  210-154  wide 209-122  wide 209-120	100 (2 x 5) 25 1 1 25
	End plate with fixing flange  End plate with snap-in mounting foot  Comb type jumper bar, insulated, 2-way  Operating tool, insulated, for connecting the comb type jumper bar  Aluminum carrier rail, 1000 x 18 x 7 mm 3'3" x 0.709 x 0.276 in  Plastic end stop, with WSB marking facility, for aluminum rail 210-154  Mounting adapter, for terminal blocks with snap-in mounting	grey  I <sub>N</sub> 16 A grey reduce wire to 1.  2-way  6 mm/0.236 in v grey 6 mm/0.236 in v	261-361  261-371  261-402 5 mm²/AWG 16 max.  209-132  210-154  wide 209-122  wide 209-120	100 (2 × 50)  100 (2 × 50)  25  1  1  25	grey  I <sub>N</sub> 16 A grey reduce wire to 1.  2-way  6 mm/0.236 in v grey 6 mm/0.236 in v	261-371  261-402 5 mm²/AWG 16 max.  209-132  210-154  wide 209-122  wide 209-120	100 (2 x 5 25 1
	End plate with fixing flange  End plate with snap-in mounting foot  Comb type jumper bar, insulated, 2-way  Operating tool, insulated, for connecting the comb type jumper bar  Aluminum carrier rail, 1000 x 18 x 7 mm 3'3" x 0.709 x 0.276 in  Plastic end stop, with WSB marking facility, for aluminum rail 210-154  Mounting adapter, for terminal blocks with snap-in mounting foot, for DIN 35 rail	grey  I <sub>N</sub> 16 A grey reduce wire to 1.  2-way  6 mm/0.236 in v grey 6 mm/0.236 in v grey	261-361  261-371  261-402 5 mm²/AWG 16 max.  209-132  210-154  wide 209-122  wide 209-120	100 (2 × 50)  100 (2 × 50)  25  1  1  25	grey  I <sub>N</sub> 16 A grey reduce wire to 1.  2-way  6 mm/0.236 in v grey 6 mm/0.236 in v grey	261-371  261-402 5 mm²/AWG 16 max.  209-132  210-154  wide 209-122  wide 209-120	100 (2 x 5) 25 1 1 25
	End plate with fixing flange  End plate with snap-in mounting foot  Comb type jumper bar, insulated, 2-way  Operating tool, insulated, for connecting the comb type jumper bar  Aluminum carrier rail, 1000 x 18 x 7 mm 3'3" x 0.709 x 0.276 in  Plastic end stop, with WSB marking facility, for aluminum rail 210-154  Mounting adapter, for terminal blocks with snap-in mounting foot, for DIN 35 rail  Mounting adapter with	grey  I <sub>N</sub> 16 A grey reduce wire to 1.  2-way  6 mm/0.236 in v grey 6 mm/0.236 in v	261-361  261-371  261-402 5 mm²/AWG 16 max.  209-132  210-154  wide 209-122  wide 209-120	100 (2 × 50)  100 (2 × 50)  25  1  1  25  25	grey  I <sub>N</sub> 16 A grey reduce wire to 1.  2-way  6 mm/0.236 in v grey 6 mm/0.236 in v	261-371  261-402 5 mm²/AWG 16 max.  209-132  210-154  wide 209-122  wide 209-120	100 (2 x 5) 25 1 1 25 25
	End plate with fixing flange  End plate with snap-in mounting foot  Comb type jumper bar, insulated, 2-way  Operating tool, insulated, for connecting the comb type jumper bar  Aluminum carrier rail, 1000 x 18 x 7 mm 3'3" x 0.709 x 0.276 in  Plastic end stop, with WSB marking facility, for aluminum rail 210-154  Mounting adapter, for terminal blocks with snap-in mounting foot, for DIN 35 rail  Mounting adapter with screw, for terminal blocks with	grey  I <sub>N</sub> 16 A grey reduce wire to 1.  2-way  6 mm/0.236 in v grey 6 mm/0.236 in v	261-361  261-371  261-402 5 mm²/AWG 16 max.  209-132  210-154  wide 209-122  wide 209-120	100 (2 × 50)  100 (2 × 50)  25  1  1  25  25	grey  I <sub>N</sub> 16 A grey reduce wire to 1.  2-way  6 mm/0.236 in v grey 6 mm/0.236 in v	261-371  261-402 5 mm²/AWG 16 max.  209-132  210-154  wide 209-122  wide 209-120	100 (2 x 5  25  1  1  25  25
	End plate with fixing flange  End plate with snap-in mounting foot  Comb type jumper bar, insulated, 2-way  Operating tool, insulated, for connecting the comb type jumper bar  Aluminum carrier rail, 1000 x 18 x 7 mm 3'3" x 0.709 x 0.276 in  Plastic end stop, with WSB marking facility, for aluminum rail 210-154  Mounting adapter, for terminal blocks with snap-in mounting foot, for DIN 35 rail  Mounting adapter with screw, for terminal blocks with fixing flange, for DIN 35 rail	grey  I <sub>N</sub> 16 A grey reduce wire to 1.  2-way  6 mm/0.236 in v grey 6 mm/0.236 in v grey 6 mm/0.236 in v grey	261-361  261-371  261-402 5 mm²/AWG 16 max.  209-132  210-154  wide 209-122  wide 209-120	100 (2 × 50)  100 (2 × 50)  25  1  1  25  25	grey  I <sub>N</sub> 16 A grey reduce wire to 1.  2-way  6 mm/0.236 in v grey 6 mm/0.236 in v grey 6 mm/0.236 in v grey	261-371  261-402 5 mm²/AWG 16 max.  209-132  210-154  wide 209-122  wide 209-120	100 (2 x 5 25 1 1 25

 $<sup>\</sup>ensuremath{^*}$  For further approvals with corresponding ratings see section 15.

# **Terminal Strips with** Fixing Flanges or Snap-in Mounting Feet 2.5 mm<sup>2</sup> / AWG 14, Series 261



**Test plug modules** see page 10.28

0.08 - 2.5 mm<sup>2</sup> 500 V/6 kV/3 0

AWG 28 - 14 300/600 V, 15/5 A **9\** 300/600 V, 20/5 A **@** 

Pole width 6 mm / 0.236 in ■ 8 – 9 mm / 0.33 in

\* 🕦 @ VDE KEER CCAKEER 🛇 @ 🕏 🚭 🗥 GL BV LR NV 🛭 🖗

2 x 0.08 – **2.5** mm<sup>2</sup> | 2 x AWG 28 – 14 500 V/6 kV/3 **0** | 300/600 V, 15/5 A **9**\(\frac{1}{2}\) 24 A

Pole width 10 mm / 0.394 in \_\_\_\_ 8 – 9 mm / 0.33 in

\* 🗫 🍕 VDE KEEB CCAKEEB S 👁 😤 🚱 🕸 🗥 GL BV LR NV 🗞 🏵

- $\bigcirc$  500 V = rated voltage 6 kV = rated surge voltage 3 = pollution degree (see also section 15)
- 2 Suitable for Ex i applications with blue insulating hou-
- 4 For longer strips and /or assemblies of different please contact factory





Description	

## Terminal strips with fixing flanges, for screw fixing or similar methods, fixing hole diameter 3.2 mm (with mounting adapter 209-123 also for DIN 35 rail)



Terminal strips with snap-in mounting feet, for plate thickness 0.6 - 1.2 mm, fixing hole diameter 3.5 mm (fits aluminum rail 210-154 or with mounting adapter 209-120 for DIN 35 rail)

No. of poles	ltem No.	Packunit pcs	No. of poles	ltem No.	Packunit pcs
2-conduct	or terminal strips with f	ixing flanges,	4-conducto	or terminal strips with fi	xing flanges,
grey			grey		
2	261-102	100	2	261-202	100
3	261-103	100	3	261-203	100
4	261-104	100	4	261-204	100
5	261-105	100	5	261-205	100
6	261-106	50	6	261-206	50
7	261-107	50	7	261-207	50
8	261-108	50	8	261-208	50
9	261-109	50	9	261-209	50
10	261-110	25	10	261-210	25
11	261-111	25	11	261-211	25
12 🕢	261-112	25	12 🕢	261-212	25

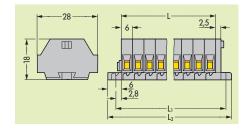
2-conduct	or terminal strips with sr	nap-in	4-conductor terminal strips with snap-in					
mounting	feet, grey		mounting feet, grey					
2	261-152	100	2	261-252	100			
3	261-153	100	3	261-253	100			
4	261-154	100	4	261-254	100			
5	261-155	100	5	261-255	100			
6	261-156	50	6	261-256	50			
7	261-157	50	7	261-257	50			
8	261-158	50	8	261-258	50			
9	261-159	50	9	261-259	50			
10	261-160	25	10	261-260	25			
11	261-161	25	11	261-261	25			
12 🕢	261-162	25	12 🕢	261-262	25			
			<u> </u>					

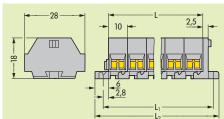
#### Dimensions for modular terminal blocks and terminal strips (in mm)

Modular terminal blocks and terminal strips with fixing flanges

L = No. of poles x pole width  $L_1 = L + 8.1$  mm  $L_2 = L + 14.5$  mm

Additional item-Nos. for colored terminal strips blue .../000-006 🕗

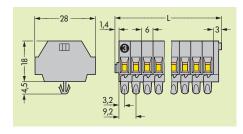


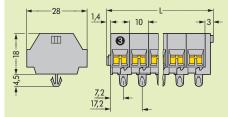


Modular terminal blocks and terminal strips with snap-in mounting feet

3 End terminal block; see page 10.20

 $L = (No. of poles \times pole width) + 4.4 mm$ 







# Modular Terminal Blocks with Push Buttons on One or Both Sides, with Fixing Flange or Snap-in Mounting Foot 2.5 mm<sup>2</sup> / AWG 14, Series 261

0.08 - 2.5 mm<sup>2</sup> 500 V/6 kV/3 **①** 24 A

AWG 28 - 14 300/600 V, 15/5 A 🕦

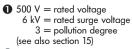
2 x 0.08 - 2.5 mm<sup>2</sup> | 2 x AWG 28 - 14 500 V/6 kV/3 **①** | 300/600 V, 15/5 A **%** 

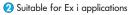
Terminal block width 6 mm / 0.236 in 8 – 9 mm / 0.33 in

\* 👊 CCAKEE 🛈 🕾 📽 🗥 LR NV 🛭 🕙

8 – 9 mm / 0.33 in \* 🗫 CCAKEER 🛈 🕾 📽 🗥 LR NV 🚳

Terminal block width 10 mm / 0.394 in











with push button on one side		Color	Item No.		Packunit pcs	Color	ltem No.		Packunit pcs
Terminal blocks v	with fixing flange,	2-cond. term.	block with pus	sh button o	on one side	4-cond. term	. block with pu	ush button (	on one side
	for screw fixing or similar	grey	261-301/33	31-000 🔵	200 (4 x 50)	grey	261-331/3	32-000	200 (4 x 50)
1202	methods, fixing hole	light grey	261-303/33	31-000 🔘	200 (4 x 50)	light grey	261-333/3	32-000 🔘	200 (4 x 50)
	diameter 3.2 mm (with mounting	blue	261-304/33	31-000 🕗	200 (4 x 50)	blue	261-334/3	32-000 🕗	200 (4 x 50)
	adapter 209-123 also for	orange	261-306/33	31-000 🛑	200 (4 x 50)	orange	261-336/3	32-000 🛑	200 (4 x 50)
	DIN 35 rail)	green-yellow	261-307/33	31-000 🌕	200 (4 x 50)	green-yellow	261-337/3	32-000 🕕	200 (4 x 50)
Terminal blocks v	with snap-in mounting foot,								
	for plate thickness 0.6 – 1.2 mm,	2-cond. term.	block with pus	sh button o	on one side	4-cond. term	. block with pu	ush button (	on one side
120	fixing hole diameter 3.5 mm	grey	261-311/33	31-000	200 (4 x 50)	grey	261-341/3	32-000	200 (4 x 50)
3	(fits aluminum rail 210-154 or with	light grey	261-313/33	31-000 🔘	200 (4 x 50)	light grey	261-343/3	32-000 🔘	200 (4 x 50)
	mounting adapter 209-120 for	blue	261-314/33	31-000 🕗	200 (4 x 50)	blue	261-344/3	32-000 🕗	200 (4 x 50)
0.00	DIN 35 rail)	orange	261-316/33	1-000	200 (4 x 50)	orange	261-346/3	32-000 🛑	200 (4 x 50)
End terminal blo	ck 🕄,	green-yellow	261-317/33	31-000	200 (4 x 50)	green-yellow	261-347/3	32-000 🕕	200 (4 x 50)
ED m	without fixing foot, for terminal					-			
The state of	strips with snap-in mounting feet	2-cond. term.	block with pus	sh button o	on one side	4-cond. term	. block with pu	ush button o	on one side
3-4	(see dimensioned drawings on	grey	261-321/33	1-000	200 (4 x 50)	grey	261-351/3	32-000	200 (4 x 50)
20-8-	page 10.23)	light grey	261-323/33	1-000	200 (4 × 50)	light grey	261-353/3	32-000	200 (4 x 50)
N Walter	, ,	blue	261-324/33	_		blue	261-354/3	32-000 🕗	200 (4 x 50)
		orange	261-326/33	31-000	200 (4 × 50)	orange	261-356/3	32-000	200 (4 x 50)
		green-yellow	261-327/33			green-yellow	261-357/3	32-000	200 (4 x 50)
		ŭ ,			, ,	,			, ,
with push bu	ttons on both sides	Color	Item No.		Packunit	Color	ltem No.		Packunit
Terminal blocks y	with fixing flange,	2-cond term	bl. with push l			4-cond term	. bl. with push		
	for screw fixing or similar	grey	261-301/34	_		grey	261-331/3	_	200 (4 x 50)
44	methods, fixing hole	light grey	261-303/34		(	light grey			200 (4 x 50)
3.1	diameter 3.2 mm (with mounting	blue	261-304/34			blue	261-334/3		
- 1 m	adapter 209-123 also for	orange	261-306/34		(/	orange	261-336/3		
-	DIN 35 rail)	green-yellow	261-307/34			green-yellow			200 (4 x 50)
Terminal blocks	with snap-in mounting foot,	green yellen	201 007704		200 (1 x 00)	green year	201 00770	12 000	200 (1 x 00)
	for plate thickness 0.6 – 1.2 mm,	2-cond term	bl. with push l	huttons on	hoth sides	4-cond term	. bl. with push	huttons on	hoth sides
4	fixing hole diameter 3.5 mm	grey	261-311/34	_		grey	261-341/3		200 (4 x 50)
1	(fits aluminum rail 210-154 or with	light grey	261-313/34		, ,	light grey	261-343/3		200 (4 x 50)
20 -	mounting adapter 209-120 for	blue	261-314/34		` '	blue			200 (4 x 50)
	DIN 35 rail)	orange	261-316/34		, ,	orange	261-346/3		, ,
End terminal blo	,	green-yellow	261-317/34			green-yellow			200 (4 x 50)
a ic.iiiiidi bio	without fixing foot, for terminal	greensyenow	201-017/04	000	200 (4 X 30)	green-yellow	201-047/3	12-000	200 (4 x 30)
The same of the sa	strips with snap-in mounting feet	2-cond term	bl. with push l	huttons on	hath sides	4-cond term	. bl. with push	buttons on	both sides
2	(see dimensioned drawings on	grey	261-321/34	_	200 (4 x 50)	grey	261-351/3		200 (4 x 50)
9	page 10.23)	light grey	261-323/34		, ,	light grey	261-353/3		, ,
A STATE OF	page 10.20)	blue	261-323/34		. ,	blue	261-353/3		, ,
			261-326/34		, ,		261-354/3		, ,
		orange green-yellow	261-326/34			orange	261-357/3		, ,
		green-yellow	201-327/34	1-000	200 (4 x 30)	green-yellow	201-357/3		200 (4 x 50
Accessories f	or modular terminal blocks	and termina	ıl strips						
Mauntina access	t	coo pages 10.0	0 and 10.21			100 pages 10 C	20 and 10 21		
Mounting access		see pages 10.2	o ana 10.21			see pages 10.2	20 ana 10.21		
Marking accesso	ories	see section 14				see section 14			

<sup>\*</sup> For further approvals with corresponding ratings see section 15.

#### Terminal Strips with Push Buttons on One or Both Sides, with Fixing Flanges or Snap-in Mounting Feet 2.5 mm<sup>2</sup> / AWG 14, Series 261



0.08 - 2.5 mm<sup>2</sup> 500 V/6 kV/3 **①** 24 A

AWG 28 - 14 300/600 V, 15/5 A 74

Pole width 6 mm / 0.236 in 8 – 9 mm / 0.33 in

\* 👊 CCAKEER 🛈 🕞 🚏 🗥 LR NV 🛭 🕙

2 x 0.08 - **2.5** mm<sup>2</sup> | 2 x AWG 28 - 14 500 V/6 kV/3 **①** | 300/600 V, 15/5 A **9**\(\bar{\text{N}}\)

Pole width 10 mm / 0.394 in **──** 8 – 9 mm / 0.33 in

\* 🗫 CCAKEE O 🕾 🐨 🗥 LR NV 🛭

- 1 500 V = rated voltage 6 kV = rated surge voltage 3 = pollution degree (see also section 15)
- 2 Suitable for Ex i applications with blue insulating housings
- 4 For longer strips and/or assemblies of different please contact factory
- **5** For item No. and packing-unit, see page 10.21





Description	No. of poles	Add. item No. for	No. of poles	Add. item No. for	
	2-conductor te	rminal strips with fixing flanges,	4-conductor to	erminal strips with fixing flanges,	
	for screw fixing	or similar methods, fixing hole	for screw fixing	or similar methods, fixing hole	
A IN IN IN IN IN IN IN IN INC.	diameter 3.2 mr	n (with mounting adapter 209-123	diameter 3.2 m	m (with mounting adapter 209-123	
	also for DIN 35	rail)	also for DIN 35	5 rail)	
E LIBBB CON ON ON	with push butt	ons on one side, grey	with push but	tons on one side, grey	
	_	_	_	_	
	2 - 12 🕢	261/331-000 🜀	2 - 12 🕢	261/332-000 🜀	
-					
	with push but	ons on both sides, grey	with push but	tons on both sides, grey	
	0 10 0	0/1 /0/1 000 G	0 10 0	0/1 /0/0 000 @	
The second second second	2 - 12 🕢	261/341-000 🚱	2 - 12 🕢	261/342-000 🚱	
	2-conductor to	erminal strips with snap-in mounting	4-conductor to	erminal strips with snap-in mounting	
		hickness 0.6 – 1.2 mm, fixing hole	<b>feet,</b> for plate thickness 0.6 – 1.2 mm, fixing hole		
		n (fits aluminum rail 210-154 or with	diameter 3.5 mm (fits aluminum rail 210-154 or with		
		er 209-120 for DIN 35 rail)	mounting adapter 209-120 for DIN 35 rail)		
		ons on one side, grey	with push buttons on one side, grey		
		, ,	-		
TO STORE THE STORE OF THE STORE	2 - 12 4	261/331-000 <b>⑤</b>	2 - 12 🕢	261/332-000 🕥	
The state of the s	with push butt	ons on both sides, grey	with push but	tons on both sides, grey	
	2 - 12 🕢	261/341-000 🕤	2 - 12 🕢	261/342-000 🔇	
C C C C C C C C C C C C C C C C C C C					
47 47 47 47 47 47					
THE PROPERTY OF THE REST					

Modular terminal blocks and terminal strips with fixing flanges

L = No. of poles x pole width  $L_1 = L + 8.1$  mm  $L_2 = L + 14.5$  mm

blue

Additional item-Nos. for colored terminal strips

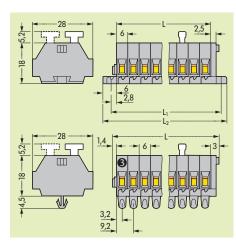
Modular terminal blocks and terminal strips

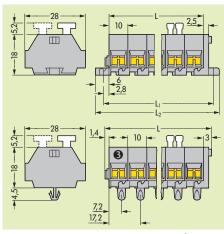
.../000-006 🕗

3 End terminal block; see page 10.22

with snap-in mounting feet

L = (No. of poles x pole width) + 4.4 mm







#### Modular Terminal Blocks with Fixing Flange 2.5 mm<sup>2</sup> / AWG 14, with Marker Receptacle for the Miniature WSB Quick Marking System Series 261

0.08 - 2.5 mm<sup>2</sup> 500 V/6 kV/3 **①** 24 A

\* **91 6** S D BV 🛞

AWG 28 - 14 300/600 V, 15/5 A **%** 300/600 V, 20/5 A ®

0.08 **– 2.5 mm**<sup>2</sup> 500 V/6 kV/3 **①** 24 A

AWG 28 - 14 300/600 V, 15/5 A 🕦

Terminal block width 6 mm / 0.236 in

8 – 9 mm / 0.33 in





Terminal block width 6 mm / 0.236 in

8 – 9 mm / 0.33 in

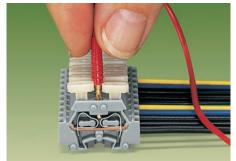


1 500 V = rated voltage 6 kV = rated surge voltage 3 = pollution degree (see also section 15)

Description			No.	pcs		No.	pcs	
Terminal blocks	with fixing flange,	2-conductor	terminal block,	-	2-conductor	terminal block,		
_	for screw fixing or similar	without push	n button		with push b	utton on one side	n on one side	
	methods, fixing hole	grey	261-411	200 (4 × 50)	grey	261-411/33	1-000 200 (4 x	
	diameter 3.2 mm (with mounting	,		` '	,		•	
1215	adapter 209-123 also for							
	DIN 35 rail)							
	Lateral marking facility for				2-conductor	terminal block,		
	miniature WSB Quick marking				with push buttons on both sides			
	system, test slot				grey		1-000 200 (4 x	
	.,				3 1		,	
Accessories t	or modular terminal blocks	ana termin	ai strips Appropriate	e marking system i	AIIIII-AA2D (8	ee section 14)		
Accessories t	or modular terminal blocks  End plate	ana termino			VIIII-VV3D (s			
Accessories t		grey	261-410	100 (2 x 50)	grey	261-410	100 (2 x	
Accessories f	End plate						100 (2 x	
Accessories f	End plate with fixing flange	grey			grey		100 (2 x )	
Accessories f	End plate with fixing flange  Comb type jumper bar, insulated, 2-way	grey I <sub>N</sub> 16 A grey	261-410	100 (2 x 50) 25	grey I <sub>N</sub> 16 A grey	261-410	25	
Accessories f	End plate with fixing flange  Comb type jumper bar, insulated, 2-way	grey I <sub>N</sub> 16 A grey	261-410 261-402	100 (2 x 50) 25	grey I <sub>N</sub> 16 A grey	261-410	25	
Accessories f	End plate with fixing flange Comb type jumper bar,	grey I <sub>N</sub> 16 A grey	261-410 261-402	100 (2 x 50) 25	grey I <sub>N</sub> 16 A grey	261-410	25	
Accessories f	End plate with fixing flange  Comb type jumper bar, insulated, 2-way  Operating tool, insulated,	grey I <sub>N</sub> 16 A grey reduce wire to	261-410 261-402 o 1.5 mm <sup>2</sup> /AWG 16 max.	100 (2 × 50) 25	grey I <sub>N</sub> 16 A grey reduce wire to	261-410 261-402 o 1.5 mm²/AWG 16 m	25	
Accessories f	End plate with fixing flange  Comb type jumper bar, insulated, 2-way  Operating tool, insulated, for connecting the comb type	grey I <sub>N</sub> 16 A grey reduce wire to	261-410  261-402  1.5 mm²/AWG 16 max.  209-132	100 (2 × 50) 25	grey I <sub>N</sub> 16 A grey reduce wire to	261-410 261-402 o 1.5 mm²/AWG 16 m 209-132	25	
Accessories f	End plate with fixing flange  Comb type jumper bar, insulated, 2-way  Operating tool, insulated, for connecting the comb type jumper bar	grey  I <sub>N</sub> 16 A grey reduce wire to	261-410  261-402  1.5 mm²/AWG 16 max.  209-132	100 (2 × 50) 25	grey  I <sub>N</sub> 16 A grey reduce wire to	261-410 261-402 o 1.5 mm²/AWG 16 m 209-132	25	
Accessories f	End plate with fixing flange  Comb type jumper bar, insulated, 2-way  Operating tool, insulated, for connecting the comb type jumper bar  Mounting adapter with	grey  I <sub>N</sub> 16 A grey reduce wire to  2-way  6 mm/0.236 ii	261-410  261-402 2 1.5 mm²/AWG 16 max.  209-132 in wide	100 (2 × 50) 25	grey  I <sub>N</sub> 16 A grey reduce wire to 2-way  6 mm/0.236	261-410  261-402  1.5 mm²/AWG 16 m  209-132  in wide	25 nax.	
Accessories f	End plate with fixing flange  Comb type jumper bar, insulated, 2-way  Operating tool, insulated, for connecting the comb type jumper bar  Mounting adapter with screw, for terminal blocks with	grey  I <sub>N</sub> 16 A grey reduce wire to  2-way  6 mm/0.236 ii	261-410  261-402 201.5 mm²/AWG 16 max.  209-132 in wide 209-123	100 (2 × 50) 25	grey  I <sub>N</sub> 16 A grey reduce wire to 2-way  6 mm/0.236	261-410  261-402 b 1.5 mm²/AWG 16 m  209-132 in wide  209-123	25 nax.	
Accessories f	End plate with fixing flange  Comb type jumper bar, insulated, 2-way  Operating tool, insulated, for connecting the comb type jumper bar  Mounting adapter with screw, for terminal blocks with fixing flange, for DIN 35 rail	grey  I <sub>N</sub> 16 A grey reduce wire to  2-way  6 mm/0.236 is	261-410  261-402 201.5 mm²/AWG 16 max.  209-132 in wide 209-123	100 (2 × 50) 25	grey  I <sub>N</sub> 16 A grey reduce wire to 2-way  6 mm/0.236 grey	261-410  261-402 b 1.5 mm²/AWG 16 m  209-132 in wide  209-123	25 nax.	
Accessories f	End plate with fixing flange  Comb type jumper bar, insulated, 2-way  Operating tool, insulated, for connecting the comb type jumper bar  Mounting adapter with screw, for terminal blocks with fixing flange, for DIN 35 rail Mounting adapter	grey  I <sub>N</sub> 16 A grey reduce wire to  2-way  6 mm/0.236 is grey  6.5 mm/0.256	261-410  261-402 201.5 mm²/AWG 16 max.  209-132 in wide 209-123 6 in wide	100 (2 × 50)  25  1  25	grey  I <sub>N</sub> 16 A grey reduce wire to 2-way  6 mm/0.236 grey  6.5 mm/0.25	261-410  261-402 201.5 mm²/AWG 16 m  209-132 in wide 209-123 6 in wide	25 nax.	
Accessories f	End plate with fixing flange  Comb type jumper bar, insulated, 2-way  Operating tool, insulated, for connecting the comb type jumper bar  Mounting adapter with screw, for terminal blocks with fixing flange, for DIN 35 rail Mounting adapter for DIN 35 rail,	grey  I <sub>N</sub> 16 A grey reduce wire to  2-way  6 mm/0.236 is grey  6.5 mm/0.256	261-410  261-402 201.5 mm²/AWG 16 max.  209-132 in wide 209-123 6 in wide	100 (2 × 50)  25  1  25	grey  I <sub>N</sub> 16 A grey reduce wire to 2-way  6 mm/0.236 grey  6.5 mm/0.25	261-410  261-402 201.5 mm²/AWG 16 m  209-132 in wide 209-123 6 in wide	25 nax.	
Accessories f	End plate with fixing flange  Comb type jumper bar, insulated, 2-way  Operating tool, insulated, for connecting the comb type jumper bar  Mounting adapter with screw, for terminal blocks with fixing flange, for DIN 35 rail Mounting adapter for DIN 35 rail, can be used as end stop	grey  I <sub>N</sub> 16 A grey reduce wire to  2-way  6 mm/0.236 is grey  6.5 mm/0.256	261-410  261-402 201.5 mm²/AWG 16 max.  209-132 in wide 209-123 6 in wide 209-137	100 (2 × 50)  25  1  25	grey  I <sub>N</sub> 16 A grey reduce wire to 2-way  6 mm/0.236 grey  6.5 mm/0.25	261-410  261-402 201.5 mm²/AWG 16 m  209-132  in wide 209-123  6 in wide 209-137	25 nax.	



Marking with miniature WSB Quick marking system



Touch contacting with a 2 mm/0.079 in test plug



Connection of conductor with push button

#### Terminal Strips with Fixing Flanges 2.5 mm<sup>2</sup> / AWG 14, with Marker Receptacle for the Miniature WSB Quick Marking System Series 261



0.08 - 2.5 mm<sup>2</sup> 500 V/6 kV/3 **①** 24 A

AWG 28 - 14 300/600 V, 15/5 A **9\\** 300/600 V, 20/5 A **@** 

Pole width 6 mm / 0.236 in ■ 8 – 9 mm / 0.33 in

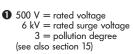
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0.08 - 2.5 mm<sup>2</sup> 500 V/6 kV/3 **①** 

AWG 28 - 14 300/600 V, 15/5 A 74

Pole width 6 mm / 0.236 in □ 8 - 9 mm / 0.33 in

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2 For longer strips, please contact factory





Description	
Terminal strips with fixing flanges, for screw fixing or similar methods, fixing hole diameter 3.2 mm (with mounting adapter 209-123 also for DIN 3.	5 rail)



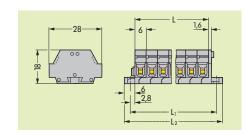
Terminal strips with fixing flanges, with push buttons on one or both sides of the strip, for screw fixing or similar methods, fixing hole diameter 3.2 mm (with mounting adapter 209-123 also for DIN 35 rail)

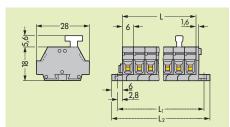
No. of poles	Item No.	Packunit pcs	No. of poles	ltem No.	Packunit pcs
2-conductor	r terminal strips with fi	xing flanges,	2-conducto	r terminal strips with	fixing flanges,
without pus	h button, grey		with push b	outtons on one side,	grey
2	261-422	100	2	261-422/33	<b>1-000</b> 100
3	261-423	100	3	261-423/33	<b>1-000</b> 100
4	261-424	100	4	261-424/33	<b>1-000</b> 100
5	261-425	100	5	261-425/33	<b>1-000</b> 100
6	261-426	50	6	261-426/33	<b>1-000</b> 50
7	261-427	50	7	261-427/33	<b>1-000</b> 50
8	261-428	50	8	261-428/33	<b>1-000</b> 50
9	261-429	50	9	261-429/33	<b>1-000</b> 50
10	261-430	25	10	261-430/33	<b>1-000</b> 25
11	261-431	25	11	261-431/33	1 <b>-000</b> 25
12 2	261-432	25	12 🕗	261-432/33	<b>1-000</b> 25
			2-conducto	r terminal strips with	fixing flanges,
			with push k	outtons on both side:	s, grey
			2	261-422/34	<b>1-000</b> 100
			3	261-423/34	<b>1-000</b> 100
			4	261-424/34	<b>1-000</b> 100
			5	261-425/34	<b>1-000</b> 100
			6	261-426/34	<b>1-000</b> 50
			7	261-427/34	<b>1-000</b> 50
			8	261-428/34	<b>1-000</b> 50
			9	261-429/34	<b>1-000</b> 50
			10	261-430/34	<b>1-000</b> 25
			11	261-431/34	<b>1-000</b> 25
			12 2	261-432/34	1-000 25

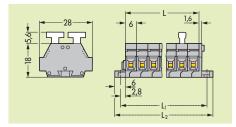
#### Dimensions for modular terminal blocks and terminal strips (in mm)

Modular terminal blocks and terminal strips with fixing flanges

L = No. of poles x pole width  $L_1 = L + 7.2$  mm  $L_2 = L + 13.6$  mm











# Modular Terminal Blocks with Fixing Flange or Snap-in Mounting Foot 4 mm<sup>2</sup> / AWG 12, Series 262

Test plug modules see page 10.28

0.08 - 4 mm<sup>2</sup> 630 V/8 kV/3 **①** 24 A AWG 28 - 12 300/600 V, 20/5 A **%** 300/600 V, 25/5 A ® 2 x 0.08 - 4 mm<sup>2</sup> 630 V/8 kV/3 **①** 32 A 2 x AWG 28 - 12 300/600 V, 20/5 A **%** 300/600 V, 25/5 A ®

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- € 630 V = rated voltage
   8 kV = rated surge voltage
   3 = pollution degree
   (see also section 15)
- Suitable for Ex i applications
- Suitable for Ex e II applications 0.5 - 4 mm<sup>2</sup> AWG 20 - 12 550 V, 23 A (see also section 13)



Terminal block width 7 mm / 0.276 in

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9 – 10 mm / 0.37 in



Description		Color	Item No.	Packunit pcs	Color	Item No.	Packunit pcs
Terminal blocks	s with fixing flange,	2-conductor ter	rminal blocks		4-conductor ter	minal blocks	
THE REAL PROPERTY.	for screw fixing or similar	grey	262-301	100 (2 x 50)	grey	262-331	100 (2 x 50
15-1-	methods, fixing hole	light grey (Ex)	262-130 🔾	100 (2 x 50)	light grey 🖘	262-230 🔘	100 (2 x 50
	diameter 3.2 mm (with mounting	blue	262-304 🕗	100 (2 x 50)	blue	262-334 🕗	100 (2 x 50
	adapter 209-123 also for	orange	262-306	100 (2 x 50)	orange	262-336	100 (2 x 50
	DIN 35 rail)	green-yellow	262-307 🛑	100 (2 x 50)	green-yellow	262-337 🕕	100 (2 x 50
Terminal blocks	s with snap-in mounting foot,						
100	for plate thickness 0.6 – 1.2 mm,	2-conductor ter	minal blocks		4-conductor ter	minal blocks	
0-1-	fixing hole diameter 3.5 mm	grey	262-311	100 (2 x 50)	grey	262-341	100 (2 x 5)
a let	(fits aluminum rail 210-154 or with	light grey 🕸	262-180	100 (2 x 50)	light grey 🖘	262-280 🔘	100 (2 x 50
	mounting adapter 209-120 for	blue	262-314 🕗	100 (2 x 50)	blue	262-344 🕗	100 (2 x 50
	DIN 35 rail)	orange	262-316	100 (2 x 50)	orange	262-346	100 (2 x 50
End terminal bl	lock 🕄,	green-yellow	262-317 🕕	100 (2 x 50)	green-yellow	262-347 🕕	100 (2 x 50
	without fixing foot, for terminal						
strips with snap-in mounting feet		2-conductor ter	minal blocks		4-conductor ter	minal blocks	
000	(see dimensioned drawings on	grey	262-321	100 (2 x 50)	grey	262-351	100 (2 x 50
	page 10.27)	light grey (Ex)	262-181	100 (2 x 50)	light grey (Ex)	262-281	100 (2 x 50
		blue	262-324 🕗	100 (2 x 50)	blue	262-354 🕗	100 (2 x 50
		orange	262-326	100 (2 x 50)	orange	262-356	100 (2 x 50
		green-yellow	262-327 🛑	100 (2 x 50)	green-yellow	262-357 🕕	100 (2 x 50
	End plate with fixing flange	grey	262-361 262-363	50 50	grey	262-361 262-363	50 50
	F 1 1	light grey	262-363	50	light grey	262-363	50
	End plate with snap-in		0/0 071	50		0/0 071	50
	mounting foot	grey	262-371 262-373	50 50	grey	262-371 262-373	50 50
W	C 1	light grey	202-3/3	30	light grey	202-3/3	50
	Comb type jumper bar,	I <sub>N</sub> 16 A	262-402	25	I <sub>N</sub> 16 A	262-402	25
1	insulated, 2-way	grey	.5 mm²/AWG 14 max.	-	grey	5 mm <sup>2</sup> /AWG 14 max.	25
	O	reduce wire to 2.	.5 mm /AvvG 14 max.		reduce wire to 2.	J IIIII / AVVG 14 IIIax.	
	Operating tool, insulated, for connecting the comb type	2-way	209-132	1	2-way	209-132	1
	jumper bar	z-wuy	207-132	'	2-wuy	207-132	
	Aluminum carrier rail,						
	1000 x 18 x 7 mm		210-154	1		210-154	1
	3'3" × 0.709 × 0.276 in		210-154	ı		210-134	ı
	Plastic end stop,	6 mm / 0.236 in v	ui do		6 mm / 0.236 in v	ر المام	
			209-122	25		209-122	25
	with WSB marking facility, for aluminum rail 210-154	grey	207-122	23	grey	207-122	23
		6 mm / 0.236 in v	ui do		6 mm / 0.236 in v	ر أمام	
	Mounting adapter, for terminal			25			25
	blocks with snap-in mounting	grey	209-120	25	grey	209-120	25
V							
\\	foot, for DIN 35 rail	6 mm /0 224 :	wide		6 mm /0 224 :	vide	
/\\	foot, for DIN 35 rail  Mounting adapter with	6 mm / 0.236 in v		25	6 mm / 0.236 in v		25
	foot, for DIN 35 rail  Mounting adapter with screw, for terminal blocks with	6 mm/0.236 in v	wide <b>209-123</b>	25	6 mm / 0.236 in v grey	vide <b>209-123</b>	25
	foot, for DIN 35 rail  Mounting adapter with screw, for terminal blocks with fixing flange, for DIN 35 rail	grey	209-123	25	grey	209-123	25
	foot, for DIN 35 rail  Mounting adapter with screw, for terminal blocks with fixing flange, for DIN 35 rail  Mounting adapter	grey 6.5 mm/0.256 ir	<b>209-123</b> n wide		grey 6.5 mm/0.256 in	<b>209-123</b> wide	
	foot, for DIN 35 rail  Mounting adapter with screw, for terminal blocks with fixing flange, for DIN 35 rail	grey	209-123	25 25	grey	209-123	25 25

#### **Terminal Strips with** Fixing Flanges or Snap-in Mounting Feet 4 mm<sup>2</sup> / AWG 12, Series 262



**Test plug modules** see page 10.28

 $0.08 - 4 \text{ mm}^2$ 630 V/8 kV/3 **①** 24 A

AWG 28 - 12 300/600 V, 20/5 A **9\\** 300/600 V, 25/5 A **@** 

Pole width 7 mm / 0.276 in 9 - 10 mm / 0.37 in

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2 x 0.08 - 4 mm<sup>2</sup> 630 V/8 kV/3 **①** 

2 x AWG 28 - 12 300/600 V, 20/5 A **%** 300/600 V, 25/5 A ®

Pole width 12 mm / 0.472 in □ 9 - 10 mm / 0.37 in

**?N ⑥** VDE KEER CCAKEER № ⑤ ② @ 🚭 🛣 GL BV LR NV ۞ ※ 😥

- 1 630 V = rated voltage 8 kV = rated surge voltage 3 = pollution degree (see also section 15)
- 2 Suitable for Ex i applications with blue insulating housings
- Ex Suitable for Ex e II applications 0.5 – 4 mm<sup>2</sup> 550 V, 23 A AWG 20 - 12 (see also section 13)
- 4 For longer strips and /or assemblies of different please contact factory





# Description

Terminal strips with fixing flanges, for screw fixing or similar methods, fixing hole diameter 3.2 mm (with mounting adapter 209-123 also for DIN 35 rail)



Terminal strips with snap-in mounting feet, for plate thickness 0.6 - 1.2 mm, fixing hole diameter 3.5 mm (fits aluminum rail 210-154 or with mounting adapter 209-120 for DIN 35 rail)

No. of poles	Item	-No.	Packunit pcs	No. of poles	Item-No.		Packunit pcs
2-condu	ctor terminal st	rips with fixin	g flanges,	4-condu	ctor terminal str	ips with fixin	g flanges,
	grey	light gre	y (Ex)		grey	light gre	y (Ex)
2	262-102	262-132	100	2	262-202	262-232	100
3	262-103	262-133	100	3	262-203	262-233	100
4	262-104	262-134	100	4	262-204	262-234	100
5	262-105	262-135	100	5	262-205	262-235	100
6	262-106	262-136	100	6	262-206	262-236	100
7	262-107	262-137	100	7	262-207	262-237	100
8	262-108	262-138	100	8	262-208	262-238	100
9	262-109	262-139	50	9	262-209	262-239	50
10	262-110	262-140	50	10	262-210	262-240	50
11	262-111	262-141	25	11	262-211	262-241	25
12 🕢	262-112	262-142	25	12 🕢	262-212	262-242	25

2-cond.	terminal strips v	with snap-in	mount. feet,	4-cond.	terminal strips v	with snap-in ı	mount. feet,
	grey	light grey	, (€x)		grey	light grey	/ ⟨€x⟩
2	262-152	262-182	100	2	262-252	262-282	100
3	262-153	262-183	100	3	262-253	262-283	100
4	262-154	262-184	100	4	262-254	262-284	100
5	262-155	262-185	100	5	262-255	262-285	100
6	262-156	262-186	100	6	262-256	262-286	100
7	262-157	262-187	100	7	262-257	262-287	100
8	262-158	262-188	100	8	262-258	262-288	50
9	262-159	262-189	50	9	262-259	262-289	50
10	262-160	262-190	50	10	262-260	262-290	50
11	262-161	262-191	25	11	262-261	262-291	25
12 🕢	262-162	262-192	25	12 🕢	262-262	262-292	25

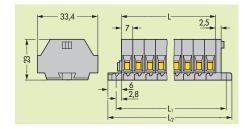
#### Dimensions for modular terminal blocks and terminal strips (in mm)

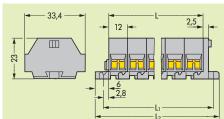
Modular terminal blocks and terminal strips with fixing flanges

L = No. of poles x pole width  $L_1 = L + 8.1$  mm

 $L_2 = L + 14.5 \text{ mm}$ 

Additional item-Nos. for colored terminal strips blue .../000-006 🕗

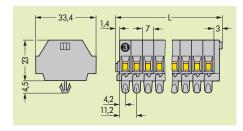


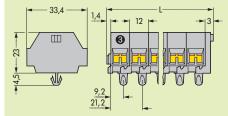


Modular terminal blocks and terminal strips with snap-in mounting feet

3 End terminal block; see page 10.26

 $L = (No. of poles \times pole width) + 4.4 mm$ 







#### Test Plug Modules for Terminal Strips without Push Button Series 260, 261 and 262

Suitable for series 260
Module width 5 mm/0.197 in;
8 mm/0.315 in
Test voltage 250 V/500 V ①, 48 V ②
Test current 0.5 A/6 A ③

Average contact pressure 2.2 N per pin

Suitable for series 261
Module width 6 mm/0.236 in;
10 mm/0.394 in
Test voltage 400 V/800 V ①, 48 V ②
Test current 0.5 A/6 A ⑤

Average contact pressure 2.2 N per pin

Suitable for series 262
Module width 7 mm/0.276 in;
12 mm/0.472 in
Test voltage 500 V/800 V ①, 48 V ②
Test current 0.5 A/6 A ⑤

Average contact pressure 2.2 N per pin











	ltem No.	Packunit pcs		ltem No.	Packunit pcs		ltem No.	Packunit pcs
Test plug m	odule without locking	device,	Test plug n	nodule without locking	device,	Test plug module without locking device,		
Module widt	h 5 mm / 0.197 in		Module wid	lth 6 mm / 0.236 in		Module width 7 mm / 0.276 in		
for 2-conduc	ctor terminal blocks		for 2-condu	ictor terminal blocks		for 2-conduc	ctor terminal blocks	
grey	249-135	100 (4 x 25)	grey	249-136	100 (4 x 25)	grey	249-137	100 (4 x 25)
Module widt	h 8 mm / 0.315 in		Module wid	lth 10 mm / 0.394 in		Module widt	h 12 mm / 0.472 in	
for 4-conduc	ctor terminal blocks		for 4-condu	ictor terminal blocks		for 4-conduc	ctor terminal blocks	
grey	249-138	100 (4 x 25)	grey	249-139	100 (4 x 25)	grey	249-140	100 (4 x 25
Test plug m	odule with locking de	vice,	Test plug n	nodule without locking	device,			
Module widt	h 5 mm / 0.197 in		Module wid	lth 6 mm / 0.236 in				
for 2-conduc	ctor terminal blocks		for 2-condu	ictor terminal blocks				
grey	260-404	100 (4 x 25)	grey	261-404	100 (4 x 25)			
Module widt	h 8 mm / 0.315 in		Module wid	lth 10 mm / 0.394 in				
for 4-conduc	ctor terminal blocks		for 4-condu	ictor terminal blocks				
grey	260-405	100 (4 x 25)	grey	261-405	100 (4 x 25)			

#### **Accessories**



**Test plug,** w. cable 500 mm/1'7.7' 2 mm/0.079 in Ø, red **210-136** 50 2.3 mm/0.091 in Ø, yel. **210-137** 50



**Test plug,** w. cable 500 mm/1'7.7' 2 mm/0.079 in Ø, red **210-136** 50 2.3 mm/0.091 in Ø, yel. **210-137** 50



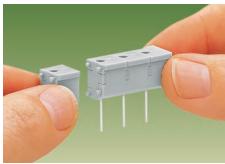
**Test plug,** w. cable 500 mm/l'7.7" 2 mm/0.079 in Ø, red **210-136** 50 2.3 mm/0.091 in Ø, yel. **210-137** 50



For the testing procedure, the test plug module strips are snapped onto the terminal strip – wired or unwired. As the contact is established by touch contact at the CAGE CLAMP\*\* spring (spring steel), this kind of testing is limited to 0.5 A max. Distance between locking devices should be 35 – 40 mm /1.378 – 1.575 in!



Testing with connected wires.



Assembly of multipole test plug module strips

- Max. test voltage 250 V to 800 V only in test equipment, considering the air and creepage distances
- In case of touch contacting the max. test voltage must not exceed 48 V, test pins are not touchproof.
- Maximum test current in case of touch contacting is 0.5 A; 6 A if the test pins are firmly connected in the clamping units

# Insulation Stops for Terminal Strips of Series 869 for Conductors from 0.08 mm<sup>2</sup> – 1 mm<sup>2</sup> / AWG 28 – 14



Insulation stop, suitable for all front-entry compact terminal blocks, series 869	
Terminal block width 5 mm / 0.197 in 8 – 9 mm / 0.33 in	



	ltem No.	Packunit pcs
Insulation stop	, 5 pcs/strip	
white	280-470	200 strips
0.08 - 0.2 mm <sup>2</sup>	1 /AWG 28 - 24	
light grey	280-471	200 strips
0.25 - 0.5 mm <sup>2</sup> /	/AWG 22 – 20	
dark grey	280-472	200 strips
0.75 - 1 mm <sup>2</sup> /A	4WG 18	
1 0.2 mm <sup>2</sup> /AV	NG 24 solid	
0.14 mm <sup>2</sup> /A	AWG 26 fine-stranded	

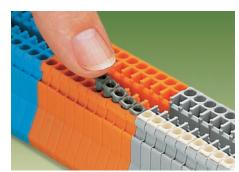
#### **Application notes**

For the wiring of programmable logic controllers and microprocessor operated control circuits very small wire sizes of fine-stranded conductors are frequently used. These small conductors are so flexible that they often deform when pushed against the current bar in the terminal blocks. As a result, the conductor insulation may be clamped instead of the copper conductor, resulting in no or very intermittent contact. This problem exists with all types of terminal blocks currently offered on the market. Consequently, unnecessary time is spent on trouble shooting.

The insulation stop for compact terminal blocks is the answer to solve these problems. It bundles the cores of fine-stranded conductors automatically when introduced into the clamping unit, without any splaying, and reduces the conductor entry hole to a defined cross sectional area so that the insulation of these conductors cannot be introduced into the clamping unit.

The insulation stop is available as a dividable 5-pole strip for rail-mounted terminal strips of series 869.

With the use of the insulation stop the conductor stripped lengths related to the respective frontentry rail-mounted terminal strip, remain unchanged.



Push insulation stop into the conductor entry holes of front-entry rail-mounted terminal blocks.



Introduce stripped, untwisted conductor into insulation stop . . .



\* . . . the conductor is bundled . . .

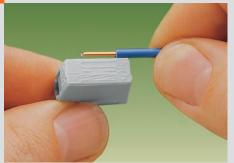


... and the conductor insulation is prevented from being pushed into the clamping unit by the positive stop.



# Lighting Connectors, Series 224 Description and Handling

Lighting (CAGE CLAMP®) side



Strip conductor 9 - 11 mm /0.39 in

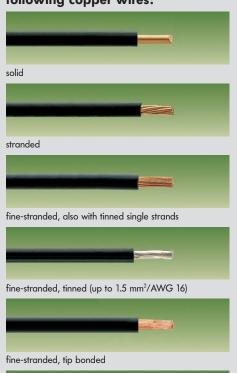


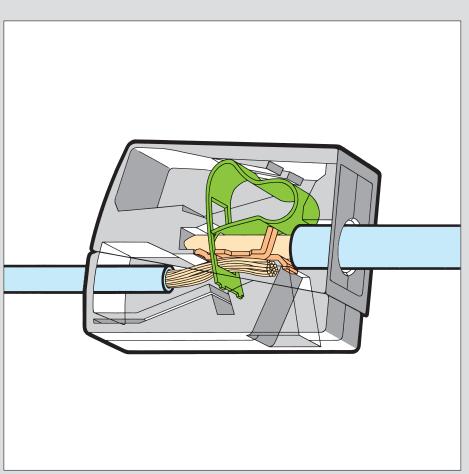
To connect: Press button fully and insert stripped conductor into square entry and release



To remove: Press button and withdraw conductor

#### CAGE CLAMP® connects the following copper wires:\*





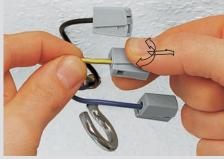
#### Installation/field (push-wire) side

fine-stranded with ferrule (up to  $1.5\ mm^2/AWG\ 16$ )



To connect: Introduce stripped solid conductor into circular entry and push to stop

#### The push-wire connection connects the following copper wires:\*



To remove: Hold conductor and twist connector alternately left and right while pulling





Testing through separate test slot

# Lighting Connectors "Service" Connectors

\* 🕦 🚳 VDE 📀 🖼 CCAKEER 🕦 🛇 📵 🗈 🚭 🐨 BV NV

Installation side
1.0 - 2.5 mm<sup>2</sup> solid
Lighting side
0.5 - 2.5 mm<sup>2</sup> rig.+ flex
400 V/4 kV/2 0; 24 A
9 - 11 mm / 0.39 in

Installation side
1.0 − 2.5 mm² solid
Lighting side
0.5 − 2.5 mm² rig.+ flex
400 V/4 kV/2 •; 24 A

9 − 11 mm / 0.39 in

\* 🕦 🚯 VDE 📀 🕬 (CAKEER 🕦 (S) 🛈 🕫 🎨 🚏 GL BV

0.5 **– 2.5 mm**<sup>2</sup> rig.+ flex | AWG 20 − 16 400 V/4 kV/2 **①** 300 V, 20 A ③ **⑤** 

**□** 9 – 11 mm / 0.39 in 







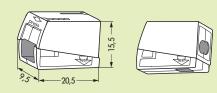
	ltem No.	Packunit pcs		ltem No.	Packunit pcs		Item No.	Packunit pcs
Lighting co	onnectors,		2-conducto	r lighting connectors,		"Service" c	onnector	
standard ve	rsion, continuous		standard ver	sion, continuous		grey	224-201	50
service temp	perature 105°C,		service temperature 105 °C,					
grey	224-101	1000 (10 x 100)	white	224-112	1000 (10 x 100)			
version for i	increased continuous		version for ir	ncreased continuous				
service temp	perature of 120°C,		service temp	erature of 120°C,				
black	224-104	100	black	224-114	100			

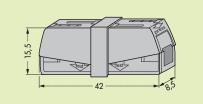
Dimensions (in mm)

15) in grounded (earthed) supply systems 400 V = rated voltage 4 kV = rated surge voltage 2 = pollution degree (see also section 15)



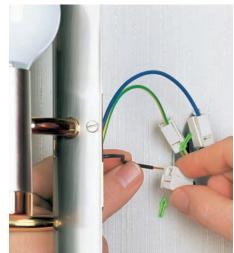




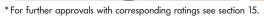






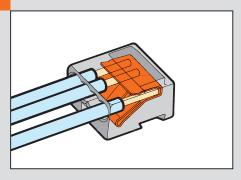








# MICRO Push-Wire Connectors for Junction Boxes,<sup>®</sup> Series 243 Description and Handling



Stripped length



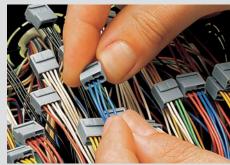
Strip solid wire 5 - 6 mm / 0.22 in

#### **Connector strips**



Assembly of modular connectors to connector strips

#### **Push-wire connection**



Connection: Insert stripped conductor FULLY.

# 

#### **Push-wire connection**



Removal: Hold wire to be removed and twist alternately left and right while pulling the connector

Commoning



Commoned connector strips

Packing units



Box for use on site (example)
Contents series 243: 50 pcs 8-conductor
or 100 pcs 4-conductor

Use contact paste "Alu-Plus" when connecting aluminum wires (see section 15)

#### \_

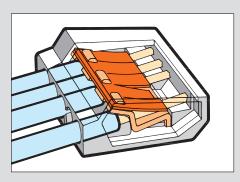
**Testing** 

The push-wire connection connects the following copper wires:

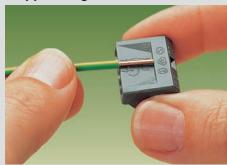


solid

# Push-Wire Connectors for Junction Boxes, Series 273 Description and Handling



#### Stripped length

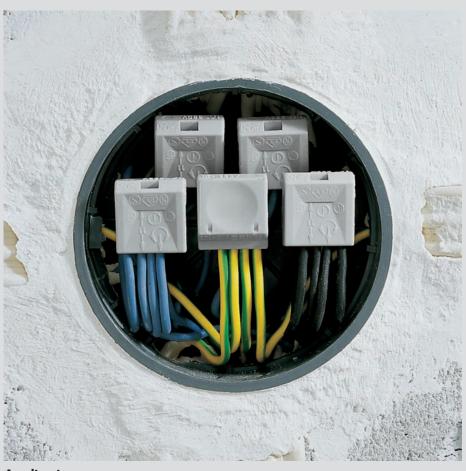


Strip solid conductor 10 mm - 13 mm / 0.45 in

#### **Push-wire connection**



Connection: Insert stripped solid conductor FULLY



#### **Push-wire connection**



Removal: Hold wire to be removed and twist alternately left and right while pulling the connector

#### **Testing**



Testing

#### **Applications**



Push-wire connectors used in a cable duct with double power outlet

#### The push-wire connection clamps the following copper wires:



Use contact paste "Alu-Plus" when connecting aluminum wires (see section 15)

#### **Packing unit**



Wholesaler package with 10 boxes for use on site



#### **MICRO Push-Wire Connectors for Junction Boxes** Series 243



4 x 0.6 – 0.8 Ø mm "s" \*\* 100 V/1.5 kV/2 **①** 

\* 91 @ VDE KEER ((AKEER N S D 🕾 🗥

4 x AWG 22 - 20 "sol." \*\* 125 V, 7 A **9** 150 V, 7 A **9** 

8 x 0.6 - 0.8 Ø mm "s" \*\* 100 V/1.5 kV/2 **①** 

8 x AWG 22 – 20 "sol." \*\* 125 V, 7 A **%** 150 V, 7 A ®

 $4 \times 0.4 - 0.5 \varnothing$  mm "s" 100 V/1.5 kV/2 **①** 

4 x AWG 26 - 24 "sol." 125 V, 7 A **93** 150 V, 7 A ®

5 – 6 mm / 0.22 in

5 - 6 mm / 0.22 in \* 🕦 @ VDE KEGA (CAKEGA 🛇 🛈 🚱 🙈

5 – 6 mm / 0.22 in

\* **91 @** CCAKEER @ <u>A</u>

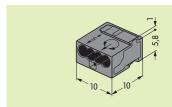


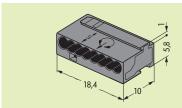


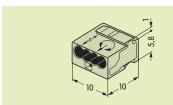




Color	Item No.	Packunit pcs	Color	ltem No.	Packunit pcs	Color	ltem No.	Packunit pcs
MICRO pusi	h-wire connectors	for junction boxes,	MICRO pusi	h-wire connectors	for junction boxes,	MICRO push	-wire connector f	or junction boxes,
4-conductor of	connectors		8-conductor connectors			4-conductor co	onnectors	
dark grey	243-204	1000 (10 x 100)	dark grey	243-208	500 (10 x 50)	transparent	243-144	1000 (10 x 100)
red	243-804	1000 (10 x 100)	red	243-808	500 (10 x 50)			







4 x 0.6 – 0.8 Ø mm "s" \*\* 100 V/1.5 kV/2 **①** 6 A

4 x AWG 22 – 20 "sol." \*\*
125 V, 7 A 🔊 150 V, 7 A ®

8 x 0.6 - 0.8 Ø mm "s" \*\* 100 V/1.5 kV/2 **①** 6 A

8 x AWG 22 – 20 "sol." \*\* 125 V, 7 A **%** 150 V, 7 A @

5 - 6 mm / 0.22 in

\* **91 @** VDE <u>Kega</u> (Ca<u>kega</u> **N** S **0 @ &** 

5 – 6 mm / 0.22 in

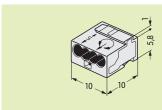
\* 🕦 🏿 VDE KEUR CCAKEUR S 🛈 🕞 🗥

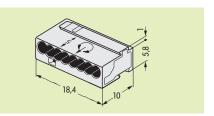






Color	Item No.	Packunit pcs	Color	Item No.	Packunit pcs
MICRO pus	h-wire connectors	for junction boxes,	MICRO pus	h-wire connectors fo	or junction boxes,
4-conductor	connectors		8-conductor	connectors	
light grey	243-304	1000 (10 x 100)	light grey	243-308	500 (10 x 50)
vellow	243-504	1000 (10 × 100)	vellow	243-508	500 (10 × 50)

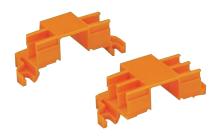




100 V = rated voltage 1.5 kV = rated surge voltage 2 = pollution degree (see also section 15)

<sup>\*</sup>For further approvals with corresponding ratings see section 15. \*\* When using wires of the same diameter only, 0.5  $\varnothing$  mm/AWG 24 or 1.0  $\varnothing$  mm/AWG 18 are also possible.

# Mounting Carrier for MICRO Push-Wire Connectors, for DIN 35 Rail or Screw Fixing, Series 243



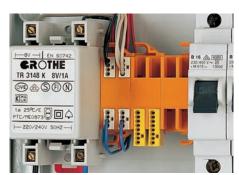
Description	ltem No.	Packunit pcs		
Mounting carrier				
for 4 push-wire connectors	243-112	50 (5 x 10)		
for 6 push-wire connectors	243-113	50 (5 x 10)		
Marker strip,				
plain	242-110	1		



Inserting a MICRO push-wire connector for junction boxes into the carrier



Removal of MICRO push-wire connector from the carrier



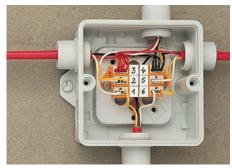
Example of house-bell application – mounted on DIN 35 rail

#### Quick fix mounting

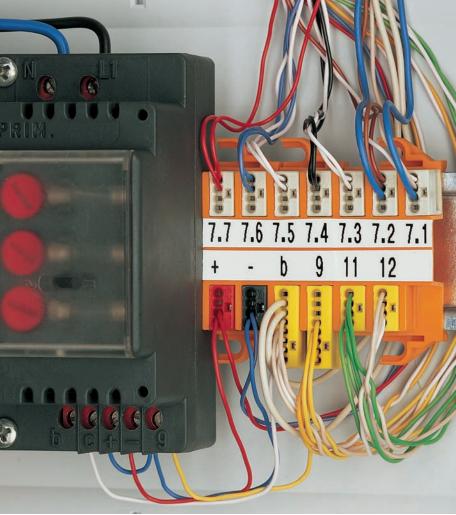
Electrical installers have often expressed a desire to be able to use the features of the MICRO push-wire connectors on DIN rail applications in panels. They have realized that these connectors are just as suitable in distribution panels for easy connection of the smaller wires used in low current applications. They are ideal for the connection of telephone type wire used in the connection of alarms, bells, door sensors, communication systems, etc.

The mounting carrier is the professional solution. It is available with mounting slots for 4 or 5 connectors. The 4- or 8-conductor MICRO pushwire connectors are simply slid into the carrier, but can be easily removed again.

The carrier is designed for easy mounting directly to the DIN 35 rail, or to a panel, via a screw, by use of the fixing flanges provided. A large marking surface is provided for clear circuit identification. This may be directly marked with a fiber tip pen, or by the use of pre-printed self-adhesive marker strips.



Typical application in a terminal box for burglar alarm system



Example of house communication application



#### **Push-Wire Connectors for Junction Boxes Series 273 and 773**



3 x 0.75 - 1.5 mm<sup>2</sup> "s" 1 3 x AWG 18 - 16 "sol." 5 x 0.75 - 1.5 mm<sup>2</sup> "s" 1 5 x AWG 18 - 16 "sol." 400 V/4 kV/2\*\* 600 V, 10 A 6 18 A

600 V, 10 A @

18 A

600 V, 10 A ® 600 V, 10 A @

2 x 1 - 2.5 mm<sup>2</sup> "s" Q 3 x 1 - 2.5 mm<sup>2</sup> "s" Q 400 V/4 kV/2\*\* 24 A

2 x AWG 18 - 12 "sol." 3 x AWG 18 - 12 "sol." 600 V, 20 A ® 600 V, 20 A @

□□ 10 – 13 mm / 0.45 in \* **® ®** VDE **◎ KE** CCAKER **® ⑤ ® ® ⑤ B & ® △ A** GL BV NV

400 V/4 kV/2\*\*

\* ® **6** VDE & KEE CCAKEE № S ® ® © � ♥ 🗒 🛦 GL BV NV

8 x 0.75 - 1.5 mm<sup>2</sup> "s" 1 8 x AWG 18 - 16 "sol."

\_\_\_\_ 10 - 13 mm / 0.45 in



□□ 10 – 13 mm / 0.45 in





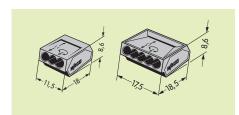


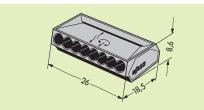


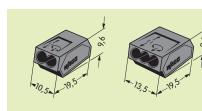
\* ® \$\ \text{\$ B \ YDE \$\omega\$ \$\ \text{\$ KEEF } \ CCAKEEF \ N \ S \ \Omega\$ \$\ \Omega\$



Color	Item No.	Item No.	Packunit pcs	M		Packunit pcs	Color	Item No.	Item No.	Packunit pcs	
Push-wire c	Push-wire connectors for junction boxes,				Push-wire connectors for junction boxes,			Push-wire connectors for junction boxes,			
	3-cond.con. 5-cond.con.				8-conductor connectors			2-cond.con. 3-cond.con.			
grey	273-100	273-101	1000 (10 x 100)	grey	273-108	500 (10 x 50)	dark grey	273-112	273-104	1000 (10 x 100)	
transparent	_	273-155	1000 (10 x 100)	transparent	273-158	500 (10 x 50)	transparent	273-252	273-253	1000 (10 x 100)	







4 x 1 - 2.5 mm<sup>2</sup> "s" 2 5 x 1 - 2.5 mm<sup>2</sup> "s" 2 400 V/4 kV/2\*\* 24 A

4 x AWG 18 - 12 "sol." 5 x AWG 18 - 12 "sol." 600 V, 20 A ® 600 V, 20 A @

400 V/4 kV/2\*\* 24 A

**□□□** 10 – 13 mm / 0.45 in

8 x AWG 18 - 12"sol."

600 V, 20 A ® 600 V, 20 A ®

400 V/4 kV/2\*\* 32 A

3 x 1.5 - 4 mm<sup>2</sup> "s"

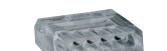
3 x AWG 14-10 "sol." 600 V, 30 A ® 600 V, 30 A ®

**□□□** 12 – 15 mm / 0.53 in

**□□□ 10 – 13 mm / 0.45 in** \* ® ® VDE @ \$ KEER CCAKEER № \$ ® F & F GL BV NV

8 x 1 - 2.5 mm<sup>2</sup> "s" 2

\* 🕦 🏽 CCAKEER NO SO 🗇 🖭 CB GL BV NV



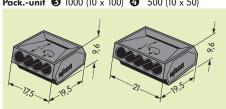


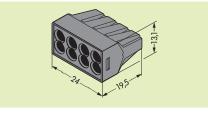




Color	Item No.	ltem No.	Color Item No.		Packunit pcs	Color	Item No.	Packunit pcs		
Push-wire	Push-wire connectors for junction boxes,			Push-wire connectors for junction boxes,			Push-wire connectors for junction boxes,			
	4-cond. connectors 5-cond. connectors			8-conductor connectors			3-conductor connectors			
dark grey	273-102 🚱	273-105 🔞	dark grey	773-208	500 (10 x 50)	grey	273-403	500 (10 x 50)		
transparent	273-254 🚱	273-255 🕢	transparent	773-108	500 (10 x 50)	transparent	273-453	500 (10 x 50)		

Pack.-unit 3 1000 (10 x 100) 3 500 (10 x 50)

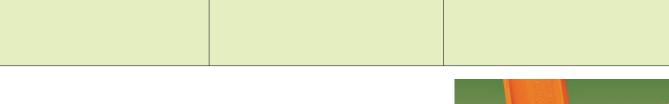


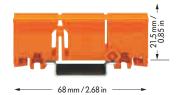




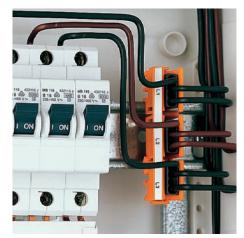
<sup>\*\*</sup> in grounded (earthed) supply systems

# Mounting Carrier for Push-Wire Connectors for Junction Boxes, for DIN 35 Rail or Screw Fixing, Series 273





Description	ltem No.	Packunit pcs							
Mounting carrier	273-150	50 (5 x 10)							
Marker strips, 48 strips per card,									
plain	210-334	1 card							



FIXED IN POSITION - on a DIN 35 rail



FIXED IN POSITION - screw fixing

One single carrier can hold up to 15 clamping units in a very narrow space. Up to now this has only been possible using rail-mounted terminal blocks.

The advantages for you are:

- the carriers can be fixed quickly and easily: on a DIN 35 rail or with screw fixing.
- a carrier can hold up to three 1.5 mm²/AWG 16 or 2.5 mm²/AWG 12 connectors of series 273 (excluding the 8 x 2.5 mm² version).
- the connectors can be easily exchanged.
- large marking area for self-adhesive marker strips or for direct marking with permanent fibre tip pen.



Snap **off** cover ...



... and use as end plate.



Snapping on to carrier rail



Removing from a carrier rail



# Compact Connector for Flexible Conductors with CAGE CLAMP®COMPACT Connection Description and Handling – Series 222

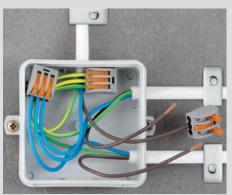


Strip wire 9 - 10 mm/0.37 in

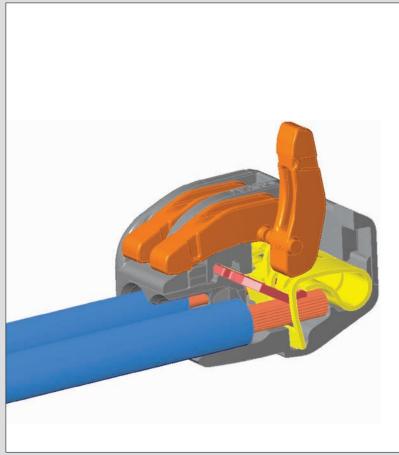


Connection: Push up lever and insert conductor  $\dots$  then push down lever to its closed position





Wiring of flexible conductors in a junction box





Individual design of low voltage lighting systems



Connecting pre-wired and pre-fabricated components, for example in mobile homes



Lighting fixture connection with flexible conductors and power feed

CAGE CLAMP® connects the following copper wires:\*

stranded

fine-stranded, also with tinned single strands

fine-stranded wire tip bonded

fine-stranded wire with crimped ferrule\*\* fine-stranded wire with crimped pin terminal

\*For aluminum wire see notes in section 15!
\*\*When using wires with ferrules, it is necessary to use a terminal block one size larger than the nominal cross section of the wire.

# Compact Connector for Flexible Conductors, Series 222

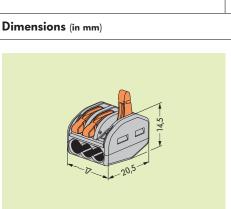


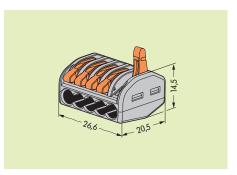
4 mm <sup>2</sup> "f-str"	5 x 0.08 – 2.5 mm <sup>2</sup> "s+f-str" AWG 28 – 12 4 mm <sup>2</sup> "f-str" 400 V/4 kV/2 10 32 A 600 V, 20 A 5 mm / 0.37 in	1 400 V = rated voltage 4 kV = rated surge voltage 2 = pollution degree (see also section 15)
* ® ENEC		





	ltem No.	Pack. unit pcs		ltem No.	Pack. unit pcs				
Compact conne	ector,		Compact cor	nnector,					
3-wire connector,	,		5-wire connec	tor,					
with levers			with levers						
continuous servic	e temperature 85°C		continuous service temperature 85°C						
grey	222-413	500 (10×50)	grey	222-415	400 (10×40				
<b>Dimensions</b>	(in mm)								







#### Compact connector

Connects up to 3 or 5 stripped fine-stranded wires of 0.08 mm²/AWG 28 to 4 mm²/AWG 12 or solid or stranded wires up to 2.5 mm²/AWG 12, without tools.

#### This is how it works:

Open the clamping unit by levering one of the small orange colored levers such that the lever engages and keeps the clamping unit in its open position. The wire can now be inserted, then the lever can be returned to its closed position, flush with the terminal block housing.

**The safety:**The closed position of the lever reliably prevents accidental unclamping of a connected wire.

The additional application safety, for any type of conductor (solid, stranded, flexible), is confirmed by approvals like ENEC or UL.



The ENEC mark is a European safety mark including 20 countries.



#### 4-Conductor Terminal Strips with CAGE CLAMP®S connection . . . Description and Handling - Series 862

#### **Conductor connection**



- 4 conductors per pole
   for solid and flexible conductors
- mixed wiring with solid and flexible conductors of different wire sizes

#### Marking



Marking by direct printing and/or marker strips

#### **Testing**



Testing with test plug 2 mm / 0.079 in Ø



Makes an automatic contact to the mounting A varnish coating is penetrated automatically.

#### Commoning



Commoning with jumper bar



#### Features and Advantages

This new connector series has been developed specifically to minimize the connection costs of electrical devices. At the same time, the requirement for flexible assembly, for numerous electrical connection options and for easy handling were part of the development.

- The new CAGE CLAMP®S allows the connection of up to four conductors with wire sizes from 0.5 mm² to 4 mm²/AWG 20 to 12. Different cross sections can be used within one connector.
- For factory wiring, CAGE CLAMP®S allows the direct insertion of solid conductors or flexible conductors with crimped ferrules\* or ultrasonically bonded wire ends from 0.5 mm<sup>2</sup> up to 4 mm<sup>2</sup>/AWG 20 to 12. (Length of bonded wire end min. 7 mm / 0.276 in)
- Automatic grounding contact available as an option.
- Snap-in mounting feet for fast assembly
- Push-buttons for easy handling with a commercially available screwdriver or by hand.
- Direct testing with test plug 2 mm / 0.079 in Ø
- Standard marking per pole or, for large quantities, in accordance with customer's specification.

#### **CAGE CLAMP®** connects the following copper wires:\*

stranded

fine-stranded. also with tinned single strands

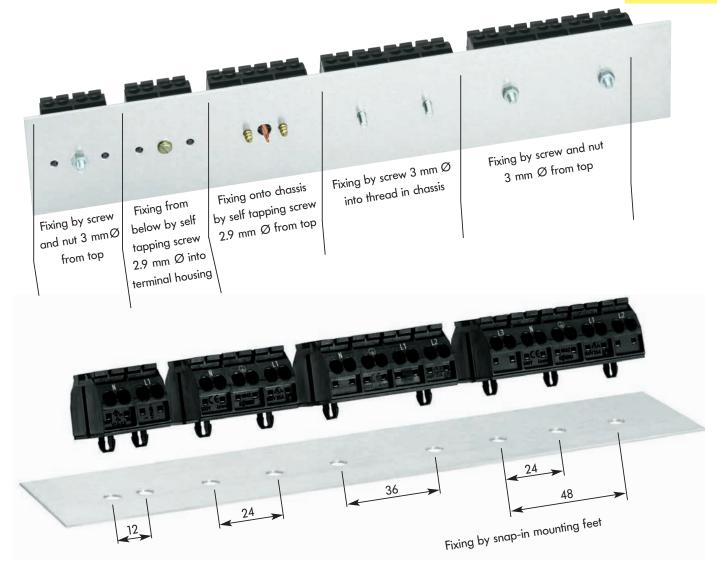
fine-stranded wire tip bonded

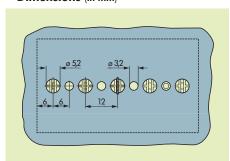
fine-stranded wire with crimped ferrule\*\* fine-stranded wire with crimped pin terminal

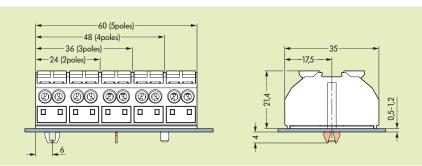
\*For aluminum wire see notes in section 15!
\*\*When using wires with ferrules, it is necessary to use a terminal block one size larger than the nominal cross section of the wire.

#### **Fixing Options**









Ferrules		Sleeve mm²	for AWG	Color	Stripped length mm	L	L1	D mm	D1	D2	ltem No.	Packunit pcs
	Insulated ferrules	0.5	22	white	12.0	16.0	10.0	3.1	2.6	1.0	216-241	1000
<u> </u>		0.75	20	grey	12.0	16.0	10.0	3.3	2.8	1.2	216-242	1000
100		1.0	18	red	12.0	16.0	10.0	3.5	3.0	1.4	216-243	1000
1		1.5	16	black	12.0	16.0	10.0	4.0	3.5	1. <i>7</i>	216-244	1000
	Uninsulated ferrules	0.5	22		10	10		2.1		1.0	216-141	1000
<u></u>		0.75	20		10	10		2.3		1.2	216-142	1000
6 6		1.0	18		10	10		2.5		1.4	216-143	1000
		1.5	16		10	10		2.8		1. <i>7</i>	216-144	1000
l <b>≼</b> [>l												



# 4-Conductor Device Connectors, 2 and 3 pole, 4 mm²/ AWG 12 with Unique Cost-Cutting Features Series 862

4 x 0.5 - 4 mm<sup>2</sup> 500 V/6 kV/3 32 A 4 x 0.5 - 4 mm<sup>2</sup> 500 V/6 kV/3 32 A 4 x AWG 20 - 12 300/600 V, 20/5 A RV ® 4 x AWG 20 - 12 300/600 V, 20/5 A RV ® 10 – 11 mm / 0.41 in 10 – 11 mm / 0.41 in \* **91 @** ENEC \* **91 @** ENEC







		2 poles			3 poles		
Available in black or	- white	z poies			3 poles		
	without with ground/earth contact	Item No. black	Item No. white	Packunit	Item No. black	Item No. white	Packunit
for fixing screw 3 mi	m/0.118 in Ø or						•
	2.9 mm/0.114 in Ø from top						
,	without marking	862-0552	862-0652	500			
L	.1-N	862-1552	862-1652	500			
1	N-L1	862-2552	862-2652	500			
f. self tapping screw 2	2.9 mm/0.114 in Ø from below						
	without marking	862-0562	862-0662	500			
	.1-N	862-1562	862-1662	500			
1	N-L1	862-2562	862-2662	500			
1 snap-in foot per p		0/0.0500	0/0.0/00	500			
	without marking	862-0532	862-0632	500			
	.1-N	862-1532	862-1632	500			
Г	N-L1	862-2532	862-2632	500			
for fixing screw 3 mi							
f. self tapping screw	2.9 mm/0.114 in Ø from top						
١	without marking				862-0503	862-0603	250
(	⊕-N-L1				862-1503	862-1603	250
1	N-⊕-L1				862-2503	862-2603	250
	N-⊕-L1				862-8503	862-8603	250
	⊕-N-L1				862-9503	862-9603	250
1 snap-in foot per p	ala						
	vithout marking				862-0533	862-0633	250
	⊕-N-L1				862-1533	862-1633	250
	9-N-L1 N-⊕-L1				862-2533	862-2633	250
'	N-⊕-L1				862-8533	862-8633	250
	⊕-N-L1				862-9533	862-9633	250
	J <u>-</u> .				7000	002 7000	200
snap-in feet at pos.							0.50
	without marking				862-0593	862-0693	250
	Ð-N-L1				862-1593	862-1693	250
	N-⊕-L1				862-2593	862-2693	250
	N-⊕-L1 ⊕-N-L1				862-8593 862-9593	862-8693	250
	⊎-N-LI				862-9593	862-9693	250
Accessories	DIN rail mounting of 862 Series see	e accessories page 10.2	26	-			
Comb type jumper b	ar, can easily be inserted into the	Test plug, with cable	e 500 mm/1'7.7"		Test plug, with cab	le 500 mm/1'7.7"	
	vire entry, 32 A		2 mm/0.079 in Ø, r	red		2.3 mm/0.091 in 9	ð, yellow
LILILIA .	<b>362-482</b> 5		210-136	50 (5 x 10)		210-137	50 (5×1
Screwdriver, with part	tially insulated shaft	Marker strip, white	, plain, for central ma	ırking;	Marker strip, white	e, plain, for central m	arking;
•	3.5 x 0.5) mm	1	7.5 mm wide, on rol			7.5 mm wide, on re	
	210-620		709-178	1		709-188	1

 $<sup>\</sup>ensuremath{^*}$  For further approvals with corresponding ratings see section 15.

# 4-Conductor Device Connectors, 4 and 5 pole, 4 mm²/ AWG 12 with Unique Cost-Cutting Features Series 862









`			4 poles	•		5 poles	•	
Available in black								
	without ground/earth	with contact	ltem No. black	Item No. white	Packunit pcs	Item No. black	Item No. white	Packunit pcs
for fixing screw 3	mm/0.118 in Ø o	r						
f. self tapping scr	ew 2.9 mm/0.114	in Ø from top						
	without marking	3	862-0504	862-0604	200			
	⊕-N-L1-L2		862-1504	862-1604	200			
	N-⊕-L1-L2		862-2504	862-2604	200			
		N-⊕-L1-L2	862-8504	862-8604	200			
		⊕-N-L1-L2	862-9504	862-9604	200			
1 snap-in foot pe	er pole							
	without marking	3	862-0534	862-0634	200			
	⊕-N-L1-L2		862-1534	862-1634	200			
	N-⊕-L1-L2		862-2534	862-2634	200			
		N-⊕-L1-L2	862-8534	862-8634	200			
		⊕-N-L1-L2	862-9534	862-9634	200			
snap-in feet at po	s. 1+4							
	without marking	3	862-0594	862-0694	200			
	⊕-N-L1-L2		862-1594	862-1694	200			
	N-⊕-L1-L2		862-2594	862-2694	200			
		N-⊕-L1-L2	862-8594	862-8694	200			
		⊕-N-L1-L2	862-9594	862-9694	200			
for fixing screw 3	mm/0.118 in $\emptyset$ o	r						
f. self tapping scr	ew 2.9 mm/0.114	in Ø from top						
	without marking	3				862-0505	862-0605	200
	⊕-N-L1-L2-L3					862-1505	862-1605	200
	L3-N-⊕-L1-L2					862-2505	862-2605	200
		L3-N-⊕-L1-L2				862-8505	862-8605	200
		⊕-N-L1-L2-L3				862-9505	862-9605	200
1 snap-in foot pe	er pole							
	without marking	3				862-0525	862-0625	200
	⊕-N-L1-L2-L3					862-1525	862-1625	200
	L3-N-⊕-L1-L2					862-2525	862-2625	200
		L3-N-⊕-L1-L2				862-8525	862-8625	200
		⊕-N-L1-L2-L3				862-9525	862-9625	200
snap-in feet at po	s. 1+3+5							
	without marking	3				862-0515	862-0615	200
	⊕-N-L1-L2-L3					862-1515	862-1615	200
	L3-N-⊕-L1-L2					862-2515	862-2615	200
		L3-N-⊕-L1-L2				862-8515	862-8615	200
		⊕-N-L1-L2-L3				862-9515	862-9615	200
Accessories	DIN rail mounting	of 862 Series se	e accessories page	10.26				
Comb type jumpe	er bar, can easily be	inserted into the	Test plug, with a	cable 500 mm/1'7.7"		Test plug, with	cable 500 mm/1'7.7"	
	wire entry, 32 A			2 mm/0.079 in	Ø, red		2.3 mm/0.091	in Ø, yellow
Little in it	862-482	5		210-136	50 (5 x 10)		210-137	50 (5 x
Screwdriver, with	partially insulated sho	aft	Marker strip, w	hite, plain, for centra	-	Marker strip, w	hite, plain, for centra	-
	(3.5 x 0.5) mm			7.5 mm wide, or	roll, 50 m long		7.5 mm wide, o	n roll, 300 m Ion
	210-620	1		709-178	1		709-188	1

<sup>\*</sup> For further approvals with corresponding ratings see section 15.

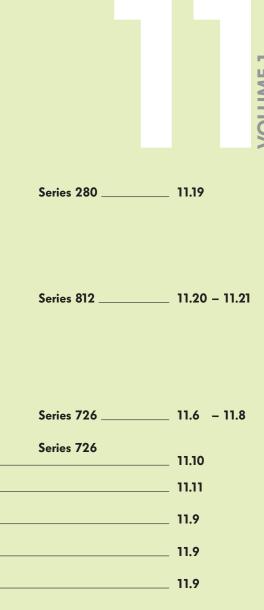




Safe patching despite high density wiring:

WAGO matrix patchboards with CAGE CLAMP® connection

#### Patching Systems and Busbar Terminal Blocks





3-conductor double potential terminal blocks 2.5 mm² / AWG 12



**Busbar terminal blocks** 

Matrix patchboards

Common potential matrix assembly - Marking on the patchboard side \_ - Marking on the supply side \_\_\_\_\_\_\_ 11.11 Decade marker carriers for matrix patchboards \_\_\_\_\_\_ 11.9 Insulation stop for matrix patchboards \_\_\_\_\_

Additional modules for matrix patchboards \_\_\_\_\_\_ 11.9



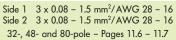
Terminal blocks for matrix patching and same potential terminal blocks 1.5 mm<sup>2</sup> / AWG 16 Series 727 \_\_\_\_\_\_ 11.14 - 11.17



# Patching Systems - Product Summary -













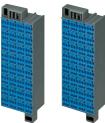
Side 1  $3 \times 0.08 - 1.5 \text{ mm}^2/\text{AWG } 28 - 16$ Side 2  $2 \times 0.08 - 2.5 \text{ mm}^2/\text{AWG } 28 - 14$ 32-, 48- and 80-pole - Pages 11.6 - 11.7

#### Series 726 Matrix patchboards



2 x 0.08 - 1.5 mm<sup>2</sup>/AWG 28 - 16 2 x 0.08 - 1.5 mm<sup>2</sup>/AWG 28 - 16 32-pole – Page 11.8

#### Series 726 Ex i Matrix **patchboards**



Side 1  $3 \times 0.08 - 1.5 \text{ mm}^2/\text{AWG } 28 - 16$ Side 2 3 x 0.08 - 1.5 mm<sup>2</sup>/AWG 28 - 16 32-, 48- and 80-pole - Pages 11.6 - 11.7

Side 1  $3 \times 0.08 - 1.5 \text{ mm}^2/\text{AWG } 28 - 16$ Side 2 2 x 0.08 - 2.5 mm<sup>2</sup>/AWG 28 - 14 32-, 48- and 80-pole - Pages 11.6 - 11.7



2 x 0.08 - 1.5 mm<sup>2</sup>/AWG 28 - 16  $2 \times 0.08 - 1.5 \text{ mm}^2/AWG 28 - 16$ 32-pole - Page 11.8

#### Series 726 Decade marker carrier



Page 11.9



Page 11.9



#### Series 726 Common potential matrix patchboards



24 x 0.08 - 2.5 mm<sup>2</sup>/AWG 28 - 14 1/2 x 0.2 - 16 mm<sup>2</sup>/AWG 24 - 6 Page 11.10

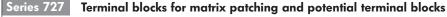






1/2 x 0.2 - 16 mm<sup>2</sup>/AWG 24 - 6 24 x 0.08 - 2.5 mm<sup>2</sup>/AWG 28 - 14 Page 11.11









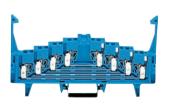
4-level terminal blocks

8-level terminal blocks

Pages 11.14 - 11.15

Pages 11.16 - 11.17

#### Series 727 Ex i Terminal blocks for matrix patching and potential terminal blocks





4-level terminal blocks

8-level terminal blocks

Pages 11.14 - 11.15

Pages 11.16 - 11.17

# Series 280 3-conductor double potential terminal block/ Terminal block for matrix patching









Page 11.19 Page 11.19 Page 11.19

#### Series 812 Busbar terminal blocks





Insulated busbar carrier



4 mm² / AWG 12 N/L Page 11.21

16 mm² / AWG 6 N/L Page 11.21

Page 11.21

Ground (earth) busbar carrier

#### Series 812 Ground (earth) busbar terminal blocks







4 mm² / AWG 12 N/L Page 11.21 16 mm² / AWG 6 N/L Page 11.21





# Matrix Patchboards with CAGE CLAMP $^{\mathbb{R}}$ connection . . . Series 726

#### **CAGE CLAMP®** connection



Connection of wires with screwdriver blade size (2.5 x 0.4) mm Item No. 210-119

#### Marking of modules



Marking of modules (factory marked) Side 1: 1, 2, 3, 4 . . .

#### **Testing**



Testing with test plug 2.3 mm/0.091 in Ø Item No. 210-137

#### Ex i versions



Blue matrix patchboards are suitable for Ex i applications

# B 2 B 3 41 49 57 42 50 58 34 43 50 5

#### Marking

Marking



WFB Continuous marking strips. Fits into the marker receptacle and the group marking carrier of the matrix patchboard

**Examples of installation** 



Individual group marking with WSB Quick marking system



Matrix patchboards in a frame



Matrix patchboards in 19" rack



---

CAGE CLAMP®
connects the following
copper wires: \*





stranded



fine stranded, also with tinned single strands

#### ... Description and Handling

#### Common potential matrix assembly Space Saving



Example shown here with (white) supply terminal block



Slim line matrix patchboard (lower right) mounted upside down

#### Additional module



Snapping on an additional module with contact to mounting frame

#### Additional module



Assembly of a matrix patchboard with additional module snapped on.
Direct connection to the mounting frame via contact plate



	Conductor cross section (mm²/AWG) without ferrule	Conductor cross se with f	errule		
	Willion Terrole	insulated	uninsulated		
Side 2	1.5/16	Item No./Color 0.75/20 <b>216-202</b> /grey	Item No. 1.0/18 <b>216-123</b>		
Side 1	1.5/16	0.75/20 <b>216-202</b> /grey	1.0/18 <b>216-123</b>		
Side 2	2.5/14	1.5/16 <b>216-204</b> /black	1.5/16 <b>216-104</b>		
Side 1	1.5/16	0.75/20 <b>216-202</b> /grey	1.0/18 <b>216-123</b>		



Connection of ferruled wires





fine-stranded wire with crimped ferrule **1** 



fine-stranded wire with crimped pin terminal



fine-stranded wire – tip bonded

#### **Matrix Patchboards**

\* **91 6** ((AKEUA (D) @

Side 1: 3 x 0.08 -1.5 mm<sup>2</sup> AWG 28 - 16 Side 2:  $3 \times 0.08 - 1.5 \text{ mm}^2$ 500 V/6 kV/3 □ 8 – 10 mm / 0.35 in

Side 1:  $3 \times 0.08 - 1.5 \text{ mm}^2$ Side 2:  $2 \times 0.08 - 2.5 \text{ mm}^2$ AWG 28 - 16 300 V, 10 A 90 300 V, 10 A @

500 V/6 kV/3 300 V, 10 A 91 10 A 300 V, 10 A @

Side 1:  $3 \times 0.08 - 1.5 \text{ mm}^2$ AWG 28 - 16 Side 2: 3 x 0.08 -1.5 mm<sup>2</sup> AWG 28 - 14 500 V/6 kV/3 10 A

AWG 28 - 16 AWG 28 - 16 300 V, 10 A 90 300 V, 10 A @

■ 8 – 10 mm / 0.35 in

\* **71 6** CCAKEE O 🕞

□ 8 - 10 mm / 0.35 in \* **71 @** ((AKES) **@** 





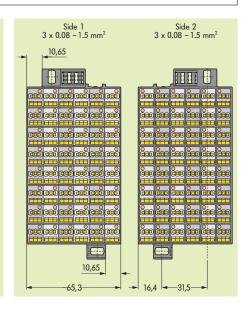






No. of poles	Item No.	Packunit pcs	No. of poles	ltem No.	Pa pc	ckunit s	No. of poles	Item No.	Ì	Packunit pcs	
Matrix patchb	oards, 32 poles, fram	e dark grey,	Matrix patchb	oards, 32 poles, f	rame dark	grey,	Matrix patchboards, 48 poles, frame dark grey,				
colors and numb	pering of modules on		colors and num	bering of modules o	n		colors and numbering of modules on				
sides 1 and 2 ar	ranged vertically		sides 1 and 2 a	rranged vertically			sides 1 and 2 c	ırranged ve	rtically		
Numbering	Colors of modules		Numbering	Colors of modules			Numbering	Colors of 1	modules		
	grey white gre	ey white		grey white	grey	white		grey	white grey	white	
( 1 – 32)	1 - 8 9 - 16 17	- 24 25 - 32	(1-32)	1 - 8 9 - 16	17 - 24	25 - 32	( 1 – 48)	1 - 8	9 – 16 17 –	24 25 – 32	
(33 – 64)	33 - 40 41 - 48 49	- 56 57 - 64	(33 - 64)	33 - 40 41 - 48	49 – 56	57 - 64		33 – 40	41 – 48		
32 (1 – 32)	726-121	20	32 (1-32)	726-221		20	48 (1-48)	726	-421	10	
32 (33 – 64)	726-122	20	32 (33 – 64)	726-222	:	20					
Color of module	es blue and numbering	Color of modules blue and numbering of modules on				Color of modules blue and numbering of modules on					
sides 1 and 2 arranged vertically			sides 1 and 2 arranged vertically				sides 1 and 2 arranged vertically				
32 (1 – 32)	726-141 🚺	20	32 (1-32)	726-241 🕕		20	48 (1-48)	726	-441 🚺	10	
32 (33 – 64)	726-142 🚺	20	32 (33 – 64)	726-242 🕕		20					
1 suitable for E	x i applications		1 suitable for Ex i applications				1 suitable for Ex i applications				
Accessories	(Insulation stop	see page 11.9)									
~	Group marking	adapter	~	Group mark	ing adap	oter	~	Gro	up marking a	dapter	
No.	for side 2		100	for side 2			The same of the sa	for s	ide 2		
-	726-90	<b>02</b> 50	46	72	6-902	50	1		726-902	50	
	<b>Test plug,</b> 2.3 m	m / 0.091 in Ø		Test plug, 2.	3 mm/0.0	)91 in Ø		Test	<b>plug,</b> 2.3 mm	0.091 in Ø	
	yellow 210-13	<b>37</b> 50 (5 x 10)		yellow 21	0-137	50 (5 x 10)		yello	w <b>210-137</b>	50 (5 x 10)	
	with cable 500 m	ım / 1'7.7"		with cable 50	0 mm / 1'7	7.7"		with	cable 500 mm	/1'7.7"	
	Wire comm. cho	ain, insulated, 6A		Wire comm.	chain, in:	sulated, 6 A		Wire	comm. chain	, insulated, 6 A	
	\/ 31 connections, 0.	5 mm², max. 50 V		31 connection	s, 0.5 mm²	², max. 50 V		31 cc	onnections, 0.5 i	nm², max. 50`	
V V	grey 709-10		V V V	grey <b>70</b>	9-107	1	V V V	grey	709-107	1	

3.5 14,5	Side 1 3 x 0.08 – 1.5 mm <sup>2</sup> 	Side 2 3 x 0.08 – 1.5 mm²	Side 2 2 x 0.08 – 2.5 mm <sup>2</sup>
14,5	00 00 00 00 00 00 00 00 00 00 00 00 00	20 00 00 00 00 00 00 00 00 00 00 00 00 0	



<sup>\*</sup> For further approvals with corresponding ratings see section 15.

Side 1:  $3 \times 0.08 - 1.5 \text{ mm}^2$ Side 2:  $2 \times 0.08 - 2.5 \text{ mm}^2$ 500 V/6 kV/3 10 A

AWG 28 - 16 AWG 28 - 14 300 V, 10 A 91 300 V, 10 A @

Side 2:  $3 \times 0.08 - 1.5 \text{ mm}^2$ 500 V/6 kV/3 10 A

Side 1:  $3 \times 0.08 - 1.5 \text{ mm}^2$ 

AWG 28 - 16 AWG 28 - 16 300 V, 10 A 94 300 V, 10 A @

Side 1:  $3 \times 0.08 - 1.5 \text{ mm}^2$ Side 2:  $2 \times 0.08 - 2.5 \text{ mm}^2$ 500 V/6 kV/3 10 A

AWG 28 - 16 AWG 28 - 14 300 V, 10 A 90 300 V, 10 A @

□ 8 – 10 mm / 0.35 in □ 8 – 10 mm / 0.35 in

\* **91 @** CCAKEER **(**) @

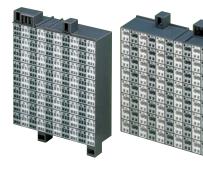
□ 8 – 10 mm / 0.35 in \* 🗫 🏽 CCAKEDA 🛈 🕞



\* **91 @** ((AKEDA (D) @







No. of poles	ltem No.	Packunit pcs	No. of poles	ltem No.	Pac pcs	:kunit	No. of poles	Item No.		Pac	ckunit
Matrix patchbo	ards, 48 poles, fra	me dark grey,	Matrix patch	oards, 80 poles,	rame dark	grey,	Matrix patchb	oards, 80 p	oles, fro	ıme dark	grey,
colors and numb	ering of modules on		colors and num	bering of modules	on		colors and num	bering of mo	dules on		
sides 1 and 2 arr	ranged vertically		sides 1 and 2 c	rranged vertically			sides 1 and 2 a	rranged verti	ically		
Numbering	Colors of modules		Numbering	Colors of modules			Numbering	Colors of m	odules		
	grey white g	grey white		grey white	grey	white		grey w	hite	grey	white
( 1 – 48)	1 - 8 9 - 16 1	17 – 24 25 – 32	( 1 – 80)	1 - 8 9 - 16	17 – 24	25 - 32	( 1 – 80)	1 - 8	9 – 16	17 – 24	25 - 32
	33 - 40 41 - 48			33 - 40 41 - 48	49 - 56	57 - 64		33 - 40 4	1 – 48	49 – 56	57 - 64
48 (1 – 48)	726-521	10		65 - 72 73 - 80				65 – 72 73	3 – 80		
			80 (1 – 80)	726-721		8	80 (1-80)	726-8	321		8
Color of module	s blue and numbering	g of modules on	Color of modu	les blue and numbe	ing of mod	lules on	Color of modules blue and numbering of modules on				dules on
sides 1 and 2 arr	ranged vertically		sides 1 and 2 c	rranged vertically			sides 1 and 2 arranged vertically				
48 (1-48)	726-541 1	10	80 (1 – 80)	726-741 ①	)	8	80 (1 – 80)	726-8	341 🕕		8
1 suitable for E	x i applications		1 suitable for	Ex i applications			1 suitable for	Ex i application	ons		

(for the group marking the WAGO WSB Quick marking system or WFB Continuous marking strips can be used, see section 14)

П	

Group marking adapter for side 2 726-902 50 **Test plug,** 2.3 mm / 0.091 in Ø yellow **210-137** 50 (5 x 10) with cable 500 mm / 1'7.7"

Wire comm. chain, insulated, 6A 31 connections, 0.5 mm<sup>2</sup>, max. 50 V 709-107



Group marking adapter for side 2 **726-902** 50 **Test plug,** 2.3 mm/0.091 in Ø yellow **210-137** 50 (5 x 10) with cable 500 mm / 1'7.7'

Wire comm. chain, insulated, 6A 31 connections, 0.5 mm<sup>2</sup>, max. 50 V 709-107



Group marking adapter for side 2

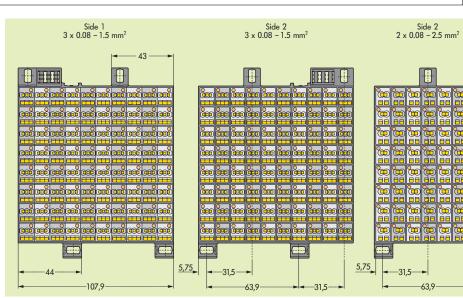
**726-902** 50

**Test plug,** 2.3 mm / 0.091 in Ø yellow **210-137** 50 (5 x 10) with cable 500 mm / 1'7.7"

Wire comm. chain, insulated, 6A 31 connections, 0.5 mm<sup>2</sup>, max. 50 V **709-107** 1

Side 2 2 x 0.08 - 2.5 mm <sup>2</sup>
TOTAL C

16.4 -31.5





11

#### Matrix Patchboards Slim Line Version for 19" Racks

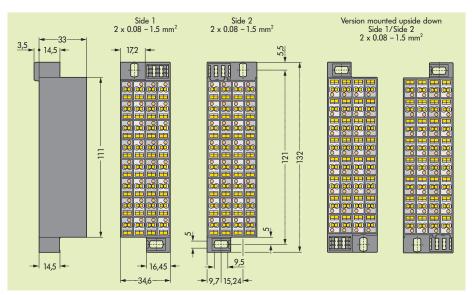
Side 1: 2 x 0.08 -1.5 mm<sup>2</sup> AWG 28 - 16 Side 1:  $2 \times 0.08 - 1.5 \text{ mm}^2$ AWG 28 - 16 Side 2:  $2 \times 0.08 - 1.5 \text{ mm}^2$ Side 2:  $2 \times 0.08 - 1.5 \text{ mm}^2$ AWG 28 - 16 AWG 28 - 16 500 V/6 kV/3 300 V, 10 A 94 500 V/6 kV/3 300 V, 10 A 91 300 V, 10 A @ 10 A 300 V, 10 A @ ■ 8 – 10 mm / 0.35 in □ 8 - 10 mm / 0.35 in \* **71 @** ((AKEDA (D) @ \* 🗫 @ CCAKEDA 🕝







No. of poles	Item No.	Packunit pcs	No. of poles	ltem No.	Pac pcs	ckunit
Matrix patchboards	s, 32 poles, f	rame dark grey,	Matrix patchl	boards, 32 poles, r	nounted u	pside
colors and numbering	of modules o	on	down, frame	dark grey, colors and	numberin	g of
sides 1 and 2 arrange	ed vertically		modules on sid	les 1 and 2 arranged	vertically	
Numbering Color	rs of modules		Numbering	Colors of modules		
grey		grey white		grey white	grey	white
` '		17 – 24 25 – 32	( 1 – 32)			
, , ,		49 – 56 57 – 64		33 - 40 41 - 48		
( · ·/	726-321	24	32 (1 – 32)			24
. (/	726-322	24	32 (33 – 64)		-	24
Color of module blue		ng of modules on		le blue and numberi	ng of modu	ules on
sides 1 and 2 arrange	•			arranged vertically		
, ,	726-341 1		32 (1 – 32)			24
32 (33 – 64)	726-342 1	24	32 (33 – 64)	726-346 🕕	2	24
1 suitable for Ex i ap	plications		suitable for	Ex i applications		
Accessories						
. 🔎	Group mark	ing adapter		Group mark	ing adap	ter
THE REAL PROPERTY.	for side 2	-		for side 2		
-	72	<b>6-902</b> 50	-	720	<b>5-902</b> 5	50
	Test plug, 2.	3 mm / 0.091 in Ø		Test plug, 2.	3 mm/0.0	91 in Ø
	yellow 210	<b>0-137</b> 50 (5 x 10)		yellow 210	<b>)-137</b> 5	50 (5 x 10)
	with cable 50	0 mm / 1'7.7"		with cable 50	0 mm/1'7.	7"
	Wire comm.	chain, insulated, 6A		Wire comm.	chain, ins	ulated, 6A
	31 connection	s, 0.5 mm², max. 50 V		31 connection	s, 0.5 mm²,	, max. 50 V
YYYY	grey <b>70</b> 5	<b>9-107</b> 1	Y Y Y	grey <b>70</b> 9	7-107	1
Dimensions (in n	mm)					



#### Additional Modules, Decade Marker Carriers and Insulation Stops for Matrix Patching Series 726



 1 x 0.08 - 4 mm²
 AWG 28 - 12

 1 x 0.08 - 2.5 mm²
 AWG 28 - 14

 500 V/4 kV/3
 300 V, 10 A ®

 10 A
 300 V, 10 A ®

 8 - 10 mm / 0.35 in

Insulation stop, suitable for patchboard side 1 matrix patching 3 x 1.5 mm²/AWG 16



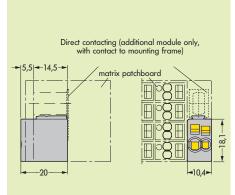


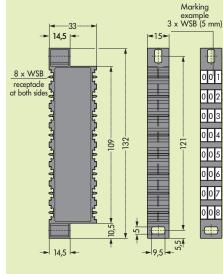


Color	ltem No.	Packunit pcs	Color	Item No.	Packunit pcs		Item No.	Packunit pcs
Additional n	nodules, for matrix pat	chboards,	Decade marke	er carrier, for matrix	patchboards	Insulation stop	, 4 x 3 pcs/strip	
for snap-on fi	ixing to the lower fixing	element,	dark grey	726-905	10	white	726-901	200 strips
with CAGE CLAMP®						0.08 - 0.2 mm <sup>2</sup>	/AWG 28 - 24 "s"	
						(0.08 - 0.14 mn	n <sup>2</sup> /AWG 28 – 26 "f-st'	")
Additional ma	odule with contact to ma	ounting frame						
white	726-903	25				light grey	726-906	200 strips
						0.25 mm <sup>2</sup> /AW0	9 22 "s"	
Additional mo	odule, insulated					0.14 - 0.25 mm		
grey	726-904	25						
						dark grey	726-907	200 strips
						0.25 - 0.5 mm <sup>2</sup>	/AWG 22 - 20 "s+f-s	t"
						Note: Suitable	for patchboard side 1	of matrix
						patchboards 1.5 mm <sup>2</sup> / AWG 16 (patchboards with		
						different front of	and back sides)	
							,	



Insert insulation stop into conductor entry holes of matrix patchboard.











#### **Common Potential Matrix Patchboards** Slime Line Version for 19" Racks

Pack.-unit

Supply side: 24 A 24 × 2 × 0.08 - 2.5 mm<sup>2</sup> AWG 28 - 14 8 - 10 mm / 0.35 in 300 V, 10 A @ Patchboard side: 76 A

1 x 0.2 - 16 mm<sup>2</sup>

or 2 x 0.2 - 16 mm<sup>2</sup>

16 - 17 mm / 0.65 in AWG 24 - 6 AWG 24 - 6
\* **91** @ ((AKEDA (D)

Supply side: 24 A 24 x 2 x 0.08 - 2.5 mm<sup>2</sup> AWG 28 - 14 8 - 10 mm / 0.35 in 300 V, 10 A @ AWG 24 - 6

Patchboard side: 76 A

1 x 0.2 - 16 mm<sup>2</sup>

or 2 x 0.2 - 16 mm<sup>2</sup> AWG 24 - 6
\* **91** @ ((AKEER (D) 16 – 17 mm / 0.65 in

Supply side: 24 A 24 x 2 x 0.08 - 2.5 mm<sup>2</sup> AWG 28 - 14 8 - 10 mm / 0.35 in 300 V, 10 A ® Patchboard side: 76 A

1 x 0.2 - 16 mm<sup>2</sup>

or 2 x 0.2 - 16 mm<sup>2</sup>

16 - 17 mm / 0.65 in AWG 24 - 6 AWG 24 - 6 \* **91 @** ((AKEDA D)



Item

(2.5 x 0.4) mm 210-119 1

(5.5 x 0.8) mm **210-121** 1

**283-611** 25

Additional supply

terminal block



Item

Pack.-unit



Item

(2.5 x 0.4) mm 210-119 1

green-yellow 283-609 25

(5.5 x 0.8) mm **210-121** 

Additional supply

terminal block

Pack.-unit

	No.	pcs		No.	pcs		No.	pcs
Common potent	tial matrix patchboa	rds, frame dark grey,	Common pot	ential matrix patchboa	ds, frame dark grey,	Comm. pot. matrix	pbds. f. gnd. earth	cond., frame dark grey
Supply side:			Supply side	:		Supply side:		
24 x 2 connection	ons, numbering of m	odules arranged	24 x 2 connections, numbering of modules arranged			24 x 2 connection	s, numbering of n	nodules arranged
vertically (1 – 24), color of module: grey,			vertically (1 –	24), color of module: w	hite,	vertically (1 – 24),	color of module:	green-yellow,
Patchboard sid	de:		Patchboard	side:		Patchboard side	:	
with 1 supply terminal block incl. end plate			with 1 supply	terminal block incl. end	plate	with 1 supply term	ninal block incl. en	ıd plate
wire size 0.2 mm	m <sup>2</sup> to 16 mm <sup>2</sup> /AWG :	24-6	wire size 0.2	mm <sup>2</sup> to 16 mm <sup>2</sup> /AWG 2	24-6	wire size 0.2 mm <sup>2</sup>	to 16 mm <sup>2</sup> /AWG	24-6
grey	726-601	10	white	726-611	10	green-yellow	726-621	10
with 2 supply te	erminal blocks incl. en	d plate	with 2 supply terminal blocks incl. end plate			with 2 supply terminal blocks incl. end plate		
wire size 0.2 mm	m <sup>2</sup> to 16 mm <sup>2</sup> /AWG :	24-6	wire size 0.2 mm <sup>2</sup> to 16 mm <sup>2</sup> /AWG 24-6			wire size 0.2 mm <sup>2</sup> to 16 mm <sup>2</sup> /AWG 24-6		
grey	726-602	10	white	726-612	10	green-yellow	726-622	10
Accessories	s (Marking accessorie	·	g system see sec	<u>'</u>				
	Group marki	• .		Group marki	•		•	king adapter
EL TH	for patchboa		E TO	for patchboa		No. of Lot	for patchbo	
	72	<b>26-902</b> 50	-	72	<b>6-902</b> 50		7	<b>26-902</b> 50
	Test plug, 2.3	mm/0.091 in Ø		Test plug, 2.3	mm / 0.091 in Ø		Test plug, 2.	3 mm/0.091 in Ø
	yellow 21	<b>0-137</b> 50 (5 x 10)		yellow 21	<b>0-137</b> 50 (5 x 10)		yellow 2	<b>10-137</b> 50 (5 x 10)
	with cable 500	) mm / 1'7.7"		with cable 500	mm / 1'7.7"		with cable 50	00 mm / 1'7.7"
	Screwdrivers			Screwdrivers			Screwdriver	's

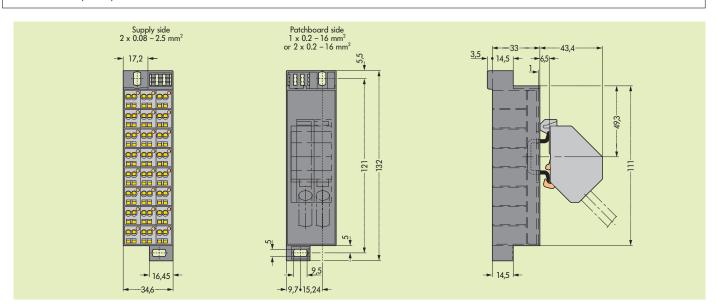
(2.5 x 0.4) mm **210-119** 

(5.5 x 0.8) mm **210-121** 

**283-611** 25

Additional supply

terminal block



#### **Common Potential Matrix Patchboards** Slim Line Version, for 19" Racks, Supply Side/Patchboard Side



Supply side: 76 A  $1 \times 0.2 - 16 \text{ mm}^2$  or  $2 \times 0.2 - 16 \text{ mm}^2$ AWG 24 - 6 AWG 24 - 6 16 - 17 mm / 0.65 in 300 V, 10 A 90

Patchboard side: 24 A 24 x 2 x 0.08 − 2.5 mm<sup>2</sup> | AWG 28 − 14 8 − 10 mm / 0.35 in \*¶4 € ((AKES) ⊕

Supply side: 76 A  $1 \times 0.2 - 16 \text{ mm}^2$ or  $2 \times 0.2 - 16 \text{ mm}^2$ 16 - 17 mm / 0.65 in

AWG 24 - 6 AWG 24 - 6 300 V, 10 A 94

AWG 28 - 14
\* \$\mathbf{Y} \text{ ((AKETA (D)

Supply side: 76 A  $1 \times 0.2 - 16 \text{ mm}^2$  or  $2 \times 0.2 - 16 \text{ mm}^2$ 

16 - 17 mm / 0.65 in

AWG 24 - 6 300 V, 10 A 94

AWG 24 - 6

Patchboard side: 24 A 2 × 0.08 - 2.5 mm<sup>2</sup> AWG 28 - 14 8 - 10 mm / 0.35 in \* \$\frac{4}{3} \emptyset{\text{@}((\text{KEE}) \text{0})}







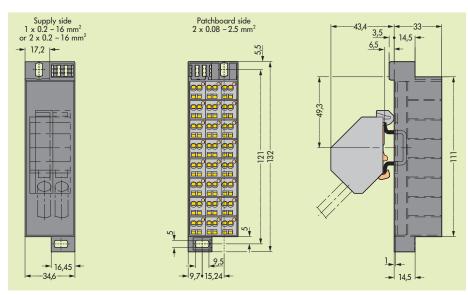






	ltem No.	Packunit pcs		ltem No.	Packunit pcs		Item No.	Packunit pcs	
Common pote	ential matrix patchboards	s, frame dark grey,	Common pot	ential matrix patchboar	ds, frame dark grey,	Common potential matrix patchboards, frame dark grey,			
Supply side:			Supply side:			Supply side:			
with 1 termina	ıl block incl. end plate		with 1 termin	al block incl. end plate		with 1 terminal bl	ock incl. end plate		
wire size 0.2 -	- 16 mm²/AWG 24-6		wire size 0.2 - 16 mm <sup>2</sup> /AWG 24-6			wire size 0.2 – 16 mm <sup>2</sup> /AWG 24-6			
grey	726-651	10	white	726-661	10	green-yellow	726-671	10	
with 2 termina	ıl blocks incl. end plate		with 2 terminal blocks incl. end plate			with 2 terminal blocks incl. end plate			
wire size 0.2 -	- 16 mm <sup>2</sup> /AWG 24-6		wire size 0.2 - 16 mm <sup>2</sup> /AWG 24-6			wire size 0.2 – 16 mm <sup>2</sup> /AWG 24-6			
grey	726-652	10	white	726-662	10	green-yellow	726-672	10	
Patchboard s	ide:		Patchboard side:			Patchboard side:			
24 x 2 connec	tions, numbering of mod	ules arranged	24 x 2 conne	ctions, numbering of mo	dules arranged	24 x 2 connections, numbering of modules arranged			
vertically (1 – 2	24), color of module: grey	y	vertically (1 – 24), color of module: white			vertically (1 – 24), color of module: green-yellow			

Accessories (M	arking accessories WSB quick markin	g system see section 14					
~	Group marking adapter	_	Group marking adapter	_	Group marking adapter		
The same of the sa	for patchboard side		for patchboard side		for patchboard side		
469	<b>726-902</b> 50	744	<b>726-902</b> 50	46	<b>726-902</b> 50		
	<b>Test plug,</b> 2.3 mm / 0.091 in Ø		<b>Test plug,</b> 2.3 mm/0.091 in Ø		<b>Test plug,</b> 2.3 mm/0.091 in Ø		
	yellow <b>210-137</b> 50 (5 x 10)		yellow <b>210-137</b> 50 (5 x 10)		yellow <b>210-137</b> 50 (5 x 10)		
	with cable 500 mm/1'7.7"		with cable 500 mm/1'7.7"		with cable 500 mm/1'7.7"		
	Screwdrivers		Screwdrivers		Screwdrivers		
	(2.5×0.4) mm <b>210-119</b> 1		(2.5 x 0.4) mm <b>210-119</b> 1		(2.5×0.4) mm <b>210-119</b> 1		
	(5.5×0.8) mm <b>210-121</b> 1		(5.5×0.8) mm <b>210-121</b> 1		(5.5×0.8) mm <b>210-121</b> 1		
240	Additional supply terminal	, w	Additional supply terminal		Additional supply terminal		
	block		block		block		
	grey <b>283-611</b> 25		white <b>283-610</b> 25		green-yellow <b>283-609</b> 25		
				_			







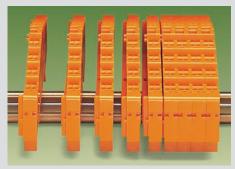


# Terminal Blocks for Matrix Patching and Same Potential Terminal Blocks with CAGE CLAMP $^{\rm B}$ connection, Series 727 . . .

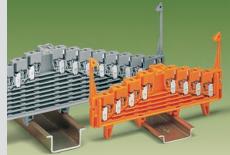
Assembly \_



Snap individual 4- or 8-level terminal blocks onto the carrier rail . . .



... and engage



Terminal blocks for DIN 35 x 7.5 mm or DIN 35 x 15 mm high are available

#### Assembly / Removal



Grip end plate at both sides and

- push down (assembly)pull up (removal)

#### Removal



Open the assembly by laterally sliding a block using a screwdriver (2.5 x 0.4) mm . . .

#### Removal



.. move terminal block laterally and remove from the rail with a levering action



#### Marking



Marking of clamping units by direct printing



stranded



fine stranded, also with tinned single strands

#### ... Description and Handling

#### Matrix patching assembly



Example left: Main cables fed through locking clips on the field side right: Control cables fed between locking clips center: Wiring of the patching sides

#### Wiring space



When using terminal blocks with locking clips the wiring space between the terminal strips can be covered with a wiring duct cover\*.

(\*for suitable suppliers – please contact factory)

#### **CAGE CLAMP®** connection

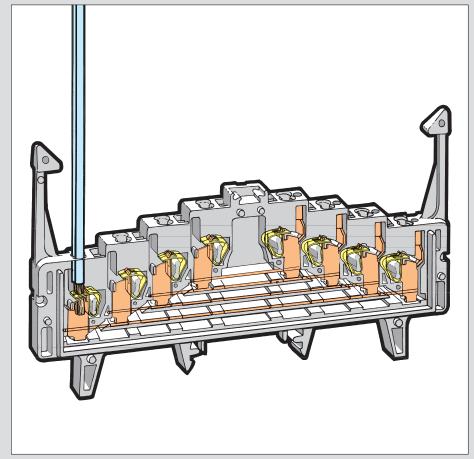


Connection/removal of conductors using a screwdriver (2.5 x 0.4) mm

#### **Testing**



Special test contact for test plug 2.3 mm/0.091 in  $\varnothing$ 





Marking of coordinates with the WMB Multi marking system or WSB Quick marking system



Ex i versions

Blue terminal blocks for matrix patching are suitable for Ex i applications





fine-stranded wire with crimped ferrule **1** 



### 4-Level Terminal Blocks for Matrix Patching 1.5 mm<sup>2</sup> / AWG 16, Series 727

2 x 0.08 - 1.5 mm<sup>2</sup> 250 V/4 kV/3 **①** 12 A

2 x AWG 28 - 16 300 V, 10 A **%** 300 V, 10 A ®

12 A | 300 V, 10 A @ Terminal block width 7.62 mm / 0.3 in & 8 = 10 mm / 0.35 in

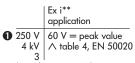
\* **91 @** (CAKEU O @ &

2 x 0.08 - 1.5 mm<sup>2</sup> 250 V/4 kV/3 **①** 12 A

2 x AWG 28 - 16 300 V, 10 A **%** 300 V, 10 A **®** 

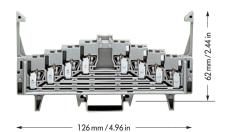
Terminal block width 7.62 mm / 0.3 in  $\boxed{\phantom{0}}$  8 - 10 mm / 0.35 in

\* **91 @** CCAKEDA **D @ &** 



(see also section 15)

- 2 4x pairs of contacts on each level
- 3 Suitable for Ex i applications





Description			ltem No.	ltem No.	Packunit		ltem No.	ltem No.	Packuni
4-level terminal b	lock for matrix patching <b>2</b> ,	with	for	for		without	for	for	
for DIN 35 rail	, , ,	locking o	lips DIN 35 x 7.5	DIN 35 x 15		locking c	lips DIN 35 x 7.5	DIN 35 x 15	
acc. to EN 60715		grey	727-219 4		50	grey	727-220		50
		white	727-221 4	727-231	50	white	727-222	727-232	50
		blue	③ 727-223 <b>④</b>	727-233 <b>4</b>	50	blue	<b>3</b> 727-224 <b>4</b>	727-234 🕢	50
Accessories	A	ppropriate	marking system <b>W</b>	MB/WSB	(see section 14	1)			
	4-level end plate,	7.62 mm /	0.3 in thick			7.62 mm /	0.3 in thick		
صريانا أقاريه	without printing								
		orange	727-217		25	orange	727-217		25
	4-level end plate,	7.62 mm /	0.3 in thick			7.62 mm /	0.3 in thick		
صورا التسوي	numeric printing	0-1-2-3	33-2-1-0			0-1-2-3	3-2-1-0		
		orange	727-205		25	orange	727-205		25
	4-level end plate,	7.62 mm /	0.3 in thick			7.62 mm /	0.3 in thick		
محددانا الأسعم	alphanumeric printing	a-b-c-a	dd-c-b-a			a-b-c-d	d-c-b-a		
	'	orange	727-206		25	orange	727-206		25
	4-level end plate,	7.62 mm /	0.3 in thick				0.3 in thick		
	numeric printing	3-2-1-0	00-1-2-3			3-2-1-0	0-1-2-3		
	nomene pinning	orange	727-207		25	orange	727-207		25
	4-level end plate,		'0.3 in thick				0.3 in thick		
	alphanumeric printing		1a-b-c-d				a-b-c-d		
	dipitationierie priming	orange	727-208		25	orange	727-208		25
	Wire harness support,	orange	, 1, 100		20	orange	, 1, 100		
Q	see also page 11.19	grey	249-109		50	grey	249-109		50
- File	WSB Double marker carrier,	4 mm /0	157 in wide			4 mm /0 1	57 in wide		
8 A.E.	for I/O markings	4 111117 0.	209-128		200 (2 x 100)	4 111117 0.1	209-128		200 (2:
A 20 100	in the terminal block center		207-120		200 (2 × 100)		207-120		200 (2.
	Screwless								
-HH-	end stop	4 mm /(	).236 in wide	249-116	100 (4 x 25)	4 /0	.236 in wide	240 114	100 (4
	ena siop		).394 in wide	249-117		-	.394 in wide		
	<b>Test plug,</b> 2.3 mm/0.091 in Ø	10 11111170		447-11/	50 (2 x 25)	10 11111/0.	.o/4 III WIGE	No. for 5 DIN 35 x 15 727-230 <b>4</b> 727-232 <b>4</b>	50 (2
	with cable 500 mm /1'7.7"	vollen	210-137		50 /5 ~ 10	volle	210-137		50 /5
	WITH CADIE OUU MM / I /./	yellow	210-137		50 (5 x 10)	yellow	210-137		50 (5
	Reducing test plug,								
	from 4 mm / 0.157 in Ø socket	red	210-297		100 (4 × 25)	red	210-297		100 (4
9	to 2.3 mm/0.091 in Ø plug								,
	Wire commoning chain,								
	insulated, 6 A, 32 connections,	grey	709-107		1	grey	709-107		1
Y Y Y Y	0.5 mm², max. 50 V								
	Insulation stop,								
CONTRACTOR OF THE PARTY OF THE	8 pcs/strip								
and a second	0.08-0.14 mm <sup>2</sup> "f-st"/0.08-0.2 mm <sup>2</sup> "s"	white	727-197		200 (8 × 25)	white	727-197		200 (8
	0.14-0.25 mm <sup>2</sup> "f-st"/0.25 mm <sup>2</sup> "s"	light grey	727-198		200 (8 x 25)	light grey	727-198		200 (8
	0.25-0.5 mm <sup>2</sup> "s + f-st"	dark grey			200 (8 x 25)	dark grey			200 (8
Additional iten	n no. for terminal blocks with mar	king	0-1-2-33		/0				
			1 1			200 000			

<sup>\*</sup> For further approvals with corresponding ratings see section 15.

...-.../022-000

...-../024-000

a-b-c-d--d-c-b-a

3-2-1-0--0-1-2-3

d-c-b-a--a-b-c-d ..

\*\* if approved by the works expert

# 4-Level Same Potential Terminal Blocks 1.5 $\,\mathrm{mm^2}$ / AWG 16, Series 727



2 x 0.08 - 1.5 mm<sup>2</sup> 250 V/4 kV/3 **①** 18 A

2 x AWG 28 - 16 300 V, 10 A **%** 300 V, 10 A ®

Terminal block width 7.62 mm / 0.3 in 8 - 10 mm / 0.35 in

\* **71 @** (CAKEDA (D) @ (8)

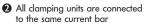
2 × 0.08 – **1.5 mm²** 250 V/4 kV/3 **①** 18 A

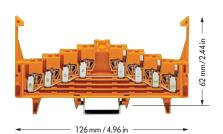
2 x AWG 28 - 16 300 V, 10 A **%** 300 V, 10 A ®

Terminal block width 7.62 mm / 0.3 in  $\boxed{\phantom{0}}$  8 - 10 mm / 0.35 in

\* 90 @ CCAKEDA @ @ &









Description			Item No.	ltem No.	Packunit pcs		Item No.	Item No.	Packunit pcs
4-level same pote	ntial terminal block ②,	with	for	for		without	for	for	
or DIN 35 rail		locking clip	os DIN 35 x 7.5	DIN 35 x 15		locking cli	<b>ps</b> DIN 35 x 7.5	DIN 35 x 15	
acc. to EN 60715		orange	727-225 🕄	727-235 €	50	orange	<b>727-226 3</b>	727-236 🕄	50
		light grey (	727-227 🚱	727-237 €	50	light grey	◯ 727-228 🚱	727-238 €	50
Accessories		appropriate ma	arking system <b>W</b>	/MB/WSB	(see section 14	)			
	4-level end plate,	7.62 mm / 0.				7.62 mm / 0	.3 in thick		
- calling	without printing								
	, initial principal	orange	727-217		25	orange	727-217		25
	4-level end plate,	7.62 mm / 0.			20	7.62 mm / 0			
The state of the s	numeric printing	0-1-2-3-					-3-2-1-0		
	Homeric priming		727-205		25		727-205		25
	A lovel and plate	orange 7.62 mm/0.			23	orange 7.62 mm/0			23
-	4-level end plate,	a-b-c-d-					-d-c-b-a		
	alphanumeric printing				0.5				٥٢
		orange	727-206		25	orange	727-206		25
_	4-level end plate,	7.62 mm / 0.				7.62 mm / 0			
عند الناب	numeric printing	3-2-1-0-			0.5		-0-1-2-3		0.5
		orange	727-207		25	orange	727-207		25
	4-level end plate,	7.62 mm/0.				7.62 mm/0			
عدنانا أقاعد	alphanumeric printing	d-c-b-a-				d-c-b-a-	-a-b-c-d		
		orange	727-208		25	orange	727-208		25
~	Wire harness support,								
Y	see also page 11.19	grey	249-109		50	grey	249-109		50
P	WSB Double marker carrier,	4 mm / 0.15	7 in wide			4 mm / 0.15	7 in wide		
I.A. I	for I/O markings		209-128		200 (2 x 100)		209-128		200 (2 x 1
446 m 446	in the terminal block center				· ·				
	Screwless								
. 111-	end stop	6 mm / 0.2	36 in wide	249-116	100 (4 x 25)	6 mm / 0.2	36 in wide	249-116	100 (4 x :
· 1	cha diop	10 mm / 0.3		249-117	50 (2 x 25)	10 mm / 0.3		249-117	50 (2 x :
	<b>Test plug,</b> 2.3 mm / 0.091 in Ø	10 111117 0.0	7 I III WIGO	217 117	50 (E X 25)	10 111117 0.0	77 I III WIGO	217 117	30 (£ X .
	with cable 500 mm / 17.7"	yellow	210-137		50 (5 x 10)	yellow	210-137		50 (5 x
	Will Cable 300 mm7 17.7	yellow	210-137		30 (3 X 10)	yellow	210-137		30 (3 X
	Reducing test plug,								
	from 4 mm / 0.157 in Ø socket	red	210-297		100 (4 x 25)	red	210-297		100 (4 x
	to 2.3 mm/0.091 in Ø plug								
	Wire commoning chain,								
	insulated, 6 A, 32 connections,	grey	709-107		1	grey	709-107		1
V V V	0.5 mm², max. 50 V	37				3 7			
	Insulation stop,								
CHECKER CO.	8 pcs/strip								
anananana	0.08-0.14 mm <sup>2</sup> "f-st"/0.08-0.2 mm <sup>2</sup> "s"	white	727-197		200 (8 x 25)	white	727-197		200 (8 x
film.	0.14-0.25 mm <sup>2</sup> "f-st"/0.25 mm <sup>2</sup> "s"	light grey	727-197		200 (8 x 25)	light grey	727-197		200 (8 x :
	0.25-0.5 mm <sup>2</sup> "s + f-st"	dark grey	727-199		200 (8 x 25)	dark grey	727-199		200 (8 x
Additional item	no. for terminal blocks with mar	king	0-1-2-33		/0				
			a-b-c-d		/0				
			3-2-1-00		/0				
			d-c-b-aa	a-b-c-d	/0	24-000			

<sup>\*</sup> For further approvals with corresponding ratings see section 15.



#### 8-Level Terminal Blocks for Matrix Patching 1.5 mm<sup>2</sup> / AWG 16, Series 727

2 x 0.08 - 1.5 mm<sup>2</sup> 250 V/4 kV/3 **①** 12 A

2 x AWG 28 - 16 300 V, 10 A **%** 300 V, 10 A ®

2 x 0.08 - 1.5 mm<sup>2</sup> 250 V/4 kV/3 **①** 12 A

2 x AWG 28 - 16 300 V, 10 A **%** 300 V, 10 A **®** 

Terminal block width 7.62 mm / 0.3 in 8 – 10 mm / 0.35 in

\* **71 6** (CAKEU O @ &

Terminal block width 7.62 mm / 0.3 in 8 – 10 mm / 0.35 in

\* **91 @** CCAKEDA **D** @ **&** 

Note: Only combine terminal blocks and end plates that are colored grey/white/ light grey or orange/blue!

Ex i\*\* application 1 250 V | 60 V = peak value | 4 kV | ∧ table 4, EN 50020

(see also section 15) 2 8x pairs of contacts on each level

3 Suitable for Ex i applications



Description			ltem No.	Item No.	Packunit pcs		Item No.	Item No.	Packunit pcs
8-level terminal b	lock for matrix patching <b>2</b> ,	with	for	for		without	for	for	
for DIN 35 rail		locking	<b>clips</b> DIN 35 x 7.5	DIN 35 x 15		locking cl	ips DIN 35 x 7.	5 DIN 35 x 15	
acc. to EN 60715		grey	727-119 4	727-129 🕻	25	grey	727-120	<b>3</b> 727-130 <b>4</b>	25
		white	<b>727-121 4</b>	727-131 🛭	25	white	727-122	<b>?</b> 727-132 <b>?</b>	25
		blue	<b>3</b> 727-123 <b>4</b>	727-133 🛭	25	blue	3 727-124	<b>3</b> 727-134 <b>4</b>	25
Accessories		Appropriate	marking system <b>V</b>	VMB/WSB	(see section 14)				
	8-level end plate,		orange	grey	blue	white	light grey		
THE RESERVE TO SERVE		7.62 mm	/0.3 in thick						
	without printing		727-117	727-113	727-114	727-115	727-116		25
			/0.3 in thick						
	numeric printing	0-1-2-3	3-4-5-6-77-6						
			727-105	727-155	727-159	727-163	727-167		25
			/0.3 in thick						
AND DESCRIPTION OF THE PERSON NAMED IN COLUMN	alphanumeric printing	a-b-c-	d-e-f-g-hh-g	,					
			727-106	727-156	727-160	727-164	727-168		25
			/0.3 in thick						
	numeric printing	7-6-5-4	4-3-2-1-00-						
			727-107	727-157	727-161	727-165	727-169		25
			/0.3 in thick						
	alphanumeric printing	h-g-f-e	e-d-c-b-aa-k	o-c-d-e-f-g	- h				
			727-108	727-158	727-162	727-166	727-170		25
Ÿ	Wire harness support,								
	see also page 11.19	grey	249-109		50	grey	249-109		50
8 _	WSB Double marker carrier,	4 mm/0	.157 in wide			4 mm / 0.1	57 in wide		
五本 五	for I/O markings		209-128		200 (2×100)		209-128		200 (2 x 1
200 200	in the terminal block center								
DOLLARS SAME	WSB Quick marking system,		<b>209-933</b> to		5 cards		209-933	ois	5 card
Belletti Billion	for I/O markings		209-992		5 cards		209-992		5 card
PARTITION OF TAXABLE PARTITION	in the terminal block center	see section	on 8			see section	n 8		
	Screwless								
.1111	end stop	6 mm/	0.236 in wide	249-116	100 (4 x 25)	6 mm/0.	236 in wide	249-116	100 (4 x
· /s		10 mm/	0.394 in wide	249-117	50 (2 x 25)	10 mm/0.	394 in wide	249-117	50 (2 x
	<b>Test plug,</b> 2.3 mm/0.091 in Ø								
	with cable 500 mm/1'7.7"	yellow	210-137		50 (5 x 10)	yellow	210-137		50 (5 x
	Reducing test plug,								
	from 4 mm/0.157 in Ø socket	red	210-297		100 (4 x 25)	red	210-297		100 (4 x
	to 2.3 mm/0.091 in Ø plug								
	Wire commoning chain,								
	insulated, 6A, 32 connections,	grey	709-107		1	grey	709-107		1
Y Y Y Y	0.5 mm², max. 50 V								
MARKET COMP	Insulation stop,								
CONTROL OF THE PROPERTY OF THE	see right page				_				
	no. for terminal blocks with ma	rking			6-5-4-3-2-1		/		
					g-f-e-d-c-b-		/		
					1-2-3-4-5-6		/		
			h-g-f-e-d	-c-b-aa-l	o-c-d-e-f-g-	h	/	004-000	

<sup>\*</sup> For further approvals with corresponding ratings see section 15.

 $<sup>^{**}</sup>$  if approved by the works expert

## 8-Level Same Potential Terminal Blocks 1.5 $\,\text{mm}^2\,/$ AWG 16, Series 727



2 x 0.08 - 1.5 mm<sup>2</sup> 250 V/4 kV/3 **①** 18 A

\* **91 @** CCAKEDA **D** @ &

2 x AWG 28 - 16 300 V, 10 A **%** 300 V, 10 A ® 2 × 0.08 – **1.5** mm<sup>2</sup> 250 V/4 kV/3 **①** 18 A

2 x AWG 28 - 16 300 V, 10 A **%** 300 V, 10 A ®

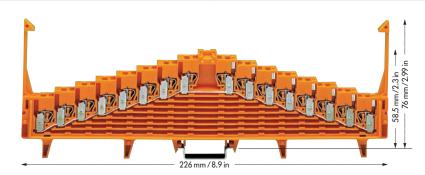
Terminal block width 7.62 mm / 0.3 in 8 – 10 mm / 0.35 in

Terminal block width 7.62 mm / 0.3 in  $\boxed{\phantom{0}}$  8 - 10 mm / 0.35 in

\* 91 @ CCAKEER @ @ @

Note: Only combine terminal blocks and end plates that are colored grey/white/ light grey or orange/blue!

- 1 250 V = rated voltage 4 kV = rated surge voltage 3 = pollution degree (see also section 15)
- 2 All clamping units are connected to the same current bar



Description			Item No.	Item No.	Packunit pcs		Item No.	Item No.	Packunit pcs
3-level same poter	ntial terminal block <b>2</b> ,	with	for	for		without	for	for	
or DIN 35 rail		locking clip	s DIN 35 x 7.5	DIN 35 x 15		locking clip	os DIN 35 x 7.5	DIN 35 x 15	
acc. to EN 60715		orange	727-125 🕄	727-135 🕙	25	orange	<b>)</b> 727-126 🕄	727-136 €	25
		light grey	727-127 🔞	727-137 €	25	light grey (	727-128 🚱	727-138 €	25
Accessories		appropriate ma	rkina system <b>V</b>	/MB/WSB	(see section 14	)			
					<u>'</u>		P. Lu		
_	8-level end plate,	7.62 mm / 0.3	orange	grey	blue	white	light grey		
	without printing	7.02 111117 0.3	727-117	727-113	727-114	727-115	727-116		25
<del>-</del> -	willion prining	7.62 mm / 0.3		727-113	727-114	727-113	727-110		23
_	numaria mintina		1-5-6-77-6	5-5-1-2-2-	1 - 0				
	numeric printing	0-1-2-3-4	727-105	727-155	727-159	727-163	727-167		25
<del></del>		7.62 mm / 0.3		727-133	727-137	727-103	727-107		23
_	1.1								
	alphanumeric printing	a-b-c-a-e	e-f-g-hh-g			707 1/4	707 1/0		0.5
		7.62 mm / 0.3	727-106	727-156	727-160	727-164	727-168		25
_				10045	/ 7				
	numeric printing	7-6-5-4-3	3-2-1-00-1			707.175	707.170		0.5
,		7/0 /06	727-107	727-157	727-161	727-165	727-169		25
		7.62 mm / 0.3							
	alphanumeric printing	h-g-t-e-d	-c-b-aa-b						
			727-108	727-158	727-162	727-166	727-170		25
	Wire harness support,								
Y	see also page 11.19	grey	249-109		50	grey	249-109		50
<u>H.</u>	WSB Double marker carrier,	4 mm / 0.157	7 in wide			4 mm / 0.157	7 in wide		
A.A. A	for I/O markings		209-128		200 (2×100)		209-128		200 (2 x 1
245	in the terminal block center				, ,				,
No.	Screwless								
111	end stop	6 mm/0.23	36 in wide	249-116	100 (4 x 25)	6 mm / 0.23	36 in wide	249-116	100 (4 x :
· /	cha stop	10 mm / 0.39		249-117	50 (2 x 25)	10 mm / 0.39		249-117	50 (2 x :
	<b>Test plug,</b> 2.3 mm / 0.091 in Ø	10 111117 0.07	T III WIGO	217 117	00 (E X 20)	10 111117 0.0	/ I III WIGO		00 (2 X )
	with cable 500 mm /1'7.7"	yellow	210-137		50 (5 x 10)	yellow	210-137		50 (5 x
	wiiii cubie 300 iiiiii 7 17.7	ychow	210-107		30 (3 X 10)	yellow	210-107		30 (3 X
<b>V</b>	Reducing test plug,								
	from 4 mm / 0.157 in Ø socket	red	210-297		100 (4 x 25)	red	210-297		100 (4 x 2
	to 2.3 mm / 0.091 in Ø plug	reu	210-277		100 (4 X 23)	reu	210-277		100 (4 X .
	Wire commoning chain,								
	9		709-107		1		709-107		1
$\bigvee$ $\bigvee$ $\bigvee$	insulated, 6 A, 32 connections, 0.5 mm <sup>2</sup> , max. 50 V	grey	707-107			grey	707-107		
llan	•								
CONTROL OF THE PARTY OF THE PAR	Insulation stop,								
anachana	8 pcs/strip	late a	707 107		200 (0 05)		707 107		200 (0
Charac	0.08-0.14 mm <sup>2</sup> "f-st"/0.08-0.2 mm <sup>2</sup> "s"	white	727-197		200 (8 x 25)	white	727-197		200 (8 x 2
	0.14-0.25 mm <sup>2</sup> "f-st"/0.25 mm <sup>2</sup> "s"	light grey	727-198		200 (8 x 25)	light grey	727-198		200 (8 x 2
	0.25-0.5 mm <sup>2</sup> "s + f-st"	dark grey	727-199		200 (8 x 25)	dark grey	727-199		200 (8 x
Additional item	no. for terminal blocks with mar	king	0-1-2-3-4	-5-6-77-	6-5-4-3-2-1	- 0	/0	01-000	
			a-b-c-d-e	-f-g-hh-	g-f-e-d-c-b-	а	/0	02-000	
				0	1-2-3-4-5-6		/0		





## Rail-Mounted Terminal Blocks for Matrix Patching with CAGE CLAMP® Description and Handling



Terminal blocks for matrix patching. Connection/removal of wires on the terminal



Terminal blocks for matrix patching.
Connection/removal in the terminal block center



Used as disconnect terminal block. Inserting disconnect jumpers

#### Pin modules



Insertion of a pin module shown with terminal blocks series 280

#### Comb type jumper bars



Used as potential multiplication. Insertion of a 10-way comb type jumper bar (only possible in the center)

#### Wire harness support



Introduction of a wire harness support into the marker slot



Insertion of a cable into the wire harness support



2 x group marking on top 1 x terminal block marking at the bottom

#### CAGE CLAMP® connects the following copper wires:\*

fine-stranded wire tip bonded

fine-stranded wire with crimped ferrule\*\* fine-stranded, also with tinned single strands

fine-stranded wire with crimped pin terminal

#### Rail-Mounted Terminal Blocks for Matrix Patching 2.5 mm<sup>2</sup> / AWG 12, Series 280 **Wire Harness Support**



0.08 - 2.5 mm<sup>2</sup> 800 V/8 kV/3 **①** 

AWG 28 - 12 300 V, 10 A 94 Wire harness support

Terminal block width 5 mm / 0.197 in □**■** 8 – 9 mm / 0.33 in

1 800 V = rated voltage 8 kV = rated surge voltage 3 = pollution degree (see also section 10) 800 V/8 kV/3 against ground (earth) and adjacent terminal blocks. 500 V/6 kV/3 between both current rails. (If used as disconnect terminal block or multiplier of potential)



93 mm / 3.66 in



Description	Description		Item No.	Packunit pcs		Item No.	Packunit pcs
Terminal block for	r matrix patching, for DIN 35 rail	3-conductor	double potential termi	inal block	Wire harness support		
		grey	280-675	50	grey	249-109	50
Attention! These 3	Attention! These 3-conductor double potential						
terminal blocks co	annot be commonded with						
adjacent jumpers	!						
Accessories	Accessories Appropriate marking sy		/SB (see section 14)		Applicati	ion notes	
	End and	5 mm / 0.197	in thick		The maxim	um number of fine-stra	ınded conductors
	intermediate plate	orange	280-333	25		be supported by the sys	
		grey	280-325	25	the wire size	e: 0.25 mm <sup>2</sup> /AWG 24	
	Alternate comb type					0.5 mm <sup>2</sup> /AWG 20 0.75 mm <sup>2</sup> /AWG 18	95 conductors

	End and	5 mm/0.19/ in thi	3 mm/0.197 in thick		
	intermediate plate	orange	280-333	25	
		grey	280-325	25	
	Alternate comb type				
11	jumper bar, insulated,	2-way	280-492	200 (8 x 25)	
	$I_N = I_N$ of terminal block				
	Disconnect jumper	with pull-tab			
Ħ	terminal block, orange,	2-way	280-494	200 (8 x 25)	
Į Į	$I_N = I_N$ of terminal block				
	Comb type jumper bar,	2-way	280-482	200 (8 x 25)	
	insulated,	3-way	280-483	200 (8 x 25)	
[[[[[[[[]]]]]]]]	$I_N = I_N$ of terminal block	10-way	280-490	50 (2 x 25)	
	Operating tool,	2-way	280-432	1	
	insulated, for comb jumpers	3-way	280-433	1	
		10-way	280-440	1	
	2-pole pin modules, for	1 x 1 mm	280-477	for Wire-Wrap	
	assembly on all front-entry rail-	0.8 x 1.6 mm	280-475	for Termi-Point	
	mounted term. blocks series 280	0.8 x 2.4 mm	280-473	for Termi-Point	
444	3-pole pin modules, for	1 x 1 mm	280-478	for Wire-Wrap	
VYY YY	assembly on all front-entry rail-	0.8 x 1.6 mm	280-476	for Termi-Point	
	mounted term. blocks series 280	0.8 x 2.4 mm	280-474	for Termi-Point	

1 mm²/AWG 18 1.5 mm²/AWG 16 2.5 mm²/AWG 14 65 conductors 45 conductors 30 conductors

In process automation systems, the matrix patchboard is an essential element in measurement and control techniques. Particularly in this kind of application, use of the WAGO wire harness support can make wiring easier and more obvious. WAGO 3-conductor front-entry double potential terminal blocks of the 280 series (with or without the addition of Wire-Wrap® or TERMI-POINT® pins) are particularly suitable in this application. They can be used for the linking of incoming field wires, from items such as measuring devices or servos etc., with the central process controller devices, such as control consoles, panelboards or PLCs, by means of matrix connections.

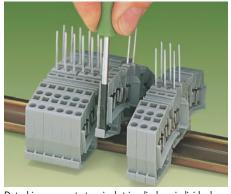
The WAGO wire harness suppoert elements are pushed into the terminal blocks (about every 8th one) to form an additional "cable-duct" above the wiring level of the terminal blocks. Two marker slots are provided in each, the top ones may be used for group marking, and the lower slot for marking the terminal block.

#### **Application notes**

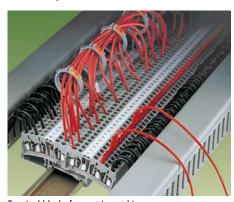
In case of these 5 mm/0.197 in wide double potential front-entry terminal blocks two 3-conductor through terminal blocks are built into one insulating housing on one level. Compared with "standard" through terminal blocks the terminal block width is only 2.5 mm/0.098 in.

On each side of the terminal block are marker slots for WAGO WSB markers. By means of the available accessories these terminal blocks can also be used as 4-conductor disconnect terminal blocks or multipliers of potential.

During mounting /dismounting using DIN 35 rail please note that due to the protruding webs the terminal blocks can only be inserted or removed from the strip after having displaced the adjacent terminal blocks (see also opposite photo).



Detaching: seperate terminal strip, displace individual terminal block laterally and remove from the carrier rail



Terminal blocks for matrix patching with wire harness support



## Busbar Terminal Blocks with CAGE CLAMP® Description and Handling – Series 812

Using the series 812 busbar terminal blocks in switchgear cabinets and distribution boards allows simple and safe potential distribution on standard 10 x 3 mm busbars.

Tool-less snapping of self-locking busbar terminal blocks onto the busbar enables quick and easy assembly as well as subsequent extension. The busbar terminal blocks are available in two different versions including conductor cross sections from AWG 16 to AWG 6 (1.5 mm² - 16 mm²).



Snapping the ground (earth) busbar terminal block onto the N-busbar



Unlock positions 1. and 2. to remove the ground (earth) busbar terminal block

#### Connecting AWG 12 (4 mm<sup>2</sup>) wires



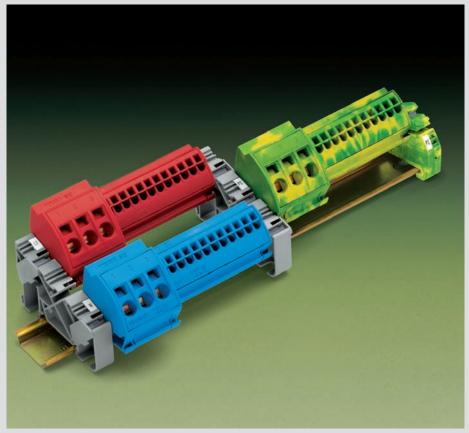
Due to the CAGE CLAMP\*S connection, solid wires can be inserted directly into the AWG 12 (4 mm²) busbar terminal block, thus reducing wiring time significantly.

#### Connecting AWG 6 (16 mm<sup>2</sup>) wires



Open the clamping unit with a screwdriver when connecting solid, stranded and fine-stranded wires.

#### Combination of AWG 12 (4 mm²) and AWG 6 (16 mm²) busbar terminal blocks



## Removing AWG 12 (4 mm²) and AWG 6 (16 mm²) wires



Open the clamping unit using a screwdriver

CAGE CLAMP® connects the following copper wires:\*

fine-stranded, also with tinned single strands

#### Busbar carrier 812-140



Carrier with 3 receptacles for 10 x 3 mm busbars with locking device for easy mounting of the busbars. The carriers can be snapped onto the DIN 35 rail or fixed on a panel with screw mounting.

fine-stranded wire tip bonded

#### Ground (earth) busbar carrier 812-141



Carrier including a receptacle with locking device for  $10 \times 3$  mm busbar. The contact between the busbar and the rail is made automatically by simply snapping the carrier onto the DIN 35 rail. One end of the busbar is mounted onto the ground (earth) busbar carrier, the other end is inserted into the middle position of the insulated busbar carrier.

## Busbar Terminal Blocks with CAGE CLAMP® Series 812



12 x 0.5 - 4 mm<sup>2</sup> 1000 V/ 6 kV/ 3 **0** 96 A\*\*

AWG 20 - 12 600 V

Terminal block width 75 mm / 2.953 in 10 mm / 0.39 in

3 x 1.5 - 16 mm<sup>2</sup> 1000 V/ 6 kV/ 3\* 96 A\*\*

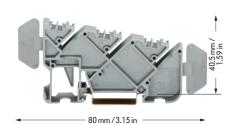
AWG 16 - 6 600 V

Terminal block width 38 mm / 1.496 in 12 mm / 0.47 in

\* Can only be used with insulated busbar carrier 812-140 and cover correctly mounted at the end of the busbar.

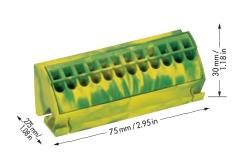


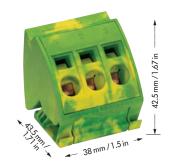


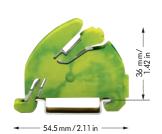


	ltem No.	Packunit pcs		Item No.	Packunit pcs	Item No.	Packunit pcs
Busbar terminal blocks with CAGE CLAMP®S			Busbar terminal blocks with CAGE CLAMP®			Insulated busbar carrier	
4 mm <sup>2</sup> /AWG	12		16 mm <sup>2</sup> /AWG	6		812-140	25
light grey	812-101	10	light grey	812-111	12		
dark grey	812-102	10	dark grey	812-112	12	Each busbar receptacle is equipped w	rith one marking
red	812-103	10	red	812-113	12	position for WMB or WSB markers.	
blue	812-104	10	blue	812-114	12		

12 x 0.5 - 4 mm <sup>2</sup> AWG 20 - 12	3 x 1.5 – 16 mm <sup>2</sup> AWG 16 – 6	
Terminal block width 75 mm / 2.953 in 10 mm / 0.39 in	Terminal block width 38 mm / 1.496 in 12 mm / 0.47 in	







	ltem No.	Packunit pcs		Item No.	Packunit pcs		Item No.	Packunit pcs
Ground (earth) busbar terminal block			Ground (earth) busbar terminal block			Ground (earth) busbar carrier		
with CAGE CLAMP®S 4 mm²/AWG 12			with CAGE CLAMP® 16 mm²/AWG 6			with contact to DIN 35 rail		
green-yellow	812-100	10	green-yellow	812-110	12	green-yellow	812-141	25
					suitable for WMB or WSB marking system			

#### **Accessories**

N-busbar, copper, tinned, 10 × 3 mm /0.394 × 0.118 in, I<sub>N</sub> 140 A, 1000 mm/3'3" long 210-133 1

\* Current carrying capacity:
With a maximum total current of 96 A, the clamping units of the busbar terminal block can be loaded with the rated current of the conductor cross sections approved. This only applies when 10 x 3 mm busbars are used. Other applications on request.

N-busbar, copper, tinned,

10 x 3 mm /0.394 x 0.118 in, I<sub>N</sub> 140 A, 1000 mm/3'3" long **210-133** 

## Finger guard cover for busbar terminal blocks

serves as touchproof protection for unused clamping units

yellow 284-400 100 (4 x 25)

#### Note

The busbar system is **touch-proof** provided that there is no space left between the insulated busbar carriers and the busbar terminal blocks. Furthermore, the covers at the ends of the busbar and the finger guard covers of the unused clamping units of the AWG 6 (16 mm²) terminal block must be correctly mounted.





The shield (screen) connecting system from WAGO offers high electrical and mechanical safety for very flexible applications.

## 19

## Shield (Screen) Connecting System

VOLUME 1



Shield (screen) connecting system

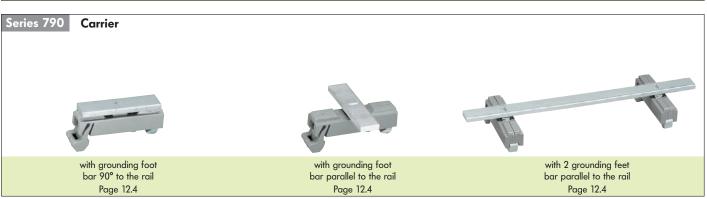
Mounting options based on application, description and handling \_\_\_\_\_\_\_\_12.3

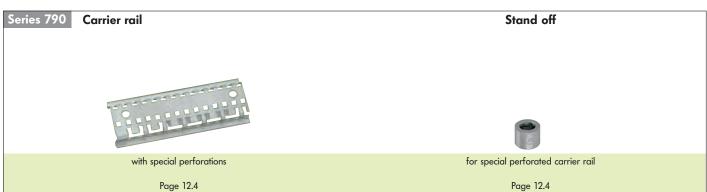
Shield (screen) clamping saddles Series 790 \_\_\_\_\_\_ 12.4 - 12.5

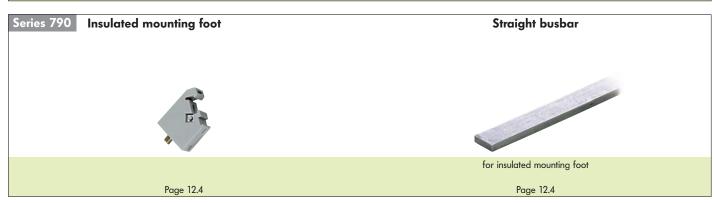


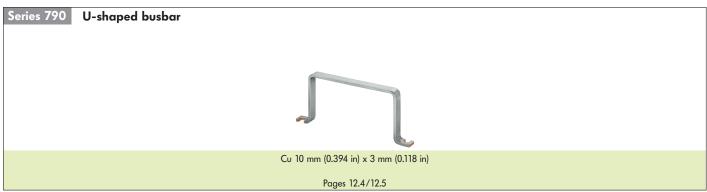
# Shield (Screen) Connecting System – Product Summary –



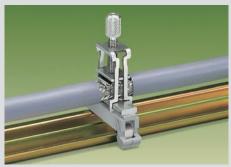








### Shield (Screen) Connecting System Description and Handling – Series 790



Carrier with grounding foot\*
45 mm/1.772 in long, busbar 90° to the rail Item No. 790-113



Carrier with grounding foot\*
45 mm/1.772 in long, busbar parallel to the rail Item No. 790-114



Carrier with 2 grounding feet\*
125 mm/4.921 in long, busbar parallel to the rail Item No. 790-115

\*for all sizes of shield (screen) clamping saddles

#### **Applications**



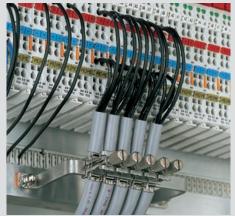
– on special slotted carrier rail



- carrier with grounding foot, busbar parallel to



 insulated mounting carriers for a common shield (screen) reference potential, independent of the housing potential

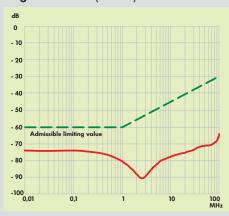


– U-shaped copper busbar 10 mm (0.394 in) x 3 mm (0.118 in)



– snap into any metal plate up to max. thickness 3 mm/0.118 in

#### Negative shield (screen) attenuation



#### Hole dimensions for panel mounting

The WAGO shield (screen) connecting system is highly effective because the clamping unit can be brought very close to the unshielded part of the cable.

Additionally, the spring material is

Shield (screen)
clamping saddle size

Distance X
11 mm 9.5 mm

Distance Y
19 mm 17.5 mm

27 mm 25.5 mm

41.5 mm

43 mm

part of the clamping saddle, giving good electrical connection and compensating for any deformation in the braiding. The system also acts as a partial strain relief.

## **Shield (Screen) Clamping Saddles**

Shield (screen) clamping saddle, 11 mm / 0.433 in wide For conductors with a diameter of up to 8 mm / 0.315 in Shield (screen) clamping saddle, 19 mm / 0.748 in wide For conductors with a diameter of 7 mm / 0.276 in to 16 mm / 0.63 in

Note:

Cannot be used for the connection of ground (earth) conductors!





Description			Item No.	Packunit pcs		ltem No.	Packunit pcs
Shield (screen) clan	nping saddle, incl. knurled screw	Shield (screen) clam	ping saddle,	11 mm/0.433 in wide	Shield (screen) c	lamping saddle, 19	9 mm / 0.748 in wide
	Diameter of connectable conductor	up to 8 mm / 0.315 in			7 mm / 0.276 in to	o 16 mm / 0.63 in	
			790-108	50		790-116	50
Accessories							
	Carrier w. grounding foot, bar 90° to	45 mm / 1.772 in long			45 mm /1.772 in	long	
11	the rail, 10 mm (0.394 in) x 3 mm (0.118	Č	790-113	25		790-113	25
	in), bar a. foot – Cu w. tin plating						
	Carrier w. grounding foot, bar parallel	45 mm / 1.772 in long			45 mm /1.772 in	long	
	to the rail, 10 mm (0.394 in) x 3 mm		790-114	25		790-114	25
	(0.118 in), bar a. foot – Cu w. tin plating						
do	Carrier w. 2 grounding feet, bar par-	125 mm / 4.921 in lon	ıg		125 mm / 4.921 ir	n long	
and a	allel to the rail, 10 mm (0.394 in) x 3 mm		790-115	25		790-115	25
English Control	(0.118 in), bar a. foot – Cu w. tin plating						
	Carrier rail, special perforated,						
	1000 mm/3'.3" long, Cu with tin		790-145	1		790-145	1
110	plating, special lengths on request						
	Stand off, for special perforated						
	carrier rail, use M5 size screw		790-144	200 (2 x 100)		790-144	200 (2 x 100)
	Straight busbar,	1000 mm / 3'.3" long	210-133	20 (20 x 1)	1000 mm / 3'.3" lon	g <b>210-133</b>	20 (20 x 1)
	10 mm (0.394 in) x 3 mm (0.118 in),	30 mm / 1.181 in long	790-133	20 (20 x 1)	30 mm / 1.181 in	ong <b>790-133</b>	20 (20 x 1)
	bar – Cu with tin plating	50 mm / 1.969 in long	790-134	20 (20 x 1)	50 mm / 1.969 in	ong <b>790-134</b>	20 (20 x 1)
R	Insulated mounting foot,						
12.5	for busbar, with standard screw	grey	790-100	50 (2 x 25)	grey	790-100	50 (2 x 25)
* 7	M4 x 8 mm						
8	Insulated mounting foot,						
12 元	for busbar, with sheet metal screw	grey	790-101	50 (2 x 25)	grey	790-101	50 (2 x 25)
	(3.5 x 9) mm						
	U-shaped busbar,	Item nos. and dimens	ions,		Item nos. and din	nensions,	
ا ل	10 mm (0.394 in) x 3 mm (0.118 in),	see drawing on page	12.5		see drawing on p	page 12.5	
L	Cu with tin plating						
A 10 -4							

#### **Application notes**

The shield (screen) clamping saddle is shipped ready for direct connection to the busbar 10 mm (0.394 in) x 3 mm (0.118 in) or to a drilled mounting plate. After connection, tighten the knurled screw to complete the installation.

Recommended tightening torque: 0.5 Nm

To remove a shield (screen) clamping saddle, unscrew until ratcheted mechanism is released, then slightly tip saddle and remove the clamping saddle.







12

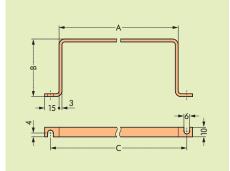
Shield (screen) clamping saddle, 27 mm / 1.063 in wide For conductors with a diameter of 6 mm / 0.236 in to 24 mm / 0.944 in Shield (screen) clamping saddle, 43 mm / 1.693 in wide For conductors with a diameter of 22 mm / 0.866 in to 40 mm / 1.575 in



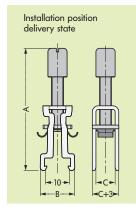


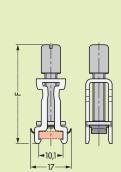
	Item No.	Packunit pcs	Item No.	1	Packunit pcs	
Shield (screen) clam	ping saddle, 2	7 mm / 1.063 in wide	Shield (screen) clamping	saddle, 43	mm / 1.693 in wide	
6 mm / 0.236 in to 24	mm / 0.944 in		22 mm / 0.866 in to 40 mm	/1.575 in		
	790-124	50	790	-140	50	
45 mm / 1.772 in long			45 mm / 1.772 in long			
•	790-113	25	790	-113	25	
45 mm / 1.772 in long			45 mm / 1.772 in long			
	790-114	25	790	-114	25	
125 mm / 4.921 in lon	ıg		125 mm / 4.921 in long			
	790-115	25	790	-115	25	
	790-145	1	790	-145	1	
	700 744	000 (0 100)	700		000 /0 300	
	790-144	200 (2 x 100)	790	-144	200 (2 × 100	
1000 mm / 3'.3" long	210-133	20 (20 x 1)	1000 mm / 3'.3" long <b>210</b>	-133	20 (20 x 1)	
30 mm / 1.181 in long	790-133	20 (20 x 1)	30 mm / 1.181 in long <b>790</b>	-133	20 (20 x 1)	
50 mm / 1.969 in long	790-134	20 (20 x 1)	50 mm / 1.969 in long <b>790</b>	-134	20 (20 x 1)	
		, ,			, ,	
grey	790-100	50 (2 x 25)	grey <b>790</b>	-100	50 (2 x 25)	
grey	790-101	50 (2 x 25)	grey <b>790</b>	-101	50 (2 x 25)	
Item nos. and dimens	ions,		Item nos. and dimensions.			
see drawing on on th	•		see drawing on on the right			
	- J					



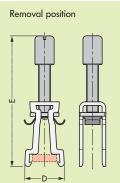


	Dime	nsions	in mm	Pack.unit		
Item No.	Α	В	С	pcs		
<b>790-190</b> suitable for I/O	63 module		83 750 (5 E/A)	25 (5 x 5)		
<b>790-191</b> suitable for I/O	100 module	60 series	118 750 (8 E/A)	25 (1 x 25)		
790-192	63	35	83	25 (5 x 5)		
790-193	100	35	118	25 (1 x 25)		





Closed position



	Dimensions in mm												
Item No.	Α	В	С	D	Е	F							
790-108	51	15	8	16	55	42							
790-116	53	15	16	16	57	45							
790-124	78	15	24	16	83	58							
790-140	97	15	40	16	100	73							





Forward-looking certification: WAGO Ex e II terminal blocks with an EC type-examination certificate according to Ex directive 94/9/EC (ATEX 100 a).







General technical information for electrical equipment in hazardous environments \_\_\_\_

\_\_\_\_\_ 13.2 – 13.9



All terminal blocks used in hazardous environments "Ex e II" have their item nos. marked with the  $\overleftarrow{\{\Sigma\!\!\!\ )}$  symbol







All terminal blocks used in intrinsically safe current circuits "Ex i" have their item nos. marked with the symbol







#### **General Technical Information** for Electrical Equipment in Hazardous Environments

Prerequisite for a potential explosion danger is the realization of an explosion endangered atmosphere. This can occur wherever inflammable gases or liquids are produced, processed, transported or stored.

Such hazardous environment can form, for example, in chemical plants, refineries, tank farms, vehicles, sewage treatment plants, airports, grain mills or sea ports.

#### **GUIDELINE FOR THE BASIC** PRINCIPLES OF EXPLOSION **PROTECTION:**

#### General requirement

The European Standard EN 60079-0 -VDE classification 0170/0171 part 1 contains the general requirements for the construction and testing of electrical apparatus, which are determined for use in potentially explosive atmosphe-

It has to be ensured, that this equipment does not cause an explosion of the surrounding atmosphere. In addition to the EN 60079-0 specification, the (see page 13.3) European Standards which relate to specific standards of protection have to be considered.

#### **Electrical equipment**

Electrical equipment is any part which serves as a whole or in parts for the application of electrical energy. Amongs these are equipment for the production, transmission, distribution, storage, controlling and use of electrical energy, including telecommunication systems.

#### **Ex-components**

Ex-components are parts of an electrical equipment for hazardous environments and are marked with the symbol "U". It is not allowed to use them alone in hazardous environments and, in case they should be used in these environments and in electrical equipment, an additional certificate is required.

		Ignition protection types	
Designation	European Standard	Explanation	Application area
"o"	EN 50015	Oil immersed apparatus: Electrical equipment or parts of same immersed in oil.	Zone 1 + 2
"p"	EN 50016	Pressurized apparatus: The ingress of the surrounding (explosive) atmosphere into the housing of electrical equipment is avoided by keeping the ignition protection gas inside under pressure.	Zone 1 + 2
"q"	EN 50017	Powder filled apparatus: Filling of the electrical equipment housing with fine grain sand prevents the ignition of a surrounding explosive atmosphere by an electric arc generated in the housing.	Zone 1 + 2
"d"	EN 50018	Flameproof enclosure: Equipment which could ignite an explosive atmosphere is encapsulated in a housing which can resist an explosion pressure within the housing.	Zone 1 + 2
"e"	EN 50019	Increased safety:  Measures have been undertaken in order to achieve an increased degree of safety by the avoidance of inadmissibly high temperatures and the creation of sparks or electric arcs.	Zone 1 + 2
"i"	EN 50020	Intrinsic safety: Current circuit in which no sparks or thermal effects can occur and cause an ignition of a certain explosive atmosphere.	Zone 1 + 2 following special testing zone 0
"n"	EN 50021	Non-sparking: Electrical equipment of group II for use in areas in which an explosive mixture of gas, vapor or mist is unlikely to occur during normal operation and if it does it will be for a short period.	Zone 2
"m"	EN 50028	Cast encapsulation: Dangerous electrical equipment is embedded in a cast mass. This corresponds approximately to the known special protection type Ex s.	Zone 1 + 2
	EN 50039	Instrinsically safe electrical systems "i" Assembly of interconnected electrical equipment in which the circuits intended for use, as a whole or in part, in hazardous environments are intrinsically safe. It is documented accordingly in the system description.	Zone 1 + 2 following special testing zone 0
	IEC / TS 60079-27	FISCO standard Electrical apparatus for explosive gas atmospheres – Part 27: Fieldbus intrinsically safe concept (FISCO) and Fieldbus non-incendive concept (FNICO)	

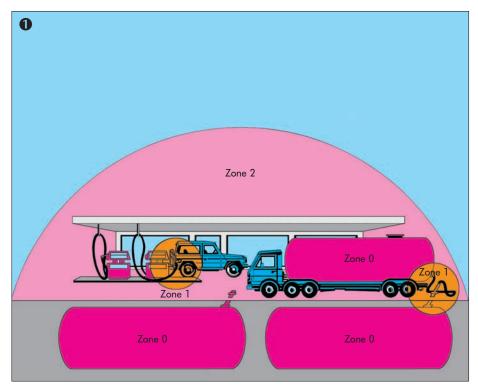


# Continued – General Technical Information for Electrical Equipment in Hazardous Environments

#### Hazardous environments

Hazardous environments are areas in which the atmosphere may become explosive. Explosive atmosphere is defined as a mixture of ignitable substances in the form of gases, vapors or mixtures with air under atmospheric

conditions in critically mixed ratios such that excessive high temperature, arcs or sparks may cause an explosion. According to ElexV, EN 1127-1, endangered areas are classified into zones according to the probability of the existence of a dangerous explosion prone atmosphere as follows:



 Areas explosion endangered as a result of combustible gases, vapours or mist

#### Zone 0

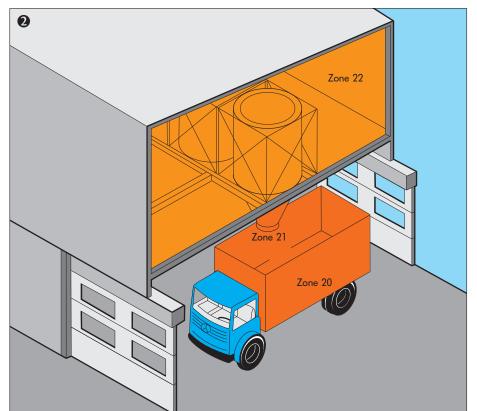
encompasses areas in which an explosive gas/air mixture is continuously present or present for long periods.

#### Zone 1

encompasses areas in which an explosive mixture can occur during normal operation.

#### Zone 2

encompasses areas in which an explosive mixture is unlikely to occur under normal operation and if it does it will be for a short period.



2 Areas explosion endangered due to combustible dust

#### Zone 20

Area in which an explosive mixture in the form of dust in air is continuously present or present for long periods. Dust deposits of a known thickness or of an excessive thickness may build up. Dust deposits alone are not synonymous with Zone 20.

#### Zone 21

Area in which an explosive mixture in the form of dust in air can occur during normal operation. Deposits of combustible dust exist in general.

#### Zone 22

Area in which an explosive mixture in the form of dust in air is unlikely to occur during normal operation and if it does it will be for a short period or in which deposits of combustible dust exist. The specification EN 60079-0 defines two groups of electrical equipment for hazardous environments:

#### Group I:

Electrical equipment for mines.

#### Group II:

Electrical equipment for hazardous environments other than mines.

Electrical apparatus in the chemical and petrochemical industry is classed within group II.

Publication of the WBK Mining Authority of March 1989.

Quotation: "... terminal blocks for which the type of protection Ex e ll has been certified will also be accepted for use in group I - Electrical equipment of the type of protection - Increased safety "e".

This statement can also be found in point 12 of the EC Examination Certificate stating that terminal blocks are approved for Group I as well as for Group II (see page 13.8).

Temperature class	Max. s ℃	urface temp. (°F)
T1	450	(842)
T2	300	(572)
T3	200	(392)
T4	135	(275)
T5	100	(212)
T6	85	(185)

Depending on the maximum surface temperature of the equipment, the electrical equipment of group II is defined in temperature classes T1 up to T6. The ambient temperature, which has to be considered, is fixed at 40 °C (104 °F). (Modifications of this value are possible under certain conditions)

Terminal blocks for the type of protection - Increased safety "e" - are generally classed in T6. When using terminal blocks in equipment of temperature class T1 up to T5 it has to be ensured, that the highest temperature on the insulating parts does not exceed 85 °C (185°F).

The highest measured temperature rise on the surface of the equipment shall not exceed 40 K.

The resistance to heat of the insulating material shall at least be 20 °C (68 °F) above the highest operating tempera-

The resistance to low temperature is sufficient if the insulating material withstands a 24-hour storage at a temperature of up to minus 60°C (-76°F) without destroying this type of protection.

#### Specific requirements "Increased safety Ex e"

The European Standard EN 60079-7 -1977 - VDE 0170/0171 part 6 contains the "special requirements" for the construction and testing of electrical equipment for the type of protection -Increased safety "e" -, which are intended for use in explosive atmospheres.

This specification is a supplement to EN 60079-0 and relates to such equipment or parts thereof, which do not produce arcs, sparks or dangerous temperatures under normal operating conditions.

This standard describes special measures, which have to be observed to obtain a safety degree according to the type of protection - Increased safety "e" -. Paragraph 4.2 "Terminal blocks for external conductors" relates to electrical equipment, such as railmounted terminal blocks.

The following are the most important design requirements for terminal blocks for external electrical conductors:

They shall be

- sufficiently large to permit the reliable connection of external conductors with cross section of at least the size related to the nominal current of the equipment;
- they must be protected against selfloosening and designed in such a way that the external conductors cannot slip out of their clamping
- they must be designed in such a way that sufficient contact pressure is ensured without damaging the con-
- their design must ensure that the contact pressure does not change with temperature cycling;
- for the connection of stranded conductors they must be designed with a spring connecting link;
- terminal blocks for conductor cross section up to 4 mm<sup>2</sup>/AWG 12 shall be so designed that smaller conductor cross sections may be connected safely.

Temperature class	Max. s ℃	urface temp. (°F)
T1	450	(842)
T2	300	(572)
T3	200	(392)
T4	135	(275)
T5	100	(212)
T6	85	(185)

#### The table shows a comparison between the existing practice according to ElexV, DIN VDE 0165-1991 and the new EN 1127-1:

Group II									
Category	Type of protection	Adequate safety with	Comparable with existing practice	new acc. to EN 1127					
1 Ex atmosphere is very probable, dust in air	highest	2 protection measures 2 errors	Group II, Zone 0 Zone 10	Zone 0 Zone 20					
2 From time to time Ex atmosphere	increased	equipment failure or error	Group II, Zone 1	Zone 1 Zone 21					
3 Low probability of Ex atmosphere, settled dust	normal	trouble-free operation	Group II, Zone 2 Zone 11	Zone 2 Zone 22					

#### Continued – **General Technical Information** for Electrical Equipment in Hazardous Environments

It is expressively forbidden to use insulating parts for the transmission of contact pressure. Terminal blocks with sharp edges, which may damage the conductor and others that can rotate or be deformed permanently during normal fixing, are not permissible.

Terminal blocks for connections inside electrical equipment should not be subjected to excessive mechanical stress. They must comply with the conditions for terminal blocks for external electrical conductors.

The air distances between live parts of different potentials are contained in the table 1 with a minimum value of 3 mm for external connections.

The value of the creepage distances depends on the working voltage, the surface condition of the insulating parts and the anti-tracking index of the insulation material.

Grooves on the surface may only be considered if they are at least 2.5 mm wide and deep, and corrogations on the surface only if their height is at least 2.5 mm and their width corresponds to the mechanical strength of the material, however not smaller than 1 mm.

Table 1: Creepage and air distances

Voltage <sup>1)</sup> Effective value of AC voltage		mum creep mm	Minimum air distance	
or DC voltage V	1	II	III a	mm
10 <sup>2)</sup> 12.5 16 20 25 32 40 50 63 80 100 125 160 200 250 320 400 (440)*) 500 (550)*) 630 (690)*) 800 1000 1250 1600 2000 2500 3200 4000 5000 6300 8000 10000	1.6 1.6 1.6 1.7 1.8 1.9 2.1 2.1 2.2 2.4 2.5 3.2 4 5 6.3 8 10 12 16 20 22 23 25 32 40 50 63 80 100 125	1.6 1.6 1.6 1.7 1.8 2.4 2.6 2.8 3.0 3.2 4 5 6.3 8 10 12.5 16 20 25 26 27 28 36 45 56 71 90 110 140	1.6 1.6 1.6 1.7 1.8 3.0 3.4 3.4 3.6 3.8 4 5 6.3 8 10 12.5 16 20 25 32 32 32 32 32 32 32 30 50 63 80 100 125 160	1.6 1.6 1.6 1.6 1.7 1.8 1.9 2.1 2.1 2.2 2.4 2.5 3.2 4 5 6 6 8 10 12 14 18 20 23 29 36 44 50 60 80 100

The indicated voltages are taken from the IEC 60664-1. The working voltage\*) may exceed the voltage indicated in the table by 10%. This is based on the simplification of supply voltages according to table  $3\,\mathrm{b}$  of

The classification of the insulating materials according to their tracking resistance follows the Comparative Tracking Index (CTI) and is contained in the table 2 as follows:

This classification is related to insulating parts without grooves or corrogations. If the insulating parts have grooves or corrogations sufficiently large to be considered, the minimum creepage distances according to the values of the insulating materials of the next higher class apply, for ex. group I instead of group II.

Under consideration of the ambient temperature of 40°C (104°F) specified for electrical equipment, the current carrying capacity acc. to DIN/VDE 0298, part 4, table 10, of rubber insulated conductors is reduced to 82%, of PVC-insulated conductors to 87 % of the current carrying capacity, specified for 30°C (86°F) ambient temperature acc. to item 4.3.3. of DIN VDE 0298-4: 2003-08.

Table 2: Tracking resistance of Insulating materials

Material group	Comparative tracking index
        a	600 ≤ CTI 400 ≤ CTI < 600 175 ≤ CTI < 400

#### Types of wire and wire preparation

According to EN 60079-14 / DIN VDE 0165-1 the wire ends of stranded and fine-stranded wire have to be protected against splaying, for example by the use of cable lugs, ferrules, or by the design of the terminal block applied. Soldering alone is not sufficient.

Connecting electrical equipment to terminal blocks in an atmosphere with a type of protection - Increased safety "e" - the air and creepage distances according to EN 60079-7/DIN VDE 0170/0171-6 must not be reduced.

Experience through the application of terminal blocks in aggressive atmospheres in the chemical industry demonstrate that tinned copper ferrules (gastight) or tinned copper pin-type cable sockets/ lugs are recommended when connecting fine-stranded wires to terminal blocks in corrosive atmospheres.

The indicated values for creepage and air distances are based on a maximum deviation of the supply voltage

CTI values are not applicable for voltages of 10 V or less. Materials that do not meet the requirements of material group III a can be used.

#### **Approvals**

Terminal blocks can be used in zones I and II, provided that the terminal blocks are in an enclosure that has a minimum degree of protection IP 54 and an Ex e certification.

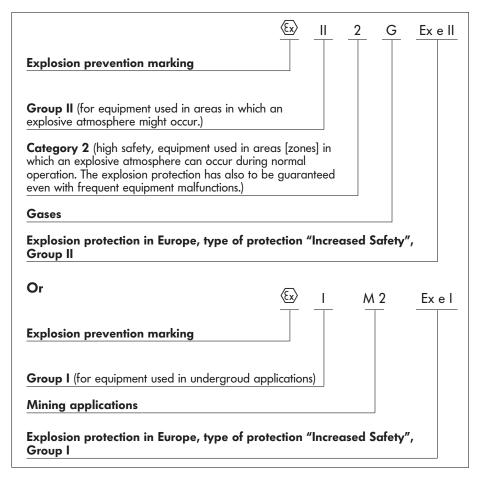
Terminal blocks are considered EX components, as they are only a part of the equipment. Part certificates provided by testing agencies serve as a basis for the complete certification of conformity for the installation.

An EC type examination certificate is issued in accordance with the Explosion Protection Directive 94/9/EG (ATEX 100 a).

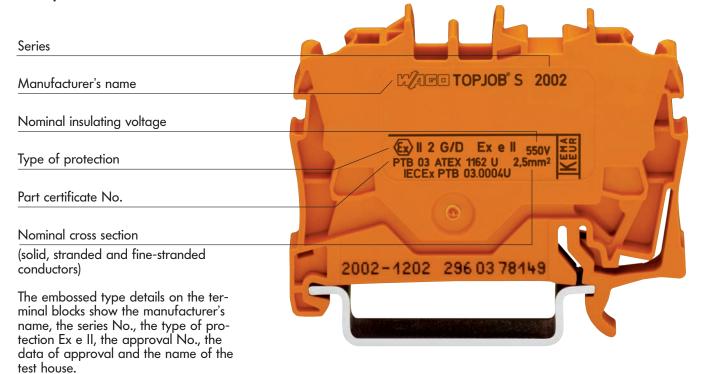
In addition, IEXEx certificates can be obtained from the appropriate accredited testing organizations (see also page 13.8) in accordance with the IECEx certification agreement, which is accepted overall in Europe and currently in countries like Canada, China and Australia, etc.

These certificates can be downloaded from www.iecex.com.

The marking of the terminal blocks are in conformance with EC directive 94/9/EC ATEX 100 a and will be as follows:









# Continued – General Technical Information for Electrical Equipment in Hazardous Environments

According to UL Standard 60079-7 terminal blocks for Class I, Zone 1, Ex e II hazardous locations can be approved for Ex applications.

As a result of international harmonization efforts the UL certificate can be issued on the basis of a certificate according to EN 60079-0 or EN 60079-7, provided that the terminal blocks have also been approved in accordance with UL 1059 (ordinary location).

If desired by the applicant, the product can at the same time be approved in accordance with the Canadian Standards E79-0-95 and E79-7-95 and released for use in Canada.

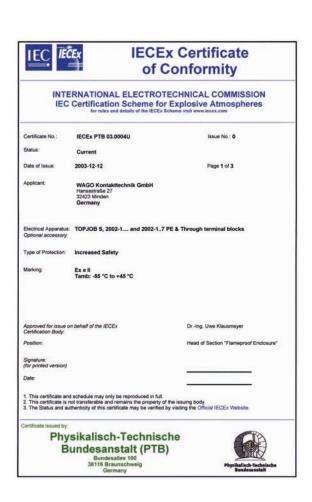
The terminal blocks are marked with CNUs Cl. I, Zn. 1, AEx e II.

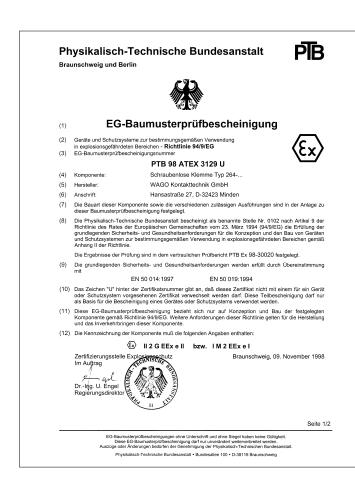
The WAGO terminal blocks specified in this catalog have been granted the EC type examination certificates.

The WAGO terminal blocks approved for the ignition protection type Ex e II are manufactured of flame resistant, self-extinguishing Nylon 6.6. The same applies to the other terminal blocks in the non explosion endangered area.

A tracking resistance with a CTI value of 600 as per IEC 60112 and a constant operating temperature of 105°C/22°F in accordance with IEC 60216-1 and -2 are provided.

To monitor the above described quality features, all CAGE CLAMP® rail-mounted terminal blocks with Ex e II approval are subject to a factory part quality control.





#### Special requirements "intrinsic safety Ex i"

The European Standard EN 60079-11 – classification 0170/0171, part 7/08.03 – contains the special requirements for the construction and testing of electrical apparatus, designated for the type of protection intrinsic safety "i" – in potentially explosive atmospheres.

As opposed to other ignition protection types, the ignition protection technique intrinsic safety "i" does not only refer to individual equipment, but to the complete intrinsically safe current circuit.

A current circuit is termed intrinsically safe when in normal operation and with certain occurring fault conditions no sparks and no thermal effects can cause an ignition in a certain explosive atmosphere.

It is important to distinguish between

- intrinsically safe electrical equipment when all circuits are intrinsically safe and
- a related electrical equipment including both intrinsically and non-intrinsically safe circuits, and being designed in such a way that it is impossible for the non-intrinsically safe circuits to affect the intrinsically safe circuits.

Intrinsically safe electrical equipment and intrinsically safe parts or related electrical equipment are classified in categories "ia" or "ib".

Products classified Ex "ia" should not cause any ignition when current is applied in the following cases:

- a) in normal service and the presence of non-countable faults leading to the most unfavorable condition;
- b) in normal service and the presence of one countable fault in addition to the non-countable faults leading to the most unfavorable condition;
- c) in normal service and the presence of two countable faults in addition to the non-countable faults leading to the most unfavorable condition.

Products classified Ex "ib" should not cause any ignition when current is applied in the following cases:

- a) in normal service and the presence of non-countable faults leading to the most unfavorable condition;
- b) in normal service and the presence of one countable fault in addition to the non-countable faults leading to the most unfavorable condition.

No particular approval is necessary for terminal blocks as plain mechanical equipment for use in type of protection Ex i applications, as they do not contain a source of voltage and precise information is available concerning the electrical data and the temperature rise performance.

They shall be identifiable for example by their type designation and the following construction requirements have to be observed:

- The air distance between bare, conducting parts of terminal blocks of different intrisically safe circuits has to be equal or higher than the values specified in the standard. In addition, the air distances between the terminal blocks must be so that the air distances between bare, conducting parts of the connected external conductors is at least 6 mm for one measurement. Each possible motion of metallic parts that are not rigidly fixed must be considered.
- When a possible connection has not been considered during safety analysis, the minimum air distance between grounded (earthed) metallic or other conducting parts and the uninsulated conducting parts of the conductors that are connected to the terminal blocks must be 3 mm.
- The terminal block has to be marked in a clear and distinct manner. If a color is used, it shall be light blue (approx. RAL 5015).

When using terminal blocks in intrinsically safe circuits, the following requirements have to be observed:

Terminal blocks used for intrinsically safe circuits must be separated from non-intrinsically safe circuits. This is accomplished by several accepted methods. First, intrinsically safe circuits are separated by at least 50 mm of air space from non-intrinsically safe circuits. Second, intrinsically safe circuits are housed in a separate enclosure. Third, intrinsically safe terminal blocks are separated from non-intrinsically safe terminal blocks by either an insulated partition or grounded metal partition. The partition size must allow for either 1.5 mm or less distance from the sides of the housing or provide at least 50 mm of creepage distance between the intrinsically and non-intrinsically safe circuits in all directions. The insulation between an intrinsically safe circuit and the chassis of an electrical equipment or parts, which may be grounded (earthed), has to withstand an effective AC voltage corresponding to double the value of the voltage of the intrinsically safe circuit or a minimum of at least 500 V, depending on which value is higher.

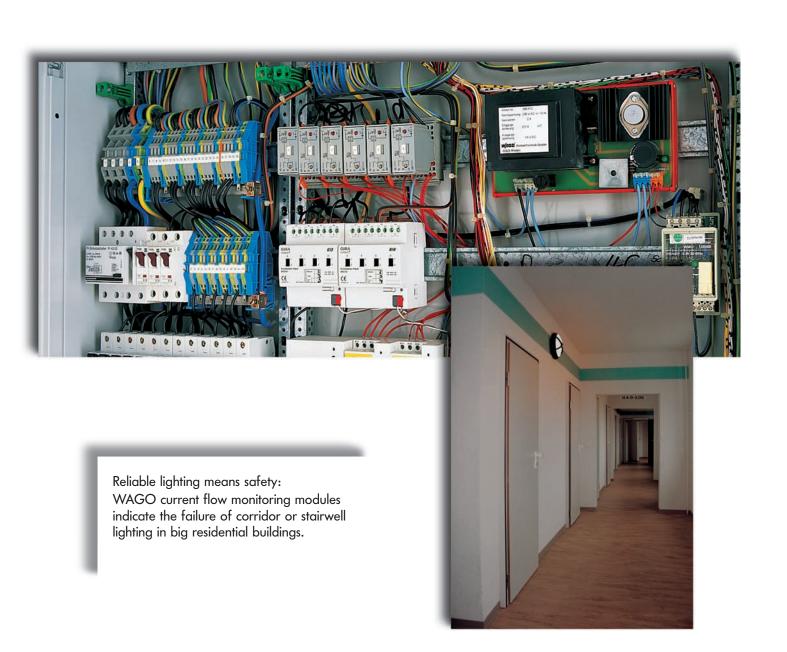
The insulation between an intrinsically safe and a non-intrinsically safe circuit has to withstand an effective AC voltage of 2 x nominal value (U) + 1 kV or a minimum of 1.5 kV, whereby U represents the total of the effective voltages of the intrinsically safe and the non-intrinsically safe circuit.

Short circuit between different intrinsically safe circuits could cause dangerous conditions. The insulation between these circuits should withstand an effective voltage of at least 500 V AC or 2 U AC where U is the total of the effective voltages of the related circuits.

According to the construction specification EN 60079-14 (VDE 0165), stranded and fine-stranded conductors in intrinsically safe circuits have to be protected against splayed ends, for example by ferrules or pin terminals or by the design of the terminal blocks. Tinning of the conductor end alone is not permissible.

For the connection of stranded and fine-stranded conductors in terminal blocks it is recommended to use in corrosive atmosphere gastight tinned copper ferrules or tinned copper pin terminals.





## 14

# Marking and Mounting Accessories Tools

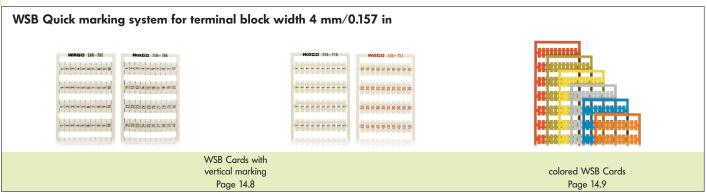
Wire cutter \_

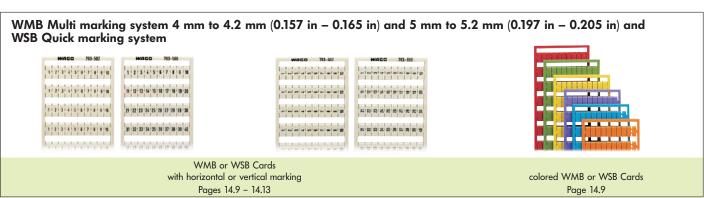
	Angled support bracket	14.36
	Carrier rails	14.36 – 14.37
	Collective carrier for jumpers	14.37
•••••••	Covers	14.39
	End stops for DIN 35 and DIN 15 rail	14.19/14.37
	Group marker carriers and marker carriers	14.16 – 14.18
where.	Marker branches	14.16
	Marker carriers	14.16
	Marker tags	14.16
	Marking computer system	14.20 – 14.25
	Marking system (vertically movable)	
<b>3</b>	Miniature WSB Quick marking system	14.14
	Mounting carrier	
2	Stickers for operating instructions	
	T marker tag	
	WCB Combi marking system	14.17
	WFB Countinuous marking strips	
	WMB Multi marking system	
	WSB Quick marking system	
	Contact paste "Alu-Plus"	14.48
1111	Crimping tools for ferrules	14.44 – 14.45
	Operating tools	
	Screwdrivers	
	Stripping tools	
1	Testboy	
1	Voltage testers	

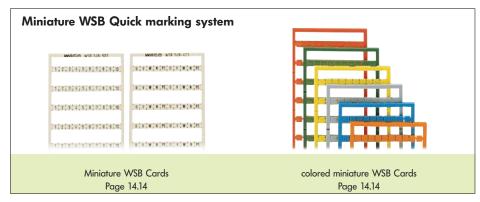


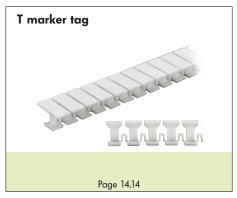
14.49

# Marking Accessories – Product Summary –



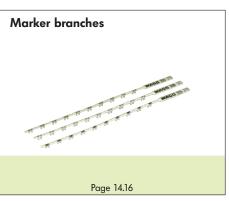




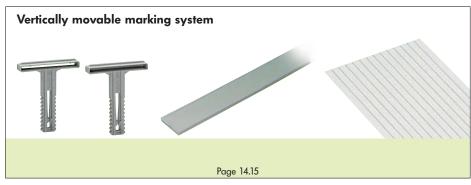
















WSB double marker carriers Page 14.16



Group marker carriers Page 14.18



Group marker carriers for serie 282 Page 14.17



adjustable height group marker carriers Page 14.18



pivotable group marker carrier Page 14.17



WCB combi marker tags Page 14.17

#### **ProServe**



Thermal transfer printer Page 14.24



Thermal transfer printer Page 14.24



Plotter Page 14.25



Interchangeable locating devices Page 14.26



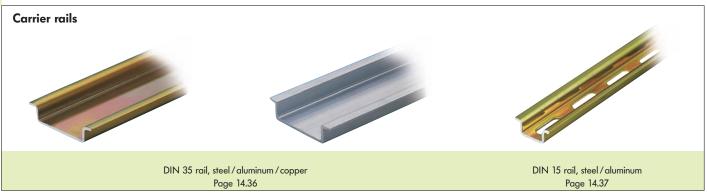
Marker cards, plain Page 14.27



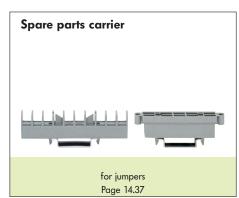
Software Page 14.23



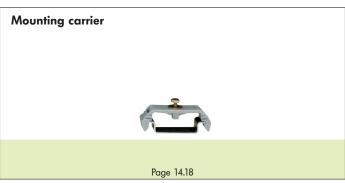
# Montagematerial - Product Summary –











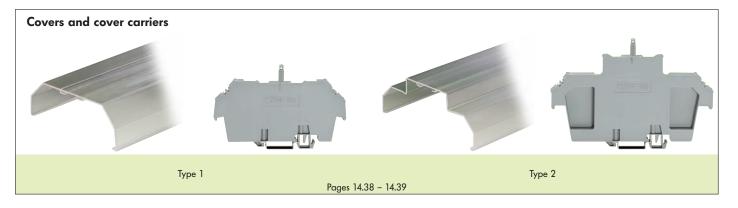






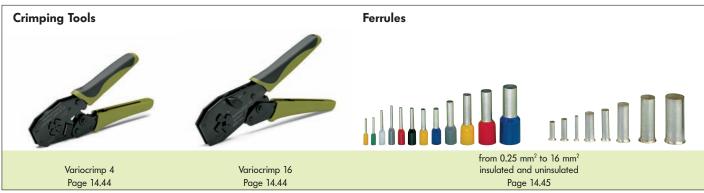


Pages 14.40 - 14.41

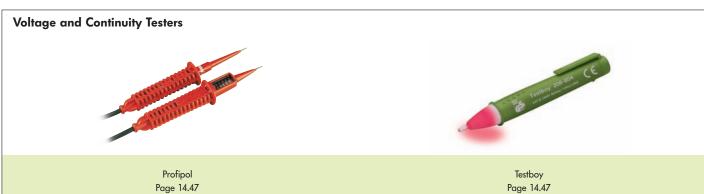


### **Tools** - Product Summery -















WMB (WAGO multi marking system) et WSB (WAGO Quick marking system)



Separation of a strip from the WMB or WSB marker card



Stretching of a strip – only for WSB marking for terminal block widths above 5 mm up to 6.2 mm



Stretching of a strip – only for WMB marking stretchable from 4 mm up to 4.2 mm stretchable from 5 mm up to 5.2 mm

## Miniature WSB (WAGO Quick marking system)



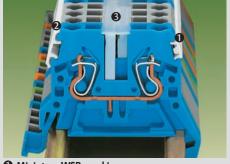
Marking with miniature WSB Quick marking system

## WSB Quick marking system or WMB Multi marking system

WCB Combi marking system



#### Miniature WSB or WMB marking



- Miniature WSB marking
- WMB marking using miniature WSB marker receptacles

#### WFB (WAGO Continuous marking strips)



Customized ink pen marking



Adapter for WFB Continuous marking strips, to be fixed every 10th terminal block

#### **Group marking**



Group marking on N-busbar carrier used as end stop

### ... Description and Handling



Separation of an individual marker from the strip, for bigger terminal blocks



Snapping a strip into the marker receptacle profile



WMB or WSB "decade" labelling

# WFB Continuous marking strips **Group marking** ise Garage Reserve Reserve Strom Kreise Werkstatt

#### Marker branches



Snapping markers into the marker receptacle

profile up to 2 branch markers, series 279 up to 3 branch markers, series 280 to 285

#### Marker tags



Snapping markers into marker carriers

**Group marker carriers** 

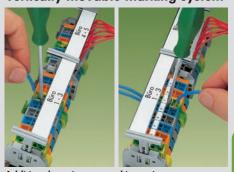


Group marker carrier adjustable in height



Additional group marking

#### Vertically movable marking system



Additional continuous marking strips

Vertical marking Consecutive numbers each strip

10 strips with 10 markers for each card for terminal block width 4 mm/0.157 in

Vertical marking Same numbers each strip

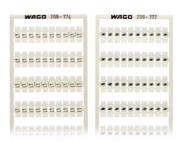
10 strips with 10 markers for each card for terminal block width 4 mm/0.157 in

Vertical marking Same letters/symbols each strip

10 strips with 10 markers for each card for terminal block width 4 mm/0.157 in







Marking per card	Item No.	Packunit pcs	Marking per card	Item No.	Packunit pcs	Marking per card	Item No.	Packunit pcs
1 10 (10x)	209-702	5 cards	1/ 2 (each 50x)	209-718	5 cards	a, b, c, e, u, v, w,	x, y, z (10x)	
11 20 (10x)	209-703	5 cards	3/ 4 (each 50x)	209-719	5 cards		209-743	5 cards
21 30 (10x)	209-704	5 cards	5/ 6 (each 50x)	209-720	5 cards	R, S, T, U, V, W, X	, Y, Z, Mp (10x)	
31 40 (10x)	209-705	5 cards	7/ 8 (each 50x)	209-721	5 cards		209-744	5 cards
41 50 (10x)	209-706	5 cards	9/10 (each 50x)	209-722	5 cards	A, B, P, N, PE, P	PEN, L1, L2, L3, 🚇 (10	<b>)</b> ×)
			11/12 (each 50x)	209-723	5 cards		209-745	5 cards
1 50 (2x)	209-766	5 cards	13/14 (each 50x)	209-724	5 cards			
51 100 (2x)	209-707	5 cards	15/16 (each 50x)	209-725	5 cards	L1 (100x)	209-774	5 cards
101 150 (2x)	209-708	5 cards	17/18 (each 50x)	209-726	5 cards	L2 (100x)	209-775	5 cards
151 200 (2x)	209-709	5 cards	19/20 (each 50x)	209-727	5 cards	L3 (100x)	209-776	5 cards
201 300 (1x)	209-710	5 cards	21/22 (each 50x)	209-728	5 cards	N (100x)	209-777	5 cards
301 400 (1x)	209-711	5 cards	23/24 (each 50x)	209-729	5 cards	PE (100x)	209-778	5 cards
401 500 (1x)	209-712	5 cards	25/26 (each 50x)	209-730	5 cards	PEN (100x)	209-779	5 cards
501 600 (1x)	209-713	5 cards	27/28 (each 50x)	209-731	5 cards	⊕ (100x)	209-780	5 cards
601 700 (1x)	209-714	5 cards	29/30 (each 50x)	209-732	5 cards			
701 800 (1x)	209-715	5 cards	31/32 (each 50x)	209-733	5 cards			
801 900 (1x)	209-716	5 cards	33/34 (each 50x)	209-734	5 cards			
901 1000 (1x)	209-717	5 cards	35/36 (each 50x)	209-735	5 cards	+/- (50x)	209-752	5 cards
			37/38 (each 50x)	209-736	5 cards			
1 9, ;(10	x) <b>209-765</b>	5 cards	39/40 (each 50x)	209-737	5 cards			
			41/42 (each 50x)	209-738	5 cards			
for double deck ter	minal blocks		43/44 (each 50x)	209-739	5 cards	for fuses (fuse p	lugs 281-5)	
1, 3, 5, 7, 9, 11, 99	9 and 2, 4, 6, 8, 10,	12, 100 (1x)	45/46 (each 50x)	209-740	5 cards	F 1,, F10; (10)	() <b>209-787</b>	5 cards
	249-700	5 cards	47/48 (each 50x)	209-741	5 cards	F11,, F20; (10)	() 209-700/209-124	5 cards
101, 103, 105, 14	9 and 102, 104, 106	, 150 (2x)	49/50 (each 50x)	209-742	5 cards	F21,, F30; (10)	() 209-700/209-125	5 cards
	249-701	5 cards				F31,, F40; (10)	() 209-700/209-126	5 cards
			"Decade" marking with	red printing,		F41,, F50; (10)	() <b>209-700/209-127</b>	5 cards
WSB Double marke	er carrier, 4 mm/0.	157 in wide	2 strips each with same no	umbers				
suitable for all WSB o	and WMB marking s	systems	10 50 (each 20x)	209-753*	5 cards			
	209-128	100	60 100 (each 20x)	209-754*	5 cards			
			110 150 (each 20x)	209-755*	5 cards			
			160 200 (each 20x)	209-756*	5 cards	plain,	209-501	5 cards
						for self-		
			210 300 (each 10x)	209-757*	5 cards	marking		
			310 400 (each 10x)		5 cards			
			410 500 (each 10x)	209-759*	5 cards	Marking pen	210-110	1
			510 600 (each 10x)	209-760*	5 cards	with fibre tip,		
			610 700 (each 10x)		5 cards	for permanent		
			710 800 (each 10x)		5 cards	marking		
			810 900 (each 10x)	209-763*	5 cards			
			910 1000 (each 10x)	209-764*	5 cards			
			* see also page 14.7					
		1111111						
20 20 20 21 27 23 24 2	5 26 27 28 29 30	$\Omega\Pi\Pi$						
18 13 50 51 55	*****							
	151111							
Snapping a strip into								
double marker carrie	ı							

#### Colored **Marker Cards**

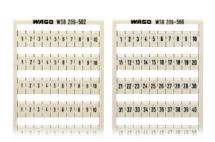
# WAGO Quick Marking System WSB<sup>0</sup> WAGO Multi Marking System WMB<sup>0</sup>

Colored marker cards Horizontal/vertical marking Additional item-Nos. 10 strips with 10 markers per card for terminal block widths 5 - 17.5 mm/0.197 in - 0.689 in (WSB/WMB) 4 - 4.2 mm/0.157 in - 0.165 in (WMB) Horizontal marking Consecutive numbers each strip

10 strips with 10 markers per card for terminal block widths 5 - 17.5 mm/0.197 in - 0.689 in (WSB/WMB) 4 - 4.2 mm/0.157 in - 0.165 in (WMB) Vertical marking Consecutive numbers each strip

10 strips with 10 markers per card for terminal block widths 5 - 17.5 mm/0.197 in - 0.689 in (WSB/WMB) 4 - 4.2 mm/0.157 in - 0.165 in (WMB)







Color	ltem No.	Marking per card	ltem No.	Packunit pcs	Marking per card	ltem No.	Packunit pcs
Colored mar	ker cards	1 10 (10x)	209-502	5 cards	1 10 (10x)	209-602	5 cards
All the markin	gs shown are also available with	11 20 (10x)	209-503	5 cards	11 20 (10x)	209-603	5 cards
black printing	on colored marker cards.	21 30 (10x)	209-504	5 cards	21 30 (10x)	209-604	5 cards
		31 40 (10x)	209-505	5 cards	31 40 (10x)	209-605	5 cards
Add. item-No	. for colored marker cards	41 50 (10x)	209-506	5 cards	41 50 (10x)	209-606	5 cards
yellow	/000-002	51 60 (10x)	209-569	5 cards	51 60 (10x)	249-601	5 cards
red	/000-005	61 70 (10x)	209-570	5 cards	61 70 (10x)	249-602	5 cards
blue	/000-006	71 80 (10x)	209-571	5 cards	71 80 (10x)	249-603	5 cards
grey	/000-007	81 90 (10x)	209-572	5 cards	81 90 (10x)	249-604	5 cards
orange	/000-012	91 100 (10x)	209-573	5 cards	91 100 (10x)	249-605	5 cards
light green	/000-017						
green	/000-023	1 50 (2x)	209-566	5 cards	1 50 (2x)	209-666	5 cards
violet	/000-024	51 100 (2x)	209-507	5 cards	51 100 (2x)	209-607	5 cards
Ordering exa	mples	101 150 (2x)	209-508	5 cards	101 150 (2x)	209-608	5 cards
		151 200 (2x)	209-509	5 cards	151 200 (2x)	209-609	5 cards
Terminal block	width 4 mm – WSB card						
Marking 1	. 50 on yellow card	201 300 (1x)	209-510	5 cards	201 300 (1x)	209-610	5 cards
	209-766/000-002	301 400 (1x)	209-511	5 cards	301 400 (1x)	209-611	5 cards
		401 500 (1x)	209-512	5 cards	401 500 (1x)	209-612	5 cards
Terminal block	width 4 mm – WMB card	501 600 (1x)	209-513	5 cards	501 600 (1x)	209-613	5 cards
Marking 1	. 50 on blue card	601 700 (1x)	209-514	5 cards	601 700 (1x)	209-614	5 cards
	793-4566/000-006	701 800 (1x)	209-515	5 cards	701 800 (1x)	209-615	5 cards
		801 900 (1x)	209-516	5 cards	801 900 (1x)	209-616	5 cards
Terminal block	width 5 mm – WSB card	901 1000 (1x)	209-517	5 cards	901 1000 (1x)	209-617	5 cards
Marking 1	. 50 on red card				1001 1100 (1x)	209-688	5 cards
-	209-566/000-005	1 9, ;(	10x) <b>209-565</b>	5 cards	1101 1200 (1x)	209-669	5 cards
					1201 1300 (1x)	209-670	5 cards
Terminal block	width 5 mm – WMB card	for double deck to	erminal blocks		1301 1400 (1x)	209-671	5 cards
Marking 1	50 on green card	1, 3, 5, 99			1401 1500 (1x)	209-672	5 cards
0	793-5566/000-023	and 2, 4, 6, 100	) (1x)		1501 1600 (1x)	209-901	5 cards
			209-599	5 cards	1601 1700 (1x)	209-902	5 cards
Note:					1701 1800 (1x)	209-903	5 cards
Please note the	at colored marker cards are normally on	for triple deck ter	minal blocks		1801 1900 (1x)	209-912	5 cards
	y and more expensive than standard care				1901 2000 (1x)	209-913	5 cards
	1		249-557	5 cards		0x) <b>209-665</b>	5 cards
		100, 103, 106,	198 (1x)		101, 101, 101, 102, .		
All WSB co	ards shown on this page are also		249-558	5 cards	130, 130, 130 (1x)		5 cards
-	as WMB cards with the same suffix.				131, 131, 131, 132,		
Item no. se					160, 160, 160 (1x)		5 cards
WSB	WMB				, , , , ,		
	rigid				for double deck ter	minal blocks	
209	793	plain,	209-501	5 cards	1, 3, 5, 7, 9, 11, 99		0, 12, 100 (1
249	794	for self-		,	, , , , , , , , , , , , , , , , , , , ,	209-699	5 cards
	stretchable 5 – 5.2 mm	marking			101, 103, 105, 14		
209	793-5				, ,	209-900	5 cards
249	794-5	Marking pen	210-110	1	for triple deck term		
	stretchable 4 - 4.2 mm	with fibre tip,			1, 4, 7, 99 (1x)		
209	793-4	for permanent			,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	249-657	5 cards
249	794-4	marking			100, 103, 106, 19		5 64,43
	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	marking			100, 100, 100, 17	~ (1A)	

249-658

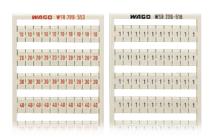
# WAGO Quick Marking System WSB<sup>0</sup> WAGO Multi Marking System WMB<sup>0</sup>

Horizontal marking Same letters per strip

10 strips with 10 markers per card for terminal block widths 5 - 17.5 mm/0.197 in - 0.689 in (WSB/WMB) 4 - 4.2 mm/0.157 in - 0.165 in (WMB) Vertical marking Same letters per strip

10 strips with 10 markers per card for terminal block widths 5 - 17.5 mm/0.197 in - 0.689 in (WSB/WMB) 4 - 4.2 mm/0.157 in - 0.165 in (WMB) Horizontal marking Consecutive letters/symbols per strip

10 strips with 10 markers per card for terminal block widths 5 - 17.5 mm/0.197 in - 0.689 in (WSB/WMB) 4 - 4.2 mm/0.157 in - 0.165 in (WMB)





WAGO WS8 289-546	WAGD WS8 209-550
21 S1 11 U1 W1 W1 X1 Y1 Z1 SL	86 56 16 06 VS W6 16 V6 Z6 S
RI ST 11 UT W W 11 Y 21 SL	87 57 17 U7 97 W7 X7 Y7 Z7 S
21 S1 11 U1 V1 W1 X1 Y1 21 SL	R8 S8 T8 U8 V8 W8 18 Y8 Z8 S
R1 S1 11 U1 V1 W1 X1 V1 Z1 SL	RS SS TS US VS WS XS YS 28 S
	90 000 000 de at lan est ant lan

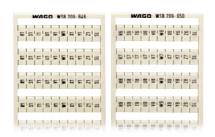
Marking per card	Item No.	Marking per card	Item No.	Marking per card	ltem No.	Packunit pcs	Marking per card	ltem No.	Packunit pcs
1/ 2 (50 each)	209-518	51/ 52 (50 each)	209-400	1/ 2 (50 each)	209-618	5 cards	U, V, W, N, PE,	U, V, W, N, PE (10x)	
3/ 4 (50 each)	209-519	53/ 54 (50 each)	209-401	3/ 4 (50 each)	209-619	5 cards		209-474	5 cards
5/ 6 (50 each)	209-520	55/ 56 (50 each)	209-402	5/ 6 (50 each)	209-620	5 cards	L1, L2, L3, N, PE	E, L1, L2, L3, N, PE (10x)	
7/ 8 (50 each)	209-521	57/ 58 (50 each)	209-403	7/ 8 (50 each)	209-621	5 cards		209-472	5 cards
9/10 (50 each)	209-522	59/ 60 (50 each)	209-404	9/10 (50 each)	209-622	5 cards			
11/12 (50 each)	209-523	61/ 62 (50 each)	209-405	11/12 (50 each)	209-623	5 cards	U1, V1, W1, U	I, VI, WI, UI, VI, WI,	; (10x)
13/14 (50 each)	209-524	63/ 64 (50 each)	209-406	13/14 (50 each)	209-624	5 cards		209-487	5 cards
15/16 (50 each)	209-525	65/ 66 (50 each)	209-407	15/16 (50 each)	209-625	5 cards	U2, V2, W2, U2	2, V2, W2, U2, V2, W2,	; (10x)
17/18 (50 each)	209-526	67/ 68 (50 each)	209-408	17/18 (50 each)	209-626	5 cards		209-494	5 cards
19/20 (50 each)	209-527	69/ 70 (50 each)	209-409	19/20 (50 each)	209-627	5 cards	U3, V3, W3, U3	3, V3, W3, U3, V3, W3,	; (10x)
21/22 (50 each)	209-528	71/ 72 (50 each)	209-410	21/22 (50 each)	209-628	5 cards		209-495	5 cards
23/24 (50 each)	209-529	73/ 74 (50 each)	209-411	23/24 (50 each)	209-629	5 cards	U4, V4, W4, U4	I, V4, W4, U4, V4, W4,	; (10x)
25/26 (50 each)	209-530	75/ 76 (50 each)	209-412	25/26 (50 each)	209-630	5 cards		209-496	5 cards
27/28 (50 each)	209-531	77/ 78 (50 each)	209-413	27/28 (50 each)	209-631	5 cards	U5, V5, W5, U5	5, V5, W5, U5, V5, W5,	; (10x)
29/30 (50 each)	209-532	79/ 80 (50 each)	209-414	29/30 (50 each)	209-632	5 cards		209-497	5 cards
31/32 (50 each)	209-533	81/ 82 (50 each)	209-415	31/32 (50 each)	209-633	5 cards			
33/34 (50 each)	209-534	83/ 84 (50 each)	209-416	33/34 (50 each)	209-634	5 cards	U6, V6, W6, U	6, V6, W6, U6, V6, W6,	;
35/36 (50 each)	209-535	85/ 86 (50 each)	209-417	35/36 (50 each)	209-635	5 cards	to		
37/38 (50 each)	209-536	87/ 88 (50 each)	209-418	37/38 (50 each)	209-636	5 cards	U9, V9, W9, U9	9, V9, W9, U9, V9, W9,	; (2 each)
39/40 (50 each)	209-537	89/ 90 (50 each)	209-419	39/40 (50 each)	209-637	5 cards		209-498	5 card
41/42 (50 each)	209-538	91/ 92 (50 each)	209-420	41/42 (50 each)	209-638	5 cards			
43/44 (50 each)	209-539	93/ 94 (50 each)	209-421	43/44 (50 each)	209-639	5 cards	R1, S1, T1, U1,	V1, W1, X1, Y1, Z1, SL	(10×)
45/46 (50 each)	209-540	95/ 96 (50 each)	209-422	45/46 (50 each)	209-640	5 cards		209-546	5 card
47/48 (50 each)	209-541	97/ 98 (50 each)	209-423	47/48 (50 each)	209-641	5 cards	R2, S2, T2, U2,	V2, W2, X2, Y2, Z2, SL	(10x)
49/50 (50 each)	209-542	99/100 (50 each)	209-424	49/50 (50 each)	209-642	5 cards		209-547	5 cards
				, ,			R3, S3, T3, U3,	V3, W3, X3, Y3, Z3, SL	(10×)
Packunit pcs:	5 cards							209-548	5 cards
							PA SA TA HA	V4, W4, X4, Y4, Z4, SL	
							and	ντ, νντ, Λτ, Ιτ, Δτ, SL	
"Decade" ma	م مانش برماندان	a al muintina		"Decade" marking v	بديناهما ادوير والخان			V5, W5, X5, Y5, Z5, SL	(5 agch)
2 strips each w	•			2 strips each with same			K5, 35, 15, 05,	209-549	5 cards
10, 20			5 cards		209-653*	5 cards		207-347	J curu:
60, 70			5 cards	60 100 (20 each)		5 cards	P6 S6 T6 116	V6, W6, X6, Y6, Z6, SL	
110, 120			5 cards	110 150 (20 each)		5 cards	to	¥0, ¥¥0, X0, 10, Z0, 3L	
160, 170			5 cards	160 200 (20 each)		5 cards	-	J10, V10, W10, X10, Y1	710 SL /2 og
160, 170	200 (20 eddi)	207-336	3 caras	100 200 (20 edch)	207-030	3 caras	K10, 310, 110, 0	209-550	5, 210, 31 (2 ed) 5 cards
210, 220 3	300 (10 000)	209_557*	5 cards	210 300 (10 each)	209-657*	5 cards		207-330	J caras
310, 320 4			5 cards	310 400 (10 each)		5 cards	Δ ΔΙΙ \Λ/CR	ds shown on this page	are also
				410 500 (10 each)			_	WMB cards with the so	
410, 420			5 cards			5 cards			ame sums.
510, 520 6			5 cards	510 600 (10 each)			Item no. see	1	
610, 620	٠ ,		5 cards	610 700 (10 each)		5 cards	WSB	WMB	
710, 720 8			5 cards	710 800 (10 each)		5 cards	200	rigid	
810, 820 910, 920 10			5 cards	810 900 (10 each)		5 cards	209 249	793 794	
710, 720 10	UUU (10 each)	207-304	5 cards	910 1000 (10 each)	207-004	5 cards	447	stretchable	
* see also pag	e14.7			* see also page 14.7					4 – 4.2 mm
see also pag	J . 1.//			300 diso page 14.7			209		793-4
								,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	

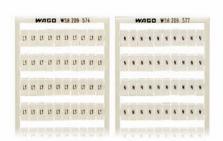
Vertical marking Consecutive letters/symbols per strip

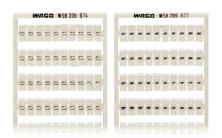
10 strips with 10 markers per card for terminal block widths 5 - 17.5 mm/0.197 in - 0.689 in (WSB/WMB) 4 - 4.2 mm/0.157 in - 0.165 in (WMB) Horizontal marking Same letters/symbols per strip

10 strips with 10 markers per card for terminal block widths 5 - 17.5 mm/0.197 in - 0.689 in (WSB/WMB) 4 - 4.2 mm/0.157 in - 0.165 in (WMB) Vertical marking Same letters/symbols per strip

10 strips with 10 markers per card for terminal block widths 5 - 17.5 mm/0.197 in - 0.689 in (WSB/WMB) 4 - 4.2 mm/0.157 in - 0.165 in (WMB)







Marking per card	ltem No.	Packunit pcs	Marking per card	Item No.	Packunit pcs	Marking per card	ltem No.	Packunit pcs
U, V, W, N, PE, U, '	V, W, N, PE (10x)		a, b, c, e, u, v, w, x, y	, z (10x)		a, b, c, e, u, v, v	v, x, y, z (10x)	
	249-674	5 cards		209-543	5 cards		209-643	5 cards
L1, L2, L3, N, PE, L	I, L2, L3, N, PE (10x)		R, S, T, U, V, W, X, Y,	Z, Mp (10x)		R, S, T, U, V, W,	X, Y, Z, Mp (10x)	
	249-672	5 cards		209-544	5 cards		209-644	5 cards
			A, B, P, N, PE, PEN, L	1, L2, L3, (10x)		A, B, P, N, PE, P	EN, L1, L2, L3, 🚇 (10x	)
U1, V1, W1, U1, V	1, W1, U1, V1, W1,	; (10x)		209-545	5 cards		209-645	5 cards
	209-687	5 cards						
U2, V2, W2, U2, V	2, W2, U2, V2, W2,	: (10x)	L1 (100x)	209-574	5 cards	L1 (100x)	209-674	5 cards
,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	209-694	5 cards	L2 (100x)	209-575	5 cards	L2 (100x)	209-675	5 cards
U3, V3, W3, U3, V	3, W3, U3, V3, W3,	: (10x)	L3 (100x)	209-576	5 cards	L3 (100x)	209-676	5 cards
	209-695	5 cards	N (100x)	209-577	5 cards	N (100x)	209-677	5 cards
U4. V4. W4. U4. V	4, W4, U4, V4, W4,		PE (100x)	209-578	5 cards	PE (100x)	209-678	5 cards
- 1, 1 1, 11 1, 2 1, 1	209-696	5 cards	PEN (100x)	209-579	5 cards	PEN (100x)	209-679	5 cards
U5. V5. W5. U5. V	5, W5, U5, V5, W5,		⊕ (100x)	209-580	5 cards	⊕ (100x)	209-680	5 cards
20, 10, 110, 20, 11	209-697	5 cards	R (100x)	209-581	5 cards	R (100x)	209-681	5 cards
	207-077	3 caras	S (100x)	209-582	5 cards	S (100x)	209-682	5 cards
HA VA WA HA V	6, W6, U6, V6, W6,		T (100x)	209-583	5 cards	T (100x)	209-683	5 cards
to	0, 110, 00, 10, 110,	,	1 (100%)	207-300	J caras	1 (100%)	207-000	5 caras
	9, W9, U9, V9, W9,	. (2 oach)	+/- (50 each)	209-552	5 cards	+/- (50 each)	209-652	5 cards
07, 47, 447, 07, 4	209-698	5 cards	+7 - (30 each)	207-332	J caras	+7- (50 eddi)	207-032	J caras
	207-070	o caras						
D1 C1 T1 U1 \/1	W/1 V1 V1 71 CL /	10.)						
KI, SI, II, UI, VI,	W1, X1, Y1, Z1, SL (1							
DO CO TO 110 1/0	209-646	5 cards						
R2, S2, 12, U2, V2,	W2, X2, Y2, Z2, SL (							
DO 00 TO 110 1/0	209-647	5 cards						
R3, S3, T3, U3, V3,	W3, X3, Y3, Z3, SL (							
	209-648	5 cards						
R4, S4, T4, U4, V4,	W4, X4, Y4, Z4, SL							
and								
R5, S5, T5, U5, V5,	W5, X5, Y5, Z5, SL (5							
	209-649	5 cards						
R6, S6, T6, U6, V6,	W6, X6, Y6, Z6, SL							
to								
R10, S10, T10, U10	, V10, W10, X10, Y10	), Z10, SL (2 each)						
	209-650	5 cards						
						All WSB care	ds shown on this page	are also
						available as	WMB cards with the	same suffix.
						Item no. see	table:	
						WSB	WMB	
							rigid	
						209	793	
						249	794	
							stretchable	
							5 – 5.2 mm	4 - 4.2 mm
						209	<b>793-5</b>	793-4
						249	794-5	793-4
						47/	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	, , 0-7

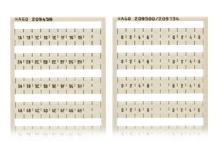
# WAGO Quick Marking System WSB<sup>0</sup> WAGO Multi Marking System WMB<sup>0</sup>

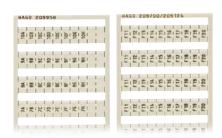
Horizontal marking for subdistribution boxes (power stations)

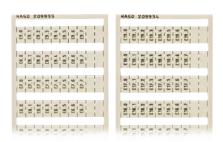
10 strips with 10 markers per card for terminal block widths 5 - 17.5 mm/0.197 in - 0.689 in (WSB/WMB) 4 - 4.2 mm/0.157 in - 0.165 in (WMB) Vertical marking for subdistribution boxes (power stations); for relays, shielding (screenings), fuses; 10 strips with 10 markers per card for terminal block widths 5 - 17.5 mm/0.197 in - 0.689 in (WSB/WMB) 4 - 4.2 mm/0.157 in - 0.165 in (WMB)

Vertical marking for PLC input marking;

10 strips with 10 markers per card for terminal block widths 5 - 17.5 mm/0.197 in - 0.689 in (WSB/WMB) 4 - 4.2 mm/0.157 in - 0.165 in (WMB)





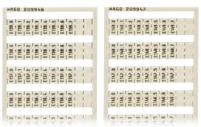


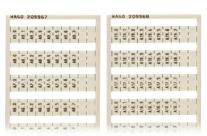
Marking per card	Item No.	Packunit pcs	Marking per card	ltem No.	Packı pcs	unit	Marking per card	ltem No.	Packunit pcs
for subdistribution boxes (power stations)			for subdistribution boxes (power stations)				for PLC input marking		
1A, 1B, 1C, 1D, 1	1E, 1F, 1G, 1H, ,	;	1A, 1B, 1C, 1D, 1E, 1F, 1G, 1H, , ;				E0.0, E0.1, E0.2, E0.3, E0.4, E0.5, E0.6, E0.7, , ;		
to			to				to		
10A, 10B, 10C, 10D, 10E, 10F, 10G, 10H, , ; (1 each)			10A, 10B, 10C,	10D, 10E, 10F, 10	0G, 10H, , ; (1	each)	E9.0, E9.1, E9.	2, E9.3, E9.4, E9.5, E	9.6, E9.7, , ;(1 each
	209-458	5 cards		209-958		ards		209-933	5 cards
0, 2, 4, 6, , , (	0, 2, 4, 6; (5x)		0, 2, 4, 6, , ,	, 0, 2, 4, 6; (5x)			same as abov	e, however	
1, 3, 5, 7, , , 1, 3, 5, 7; (5x)			1, 3, 5, 7, , ,				E10.0 to E19.7	7 (1 each)	
	209-500/209-1	<b>134</b> 5 cards		209-600/2	<b>09-073</b> 5 co	ards		209-934	5 cards
			Symbol shield	(screen) term. I	bl. acc. to DIN 4	0711	E20.0 to E29.7	7 (1 each)	
			-	, $\ominus$ , $\ominus$ , $\ominus$ , $\ominus$ , $\ominus$ ,				209-935	5 cards
			0,0,0,0,0,0	209-993		ards		207.700	0 00.00
				207 770			E30.0 to E39.7	7 (1 each)	
			for relays				200.0 10 207.7	209-936	5 cards
			-	2, 14, A <sub>1</sub> , A <sub>2</sub> , A <sub>3</sub> ,	. (5v)			207 700	o caras
WSB Double m	arker carrier 4 mm	n /0 157 in wide	17 27 27	$A_2$ , $A_2$ , 11, 12, 14,	; (5x)		E40.0 to E49.7	7 (1 each)	
WSB Double marker carrier, 4 mm/0.157 in wide suitable for all WSB and WMB marking systems			11, 12, 14, 17, 1	209-994		ards	L40.0 10 L47.7	209-937	5 cards
solidble for dir vv	209-128	100		207-774	3 ((	urus		207-737	J curus
	207-120	100	12 A A 24 1	1, 14, 21, 22,	. (10v)		E50.0 to E59.7	7 (1 oach)	
			12, 1, 1, 1, 12, 24, 1	209-995		ards	L30.0 10 L37.7	209-938	5 cards
				207-773	3 (1	aras		207-730	3 caras
			A A A A 7	0 11 11 14	/10 \		F/0.0 + F/0.7	7 /3	
			$A_1, A_1, A_2, A_2, I$	2, 11, 11, 14, ,			E60.0 to E69.7	, ,	5 1
				209-996	3 C	ards		209-939	5 cards
	1			041/411 10 14	0) ( (70 )		F70.0 - F70.	7 /3 1)	
k			I <sub>in</sub> , I <sub>in</sub> , , I <sub>out</sub> , I <sub>out</sub> ,	24 V, 11, 12, 14,			E70.0 to E79.7	, ,	
	THE PERSON	111111111111111111111111111111111111111		209-997	5 cc	ards		209-940	5 cards
20 20 22 22 23	24 25 26 27 28 29 30	HHH							
1 18 19 50 51 155	1111111	1111	$A_1, A_2, A_1, A_2, R_1$	, -, R <sub>L</sub> , -, , ;			E80.0 to E89.7		
11111				209-998	5 c	ards		209-941	5 cards
		1555477							
Snapping a strip			for fuse termin	nal blocks 281-	6		E90.0 to E99.7	7 (1 each)	
double marker co	arrier		F 1,, F10; (1	0x) <b>794-615</b>	5 co	ards		209-942	5 cards
			F11,, F20; (1	0x) <b>794-616</b>	5 c	ards			
			F21,, F30; (1	0x) <b>794-617</b>	5 cc	ards	E100.0 to E10	9.7 (1 each)	
			F31,, F40; (1	0x) <b>794-618</b>	5 c	ards		209-943	5 cards
All WSB cards shown on this page are also			F41,, F50; (1	0x) <b>794-619</b>	5 cc	ards			
available as WMB cards with the same suffix.							E110.0 to E11	9.7 (1 each)	
Item no. see table:								209-944	5 cards
WSB	WMB	3							
	rigid						E120.0 to E12	9.7 (1 each)	
209	793-							209-945	5 cards
249	794-								
	stretch	nable 5 – 5.2 mm					continued on	next page	
209	793-							1	
249	794-								
	' ' ' '	nable 4 – 4.2 mm							
209	793-4								
249	794-4								
47/*	1 / / 4-4	····							

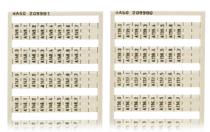
Vertical marking for PLC input marking; (continued) 10 strips with 10 markers per card for terminal block widths 5 - 17.5 mm/0.197 in - 0.689 in (WSB/WMB) 4 - 4.2 mm/0.157 in - 0.165 in (WMB)

Vertical marking for PLC output marking;

10 strips with 10 markers per card for terminal block widths 5 - 17.5 mm/0.197 in - 0.689 in (WSB/WMB) 4 - 4.2 mm/0.157 in - 0.165 in (WMB) Vertical marking for PLC output marking; (continued) 10 strips with 10 markers per card for terminal block widths 5 - 17.5 mm/0.197 in - 0.689 in (WSB/WMB) 4 - 4.2 mm/0.157 in - 0.165 in (WMB)







Marking per card	Item No.	Packunit pcs	Marking per card	Item No.	Packunit pcs	Marking per card	Item No.	Packunit pcs
for PLC input	markina	•	for PLC output	markina		for PLC outpu	ut markina	<u> </u>
•	I, E130.2, E130.3, E13	30.4. E130.5.	•		A0.6, A0.7, , ;		1, A130.2, A130.3, A1	30.4. A130.5.
E130.6, E130.7		2011/ 210010/	to	, , , , , , , , , , , , , , , , , , , ,	71010/71011/	A130.6, A130.7		.,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,
	, , , , , , , , , , , , , , , , , , ,	39 4 F139 5		A93 A94 A95	A9.6, A9.7, , ; (1 each)		1, A139.2, A139.3, A1	39 4 A139 5
	7, , ; (1 each)	77.1, 2107.0,	70.0,70.1,70.2,	209-967	5 cards		7, , ; (1 each)	07.1,71107.0,
2107.0, 2107.7	209-946	5 cards		207-707	5 caras	7(107.0, 7(107.7	209-980	5 card
	207-740	5 caras					207-700	5 cara
same as above	e, however		same as above,	however		same as above	e, however	
E140.0 to E149	9.7 (1 each)		A10.0 to A19.7 (	1 each)		A140.0 to A14	49.7 (1 each)	
	209-947	5 cards		209-968	5 cards		209-981	5 card
E150.0 to E159	9.7 (1 each)		A20.0 to A29.7 (	1 each)		A150.0 to A15	59.7 (1 each)	
	209-948	5 cards		209-969	5 cards		209-982	5 cards
E160.0 to E169	9.7 (1 each)		A30.0 to A39.7 (	1 each)		A160.0 to A16	69.7 (1 each)	
	209-949	5 cards		209-970	5 cards		209-983	5 card
E170.0 to E179	9.7 (1 each)		A40.0 to A49.7 (	1 each)		A170.0 to A17	79.7 (1 each)	
	209-950	5 cards		209-971	5 cards		209-984	5 card
E180.0 to E189	9.7 (1 each)		A50.0 to A59.7 (	1 each)		A180.0 to A18	39.7 (1 each)	
	209-959	5 cards		209-972	5 cards		209-985	5 card
E190.0 to E199	9.7 (1 each)		A60.0 to A69.7 (	1 each)		A190.0 to A19	99.7 (1 each)	
	209-960	5 cards	(	209-973	5 cards		209-986	5 card
	207 700	0 00.00			o car as		207 700	0 00.0
E200.0 to E209	9.7 (1 each)		A70.0 to A79.7 (	1 each)		A200.0 to A20	09.7 (1 each)	
	209-961	5 cards	7 0 0 10 10 7 17 17	209-974	5 cards	, 120010 10 / 120	209-987	5 card
	20, 70.	0 00.00			o car as			0 00.0
E210.0 to E219	9.7 (1 each)		A80.0 to A89.7 (	1 each)		A210.0 to A21	197 (1 each)	
	209-962	5 cards	710010 10 710711 (	209-975	5 cards	7.2.000 10 7.2.	209-988	5 card
	207-702	5 caras		207-773	5 caras		207-700	3 cara
E220.0 to E229	9.7 (1 each)		A90.0 to A99.7 (	1 each)		A220.0 to A22	29.7 (1 each)	
L220.0 10 L22	209-963	5 cards	A70.0 10 A77.7 (	209-976	5 cards	A220.0 10 A22	209-989	5 card
	207-700	5 caras		207-770	5 caras		207-707	5 cara.
E230.0 to E23	9.7 (1 each)		A100.0 to A109.	7 (1 each)		A230.0 to A23	39.7 (1 each)	
L200.0 10 L20	209-964	5 cards	7(100.0 10 7(107.	209-977	5 cards	71200.0 10 7120	209-990	5 card
	207-704	5 caras		207-777	5 caras		207-770	3 cara
E240.0 to E24	9.7 (1 each)		A110.0 to A119.	7 (1 each)		A240.0 to A24	19 7 (1 each)	
L240.0 10 L24	209-965	5 cards	7(110.0 10 7(117.	209-978	5 cards	712-10.0 10 712-	209-991	5 card
	207-703	J curus		207-770	5 curds		20/-//1	5 cara:
E250.0 to E25	9.7 (1 each)		A120.0 to A129.	7 (1 each)		A250.0 to A25	59.7 (1 each)	
L230.0 10 L23	209-966	5 cards	7.1120.0 10 A127.	209-979	5 cards	7.250.0 10 A25	209-992	5 card
	207-700	J curus		207-717	J curus		247-772	J cara
			continued in next	t column				
			Committee in next	COMMIN				

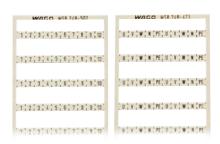


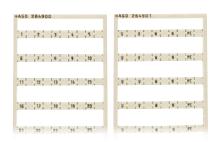
# Miniature WSB Quick Marking System Mini-WSB<sup>0</sup> WAGO Multi Marking System WMB<sup>0</sup> for Terminal Blocks with Miniature WSB Marker Receptacles

Horizontal marking Consecutive letters/symbols each strip 10 strips with 10 markers for each card ex. for 2-conductor terminal blocks Series 264

Horizontal marking Consecutive letters/symbols each strip 10 strips with 10 markers for each card ex. for 4-conductor terminal blocks Series 264

Colored marker cards Horizontal marking Additional item-numbers 10 strips with 10 markers for each card ex. for 2- and 4-cond. terminal blocks Series 264







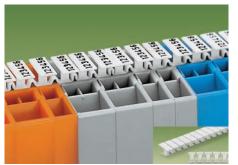
Marking per card	Item No.	Packunit pcs	Marking per card	ltem No.	Packunit pcs	Color	Item No.
1 10 (10x)	248-502	5 cards	1, , 2, , 3, ,	4, , 5, ;		Colored ma	ırker cards
11 20 (10x)	248-503	5 cards	to				
21 30 (10x)	248-504	5 cards	46, , 47, ,	48, , 49, , 50,	; (1 each)	All markings	stated opposite are also available with
31 40 (10x)	248-505	5 cards		264-900	5 cards	black printing	g on colored marker cards.
41 50 (10x)	248-506	5 cards					
51 60 (10x)	248-569	5 cards	U, , V, , W,	, N, , PE, ; (10:	<b>&lt;</b> )	Add. item-No	o. for colored marker cards
61 70 (10x)	248-570	5 cards		264-901	5 cards	yellow	/000-002
71 80 (10x)	248-571	5 cards				red	/000-005
81 90 (10x)	248-572	5 cards	L1, ,L2, ,L3	3, , N, , PE, ; (1	Ox)	blue	/000-006
91 100 (10x)	248-573	5 cards		264-902	5 cards	grey	/000-007
						orange	/000-012
1 50 (2x)	248-566	5 cards	1, ,1, ,1, ,	1, , 1, ; (10x)		light green	/000-017
				264-903	5 cards	green	/000-023
U, V, W, N, PE, U, \	/, W, N, PE; (10x)					violett	/000-024
	248-474	5 cards	2, , 2, , 2, ,	2, , 2, ; (10x)			
L1, L2, L3, N, PE, L1,	, L2, L3, N, PE; (10x)			264-904	5 cards	Ordering exc	ample
	248-472	5 cards				Marking 41 .	50 on yellow card
			3, , 3, , 3, ,	3, , 3, ; (10x)			248-506/000-002
plain, <b>209-501</b>	5 cards			264-905	5 cards		
for self-						Note:	
marking						Please note t	hat colored marker cards are normally on
						longer delive	ery and more expensive than standard
Marking pen	210-110	1				cards.	
with fibre tip,							
for permanent mark	king						

Exemple		
Marking	Mini-WSB card	WMB rigid
51 100	248-5 <u>07</u>	793-507
F1F10	249-615	794-615
Marking	Mini-WSB card	WMB 5-5,2
51 100	248-5 <u>07</u>	793-5507
E1 E10	240_615	704-5615

1 All WSB cards shown on pages 14.9 to 14.11 are also available as WMB cards with the same suffix. Item no. see table:

WSB	WMB
	rigid
209	793
249	794
	stretchable 5 – 5.2 mm
209	793-5
249	794-5

# **WAGO T Marker Tag**



The T marker tag can be used with:

 series 264 modular terminal blocks and terminal strips

series 270 sensor and actuator terminal blocks

# 6 characters per marker

The new T marker tag fulfills the customer request for larger marking areas for series 264 terminal

The T marker can be marked with up to 6 characters per marker and is snapped into the miniature WSB marker receptacle.

Terminal strips in any combination of 2- and 4-conductor terminal blocks can be marked without difficulty by stretching the tag.

30 markers per tag, suitable for terminal block widths from 5 mm/0.197 in to 6 mm/0.236 in, Each marker can be marked with up to 6 characters plain 209-290 50 pieces

Pre-printed markers on request

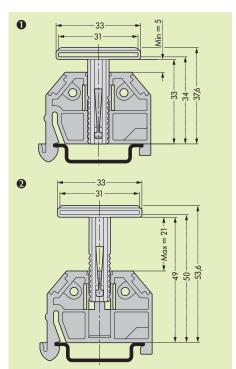
# WFB Continuous Marking Stips, Vertically Movable Marking System

WFB Continuous marking strips for self-marking and	Laterally movable marking system	
Adapters for snap-in fixing into the marker receptacles		





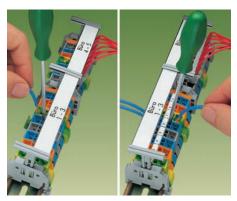
	Item No.	Packunit pcs		Item No.	Packunit pcs
WFB Continuous m	arking strips,		Carrier-through e	lement,	
for self-marking for e	ex. with fibre tip	marking pen	adjustable in height		
length 1000 mm / 3.3'	210-612	10 (10 x 1)	grey	709-118 🛈	50 (2 x 25
Adapter for WFB Continuous marking strips,			Carrier-end eleme	ent,	
for snap-in fixing into	the marker rec	eptacle	adjustable in height		
	209-185	200 (8 x 25)	grey	709-119 🕗	50 (2 x 25
Fibre tip marking p	en,		Receptacle for mo	ırking strips,	
	for permanent	marking		transparent, fold	ed,
1	210-110	1		1 m long, 16 mm	wide, 1.7 mm thic
				709-120	1
			Marking card, wit	h 14 marking strips,	
				DIN-A-4, plain	
				709-193	1



# **Examples of marking**



Adapter for WFB Continuous marker strips to be fixed on every 10th terminal block approx.



This system can be used as an additional group marker carrier or continuous marking strip carrier for terminal strips or rail-mounted single deck terminal blocks, for example for series:

- terminal strips, series 264, for DIN 35 rails
- rail-mounted single deck terminal blocks, series 279 to 284, with a maximum height of 49 mm/1.93 in from the upper edge of the carrier rail (please allow also for the conductor radius)



# Marker Tags, Marker Carriers and Marker Branches

WAGO marker tags Horizontal marking Identical numbers/letters each tag 20 markers per tag

WAGO marker carriers for marker tags

WAGO marker branches
Horizontal marking
Identical numbers/letters
each branch
10 markers per branch
for terminal block widths
4 – 17.5 mm / 0.157 – 0.689 in







Marking per tag	ltem No.	Packunit pcs	ltem No.	Packunit pcs	Marking per branch	ltem No.	Packunit pcs
plain	209-800	10 tags	Quadruple marker carrier		plain	209-300	10 branches
			209-115 🛈	100			
1	209-801	10 tags	Sextuple marker carrier		1	209-301	10 branche
2	209-802	10 tags	209-116 <b>②</b>	100	2	209-302	10 branche
3	209-803	10 tags	(see also page 14.7)		3	209-303	10 branche
4	209-804	10 tags			4	209-304	10 branche
5	209-805	10 tags	Quadruple transparent marker	arrier 🕄	5	209-305	10 branche
6	209-806	10 tags	209-125	100	6	209-306	10 branche
7	209-807	10 tags	Sextuple transparent marker ca	rier <b>4</b>	7	209-307	10 branche
8	209-808	10 tags	not for center marking		8	209-308	10 branche
9	209-809	10 tags	209-126	100	9	209-309	10 branche
0	209-810	10 tags			0	209-310	10 branche
Α	209-823	10 tags			A	209-323	10 branche
В	209-824	10 tags	WAGO WSB Double market	carriore	В	209-324	10 branche
С	209-825	10 tags	WAGO W3D Dooble market	curriers	С	209-325	10 branche
D	209-826	10 tags			D	209-326	10 branche
E	209-811	10 tags			E	209-311	10 branche
F	209-812	10 tags			F	209-312	10 branche
G	209-813	10 tags			G	209-313	10 branche
Н	209-827	10 tags			Н	209-327	10 branche
I	209-828	10 tags			I	209-328	10 branche
J	209-829	10 tags			J	209-329	10 branche
K	209-830	10 tags			K	209-330	10 branche
L	209-814	10 tags	W.		L	209-314	10 branche
M	209-831	10 tags		29	M	209-331	10 branche
N	209-815	10 tags		W.	N	209-315	10 branche
0	209-832	10 tags	207 200	SA	0	209-332	10 branche
P	209-816	10 tags			P	209-316	10 branche
Q	209-833	10 tags	244		Q	209-333	10 branche
R	209-834	10 tags			R	209-334	10 branche
S	209-835	10 tags			S	209-335	10 branche
T	209-836	10 tags	Item	Packunit	T	209-336	10 branche
U	209-817	10 tags	No.	pcs	U	209-317	10 branche
V	209-818	10 tags	WSB Double marker carrier, 4 m	m / 0.157 in wide	V	209-318	10 branche
W	209-819	10 tags	suitable for all WSB and WMB mai	king systems	W	209-319	10 branche
Χ	209-820	10 tags	209-128	100	X	209-320	10 branche
Υ	209-821	10 tags			Υ	209-321	10 branche
Z	209-822	10 tags		2111	Z	209-322	10 branche
				9 9			
+	209-837	10 tags		11 85			
_	209-838	10 tags					
			11				
			185 45				

# WCB Combi Marking System and Group Marker Carrier

WCB Combi marking system

20 markers with identical numbers/letters each tag

WAGO pivotable group marker carrier for rail-mounted terminal blocks from 5 mm/0.197 in on and in spacer housings

WAGO group marker carriers for terminal block series 282

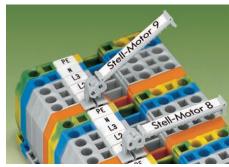








Per tag   No.   Per tag   No.   No.   Per tag   No.   Pick   Pivotable group marker carrier   The group marker carriers are available in two different versions:   249-201   B (20x)   249-212   249-105   50   Tent versions:   - angled, for example for transformer terminal blocks (picture below top)   - angled, for example for transformer terminal blocks (picture below top)   - straight, for example for 2- and 3-conductor   - straight, for example for 2- angled, for example for 2- angled, for example for 2- angled, for ex					* from upper edge of terminal block			
1 (20x) 249-201 B (20x) 249-212 249-215 50 rent versions: 2 (20x) 249-202 C (20x) 249-213	Marking per tag							Packunit pcs
2 (20x) 249-202	plain	249-200	A (20x)	249-211	Pivotable group marker carrier		The group marker carriers are avai	lable in two diffe-
3 (20x) 249-203 D (20x) 249-214 Marker card, 4 x 30 pcs per sheet (picture below top) 4 (20x) 249-204 E (20x) 249-215 209-183 1 sheet 209-144 50 5 (20x) 249-205 F (20x) 249-216	1 (20x)	249-201	B (20x)	249-212	249-105	50	rent versions:	
4 (20x) 249-204	2 (20x)	249-202	C (20x)	249-213			- angled, for example for transforme	r terminal blocks
5 (20x) 249-205	3 (20x)	249-203	D (20x)	249-214	Marker card, 4 x 30 pcs per sheet		(picture below top)	
6 (20x) 249-206	4 (20x)	249-204	E (20x)	249-215	209-183	1 sheet	209-144	50
7 (20x) 249-207	5 (20x)	249-205	F (20x)	249-216			- straight, for example for 2- and 3-c	:onductor
8 (20x) 249-208	6 (20x)	249-206	G (20x)	249-217	Protection cover, transparent		terminal blocks (picture below botto	m)
9 (20x) 249-209 J (20x) 249-220 0 (20x) 249-210 K (20x) 249-221 L (20x) 249-222 10 (2x) 249-239 M (20x) 249-223 N (20x) 249-241 O (20x) 249-225 2. (20x) 249-242 P (20x) 249-225 3. (20x) 249-243 Q (20x) 249-227 Appropriate marking systems: 3. (20x) 249-244 R (20x) 249-227 WSB, WMB and WCB 5. (20x) 249-245 S (20x) 249-229 6. (20x) 249-246 T (20x) 249-230	7 (20x)	249-207	H (20x)	249-218	209-184	50	209-143	50
0 (20x) 249-210 K (20x) 249-221 L (20x) 249-222 10 (2x) 249-239 M (20x) 249-223 N (20x) 249-241 O (20x) 249-225 2. (20x) 249-242 P (20x) 249-226 3. (20x) 249-243 Q (20x) 249-227 4. (20x) 249-244 R (20x) 249-227 4. (20x) 249-245 S (20x) 249-228 5. (20x) 249-245 S (20x) 249-230 6. (20x) 249-246 T (20x) 249-230	8 (20x)	249-208	I (20x)	249-219				
L (20x) 249-222  10 (2x) 249-239 M (20x) 249-223 N (20x) 249-241 O (20x) 249-225 2. (20x) 249-242 P (20x) 249-226 3. (20x) 249-243 Q (20x) 249-227 Appropriate marking systems: 4. (20x) 249-244 R (20x) 249-228 5. (20x) 249-245 S (20x) 249-229 6. (20x) 249-246 T (20x) 249-230	9 (20x)	249-209	J (20x)	249-220				
10 (2x) 249-239 M (20x) 249-223 N (20x) 249-224  1. (20x) 249-241 O (20x) 249-225 2. (20x) 249-242 P (20x) 249-226 3. (20x) 249-243 Q (20x) 249-227 4. (20x) 249-244 R (20x) 249-228 5. (20x) 249-245 S (20x) 249-229 6. (20x) 249-246 T (20x) 249-230	0 (20x)	249-210	K (20x)	249-221				
N (20x) 249-224  1. (20x) 249-241 O (20x) 249-225  2. (20x) 249-242 P (20x) 249-226  3. (20x) 249-243 Q (20x) 249-227  4. (20x) 249-244 R (20x) 249-228  5. (20x) 249-245 S (20x) 249-229  6. (20x) 249-246 T (20x) 249-230			L (20x)	249-222				
1. (20x)       249-241       O (20x)       249-225         2. (20x)       249-242       P (20x)       249-226         3. (20x)       249-243       Q (20x)       249-227         4. (20x)       249-244       R (20x)       249-228         5. (20x)       249-245       S (20x)       249-229         6. (20x)       249-246       T (20x)       249-230	10 (2x)	249-239	M (20x)	249-223				
2. (20x)       249-242       P (20x)       249-226       Appropriate marking systems:         3. (20x)       249-243       Q (20x)       249-227       WSB, WMB and WCB         4. (20x)       249-244       R (20x)       249-228         5. (20x)       249-245       S (20x)       249-229         6. (20x)       249-246       T (20x)       249-230			N (20x)	249-224				
3. (20x) 249-243 Q (20x) 249-227 WSB, WMB and WCB  4. (20x) 249-244 R (20x) 249-228  5. (20x) 249-245 S (20x) 249-229  6. (20x) 249-246 T (20x) 249-230	1. (20x)	249-241	O (20x)	249-225				
4. (20x) 249-244 R (20x) 249-228 5. (20x) 249-245 S (20x) 249-229 6. (20x) 249-246 T (20x) 249-230	2. (20x)	249-242	P (20x)	249-226			Appropriate marking systems:	
5. (20x) 249-245 S (20x) 249-229 6. (20x) 249-246 T (20x) 249-230	3. (20x)	249-243	Q (20x)	249-227			WSB, WMB and WCB	
6. (20x) 249-246 T (20x) 249-230	4. (20x)	249-244	R (20x)	249-228				
6. (20x) 249-246 T (20x) 249-230 7. (20x) 249-247 U (20x) 249-231	5. (20x)	249-245	S (20x)	249-229		<u> </u>		
7. (20x) <b>249-247</b> U (20x) <b>249-231</b>	6. (20x)	249-246	T (20x)	249-230		A		
	7. (20x)	249-247	U (20x)	249-231	otor			*







8. (20x)

9. (20x)

0. (20x)

+ (20x)

-(20x)

249-248

249-249

249-250

249-237

249-238

Pieces per packing unit: 10 tags

V (20x)

W (20x)

X (20x)

Y (20x)

Z (20x)

249-232

249-233

249-234 249-235

249-236

This pivotable group marker carrier has been developed for group marking of rail-mounted terminal blocks and brings together many requirements of our customers.

- Can be used in all multiprofile marker receptacles for rail-mounted terminal bocks from 5 mm width on or in spacer housings as shown in the picture
- Pivotable in 7 different stable positions, providing the best visual angle in case of difficult mounting conditions
- Two levels for different marking systems Level a: for marker card (4 x 34) mm (see picture) for 12 WCB-Combi markers (see left column)



The new group marker carriers make it possible to mark subgroups in confined places.

These group marker carriers can be snapped into the jumper contact positions of the terminal block



# 14 Group Marker Carriers and Mounting Carrier

WAGO group marker carriers	Adjustable height group marker carriers	Mounting carrier for isolated mounting on rail





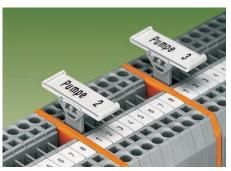


	B 1 1
Item No.	Packunit pcs
Group marker carrier, for snapping in	to screwless end
stops, 10 mm / 0.394 in wide, for center of	or side mounting
209-112 ①	50
Marker card, from white cardboar	d,
for self-marking, 100 markers per sheet	
209-113 🛭	1 sheet
or self-adhesive label,	
for self-marking, 7 x 25 pcs per sheet	
210-345 🕗	1 sheet
Protection cover, transparent	
209-114 🕄	50
Group marker carrier, for jumper con	
of rail-mounted terminal blocks, for term	ninal block
widths 4 – 8 mm / 0.157 – 0.315 in	
for up to 3 WMB Markers or 8 branch	markers,
15 mm / 0.591 in wide	
209-140 🕢	50
for up to 2 WMB Markers or 5 branch	markers,
10 mm / 0.394 in wide	50
209-141 🕢	50
f 13444P44   0  1	
for 1 WMB Marker or 2 branch marker	rs,
5 mm / 0.197 in wide	50
209-142 🕢	50

	ltem No.	Packunit pcs	ltem No.	Packunit pcs
nd	Adjustable height group marker car	rriers,	Mounting carrier,	
ng	suitable for end stops 249-116 and 249	-117	for isolated mounting on DIN 35 rail	
	(see page 14.19)		209-106	25
	for 1 marker card or self-adhesive labe	l and transpa-		
	rent cover protection (see on the left)			
	249-119 🛈	50 (2 x 25)		
	for 2 WSB Quick markers each,			
	3 WCB Combi markers			
	or			
	1 x continuous marking strip			
	249-118 2	100 (4 x 25)		

# **Application notes**







Receptacles for: 1 x marker card

2 x WSB (Quick marking) or 3 x WCB (Combi marking) or 1 x WFB (Continuous marking strips)

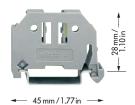


Isolated mounting of a carrier rail in a distribution box for protection class 2.

Here shown with rail-mounted terminal blocks.

# **End Stop for DIN 35 Rail**

End stop for DIN 35 rail, End stop width 6 mm/0.236 in	End stop for DIN 35 rail, End stop width 10 mm/0.394 in	





**→** 45 mm / 1.77 in →

ltem No.	Packunit pcs	ltem No.	Packunit pcs
End stop, for DIN 35 rail		End stop, for DIN 35 rail	
6 mm/0.236 in wide		10 mm / 0.394 in wide	
249-116	100 (4 x 25)	249-117	50 (2 x 25)
Application notes			

Fit – and forget! Assembling the new WAGO screwless end stop is as simple and quick as snapping a WAGO rail-mounted terminal block onto the rail.

## Without any tools!

This way rail-mounted terminal blocks are safely secured, at low cost, against any movement on all carrier rails DIN 35 acc. to DIN EN 50022 (35 x 7.5 mm; 35 x 15 mm).

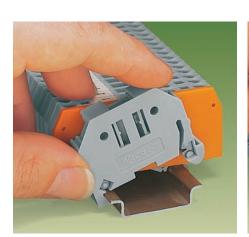
## Entirely without screws!

The "secret" of the excellent tight fit lies in the two small clamping plates which keep the end stop in position, even if the rails are mounted vertically.

# Simply snap on and forget!

In addition, costs are considerably reduced when using large numbers of end stops.

A further advantage is that three marker receptacles for all WAGO marker systems for rail-mounted terminal blocks and a snap-in hole for WAGO adjustable height group marker carriers offer individual marking possibilities.



Snap on . . .

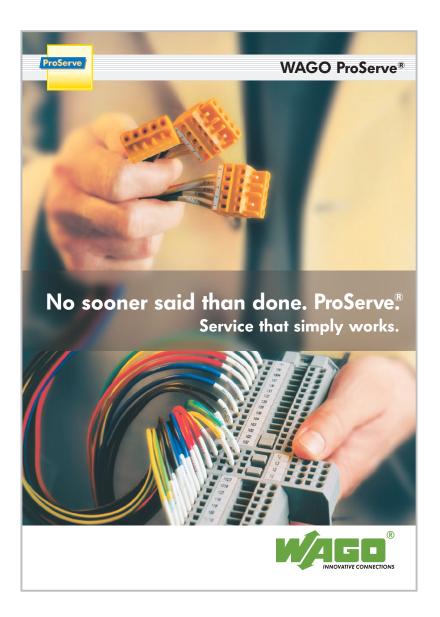




... that's it!

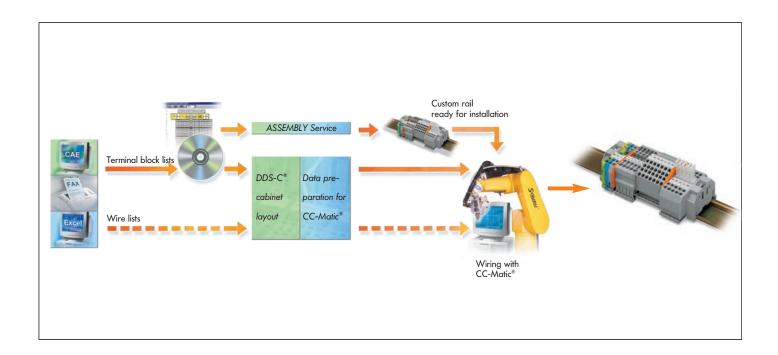


# No sooner said than done. ProServe®. Service that simply works.



The benefits of ProServe are at your disposal every day. With unique features such as accuracy checking, ProServe does a lot of the work for you, therefore saving you time and money. Immediate access to professional and sophisticated services allows for error-free applications, higher flexibility in your daily business and better customer service. With more than 50 years of WAGO expertise at your disposal, put ProServe to work for you in your next application.

# From the circuit diagram to automated wiring.



# **CONTENTS**

# ProServe

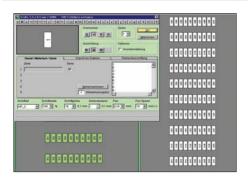
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# Marking service

# Assembly service for custom rail assemblies

# Wiring service







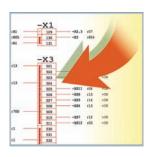
Description	Description	Description
Special markings often require considerable manual	Reduce your inventory and part numbers for WAGO	The WAGO ProServe wiring service turns the custom
work. WAGO smartMARKING helps you minimize this	terminal blocks and accessories to a single part num-	rail, ready for installation in a switchgear cabinet, into
work and optimize the quality of the markings.	ber: Rail assemblies ready for installation!	a wired custom rail ready for connection.
Simply send us your specifications.	Simply send us your specifications.	Simply send us your specifications.
We will do the rest.	We will do the rest.	We will do the rest.
▶ by fax	▶ by fax	▶ by fax
▶ via e-mail	▶ via e-mail	▶ via e-mail
▶ via ProServe Software	▶ via ProServe Software	▶ via ProServe Software

## www.wago.com

## Macros

## **Training**



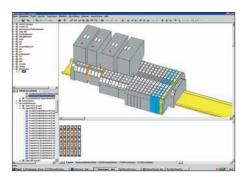


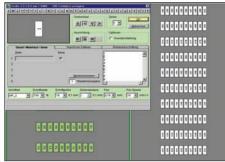


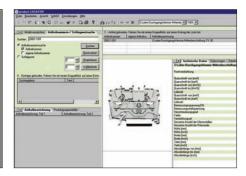
Description	Description	Description
▶ Support-Center	Product macros, i.e. completed product "drawings",	► WAGO smartDESIGNER
	make CAD/CAE drawing faster and easier. The	▶ WAGO smartMARKING
► Call-Back Service	EPLAN software version 5.4 includes macro data of	► WAGO productLOCATOR
	the WAGO-I/O-SYSTEM 750 for circuit diagrams,	
► Online Info Service	plans and graphics. They can be easily incorporated	WAGO seminars help you work optimally with innova-
	into the design process in much the same way custom	tive products in a very short time. You will mainly learn
► Online Catalog	rail assemblies are installed in a switchgear cabinet.	by doing without unnecessary teaching. The training
www.wagocatalog.com		will have a cost saving effect for you by reducing the
	Free update service at: www.wago.com	time needed to effectively use our intelligent products.
	(Service/Downloads/Software/CAD/CAE)	Time is money!
		Please register at www.wago.com/wagoweb/usa/
		eng/service/training/index.htm

# Software Package

# WAGO smart DESIGNER WAGO smart MARKING WAGO product LOCATOR







Description	Description	Description
Innovative WAGO ProServe design service	WAGO marker cards –	Full-function product search:
	Simplification of terminal block markings.	
Features overview:	WAGO SCRIPT helps you minimize the cost of custom	▶ Interactive access to over 12,000 part numbers
	marking and optimize printing results.	► Search by product groups or item numbers
▶ Interactive 3D design of:		► Search by keywords or technical data
terminal blocks, connectors, PCB terminal blocks,		▶ Import of custom part numbers
WAGO→I/O→SYSTEM, ELECTRONICC	► WYSIWYG marking	► Create part lists with a single mouse-click
▶ Possibility of using your own custom part numbers	► Automatic calibration of the plotter	▶ 13 languages
▶ Intelligent, accuracy check feature	▶ Import data from various CAE systems,	▶ Updates via the Internet
(AutoAudit function)	MS-Excel, WAGO smartDESIGNER	
► Data exchange with CAE, XLS, etc.	► Marker cards for marking tag type:	
► Creation of individual project libraries in addition to	WSB, miniature WSB, WTB, WMB etc.	
the WAGO standard libraries	with custom marking and competitor's marking	
▶ Possibility of designing and printing the marking	► Electronic symbol library	
directly	► Text length check feature	
▶ 13 languages	▶ 13 languages	
▶ Updates via the Internet	▶ Updates via the Internet	

Marking cards (plain)	ProServe SOFTWARE	
W · /	Item No. 0888-0402/	





Description		Item No.	Description	
Adhesive marker stri	ps on cards	DIN A4	The software package includes:	
pin spacings	strips			
can be chosen	per card		► WAGO smartDESIGNER	
Strip height 2.3 mm	100 x	210-331	► WAGO smartMARKING	
Strip height 3 mm	80 x	210-332	► WAGO productLOCATOR	
Strip height 5 mm	48 x	210-334	► WAGO wireLINK	
Strip height 6 mm	40 x	210-333		
Strip height 9 mm	40 x	210-335		
Strip length 182 mm				



# Hardware

Spare roller

Network card for TP 300

USB card for TP 300

Label dispenser

258-162

258-163

258-164

258-165

Thermal transfer printers TP 298	Thermal transfer printer TP 300	Thermal transfer printer TP 297







**The printers** are suitable for printing thermal transfer labels, cable markers, type labels, heat shrink tubes, barcodes, etc.

Furthermore, they can be used to print marker strips of both TOPIOB®S and 870, 869, 862 as well as 270 series. For exceptional print quality, the printers offer all the advantages and benefits of the thermal transfer technology. For more information see data sheets beginning on page 11.16

Description	Item No.	Description	Item No.	Description	ltem No.
Thermal transfer printer, TP 298	258-298	Thermal transfer printer, TP 300	258-300	Thermal transfer printer, TP 297	258-297
Resolution 300 dpi, without display		Resolution 300 dpi		Resolution 203 dpi, without display	
- technical data on page 14.32		- technical data on page 14.30		- technical data on page 14.33	
ProServe Software included		ProServe Software included		ProServe Software included	
Accessories required for t	he marking o	of marker strips			
Ink ribbon for marker strips	258-145	Marker strips for series			
resin, width 38 mm x 300 m					
		TOPJOB®S white, plain, width 11	mm,		
		50 m roll	2009-110		
		300 m roll	2009-130		
		870, 869, 862, 270			
		white, plain, width 7.5 mm			100
		50 m roll	709-178		
		300 m roll	709-188		
		translucent, plain, width 7.5 mm			
		50 m roll	709-177		
		300 m roll	709-187		
		OUT III TOIL	. 07 107		
Optional accessories					
Ink ribbon for labels		Carrying case for TP 300/298	258-171		
resin/wax, width 60 mm x 300 m	258-143	Carrying case for TP 297	258-172		
resin/wax, width 100 mm x 300 m	258-144				
		Retractable handle	258-173		
External coil mounting system	258-169	for carrying case		THE STATE OF THE S	man and an
for 300 m rolls		, ,			
					110
Cutter					10
TP 298/300	258-161				
2, 5, 500	_50 .0.				
		I			

# Hardware

Plotter Full plotter package







The full plotter package, available in 4 versions, is suitable for marking any type of WAGO marker card or competitor's markers. Includes the ProServe CD-ROM and WAGO smartMARKING software.

Description	Item No.	Description	ltem No.
Plotter IP 350	258-350	Version 1	258-350/000-001
including power supply and centro	onics cable,	1 plotter incl. power	supply and centronics cable
- technical data see page 14.34		1 ProServe software	
· ·		4 WMB carrier plate	s 5 mm/0.197 in
WAGO plotter pen (shown page	e 11.12)	20 WMB marker car	
Line width 0.18 mm	258-226	1 plotter pen, line wie	dth 0.25 mm (disposable)
Line width 0.25 mm	258-227	1 plotter pen, line wie	dth 0.35 mm (disposable)
Line width 0.35 mm	258-228		
Line width 0.50 mm	258-229	Version 2	258-350/000-002
		1 plotter incl. power	supply and centronics cable
WAGO plotter pen (disposable)		1 ProServe Software	
Line width 0.25 mm	258-327	4 WSB carrier plates	
Line width 0.35 mm	258-328	20 WSB marker card	s
		1 plotter pen, line wie	dth 0.25 mm (disposable)
WAGO cleaning set (shown pag	je 11.12)	1 plotter pen, line wie	dth 0.35 mm (disposable)
	258-139		· · · · · ·
WAGO pen cleaner (shown pag	e 11.12)	Version 3	258-350/000-003
	258-140	1 plotter incl. power	supply and centronics cable
		1 ProServe software	
WAGO ink cartridges (shown po	age 11.12)	2 WMB (5 mm/0.197	in) carrier plates
black, for permanent marking, not	refillable (5 x 1 ml)	2 miniature WSB carr	ier plates
. ,	258-141	10 WMB (5 mm/0.19	7 in) marker cards
		10 miniature WSB mo	rker cards
Carrier plate for Plotter IP 350	(shown page 11.12)	1 plotter pen, line wie	dth 0.25 mm (disposable)
WSB 5 mm (209-501)	258-361		dth 0.35 mm (disposable)
WSB 4 mm (209-701)	258-362		, , , ,
Mini-WSB (248-501)	258-363	Version 4	258-350/000-004
Group marking carriers (209-112)	258-364	1 plotter incl. power	supply and centronics cable
WMB 5 mm (793-501)	258-368	1 ProServe software	
WMB 4 mm (793-4501)	258-368	1 WMB carrier plate	5 mm/0.197 in
For other carrier plates see page	11.12	1 WSB carrier plate :	5 mm/0.197 in
		1 miniature WSB carr	ier plate
Marker tags		1 WSB carrier plate	•
(209-200)	258-369	5 WMB marker card	5 mm/0.197 in
Marker strips		5 WSB marker cards	5 mm/0.197 in
(2009-110 + 2009-130 and 709	.) 258-410	5 miniature WSB mai	ker cards
WMB Inline	.,	5 WMB marker card	s 4 mm/0.157 in
(2009-115 + 2009-135)	258-412	1 plotter pen, line wie	dth 0.25 mm (disposable)
(			dth 0.35 mm (disposable)
			(



# Accessories 26

Accessories for thermal transfer printers	Marker card carrier plates for plotter IP 350	Plotter accessories







Description	Item No.	Description	Item No.	Description	ltem No.
Ink ribbon for marker strips	258-145	Carrier plates for marker cards		Carrier plate for Partex	
resin, width 38 mm x 300 mm		WSB 5 mm/0.197 in (209-501)	258-361	PA+1	258-391
		WSB 4 mm/0.157 in (209-701)	258-362	PA+2	258-392
Ink ribbon for labels		Miniature WSB (248-501)	258-363	PK2 PVC	258-393
resin/wax, width 60 mm x 300 m	258-143	Group marking carriers (209-112	258-364		
resin/wax, width 100 mm x 300 m	258-144	WMB 5 mm/0.197 in (793-501)	258-368	Carrier plate for Entrelec	
		WMB 4 mm/0.157 in (793-4501)	258-368	Universal	258-394
External coil mounting system	258-169				
for 300 m rolls		Carrier plates for murrplastik		WAGO plotter pen	
		MP-400	258-370	line width	
Cutter		KS 4/12, 4/18, 4/23, 4/30		0.18 mm/0.007 in	258-226
TP 298/300	258-161	MP-401	258-371	0.25 mm/0.010 in	258-227
		KES, KLG,KMR, KPX, KS 15×17/27		0.35 mm/0.014 in	258-228
Spare roller	258-162	KSI, KSK, KSO, KSS, KTE, KWI, SKS		0.50 mm/0.020 in	258-229
Network card for TP300	258-163	BS 5/6	258-397	2.55 5.525	
USB card for TP300	258-164	200,0	200 077	The WAGO plotter pen is suital	ole for any kind of
Label dispenser	258-165	Carrier plates for Phoenix Cont	net	smooth surfaces. No additional	
Eart dispeliser	200-100	ZBM	258-372	Smooth sorraces. 140 dddillolldl	adaptor is required.
		ZB	258-373	WAGO plotter pen (disposabl	ما
Carrying case for TP 300/298	258-171	ZBN	258-374	Line width 0.25 mm	258-327
, ,				Line width 0.35 mm	258-327
Carrying case for TP 297	258-172	ZBFM	258-375	Line width 0.35 mm	256-326
	050 150	BNZ	258-377		050 500
Retractable handle	258-173	BN-ZB	258-378	Cleaning set	258-139
for carrying case		SS-ZB	258-379	suitable for cleaning all plotter	oens
		PAB	258-381		
		GPE	258-382	WAGO Pen Cleaner	258-140
		BMK, ESL label sheets	258-383		
				WAGO ink cartridges,	258-141
		Carrier plates for Siemens		black, for permanent marking,	
		Sirius 10 x 7, 20 x 7	258-384	not refillable (5 x 1 ml)	
		22 ×22	258-385		
		18 x28	258-386		
		Carrier plate for Weidmüller			
		MC Universal	258-387		
		MC SF4-6	258-388		
		Carrier plate for Wörtz/Allen-B	radley		
		Universal	258-389		
		Carrier plate for Möller			
		XB M22-XST	258-390		
		1		1	

# **Marking Accessories**

Marker cards
(plain)

Marker cards
(plain)

Group marking carrier



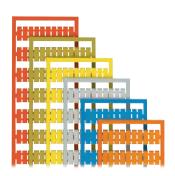




Description	Item No.	Description	ltem No.	Description	ltem No.
Marker cards and tags		Marker cards and tags		Group marking carrier	209-112
WSB 5 - 8 mm/0.197 in - 0.384 in	209-501	WMB 5 mm/0.197 in	793-501	for snapping into 10 mm/0.394	in wide
		WMB 4 - 4.2 mm/0.157 in -	4.2 mm/0.157 in - 0.165 in <b>793-4501</b> screwless end stops for center or side mo		
Additional item Nos.		WMB 5 - 5.2 mm/0.197 in -	0.205 in <b>793-5501</b>	for carrier plate (258-364)	
for colored marker cards		Additional item Nos. for colored marker cards			
yellow	/000-002	yellow	/000-002		
red	/000-005	red	/000-005		
blue	/000-006	blue	/000-006		
grey	/000-007	grey	/000-007		
orange	/000-012	orange	/000-012		
light green	/000-017	light green	/000-017		
green	/000-023	green	/000-023		
violet	/000-024	violet	/000-024		

Marker cards (plain)	Marker cards (plain)	Marker strips







Description	ltem No.	Description	Description Item I No.		ltem No.
Marker cards and tags		Marker cards and tags		Marker strips for series	
Miniature WSB	248-501	WSB 4 mm/0.157 in	209-701		
				TOPJOB®S white, plain, width	11 mm,
Additional item Nos.		Additional item Nos.		50 m roll	2009-110
for colored marker cards		for colored marker cards		300 m roll	2009-130
yellow	/000-002	yellow	/000-002		
red	/000-005	red	/000-005	870, 869, 862, 270	
blue	/000-006	blue	/000-006	white, plain, width 7.5 mm	
grey	/000-007	grey	/000-007	50 m roll	709-178
orange	/000-012	orange	,		709-188
light green	/000-017	light green	/000-017	translucent, plain, width 7.5 mm	
green	/000-023	green	/000-023	50 m roll	709-177
violet	/000-024	violet	/000-024	300 m roll	709-187



# Matrix of Devices Supported by the ProServe Marking Service





Thermal transfer printer TP 298



Version		TP 297	TP 298		
	Item No.	<b>Printer</b> 258-297	<b>Printer</b> 258-298		
Marker carriers	Marker strips 7.5 mm <sup>1)</sup> Item No. 50 m roll Item No. 300 m roll	709-177 —	709-177 709-187		
	Marker strips 11 mm <sup>2)</sup> Item No. 50 m roll Item No. 300 m roll	2009-110 —	2009-110 2009-130		
	WMB Item No.	_	_		
	WSB 5 mm Item No.	_	-		
	WSB 4 mm Item No.	_	_		
	Miniature WSB Item No.	_	_		
Interfaces		parallel serial	serial USB Ethernet		
Resolution	203 dpi 300 dpi	<u>x</u> _	-x		
	Labels	x	x		

 $<sup>^{\</sup>mbox{\tiny $1$}}$  suitable for series 870, 869, 862 and 270

<sup>2)</sup> suitable for the TOBJOB®S series

Thermal transfer printer TP 300





TP 300	IP 350
<b>Printer</b> 258-300	<b>Plotter</b> 258-350
709-177 709-187	709-177 709-187
2009-110 2009-130	2009-110 —
-	793-501 793-5401 793-5501
	209-501
-	209-701
-	248-501
parallel serial	parallel USB
-x	n.r.
Х	









Description			Item No.	Packunit pcs
TP 300	Resolution 300 dpi		258-300	1
System Data				
Printing method	Thermal/thermal transfer	Electronics		
Printhead system	Thick film	Processor 32 Bit ColdFire	64 MHz	
Print speed	150 mm/sec.	RAM	8 MB	
Print width	108.4 mm	ROM	2 MB Flash	
Label material.	Continuous mat. on rolls or paper transport	Slot for memory card	standard	
,	Thermal and standard paper, cardboard,	- CompactFlash Type 1		
	textil, plastic foil: PE, PP, PVC, PA	Real time clock	standard	
Material thickness/weight	0.07 - 0.3 mm / 60-300 g/m <sup>2</sup>	- for print-out of date and time	oran a a	
	5.57 5.55 mm / 55 555 g/ m	Operation panel as navigator pad	4/8	
Supply roll		- keys/indicators	17.0	
Roll diameter	max. 210 mm	LCD-grafic display	standard	
Core diameter	38.1 mm - 76 mm	- text 2 lines/20 characters, symbols	oran a a	
Width of liner	120 mm			
Label width	12 mm - 116 mm	Interfaces		
Label height	5 - 1000 mm	Serial RS 232 C	standard	
		- 1200 up to 230 400 bauds/8 bit	oran a a	
Transfer ribbon		RS 422, RS 485	optional	
Ink	inside or outside	- 1200 up to 230 400 bauds/8 bit	op.iioiidi	
Roll diameter	max. 80 mm	Parallel Centronics	standard	
Core diameter	25 mm	- bidirectional acc. to IEEE 1284	oran a a	
Running length variable	max. 500 m	Ethernet 10/100 Base T,	optional	
Width	max. 114 mm	LDP, RawIP-Printing, HTTP, SMTP,	op.iioiidi	
		DHCP, SNMP, Time, FTP		
Internal rewinder		Wireless LAN	on request	
Total diameter	max. 145 mm	USB Slave for PC connection	optional	
Core diameter	38.1 mm	Twingx / Coax Converter	optional	
Winding direction	only outside	- for IBM connection	op.iioiiai	
<b>9</b>	<b>,</b>	USB Master for keyboard/scanner	standard	
Dimensions		Peripheral connection	standard	
Height, depth, width	274 mm, 446 mm, 242 mm	. c.i.p.i.c.a. cc.iii.ca.	oran a a	
Weight	10 kg	Accessories (optional)		
Energy consumption	max. 250 W	Cutter, dispense key, external unwinder	external rewinder, memor	ry card Compact
		Flash Type 1 up to 64 MB, PC-keyboar		
Label sensor			1100, compa	2,200.0
Distance to guide edge	4 mm - 57.5 mm	Power supply	100 - 240 V ~ 50/60 Hz	z. PFC
See-through/reflective sensor	standard	Operating temperature/humididy	2.0 , 00 / 10	-, •
		non condensing	10 - 35°C / 30 - 85%	
		Safety regulations	CE, FCC class 1	
			, 1	

# Thermal Transfer Printer TP 298





Description			ltem No.	Packuni pcs
TP 298	Resolution 300 dpi		258-298	1
System Data				
Printing method	Thermal/thermal transfer	Electronics		
Printhead system	Thick film	Processor 32 Bit ColdFire	64 MHz	
Print speed	100 mm/sec.	RAM	8 MB	
Print width	108.4 mm	ROM	4 MB Flash	
Label material	Continuous mat. on rolls or paper transport	Slot for memory card	standard	
	Thermal and standard paper, cardboard,	- CompactFlash Type 1		
	textil, plastic foil: PE, PP, PVC, PA			
Material thickness/weight	0.07 mm - 0.3 mm / 60 g/m² -300 g/m²	Interfaces		
		Serial RS 232 C	standard	
Supply roll		Ethernet 10/100 Base T,	standard	
Roll diameter	max. 210 mm	USB for PC connection	standard	
Core diameter	38.1 mm - 76 mm			
Width of liner	120 mm	Accessories (optional)		
Label width	12 mm - 116 mm	Cutter, external unwinder, extern	al rewinder,	
Label height	5 mm - 1000 mm	memory card Compact Flash Typ		
Transfer ribbon		Power supply	100 - 240 V ~ 50/60 H	Hz, PFC
Ink	inside or outside	Operating temperature/humic	didy	
Roll diameter	max. 80 mm	non condensing	10 - 35°C / 30 - 85%	
Core diameter	25 mm	Safety regulations	CE, FCC class 1	
Running length variable	max. 500 m			
Width	max. 114 mm			
Internal rewinder				
Total diameter	max. 145 mm			
Core diameter	38.1 mm			
Winding direction	only outside			
Dimensions				
Height, depth, width	274 mm, 446 mm, 242 mm			
Weight	9 kg			
Energy consumption	max. 200 W			
Label sensor				
Distance to guide edge	4 mm - 57.5 mm			
See-through/reflective sensor	standard			



Description			ltem No.	Packunit pcs
TP 297	Resolution 203 dpi		258-297	1
System Data				
Printing method	Thermal/thermal transfer	Core diameter	min. 40 mm	
Printhead system	Thin-film transfer head	Roll diameter	200 mm	
Print resolution	203 dpi	Winding direction inside or o	utside	
Print speed	max. 76 mm/sec.			
Print width	max. 104 mm			
Font types	all font types supported by Windows,	Transfer ribbon		
	5 alphanumeric fonts, OCR-A + OCR-B	Length	max. 300 mm	
Character sets	all character sets supported by Windows,	Width	max. 114 mm	
	5 custom character sets	Core diameter	1"	
Font sizes	all font sizes supported by Windows,	Ink	inside or outside	
	continuously adjustable			
Font styles	TTF-font types, 5 custom fonts	Operation panel	Pause and feed, error	
Print directions	all directions supported by Windows	Operation paties	radae ana reca, error	
Barcodes	all directions supported by TTIIIdotts	Dimensions		
Code 39, Code 93		Height, depth, width	145 mm, 215 mm, 200 mi	n
Code 128 A, B, C	EAN-UPC Appendix 2 and 5	Depth with winder	450 mm	
Codabar	PDF417	Net weight	1.5 kg	
EAN 8, 13, 128	1 01 417	ivei weigiii	1.5 kg	
EAN/UCC E				
UPS Maxicode		Davier aumuli	100 - 240 V ~ 50/60 Hz	
Interleaved 2/5		Power supply Memory	1.5 MB Flash/2 MB DRAM	
	and the conditions of the decide of the conditions of	Label sensor		1
9 1	, width and ratio. Includes digit check, printed	Label sensor	Present sensor	
character quality check, and start/s	·	0 ::		
Graphic formats	every graphic format is supported by	Options		
	Windows	EPL-Zebra programming language	ge, input keyboard	
Interfaces	1=== 100 / It			
Parallel Centronics	IEEE 1284 compliant			
RS 232				
Peripheral connection	Dispense edge			
Labels and continuous material				
Label material.	Thermal and standard paper, plastic foil:			
Edber marenar,	PE, PP, PVC, PA			
Weight of adhesive labels	60 - 180g/m²			
Weight of cardboard	max. 180g/m <sup>2</sup>			
Label width	12 - 116 mm			
Width of liner	max. 116 mm			
Label height	10 - 2.286 mm			



Description		Item Pac No. pcs	kunit
IP 350		<b>258-350</b> 1	
System Data		Features	
Plot area	max. 440 mm x 305 mm	Robust design made of aluminum frames	
Interface	parallel (centronics)	No calibration required. The plotters can be easily replaced.	
	USB 1.1		
		Additional inputs and outputs are available to control the peripherical units.	
Language	HP-GL 7475A		
		Best possible sealing system of the plotter pens in the pen storage unit. This p	revents
Memory	16 MB	the ink from drying and clogging the pen tip. As such, the pens do not need	to be
Speed	max. 400 mm/sec.	removed after plotting.	
Drive system	Two-phase stepper motor		
		Markers with a maximum height of 10.5 mm can be plotted.	
Pen storage unit	max. 4 pens with best possible sealing system	Plotting special markers up to 15 mm is also possible.	
Plotter pen	Special plotter pens with HP receptacle		
Addressable resolution	0.01 mm	Preparatory functions, i.e. the plotter uses the pen in advance on a separate	media
Repeatability (accuracy)	0.05 mm	start the ink flow thereby allowing the first marker to be printed perfectly.	
Repeatability		· · · · · · · · · · · · · · · · · · ·	
when changing the pen	0.05 mm using pens of best quality	The marking software automatically identifies the marker card carrier plate by the plotter so that the most efficient combination of marker cards can be	
Voltage supply	via separate desktop power supply unit	the print job.	
,	equipped with exchangeable supply line		
Voltage range	Nominal voltage 120-240 V ~ 50-60 Hz		
	min. 90 V ~ max. 264 V ~		
Current consumption	0.3 A max. at 220 V ~		
Dimensions	660 mm x 440 mm x 125 mm		
Weight	8 kg		
Environmental requirements	Operating temperature: 10 °C - 35 °C		
	Relative air humidity: 35 % - 75 %		
Safety approvals	acc. to UL-UL1950		
	CSA-950/VDE EN60950		
Immunity to interference	acc. to FCC Class B		
•	FCC Part 15 and VDE Class B		
	EN 55022		

# Marker Cards – Self-Adhesive Marker Strips

WAGO marker cards for Series 260, computer marked, 40 self-adhesive strips per card

Height of marker strip 6 mm/0.236 in

WAGO marker cards for Series 261, computer marked, 40 self-adhesive strips per card

Height of marker strip 6 mm/0.236 in

WAGO marker cards for Series 262, computer marked, 40 self-adhesive strips per card

Height of marker strip 6 mm/0.236 in







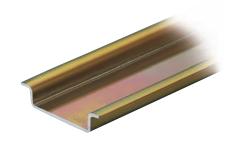
series 260  only with grid. spac.  1 - 10 (120x)  11- 20 (120x)  21- 30 (120x)  21- 30 (120x)  21- 50 (120x)  51- 60 (120x)  51- 70 (120x)	210-333/0500-0001 210-333/0500-0002 210-333/0500-0003 210-333/0500-0004 210-333/0500-0005 210-333/0500-0006	1 card 1 card 1 card 1 card 1 card	series 261	ac.210-333/0600-0001 210-333/0600-0103 210-333/0600-0104 210-333/0600-0104	1 card	series 262	-conductor terminal stri	ps
only with grid. spac.?  1 - 10 (120x)  11 - 20 (120x)  21 - 30 (120x)  21 - 30 (120x)  31 - 40 (120x)  41 - 50 (120x)  51 - 60 (120x)  61 - 70 (120x)	210-333/0500-0002 210-333/0500-0003 210-333/0500-0004 210-333/0500-0005 210-333/0500-0006	1 card 1 card 1 card 1 card	only with grid. sp. 1 - 12 (80x) 13 - 24 (80x) 25 - 36 (80x)	210-333/0600-0103 210-333/0600-0104				
1 - 10 (120x) : 11 - 20 (120x) : 21 - 30 (120x) : 21 - 30 (120x) : 31 - 40 (120x) : 41 - 50 (120x) : 51 - 60 (120x) : 61 - 70 (120x) :	210-333/0500-0002 210-333/0500-0003 210-333/0500-0004 210-333/0500-0005 210-333/0500-0006	1 card 1 card 1 card 1 card	1 - 12 (80x) 13 - 24 (80x) 25 - 36 (80x)	210-333/0600-0103 210-333/0600-0104		only with grid. sp		
11 - 20 (120x) : 21 - 30 (120x) : 31 - 40 (120x) : 41 - 50 (120x) : 51 - 60 (120x) : 51 - 70 (120x) :	210-333/0500-0003 210-333/0500-0004 210-333/0500-0005 210-333/0500-0006 210-333/0500-0007	1 card 1 card 1 card	1 - 12 (80x) 13 - 24 (80x) 25 - 36 (80x)	210-333/0600-0103 210-333/0600-0104			ac.210-333/0700-000	1 1 card
21 - 30 (120x) : 31 - 40 (120x) : 41 - 50 (120x) : 51 - 60 (120x) : 51 - 70 (120x) :	210-333/0500-0004 210-333/0500-0005 210-333/0500-0006 210-333/0500-0007	1 card 1 card	25 - 36 (80x)			1 - 20 (40x)	210-333/0700-0020	<b>0</b> 1 care
31 - 40 (120x) 2 41 - 50 (120x) 2 51 - 60 (120x) 2 61 - 70 (120x) 2	210-333/0500-0005 210-333/0500-0006 210-333/0500-0007	1 card	, ,	210-333/0600-0105	l 1 card	21 - 40 (40x)	210-333/0700-0108	<b>B</b> 1 care
41 - 50 (120x) 5 51 - 60 (120x) 5 61 - 70 (120x) 5	210-333/0500-0006 210-333/0500-0007		37 - 48 (80x)		1 card	41 - 60 (40x)	210-333/0700-0109	9 1 car
51 - 60 (120x) 5 61 - 70 (120x) 5	210-333/0500-0007	1 card		210-333/0600-0106	1 card			
61 – 70 (120x)						1 - 50 (20x)	210-333/0700-002	<b>1</b> 1 car
61 – 70 (120x)			41 - 50 (80x)	210-333/0600-0006	1 card			
, ,	210 222/0500 0000	1 card	51 - 60 (80x)	210-333/0600-0007	1 card	L, (1040x)	210-333/0700-0074	<b>4</b> 1 car
71 – 80 (120x)	210-333/0500-0008	1 card	61 - 70 (80x)	210-333/0600-0008	1 card	L <sub>2</sub> (1040x)	210-333/0700-0075	5 1 car
	210-333/0500-0009	1 card	71 - 80 (80x)	210-333/0600-0009	1 card	L <sub>3</sub> (1040x)	210-333/0700-0076	<b>6</b> 1 care
31 - 90 (120x) 2	210-333/0500-0010	1 card	81 - 90 (80x)	210-333/0600-0010	1 card	N (1040x)	210-333/0700-0077	<b>7</b> 1 care
91 – 100 (120x)	210-333/0500-0011	1 card	91 – 100 (80x)	210-333/0600-0011	1 card	PE (1040x)	210-333/0700-0078	<b>B</b> 1 care
ì			, ,			PEN (1040x)	210-333/0700-0079	9 1 care
1 - 50 (20x)	210-333/0500-0021	1 card	1 - 50 (20x)	210-333/0600-0021	1 card	, ,		
` '			, ,			suitable for 4	-conductor terminal stri	ps
_, (1440x) 2	210-333/0500-0074	1 card	L, (1200x)	210-333/0600-0074	l 1 card	series 262		
	210-333/0500-0075		L <sub>2</sub> (1200x)	210-333/0600-0075		only with arid, sp	ac.210-333/1200-000	1 1 care
- ' '	210-333/0500-0076		L <sub>3</sub> (1200x)	210-333/0600-0076		1 – 12 (40x)	210-333/1200-0103	
	210-333/0500-0077		N (1200x)	210-333/0600-0077		13 - 24 (40x)	210-333/1200-0104	
	210-333/0500-0078		PE (1200x)	210-333/0600-0078		25 - 36 (40x)	210-333/1200-0105	
` '	210-333/0500-0079		PEN (1200x)	210-333/0600-0079		37 - 48 (40x)	210-333/1200-010	
			(			49 - 60 (40x)	210-333/1200-0107	
suitable for 4-cc	onductor terminal strip	os	suitable for 4	-conductor terminal stri	ps	,		
series 260	•		series 261			1 - 24 (20x)	210-333/1200-0203	<b>3</b> 1 car
only with arid, spac.	210-333/0800-0001	1 card	only with arid, sp	ac. <b>210-333/1000-0001</b>	1 card	` '		
	210-333/0800-0002		1 - 16 (40x)	210-333/1000-0202		L <sub>1</sub> (600x)	210-333/1200-0074	<b>4</b> 1 car
	210-333/0800-0003		17 - 32 (40x)	210-333/1000-0204		L <sub>2</sub> (600x)	210-333/1200-0075	
, ,	210-333/0800-0004		33 - 48 (40x)	210-333/1000-0206		L <sub>3</sub> (600x)	210-333/1200-0076	
	210-333/0800-0005		49 - 64 (40x)	210-333/1000-0110		N (600x)	210-333/1200-0077	
	210-333/0800-0006		65 - 80 (40x)	210-333/1000-0111		PE (600x)	210-333/1200-0078	
(,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,			81 - 96 (40x)	210-333/1000-0112		PEN (600x)	210-333/1200-0079	
51 – 60 (80x)	210-333/0800-0007	1 card	97 – 112 (40x)	210-333/1000-0113		(333)		
	210-333/0800-0008		( )			61   201	202 203 204 205	206 207 208
, ,	210-333/0800-0009		1 - 36 (20x)	210-333/1000-0208	1 card	61 201	THE REAL PROPERTY OF THE PERSON	206 207 208
	210-333/0800-0010					100000	The same of the same of the same of	
	210-333/0800-0011	1 card	L, (720x)	210-333/1000-0074	l 1 card	61 201		206 207 208
(,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,			L <sub>2</sub> (720x)	210-333/1000-0075		61 201	202 203 204 205	206 207 208
1 - 40 (20x)	210-333/0800-0209	1 card	L <sub>3</sub> (720x)	210-333/1000-0076	1 card	61 201	202 203 204 205	206 207 208
(= 1.1)			N (720x)	210-333/1000-0077		61 201	202 203 204 205	206 207 208
_, (880x) 2	210-333/0800-0074	1 card	PE (720x)	210-333/1000-0078				206 207 208
	210-333/0800-0075		PEN (720x)	210-333/1000-0079				
2 ' '	210-333/0800-0076		,			61 201		206 207 208
,	210-333/0800-0077					61 201	202 203 204 205	206 207 208
	210-333/0800-0078					61 201	202 203 204 205	206 207 208
	210-333/0800-0079					1 776		
(000A)		· cara				Other marking	s with different spacings f	or

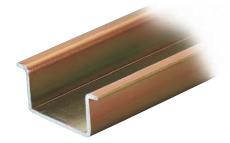
W/4GD®

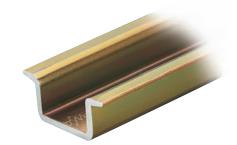
# **Carrier Rails and Mounting Accessories**

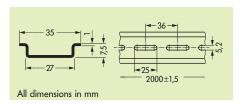
Carrier rail 35 x 7.5 mm, 1 mm/0.039 in thick, acc. to EN 60715, Steel, zinc-plated and yellow chromated I<sub>N</sub> 76 A (referred to a length of 1 m) Carrier rail 35 x 15 mm, 1.5 mm/0.059 in thick, acc. to EN 60715, Steel, zinc-plated and yellow chromated  $I_{\scriptscriptstyle N}$  125 A (referred to a length of 1 m)

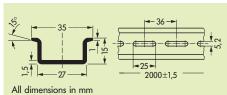
Carrier rail 35 x 15 mm, 2.3 mm/0.091 in thick, acc. to EN 60715, Steel, zinc-plated and yellow chromated I<sub>N</sub> 125 A (referred to a length of 1 m)

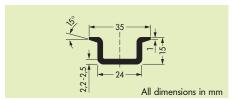












Item No.	ltem No.	Packunit pcs	Item No.	ltem No.	Packunit pcs	ltem No.	Packunit pcs
1 m/3'3" long	2 m / 6'6" long			2 m / 6'6" long		2 m / 6'6" long	
Steel rail 35 x 7	7.5 mm,1 mm/0.039	in th., unslotted	Steel rail 3	5 x 15 mm, 1.5 mm/0.	059 in th., unslotted	Steel rail 35 x 15 mm, 2.3 mm/0.	091 in th., unslotted
210-229	210-113	10		210-114	10	210-118	10
Steel rail 35 x 7.5 mm, 1 mm/0.039 in th., slotted			Steel rail 3	5 x 15 mm, 1.5 mm/0.	059 in th., slotted		
210-162	210-112	10		210-197	10		

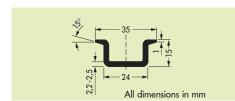
Carrier rail 35 x 15 mm, 2.3 mm/0.091 in thick, acc. to EN 60715, Copper, unplated I<sub>N</sub> 309 A (referred to a length of 1 m) Carrier rail 35 x 7.5 mm, 1.5 mm/0.059 in thick, acc. to EN 60715, Aluminum, unplated  $\rm I_{\rm N}$  76 A (referred to a length of 1 m)

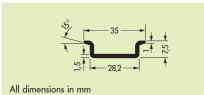
Angled support bracket steel, zinc-plated and yellow chromated











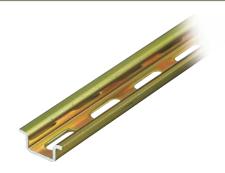
, M,5
55
Ø7 <b>1</b> 8
All 1:
All dimensions in mm

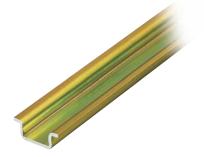
Item No.	Packunit pcs	Item No.	Packunit pcs	Item No.	Packunit pcs
2 m / 6'6" long		2 m / 6'6" long			
Copper carrier rail 35 x 15 mm,		Aluminum carrier rail 35 x 7.5 mm,		Angled support bracket, without screw	,
2.3 mm/0.091 in thick, unslotted		1.5 mm/0.059 in thick, unslotted		210-148	10
210-198	10	210-196	10	Screw M 5 x 8	
				210-149	100 (5 x 20)

Carrier rail 15 x 5.5 mm, 1 mm/0.039 in thick, acc. to EN 60715, Steel, zinc-plated and yellow chromated I<sub>N</sub> 57 A (referred to a length of 1 m)

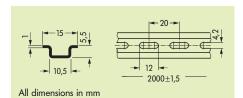
Carrier rail 15 x 5.5 mm, 1 mm/0.039 in thick, acc. to EN 60715, Steel, zinc-plated and yellow chromated I<sub>N</sub> 57 A (referred to a length of 1 m)

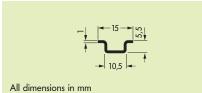
Carrier rail 15 x 5.5 mm, 1 mm/0.039 in thick, acc. to EN 60715, Aluminum, unplated I<sub>N</sub> 57 A (referred to a length of 1 m)

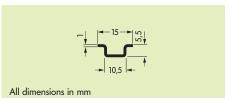










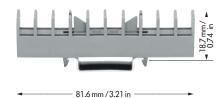


ltem No.	Packunit pcs	ltem No.	Packunit pcs	ltem No.	Packunit pcs
2 m / 6'6" long		2 m / 6'6" long		2 m / 6'6" long	
Steel carrier rail 15 x 5.5 mm,		Steel carrier rail 15 x 5.5 mm,		Aluminum carrier rail 15 x 5.5 mm,	
1 mm/0.039 in thick, slotted		1 mm/0.039 in thick, unslotted		1 mm/0.039 in thick, unslotted	
210-111	1	210-295	1	210-296	1

Collective carrier for standard and collective carrier for standard and special jumpers in longitudinal switching disconnect terminal blocks and transverse switching terminal blocks, Series 282, can be snapped onto DIN 35 rail Width 15.8 mm / 0.62 in (= 2 x pitch 8 mm)

Collective carrier for adjacent jumpers, for DIN 35 rail, 10.7 mm / 0.421 in wide

Screwless end stop, for DIN 15 rail 6 mm / 0.236 in wide







The collective carrier can be snapped onto DIN 35 rails. It serves as a holder for jumpers, e.g. during maintenance work.

	The collective carrier can be snapped onto carrier
	rails DIN 35. It serves for the storage of adjacent
	jumpers for rail-mounted terminal blocks for use if
	spares are necessary.

Item No.	Packunit pcs	ltem No.	Packunit pcs	ltem No.	Packunit pcs
Collective carrier for jumpers	s	Collective carrier for adjacent jum	pers	Screwless end stop, for DIN 15 rd	iil
282-369	25	209-100	50 (2 x 25)	249-101	25
suitable for jumpers for		suitable for adjacent jumpers of series		suitable for marking with WSB Quick	marking system
transverse switching t. bl.	282-811 and	279, 280, 281, 282 and 284		_	
longitudinal switch disc t bl	282-821	and hanana plua series 215			

# Transparent Covers for Rail-Mounted Terminal Blocks, Usable with Lead Seals Description and Handling

# Mounting



A cover carrier is snapped onto the rail

# Application .



Examples:
A cover, type 1, without . . .



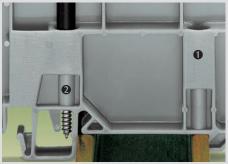
... or with safety warning

# Mounting



Screwing in the fixing screw **1** and the retaining screw **2** 

# Mounting



- 1 Fixing screw prevents the cover carrier from being moved on the rail

  Retaining screw – prevents lifting off from rail

# Cover, type 2, with safety warning

## Removal



Removal of a cover carrier from the carrier rail

# Marking



Pushing in a marking strip into the cover

## Lead seal



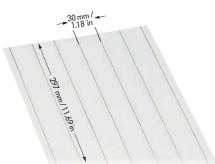
The cover may be sealed with a lead seal. If the cover is used without a lead seal the threaded stud can be broken off

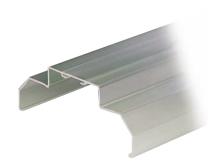
# Transparent Covers for Rail-Mounted Terminal Blocks, Usable with Lead Seals

Covers and cover carriers, type 1 suitable for rail-mounted terminal blocks series 279 to 282; 880 Miniature rail-mounted terminal blocks series 264 and sensor/actuator terminal blocks series 269 Marker card for group marking or safety warnings

Spare fixing/retaining screws and spare knurled nut Covers and cover carriers, type 2, suitable for rail-mounted terminal blocks series 283, 284, 285; double and triple deck terminal blocks series 280/281; topJob rail-mounted terminal blocks series 776, 777, 780 to 784; sensor/actuator terminal blocks series 280 and disconnect and measuring terminal blocks for transformer circuits series 282







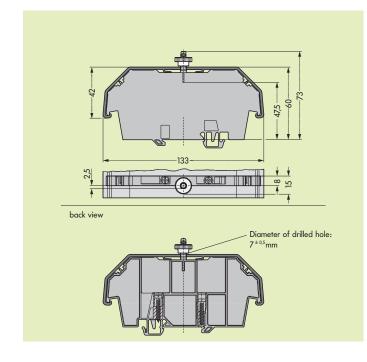
	Item No.	Packunit pcs		Item No.	Packunit pcs		Item No.	Packunit pcs
Cover, type 1,	,		Marker ca	ırd with 6 marking st	rips,	Cover, type 2,	,	
1 m/3'3" long,	suitable for cover co	arrier, type 1	plain	709-183	1	1 m/3'3" long,	suitable for cover of	carrier, type 2
transparent	709-153	10	Diskette w	vith WinWORD marki	ng system	transparent	709-154	1
				709-184	1			

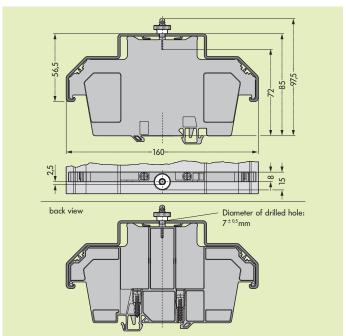






	ltem No.	Packunit pcs	Item No.	Packunit pcs		Item No.	Packunit pcs
Co	ver carrier, type 1,		Spare fixing/retaining screws		Cover carrie	r, type 2,	
incl	fixing/retaining screws and knu	rled nut	209-196	200 (8 x 25)	incl. fixing/retaining screws and knurled nut		
gre	709-167	10	Spare knurled nut		grey	709-168	10
			210-549	100 (4 x 25)			





# Stickers for Operating Instructions\*

for front-entry rail-mounted terminal blocks (horizontal version)

for CAGE CLAMP®

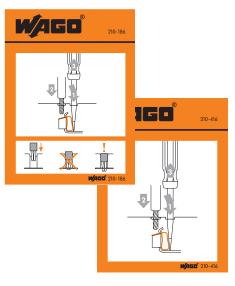
Size 60 mm  $\times$  65 mm/2.36 in  $\times$  2.48 in

for front-entry rail-mounted terminal blocks (angled version)

Size  $60 \text{ mm} \times 65 \text{ mm}/2.36 \text{ in} \times 2.48 \text{ in}$ 

for side-entry rail-mounted terminal blocks

Size 60 mm  $\times$  65 mm/2.36 in  $\times$  2.48 in

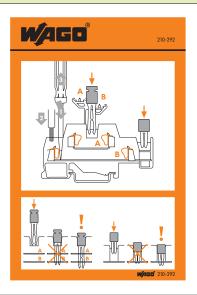


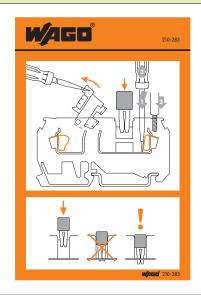




	Item No.	Packunit pcs		Item No.	Packunit pcs		ltem No.	Packunit pcs
Operating stic	cker,		Operating stick	ker,		Operating sti	cker,	
for front-entry	rail-mounted termina	al blocks series	for front-entry re	ail-mounted termin	al blocks, angled type	for side-entry r	ail-mounted termina	al blocks
279 to 285	210-186	100	series			series		
for CAGE CLA	MP®,		280 and 281	210-183	100	279 to 284	210-182	100
	210-416	100						

fo	or double and triple deck terminal blocks	for disconnect terminal blocks
Si	ize 80 mm x 104 mm/3.15 in x 4.09 in	Size 80 mm x 104 mm/3.15 in x 4.09 in





	ltem No.	Packunit pcs		ltem No.	Packunit pcs
Operating stick	ker,		Operatin	g sticker,	
for double and t	triple deck terminal	blocks	for discon	nect terminal blocks	
series			series		
280 and 281	210-292	100	280	210-283	100

<sup>\*</sup> Note: Handling instructions for rail-mounted terminal blocks are included in each carton.

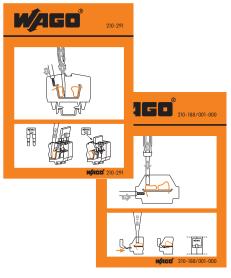
If self-adhesive stickers, as above, are required to give field wiring information – for example in enclosures, panels or switchboards – please order using the above part numbers.

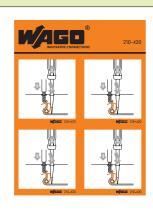
for front-entry miniature rail-mounted terminal blocks and front-entry terminal strips

Size 60 mm  $\times$  65 mm/2.36 in  $\times$  2.48 in

for rail mounted terminal blocks with CAGE CLAMP® COMPACT

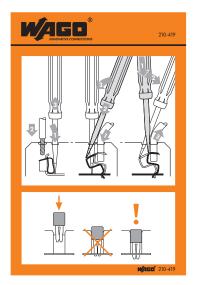
Size (1.18 x 1.26) in x 4

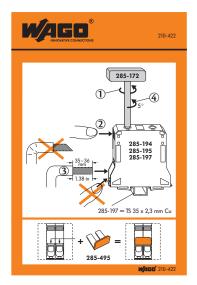


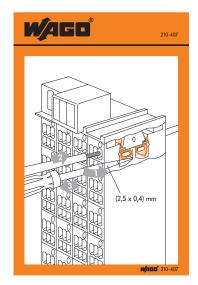


	ltem No.	Packunit pcs	ltem No.	Packunit pcs
Operating sti	cker, for front-entry minic	ature	Operating sticker,	
rail-mounted terminal blocks, series		for rail-mounted terminal blocks		
264	210-291	100	with CAGE CLAMP® COMPACT	
rail-mounted te	erminal blocks, series		series	
260 to 262	210-188/001-000	100	870 <b>210-420</b>	100

for FIT CLAMP, universal	for high current terminal	for matrix patchboards	
Size 80 mm x 104 mm/3.15 in x 4.09 in	Size 80 mm x 104 mm/3.15 in x 4.09 in	Size 80 mm x 104 mm/3.15 in x 4.09 in	







	ltem No.	Packunit pcs		ltem No.	Packunit pcs		Item No.	Packunit pcs
Operating	g sticker,		Operating	sticker,		Operating	g sticker,	
for FIT CLA	AMP, universal		for high cu	rrent terminal blocks		for matrix	patchboards	
series			series			series		
290	210-419	100	285	210-422	100	726	210-407	100



Screwdrivers with partially insulated shaft for optimum handling in terminal blocks and connectors

Screwdrivers
with partially insulated shaft
– Set –

Screwdrivers (DIN 5264) for optimum handling in terminal blocks and connectors

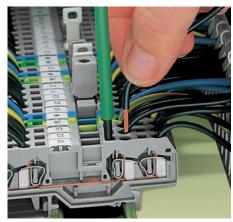






ltem No.	Packunit pcs	Item No.	Packunit pcs	ltem No.	Packunit pcs
Screwdriver with partially insulate	d shaft,	Screwdrivers with partially insu	ated shaft,	Screwdriver, short, blade 3.5 mm	x 0.5 mm/
type 1, blade 2.5 x 0.4 mm/0.098 in >	c 0.016 in,	– set –,		0.138 in x 0.020 in,	
suitable for series 279, 726, 727, 2001		types 1 – 3 see left		suitable for series 260, 261, 262, 26	64, 280, 281, 869
210-619	1	210-622	1	210-257	1
Screwdriver with partially insulate	d shaft,			Screwdriver, short angled, 3.5 m	nm x 0.5 mm/
type 2, blade 3.5 x 0.5 mm/0.137 in x	0.020 in,			0.138 in x 0.020 in, specially suitable	le for sensor and
suitable for series 260, 261, 262, 264,	270, 280, 281,			actuator terminal blocks of series 2	80 or for
290, 775, 776, 777, 769, 780, 781, 869	, 870, 880,			serie 260, 261, 262, 264, 280, 281,	869, 870, 880
2002, 2004				210-258	1
210-620	1				
Screwdriver with partially insulate	d shaft,				
type 3, blade 5.5 x 0.8 mm/0.217 in x	0.031 in,				
suitable for series 282, 283, 284, 285,	782, 783, 784,				
785, 2006, 2010, 2016					
210-621	1				

## **Application notes**



The blade dimensions of the a.m. screwdrivers are particularly appropriate for easy operation of front-entry terminal blocks.



Set of screwdrivers in a box



The blade dimensions of the a.m. screwdrivers (DIN 5264) are particularly appropriate for easy operation of front-entry sensor and actuator terminal blocks of series 280.

# Multipole operating tools for front-entry terminal blocks (insulated)

# Plunger, for side-entry rail-mounted terminal blocks





	ltem No.	Packunit pcs	Item No.	Packun pcs
Operating to	ols, solid non-conduc	ting material	Operating tool,	
suitable for se	ries 279		for side-entry rail-mounted termina	al blocks
1-way	209-129	1	series 279 and 280	
			210-143	1
suitable for se	ries 279			
2-way	279-432	1	Operating tool,	
3-way	279-433	1	for side-entry rail-mounted termina	al blocks
10-way	279-440	1	series 281, 282, 283 and 284	
			210-141	1
suitable for se	ries 264*, 280, 281**			
1-way	209-130	1		
2-way	280-432	1		
3-way	280-433	1		
4-way	280-434	1		
5-way	280-435	1		
6-way	280-436	1		
7-way	280-437	1		
8-way	280-438	1		
9-way	280-439	1		
10-way	280-440	1		
suitable for se	ries 281			
5-way	281-440	1		
,				
* only 1- and	2-way			
** only up to				



Commoning of front-entry through terminal blocks with comb type jumper bars with the aid of a 10-way operating tool.



The plunger is placed into the upper operating slot of the side-entry terminal block and the damp is hooked into the lateral operating hole. The contact is fully opened by pressing the handles together until they engage – both hands are then free for the preparation and introduction of the conductor into the terminal block. When operating the handles beyond the locked position the ratchet allows the tool to open and be removed from the terminal block.



# Crimping Tools Variocrimp 4, Variocrimp 16

Variocrimp 4
Crimping tool for ferrules
insulated and uninsulated
from 0.25 mm² – 4 mm²/AWG 24 – 12
weight 400 g/0.882 lbs

Variocrimp 16
Crimping tool for ferrules
insulated and uninsulated
from 6 mm² - 16 mm²/AWG 10 - 6
weight 580 g/1.28 lbs





Description	ltem No.	Packunit pcs	ltem No.	Packunit pcs
Crimping tool Variocrimp 4,	206-204	1		
0.25 mm <sup>2</sup> – 4 mm <sup>2</sup> /AWG 24 – 12				
6			206-216	1
Crimping tool Variocrimp 16,			200-210	
6 mm <sup>2</sup> – 16 mm <sup>2</sup> /AWG 10 – 6				

# **Application notes**

- With the Variocrimp 4 built-in crimping pressure plates control the crimping force automatically for the conductor cross section used.
   With the Variocrimp 16 it is necessary to select the wire gauge on the tool before crimping.
- Each tool has only one crimping station for all the wire sizes handled.
- Uniform compact crimping from all four sides for high conductor retention.
- No need to center the conductor in the ferrule sleeve.
- Conductor and ferrule insertion possible from both sides (for left- and right handed).
- Built-in ratchet to guarantee complete crimping every time.
- Tools open automatically after crimping operation is complete.
- $\bullet$  Comfortable handles for operator.



Introduce conductor with ferrule into crimping station.



Only for Variocrimp 16: Adjust conductor cross section with opened tool.



Squeeze handles until ratchet mechanism is released.



A perfect gastight crimp, both electrically and mechanically reliable.

# **Ferrules**

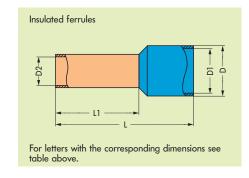
Insulated ferrules, electrolytic copper, electro-tin plated, acc. to DIN 46228, part 4/09.90 Uninsulated ferrules, electrolytic copper, electro-tin plated, acc. to DIN 46228, part 1/08.92

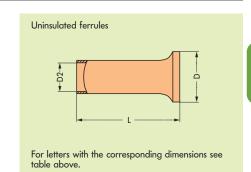




Slee	eve for	AWG	Color	Stripped length mm	L	L1	D mm	D1	D2	ltem No.	Packunit pcs
0.2	25 2	24	yellow	7.5	10.5	6.0	2.5	2.0	0.8	216-321	1000
0.2	25 2	24	yellow	9.5	12.5	8.0	2.5	2.0	8.0	216-301	1000
0.3	34 2	24	green	7.5	10.5	6.0	2.5	2.0	8.0	216-322	1000
0.3	34 2	24	green	9.5	12.5	8.0	2.5	2.0	8.0	216-302	1000
0.5	5 2	22	white	7.5	11.5	6.0	3.0	2.5	1.1	216-221	1000
0.5	5 2	22	white	9.5	13.5	8.0	3.0	2.5	1.1	216-201	1000
0.7	75 2	20	grey	8.0	12.0	6.0	3.3	2.8	1.3	216-222	1000
0.7	75 2	20	grey	10.0	14.0	8.0	3.3	2.8	1.3	216-202	1000
1.0	0 1	8	red	8.0	12.0	6.0	3.6	3.0	1.5	216-223	1000
1.0	0 1	8	red	10.0	14.0	8.0	3.6	3.0	1.5	216-203	1000
1.5	5 1	6	black	8.0	12.0	6.0	4.0	3.4	1.8	216-224	1000
1.5	5 1	6	black	10.0	14.0	8.0	4.0	3.4	1.8	216-204	1000
2.0	08 1	4	yellow	10.0	14.5	8.0	4.2	3.6	2.05	216-205	1000
2.5	5 1	4	blue	10.0	15.0	8.0	4.8	4.2	2.3	216-206	1000
4.0	0 1	2	grey	12.0	16.8	9.5	5.4	4.8	2.9	216-207	1000
6.0	0 1	0	yellow	14.0	20.0	12.0	6.8	6.2	3.5	216-208	100
10.0	0	8	red	16.0	21.0	12.0	8.1	7.5	4.6	216-209	100
16.0	0	6	blue	23.0	29.0	18.0	9.6	8.8	5.8	216-210	100

Sleeve f	for AWG	Stripped length mm	L	D mm	D2	Item No.	Packunit pcs
0.25	24	5	5	1.7	0.75	216-151	1000
0.25	24	7	7	1.7	0.75	216-131	1000
0.34	24	5	5	1.7	0.85	216-152	1000
0.34	24	7	7	1.7	0.85	216-132	1000
0.5	22	6	6	2.1	1.0	216-121	1000
0.5	22	8	8	2.1	1.0	216-101	1000
0.75	20	6	6	2.3	1.2	216-122	1000
0.75	20	8	8	2.3	1.2	216-102	1000
1.0	18	6	6	2.5	1.4	216-123	1000
1.0	18	8	8	2.5	1.4	216-103	1000
1.5	16	6	6	2.8	1.7	216-124	1000
1.5	16	8	8	2.8	1.7	216-104	1000
2.5	14	10	10	3.4	2.2	216-106	1000
4.0	12	10	10	4.0	2.8	216-107	1000
6.0	10	12	12	4.7	3.5	216-108	250
10.0	8	12	12	5.8	4.5	216-109	250
16.0	6	15	15	7.5	5.8	216-110	250







# **Stripping Tools**

Microstrip wire stripper 0.14 mm² – 1.5 mm²/AWG 24 – 16 solid and stranded, with wire cutter up to 1.5 mm²/AWG 16 solid and stranded weight 76 g/0.166 lbs

Stripping and cutting tool Quickstrip 10 0.02 mm² – 10 mm²/AWG 28 – 8 stranded (6 mm²/AWG 10 solid) with wire cutter up to 10 mm²/AWG 8 stranded (1.5 mm²/AWG 16 solid) weight 136 g/0.3 lbs

Stripping and cutting tool Quickstrip 16 4 mm² – 16 mm²/AWG 12 – 6

with wire cutter up to 10 mm²/AWG 8 stranded (1.5 mm²/AWG 16 solid) weight 136 g/0.3 lbs







	ltem No.	Packunit pcs		ltem No.	Packunit pcs		ltem No.	Packunit pcs
Microstrip wire	stripper and cutter		Stripping and cu	tting tool Quicks	trip 10	Stripping and a	utting tool Quicks	strip 16
	206-501	1		206-124	1		206-125	1
Accessories								
0	Spare stripping	unit,		Standard bla	de cassette		Blade casset	tte 16 mm²/AWG
	complete			0.02 - 10 mn	n <sup>2</sup> /AWG 34-8		4.0 - 16 mm	<sup>2</sup> /AWG 12-6
	206-502	1		206-126	1		206-128	1
	Spare blade,			"V" blade ca	ssette			
	for wire cutter			0.02 - 4 mm <sup>2</sup> /A	WG 34-12 for PTFE			
	206-503	1		206-127	1			

# Application notes

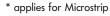
- Automatically adjusts to the wire size.
- No damage to wire strands.
- Gripping pressure of jaws adjusts automatically to wire insulation diameter.
- Full cycle strip jaws open after stripping, ensures no nicked strands.
- Exact strip length may be set by sliding of red setting stop.
- Replaceable stripping jaw assembly.
- Self-sharpening, fully protected wire cutter, also replaceable.\*
- Glass fiber reinforced polyamide tool body.

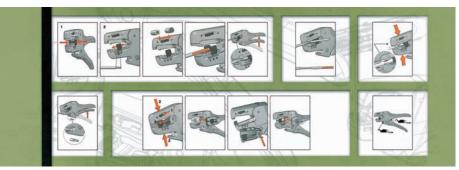






Stripping of wire.





Handling description included.

# **Voltage Testers and Testboy**

Voltage tester Profipol AC 12 V to 400 V DC 12 V to 500 V	Testboy	
weight 138 g/0.304 lbs		





	Item No.	Packunit pcs	Item No.	Packunit pcs
Voltage tester Pro	fipol		Testboy, with integrated flashlight	
	206-802	1	206-804	1
Voltage range	AC 12V up to	400 V	Voltage range 120 V up to AC 1000 V	
	DC 12V up to	500 V		
LED indication AC	12 V, 50 V, 100	V, 230 V, 400 V		
DC	12 V, 60 V, 120	V, 280 V, 500 V		
Type of protection	IP 65			
Operating time	30 s max.			
Temperature range	$-10^{\circ}$ up to + 5	0°C		

# **Application notes**



Voltage testing at push-wire connectors

- LED band provides clear voltage range readings.
   (white scale = AC voltage red scale = DC voltage)
- LED indication of polarity
- double-pole voltage testing
- type of protection IP 65
- switching is not necessary
- 85 cm long highly flexible and nonskid test cable



A device that will reliably detect A.C. voltages in cables, sockets, fuses, switches, connector boxes, etc.

# The following can be detected by the WAGO Testboy:

- Live conductors
- Line breaks
- Blown fuses
- Defective switches
- Defective lamps

WAGO contact paste "Alu-Plus" for the safe wiring of solid **1** aluminum conductors up to 4 mm<sup>2</sup>/AWG 12 in WAGO spring-clamp terminal block

Aluminum conductors according to IEC 61545, Class B, "Alloy 1370" with a tensile strength of 90 – 180 N/mm² and a tensile strain of 1 – 4%.

Use WAGO contact paste "Alu-Plus" when connecting solid aluminum wires in WAGO spring-clamp terminal blocks.

Please take note that the nominal currents must be adapted to the reduced conductivity of the aluminum wires:

 $2.5 \text{ mm}^2/\text{AWG } 14 = 16 \text{ A}$  $mm^2/AWG 12 = 22 A$ 



WAGO contact paste "Alu-Plus" for the safe wiring of solid aluminum wire up to 4 mm²/ AWG 12 in WAGO spring-clamp terminal blocks. Cleaning and greasing of the aluminum wire is no longer necessary. Use the WAGO contact paste "Alu-Plus" instead, which is directely injected into the conductor entry hole of WAGO terminal blocks by means of the handy syringe.

Aluminum conductors that clearly indicate corrosion effects (stained black) require mechanical clea-

This allows the easy connection of solid aluminum wire (in case of multipole terminal blocks, can also be mixed with copper wires).

## WAGO "Alu-Plus"

- automatically destroys the oxide film during clamping
- prevents fresh oxidation at the clamping point • prevents electrolytic corrosion between
- aluminum- and copper wires (in the same terminal block)
- offers permanent protection against corrosion

It is, of course, also possible to apply the WAGO "Alu-Plus" **in addition** on the whole surface of the aluminum wire before clamping.

Description	ltem No.	Packunit pcs
Syringe	249-130	20 (4 × 5)
Contents: 20 ml contact paste "Alu-Plus"		

## Application notes



## **WAGO Push-wire connectors**

1. Push nozzle of the "Alu-Plus" syringe into the <u>center</u> conductor entry hole of the WAGO junction box connector.

2. Press plunger until "Alu-Plus" is visible in the other holes.



# **WAGO Lighting connectors**

1. Push nozzle of the "Alu-Plus" syringe first into the <u>circular</u> and then into the square conductor entry hole of the WAGO lighting connector.

2. Press plunger down until the "Alu-Plus" has filled both holes.





## WAGO Rail-mounted terminal blocks (only up to 4 mm<sup>2</sup>/AWG 12)

1. For each conductor entry: Insert nozzle of the "Alu-Plus" syringe in every open conductor entry hole (one after the other).

2. Press plunger down until "Alu-Plus" has filled each of these



# Wire Cutter

Wire cutter acc. to VDE for copper and aluminum wires up to 35 mm²/AWG 2	
Weight 200 g / 0.441 lbs	



	Item No.	Packunit pcs
Wire cutter		
	206-118	1

# Application notes



Cutting of wire







# CERTIFICATE

### The Certification Body of TÜV Management Service GmbH

certifies that



#### WAGO Kontakttechnik GmbH

Werk 1: D-32423 Minden

D-99706 Sondershausen Werk 2:

WAGO Contact SA

CH-1564 Domdidier

WAGO Contact S.A. F-95947 Roissy CDG Cedex

has established and applies a Quality Management System for

### **ELECTRICAL INTERCONNECTIONS**

Development, production and sales of connecting components with spring clamp technology for the electrical and electronic industries like rail mounted terminal blocks. terminal block strips, terminal in general, plug and socket systems etc.

### **ELECTRONICC**

Development, production and sales of components for automation of machines, plants and buildings on the basis of field bus systems, pluggable and rail mounted electronic modules and electronic sub systems for the automation industries.

An audit was performed, Report No. 70024958

Proof has been furnished that the requirements according to

ISO 9001: 2000

are fulfilled. The certificate is valid until 2007-12-16

Certificate Registration No. 12 100 16077 TMS



M. Wags Munich, 2005-01-07



TGA-ZM-07-92

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# International Certification Organizations – Overview

A list of approvals (update: catalog deadline) is provided on pages 15.6 to 15.12.

Due to the numerous agencies and approvals as well as the ever-increasing number of new products, our online catalog provides you with complete up-to-date information at www.wago.com

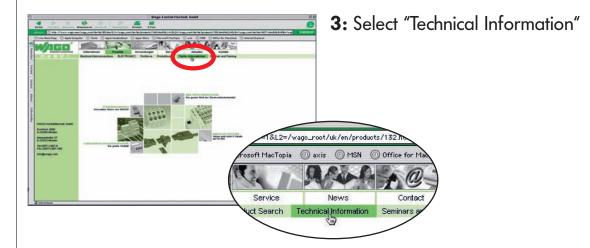
		Abbreviation for online search*			Abbreviation for online search*
<b>91</b> ®	Underwriters Laboratories USA http://www.ul.com	UL	N	Norges Elektriske Materialkontroll Norway http://express.nemko.com	NEMKO
(UL)	Underwriters Laboratories USA http://www.ul.com	UL	(S)	Svenska Elektriska Materielkontrollanstalten AB Sweden	SEMKO
c <b>FU</b> us	Underwriters Laboratories USA	cURus		http://www.semko.com	DEMICO
c UL us	http://www.ul.com  Underwriters Laboratories USA http://www.ul.com	cULus	D	Danmarks Elektriske Materielkontrol Denmark http://www.demko.dk	DEMKO
<b>(</b>	Canadian Standards Association Canada http://www.csa.ca	CSA	CENELEC	CERTIFICATION AGREEMENT Danmarks Elektriske Materielkontrol Denmark http://www.cenelec.org	CCA App. no. with DK
9918 http://www.v	VDE-Gutachten mit Fertigungsüberwachung Germany de.de/vde/html/e/home.htm	VDE	FI	SETI – FEMKO Sähkötarkastuskeskus Elinspecktionscentralen Finland http://www.seti.fi	
DVE	VDE – Deutscher Verband für Elektrotechnik Germany http://www.vde.de		FI	Sähkötarkastuskeskus Elinspecktionscentralen Finland http://www.fimko.com	FIMKO
VDE	VDE – Prüfbericht Germany		SABS	C I AC D	SABS
ÖVE	Österreichischer Verband für Elektrotechnik Austria http://www.ove.at	ÖVE	Pu	http://www.sabs.co.za RosTesT Russland http://www.rostest.ru	ROSTEST
( <del>\$</del> )	Schweizerischer Elektrotechnischer Verein Schwitzerland http://www.sev.ch/	SEV		Departamentul Moldovastandard Moldova	CSM
KEMA	N.V. tot Keuring van Elektrotechnische Materialien Netherlands	KEMA	http://www.	moldova.md/ro/government/oll/ D_STAND/en/strcent2.htm	ASTA
CENELEC C	http://www.kema.nl		M. P.	Great Britain http://www.astacertification.com	
CC A IVENA	N.V. tot Keuring van Elektrotechnische Materialien Netherlands http://www.cenelec.org	CCA App. no. with NL	RMTLY	Rheinisch-Westfälischer Technischer Überwachungsverein e.V. Germany http://www.rwtuv.de	RWTÜV

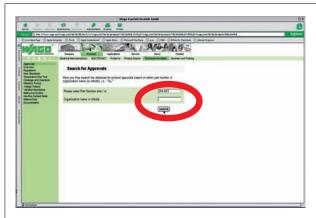
# International Certification Organizations – Overview (continued)

		Abbreviation for online search*			Abbreviation for online search*
	Elektrotechnický výskumný a projektový ústav Czech Republic http://www.ezu.cz	EZU	Shipbuil GL	ding approvals Germanischer Lloyd Germany	GL
BBD	Stowarzyszenie Elektrykow Polskich Poland http://www.bbj.pl	ВВЈ	BV	http://www.gl-group.com  Bureau Veritas France http://www.bureauveritas.fr	BV
BBJ	Stowarzyszenie Elektrykow Polskich Poland	SEP	Howls Register	Lloyd's Register of Shipping Great Britain http://www.lloydsregister.com	LR
CNET	http://www.sep.com.pl  Centre National d'Etudes des Télécommunications	CNET		NV – Det Norske Veritas Norway http://www.dnv.com	DNV
	http://www.lannion.cnet.fr  Laboratoire Central	LCIE		Russian Maritime Register of Shipping CIS http://www.rs-head.spb.ru	RMR
LCIE	des Industries Electriques France http://www.lcie.fr			Polski Rejestr Statkóv Poland http://www.prs.pl	PRS
FT ZU 57.210	Fyzikálne Technický Zkusební Ústav, Ostrava-Radvanice Czech Republic	FTZU		Korean Register of Shipping Korea http://www.krs.co.kr	KR
BK1 Ex	http://www.ftzu.cz  Robbanásbiztos Villamos Berendezések Hungary http://www.bki.hu	вкі	ABS	American Bureau of Shipping USA http://www.eagle.org	ABS
СВ	CB – TEST CERTIFICATE India http://www.ul-europe.com	СВ		Physikalisch Technische Bundesanstalt Germany	РТВ
СВ	CB – TEST CERTIFICATE China http://www.ul-europe.com	СВ	PID	Ex e II http://www.ptb.de Underwriters Laboratories	cURus-EX
	UL-International Demko A/S Denmark	ENEC	c <b>Su</b> us	USA http://www.ul.com	COROS-EX
138	http://www.ul-europe.com		KEMA	N.V. tot Keuring van Elektrotechnische Materialien Netherland http://www.kemaquality.com	KEMA-EX
			GOSENERO	90-Ex GOSENERGONADZOR Russia	GOSENER GO-EX
			FT ZV 19210	Fyzikálne Technický Zkusební Ústav, Ostrava-Radvanice Czech Republic http://www.ftzu.cz	FTZU
			BKI Ex	Robbanásbiztos Villamos Berendezések Hungary http://www.bki.hu	BKI-EX



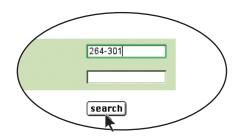


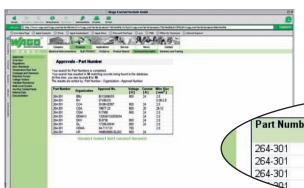




# 4: Entry 1

Item No.: e.g. "264-301"





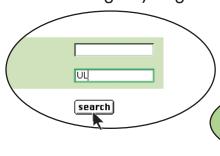
# Search result 1

All approvals related to that product will be displayed.

ımber	Organization	Approval No.	Voltage [V]	Current [A]	Wire Size [ mm <sup>2</sup> / AWG ]
	BBJ	B/12/696/03	800	24	2,5
	BV	07436/C0			0,08-2,5
	CCA	DK96-00357	800	24	2,5
	CSA	18677-23	600	20	26-12
3	CSM	017956	800	24	

# 4: Entry 2

Certification agency: e.g. "UL"



# Search result 2

All products approved by that agency will be displayed.

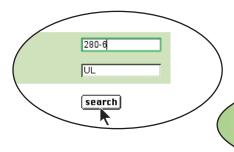
Part Number	Organization	Approval No.	Voltage [V]	Current [A]	Wire Size [ mm <sup>2</sup> / AWG ]
200-101	UL	E45172	300	10	18-16
200-105	UL	E45172	300	10	18-16
200-107	UL	E45172			18-16
W.	UL	E45172	300	10	18-16
	LII	F45172	300	10	

ed by: Part Number - Organization - Approval Number

# **4:** Entry **3**

Certification agency and item number range:

e.g. "UL" and Item-No. "280-6" or "280-60"



# Search result 3

The whole range of products approved by that agency will be displayed.

Part Number	Organization	Approval No.	Voltage [V]	Current [A]	Wire Size [ mm <sup>2</sup> / AWG ]
280-601	UL	E45172	600	20	28-12
280-602	UL	E45172	600	20	28-12
280-603	UL	E45172	600	20	28-12
	UL	E45172	300	15	28-12
		F45172	300	10	

# Approvals as per January 2004

Item No.	Approval- No.	Vol- tage V	Cur- rent A	Cross Section AWG/mm <sup>2</sup>	Item No.	Approval- No.	Vol- tage V	Cur- rent A	Cross Section AWG/mm²	Item No.	Approval- No.	Vol- tage V	Cur- rent A	Cross Section AWG/mm <sup>2</sup>	Item No.	Approval- No.	Vol- tage V	Cur- rent A	Cross Section AWG/mm²
AI.	UL –				280-562/ 281-411	E45172	300	15	28-12	280-687/ 999-950	E45172			28-12	281-623/ 281-418	E45172	110	10	28-12
77		writers L	aborat	ories	280-562/ 281-420	E45172	24	15	28-12	280-691 280-695	E45172 E45172	600 300	20 15	28-12 28-12	281-623/ 281-541	E45172	30	10	28-12
	USA				280-562/	E45172	24	15	28-12	280-805	E45172	300	15	28-12	281-623/	E45172	65	10	28-12
243-204	E45172	125		22-18	281-434 280-563	E45172	300	10	28-12	280-826 280-829	E45172 E45172	600 300	15 15	28-12 28-12	281-542 281-624	E45172	600	16	28-12
243-208	E45172	125		22-18	280-564 280-564/	E45172 E45172	300 24	15 15	28-12 28-12	280-830 280-831	E45172 E45172	600 600	20 20	28-12 28-12	281-629 281-630	E45172 E45172	600 600	20 20	28-12 28-12
243-304	E45172	125		22-18	281-483					280-832	E45172	600	20	28-12	281-631	E45172	600	20	28-12
243-308	E45172	125		22-18	280-565 280-565/	E45172 E45172	250 250	6,3 6,3	28-12 28-12	280-833 280-834	E45172 E45172	600 600	20 20	28-12 28-12	281-637 281-637/	E45172 E45172			28-12 28-12
243-504 243-508	E45172 E45172	125 125		22-18 22-18	280-321 280-566	E45172	300	10	28-12	280-835 280-836	E45172 E45172	600 300	20 15	28-12 28-12	999-950 281-651	E45172	600	20	28-12
					280-566/ 281-496	E45172	24	15	28-12	280-837 280-837/	E45172 E45172			28-12 28-12	281-652 281-653	E45172 E45172	600 600	20 20	28-12 28-12
243-804 243-808	E45172 E45172	125 125		22-18 22-18	280-567	E45172	300	15	28-12	999-950					281-654	E45172	600	20	28-12
260-1	E45172	300	10	28-16	280-568 280-570	E45172 E45172	300 300	15 15	28-12 28-12	280-838 280-839	E45172 E45172	300	15	28-12 28-12	281-656 281-657	E45172 E45172	300	10	28-12 28-12
	E45172		15/5	28-14	280-570/ 281-434	E45172	24	15	28-12	280-868 280-869	E45172 E45172	600 600	15 15	28-12 28-12	281-657/ 999-950	E45172			28-12
261		300/600			280-571 280-571/	E45172 E45172	300 24	6 15	28-12 28-12	280-870 280-871	E45172 E45172	600 600	15 15	24-10 28-12	281-658 281-659	E45172 E45172	300	15	28-12 28-12
262	E45172	300/600	20/5	28-12	281-413					280-874	E45172	600	15	28-12	281-660	E45172	300	15	28-12
264-1	E45172	600	20	28-12	280-572 280-572/	E45172 E45172	600 300	20 15	28-12 28-12	280-875 280-876	E45172 E45172	600 600	15 15	28-12 28-12	281-663 281-664	E45172 E45172	600 600	20 20	28-12 28-12
264-2	E45172	600	20	28-12	281-411 280-572/	E45172	24	15	28-12	280-879 280-880	E45172 E45172	600 600	15 15	28-12 28-12	281-668 281-672	E45172 E45172	600 600	20 10	28-12 28-12
264-3	E45172	600	20	28-12	281-420		0.4			280-881	E45172	600	15	28-12	281-678	E45172	600	20	28-12
264-357	E45172			28-12	280-572/ 281-434	E45172	24	15	28-12	280-882 280-883	E45172 E45172	600 600	15 15	28-12 28-12	281-679 281-681	E45172 E45172	600 600	20 20	28-12 28-12
264-7 264-727	E45172 E45172	600	20	28-12 28-12	280-573 280-574	E45172 E45172	300 300	10 15	28-12 28-12	280-884 280-885	E45172 E45172	600 600	15 15	28-12 28-12	281-683 281-684	E45172 E45172	300 600	15 20	28-12 28-12
264-727/ 999-950	E45172			28-12	280-574/ 281-483	E45172	24	15	28-12	280-90.	E45172	600	20	28-12	281-685 281-686	E45172 E45172	600 600	20 20	28-12 28-12
264-737	E45172			28-12	280-575	E45172	250	6,3	28-12	280-907	E45172	000	20	28-12	281-687	E45172	000	20	28-12
264-737/ 999-950	E45172			28-12	280-575/ 280-320	E45172	250	6,3	28-12	280-907/ 999-950	E45172			28-12	281-687/ 999-950	E45172			28-12
279-1	E45172	600	10	28-16	280-576 280-576/	E45172 E45172	300 24	10 15	28-12 28-12	280-912 280-916	E45172 E45172	300 300	15 15	28-12 28-12	281-691	E45172	600	20	28-12
					281-496 280-577	E45172	300	15	28-12	280-989 280-990	E45172 E45172	600 300	20 15	28-12 28-12	281-90. 281-907	E45172 E45172	600	20	28-12 28-12
279-604 279-621	E45172 E45172	600 600	10 10	28-16 28-16	280-577/	E45172	24	15	28-12	280-992	E45172	600	20	28-12	281-907/	E45172			28-12
279-623/ 281-411	E45172	24	10	28-16	281-496 280-578	E45172	300	15	28-12	280-993 280-994	E45172 E45172	600 600	20 20	28-12 28-12	999-950 281-912	E45172	300	15	28-12
279-624/	E45172	24	10	28-16	280-580 280-580/	E45172 E45172	300 24	15 15	28-12 28-12	280-995 280-996	E45172 E45172	600 600	20 20	28-12 28-12	281-916 281-993	E45172 E45172	300 600	10 20	28-12 28-12
281-413 279-626	E45172	600	10	28-16	281-434					280-998	E45172	600	20	28-12	281-994	E45172	600	20	28-12
279-68. 279-687	E45172 E45172	600	10	28-16 28-16	280-581/ 281-413	E45172	24	15	28-12	280-999	E45172	600	20	28-12	281-998	E45172	600	20	28-12
279-687/ 999-950	E45172			28-16	280-583 280-584	E45172 E45172	300 300	15 15	28-12 28-12	281-101 281-104	E45172 E45172	600 600	20 20	28-12 28-12	282-10. 282-107	E45172 E45172	600	30	24-10 24-10
					280-584/	E45172	24	15	28-12	281-107	E45172			28-12	282-122	E45172	600	10	24-10
279-8 279-837	E45172 E45172	600	10	28-16 28-16	281-483 280-585	E45172	300	15	28-12	281-107/ 999-950	E45172			28-12	282-124 282-126	E45172 E45172	600 600	10 10	24-10 24-10
279-837/ 999-950	E45172			28-16	280-586 280-586/	E45172 E45172	300 24	15 15	28-12 28-12	281-601	E45172	600	20	28-12	282-128 282-128/	E45172 E45172	600 24/110	10 10	24-10 24-10
279-838	E45172			28-16	281-496 280-587	E45172	300	15	28-12	281-603/ 281-411	E45172			28-12	281-413 282-128/	E45172	250	10	24-10
279-9	E45172	600	10	28-16	280-588	E45172	250	6,3	28-12	281-604	E45172	600	20	28-12	281-417				
279-907 279-907/	E45172 E45172			28-16 28-16	280-588/ 280-323	E45172	250	6,3	28-12	281-607 281-607/	E45172 E45172			28-12 28-12	282-128/ 281-418	E45172	24/110	10	24-10
999-950					280-592 280-593	E45172 E45172	300 300	15 15	28-12 28-12	999-950 281-610	E45172	300	10	28-12	282-131 282-133	E45172 E45172	300 300	30 30	24-10 24-10
280-10.	E45172	600	20	28-12		E45172				281-611	E45172	600	10 10	28-12	282-135	E45172	300	30	24-10
280-107	E45172			28-12	280-601 280-602	E45172	600 600	20 20	28-12 28-12	281-611/ 281-417	E45172	110/220		28-12	282-601	E45172	600	30	24-10
280-510 280-513	E45172 E45172	300/600 300	15/5 15	28-12 28-12	280-603 280-604	E45172 E45172	600 300	20 15	28-12 28-12	281-611/ 281-418	E45172	110/220	10	28-12	282-604 282-607	E45172 E45172	600	30	24-10 24-10
280-515	E45172	300	15	28-12	280-606 280-607	E45172 E45172	300	10	28-12 28-12	281-611/ 281-541	E45172	30/65	10	28-12	282-607/ 999-950	E45172			24-10
280-519 280-520	E45172 E45172	300 300	15 15	28-12 28-12	280-607/				28-12	281-611/	E45172	30/65	10	28-12	282-681	E45172	600	30	24-10
280-521 280-522	E45172 E45172	300 300	10 10	28-12 28-12	999-950 280-610	E45172	300	10	28-12	281-542 281-612	E45172	600	10	28-12	282-682 282-684	E45172 E45172	600 600	30 30	24-10 24-10
280-523 280-524	E45172 E45172	300 300	15 15	28-12 28-12	280-612 280-616	E45172 E45172	300 300	15 10	28-12 28-12	281-612/ 281-417	E45172	110/220	10	28-12	282-687 282-687/	E45172 E45172			24-10 24-10
280-525	E45172	300	10	28-12	280-621 280-622	E45172 E45172	600 300	15 15	28-12 28-12	281-612/ 281-418	E45172	110/220	10	28-12	999-950 282-691	E45172	600	30	24-10
280-526 280-527	E45172 E45172	300	10	28-12 28-12	280-624/	E45172	24	0,02	28-12	281-612/	E45172	30/65	10	28-12	282-694	E45172	600	30	24-10
280-529 280-530	E45172 E45172	300 300	15 15	28-12 28-12	281-413 280-626	E45172	600	15	28-12	281-541 281-612/	E45172	30/65	10	28-12	282-695 282-696	E45172 E45172	600 600	30 30	24-10 24-10
280-531 280-532	E45172 E45172	300 300	15 15	28-12 28-12	280-627 280-633	E45172 E45172	300 600	15 20	28-12 28-12	281-542 281-613	E45172	600	10	28-12	282-697 282-698/	E45172 E45172	600 24	30 30	24-10 24-10
280-533	E45172	300	15	28-12	280-634 280-637	E45172 E45172	600	20	28-12 28-12	281-613/ 281-417	E45172	110/220	10	28-12	281-413 282-698/	E45172	12	30	24-10
280-534 280-537	E45172 E45172	300	15	28-12 28-12	280-637/				28-12	281-613/	E45172	110/220	10	28-12	281-429				
280-543 280-547	E45172 E45172	300 300/600	15 15	28-12 28-12	999-950 280-640	E45172			28-12	281-418 281-613/	E45172	30/65	10	28-12	282-698/ 281-434	E45172	24	30	24-10
280-548	E45172			28-12	280-641 280-649	E45172 E45172	600 300	20 15	28-12 28-12	281-541 281-613/	E45172	30/65	10	28-12	282-698/ 281-449	E45172	24	30	24-10
280-549 280-550	E45172 E45172	300/600 300/600	15 15	28-12 28-12	280-651	E45172	600	20	28-12	281-542					282-699	E45172	600	30	24-10
280-551 280-552	E45172 E45172	300/600 300/600	15 15	28-12 28-12	280-653 280-654	E45172 E45172	600 600	20 20	28-12 28-12	281-616 281-619	E45172 E45172	600 600	10 20	28-12 28-12	282-8	E45172	600	30	24-10
280-553 280-554	E45172 E45172	300 300	15 15	28-12 28-12	280-656 280-671	E45172 E45172	300 600	10 20	28-12 28-12	281-620 281-622	E45172 E45172	600 600	20 10	28-12 28-12	282-901	E45172	600	30	24-10
280-555	E45172	300	15	28-12	280-672 280-675	E45172 E45172	600 600	20 10	28-12 28-12	281-622/ 281-417	E45172	220	10	28-12	282-902 282-904	E45172 E45172	600 600	30 30	24-10 24-10
280-556 280-557	E45172 E45172	300 300/600	15 15	28-12 28-12	280-676	E45172	300	15	28-12	281-622/	E45172	110	10	28-12	282-907	E45172	600	50	24-10
280-558 280-560	E45172 E45172	300	15	28-12 28-12	280-677 280-677/	E45172 E45172			28-12 28-12	281-418 281-622/	E45172	30	10	28-12	282-907/ 999-950	E45172			24-10
280-560/	E45172	24	15	28-12	999-950 280-678	E45172			28-12	281-541 281-622/	E45172	65	10	28-12	282-992 282-993	E45172 E45172	600 600	30 30	24-10 24-10
281-434 280-561	E45172	300	6	28-12	280-681	E45172	600	20	28-12	281-542									
280-561/ 281-413	E45172	24	15	28-12	280-683 280-684	E45172 E45172	300 600	15 20	28-12 28-12	281-623/	E45172 E45172	600 220	10 10	28-12 28-12	283-101 283-104	E45172 E45172	600 600	65 65	24-6 24-6
280-562	E45172	300	15	28-12	280-685 280-687	E45172 E45172	300	15	28-12 28-12	281-417					283-107	E45172			24-6

Item No.	Approval- No.	Vol- tage V	Cur- rent A	Cross Section AWG/mm²	Item No.	Approval- No.	Vol- tage V	Cur- rent A	Cross Section AWG/mm <sup>2</sup>	Item No.	Approval- No.	Vol- tage V	Cur- rent A	Cross Section AWG/mm²	Item No.	Approval- No.	Vol- tage V	Cur- rent A	Cross Section AWG/mm²
283-601	E45172	600	65	24-6	769-101/	E45171	600	20	28-12	769-219/	E45171	600	20	28-12	769-662/	E45171	600	20	28-12
283-604 283-607 283-607/	E45172 E45172 E45172	600	65	24-6 24-6 24-6	769-102	E45171	600	20	28-12	281-434 769-219/ 281-434	E45172	300/600	10/5	28-12	003-000     769-672/				
999-950 283-609	E45172			24-6	769-115 769-102	E45172	300/600	10/5	28-12	769-22. 769-22.	E45171 E45172	600 300/600	20 10/5	28-12 28-12	003-000 769-662/	E45171	600	20	28-12
283-671 283-672	E45172 E45172	600 600	65 65	24-6 24-6	769-121	E45172	300/600	10/5	28-12	769-227 769-227	E45171 E45172			28-12 28-12	004-000				
283-674 283-677	E45172 E45172	600	65	24-6 24-6	769-135					769-228/ 281-410	E45171	600	20	28-12	769-672/				
283-677/ 999-950	E45172			24-6	769-121	E45171	600	20	28-12	769-228/ 281-410	E45172	300/600	10/5	28-12	004-000				
283-691	E45172	600	65	24-6	769-135 769-121/	E45171	600	20	28-12	769-228/ 281-411	E45171	600	20	28-12	862	E45172	300/600	20/5	20-12
283-901	E45172	600	65	24-6	000-016 769-15.	E45172	300/600	10/5	28-12	769-228/	E45172	300/600	10/5	28-12	2001-120 . 2001-1207		600	15	22-14 22-14
283-902 283-904	E45172 E45172	600 600	65 65	24-6 24-6	769-15. 769-161	E45171 E45171	600 600	20 20	28-12 28-12	281-411 769-229/	E45171	600	20	28-12	2001-130 .	E45172	600	15	22-14
283-907 283-907/	E45172 E45172			24-6 24-6	769-161	E45172	300/600	10/5	28-12	281-413 769-229/	E45172	300/600	10/5	28-12	2001-1307	E45172			22-14
999-950 283-992	E45172	600	65	24-6	769-162/ 769-313	E45172	300/600	10/5	28-12	281-413 769-229/	E45171	600	20	28-12	2001-140. 2001-1407		600	15	22-14 22-14
283-998	E45172	600	65	24-6	769-162/ 769-313	E45171	600	20	28-12	281-434 769-229/	E45172	300/600	10/5	28-12	2002-120 .		600	20	22-12
284-101 284-104	E45172 E45172	600 600	50 50	24-8 24-8	769-163/ 769-313	E45172	300/600	10/5	28-12	281-434 769-23.	E45171	600	20	28-12	2002-1207		000	20	22-12
284-107	E45172	000	00	24-8	769-163/ 769-313	E45171	600	20	28-12	769-23. 769-237	E45172 E45172	300/600	10/5 10/5	28-12 28-12	2002-130 .		600	20	22-12
284-601	E45172	600	50	24-8	769-164/ 769-313	E45171	600	20	28-12	769-237	E45171			28-12	2002-1307				22-12
284-604 284-607	E45172 E45172	600	50	24-8 24-8	769-164/ 769-313	E45172	300/600	10/5	28-12	769-238/ 281-410	E45172	300/600	10/5	28-12	2002-140. 2002-1407		600	20	22-12 22-12
284-607/ 999-950	E45172			24-8	769-165/	E45171	600	20	28-12	769-238/ 281-410	E45171	600	20	28-12	2004-120 .	. E45172	600	30	20-10
284-621 284-624	E45172 E45172	600 600	115 115	24-8 24-8	769-313 769-165/	E45172	300/600	10/5	28-12	769-238/ 281-411	E45172	300/600	10/5	28-12	2004-1207				20-10
284-681 284-682	E45172 E45172	600 600	50 50	24-8 24-8	769-313 769-171	E45171	600	20	28-12	769-238/ 281-411	E45171	600	20	28-12	2004-130 .		600	30	20-10
284-684 284-687	E45172 E45172	600	50	24-8 24-8	769-171 769-176	E45172 E45172	300/600 300/600	10/5 10/5	28-12 28-12	769-239/ 281-413	E45171	600	20	28-12	2004-1307				20-10
284-687/	E45172			24-8	769-176 769-181	E45171 E45172	600 300/600	20 10/5	28-12 28-12	769-239/	E45172	300/600	10/5	28-12	2004-140. 2004-1407		600	30	20-10 20-10
999-950 284-691	E45172	600	50	24-8	769-181	E45171	600	20	28-12	281-413 769-239/	E45171	600	20	28-12	2006-120 .	. E45172	600	50	20-8
284-901	E45172	600	50	24-8	769-182/ 769-314	E45171	600	20	28-12	281-434 769-239/	E45172	300/600	10/5	28-12	2006-1207	E45172			20-8
284-902 284-904	E45172 E45172	600 600	50 50	24-8 24-8	769-182/ 769-314	E45172	300/600	10/5	28-12	281-434					2006-130 . 2006-1307		600	50	20-8 20-8
284-907 284-907/	E45172 E45172			24-8 24-8	769-183/ 769-314	E45172	300/600	10/5	28-12	769-602	E45172	300/600	10/5	28-12			/00	0.5	
999-950		600	50		769-184/ 769-314	E45172	300/600	10/5	28-12	769-615					2016-120 . 2016-1207		600	85	20-4 20-4
284-992 284-993	E45172 E45172	600	50	24-8 24-8	769-184/ 769-314	E45171	600	20	28-12	769-602	E45171	600	20	28-12	2016-130 .		600	85	20-4
285-194	E45172	600	200	4-3/0"str"	769-185/ 769-314	E45172	300/600	10/5	28-12	769-602 769-602/	E45171	600	20	28-12	2016-1307	E45172			20-4
285-195 285-197	E45172 E45172	600	200	4-3/0"str" 4-3/0"str"	769-185/	E45171	600	20	28-12	001-000									
285-634	E45172	600	115	10-2"s","str"	769-314 769-191	E45172	300/600	10/5	28-12	769-615/									
285-635 285-637	E45172 E45172	600	115	10-2"s","str" 10-2"s","str"	769-191 769-192/	E45171 E45172	600 300/600	20 10/5	28-12 28-12	769-	E45172	300/600	10/5	28-12					
285-637/ 999-950	E45172			10-2"s","str"	769-319 769-192/	E45171	600	20	28-12	001-000						UL –			
726-1	E45172	300	10	28-16/28-18	769-319 769-193/	E45172	300/600	10/5	28-12	769-615/ 001-000					(II)		vriters Lo	abora	tories
				28-14/28-18	769-319 769-193/	E45171	600	20	28-12	769-602/ 002-000	E45172	300/600	10/5	28-12		USA			
726-2	E45172	300	10		769-319 769-194/	E45172	300/600	10/5	28-12	1									
726-3	E45172	300	10	28-16/28-18	769-319					769-615/ 002-000					222-413	E69654	600	20	28-12"s","str"
726-4	E45172	300	10	28-16/28-18	769-194/ 769-319	E45171	600	20	28-12	769-602/ 002-000	E45171	600	20	28-12	224-101	E69654	300	20	14-12"s"/ 20-16"s"/"str
726-521	E45172	300	10	28-14/28-18	769-195/ 769-319	E45171	600	20	28-12	769-615/					224-104	E69654	300	20	14-12"s"/ 20-16"s"/"str
726-60. 726-61.	E45172 E45172	300 300	10 10	24-6/28-14 24-6/28-14	769-195/ 769-319	E45172	300/600	10/5	28-12	002-000					224-112	E69654	300	4	18-16"s"/ 20-16"s"/"str
726-62.	E45172			24-6/28-14	769-20.	E45171	600	20	28-12	769-602/ 004-000	E45171	600	20	28-12	224-114	E69654	300	20	18-16"s"/
726-65. 726-66.	E45172 E45172	300 300	10 10	24-6/28-14 24-6/28-14	769-20. 769-207	E45172 E45171	300/600	10/5	28-12 28-12	769-615/					004.00	E/0/5:	000	00	20-16"s"/"str
726-67.	E45172			24-6/28-14	769-207 769-208/	E45172	600	20	28-12 28-12 28-12	004-000 769-602/	E45172	300/600	10/5	28-12	224-201	E69654	300	20	20-16
726-7	E45172	300	10	28-16/28-18	281-410					004-000	L45172	300/000	10/ 5	20-12	273-100 273-101	E69654 E69654	600 600	10 10	20-16"s" 20-16"s"
726-8	E45172	300	10	28-14/28-18	769-208/ 281-410	E45172	300/600	10/5	28-12	769-615/					273-102 273-103	E69654 E69654	600 600	20 20	18-12"s" 16-14"s"
727	E45172	300	10	28-16	769-208/ 281-411	E45171	600	20	28-12	769-632	E45172	300/600	10/5	28-12	273-104 273-105	E69654 E69654	600 600	20 20	18-12"s" 18-12"s"
69-101	E45172	300/600	10/5	28-12	769-208/ 281-411	E45172	300/600	10/5	28-12	769-642					273-108 273-112	E69654 E69654	600 600	10 20	20-16"s" 18-12"s"
69-115					769-209/ 281-413	E45172	300/600	10/5	28-12	769-632	E45171	600	20	28-12	273-153	E69654	600	10	20-16"s"
769-101/ 000-016	E45171	600	20	28-12	769-209/ 281-413	E45171	600	20	28-12	769-642					273-155 273-158	E69654 E69654	600 600	10 10	20-16"s" 20-16"s"
769-101/ 021-000	E45172	300/600	10/5	28-12	769-209/	E45171	600	20	28-12	769-632/ 003-000	E45171	600	20	28-12	273-252	E69654	600	20	18-12"s"
769-115/					281-434 769-21.	E45171	600	20	28-12	769-642/					273-253 273-254	E69654 E69654	600 600	20 20	18-12"s" 18-12"s"
021-000	E 4 E 3 T3	,,,,	00	00.10	769-21. 769-217	E45172 E45171	300/600	10/5	28-12 28-12	003-000	F.45377	,	00	00.10	273-255 273-258	E69654 E69654	600 600	20 15	18-12"s" 16-14"s"
769-101/ 022-000	E45171	600	20	28-12	769-217 769-218/	E45172 E45171	600	20	28-12 28-12	769-632/ 004-000	E45171	600	20	28-12	273-403 273-453	E69654 E69654	600 600	30 30	10-12"s" 10-12"s"
769-115/					281-410 769-218/	E45172	300/600	10/5	28-12	769-642/									
022-000	E45172	300/400	10/5	28-12	281-410	E45172		10/5		004-000	E45171	600	20	28-12	773-208	E69654	600	20	18-12"s", 22-16str
769-101/ 022-000	E431/2	300/600	10/5	20-12	769-218/ 281-411		300/600		28-12	769-662	E431/1	600	20	20-12					
769-115/					769-218/ 281-411	E45171	600	20	28-12	769-672 769-662	E45172	300/600	10/5	28-12					
022-000 769-101/	E45172	300/600	10/5	28-12	769-219/ 281-413	E45171	600	20	28-12	769-672									
022-016				- <del>-</del>	769-219/ 281-413	E45172	300/600	10/5	28-12										
					1					1					1				

Item No.	Approval- No.	Vol- tage V	Cur- rent A	Cross Section AWG/mm²	Item No.	Approval- No.	Vol- tage V	Cur- rent A	Cross Section AWG/mm²	Item No.	Approval- No.	Vol- tage V	Cur- rent A	Cross Section AWG/mm <sup>2</sup>	Item No.	Approval- No.	Vol- tage V	Cur- rent A	Cross Section AWG/mm <sup>2</sup>
. <b>91</b> 2	CUR US S Underv		abora	tories	<b>(P</b>	CSA – C	tion	ın Sta	ndard	280-524 280-525 280-526 280-527	18677-26 18677 18677 18677-26	300/600 300 300 300/600	20/5 15 15 20/5	28-12 28-12 28-12 28-12	280-901 280-902 280-903 280-904	18677 18677 18677-22 18677	600 600 600	25 25 15 25	26-12 26-12 28-12 26-12
	USA					Canada	ı			280-529	18677-26	300/600	20/5	28-12	280-905	18677-22	600	15	28-12
281-530	E45172	300	20	28-12	224-1	154112-	300		14-12"s"/	280-530 280-531	18677-26 18677	300/600 300	20/5 20	28-12 28-12	280-906 280-907	18677-22 18677-15	600	15	28-12 28-12
290-661	E45172	300/150	10	22-16"s"/"str"/		1059435			20-16"rig"	280-532 280-533	18677 18677-26	300 300/600	20 20/5	28-12 28-12	280-907/ 999-950	18677-15			26-14
				22-18"s"	224-201	154112-	300		20-16"rig"	280-534	18677-26	300/600	20/5	28-12	280-912	18677	300	15	26-14
290-664	E45172	300/150	10	22-16"s"/"str"/ 22-18"s"		1059435				280-537 280-543	18677-26 18677-26	300/600 300/600	20/5 20/5	28-12 28-12	280-916 280-946	18677 18677-22	300 600	15 15	26-14 28-12
290-667	E45172			22-16"s"/"str"/ 22-18"s"	243-20.	18677-31	150		22-20mixed/ (4x18)	280-547	18677-27	300/600	20/5	28-12	280-989	18677-22	600	15	28-12
290-681	E45172	300/150	10	28-12"sol"/"str"						280-548 280-549	18677-27 18677-27	300/600 300/600	20/5 20/5	28-12 28-12	280-99.	18677-22	600	15	28-12
290-684 290-687	E45172 E45172	300/150	10	28-12"sol"/"str" 28-12"sol"/"str"	243-30.	18677-31	150		22-20mixed/ (4x18)	280-550 280-551	18677-27 18677-27	300/600 300/600	20/5 20/5	28-12 28-12	281-10. 281-107	18677-5 18677-15	600	65	26-12 26-12
290-901 290-904	E45172 E45172	300/150 300/150	10 10	28-12"sol"/"str" 28-12"sol"/"str"	243-50.	18677-31	150		22-20mixed/	280-552	18677-27 18677-52	300/600 300	20/5 15	26-14 28-12					
290-907	E45172			28-12"sol"/"str"	245-50.	100/7-31	150		(4x18)	280-554 280-555	18677-52	300	15	28-12	281-511 281-512	18677-45 18677-45			
290-961	E45172	300/150	10	22-16"s"/"str"/ 22-18"s"	243-80.	18677-31	150		22-20mixed/	280-556 280-557	18677-52 18677-52	300 300	15 15	28-12 28-12	281-530	154112-1014	4215 300	25	28-12
290-964	E45172	300/150	10	22-16"s"/"str"/ 22-18"s"					(4×18)	280-558 280-559	18677-27 18677-52	300/600 300	20/5 15	28-12 28-12	281-601 281-604	18677-48 18677	600 600	20 20	28-12 26-12
290-967	E45172			22-16"s"/"str"/	260	18677-45	300	15	24-16	280-56.	18677-52	300	15	28-12	281-607	18677-15	600	20	26-12
				22-18"s"	261	18677-45	300/600	20/5	26-14	280-56./ 280-57.	18677-52 18677-52	300 300	15 15	28-12 28-12	281-607/ 999-950	18677-15			26-12
869-1	E45172	300/600	20/5	28-12	262	18677-45	300/600	20/5	26-12	280-57./ 280-580	18677-52 18677-52	300 300	15 15	28-12 28-12	281-610 281-611	18677 18677-36	600 600	15 10	26-12 28-12
869-2	E45172	300/600	20/5	28-12						280-584	18677-52	300	15	28-12	281-611/	18677-36	110/220	10	28-12
869-2	E45172	300/600	20/5	28-12	264-102	18677-23	600	20	26-12	280-584/ 281-483	18677-52	300	15	28-12	281-417 281-611/	18677-36	110/220	10	28-12
870-101	E45172	300/600	20/5	28-12	264-3.7	18677-23			26-12	280-585 280-586	18677-52 18677-52	300 300	15 15	28-12 28-12	281-418 281-611/	18677-36	15/30	10	28-12
870-102	E45172	300/600	20/5	28-12	264-727	18677-23			26-12	280-587	18677-52	300	15	28-12	281-541				
870-103 870-104	E45172 E45172	300/600 300/600	20/5 20/5	28-12 28-12	264-727/ 999-950	18677-23			26-12	280-588 280-588/	18677-52 18677-52	300 300	15 15	28-12 28-12	281-611/ 281-542	18677-36	30/65	10	28-12
870-107 870-108	E45172 E45172	300/600	20/5	28-12 28-12	264-737 264-737/	18677-23 18677-23			26-12 26-12	280-323 280-592		300	15	28-12	281-612	18677-36 18677-36	600 110/220	10 10	28-12 28-12
870-109	E45172	300/600	20/5	28-12	999-950	100//-23			20-12	280-593	18677-52 18677-52	300	15	28-12	281-612/ 281-417	180//-30			
870-117 870-127	E45172 E45172	300/600 300/600	20/5 20/5	28-12 28-12		154112-				280-60.	18677	600	25	28-12	281-612/ 281-418	18677-36	110/220	10	28-12
870-501	E45172		20/5	28-12	273-100 273-101	1059435 1059435	600 600	10 10	20-16"s"	280-607	18677-15			28-12 28-14	281-612/ 281-541	18677-36	15/30	10	28-12
870-502	E45172	300/600 300/600	20/5	28-12	273-102	1059435	600	20	20-16"s" 18-12"s"	280-607/ 999-950	18677-15			28-14	281-541	18677-36	30/65	10	28-12
870-503 870-504	E45172 E45172	300/600 300/600	20/5 20/5	28-12 28-12	273-103 273-104	1059435 1059435	600 600	10 20	20-16"s" 18-12"s"	280-610 280-612	18677 18677	600 600	15	28-14 28-14	281-542 281-613	18677-36	600	10	28-12
870-507 870-508	E45172 E45172		20/5	28-12 28-12	273-105 273-108	1059435 1059435	600	20 10	18-12"s"	280-616	18677	600	15	28-14	281-613/	18677-36	110/220	10	28-12
870-509	E45172	300/600 300/600	20/5	28-12	273-112	1059435	600 600	20	20-16"s" 18-12"s"	280-621 280-622	18677-7 18677-7	600 600	15 15	28-14 28-14	281-417 281-613/	18677-36	110/220	10	28-12
870-517 870-527	E45172 E45172	300/600 300/600	20/5 20/5	28-12 28-12	273-114 273-153	1059435 1059435	600 600	20 10	22-12"s" 20-16"s"	280-626 280-627	18677-7 18677-7	600 600	20 25	28-12 28-12	281-418 281-613/	18677-36	15/30	10	28-12
870-531 870-532	E45172	300/600	20/5 20/5	28-12 28-12	273-155	1059435	600 600	10 10	20-16"s"	280-633	18677-7	600	25	28-12	281-541				
870-533	E45172 E45172	300/600 300/600	20/5	28-12	273-158	1059435	600	10	20-16"s"	280-634 280-637	18677-7 18677-15	600	25	28-12 28-12	281-613/ 281-542	18677-36	30/65	10	28-12
870-534 870-535	E45172 E45172	300/600 300/600	20/5 20/5	28-12 28-12	273-252	154112- 1059435	600	20	18-12"s"	280-637/ 999-950	18677-15			28-12	281-619 281-620	18677-22 18677-22	600 600	15 10	26-12 28-12
870-536 870-377	E45172 E45172	300/600	20/5	28-12 28-12	273-253 273-254	1059435 1059435	600 600	20 20	18-12"s" 18-12"s"	280-641	18677-7 18677	600 600	25 25	28-12 28-12	281-622	18677-22	600	10	28-12
870-538	E45172	300/600	20/5	28-12	273-255	1059435	600	20	18-12"s"	280-646 280-650	18677-26	600	15	28-12	281-622/ 281-417	18677-36	110/220		28-12
870-539 870-551	E45172 E45172	300/600 300/600	20/5 20/5	28-12 28-12	273-258	1059435	600	20	18-14"s"	280-651 280-653	18677 18677-22	600 600	25 15	28-12 28-12	281-622/ 281-418	18677-36	110/220	10	28-12
870-553 870-556	E45172 E45172	300/600 300/600	20/5 20/5	28-12 28-12	273-4	154112- 1059435	600	30	14-10"s"	280-654 280-656	18677 18677	600 600	25 25	28-12 28-12	281-622/ 281-541	18677-36	15/30	10	28-12
870-557	E45172			28-12	270 4		000	50	14 10 3	280-671	18677-22	600	15	28-12	281-622/	18677-36	30/65	10	28-12
870-558 870-559	E45172 E45172	300/600 300/600	20/5 20/5	28-12 28-12	279-10.	154112- 1327715	600	15	28-16	280-672 280-676	18677-22 18677-22	600 600	15 15	28-12 28-12	281-542 281-623	18677-36	600	10	28-12
870-567 870-577	E45172 E45172	300/600 300/600	20/5 20/5	28-12 28-12		154112-				280-677 280-677/	18677-15 18677-15			28-12 28-12	281-623/ 281-417	18677-36	110/220	10	28-12
					279-604	1327715	600	15	28-16	999-950					281-623/	18677-36	110/220	10	28-12
870-68.	E45172	300/600	20/5	28-12	279-621 279-626	1327715 1327715	600 600	15 15	28-16 28-16	280-678 280-681	18677-15 18677	600	25	28-12 28-12	281-418 281-623/	18677-36	15/30	10	28-12
870-83.	E45172	300/600	20/5	28-12	279-68. 279-687	1327715 1327715	600	10	28-16 28-16	280-683 280-684	18677 18677	600 600	25 25	28-12 28-12	281-541 281-623/	18677-36	30/65	10	28-12
870-90. 870-907	E45172 E45172	300/600	20/5	28-12	279-687/ 999-950	1327715			28-16	280-685	18677	600	25	28-12	281-542				
870-91.	E45172	300/600	20/5	28-12 28-12						280-686 280-687	18677 18677-15	600	25	28-12 28-12	281-624 281-629	18677-36 18677-36	600 600	16 10	28-12 28-12
870-917	E45172			28-12	279-826 279-83.	154112-1327 154112-1327		15 10	28-16 28-16	280-687/ 999-950	18677-15			28-12	281-630 281-631	18677 18677	600 600	15 15	26-12 26-12
880-68. 880-687	E45172 E45172	600	20	28-12 28-12	279-837 279-837/	154112-1327 154112-1327			28-16 28-16	280-691 280-695	18677-22 18677-22	600 600	15 15	28-12 28-12	281-637 281-637/	18677-15 18677-15			26-12 26-12
					999-950										999-950				
880-831 880-832	E45172 E45172	600 600	20 20	28-12 28-12	279-838	154112-1327	715		28-16	280-826 280-830	18677-22 18677-22	600 600	15 15	28-12 28-12	281-651 281-652	18677 18677-22	600 600	15 15	26-12 28-12
880-834	E45172	600	20	28-12	270 001	154112-	400	10	20.14	280-831	18677-22	600	25	28-12	281-653	18677-22	600	15	28-12
880-837	E45172			28-12	279-901 279-907	1327715 1327715	600	10	28-16 28-16	280-832 280-833	18677-22 18677-22	600 600	15 15	28-12 28-12	281-654 281-656	18677-22 18677-45	600 300	15 10	28-12 28-12
880-90. 880-907	E45172 E45172	600	20	28-12 28-12	279-907/ 999-950	11327715			28-16	280-834 280-835	18677-22 18677-22	600 600	15 15	28-12 28-12	281-657 281-657/	18677-15 18677-15			26-12 28-12
					279-989 279-990	1327715 1327715	600 600	15 15	24-16 24-16	280-836 280-837	18677-22 18677-52	600	15	28-12 28-12	999-950 281-659	18677-22	600	15	28-12
					279-992	1327715	600	10	24-16	280-837/	18677-52			28-12	281-660	18677-22	600	15	28-12
					279-993 279-994	1327715 1327715	600 600	10 10	24-16 24-16	999-950 280-838	18677-22			28-12	281-663 281-664	18677-22 18677-22	600 600	15 15	28-12 28-12
					279-995	1327715	600	10	24-16	280-850 280-852	18677-45 18677-45				281-666 281-668	18677-22 18677-22	600 600	15 15	28-12 28-12
					280-10.	LR18677-5	600	20	28-12	280-856	18677-45		2		281-672	18677-36	600	10	28-12
					280-107	18677-15			28-12	280-868 280-869	18677-52 18677-52	300 300	15 15	28-12 28-12	281-678 281-679	18677-15 18677-22	600	15	26-12 28-12
					280-510	18677-27 18677-26	600	20	28-12	280-870	18677-53	300	5	24-10	281-681	18677	600	25	26-12
					280-513 280-515	18677-52	300/600 300	20/5 15	28-12 28-12	280-870 280-871	18677-52 18677-52	300 300	15 15	28-12 28-12	281-683 281-684	18677 18677	600 600	15 25	26-12 26-12
					280-519 280-520		300/600 300/600	20/5 20/5	28-12 28-12	280-874 280-875	18677-52 18677-52	300 300	15 15	28-12 28-12	281-685 281-686	18677-22 18677-22	600 600	15 15	28-12 28-12
					280-521 280-522		300/600 300/600	20/5 20/5	28-12 28-12	280-876	18677-52	300 300	15 15	28-12	281-687	18677-15			26-12 26-12
					280-522		300/600	20/5	28-12 28-12	280-879 280-88.	18677-52 18677-52	300	15 15	28-12 28-12	281-687/ 999-950	18677-15			20-12

em o.	Approval- No.	Vol- tage V	Cur- rent A	Cross Section AWG/mm²	Item No.	Approval-	Vol- tage V	Cur- rent A	Cross Section AWG/mm <sup>2</sup>	Item No.	Approval- No.	Vol- tage V	Cur- rent A	Cross Section AWG/mm <sup>2</sup>	Item No.	Approval- No.	Vol- tage V	Cur- rent A	Cross Section AWG/mm
81-691	18677-22	600	15	28-12	284-907/ 999-950	18677-52			24-8	769-201 769-202	154112-1466219 154112-1466219		10 10	28-12 28-12	769-632/ 004-000	154112-1466219	300	10	28-12
81-901 81-902	18677 18677-22	600 600	15 15	26-12 28-12	284-992 284-993	18677-52 18677-52	600 600	54 54	24-8	769-203 769-207	154112-1466219 154112-1466219	300	10	28-12 28-12	769-636/				
31-903	18677-22	600	15	28-12					24-8	769-208/	154112-1466219		10	28-12	004-000				
1-904 1-905	18677 18677-22	600 600	15 15	26-12 28-12	285-19. 285-197	114112-1327714 154112-1327714	600	210	4-3/0 4-3/0	281-410 769-208/	154112-1466219	300	10	28-12	769-638 769-638/	154112-1466219 154112-1466219		10 10	28-12 28-12
1-906 1-907	18677-22 18677-15	600	15	28-12 26-12	285-634	154112-1327714	400	140	8-2	281-411 769-209/	154112-1466219		10	28-12	003-000				
1-907/	18677-15			26-12	285-635	154112-1327714		140	4-3/0	281-413					769-638/ 004-000	154112-1466219	300	10	28-12
99-950 31-912	18677	300	15	26-12	285-637	154112-1327714			8-2	769-209/ 281-443	154112-1466219	300	10	28-12	769-640 769-640/	154112-1466219 154112-1466219		10 10	28-12 28-12
1-916 1-992	18677 18677-22	300 600	15 15	26-12 28-12	285-992 285-995	154112-1151144 154112-1151144		140 210	4-3/0 4-3/0	769-21. 769-217	154112-1466219 154112-1466219		10	28-12 28-12	003-000			10	
1-993	18677-22	600	15	28-12						769-218/	154112-1466219		10	28-12	769-640/ 004-000	154112-1466219	300	10	28-12
1-994 1-998	18677-22 18677-22	600 600	15 15	28-12 28-12	726-1	154112-1101143	300	10	28-16field/ 28-16patch	281-410 769-218/	154112-1466219	300	10	28-12	769-642 769-642/	154112-1466219 154112-1466219		10 10	28-12 28-12
2-10.	18677-5	600	40	24-10	726-2	154112-1101143	300	10	28-14field/	281-411 769-219/	154112-1466219	300	10	28-12	003-000 769-642/	154112-1466219	300	10	28-12
2-107 2-120	18677-15 18677-7	250	10	24-10 24-10					28-16patch	281-413 769-219/	154112-1466219		10	28-12	004-000	154112 1400217	500	10	20 12
2-122	18677-7	250	10	24-10	726-321	154112-1101143	300	10	28-16field/	281-443					769-662 I	154112-1466219	300	10	28-12
2-124 2-126	18677-7 18677-7	220 250	10 10	24-10 24-10					28-16patch	769-22. 769-227	154112-1466219 154112-1466219		10	28-12 28-12	769-666				
2-128 2-128/	18677-7 18677-7	250 24	10 10	24-10 24-10	726-421	154112-1101143	300	10	28-16field/ 28-16patch	769-228/ 281-410	154112-1466219	300	10	28-12	769-662/ 003-000	154112-1466219	300	10	28-12
31-413										769-228/	154112-1466219	300	10	28-12	769-666/				
2-128/ 31-417	18677-7	220	10	24-10	726-521	154112-1101143	300	10	28-14field/ 28-16patch	281-411 769-229/	154112-1466219	300	10	28-12	003-000				
2-128/ 31-418	18677-7	110	10	24-10	726-60.	154112-1101143	300	10	28-14	281-413 769-229/	154112-1466219	300	10	28-12	769-662/ 004-000	154112-1466219	300	10	28-12
2-131	18677-7	300		24-10	726-61.	154112-1101143	300	10	28-14	281-443					769-666/				
2-133	18677-7	300		24-10	726-62. 726-65.	154112-1101143 154112-1101143	300	10	28-14 28-14	769-23. 769-237	154112-1466219 154112-1466219		10 10	28-12 28-12	004-000				
2-60. 2-607	18677-7 18677-15	600		24-10 24-10	726-66.	154112-1101143			28-14	769-238/ 281-410	154112-1466219	300	10	28-12	769-668 769-668/	154112-1466219 154112-1466219		10 10	28-12 28-12
2-607/ 9-950	18677-15			24-10	726-721	154112-1101143	300	10	28-16field/	769-238/ 281-411	154112-1466219	300	10	28-12	003-000				
2-68.	18677-52	600	10	24-10					28-16patch	769-239/	154112-1466219	300	10	28-12	769-668/ 004-000	154112-1466219	300	10	28-12
2-687 2-687/	18677-52 18677-52			24-10 24-10	726-821	154112-1101143	300	10	28-14field/ 28-16patch	281-413 769-239/	154112-1466219	300	10	28-12	769-670 769-670/	154112-1466219 154112-1466219		10 10	28-12 28-12
9-950 2-694	18677-52	600	40	24-10	726-903	154112-1101143	300	10	18-12	281-443					003-000				
-695	18677-52	300	36	24-10	726-904	154112-1101143		10	18-12	769-602	154112-1466219	300	10	28-12	769-670/ 004-000	154112-1466219	300	10	28-12
!-696 !-697	18677-52 18677-52	24 300	30 36	24-10 24-10	726-905	154112-1101143				769-606					769-672 769-672/	154112-1466219 154112-1466219		10 10	28-12 28-12
-698 -698/	18677-52 18677-52	600 24	30 30	24-10 24-10	727-1	18677-50	300	10	28-16	769-602/	154112-1466219	300	10	28-12	003-000 769-672/	154112-1466219		10	28-12
1-429					727-2	18677-50	300	10	28-16	001-000					004-000	134112-1400217	300	10	20-12
2-698/ 1-449	18677-52	24	30	24-10	769-101	154112-1466219	300	10	28-12	769-606/ 001-000					773-208	154112-1059435	600	20	12-18"s"
2-699	18677-52	600	40	24-10	769-115					769-602/	154112-1466219	300	10	28-12					16-22str
2-90.	18677-52	600	40	24-16	769-101/	154112-1466219	300	10	28-12	002-000									
2-907 2-907/	18677-52 18677-52			24-10 24-10	000-016					769-606/ 002-000					862	1505030 30	0/600	20/5	20-12
9-950 2-992	18677-52	600	40	24-10	769-101/ 021-000	154112-1466219	300	10	28-12	769-602/	154112-1466219	300	10	28-12		154112-1645434 154112-1645434		15	22-14 22-14
2-993	18677-52	600	40	24-10	1					004-000								15	
3-10.	18677-5	600	90	24-6	769-115/ 021-000					769-606/ 004-000						154112-1645434 154112-1645434		13	22-14 22-14
3-107 3-107/	18677-52 18677-52			24-6 24-6	769-101/ 022-000	154112-1466219	300	10	28-12	769-608	154112-1466219	300	10	28-12	2001-140 .	154112-1645434	4 600	15	22-14
99-950					1					769-608/ 001-000	154112-1466219	300	10	28-12	2001-1407	154112-1645434	1		22-14
3-60.	18677-7	600	80	24-6	769-115/ 022-000					769-608/ 002-000	154112-1466219	300	10	28-12		154112-1536069		20	22-12
3-607 3-607/	18677-52 18677-52			24-6 24-6	1	154112-1466219	300	10	28-12	769-608/	154112-1466219	300	10	28-12	2002-1207	154112-1536069	7		22-12
9-950 3-609	18677-52			24-6	769-135					769-610	154112-1466219	300	10	28-12		154112-1536069 154112-1536069		20	22-12 22-12
3-671	18677-52	600	70 70	24-6	769-121/ 000-016	154112-1466219	300	10	28-12	769-610/ 001-000	154112-1466219	300	10	28-12				00	
3-672 3-674	18677-52 18677-52	600 600	70 70	24-6 24-6		15.010	000	16	00.55	769-610/	154112-1466219	300	10	28-12		154112-1536069 154112-1536069		20	22-12 22-12
3-677 3-677/	18677-52 18677-52			24-6 24-6	769-15. 769-160/	154112-1466219 154112-1466219		10 10	28-12 28-12	002-000 769-610/	154112-1466219	300	10	28-12	2004-120	154112-1645435	600	30	20-10
9-950 3-691	18677-22	600	90	24-6	769-313 769-161	154112-1466219	300	10	28-12	004-000 769-612	154112-1466219	300	10	28-12		154112-1645435			20-10
					769-161/ 769-313	154112-1466219		10	28-12	769-615			-	. <del>-</del>		154112-1645435		30	20-10
3-90. 3-907	18677-52 18677-52	600	70	24-6 24-6	769-162/	154112-1466219	300	10	28-12	769-612/	154112-1466219	300	10	28-12	2004-1307	154112-1645435	5		20-10
1-907/ 9-950	18677-52			24-6	769-313 769-163/	154112-1466219	300	10	28-12	001-000						154112-1645435 154112-1645435		30	20-10 20-10
-992	18677-52 18677-52	600 600	70 70	24-6 24-6	769-313 769-164/	154112-1466219	300	10	28-12	769-615/								50	
3-998					769-313					001-000 769-612/	154112-1466219	300	10	28-12		154112-1543858 154112-1543858		50	20-8 20-8
4-10. 4-107	18677 18677	600	65	24-8 24-8	769-165/15 769-313	54112-1466219	300	10	28-12	002-000					2006-130	154112-1543858	3 600	50	20-8
-601	18677	600	40	24-8	769-171 769-176	154112-1466219 154112-1466219		10 10	28-12 28-12	769-615/						154112-1543858			20-8
-604	18677	600	40	24-8	769-181	154112-1466219	300	10	28-12	769-612/	154112-1466219	300	10	28-12		154112-1645436		65	20-6
-607 -607/	18677-52 18677-52			24-8 24-8	769-182/ 769-314	154112-1466219	300	10	28-12	004-000	.5 12 1-00217	500		10 .2	2010-1207	154112-1645436	5		20-6
9-950 I-621	18677-22	600	110	1x10-2/	769-183/ 769-314	154112-1466219	300	10	28-12	769-615/						154112-1645436		65	20-6 20-6
				3x24-8	769-184/	154112-1466219	300	10	28-12	004-000	154110.1444010	300	10	29.12		154112-1645436			
-624	18677-22	600	110	1x10-2/ 3x24-8	769-314 769-185/	154112-1466219	300	10	28-12	769-632 	154112-1466219	300	IU	28-12		154112-1579112 154112-1579112		85	20-4 20-4
1-681 1-682	18677-52 18677-52	600 600	54 54	24-8 24-8	769-314 769-191	154112-1466219		10	28-12	769-636 769-632/	154112-1466219	300	10	28-12				Q.F	
1-684	18677-52	600	54	24-8	769-192/	154112-1466219		10	28-12	003-000	/J-112-1400217	500	10	20 12		154112-1579112 154112-1579112		85	20-4 20-4
4-687 4-691	18677-52 18677-7	600		24-8 24-8		154112-1466219	300	10	28-12	769-636/									
			<b>5</b> 4	24-8	769-319 769-194/	154112-1466219	300	10	28-12	003-000									
1_901	18677-59	ANN								4					1				
1-901 1-902 1-904	18677-52 18677-52 18677-52	600 600	54 54 54	24-8 24-8	769-319 769-195/	154112-1466219		10	28-12										

Item No.	Approval-	Vol- tage V	Cur- rent A	Cross Section AWG/mm²	Item No.	Approval- No.	Vol- tage V	Cur- rent A	Cross Section AWG/mm²	Item No.	Approval- No.	Vol- tage V	Cur- rent A	Cross Section AWG/mm²	Item No.	Approval- No.	Vol- tage V	Cur- rent A	Cross Section AWG/mm²
	CENELE	C CE	RTIFIC	CATION	273-254	DK2017	400	24	2,5	280-646 280-649	NL4912 NL4912	800	24	2,5	281-633/	NL4341	250		4,0
	AGREE!	MENT	•		273-255 273-258	DK2017 DK2017	400 400	24 24	2,5 2,5	280-649	NL4912 NL4912	800 800	24 24	2,5 2,5	281-411 281-634/	NL4341	250		4,0
CCA®	) CCA-D	( –			273-403	DK2017	400	32	4	280-651 280-653	NL4912 NL4912	800 800	24 24	2,5 2,5	281-413 281-634/	NL4341	250		4,0
00,10	CCA-NI				273-403	DK2017 DK2017	400	32	4	280-654	NL4912	800	24	2,5	281-434				
CCAKE	MA N.V. tot	Keur	ing vo	ın Elektro-	279-1	NL3710	800	18	1,5	280-655/. 280-656	NL4912 NL4912	250 800	16 24	2,5 2,5	281-635/ 281-489	NL4341	250		4,0
	technisc	he M	ateria	ılien,						280-671	NL4912	800	24	2,5	281-635/	NL4341	250		4,0
	Netherle	and			279-604 279-620/	NL3710 NL3710	800 60	18	1,5 1,5	280-672 280-673/	NL4912 NL4912	800 250	24 24	2,5 2,5	281-490 281-635/	NL4341	250		4,0
Accord	ing to the CE	NELE	C Cer	tification	281-408 279-621	NL3710	800	18	1,5	281-410 280-673/	NL4912	250	24	2,5	281-491 281-635/	NL4341	250		4,0
Agreen	nent, the CC	A cert	ificate	is	279-623/	NL3710	250		1,5	281-411					281-492				
recogn	ized in the fo	ollowir	ng Euro	opean	281-410 279-623/	NL3710	250	18	1,5	280-676 280-677	NL4912 NL4912	250	10	2,5 2,5	281-636/ 281-487	NL4341	250		4,0
countri	es:				281-411 279-624/	NL3710	24		1,5	280-677/ 999-950	NL4912			2,5	281-636/ 281-488	NL4341	250		4,0
1 -	n, Denmark,		,.	-	281-413					280-678	NL4912	800	24	2,5	281-637	NL4341			2,5
	France, Irela			0.	279-624/ 281-434	NL3710	24		1,5	280-681 280-683	NL4912 NL4912	800 400	24 16	2,5 2,5	281-637/ 999-950	NL4341			2,5
	lands, Austri		•	-	279-626 279-68.	NL3710 NL3710	800 800	18 18	1,5 1,5	280-684 280-685	NL4912 NL4912	800 250	24 10	2,5 2,5	281-651 281-652	NL4341 NL4341	800 800	32 26	4,0 4,0
	n, Great Brit	-			279-687	NL3710			1,5	280-686	NL4912	250	16	2,5	281-653	NL4341	800	26	4,0
	, Cyprus, Lat	-			279-687/ 999-950	NL3710			1,5	280-687 280-687/	NL4912 NL4912			2,5 2,5	281-654 281-656	NL4341 NL4341	800 250	26 6,3	4,0 4,0
Maira,	Poland, Slov	enia,	SIOVAK	Ia	279-826	NL3710	800	18	1,5	999-950 280-691	NL4912	800	24	2,5	281-657 281-657/	NL4341 NL4341			4,0 4
224-101	DK95-05205	400	24	0,5-2,5	279-83.	NL3710	800	18	1,5	280-695	NL4912	250	10	2,5	999-950				
224-104	DK95-05205	400	24	1-2,5/0,5-2,5	279-837 279-837/	NL3710 NL3710			1,5 1,5	280-826	NL4912	800	24	2,5	281-658 281-659	NL4341 NL4341	400	10	4,0 4,0
224-112 224-114	DK95-05205 DK95-05205	400 400	24 24	1-2,5/0,5-2,5 0,5-2,5	999-950 279-838	NL3710	800	18	1,5	280-83. 280-837	NL4912 NL4912	800	20	2,5 2,5	281-660 281-663	NL4341 NL4341	400 800	10 26	4,0 4,0
224-201	DK95-05205	400	24	0,5-2,5						280-837/	NL4912 NL4912			2,5	281-664	NL4341	800	26	4,0
					279-90. 279-907	NL3710 NL3710	800	18	1,5 1,5	999-950 280-868	NL4912	250	16	2,5	281-665/ 281-400	NL4341	250		4,0
243-144	DK97-01026	100	6	0,5-0,75	279-907/ 999-950	NL3710			1,5	280-869 280-870	NL4912 NL4912	250 250	16 16	2,5 2,5	281-665/ 281-401	NL4341	250		4,0
243-20.	DK97-01026	100	6	0,5-0,75	279-989	NL3710	800	18	1,5	280-871	NL4912	250	16	2,5	281-665/	NL4341	250		4,0
243-30.	DK97-01026	100	6	0,5-0,75	279-990 279-992	NL3710 NL3710	800 800	18 18	1,5 1,5	280-874 280-875	NL4912 NL4912	250 250	16 16	2,5 2,5	281-410 281-665/	NL4341	250		4,0
243-50.	DK97-01026	100	6	0,5-0,75	279-993 279-994	NL3710 NL3710	800 800	18 18	1,5 1,5	280-876 280-879	NL4912 NL4912	250 250	16 16	2,5 2,5	281-411 281-666	NL4341	400	10	4,0
243-804	DK97-01026	100	6	0,5-0,75	279-995	NL3710	800	18	1,5	280-88.	NL4912	250	16	2,5	281-668	NL4341	800	26	4,0
					280-10.	NL4912	800	24	2,5	280-90.	NL4912	800	24	2,5	281-673/ 281-400	NL4341	250		4,0
260	DK96-00357	400	17,5	1,5	280-107	NL4912			2,5	280-907 280-907/	NL4912 NL4912			2,5 2,5	281-673/ 281-401	NL4341	250		4,0
261-1 261-1/	DK96-00357 DK96-00357	500 500	26 26	2,5 2,5	280-510 280-513	NL4912 NL4912	500 500	20 20	2,5 2,5	999-950 280-912	NL4912	400	16	2,5	281-678 281-679	NL4341 NL4341	800 800	32 32	4,0 4,0
331-000					280-517	NL4912	500	20	2,5	280-915/	NL4912	250	16	2,5	281-681	NL4341	800	32	4,0
261-2	DK96-00357	500	26	2,5	280-519 280-520	NL4912 NL4912	500 500	20 20	2,5 2,5	280-916 280-940/	NL4912 NL4912	250 250	16 16	2,5 2,5	281-683 281-684	NL4341 NL4341	400 800	10 32	4,0 4,0
261-2/ 331-000	DK96-00357	500	26	2,5	280-521 280-522	NL4912 NL4912	400 400	10 10	2,5 2,5	281-410 280-940/	NL4912	250	16	2,5	281-685 281-686	NL4341 NL4341	800 800	32 32	4,0 4,0
261-3	DK96-00357	500	26	2,5	280-523 280-524	NL4912 NL4912	500 500	20 20	2,5 2,5	281-411 280-941/	NL4912	250	16	2,5	281-687 281-687/	NL4341 NL4341			4,0 4
261-3/ 331-000	DK96-00357	500	26	2,5	280-525	NL4912	400	10	2,5	281-491					999-950				
					280-526 280-527	NL4912 NL4912	400 500	10 20	2,5 2,5	280-941/ 281-492	NL4912	250	16	2,5	281-691	NL4341	800	24	4,0
261-422 	DK96-00357	500	26	2,5	280-529 280-530	NL4912 NL4912	500 500	20 20	2,5 2,5	280-942/ 281-487	NL4912	250	16	2,5	281-90. 281-907	NL4341 NL4341	800	32	4,0 4,0
261-432 261-422/	DK96-00357	500	26	2,5	280-531	NL4912	500	6,3/20	2,5	280-942/	NL4912	250	16	2,5	281-907/	NL4341			4
	DK76-00337	300	20	2,3	280-532 280-533	NL4912 NL4912	500 500	6,3/20 20	2,5 2,5	281-488 280-943/	NL4912	250	24	2,5	999-950 281-912	NL4341	400	10	4,0
261-432/ 331-000					280-534 280-537	NL4912 NL4912	500 500	20 20	2,5 2,5	281-413 280-943/	NL4912	250	24	2,5	281-915/ 281-400	NL4341	250		4,0
262	DV04 003E7	420	20	4	280-543	NL4912	500	20	2,5	281-434					281-915/	NL4341	250		4,0
	DK96-00357	630	32	4	280-547 280-548	NL4912 NL4912	500 500	20 20	2,5 2,5	280-946 280-989	NL4912 NL4912	800 800	24 24	2,5 2,5	281-401 281-915/	NL4341	250		4,0
264	DK96-00357	800	24	2,5	280-549 280-550	NL4912 NL4912	500 500	20 20	2,5 2,5	280-990 280-992	NL4912 NL4912	800 800	24 24	2,5 2,5	281-410 281-915/	NL4341	250		4,0
264-727	DK96-00357			2,5	280-551	NL4912	500	20	2,5	280-994	NL4912	800	24	2,5	281-411			20	
264-727/ 999-950	DK98-03984A			2,5	280-552 280-557	NL4912 NL4912	500 500	20 20	2,5 2,5	280-995 280-996	NL4912 NL4912	800 800	24 24	2,5 2,5	281-992 281-993	NL4341 NL4341	800 800	32 32	4,0 4,0
264-737 264-737/	DK96-00357 DK98-03984A			2,5 2,5	280-558 280-597	NL4912 NL4912	500 500	20 20	2,5 2,5	280-998 280-999	NL4912 NL4912	800 800	24 24	2,5 2,5	281-994 281-998	NL4341 NL4341	800 800	32 32	4,0 4,0
999-950					280-601	NL4912	800	24	2,5	281-10.	NL4341	800	32	4,0	282-10.	NL5448	800	41	6,0
270-560	NL5432	250	18	2,5	280-602	NL4912	800	24	2,5	281-107	NL4341	300	02	2,5	282-107	NL5448			6,0
270-560/. 270-564	NL5432 NL5432	24 250	18 18	2,5 2,5	280-603 280-604	NL4912 NL4912	800 800	24 24	2,5 2,5	281-530	NL4341	400	25	4,0	282-131 282-133	NL5448 NL5448	400 400	41 41	6,0 6,0
270-570 270-570/	NL5432	250 24	18 18	2,5 2,5	280-606 280-607	NL4912 NL4912	250	16	2,5 2,5	281-601	NL4341	800	32	4,0	282-135	NL5448	400	41	6,0
270-572	NL5432	250	18	2,5	280-607/	NL4912 NL4912			2,5 2,5	281-603/	NL4341 NL4341	250	U.L	4,0	282-60.	NL5448	800	41	6,0
270-572/ 270-574	NL5432	24 250	18 18	2,5 2,5	999-950 280-610	NL4912	250	16	2,5	281-400 281-603/	NL4341	250		4,0	282-607 282-607/	NL5448 NL5448			6,0 6
270-574/ 270-577		24 24	18 18	2,5 2,5	280-612 280-613/	NL4912	400 250	16 16	2,5 2,5	281-401 281-603/	NL4341	250		4,0	999-950 282-68.	NL5448	800	41	6,0
270-585	NL5432	250	18	2,5	280-615/	NL4912 NL4912	250	16	2,5	281-410					282-687	NL5448	000	41	6,0
270-585/. 270-586	NL5432	24 250	18 18	2,5 2,5	281-412 280-615/	NL4912	250	16	2,5	281-603/ 281-411	NL4341	250		4,0	282-687/ 999-950	NL5448			6
270-586	NL5432	24	18	2,5	281-428 280-616	NL4912	250	16	2,5	281-604 281-607	NL4341 NL4341	800	24	4,0 4,0	282-691 282-694	NL5448 NL5448	800 800	24 41	6,0 6,0
273-100	DK2017	400	17,5	1,5	280-621	NL4912	800	24	2,5	281-607/	NL4341 NL4341			4,0	282-695	NL5448	400	30	6,0
273-101 273-102	DK2017 DK2017	400 400	18 24	1,5 2,5	280-622 280-623/	NL4912 NL4912	250 250	10 16	2,5 2,5	999-950 281-610	NL4341	250	6,3	4,0	282-697 282-699	NL5448 NL5448	400 800	30 41	6,0 6,0
273-103 273-104	DK2017 DK2017	400 400	24 24	2,5 2,5	280-626 280-627	NL4912 NL4912	800 400	24 16	2,5 2,5	281-619 281-620	NL4341 NL4341	500 500	26 26	4,0 4,0	282-811	NL5448	500	30	6
273-105	DK2017	400 400	24 17,5	2,5	280-633	NL4912	800	24	2,5	281-624	NL4341	800	16	4,0	282-821	NL5448	500	30	6
273-108 273-112	DK2017 DK2017	400	24	1,5 2,5	280-634 280-637	NL4912 NL4912	800	24	2,5 2,5	281-629 281-630	NL4341 NL4341	500 500	26 26	4,0 4,0	282-860 282-865	NL5448 NL5448	500 500	30 30	6
273-153 273-155	DK2017 DK2017	400 400	17,5 17,5	1,5 1,5	280-637/ 999-950	NL4912			2,5	281-631 281-633/	NL4341 NL4341	800 250	32	4,0 4,0	282-866 282-870	NL5448 NL5448	500 500	30 30	6
273-158	DK2017	400	17,5	1,5	280-640 280-641	NL4912 NL4912	800 800	24 24	2,5 2,5	281-410					282-90.	NL5448	800	32	6,0
273-252 273-253	DK2017 DK2017	400 400	24 24	2,5 2,5	280-645/ 281-412	NL4912	250	16	2,5						282-907	NL5448	550		6,0

ltem No.	Approval- No.	Vol- tage V	Cur- rent A	Cross Section AWG/mm²	Item No.	Approval- No.	Vol- tage V	Cur- rent A	Cross Section AWG/mm²	Item No.	Approval- No.	Vol- tage V	Cur- rent A	Cross Section AWG/mm²	Item No.	Approv No.	al-	Vol- tage V	Cur- rent A	Cross Section AWG/mm <sup>2</sup>
282-907/	NL5448			6	727-125	DK96-00447	250	18	1,5	870-527	NL4981	500	24	2,5		<i>777</i> E	NEC	15		
999-950 282-992 282-993	NL5448 NL5448	800 800	41 41	6,0 6,0	727-128 727-129	DK96-00447	250	10	1,5	870-531 870-532 870-533	NL4981 NL4981 NL4981	500 500 500		2,5 2,5 2,5	4		JL-Ini A/S	ternat	ional	Demko
283-10.	NL3714	800	76	6,0	727-134	51070 00117	200		.,0	870-534 870-535	NL4981 NL4981	500	24	2,5 2,5	_		۰⁄۵ Denm	ark		
183-107 183-60.	NL3714 NL3714	800	76	16 16	727-135     727-138	DK96-00447	250	18	1,5	870-536 870-537 870-538	NL4981 NL4981 NL4981	500 500		2,5 2,5	222-413	DK1344	101-01	450	32	0,5-4
183-607 183-607/ 1999-950	NL3714 NL3714			16 16	727-219	DK96-00447	250	4	1,5	870-539 870-551 870-553	NL4981 NL4981 NL4981	500 500 500	24 24	2,5 2,5 2,5	862	DK1364	102-01	500	32	20-12
283-609 283-67.	NL3714 NL3714	800	76	16 16	727-224	DV0 / 00 / 17	050	10	1.5	870-556 870-557	NL4981 NL4981	500	24	2,5 2,5 2,5						
283-677 283-677/ 999-950	NL3714 NL3714			16 16	727-225     727-228	DK96-00447	250	18	1,5	870-558 870-559 870-567	NL4981 NL4981 NL4981	500 500 500	24 24 24	2,5 2,5 2,5						
183-691	NL3714	800	76	16	727-229	DK96-00447	250	4	1,5	870-577	NL4981	500	24	2,5						
283-90. 283-907 283-907/	NL3714 NL3714 NL3714	800	76	16 16 16	727-234	DK96-00447	250	18	1,5	870-681 870-682 870-684	NL4981 NL4981 NL4981	500 500 500		2,5 2,5 2,5						
999-950 283-992	NL3714	800	76	16	727-238					870-687	NL4981									
183-998 184-10.	NL3714 NL3715	800	76	16 10	769-101 	NL5212	500	16	4	870-831 870-832 870-834	NL4981 NL4981 NL4981	500 500		2,5 2,5 2,5						
284-107	NL3715	800	76	10	769-115 769-101/ 022-000	NL5212	500	16	4	870-837	NL4981	300		2,2						
284-60. 284-607	NL3715 NL3715	800	57	10 10	769-115/					870-901 870-902	NL4981 NL4981	500 500	24 24	2,5 2,5						
284-607/ 999-950 284-621	NL3715 NL-4207	500	125	10 35	769-121	NL5212	500	16	4	870-904 870-907 870-917	NL4981 NL4981 NL4981	500 500	24	2,5 2,5 2,5						
284-624 284-68.	NL-4207 NL3715	500 800	125 57	35 10	769-135 769-121/	NL5212	500	16	4	880-681	NL4090	800	25	4,0						
284-687 284-687/ 999-950	NL3715 NL3715			10 10	000-016 769-151	NL5212	500	16	4	880-682 880-684 880-687	NL4090 NL4090 NL4090	800 800	25 25	4,0 4,0 4,0						
284-691	NL3715	800	57	10	769-156 769-161	NL5212 NL5212	500 500	16 16	4	880-901	NL4090	800	25	4,0						
184-90. 184-907 184-907/	NL3715 NL3715 NL3715	800	57	10 10 10	769-171 769-176 769-181	NL5212 NL5212 NL5212	500 500 500	16 16 16	4 4 4	880-902 880-907	NL4090 NL4090	800 800	25 25	4,0 4,0						
999-950 284-992 284-993	NL3715 NL3715	800	57	10 10	769-201 769-202	NL5212 NL5212	250 400	16 16	4 4		. NL5408 7 NL5408	800	24	0,5-4 0,5-4						
285-19.	NL4639	1000	232	25	769-203 769-207	NL5212 NL5212	250	16	4		. NL5408 7 NL5408	800	24	0,5-4 0,5-4						
285-197 285-197/ 999-950	NL4639 NL4639			25 25	769-211 769-212 769-213	NL5212 NL5212 NL5212	250 400 250	16 16 16	4 4		. NL5408 7 NL5408	800	24	0,5-4 0,5-4						
185-634 185-635	NL4639 NL4639	1000 1000	125 125	35,0 35,0	769-214 769-217 769-221	NL5212 NL5212 NL5212	500 250	16 16	4 4 4	2006-120 2006-120		800	41	0,5-10 0,5-10						
85-637	NL4639		123	35,0	769-222 769-223	NL5212 NL5212	250 250	16 16	4	2006-130	. NL5551	800	41	0,5-10						
290-66. 290-667	NL4750 NL4750	500		1,5"f","str"/ 1,0"s"/2,5	769-227 769-231 769-232	NL5212 NL5212 NL5212	250 250	16 16	4 4 4	2006-130	7 NL5551 . NL5555	800	76	0,5-10 0,5-25 "f"						
290-68.	NL4750	500		1,5"f","str"/ 1,0"s"/2,5	769-233 769-237	NL5212 NL5212	250	16	4 4	2016-120	7 NL5555			0,5-25 "f"						
90-687	NL4750 NL4750	500		1,5"f","str"/	773-208	DK98-00459/ 1237A1	400	24	0,75-2,5"s"/ 1,5-2,5"rig"		. NL5555 7 NL5555	800	76	0,5-25 "f" 0,5-25 "f"						
290-907	NL4750	300		1,0"s"/2,5	869-102	NL4534	500	24	2,5											
290-96. 290-967	NL4750 NL4750	500		1,5"f","str"/ 1,0"s"/2,5	869-112 869-132	NL4534	500	24	2,5											
26-1	DK96-00446	500	10	3x0,5-1,5	869-142	1414004	300	24	2,3											
726-2	DK96-00446	500	10	3x0,5-1,5/ 2x0,5-2,5		NL4534	500	24	2,5											
726-3	DK96-00446	500	10	2x0,5-2,5 2x0,5-1,5/ 2x0,5-1,5	869-162 869-182	NL4534	500	24	2,5											
726-4	DK96-00446	500	10	3x0,5-1,5	869-192 869-202	NL4534	500	24	2,5											
726-5	DK96-00446	500	10	3x0,5-1,5/ 2x0,5-2,5	869-212															
726-602	DK-2119		24	0,5-2,5	869-232     869-242	NL4534 NL4534	500 500	24	2,5											
'26-611 '26-612 '26-621	DK-2119 DK-2119 DK-2119		76 24 76	0,5-16 0,5-2,5 0,5-16	869-3	NL4534	500	24	2,5											
26-622 26-651	DK-2119 DK-2119		24 76	0,5-2,5 0,5-16	869-3 . 7 870-101		500		2.5											
26-652 26-661	DK-2119 DK-2119		24 76	0,5-2,5 0,5-16	870-101 870-102 870-103	NL4981 NL4981 NL4981	500 500 500		2,5 2,5 2,5											
'26-662 '26-671 '26-672	DK-2119 DK-2119 DK-2119		24 76 24	0,5-2,5 0,5-16 0,5-2,5	870-104 870-107	NL4981 NL4981	500		2,5 2,5											
726-721 726-741	DK96-00446 DK96-00446	500 500	10	3x0,5-1,5	870-108 870-109 870-117	NL4981 NL4981 NL4981	500 500		2,5 2,5 2,5											
726-741	DK96-00446	500	10	3x0,5-1,5 3x0,5-1,5/	870-127	NL4981			2,5											
727-119	DK96-00447	250	10	2x0,5-2,5	870-501 870-502 870-503	NL4981 NL4981 NL4981	500 500 500	24 24 24	2,5 2,5 2,5											
727-119	JN70-UU44/	<b>2</b> 50	IU	<i>د</i> را	870-504 870-507 870-508 870-509	NL4981 NL4981 NL4981 NL4981	500 500 500	24	2,5 2,5 2,5 2,5											

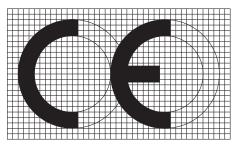
# Ex Approvals as per January 2004

No. V A AWG	mm² Item No.	Approval- No.	Vol- tage V	Cur- rent A	Cross Section AWG/mm <sup>2</sup>	Item Approval- tage rent No. No. V A	Cross Section AWG/mm <sup>2</sup>	Item No.	Approval- No.	Vol- tage V	Cur- rent A	Cross Section AWG/mn
PTB Physikalisch Technisch Bundesanstalt Bundesrepublik Deutschla	999-950 282-687/ 999-950	PTB98Atex3131	U	20	6	Ex approvals for the market	US	c <b>91</b> 0	cURus – Underw USA	riters L	abora	tories
EEx e II	202-071				0	In accordance with the Nationa	al Electrical					
IECE-PTR04 00041 1550 23 4			U			Code (NEC), besides the popu	ar					24-12
with comb type jumper bar max 16 A	999-950 282-992		U 550	39	6	classification in divisions 1 and	2 (NEC	264-1	E185892	600	20	28-12
IECExPTB04.0003U750 23 2,5	282-993				6			264-2	E185892	600	20	28-12
with comb type jumper bar max 16 A								264-2.7	E185892			28-12
PTB00Atex3113U 1,5	283-607/		2U		16			264-3.7	E185892			28-12
DTD004211211 1.5	283-677/	PTB98Atex3132	2U		16			264-7.7	E185892			28-12
	999-950 283-691	PTB98Atex3132			16	, ,			E185892			28-12
PTB00Atex3113U 1,5	283-607/				16	AREA CLASSIFICATION			E195902			28-12
PTB00Atex3113U 550 15 1,5 PTB00Atex3113U 550 15 1,5			.0		10	ARLA CLASSII ICAIION		280-6 . 7/	E185892			28-12
with adjacent jumper max 15 A		PTB98Atex3132	2U		16	Flammable MaterialFlammable Material	Flammable	280-691	E185892	600	20	28-12
with adjacent jumper max 15 A	999-950 283-992	PTB98Atex3132	2U 550	68	16	Present ContinuouslyPresent Intermittently		280-9.7	E185892			28-12
with adjacent jumper max 15 A	283-998				16	Zone 20 - dustZone 21 - dust Zone 2	2 - dust	280-9 . 7/ 999-950	E185892			28-12
								280-989	E185892	600	15	26-14
PTB00Atex3113U 550 15 1,5	999-950							280-992	E185892	600	20	28-12 28-12
PTB98Atex3109U 2,5			BU		10	· ·		280-993 280-994	E185892 F185892	600 600	20 20	28-12 28-12
PTB98Atex3109U 2.5	284-691	PTB98Atex3133		53	10			280-995	E185892	600	15	26-14
				33 A		'		280-998	E185892	600	20	28-12 28-12
	284-907/ 999-950	PTB98Atex3133	BU		10	' '	Article 300	280-999	E185892	600	20	28-12
PTB98Atex3109U 2,5	284-992				10	of Affice 303		281-6.7	E185892			28-12 28-12
PTB98Atex3109U 550 23 2,5 with adjacent jumper max 23 A	284-993	PTB98Atex3133	SU 550	53	10			999-950 281-691	E185892			28-12
PTB98Atex3109U 2,5	2002-120			22 ar max 2	0,2-4 0 A			281-907 281-907/	E185892 E185892			28-12 28-12
PTB98Atex3109U 2,5	2002-120			22 or max 2	0,2-4 0 A			999-950				
PTB98Atex3109U 550 22 2.5	2002-120	4 IECExPTB03.00	04U550	22	0,2-4		ording to	282-607	E185892			28-12
PTB98Atex3109U 550 22 2,5	2002-120			ar max 2	0 A 0,2-4	the NEC 505 specifications.		282-607/ 999-950	E185892			24-10
PTB98Atex3109U 550 23 2,5	2002-130	1 IECE×PTB03.00	04U550	22	0.2-4			282-691	E185892			24-10
		with push-in typ	oe jumper b	ar max 2	0A			283-607	E185892			28-12
with adjacent jumper max 22 A		with push-in typ	oe jumper b	ar max 2	0 A			999-950				24-10
with adjacent jumper max 20 A	2002-130							283-691	E185892			24-10
PTB98Atex3109U 550 20 2,5 with adjacent jumper max 20 A	2002-130				0,2-4			284-607	E185892			28-12 24-8
PTB98Atex3109U 550 23 2,5 with adjacent jumper max 23 A	2002-140							999-950				
PTB98Atex3109U 550 23 2,5	2002-140							284-691	E185892			24-8
PTB98Atex3109U 550 20 2,5 with adjacent jumper max 23 A	2002-140	4 IECExPTB03.00	04U550	22	0,2-4							
PTB98Atex3110U 4	2002-140											
PTB98Atex3110U 4												
PTB98Atex3110U 4												
PTB98Atex3110U 4												
PTB98Atex3110U 550 30 4												
PTB98Atex3110U 4												
PTB98Atex3110U 550 30 4												
with adjacent jumper max 26 A PTB98Atex3110U 550 30 4								i .				
with adjacent jumper max 26 A PTB98Atex3110U 550 30 4 with adjacent jumper max 26 A												
with adjacent jumper max 26 A PTB98Atex3110U 550 30 4 with adjacent jumper max 26 A												
	Bundescanstalt   Bundescanstalt   Bundesrepublik   Deutschlar   EEx e   I	### Bundesanstalt    Bundesrepublik Deutschland   Page   P	Bundesanstalt   Sundesrepublik Deutschland   EEx e   I	Sundesanstalt   Bundesanstalt   Bundesanstal	Bundesrepublik Deutschland   EEx e   I	Bundesrepublik Deutschland   Exe   I	Bundescrible  Bu	Bundescriptible   Bundescrip	Bundesarpublik Deutschland   Sundesarpublik Deutschland   Sundearpublik Deutschland   Sundesarpublik	Double-sinstit    Bundesrepublik Deuts-kland   Bundesrepublik Deuts-kla	Bundesrepublik Deutschland  B	Doundescriptibility   Doundescriptibility

# **CE Marking and EC Directives**

#### **CE** conformity marking:

The CE conformity marking consists of the characters "CE", with the following script:



Communauté Européenne (European Community)

The EC directives are legally binding specifications of the European Community. Their aim is the alignment of legal and administrative specifications in the various EC member countries, in order to prevent trading hindrances arising from different national specifications.

In order to launch a product on the market it has to comply with the relevant directives. Several directives may apply for a product, for example the EMC and the low voltage directives.

With the CE marking the manufacturer proves the conformity of the product with the relevant directives.

Apart from the CE marking, the manufacturer issues a declaration of EC conformity for the product. The manufacturer has to keep this declaration of EC conformity and present it on request to a national surveillance authority.

For WAGO products the following **EC directives** apply:

# 73/23/EEC – Low voltage directive

Within the low voltage directives, products are considered electrical equipment if used for applications at nominal voltages between 50 V and 1000 V for alternating current and between 75 V and 1500 V for direct current.

This directive applies for products such as rail-mounted terminal blocks, terminal blocks, modular terminal blocks, terminal strips etc. which comply with the specifications of the coordinated European standards and their specific parts, for example EN 60 947 for rail-mounted terminal blocks and EN 60 998 for terminal blocks.

The CE marking is indicated on the smallest packing-unit.

# 89/336/EEC - EMC directive

This directive applies to any apparatuses, equipment and systems containing electric or electronic components. The BAPT (Bundesamt für Post und Telekommunikation / Federal Office for Post and Telecommunication) is authorized to differ between elementary and complex components. Elementary components such as resistors, transformers, ICs, relays etc. are not provided with marking. As regards complex components such as electro-motors, electronic cards thermostats etc., the EMC directives apply only if these components are sold directly to the end user.

If the EMC directive applies to products, these products are provided with the CE marking on the housing. This marking proves the conformity with the corresponding standards.

# 89/392/EEC - Machine directive

This directive applies to complete machines or equipment.

The manufacturers of machines or equipment are obliged to use components which meet the corresponding EC directives, for example the low voltage or EMC directives.

The conformity with these directives is the precondition of the free exchange of goods in Europe.

94/9/EC Ex directive, ATEX 100a

Explosion proof devices (additional information see section 13)



# **IEC/EN Specifications**

In particular the following standards apply to the design and the application of the terminal blocks and connectors contained in this catalog:

IEC 60364-1 VDE 0100-100

/.. Erection of power installations with nominal voltages up to 1000 V

- Fundamental principles, assessment of general characteristics, definitions

EN 50110-1 VDE 0105 part 1

/ Operation of electrical installations

IEC 61140 EN 61140 VDE 0140 part 1

/ Protection against electric shock Common aspects for installation and equipment

VDE 0100 part 710

/ Erection of power installations with nominal voltages up to 1000 V

Requirements for special installations or locations - Part 710: Medically used areas

DIN VDE 0108 part 1

/ Power installation and safety power supply in institutional facilities

General

IEC 60664-1 EN 60664-1 VDE 0110 part 1

/ Insulation coordination for equipment within low-voltage systems

- Principles, requirements and tests

IEC 60204-1 EN 60204-1 VDE 0113 part 1 / Safety of machinery - General requirements

VDE 0118 part 1

/ Installation of electrical equipment in mines

- General requirements

IEC 60079-0 EN 60079-0 VDE 0170/0171 part 1

/ Electrical apparatus for potentially explosive atmospheres

General requirements

IEC 60079-7 EN 60079-7

VDE 0170/0171 part 6

/ Electrical apparatus for potentially explosive atmospheres

- increased safety "e"

IEC 60079-11 EN 50020

VDE 0170/0171 part 7

/ Electrical apparatus for potentially explosive atmospheres

- intrinsic safety "i

IEC 60079-14 EN 60079-14 VDE 0165 part 1

/ Erection of electrical installations in hazardous areas

IEC 60079-15 EN 60079-15

VDE 0170/0171 part 16

/ Electrical apparatus for potentially explosive atmospheres

- Type of protection "n"

IEC 60038 HD 472 S1 VDE 0175

/ IEC standard voltages

DIN VDE 0298 part 1

/ Application of cables and flexible cords in power installations

- Recommended values for current carrying capacities of cables for fixed installation and for flexible cables

IEC 60112 EN 60112

VDE 0303 part 11

/ Method for determining the comparative and the proof tracking indices of solid insulating materials

IEC 60529 EN 60529 VDE 0470 part 1

/ Degrees of protection provided by enclosures (IP-Code)

- Testing equipment and testing method

IEC 60439-1 EN 60439-1

VDE 0660 part 500

/ Low-voltage switchgear and controlgear assemblies

 Type-tested and partially type-tested assemblies

IEC 60439-3 EN 60439-3

VDE 0660 part 504

/- Particular requirements for low-voltage switchgear and controlgear assemblies intended to be installed in places where unskilled persons have access

- Distribution boards

IEC 61643-1 EN 61643-11 VDE 0675 part 6-11

/ Surge protective devices connected to low-voltage power distribution

 Performance requirements and testing methods

IEC 60335-1 EN 60335-1 VDE 0700 part 1

/ Safety of household and similar electrical appliances

- General requirements

IEC 60598-1 EN 60598-1 VDE 0711 part 1 / Lighting fixtures

- General requirements and tests

IEC 60715 EN 60715

/- Standardized mounting on rails for mechanical support of electrical devices in switchgear and controlgear installations

IEC 60999-1 EN 60999-1 VDE 0609 part 1 / Connecting devices

-Electrical copper conductors -Safety requirements for screw-type and screwless-type clamping units

 General requirements and particular requirements for clamping units for conductors from 0.5 mm<sup>2</sup> up to 35 mm<sup>2</sup> (included)

IEC 60999-2 EN 60999-2

 Particular requirements for clamping units for conductors above 35 mm<sup>2</sup> up to 300 mm<sup>2</sup> (included)

IEC 60998-1 EN 60998-1 VDE 0613 part 1

/ Connecting devices for low-voltage circuits for household and similar purposes

- General requirements

IEC 60998-2-1 EN 60998-2-1 VDE 0613 part 2-1

 /- Special requirements for connecting devices as standalone devices with screw-type terminals

IEC 60998-2-2 EN 60998-2-2 VDE 0613 part 2-2

 Special requirements for connecting devices as standalone devices with screwless-type terminals

IEC 60998-2-3 EN 60998-2-3 VDE 0613 part 2-3

 /- Special requirements for connecting devices as standalone devices with insulation piercing clamping units IEC 60998-2-5 EN 60998-2-5

 Particular requirements for connecting boxes (junction and/or tapping) for terminals or connecting devices

IEC 60947-1 EN 60947-1 VDE 0660 part 100 / Low-voltage switchgear and controlgear - General rules

IEC 60947-7-1 EN 60947-7-1 VDE 0611 part 1 /- Ancillary equipment; Terminal blocks for copper conductors

IEC 60947-7-2 EN 60947-7-2 VDE 0611 part 3 /- Ancillary equipment; Ground (earth) conductor terminal blocks

DIN VDE 0611 part 4
/ Terminal blocks for connecting copper conductors;

 Distribution terminal blocks up to 6 mm<sup>2</sup>

IEC 60947-7-3 EN 60947-7-3 VDE 0611 part 6

/- Ancillary equipment; Safety requirements for fuse terminal blocks

IEC 61984 EN 61984 VDE 0627

/ Connectors - Safety requirements and tests



# Tests and Testing Procedures According to IEC/EN Standards

Products such as connecting devices, rail-mounted terminal blocks and connectors, etc., have there own product-specific test specifications. The following paragraphs which include the most important tests are both limited to describing the test methods and explaining the test purpose. The values stated in the following paragraphs (e.g. voltages, temperatures, forces, etc.) are solely for the purpose of clarification and may vary according to the test used.

#### **Mechanical Tests**

All WAGO products meet the requirements of the following mechanical tests.

### Connecting conditions

Conductor connection Two connection systems have proven themselves in the market for spring clamp connectors:

The **Push-wire connection** in applications with exclusively solid conductors; example for lighting and building wiring, telecommunication, house communication or alarm systems. Conductor cross section range 0.28 mm<sup>2</sup> up to 4 mm<sup>2</sup>/AWG 24 – AWG 12.

The **CAGE CLAMP**® **connection** as a **universal clamping** system for solid stranded and fine-stranded conductors for applications in industrial electrotechnical and electronic engineering; preferentially for fine-stranded conductors in the elevator industry, in power stations, the chemical, automobile industry and on board ships.

Conductor cross section range 0.08 mm<sup>2</sup> up to 35 mm<sup>2</sup>/ AWG 28 – AWG 2.

The CAGE CLAMP®S is a further development of the universal CAGE CLAMP® allowing the connection of solid, stranded and fine-stranded conductors rated AWG 24 (0.2 mm²) to AWG 6 (16 mm<sup>2</sup>) (AWG 4/25 mm<sup>2</sup> only "f-st") and offering all the benefits and safety of the original CAGE CLAMP® connection. Furthermore, using the CAGE CLAMP®S connection technology, solid and stranded conductors rated AWG 20-6 (0.5 mm<sup>2</sup> - 16 mm<sup>2</sup>) as well as fine-stranded conductors with crimped ferrule rated from AWG 20 (0.5 mm<sup>2</sup>) to AWG 6 (16 mm<sup>2</sup>) can be connected by simply pushing them in.

The conductor introduction hole is designed to ensure an optimum adaptation to the insulation cross sections of conductor rated cross sections, thus guaranteeing good conductor guidance.

This is of particular importance for applications subject to vibration.

In practice, there is always a danger of very small cross section of fine-stranded wire being fragile enough to allow it to be pushed into the point where the conductor insulation is being clamped by the clamping unit.

In order to prevent resulting "accidental contact" we provide insulation stop sleeves for WAGO rail-mounted terminal blocks with cross section up to AWG 12 (4 mm²) which avoid this danger even with conductors of AWG 28 (0.08 mm²) (see page 2.43).

### Rated cross section and connectable conductors

**I.** According to IEC 60999-1 / EN 60999-1 / VDE 0609 part 1, table 1:

			Theoretical di	ameter of the lar	gest conductor				ectable
Rated		Metric			AWG	/Kcmil		cond	uctors
cross-	Ri	gid	Flexible		Rigid		Flexible	Rigid	Flexible
section	Solid	Stranded			ы Solid	Class B	Class I, K, M Stranded		
mm <sup>2</sup>	mm	mm	mm	Wire size	mm	mm	mm	]	
0.2	0.51	0.53	0.61	24	0.54	0.61	0.64	]	
0.34	0.63	0.66	0.8	22	0.68	0.71	0.80	]	
0.5	0.9	1.1	1.1	20	0.85	0.97	1.02		
0.75	1.0	1.2	1.3	18	1.07	1.23	1.28	To be s	pecified
1.0	1.2	1.4	1.5	-	-	-	-	in the r	elevant
1.5	1.5	1.7	1.8	16	1.35	1.55	1.60	pro	duct
2.5	1.9	2.2	2.3°)	14	1.71	1.95	2.08	stan	dard
4.0	2.4	2.7	2.9°)	12	2.15	2.45	2.70	]	
6.0	2.9	3.3	3.9°)	10	2.72	3.09	3.36	1	
10.0	3.7	4.2	5.1	8	3.34	3.89	4.32	1	
16.0	4.6	5.3	6.3	6	4.32	4.91	5.73	1	
25.0	_	6.6	7.8	4	5.45	6.18	7.26	1	
35.0	-	7.9	9.2	2	6.87	7.78	9.02		

NOTE: Diameters of the largest rigid and flexible conductors are based on Table 1 of IEC 60228 A und IEC 60344 and,

for AWG conductors, on ASTM B172-71 [4], IECA Publication S-19-81 [5], IECA Publication S-66-524 [6] and IECA Publication S-66-516 [7].

In practical use the conductor cross sections are approx. 5 % below the values stated in the table!

Dimensions for class 5 flexible conductors only, according to IEC 60228 A.

 $<sup>^{\</sup>text{b)}}$  Nominal cross section + 5 %

 $<sup>^{\</sup>circ}$  Largest diameter for conductors of classes I, K, M + 5 %

This specification concerning clamping units - IEC 60999-1/EN 60999-1/VDE 0609 part 1, contains the following requirement (paragraph 7.1):

# Clamping units must be suitable for connecting unprepared conductors.

With normal operating conditions this direct clamping, i.e. the direct contacting of the conductor at the current bar of the terminal block, results in optimum contact quality as any additional risk factors arising in connection with anti-splaying methods, are prevented.

Occasionally, due to wire handling on site, conductor anti-splaying methods may be necessary. Various methods may be used (as illustrated below).

For applications in special areas with extremely corrosive atmospheres, special conditions apply.

In this case the use of solid copper wires or fine-stranded copper wires with properly crimped, tinned copper ferrules or copper pin terminals is recommended. Thus the fine strands are crimped to a dense inner core, like solid copper wire. This action prevents the ingress of the aggressive atmosphere (depending on the ppm concentration), which can diffuse into the conductor bundle along the individual strands and hence cause corrosion deposits between individual strands and the clamping point.

#### 1 conductor per clamping unit

A number of VDE-specifications specify that only one conductor may be connected to each clamping unit, for example DIN VDE 0611, part 4/2.91, clause 3.1.9

The same applies to the recommendations of the association of the German automotive industry "Supply specification for the electrical equipment of machines, mechanical installations and buildings in the automotive industry" acc. to clause 15.1.1.3, draft 8.93.

Other VDE-specifications recommend the connection of one conductor per clamping unit unless the clamping unit is specifically tested and approved for the connection of several conductors:

VDE 0660, part 500, 08.00/ EN 60439-1: 1999, clause 7.8.3.7

VDE 0113, part 1, 11.98 EN 60 204-1: 1997, clause 14.1.1

VDE 0609, part 1, 12.00/ EN 60999-1:2000, clause 7.1

One conductor per clamping unit is therefore recommended, to meet the safety requirements of these relevant specifications.

This WAGO principle is the basis for a number of other technical and economic advantages:

Each conductor may be installed or removed without affecting previously installed wires.

Each conductor is clamped independently of the other. Any combinations of conductor cross section or kind of conductor (stranded and solid) can be connected.

Multi-conductor 3- and 4-wire terminal blocks may be selected, or a variety of commoning jumpers may be chosen.

### II. According to IEC 60999-2, table 1:

	Theore	etical diame	eter of the	largest con	ductor		
Rated	Met	tric		AWG/kcmi	1	Conne	ctable
cross section						condu	uctors
Section	Rigid stranded	fexible	Gage	Rigid stranded	Flexible		
mm <sup>2</sup>	mm	mm		mm	mm	Rigid	Flexible
50	9.1	11.0	0	9.64	12.08		
70	11.0	13.1	00	11.17	13.54		
95	12.9	15.1	000	12.54	15.33		
_	_	_	0000	14.08	17.22	To be sp	pecified
120	14.5	17.0	250	15.34	19.01	in the r	
150	16.2	19.0	300	16.80	20.48	prod	duct
185	18.0	21.0	350	18.16	22.05	stand	
_	_	_	400	19.42	24.05		
240	20.6	24.0	500	21.68	26.57		
300	23.1	27.0	600	23.82	30.03		

a) Dimensions for class 5 flexible conductors only, according to IEC 60228A.

NOTE: Diameters of the largest rigid and flexible conductors are based on Table 1 and Table 3 of IEC 60228 A and, for AWG conductors, on ASTM B 172-71 [1], IECA Publication S-19-81 [2],

IECA Publication S-66-524 [3] and IECA Publication S-66-516 [7].



Partial stripping of the insulation



Tinning of the end of the conductors



Tip-bonding of conductor ends



The use of crimped ferrules (gastight crimped)

With all anti-splaying methods which increase the diameter of the conductor, it is necessary to use the terminal block one size larger than the nominal cross section.



or pin terminals (gastight crimped), preferably produced from copper with tinned surface.



# Tests and Testing Procedures According to IEC/EN Standards (continued) Mechanical Tests (continued)

### Pull-out test according to IEC/EN 60947-7-1, IEC/EN 60998-2-2, IEC/EN 60999-1

This test simulates the mechanical stress on the clamping unit when, for example, the installer is pushing the conductor aside so that the adjacent clamping unit can be better operated or when he wants to check if the wire is connected properly by briefly pulling on it.

During the test, a pulling force is applied without jerks, for one minute, to the connected conductor. The pulling force is selected according to the cross-sectional area. The larger the cross-section of the conductor, the higher the pull-out force is selected. For example, the pulling force is 40 N for a conductor having a cross-section of 1.5 mm² (AWG 16) and 100 N for a conductor having a cross-section of 16 mm<sup>2</sup> (AWG 6). The values specified by the standard are the same for both screw-clamp and spring-clamp terminal blocks. During the test, the conductor shall neither slip out of the clamping unit nor break near the clamping unit.

### Conductor pull-out forces

The clamping units of screwless terminal blocks have to withstand the pull-out forces as follows:

IEC 60947-1/EN 60947-1/VDE 0660, part 100, table 5 Low-voltage switchgear and controlgear, general rules

IEC 60947-7-1/EN 60947-7-1/ VDE 0611, part 1, rail-mounted terminal blocks for copper

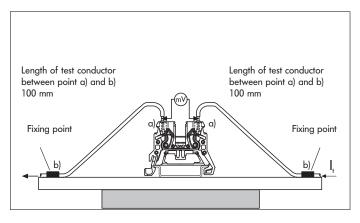
IEC 60998-2-1/EN 60998-2-1/ VDE 0613, part 2-1, table 104 IEC 60998-2-2/ EN 60998-2-2/VDE 0613, part 2-2, table 103 Connecting devices for low-voltage circuits for household and similar purposes.

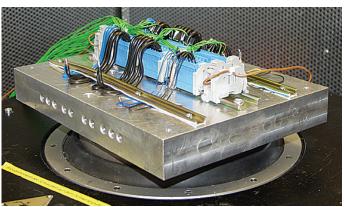
Particular requirements for connecting devices as separate entities with screwclamp or with screwless terminal blocks. IEC 60999-1/EN 60999-1/VDE 0609, part 1, table 3: IEC 60999-2/EN 60999-2, table 2: Safety requirements for screw-clamp and screwless clamping units for electrical copper conductors

Rated cross-s	ectional area	Pull-out for	ces according	to IEC/EN
mm <sup>2</sup>	AWG/MCM	60947-7-1 N	60998-2-2 N	60999-1/ -2 N
0.2	24	10	10	10
0.34	22	15	15	15
0.5	20	20	20	20
0.75	18	30	30	30
1.0	_	35	35	35
1.5	16	40	40	40
2.5	14	50	50	50
4.0	12	60	60	60
6.0	10	80	80	80
10	8	90	90	90
16	6	100	100	100
25	4	135	135	135
35	3 2	156 190	190	190
50	1 0	236 236		236
70	00	285		285
95	000	351		351
120	0000 250	427 427		427 427
150	300	427		427
185	350	503		503
240	400 500	503 578		503 578
300	600	578		578

# • Shock test according to IEC/EN 60068-2-27, 60068-2-30; Railway applications IEC/EN 61373

The shock test is very similar to the vibration test (see pages 15.20 and 15.21) except that, instead of continuous vibrations, single shocks are applied to the specimen. Shock tests are usually carried out with an acceleration of 20 g over 11 milliseconds. Tests for special requirements often need much higher values. Just like vibration tests, shock tests are primarily used to test the voltage drop variation or contact breaks, etc.





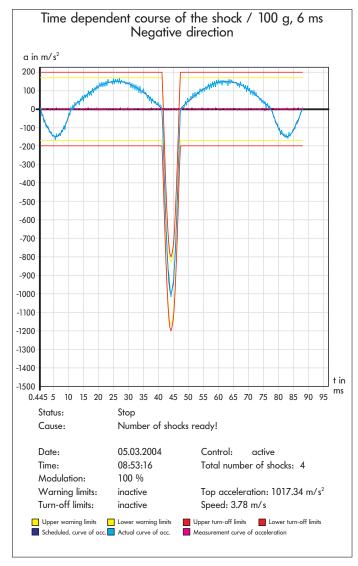
#### e.g. shock requirement

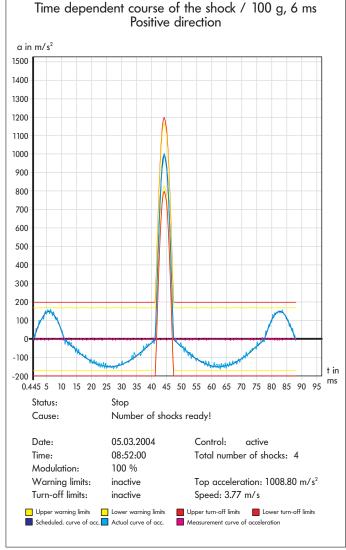
according to IEC/EN 60068-2-27

Half-sine shock

100 g acceleration 6 ms duration Direction of shock: 3 axes

3 shocks in positive direction and 3 shocks in negative direction.





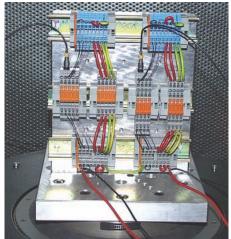
# Tests and Testing Procedures According to IEC/EN Standards (continued) Mechanical Tests (continued)

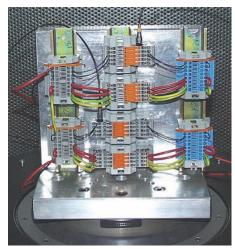
#### Vibration test acc. to IEC/EN 60068-2-6; Shipbuilding GL, LR, DNV; Railway applications EN 61373

The vibration test is aimed at finding out if vibrations, such as those produced in the vicinity of machines or in vehicles, will permanently affect the electrical connection or if contact breaks will occur during vibrations. Using a vibration table, the test specimen is submitted to vibrations in each of the X, Y and Z axes (see pictures). The amplitude, the acceleration and especially the frequency of the vibrations shall vary during the test.

For example, a common test is carried out using a wide frequency band up to 2000 Hz with different accelerations up to 20 g and varying amplitudes up to 20 mm. The test duration can be 90 minutes per axis.







Other types of test are carried out using a single fixed frequency. The exact test procedure shall vary considerably depending on how the product will be used. Some test specifications require the determination of possible resonant frequencies, i.e. finding out if resonances will occur within the frequency spectrum to be passed through. Analysing the specimen behaviour under the influence of resonant frequencies is carried out using a special testing procedure.

Apart from the standard tests mentioned above, special test procedures are carried out by the railway company, for example, on rolling stock electrical equipment or by shipping classification societies such as Germanischen Lloyd, Lloyd's Register of Shipping, Det Norske Veritas.

Though the requirements of such test procedures are particularly high, test arrangements are identical for all of them. During vibrations, possible contact breaks are monitored on an oscilloscope. Voltage drop is measured before and after the test to detect permanent failures, i.e. checking if the electrical resistance at the clamping unit has not increased beyond the permissible limit. The smaller this value is, the smaller the contact resistance of the clamping unit will be.

The test is passed if the conductor has neither slipped out of the terminal block nor been damaged, the maximum permissible voltage drop has not been exceeded and neither contact breaks have occured nor a defined break time has been exceeded.

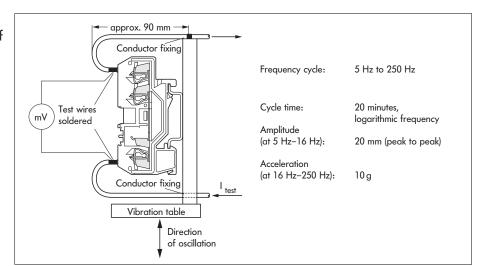
After the test, the specimens should show no damage which could affect subsequent operation.

For many years, the CAGE CLAMP® and CAGE CLAMP®S connections have been tested repeatedly for their resistance to vibration in connection with approval tests.

In addition WAGO undertakes special tests on the self resonance behaviour of the terminal systems with varying terminal block and conductor arrangements.

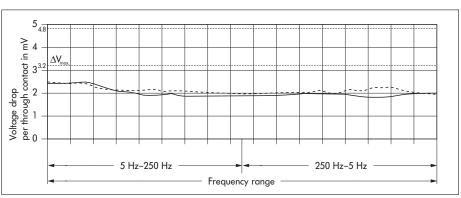
For the purpose of these tests a wide frequency band is continuously run through up to 2000 Hz with differing acceleration up to 20 g and differing amplitudes up to 20 mm.

The figure provides an example of the additional vibration test configuration for self resonance.



Vibration test set-up for self resonance

All WAGO spring clamp connections meet these test requirements.



Frequency cycle Rail-mounted terminal block: Item-No. 280-681 — Test specimen no. 1 Test current:  $1/10 \, I_N = 2.4 \, A$  — Test specimen no. 2

15



# Tests and Testing Procedures According to IEC/EN Standards (continued)

### **Electrical Tests**

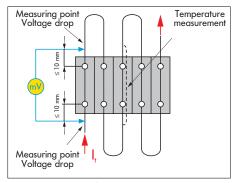
### All WAGO products meet the requirements of the following electrical tests.

#### • Temperature-rise test according to IEC/EN 60947-7-1

The temperature-rise test is necessary to test the terminal block as a whole, including the insulation housing at rated current, at overload and under short circuit conditions.

Unless otherwise specified in the related equipment specification, e.g. by specifying the nominal currents of the equipment, terminal blocks and connectors are tested with the current loads as specified in the respective construction specification.

For rail-mounted terminal blocks acc. to IEC 60947-7-1/EN 60947-7-1/VDE 0611 part 1 and terminal blocks acc. to IEC 60998-1/EN 60998-1/VDE 0613 part 1 the temperature rise shall not exceed 45 Kelvin.



Test arrangement of the temperature-rise test

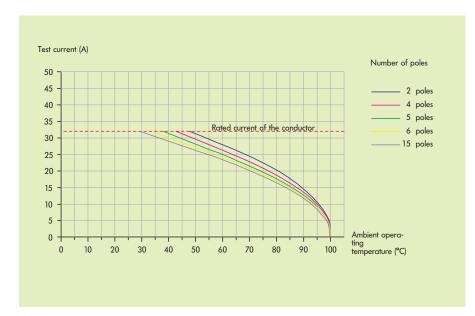
Rated cross section	Test current of IEC 60947-7-1 Table 4	acc. //EN 60998-1 Table 2	Wire size	Test current acc. IEC/EN 60947-7-1 Table 5
mm <sup>2</sup>	A	Α	AWG/MCM	Α
0.2	4	4	24	4
0.34	5	5	22	6
0.5	6	6	20	8
0.75	9	9	18	10
1.0	13.5	13.5	-	16
1.5	17.5	17.5	16	
2.5	24	24	14	22
4.0	32	32	12	29
6.0	41	41	10	38
10	57	57	8	50
16	76	76	6 4	67
25	101	101		90
35 -	125	125	2	121 139
50	150		0	162
70	192		00	185
95 -	232		000 0000	217 242
120	269		250 kcmil	271
150	309		300 kcmil	309
185	353		350 kcmil	353
240	415		500 kcmil	415
300	520		600 kcmil	520

## • Current-carrying capacity curve (derating curve) according to IEC/EN 60512-5-2

Both the constructional requirements and the current-carrying capacity of a connector must be checked by the user when selecting connectors.

The current-carrying capacity depends on the cross section of the connected wire, the ambient temperature, the number of simultaneously loaded poles, the internal resistance of the connector, the PCB layout if required and the connector materials used. In accordance with the IEC/EN 60512-5-2 standard, the relation between the current, the ambient temperature and the temperature rise up to the upper temperature limit of the connector is represented by a current-carrying capacity curve (derating curve). The connector shall only be operated up to this temperature limit (sum of the self-generated heat and the ambient temperature) without being damaged or destroyed during operation.

The way a current-carrying capacity curve (acc. to IEC/EN 60512-5-2) works is shown in the following application using the X-COM®-SYSTEM: the basic curve of a 4-pole connection charged with 32 A per pole shows a maximum ambient temperature of 42°C using a conductor of cross section 4 mm² (AWG 12). The current must be reduced at higher ambient temperatures (e.g., to 19 Å at 80°C).





1-conductor/1-pin receptacle terminal block Cross section of conductor:

1-conductor female plugs: Cross section of conductor: Length of the conductor: 769-176 4 mm² "f-st"/AWG 12 "f-st"

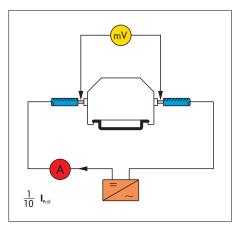
769-102 to 769-115 4 mm² "f-st"/AWG 12 "f-st" 1 m



# Tests and Testing Procedures According to IEC/EN Standards (continued) Electrical Tests (continued)

### Voltage drop test according to IEC/EN 60947-7-1

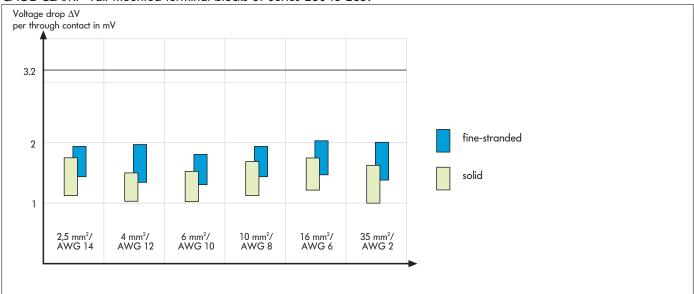
The voltage drop test allows judgement of the quality of a clamping unit under vibration, temperature cycling, industrial climate and salt spray conditions in order to verify that the contact area is gastight.



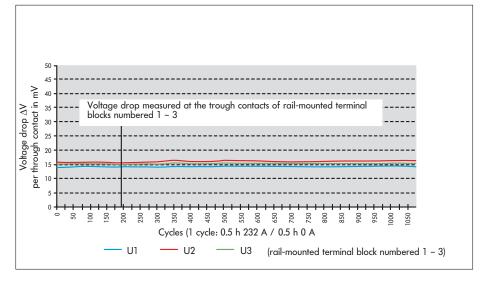
The CAGE CLAMP® and CAGE CLAMP®S connections enclose and contain flexible conductors. Therefore, a variation of the voltage drop with solid and fine-stranded conductors is so small that its influence may be neglected for the practical application of the terminal blocks.

Test arrangement for the voltage drop test

Typical variation of the voltage drops for solid and fine-stranded conductors of CAGE CLAMP® rail-mounted terminal blocks of Series 280 to 285:



Example: Current load cycling test result for rail-mounted terminal blocks (item no. 285-195) using 95 mm² (AWG 000) fine-stranded copper wires:

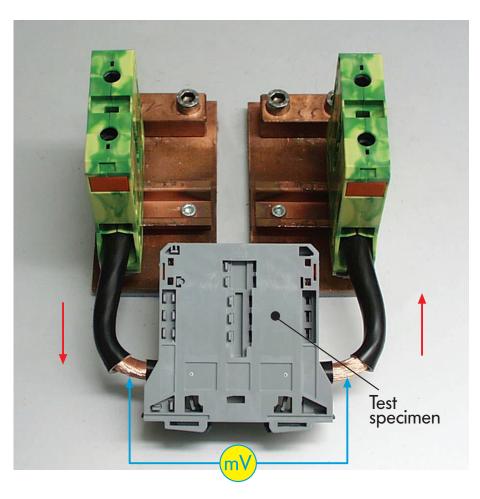


The change of voltage drop over longer periods under current load cycling conditions is shown for the WAGO railmounted terminal blocks series 285-195 (95 mm²/AWG 000) using fine-stranded copper wires. The diagram shows that the voltage drop is constant, far beyond the 192 cycles required in IEC 60947-7-1.

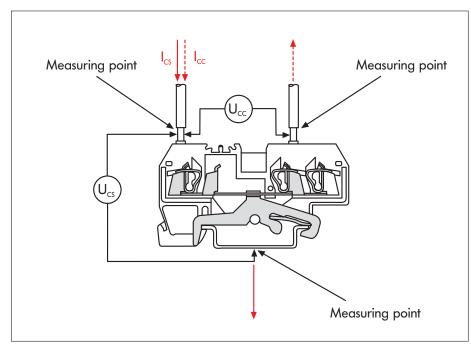
(The voltage drop has been determined using the rated current)

## • Short-time withstand current test (short-circuit withstand capacity) according to IEC/EN 60947-7-1

Apart from the rated current, which can be constantly applied to an electrical device, operation-related short peak currents consistently occur in electrical installations when motors are started, for example. Also, in the event of a short circuit, a high current can flow for a short time until the fuse element melts. Terminal blocks and connecting devices must be able to withstand such conditions. For example, a rail-mounted through terminal block shall be capable of withstanding for 1 s the rated short-time withstand current which corresponds to 120 A/mm² of its rated cross-section, in accordance to IEC/EN 60947-7-1.



The short circuit current of the 95 mm<sup>2</sup> / AWG 000 high current terminal block (item no. 285-195) is **11400 A**.



During the short-time withstand current test, the ground (earth) conductor rail-mounted terminal blocks are subjected three times for 1 s each to a current load of 120 A/mm<sup>2</sup>.

The voltage drop is the main factor for passing the test (limiting value and constant measured values).



# Tests and Testing Procedures According to IEC/EN Standards (continued) Electrical Tests (continued)

Insulation parameters according to IEC/EN 60664-1

Clearances and creepage distances Generally applicable is:

The equipment specification contains data for the measurement of clearances and creepage distances or refers to the data contained in the new revised edition of the basic standard DIN EN 60664-1/VDE 0110, part 1.

DIN EN 60664-1/VDE 0110, part 1 contains new clearance and creepage distance data taking into consideration the rules of insulation. That is the insulation parameters of an equipment are

- the surge voltages expected,

assigned to:

- the parameters of the protection device against surge voltage and
- the expected environmental conditions and the protection measures against pollution.

The standard is based on IEC 60664-1, with some modifications.

Clearances, rated impulse voltages, overvoltage categories, pollution degrees

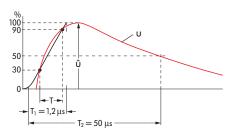
Decisive for the proportioning of air distances are the **impulse voltages** in accordance with table 1.

This basis forms the

overvoltage category, i. e. the allocation of the equipment to the expected surge voltage, and the conductor – earth voltage derived from the rated line voltage in installations with a grounded (earthed) Y (star) point.

In ungrounded (unearthed) installations, or in installations where the conductor is not grounded (earthed), the voltage between the conductors is applicable in the same way as conductor voltage to ground (earth).

#### • Voltage pulse 1.2/50



acc. to IEC 60-1 / VDE 0432, part 1

#### Overvoltage categories for electrical equipment:

Specification of a specific impulse withstand category (overvoltage category) shall be based on the following general explanation:

- Equipment of impulse withstand category I is equipment which is intended to be connected to the fixed electrical installations of buildings. Protective means are taken outside the equipment – either in the fixed installation or between the fixed installation and the equipment – to limit transient overvoltages to the specific level.
- Equipment of impulse **withstand category II** is equipment to be connected to the fixed electrical installations of buildings.

**NOTE:** Examples of such equipment are household appliances, portable tools and similar loads.

- Equipment of impulse **withstand category III** is equipment which is part of the fixed electrical installations and other equipment where a higher degree of availability is expected.

**NOTE:** Examples of such equipment are distribution boards, circuit breakers, wiring systems (IEV 826-06-01, including cables, bus-bars, junction boxes, switches, socket-outlets) in the fixed installation, and equipment for industrial use and some other equipment, e.g. stationary motors with permanent connection to the fixed installation.

Equipment of impulse withstand category IV is for use at or in the proximity
of the origin of the electrical installations of buildings upstream of the main
distribution board.

**NOTE:** Examples of such equipment are electricity meters, primary overcurrent protection devices and ripple control units.

The rated impulse voltage shall be selected from table 1 corresponding to the overvoltage category specified and to the rated voltage of the equipment.

Table 1: Rated impulse voltages for equipment energized directly from the low-voltage mains

(DIN EN 60664-1/VDE 0110, part 1)

• Voltage curve: 1.2/50 µs acc. IEC 60-1 / VDE 0432, part 1

Nominal volt of the supply s (mains) based on IE V	ystem <sup>1)</sup>	Voltage line to neutral derived from nominal voltages a.c. or d.c. up to and including	Rated impulse voltage <sup>2)</sup> V Overvoltage category <sup>4)</sup>					
Three-phase Single-phase		٧	I	II	III	IV		
		50	330	500	800	1500		
		100	500	800	1500	2500		
		150	800	1500	2500	4000		
230/400 277/480	120-240	300	1500	2500	4000	6000		
400/690		600	2500	4000	6000	8000		
1000		1000	4000	6000	8000	12000		

See annex B for application to existing different low-voltage mains and their nominal voltages

<sup>2</sup> Equipment with these rated impulse voltages can be used in installations in accordance with IEC 60364-4-443.
<sup>3</sup> The / mark indicates a 4-wire three-phase distribution system. The lower value is the voltage line-to-neutral, while the higher value is the voltage line-to-line. Where only one value is indicated, it refers to 3-wire, three-phase systems and specifies the value line-to-line.

<sup>4)</sup> See 2.2.2.1.1 for an explanation of the overvoltage categories.

The nominal supply voltages and the corresponding rated impulse voltages apply for grounded (earthed) as well as for ungrounded (unearthed) circuits.

#### Pollution degree

Pollution factors are all solid, liquid or gaseous foreign matter which may reduce the dielectric strength or the specific surface resistances.

Soiling is divided into 4 classes in accordance with the environmental conditions to be expected:

		Examples of pollution degrees for assigned areas:
pollution degree 1:	No pollution or only dry, non conductive pollution occurs. The pollution has no influence.	Electrical equipment in air-conditioned or clean dry rooms.
pollution degree 2:	Only non-conductive pollution occurs except that occasionnally temporary conductivity caused by condensation is to be expected.	Electrical equipment in living areas, shops, laboratories, test stations, mechanical workshops and medical rooms.
pollution degree 3:	Conductive pollution occurs or dry non-conductive pollution occurs which becomes conductive due to condensation which is to be expected.	Electrical equipment in industrial and farming areas, unheated rooms, workshops and boiler rooms.
pollution degree 4:	The pollution generates persitent conductivity caused by conductive dust or by rain or wet conditions.	Electrical equipment for outdoor use.

**Table 2: Clearances to withstand transient overvoltages** (DIN EN 60664-1/VDE 0110, part 1)

		Minimum cl	earances in air u	p to 2000 m abo	ve sea level	
Required		Case A			Case B	
impulse with- stand voltage <sup>1)5)</sup>	(inhomo	ogeneous field, se			jeneous field, see	
siana voliage	_	Pollution degree			Pollution degree <sup>6)</sup>	
154	1	2	3	1	2	3
kV	mm	mm	mm	mm	mm	mm
0.332)	0.01			0.01		
0.40	0.02			0.02		
0.50 <sup>2)</sup>	0.04			0.04		
0.60	0.06	0.23)4)		0.06	0.23)4)	
0.802)	0.10		0.84) 0.10	0.84) 0.10		
1.0	0.15			0.15		0.84)
1.2	0.25	0.25		0.20		
1.52)	0.5	0.5		0.30	0.30	
2.0	1.0	1.0	1.0	0.45	0.45	
2.52)	1.5	1.5	1.5	0.60	0.60	
3.0	2.0	2.0	2.0	0.80	0.80	
4.02)	3.0	3.0	3.0	1.2	1.2	1.2
5.0	4.0	4.0	4.0	1.5	1.5	1.5
6.02)	5.5	5.5	5.5	2.0	2.0	2.0
8.02)	8.0	8.0	8.0	3.0	3.0	3.0
10	11	11	11	3.5	3.5	3.5
12 <sup>2)</sup>	14	14	14	4.5	4.5	4.5
15	18	18	18	5.5	5.5	5.5
20	25	25	25	8	8	8
25	33	33	33	10	10	10
30	40	40	40	12.5	12.5	12.5
40	60	60	60	17	17	17
50	75	75	75	22	22	22
60	90	90	90	27	27	27
80	130	130	130	35	35	35
100	170	170	170	45	45	45

# **Dimensioning of clearances** acc. to DIN EN 60664-1/VDE 0110,

acc. to DIN EN 60664-1/VDE 0110, part 1, table 2

Choose the minimum clearances in accordance with the rated impulse voltages and the degree of pollution. For the operating life of the equipment do not go below these minimum clearances.

Table 2 contains a list of information for the Case A, the inhomogeneous field, and for the Case B, the homogeneous field.

This covers an electric field with essentially constant (Case B) or not constant (Case A) voltage gradients between the electrodes.

Equipment with a clearance in accordance with Case A, in other words rated for the most unfavourable case, can be employed without evidence of impulse voltage testing.

Equipment for which the clearances are dimensioned acc. to Case B or between A and B requires verification by the impulse voltage test.

The clearances shown in table 2 are applicable for an installation height of up to 2000 m above sea level.

Values for clearances above 2000 m must be multiplied by a high correction factor in accordance with table 2.

- for functional insulation: the maximum impulse voltage expected to occur across the clearance (see 3.1.4.);
- for basic insulation directly exposed to or significantly influenced by transient overvoltages from the low-voltage mains (see 2.2.2.2, 2.2.2.3.1 and 3.1.5): the rated impulse voltage of the equipment;
- for other basic insulation (see 2.2.2.3.2.): the highest impulse voltage that can occur in the circuit;
- for reinforced insulation, see 3.1.5.
- <sup>2)</sup> Preferred values specified in 2.1.1.2.
- <sup>3</sup> For printed wiring material, the values for pollution degree 1 apply except that the value shall not be less than 0.04 mm, as specified in table 4.
- <sup>4)</sup> The minimum clearances given for pollution degrees 2 and 3 are based on the reduced withstand characteristics of the associated creepage distance under humidity conditions (see IEC 60664-5).
- <sup>5)</sup> For parts or circuits within equipment subject to impulse voltages according to 2.2.2.3.2, interpolation of values is allowed. However, standardization is achieved by using the preferred series of impulse voltage values in 2.1.1.2.
- <sup>6)</sup> The dimensions for pollution degree 4 are as specified for pollution degree 3, except that the minimum dearance 1.6 mm.



<sup>1)</sup> This voltage is

# Tests and Testing Procedures According to IEC/EN Standards (continued) **Electrical Tests** (continued)

Insulation parameters according to IEC/EN 60664-1 (continued)

#### Creepage distances, Rated voltages, Material groups

Criteria for the dimensioning of the creepage distances are the rated voltages, the degrees of pollution and the material groups.

The pollution degrees specified for the clearances and its quoted allocation to locations is also applicable for creepage distances.

The tables 3 a and 3 b of the DIN EN 60664-1/VDE 0110, part 1 contain the rated voltages which have to be considered for dimensioning the minimum creepage distance.

Table 3 a: Single-phase 3- or 2-wire AC or DC systems

	Voltages ration	nalized for table 4
Nominal voltage of the supply	For insulation line-to-line <sup>1)</sup>	For insulation line-to-earth <sup>1)</sup>
system (mains) <sup>7)</sup>	All systems	Three-wire systems mid-point earthed
	• <b></b> •	° <del></del> °
V	V	V
12.5	12.5	
24 25	25	
30	32	
42 48 50**)	50	
60	63	
30-60	63	32
100**)	100	
110 120	125	
150**)	160	
220	250	
110-220 120-240	250	125
300**)	320	
220-440	500	250
600**)	630	
480-960	1000	500
1000**	1000	

Line-to-earth insulation level for unearthed or impedance-earthed systems equals that for line-to-line because the operating voltage to earth of any line can, in practice, approach full line-to-line voltage. This is because the actual voltage to earth is determined by the insulation resistance and capacitive reactance of each line to earth; thus, low (but acceptable) insulation resistance of one line can in effect earth it and raise the other two to full line-to-line voltage to earth.

Table A.2: **Height correction factors** (DIN EN 60664-1/VDE 0110, part 1)

Height	Standard air pressure	Multiplier for
m	kPa	distance
2000	80	1
3000	70	1.14
4000	62	1.29
5000	54	1.48
6000	47	1.7
7000	41	1.95
8000	35.5	2.25
9000	30.5	2.62
10000	26.5	3.02
15000	12	6.67
20000	5.5	14.5

<sup>\*)</sup> For relationship to rated voltage see 2.2.1.

<sup>\*\*)</sup> These values correspond to the values in table 1.

Table 3 b: Three-phase 3- or 4-wire AC systems

	Voltages rationalized for table 4					
Nominal voltage of the supply system (mains)*	For insulation line-to-line	For insulation line-to-line				
	All systems	Three-phase four-wire systems neutral earthed?	Three-phase three-wire systems unearthed" or corner-earthed			
V	V	V	V -			
60	63	32	63			
110 120 127	125	80	125			
150**)	160		160			
208	200	125	200			
220 230 240	250	160	250			
300**)	320		320			
380 400 415	400	250	400			
440	500	250	500			
480 500	500	320	500			
575	630	400	630			
600**)	630		630			
660 690	630	400	630			
720 830	800	500	800			
960	1000	630	1000			
1000**)	1000		1000			

Line-to-earth insulation level for unearthed or impedance-earthed systems equals that for line-to-line because the operating voltage to earth of any line can, in practice, approach full line-to-line voltage. This is because the actual voltage to earth is determined by the insulation resistance and capacitive reactance of each line to earth; thus, low (but acceptable) insulation resistance of one line can in effect earth it and raise the other two to full line-to-line voltage to earth.

## Material groups

Materials are separated into four groups according to their CTI (Comparative Tracking Index) as follows:

 $\begin{tabular}{ll} \mbox{Material group I:} & 600 \le CTI \\ \mbox{Material group II:} & 400 \le CTI < 600 \\ \mbox{Material group III a:} & 175 \le CTI < 400 \\ \mbox{Material group III b:} & 100 \le CTI < 175 \\ \end{tabular}$ 

The CTI values above refer to values obtained, in accordance with DIN EN 60112/VDE 0303, part 11, on samples specially made for the purpose and tested with solution A.



<sup>&</sup>lt;sup>2)</sup> For equipment for use on both three-phase four-wire and three-phase three-wire supplies, earthed and unearthed, use the values for three-wire systems only.

 $<sup>^{\</sup>ast)}$  For relationship to rated voltage see 2.2.1.

<sup>\*\*)</sup> These values correspond to the values in table 1.

# Tests and Testing Procedures According to IEC/EN Standards (continued) **Electrical Tests** (continued)

• Insulation parameters according to IEC/EN 60664-1 (continued)

Table 4: Creepage distances to avoid failure due to tracking

		Minimum creepage distances								
Voltage 1)	Printed	wiring								
r.m.s.		erial	Pollution degree							
	Pollution	degree								
	1	2	1   2   3							
	All material	All mat. gr.	All material		Material grou			Material grou		
	groups	except IIIb	groups	I			I		III <sup>2</sup> )	
V	mm	mm	mm	mm	mm	mm	mm	mm	mm	
10	0.025	0.04	0.08	0.4	0.4	0.4	1	1	1	
12.5	0.025	0.04	0.09	0.42	0.42	0.42	1.05	1.05	1.05	
16	0.025	0.04	0.1	0.45	0.45	0.45	1.1	1.1	1.1	
20	0.025	0.04	0.11	0.48	0.48	0.48	1.2	1.2	1.2	
25	0.025	0.04	0.125	0.5	0.5	0.5	1.25	1.25	1.25	
32	0.025	0.04	0.14	0.53	0.53	0.53	1.3	1.3	1.3	
40	0.025	0.04	0.16	0.56	0.8	1.1	1.4	1.6	1.8	
50	0.025	0.04	0.18	0.6	0.85	1.2	1.5	1.7	1.9	
63	0.04	0.063	0.2	0.63	0.9	1.25	1.6	1.8	2	
80	0.063	0.1	0.22	0.67	0.95	1.3	1.7	1.9	2.1	
100	0.1	0.16	0.25	0.71	1	1.4	1.8	2	2.2	
125	0.16	0.25	0.28	0.75	1.05	1.5	1.9	2.1	2.4	
160	0.25	0.4	0.32	0.8	1.1	1.6	2	2.2	2.5	
200	0.4	0.63	0.42	1	1.4	2	2.5	2.8	3.2	
250	0.56	1	0.56	1.25	1.8	2.5	3.2	3.6	4	
320	0.75	1.6	0.75	1.6	2.2	3.2	4	4.5	5	
400	1	2	1	2	2.8	4	5	5.6	6.3	
500	1.3	2.5	1.3	2.5	3.6	5	6.3	7.1	8.0	
630	1.8	3.2	1.8	3.2	4.5	6.3	8	9	10	
800	2.4	4	2.4	4	5.6	8	10	11	12.5	
1000	3.2	5	3.2	5	7.1	10	12.5	14	16	
1250		-	4.2	6.3	9	12.5	16	18	20	
1600			5.6	8	11	16	20	22	25	
2000			7.5	10	14	20	25	28	32	
2500			10	12.5	18	25	32	36	40	
3200			12.5	16	22	32	40	45	50	
4000			16	20	28	40	50	56	63	
5000			20	25	36	50	63	71	80	
6300			25	32	45	63	80	90	100	
8000			32	40	56	80	100	110	125	
10000			40	50	71	100	125	140	160	
12500			50 <sup>3)</sup>	63 <sup>3)</sup>	90 <sup>3)</sup>	1253)				
16000			63 <sup>3)</sup>	80 <sup>3)</sup>	1103)	1603)				
20000			80 <sup>3)</sup>	100 <sup>3)</sup>	1403)	2003)		+		
25000			100 <sup>3)</sup>	125 <sup>3)</sup>	180 <sup>3)</sup>	250 <sup>3)</sup>				
32000			125 <sup>3)</sup>	160 <sup>3)</sup>	2203)	3203)				
40000			160 <sup>3)</sup>	2003)	2803)	4003)		+		
50000			200 <sup>3)</sup>	250 <sup>3)</sup>	360 <sup>3)</sup>	500 <sup>3)</sup>				
63000			250 <sup>3</sup>	320 <sup>3)</sup>	450 <sup>3)</sup>	6003	-	1	+	

 $<sup>^{1)}</sup>$  This voltage is:

for functional insulation: the working voltage;
 for basic and supplementary insulation of the circuit energized directly from the mains (see 2.2.1.1.1):
 the voltage rationalized through table 3a or table 3b, based on the rated voltage of the equipment, or the rated insulation voltage;

<sup>-</sup> for basic and supplementary insulation of systems, equipment and internal circuits not energized directly from the mains (see 2.2.1.1.2): the highest r.m.s. voltage which can occur in the system, equipment or internal circuit when supplied at rated voltage and under the most onerous combination of conditions of operation within equipment rating.

 $<sup>^{2)}</sup>$  Material group IIIb is not recommended for applications in pollution degree 3 above 630 V.

<sup>&</sup>lt;sup>3)</sup> Provisional data based on extrapolation. Technical committees who have other information based on experience may use their dimensions.

According to their application WAGO terminal blocks and connectors are suitable for the pollution degrees 2 or 3 and for the over-voltage categories II or III. Example:

# WAGO rail-mounted through terminal blocks

acc. to IEC 60947-7-1/ EN 60947-7-1/VDE 0611, part 1 are dimensioned as follows: 800 V/8 kV/3,

i. e.

Rated voltage 800 V
Rated impulse voltage 8 kV
Pollution degree 3
Overvoltage category III

WAGO connecting terminal blocks for household and similar fixed electrical installation are classed acc. to IEC 60998-1/ EN 60998-1/ VDE 0613, part 1, table 3.

#### Example:

# WAGO Push-wire connectors for junction boxes

are according to this standard

\* 400 V/4 kV/2

\* for grounded (earthed) circuits, dimensioned for

Rated voltage	400 V
Rated impulse voltage	4 kV
Pollution degree	2
Overvoltage category	Ш

**Table 3: Clearances and creepage distances** (IEC 60998-1)

Rated insulation voltage	Creepage distances, clearances		
V	mm		
≤ 130	1.5		
> 130 and ≤ 250	3.0		
> 250 and ≤ 450	4.0		
> 450 and ≤ 750	6.0		
> 750	8.0		

# Tests and Testing Procedures According to IEC/EN Standards (continued) Electrical Tests (continued)

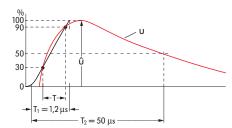
### Power-frequency withstand voltage test according to IEC/EN 60947-7-1, IEC/EN 60947-1

This test procedure is used to verify the creepage distances. Creepage distances, i.e. the distances of creeping currents, are caused by conductive impurities on the surface of the insulation housing. Apart from the amount of impurities to which a terminal block, for example, is subjected, the plastic material and housing design are also involved in generating creeping currents. The insulation material of the housing may be carbonized by a creeping current, which increases the conductivity even more.

The specimen is tested using a power-frequency withstand voltage for a short time. For example, a rail-mounted terminal block designed to operate at 800 V nominal voltage is usually tested using 2000 V alternating voltage for 1 minute. The test is considered to be passed if no flashovers or breakdowns have occured.

# • Rated impulse withstand voltage test according to IEC/EN 60947-7-1, IEC/EN 60947-1

This test is used to verify the clearances of a product. In simplified terms, a clearance is the distance between two poles of a terminal block. If this distance is too small, voltage peaks may cause flashovers or breakdowns. The arrangement of the rated impulse withstand voltage test is identical to that of the power frequency withstand voltage test; the test voltages, however, are comparatively higher and the testing times shorter, e.g. 7.3 kV over 50 µs (see figure).



Voltage pulse; measurement curve (red) and auxiliary curve (black) for calculating the rate of rise of the pulse and the resulting (virtual) peak of the curve

- T Time interval for calculating the rate of rise
- T<sub>1</sub> Front time (duration between start of impulse and reaching the peak)
- T<sub>2</sub> Total pulse duration

The test values are the values at sea level as specified in the relevant test specification. The values indicated in the catalog correspond to an altitude of 2000 m.

The test is considered to be passed if no flashovers or breakdowns have occured.

### IP ratings for electrical equipment acc. to IEC/EN 60529

Alphanumeric nomenclature for type of protection

Alphanomene in	officialists for type of profession				
Code letters IP	Protection against touch and solid objects or water	IP = Ingress Protection  If the indication of the degree of protection requires only one characteristic, the other one will be replaced by an X			
First characteristic 0 to 6	Indicates degrees of protection against touch or solid objects			Comparison	
Second characteristic 0 to 8	Indicates degree of protection against water			IP ✓→ NEMA	
First characteristic:		Second o	characteristic:		
IP 0X	No protection against touch	IP X0	No protection against water	IP code	NEMA Type
IP 1X	or solid objects Protected against solid objects > 50 mm	IP X1	Protected against vertically dripping water	10	1
IP 2X	Protected against solid objects > 12 mm (e. g. finger)	IP X2	Protected against dripping water -15° angle	11 54	2 3
IP 3X	Protected against solid objects > 2.5 mm		Protected against water spray	14	3R
IP 4X	Protected against solid objects > 1 mm	IP X4	Protected against water splash	54	3\$
IP 5X	Dust-protected (limited ingress,	IP X5	Protected against water jet	55	4&4X
ID /V	no harmful deposit)	IP X6	Protected against powerful water jet	52	5
IP 6X	Dust-tight (totally protected against dust)	IP X7	Protected against temporary immersion	67	6&6P
		IP X8	Protected against continuous	52	12&12K
			immersion	54	13

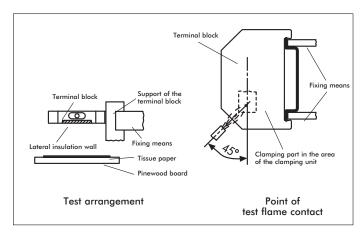
# Tests and Testing Procedures According to IEC/EN Standards (continued)

### **Material Tests**

All WAGO products meet the requirements of the following material test.

## Needle flame test according to IEC/EN 60947-7-1

This test simulates flames which may result under certain conditions (for example, a fault current over a creepage distance, overloading of parts or components). Nearby parts can be affected by such flames. Not only the ignition of the test specimen resulting from an intrinsic defect is tested, but also its behavior when other parts are ignited.

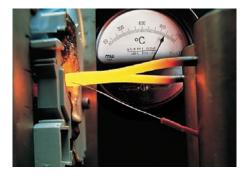


Flames should not be further fed by the insulation materials used and expand to a larger fire. The test specimen is exposed to a standard gas flame during a defined time period (e.g. 10 seconds).

After the test flame has been removed, the specimen must self-extinguish within 30 seconds. Furthermore, a layer of tissue paper situated underneath the specimen should not be ignited by glowing particles falling from the specimen.

#### Glow-wire test according to IEC/EN 60695-2-11

In the event of failure, a high current may cause a conductor to glow.



However, the glowing conductor should not cause ignition of the product involved (e.g. a rail-mounted terminal block). For the glow-wire test the tip of the glow-wire shall be pressed against a surface of the test specimen (see picture).

The position of the test specimen, the surface to be tested, the test duration and the temperature of the glow-wire, e.g. 960 °C for 30 seconds or 850 °C for 5 seconds, are specified in the standards.

The test is considered to be passed if there is no visible flames or permanent glowing or if flames or glowing extinguish within 30 seconds after removal of the glow-wire. For this test also, a layer of tissue paper situated underneath the specimen shall not be ignated by glowing particles falling from the specimen.



# Tests and Testing Procedures According to IEC/EN Standards (continued)

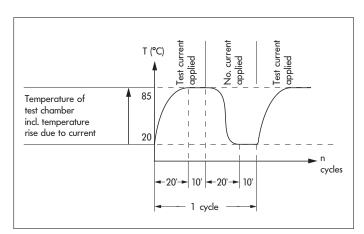
#### **Environmental Tests**

The following tests show how a product reacts when exposed to an aggressive environment. Climate chambers are used for generating standard atmospheres which may affect the long-term constancy of clamping units.

#### All WAGO products meet the requirements of the following environmental tests.

### • Temperature cycling test acc. to IEC/EN 60947-7-1, IEC/EN 60998-2-2

This test shows the change of voltage drop over longer periods under temperature cycling conditions. The test procedure usually consists of 192 temperature cycles, for example, each cycle having a duration of 60 minutes (see diagram).



The rated current is applied to the test specimen during the temperature rise and when the temperature has reached its maximum value; during the second half of the cycle the current is zero. Voltage drop is measured every 24 cycles and shall not exceed a maximum value or vary greatly. The voltage drop measured at the end of the 192nd cycle shall not exceed 1.5 times the value measured after the 24th cycle. After the test an inspection shall show no changes impairing further use of the product.

#### Industrial atmospheres acc. to EN ISO 6988, IEC 60068-2-42, IEC/EN 60068-2-60

Sulphur and its combustion products are particularly aggressive pollutants commonly found in industrial environments. A test procedure simulating such corrosive conditions consists of exposing a test specimen to water condensation in variable atmospheres containing sulphur dioxide.



A saturated atmosphere is first created in a climatic chamber by heating an aqueous sulphur dioxide solution. After less than half an hour, the test specimen is fully humidified by the condensing vapors and exposed to this atmosphere for eight hours.

After exposure to humid atmosphere, the test specimen is submitted to dry and cooler conditions at room temperature for 16 hours. Depending on the test severity, the specimen is exposed to both these conditions several times. The gas tightness of the clamping unit is checked by measuring the voltage drop.

In other test procedures, products are exposed to a dry corrosive gas atmosphere containing, for example, sulphide, nitrogen and sulphur oxides or chloric gas. These tests can be performed over 4 to 21 days.

#### Salt spray test acc. to IEC/EN 60068-2-11; GL, LR, DNV shipbuilding specifications

This test is similar to the test performed in water condensation alternating atmospheres, except that, instead of industrial atmospheres, salt mist conditions will be simulated in a heated test chamber (see picture).



Depending on the test procedure being used, the test specimen is sprayed with salt mist for up to 96 hours.

Salt spray tests are widely used, especially for ship approvals.

However, this test is performed differently than the test procedures described previously for general applications:

During a typical test, the specimen is sprayed with a salt solution for two hours and is then stored at 100 % humidity for seven days.

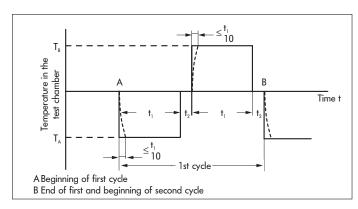
This procedure is repeated four times.

Here too, measuring the voltage drop is used as an evaluation criterion.

#### • Quick change of temperature acc. to IEC/EN 60068-2-14

Without air-conditioning, distribution panels and terminal boxes are exposed to extreme changing seasonal dependent temperatures on the open field side.

In process technology, for example, a terminal block is exposed to even quicker changes of temperature.



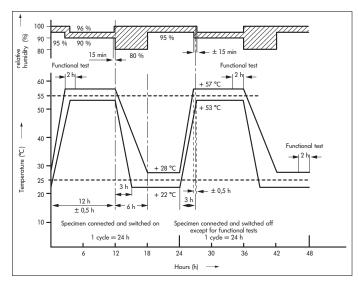
To simulate such conditions, the test specimen is exposed to repeated temperature changes, for example, between  $\rm T_A$  - 40 °C (-40 °F) and  $\rm T_B$  +70 °C (158 °F).

The dwell time  $t_1$  depends on the thermal capacity of the test specimen and should be between maximum 3 h and minimum 10 min and the transition time  $t_2$  2 - 3 min, 20 - 30 s or less than 10 seconds.

The mechanical and electrical properties of the product are checked at the end of the test.

#### • Damp heat, cyclic (12 + 12-hour cycle) acc. to IEC/EN 60068-2-30; GL, LR, DNV shipbuilding specifications

The object of this test is to determine the suitability of electrical equipment for use and storage under conditions of high relative humidity when combined with cyclic temperature changes and, in general, producing condensation on the surface of the specimen.



Apart from the salt spray tests, the damp heat test is also used for ship approvals.

For this test the specimens are subjected to temperatures varying cyclically between +25 °C (77 °F) and +55 °C (131 °F) with a relative humidity of 95 % (for tolerances see figure).

Functional tests are performed at defined times during the storage period.

The electrical and mechanical properties of the product are checked at the end of the test.



# UL Specifications – Underwriters Laboratories USA

- Flammability and performance of the insulation

material are tested according to UL 94.

WAGO terminal blocks and connectors are tested by Underwriters Laboratories Inc. according to one or more of the relevant following UL standards:

<ul> <li>The Series 273 push-wire connectors for junction boxes or the lighting connectors of Series 224 are "splicing wire connectors" and are certified according to UL 486C. They are marked with the UL Listed label  as stand-alone equipment.</li> </ul>	UL 486 C	Splicing Wire Connectors
<ul> <li>Rail-mounted terminal blocks or modular terminal blocks (e.g. Series 280, TOPJOB®S or Series 260 - 262 terminal blocks) are approved as non- stand-alone components according to UL 1059 in connection with UL 486E.</li> </ul>	UL 1059 UL 486 E	Standard for Terminal Blocks Equipment Wiring Terminals for Use with Aluminium and / or Copper Conductors
<ul> <li>The X-COM®connector system is approved as "terminal block" according to UL 1059 in connection with UL 486E. It is defined for "field and factory wiring" with a voltage of 300 V.</li> </ul>		
<ul> <li>Furthermore, it is approved as "connector for use in data, signal, control and power applications" according to UL 1977 for "factory wiring" with 600 V (i.e. the clamping unit shall be wired under controlled manufacturing conditions).</li> </ul>	UL 1977	Component connectors for use in data, signal, control and power applications
<ul> <li>Ex e II terminal blocks are approved according to UL 60079-7.</li> </ul>	UL 60079-7	Electrical apparatus for explosive gas atmospheres – Part 7: Increased safety
- Ground (earth) terminal blocks are tested for gro- unding and bonding applications according to UL 467. Components with the <b>UR label</b> are "recognized products". Additionally, after being mounted in their special applications, these com- ponents are submitted to an end product test according to the relevant device or equipment standard.	UL 467	Grounding and Bonding Equipment

**UL 94** 

Tests for Flammability of Plastic Materials for

Parts in Devices and Appliances

#### Tests and Testing Procedures According to UL Standards

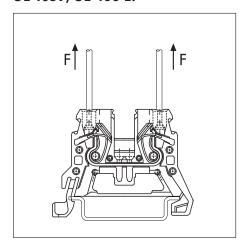
All WAGO products meet the requirements of the following tests.

• Pull-out test acc. to UL 1059, UL 486 E (rail-mounted terminal blocks), UL 486 C (splicing wire connectors)

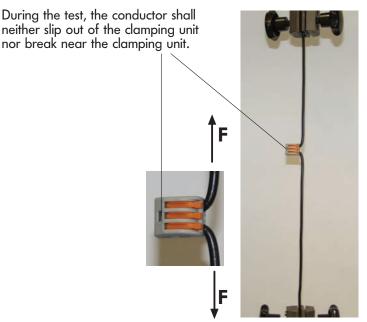
In this test, the connected wires are subjected to the appropriate pull-out forces specified in the following table without jerks for one minute. Different test arrangements are to be used for rail-mounted terminal blocks and splicing wire connectors.

Size of c	onductor		Pull-out force, pounds (N)									
AWG or				486 E, e 14.1			186 C, e 13.1					
kcmil	$(mm^2)$	Co	pper	Alur	ninum	Copper						
30 28 26 24 22 20 18 16 14 12 10 8 6 4 3 2 1 1/0 2/0 3/0 4/0 250 300	(0.05) (0.08) (0.13) (0.20) (0.32) (0.52) (0.82) (1.3) (2.1) (3.3) (5.3) (8.4) (13.3) (21.2) (26.7) (33.6) (42.4) (53.5) (67.4) (85.0) (107) (127) (152)	0.5 1 2 3 4.5 6.75 6.75 9 11.5 13.5 18 20.5 21 30 35 42 53 64 64 79 96 99	(2.2) (4.5) (8.9) (13.4) (20) (30) (30) (40) (50) (60) (80) (94) (133) (156) (186) (236) (285) (285) (285) (351) (427) (441)	- - - - - - 10 10 10 28 36 42 50 61 72 78 97 116 116 116	- - - - - (44) (44) (124) (160) (187) (222) (271) (320) (347) (432) (516) (516)	1.5 2 3 5 8 10 10 15 25 35 40 45 50	(6.9) (8.9) (13.4) (22.3) (35) (44) (44) (66) (111) (155) (178) (200) (222)					

# Test arrangement according to UL 1059, UL 486 E:



# Test arrangement according to UL 486 C:





# UL Specifications – Underwriters Laboratories USA (continued) Tests and Testing Procedures According to UL Standards (continued)

#### Heat cycling test acc. to UL 1059, UL 486 C, UL 486 E

Test performed according to: **UL 1059** 

Test performed with maximum rated cross sectional area

Test current: 150% of the max. rated current

84 cycles of: 3 1/2 h "ON" / 1/2 h "OFF"

The temperature rise is measured after the first and the 84th cycle.

The temperature rise shall not exceed 5  $^{\circ}$ C (41  $^{\circ}$ F) after the 84th cycle compared to the temperature measured after the first cycle.

UL 486 C (splicing wire connectors), (equipment wiring terminals)

Test performed with maximum rated cross sectional area

Test current: increased test current acc. to UL 486 C, table 9.1

UL 486 E, table 10.1

500 cycles of: 1 h "ON" / 1 h "OFF"

 $1\ 1/2\ h$  "ON" /  $1\ 1/2\ h$  "OFF" (from AWG 4/0 up to 400 kcmil acc. to UL 486 E)

Temperature rises on the terminal blocks and control wires are measured and recorded after 1, 25, 50, 75, 100, 125, 175, 225, 275, 350, 425 and 500 cycles.

The temperature rise shall not exceed 125 °C (257 °F) and the stability factor "S" shall not exceed  $\pm$  10.

Size of conductor			Test currents for copper conductors (A)											
			UL 48	6 E, table	10.1				UL 486 C	C, table 9.1				
AWG or kcmil	$mm^2$	Assigned maximum Ampere rating <sup>b</sup>	Sto heat	atic ing <sup>c,d,h</sup>	75	Heating Temperato °C <sup>e,h</sup>	ure rating	°C <sup>f,h</sup>	Static heating	Heat cycling				
30 28 26 24 22 20 18 16 14 12 10 8 6 4 3 2 1 1/0 2/0 3/0 4/0 250 300	(0.05) (0.08) (0.13) (0.20) (0.32) (0.52) (0.82) (1.3) (2.1) (3.3) (5.3) (8.4) (13.3) (21.2) (26.7) (33.6) (42.4) (53.5) (67.4) (85.0) (107) (127) (152)	- - - - - - 15 20 30 50 65 85 100 115 130 150 175 200 230 255 285	[20] [25] [40]	3 3.5 5.5 7 9 12 17 18 30 35 50 70 95 125 145 170 195 230 265 310 360 405 445	[22] [28] [45]	3.5 4 8 8 12 16 19 20 33 39 56 80 105 140 165 190 220 255 300 345 445 500	[27] [40] [60]	4 5 7 10 13 17 24 31 40 54 75 100 131 175 205 240 275 320 370 435 505 565 625	3 3.5 5.5 7 9 12 17 18 30 35 50 70 95	3.5 4 6 8 12 16 19 20 33 39 56 80 105				

See paragraphs 7.12 and 10.1 (UL 486 E)

Values are for 75°C (167°F), not more than 3 conductors in raceway or cable ampacities, National Electrical Code, ANSI, NFPA 70-1999, except that for Nos. 14-10 AWG copper wire and Nos. 12-10 AWG aluminium wire, the values are load-current ratings.

<sup>&</sup>lt;sup>c</sup> See paragraph 7.13 (UL 486 E)

d Values are for 75°C (167°F) single conductor in free air ampacities, National Electrical code, ANSI/NFPA 70-1999.

Values are approximately 112 percent of the static heating test currents.

f Values for No. 8 AWG and larger conductors are approximately 140 percent of the static heating test currents.

Values in brackets apply to connectors with assigned ampere ratings.

#### Conditioning – temperature-rise test acc. to UL 1059, UL 486 C

Test performed according to: **UL 1059** (rail-mounted terminal blocks)

**UL 486 C** (splicing wire connectors)

#### **Conditioning:**

The clamping units are **pre-wired/pre-inserted 9 times** using a conductor with maximum rated cross section. At the 10th time, a new conductor is connected.

Then, a static heating test is performed.

#### Static heating test:

Test current: rated current of the terminal block

Test duration: 30 days

max. permissible

temperature rise: 30 °C (86 °F)

Test current:

Test duration:

max. permissible temperature rise:

increased test current acc. to table 9.1

30 days

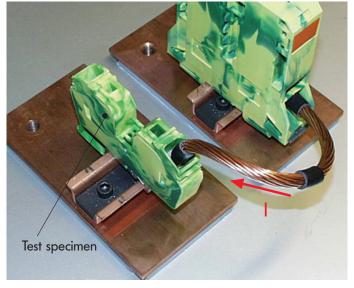
50 °C (122 °F)

#### • Grounding and bonding equipment acc. to UL 467

When used in "grounding and bonding" equipment, terminal blocks, for example, shall withstand a short circuit test using the test currents and test durations as specified in Table 14.1.

In the following example, an AWG 2 (35 mm²) ground (earth) conductor terminal block (285-635) is tested for 6 seconds at a current of 3900 A.

Table 14.1



Size of Cop	conductor per	Test duration	Test current
AWG	mm²	s	Α
14	(2.1)	4	300
12	(3.3)	4	470
10	(5.3)	4	<i>7</i> 50
8	(8.4)	4	1180
6	(13.3)	6	1530
4	(21.2)	6	2450
3	(26.7)	6	3100
2	(33.6)	6	3900
1	(42.4)	6	4900
1/0	(53.5)	9	5050
2/0	(67.4)	9	6400
3/0	(85.0)	9	8030
4/0	(107)	9	10100
250 MCM	(127)	9	12000

After the test, the specimen shall show no evidence of damage such as cracking, breaking and melting or changes of electrical properties.



# UL Specifications – Underwriters Laboratories USA (continued) Tests and Testing Procedures According to UL Standards (continued)

#### • Insulation parameters acc. to UL 1059

The table shows the potentials involved and the corresponding clearances and creepage distances required in the different applications.

#### Minimum acceptable spacings for terminal blocks, UL standard 1059, Table 8.1

		Spacings in inches (mm) between un- insulated live parts of opposite polarity uninsulated live parts and uninsulated grounded parts other than the enclosur					
Application	Potential involved in volts	Through air or oil		_	/er aces		
Service-including dead-front switchboards, panelboards service equipment, and the like	51 – 150 151 – 300 301 – 600	1/2 3/4 1	(12,7) (19,1) (25,4)	3/4 1-1/4 2	(19,1) (31,8) (50,8)		
B. Commercial appliances, including business equipment, electronic data processing equipment, and the like	51 - 150 151 - 300 301 - 600	1/16° 3/32° 3/8	(1,6)° (2,4)° (9,5)	1/16° 3/32° 1/2	(1,6)° (2,4)° (12,7)		
C. Industrial, general	51 - 150 151 - 300 301 - 600	1/8° 1/4 3/8	(3,2)° (6,4) (9,5)	1/4 3/8 1/2	(6,4) (9,5) (12,7)		
D. Industrial, Devices having limited ratings <sup>b</sup>	51 – 300 301 – 600	1/16° 3/16°	(1,6)° (4,8)°	1/8° 3/8	(3,2)° (9,5)		

#### Notes

- A slot, groove, or the like, 0.013 inch (0.33 mm) wide or less in the contour of the insulating material is to be disregarded.
- 2 An air space of 0.013 inch (0.33 mm) or less between a live part and an insulating surface is to be disregarded for the purpose of measuring over surface spacings.
- <sup>a</sup> The spacing between wiring terminals of opposite polarity and the spacing between a wiring terminal and a grounded dead metal part shall not be less than 1/4 inch (6.4 mm) if short-circuiting or grounding of such terminals may result from projecting strands of wire.
- be see paragraph 8.5 (UL 1059)
  The spacings specified in item of table 8.1 are applicable to a terminal block for use only in or with industrial control equipment where the load on any single circuit of the terminal block does not exceed 15 amperes at 51 150 volts, 10 amperes at 151 300 volts, 5 amperes at 301 600 volts, or the maximum ampere rating, whichever is less.

#### • Flammability test acc. to UL 94

This test is intended to provide an indication of a material's ability to extinguish a flame, once ignited.

Several ratings can be applied based on the rate of burning, time to extinguish, ability to resist dripping, and after-glow extinguishing time.

Each material tested may receive several ratings depending on the wall thickness.

UL 94 rating categories:

#### **V2**

- specimen mounted vertically
- burning stops within 30 seconds after the flame is removed
- flaming drips allowed
- after-glow extinguishes within max. 60 seconds

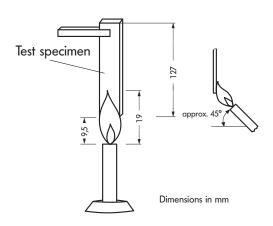
#### V

- specimen mounted vertically
- burning stops within 30 seconds after the flame is removed
- no flaming drips allowed
- after-glow extinguishes within max. 60 seconds

#### V0

- specimen mounted vertically
- burning stops within 10 seconds after the flame is removed
- no flaming drips allowed
- after-glow extinguishes within max. 30 seconds

During the test, a 3/4 inch (19 mm) flame is applied for two 10 second intervals to the specified bar specimens held vertically.



#### Connection of aluminum wires

WAGO spring-clamp terminal blocks are suitable for solid aluminum wires **1** up to 4 mm<sup>2</sup> / AWG 12 if WAGO con-tact paste "Alu-Plus" is used for the connection (see page 14.48).

Please take into account that the nominal currents must be adapted to the reduced conductivity of the aluminum wires:

#### 2.5 mm<sup>2</sup> / AWG 14 = 16 A 4 mm<sup>2</sup> / AWG 12 = 22 A

Cleaning and greasing of the aluminum conductor is no longer necessary. Use the WAGO contact paste "Alu-Plus" instead, which is directly injected into the conductor entry hole of WAGO terminal block by means of the handy syringe.

This allows the easy connection of solid aluminum wires (in case of multipole terminal blocks, also mixed with copper conductors).

WAGO "Alu-Plus"

- automatically destroys the oxide film during clamping
- prevents fresh oxidation at the clamping point
- prevents electrolytic corrosion between aluminum- and copper conductors (in the same terminal block)
- offers permanent protection against corrosion

It is, of course, also possible to apply the WAGO "Alu-Plus" directly on the whole surface of the aluminum wire before clamping.

WAGO "Alu-Plus" in the syringe offers a higher degree of security and cleanliness when connecting solid wire aluminum conductors. Filling is, for example, very quickly performed on the three following selected WAGO terminal blocks (see description on the right).

#### How to proceed:

There are two possibilities to use the contact paste when connecting solid aluminum wires:

- 1. Apply WAGO "Alu-Plus" on the whole surface of the aluminum wire before clamping.
- Or insert nozzle of the syringe in every conductor entry hole of WAGO terminal blocks as demonstrated with the three examples.

These procedures invariably offer more security and cleanliness in a quick and easy way.

# WAGO Push-wire connectors for junction boxes



1. Push nozzle of the "Alu-Plus" syringe into the <u>center</u> conductor entry hole of the WAGO junction box connector.



2. Press plunger down until "Alu-Plus" is visible in the other holes.

#### **WAGO Lighting connectors**



1. Push nozzle of the "Alu-Plus" syringe first into the <u>cir-</u> <u>cular</u> and then into the <u>square</u> conductor entry hole of the WAGO lighting connector.



2. Press plunger down until the "Alu-Plus" has filled both holes.

#### WAGO Insulated terminal blocks (only up to 4 mm<sup>2</sup>/AWG 12 rated cross section)

◆ Aluminum wires in accordance with IEC 61545, Class B, Alloy 1370, with a tensile strength of 90 -180 N/mm² and an elongation of 1 - 4 %.

Standard values: Tensile strength 90 - 180 MPa, elongation 1 - 4 %. (acc. to EN 615.4.1)



1. Push nozzle of the "Alu-Plus" syringe in <u>every</u> conductor entry hole (one after the other).



2. Press plunger down until "Alu-Plus" has filled each of these holes.



# **Material Specification**

#### **Insulation materials**

For 40 years Nylon (PA 6.6 and PA 4.6) and Polycarbonate (PC) have been the preferred insulation materials for housings of current carrying parts and accessories of terminal blocks and connectors (see table). They have been approved by almost all international test houses.

#### Table: Standard insulation materials

Material	PA 6.6	PA 4.6	PC
Flammability Flammability acc. to UL 94, rating categories	V0	V2	V2
Glow wire test acc. to IEC 60695-2-10/11+12	960°C	850°C	850°C
Oxygen index	37	27	26
Anti tracking index acc. to IEC 60112 CTI	600	375	275
Temperature resistance under HDT/B (0,45 Mpa)	short term 200°C	short term 280°C	140°C
mechanical stress	permanent 105°C	permanent 115°C	125°C
Resistance to heat Ball pressure test acc. to EN ISO 2039-1 Testing device B	125°C passed	125°C passed	125°C passed
Surface resistivity	$10^{10} - 10^{13} \Omega$	$10^{13} - 10^{16} \Omega$	$10^{15}\Omega$
Specific through resistance	$10^{15} \ \Omega/\text{cm}$	$10^9 - 10^{15} \Omega/\text{cm}$	$10^{13}\Omega/\mathrm{cm}$
Dielectric strength	30 kV/mm	25 kV/mm	29 kV/mm

#### Nylon (PA 6.6)

WAGO uses a modified Nylon, **free** of halogens, fluorcarbons, chlorinated hydrocarbons, silicone, asbestos, cadmium and formaldehyde.

It will not corrode, is hardly inflammable, self-extinguishing (V0 acc. to UL 94) and is temperature-stabilized allowing operation continuously at a temperature of 105 °C (221 °F).

This long-term resistance to temperature refers to UL-Index RTI-Mechanical STR in order to guarantee an adequate safety margin in terms of the electrical and mechanical insulation.

The short-time upper temperature limit is 200 °C (392 °F).

The same safety philosophy is the basis of the indications of the lower limiting temperature. The insulation material can be handled at temperatures as low as -35 °C (-31 °F) without damage. In the assembled and wired condition all WAGO products can be used at temperatures as low as -60 °C (-76 °F).

The humidity absorbed from the environment (up to 2.5 % on average) is chemically bound to the Nylon structure providing best elasticity and safety against breaking.

In practical use the basic stabilization provides sufficient protection against damage by ozone or ultraviolet light for many years. The resistance against adverse climate conditions is good. Nylon is also being used successfully in tropical areas.

Insulating parts produced from Nylon are resistent to termites. The material does not offer a source of oxygen or other biogenic elements to microorganisms. The presence of anaerobic earth bacteria, mould fungus and enzymes does not result in degradation of the material. The resistance to fuels, most oils and fats, the most usually applied detergents such as alcohol, Freon, Frigen, carbon tetrachloride is excellent. The resistance to acids is dependent upon the kind of acid and its concentration. More details upon request.

WAGO only accepts deliveries of insulating materials with a certificate of conformity and specified material test results.

#### **Nylon (PA 4.6)**

In comparison with Nylon 6.6, Nylon 4.6 features a much higher dimensional stability under heat. Its long-term temperature resistance under mechanical stress is 115 °C (239 °F). The long-term heat resistance after 10,000 hours is 140 °C (284 °F). The short-time upper temperature limit is 280 °C (536 °F) for Nylon 4.6 used by WAGO.

For further information see table.

#### Polycarbonate (PC)

Some typical properties of Polycarbonate include:

- excellent dimensional stability under heat, high level of strength, stiffness, hardness and viscosity up to 135 °C (275 °F).
- good electrical properties, also unaffected by exposure to moisture.
   Its insulation properties are virtually independent of the temperature and humidity.
- high dimensional stability thanks to low level of shrinkage due to low water absorption (about 0.2 % relative humidity)
- high weathering resistance
- high resistance to energetic radiation
- self-extinguishing
- crystal-clear transparency and high luster

The Polycarbonate used has a very high viscosity and chemical resistance. More details upon request. Thanks to such properties as thermal stability, nonflammability, transparancy and viscosity, Polycarbonate is a high quality material which has found a wide use in electronic applications.



## Material specification (continued)

#### **Contact materials**

Electrolytic copper  $E_{cu}$ , hard and extrahard as well as extra-hard copper alloys are the standard materials for the current carrying parts of all WAGO products.

This material combines excellent conductivity and good chemical resistance without risk of stress cracking.

#### **Contact surface**

The special tin alloy layer, the standard surface for all current-carrying parts in WAGO products, is the guarantee for the excellent long-term protection against corrosive substances. Furthermore, these layers make a gastight contact which provides a durable transition resistance.

At the clamping unit the conductor is pressed with a high contact pressure into the soft tin layer. This defined contact area is thereby protected against corrosive influences.

The thick tin layer also ensures good solderability of the solder pins of PCB terminal blocks and connectors.

#### Material of the clamping springs

All WAGO clamping springs are produced from high quality carefully selected austhenitic chrome nickel spring steel (CrNi) with high tensile strength which has proven its resistance to corrosion in many years of practical use.

It is resistant to salt sea air, town gas and the industrial gases sulphur dioxide and hydrogen sulfide.

At normal temperatures around 20 °C (68 °F), the material is resistant to salt solutions up to 30 % and dilute phosphoric acids up to 30 %.

After more than 20 years of practical experience contact corrosion of the chrome nickel spring steel in connection with the contact material used by WAGO and the copper conductors connected to the clamping units could not be noticed.

The relaxation of the material as a function of the time and surrounding temperatures up to 105 °C (221 °F) can be neglected. Even at a temperature of 250 °C (482 °F) a relaxation of only 1.5% at a load of 500 N/mm² was measured.

In certain product lines the clamping springs are thermally treated at temperatures between 350 °C (662 °F) and 420 °C (788 °F) after their production.

This treatment results in a reduction of internal stress due to the mechanical deformation of the material and may be noticed by a brownish colour of the spring surface.

WAGO only accepts deliveries of chrome nickel spring steel against certificates of conformity and after certain material tests.

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209-9	14.9	210-296	14.37	210-333/1000-0208	14.35	216-102	14.45
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	140	210-331	14.23	210-333/1200-0074	14.35	216-104	14.45
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209-4/000-007	14.9	210-333/0500-0002	14.35	210-333/1200-0078	14.35	216-109	14.45
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209-4 / 000-017	14.9	210-333/0500-0004	14.35	210-333/1200-0103	14.35	216-121	14.45
209-4/000-023	14.9	210-333/0500-0005	14.35	210-333/1200-0104	14.35	216-122	14.45
209-4/000-024	14.9	210-333/0500-0006	14.35	210-333/1200-0105	14.35	216-123	14.45
		210-333/0500-0007	14.35	210-333/1200-0106	14.35	216-124	14.45
209-5 / 000-002	14.9	210-333/0500-0008	14.35	210-333/1200-0107	14.35	216-131	14.45
209-5 / 000-005	14.9	210-333/0500-0009	14.35	210-333/1200-0203	14.35	216-132	14.45
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				249-6/000-006	14.9	258-394	14.26
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216-203	14.45	additional item no.		249-6 / 000-017	14.9	258-410	14.25
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216-205	14.45	248 / 000-005	14.14	249-6/000-024	14.9		
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216-242	1.13	Series 249				260-162	
216-243	1.13	249-101	14.37			260-202	10.19
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216-284	1.13	249-119	14.18	258-145	14.26	260-301	10.18
216-286	1.13	249-125	2.45	258-146	14.26	260-303	10.18
216-287	1.13	249-126	2.45	258-147	14.26	260-304 260-306	10.18 10.18
216-288	1.13	249-127	2.45	258-161	14.24	260-307	10.18
216-289	1.13	249-130	14.48	258-162	14.24	260-311	10.18
017.001	1 4 45	249-135	10.28	258-163	14.24	260-313	10.18
216-301	14.45	249-136	4.4	258-164	14.24	260-314	10.18
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210 022	14.45	249-140	10.28	258-171	14.24	260-321	10.18
		249-141	2.38	258-172	14.24	260-323	10.18
		249-142	2.38	258-173	14.24	260-324	10.18
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		249-147 249-148	2.39 2.39	258-229 258-297	14.26 14.33	260-336	10.18
		247-140	2.37	258-298	14.32	260-337	10.18
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243-110	10.35	249-601	14.9	258-368	14.26	260-402	10.18
243-112	10.35	1	14.7	258-369	14.25	260-405	10.28
243-113	10.35	249-605		258-370	14.26	-50 .00	. 5.20
243-144	10.34		1410	258-371	14.26		
242 204	10.24	249-615	14.12	258-372	14.26		
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243-308	10.34	249-658	14.9	258-378	14.26		
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		249-5/000-012	14.9	258-388	14.26	11	
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29-104			10.14		6.6	2/7-031	2.0		
2644 - , , , , , , , , , , , , , , , , , ,	204 1	7000 000	10.14			279-836			
2449 -	264-2	/000-006	10.14			270_927	2.8	280-366	
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2644 - ,									
244-9000-007 1.4.1.4 279-318 2.9 244-90000.012 1.4.1.4 279-318 244-9000.022 1.4.1.4 279-327 2.2.8 279-007 28 28. 280-405 28 28-1000.023 1.4.1.4 279-327 2.8 279-307 2.8 28 279-007 28 28 280-404 29 29 279-007 28 28 280-405 29 200-405 20 20 20 20 20 20 20 20 20 20 20 20 20									
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294.9	264-9	/000-012				779-906			
24-9 / 000-0024							• •		
Series 270  Series									
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Series 270									
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270-319	Sorior	. 270							
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270-409								280-434	
270-409	270-322		7.41						
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270-580/281-507				279-349	2.8			I .	
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270-570/281-507									
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270-577/281-434								I .	
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Series 273         279-504         2.29         280-318         2.11         280-515         7.51           273-100         10.36         279-508         2.29         280-319         7.46         280-519         2.30           273-101         10.36         279-512         2.29         280-320         7.49         280-520         2.30           273-102         10.36         279-513         2.29         280-321         7.46         280-521         2.31           273-104         10.36         279-518         2.29         280-322         6.6         280-522         2.31           273-105         10.36         279-518         2.29         280-323         7.49         280-523         2.30           273-108         10.36         279-518         2.29         280-324         2.10         280-525         2.31           273-112         10.36         279-527         2.29         280-325         11.19         280-525         2.31           273-155         10.36         279-527         2.29         280-327         2.11         280-529         2.31           273-155         10.36         279-604         2.9         280-331         2.12         280-529         2.30<									
Series 273   279-507   2.29   280-318   2.12   280-517   2.30   273-100   10.36   279-509   2.29   280-320   7.49   280-520   2.30   273-101   10.36   279-512   2.29   280-320   7.49   280-521   2.31   273-102   10.36   279-513   2.29   280-322   6.6   280-522   2.31   273-104   10.36   279-517   2.29   280-323   7.49   280-522   2.31   273-104   10.36   279-517   2.29   280-323   7.49   280-524   2.30   273-108   10.36   279-519   2.29   280-325   11.19   280-525   2.31   273-108   10.36   279-519   2.29   280-325   11.19   280-526   2.31   273-150   10.37   279-529   2.29   280-327   2.11   280-526   2.31   273-150   10.37   279-529   2.29   280-327   2.11   280-527   2.30   273-158   10.36   279-604   2.9   280-330   2.12   280-531   2.30   273-252   10.36   279-624   2.90   280-331   2.12   280-531   2.30   273-253   10.36   279-624   2.10   279-624   2.10   280-525   2.30   273-255   10.36   279-624   2.10   2.90   280-331   2.12   280-531   2.30   273-255   10.36   279-624   2.10   2.90   280-333   11.19   280-537   2.30   273-255   10.36   279-624   2.11   2.90   280-335   2.10   280-537   2.30   273-254   10.36   279-624   2.11   2.50   280-333   11.19   280-537   2.30   273-255   10.36   279-624   2.11   2.50   280-335   2.10   280-537   2.30   273-254   2.30   279-624   2.11   2.50   280-335   2.10   280-537   2.30   273-254   2.30   279-624   2.11   2.30   280-537   2.30   273-254   2.30   279-624   2.11   2.30   280-537   2.30   273-254   2.30   279-624   2.11   2.30   280-537   2.30   273-254   2.30   279-624   2.30   280-338   2.10   280-537   2.30   273-254   2.30   279-624   2.30   280-335   2.10   280-537   2.30   273-254   2.30   279-624   2.30   280-335   2.30   280-537   2									
Series 273         279-508         2.29         280-319         7.46         280-519         2.30           273-100         10.36         279-509         2.29         280-320         7.49         280-520         2.30           273-101         10.36         279-512         2.29         280-321         7.46         280-521         2.31           273-104         10.36         279-518         2.29         280-322         6.6         280-522         2.31           273-105         10.36         279-518         2.29         280-324         2.10         280-523         2.30           273-105         10.36         279-518         2.29         280-324         2.10         280-525         2.31           273-112         10.36         279-517         2.29         280-326         2.10         280-526         2.31           273-150         10.36         279-527         2.29         280-326         2.10         280-526         2.31           273-155         10.36         279-529         2.29         280-328         2.12         280-529         2.30           273-158         10.36         279-604         2.9         280-333         2.12         280-531         2.31 </td <td></td> <td></td> <td></td> <td>l .</td> <td></td> <td></td> <td></td> <td></td> <td></td>				l .					
273-100	Series	<b>273</b>		l .					
273-102	273-100					280-320			
273-104 10.36						280-321		280-521	
273-105         10.36         279-518         2.29         280-324         2.10         280-524         2.30           273-108         10.36         279-519         2.29         280-325         11.19         280-525         2.31           273-112         10.36         279-527         2.29         280-326         2.10         280-526         2.31           273-155         10.36         279-604         2.9         280-328         2.12         280-529         2.30           273-158         10.36         279-604         2.9         280-330         2.12         280-530         2.30           273-252         10.36         279-621-408         7.56         280-331         2.12         280-531         2.31           273-253         10.36         279-621-408         7.56         280-332         6.6         280-533         2.30           273-253         10.36         279-624/281-410         7.56         280-334         2.10         280-534         2.30           273-255         10.36         279-624/281-434         7.60         280-335         2.10         280-544         2.34           273-403         10.36         279-624/281-434         7.60         280-335         2									
273-108									
273-150 10.37 279-529 280-327 2.11 280-527 2.30 273-155 10.36 279-604 2.9 280-330 2.12 280-529 2.30 273-158 10.36 279-620/281-408 7.56 280-331 2.12 280-531 2.31 273-252 10.36 279-621 2.9 280-332 6.6 280-533 2.30 273-253 10.36 279-623/281-410 7.56 280-333 11.19 280-534 2.30 273-254 10.36 279-623/281-411 7.56 280-333 11.19 280-534 2.30 273-255 10.36 279-623/281-411 7.56 280-335 2.10 280-537 2.30 273-255 10.36 279-624/281-413 7.60 280-335 2.10 280-547 2.34 273-453 10.36 279-673/281-410 7.56 280-338 2.12 280-547 2.34 273-453 10.36 279-673/281-410 7.56 280-338 2.12 280-548 2.34 279-673/281-411 7.56 280-338 2.12 280-549 2.34 279-673/281-411 7.56 280-338 2.12 280-550 2.34 279-673/281-411 7.56 280-334 2.30 280-551 2.34 279-673/281-411 7.56 280-334 2.30 280-551 2.34 279-673/281-413 7.60 280-341 2.30 280-551 2.34 279-674/281-434 7.60 280-341 2.30 280-551 2.34 279-674/281-434 7.60 280-341 2.30 280-551 2.34 279-674/281-434 7.60 280-341 2.30 280-551 2.34 279-674/281-434 7.60 280-341 2.30 280-551 2.34 279-674/281-434 7.60 280-341 2.30 280-551 2.34 279-674/281-434 7.60 280-341 2.30 280-555 7.55 2.34 279-687/99-950 2.8 280-348 2.10 280-556 7.55 2.25 2.34 280-352 2.10 280-556 7.55 2.34 279-687/99-950 2.8 280-348 2.12 280-550 2.34 279-687/99-950 2.8 280-348 2.12 280-550 7.46 280-353 2.10 280-556 7.55 2.34 279-887/99-950 2.8 280-354 2.10 280-556 7.55 2.34 279-887/99-950 2.8 280-354 2.10 280-556 7.55 2.34 279-887/281-413 7.60 280-354 2.10 280-556 7.55 2.34 279-887/281-413 7.60 280-355 2.10 280-557 2.34 279-887/281-413 7.60 280-355 2.10 280-556 7.55 2.34 279-887/281-413 7.60 280-355 2.10 280-550 2.34 279-887/281-413 7.60 280-355 2.10 280-556 7.46 279-887/281-413 7.60 280-355 2.10 280-556 7.46 279-887/281-413 7.60 280-356 2.10 280-556 7.46 279-887/281-413 7.60 280-355 2.10 280-556 7.46 279-887/281-413 7.60 280-355 2.10 280-560 7.46 279-887/281-413 7.56 280-356 2.10 280-560 7.46 279-887/281-413 7.56 280-356 2.10 280-560 7.46 279-887/281-411 7.56 280-356 2.10 280-560 7.46 279-887/281-411 7.56 280-359 2.10 280-560 7.46 279-887/281-411	273-108		10.36	l .		280-325	11.19	280-525	2.31
273-155         10.36         79-604         2.9         280-328         2.12         280-529         2.30           273-158         10.36         279-604         2.9         280-330         2.12         280-530         2.31           273-252         10.36         279-621         2.9         280-332         6.6         280-533         2.30           273-253         10.36         279-623/281-410         7.56         280-333         11.19         280-533         2.30           273-254         10.36         279-623/281-411         7.56         280-333         11.19         280-537         2.30           273-255         10.36         279-624/281-431         7.60         280-335         2.10         280-543         2.32           273-403         10.36         279-626         2.9         280-337         2.11         280-543         2.34           273-453         10.36         279-673/281-410         7.56         280-338         2.12         280-547         2.34           273-403         10.36         279-673/281-411         7.56         280-338         2.12         280-549         2.34           279-674/281-431         7.60         280-344         2.10         280-550									
273-158         10.36         279-604         2.9         280-330         2.12         280-530         2.30           273-252         10.36         279-621         2.9         280-331         2.12         280-533         2.30           273-253         10.36         279-623/281-410         7.56         280-333         11.19         280-534         2.30           273-254         10.36         279-623/281-411         7.56         280-334         2.10         280-537         2.30           273-255         10.36         279-624/281-413         7.60         280-336         2.10         280-543         2.32           273-403         10.36         279-624/281-413         7.60         280-337         2.11         280-543         2.34           273-403         10.36         279-626         2.9         280-337         2.11         280-548         2.34           273-453         10.36         279-673/281-410         7.56         280-339         2.34         280-549         2.34           273-453         10.36         279-673/281-410         7.56         280-339         2.34         280-550         2.34           279-674/281-413         7.60         280-344         2.10         280				2/9-529	2.29				
273-252         10.36         279-620/281-408         7.56         280-331         2.12         280-531         2.31           273-253         10.36         279-623/281-410         7.56         280-332         11.19         280-534         2.30           273-254         10.36         279-623/281-411         7.56         280-333         11.19         280-537         2.30           273-255         10.36         279-624/281-413         7.60         280-335         2.10         280-547         2.34           273-403         10.36         279-624/281-434         7.60         280-336         2.34         280-547         2.34           273-403         10.36         279-626         2.9         280-337         2.11         280-548         2.34           273-453         10.36         279-673/281-410         7.56         280-338         2.12         280-549         2.34           273-453         10.36         279-673/281-411         7.56         280-338         2.11         280-549         2.34           279-674/281-413         7.60         280-340         2.30         280-551         2.34           279-681         2.8         280-341         2.30         280-553         7.46 </td <td></td> <td></td> <td></td> <td>279-604</td> <td>29</td> <td></td> <td></td> <td></td> <td></td>				279-604	29				
273-253         10.36         279-623/281-410         7.56         280-333         11.19         280-534         2.30           273-254         10.36         279-623/281-411         7.56         280-335         2.10         280-537         2.30           273-255         10.36         279-624/281-434         7.60         280-335         2.10         280-547         2.34           273-403         10.36         279-626         2.9         280-337         2.11         280-548         2.34           273-453         10.36         279-673/281-410         7.56         280-338         2.12         280-549         2.34           273-453         10.36         279-673/281-411         7.56         280-338         2.12         280-549         2.34           279-674/281-413         7.60         280-338         2.12         280-549         2.34           279-674/281-413         7.60         280-340         2.30         280-551         2.34           279-681         2.8         280-342         2.30         280-552         2.34           279-686         2.8         280-344         2.10         280-555         7.55           279-687/999-950         2.8         280-344         2.	2, 0 .00		. 0.00						
273-254       10.36       279-623/281-413       7.56       280-334       2.10       280-537       2.30         273-255       10.36       279-624/281-413       7.60       280-335       2.10       280-543       2.34         273-403       10.36       279-624/281-410       7.56       280-337       2.11       280-548       2.34         273-453       10.36       279-673/281-410       7.56       280-338       2.12       280-548       2.34         279-673/281-411       7.56       280-338       2.12       280-548       2.34         279-674/281-413       7.60       280-339       2.34       280-550       2.34         279-674/281-413       7.60       280-341       2.30       280-551       2.34         279-681       2.8       280-341       2.30       280-552       2.34         279-686       280-343       2.30       280-553       7.46         279-687       2.8       280-343       2.30       280-555       7.55         279-687       2.8       280-348       2.10       280-556       7.55         279-687/999-950       2.8       280-352       2.10       280-557       2.34         279-809/281-413									
273-255       10.36       279-624/281-413       7.60       280-335       2.10       280-547       2.34         273-403       10.36       279-624/281-434       7.60       280-336       2.34       280-547       2.34         273-453       10.36       279-673/281-410       7.56       280-338       2.12       280-549       2.34         279-673/281-411       7.56       280-339       2.34       280-550       2.34         279-674/281-413       7.60       280-340       2.30       280-551       2.34         279-681       2.8       280-341       2.30       280-552       2.34         279-686       2.8       280-342       2.30       280-553       7.46         279-687       2.8       280-344       2.10       280-555       7.55         279-687       2.8       280-348       2.12       280-557       2.34         279-687       2.8       280-348       2.12       280-559       7.47         279-809/281-413       7.60       280-352       2.10       280-559       7.47         279-809/281-434       7.60       280-355       2.12       280-560       7.46         279-815/281-410       7.56       280-3				279-623/281-410					
279-624/281-434									
273-403       10.36       279-626       2.9       280-337       2.11       280-548       2.34         273-453       10.36       279-673/281-410       7.56       280-338       2.12       280-549       2.34         279-673/281-411       7.56       280-339       2.34       280-550       2.34         279-674/281-413       7.60       280-340       2.30       280-551       2.34         279-681       2.8       280-341       2.30       280-552       2.34         279-686       2.8       280-342       2.30       280-553       7.46         279-687       2.8       280-344       2.10       280-555       7.55         279-687/999-950       2.8       280-348       2.12       280-557       2.34         279-687/999-950       2.8       280-348       2.12       280-557       2.34         279-809/281-413       7.60       280-352       2.10       280-559       7.47         279-809/281-434       7.60       280-355       2.12       280-560/281-434       7.47         279-815/281-410       7.56       280-355       2.10       280-560/281-434       7.47         279-815/281-411       7.56       280-357       2.1	2/ 5-255		10.50	l .					
279-673/281-411       7.56       280-339       2.34       280-550       2.34         279-674/281-413       7.60       280-340       2.30       280-551       2.34         279-674/281-434       7.60       280-341       2.30       280-552       2.34         279-681       2.8       280-342       2.30       280-553       7.46         280-343       2.30       280-554       7.55         280-344       2.10       280-555       7.55         279-686       280-344       2.10       280-556       7.55         279-687/999-950       2.8       280-348       2.12       280-557       2.34         279-809/281-413       7.60       280-352       2.10       280-559       7.47         279-809/281-434       7.60       280-354       2.12       280-560/281-434       7.47         279-815/281-410       7.56       280-355       2.12       280-560/281-434       7.47         279-815/281-411       7.56       280-357       2.10       280-561/281-413       7.47         279-826       2.9       280-358       2.10       280-561/281-413       7.47         279-826       2.9       280-359       2.10       280-562/281-411 <td>273-403</td> <td></td> <td>10.36</td> <td>279-626</td> <td>2.9</td> <td>280-337</td> <td>2.11</td> <td></td> <td>2.34</td>	273-403		10.36	279-626	2.9	280-337	2.11		2.34
279-674/281-413	273-453		10.36						
279-674/281-434       7.60       280-341       2.30       280-552       2.34         279-681       2.8       280-342       2.30       280-553       7.46         280-343       2.30       280-554       7.55         279-686       280-344       2.10       280-555       7.55         279-687       2.8       280-346       2.10       280-556       7.55         279-687/999-950       2.8       280-352       2.10       280-557       2.34         279-809/281-413       7.60       280-352       2.10       280-559       7.47         279-809/281-434       7.60       280-355       2.12       280-560       7.46         279-815/281-410       7.56       280-356       2.10       280-560/281-434       7.47         279-826       2.9       280-357       2.10       280-561/281-413       7.47         279-826       2.9       280-358       2.10       280-561/281-413       7.47         279-826       2.9       280-358       2.10       280-562/281-411       7.52									
279-681				l .					
1									
279-686       280-346       2.10       280-556       7.55         279-687       2.8       280-348       2.12       280-557       2.34         279-687/999-950       2.8       280-352       2.10       280-558       2.34         280-353       2.10       280-559       7.47         279-809/281-413       7.60       280-354       2.12       280-560       7.46         279-809/281-434       7.60       280-355       2.12       280-560/281-434       7.47         279-815/281-410       7.56       280-356       2.10       280-561/281-413       7.46         279-815/281-411       7.56       280-357       2.10       280-561/281-413       7.47         279-826       2.9       280-358       2.10       280-562/281-411       7.52				2/ 7-001	2.0	280-343	2.30	280-554	7.55
279-687 2.8 280-348 2.12 280-556 7.35 279-687/999-950 2.8 280-352 2.10 280-558 2.34 280-353 2.10 280-559 7.47 279-809/281-413 7.60 280-354 2.12 280-560 7.46 279-809/281-434 7.60 280-355 2.12 280-560/281-434 7.47 279-815/281-410 7.56 280-355 2.12 280-560/281-434 7.47 279-815/281-411 7.56 280-357 2.10 280-561 7.46 279-826 2.9 280-358 2.10 280-561/281-413 7.47 279-826 2.9 280-358 2.10 280-562/281-411 7.52				279-686					
279-687/999-950     2.8     280-352     2.10     280-558     2.34       280-353     2.10     280-559     7.47       279-809/281-413     7.60     280-354     2.12     280-560     7.46       279-809/281-434     7.60     280-355     2.12     280-560/281-434     7.47       279-815/281-410     7.56     280-356     2.10     280-561/281-413     7.46       279-815/281-411     7.56     280-357     2.10     280-561/281-413     7.47       279-826     2.9     280-358     2.10     280-562/281-411     7.52       280-359     2.10     280-562/281-411     7.52					28			I .	
280-353   2.10   280-559   7.47									
279-809/281-413     7.60     280-354     2.12     280-560     7.46       279-809/281-434     7.60     280-355     2.12     280-560/281-434     7.47       279-815/281-410     7.56     280-356     2.10     280-561/281-413     7.46       279-815/281-411     7.56     280-357     2.10     280-561/281-413     7.47       279-826     2.9     280-358     2.10     280-562/281-411     7.52       280-359     2.10     280-562/281-411     7.52									
279-815/281-410     7.56     280-356     2.10     280-561     7.46       279-815/281-411     7.56     280-357     2.10     280-561/281-413     7.47       279-826     2.9     280-358     2.10     280-562     7.52       280-359     2.10     280-562/281-411     7.52						280-354	2.12	280-560	7.46
279-815/281-411 7.56 280-357 2.10 280-561/281-413 7.47 279-826 2.9 280-358 2.10 280-562 7.52 280-359 2.10 280-562/281-411 7.52									
279-826 2.9 280-358 2.10 280-562 7.52 280-359 2.10 280-562/281-411 7.52								I .	
280-359 2.10 280-562/281-411 7.52								I .	
280-362 2.12 280-562/281-420 7.53						280-359	2.10	280-562/281-411	7.52
				1		280-362	2.12	280-562/281-420	7.53

Item No.	Page	Item No.	Page	Item No.	Page	Item No.	Page
280-562/281-434	7.53	280-651	2.12	280-881	7.9	281-347	2.16
280-563	7.46	280-653	2.10			281-348	2.17
280-564	7.46	280-654	2.12	280-885		281-349	2.16
280-564/281-483	7.47	280-654/056-000	2.12	280-889	2.35	281-350	2.16
280-565	7.52	280-655/281-410	7.57	280-891	2.31	281-353	2.17
280-565/280-319	7.52	280-655/281-411	7.57			281-354	2.17
280-565/280-321 280-566	7.52 7.52	280-656	2.13	280-901	2.10	281-355	2.16 2.16
280-566/281-496	7.52 7.47	280-658/281-413 280-658/281-434	7.61 7.61	280-902	2.10	281-356 281-357	2.16
280-567	7.47 7.47	280-671	2.10	280-902/056-000	2.10	281-358	2.17
280-568	7.53	280-672	2.10	280-903	2.10	281-365	2.37
280-570	7.33 7.48	280-673/281-410	7.57	280-904	2.10	281-366	2.37
280-570/281-434	7.49	280-673/281-411	7.57	280-905	2.10	201 000	2.07
280-571	7.48	280-675	11.19	280-906	2.10	281-402	2.17
280-571/281-413	7.49	280-676	7.11	280-907	2.10	281-405	6.6
280-572	7.54	280-677	2.11	280-907/999-950 280-912	2.10 7.10	281-407	2.13
280-572/281-411	7.54	280-677/999-950	2.11	280-913	7.10 7.10	281-409	2.17
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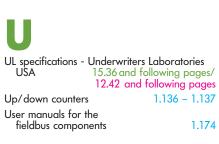


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connection

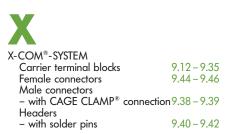
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WAGO TOPLON® 5.6 - 5.13
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WCB Combi marking system 14.17 / 10.19
WFB Continuous marking strips 14.15
Wire cutter 14.49 / 11.31 / 10.10
Wire harness support 11.19
Wire jumpers for rail-mounted terminal blocks – push-in type 2.45
Wire-tap branch connectors for ex.
in elevator shaft technology 10.6 – 10.7
Wiring, pluggable 1.176 – 1.177
WMB Multi marking system 14.9 – 14.13/
11.4/10.19
WSB Quick marking system 14.8 – 14.13/
11.4/10.19





# 15 WAGO WORLDWIDE



### **WAGO Companies, Sales Offices and Representations**

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GmbH & Co. KG
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3500 Værløse
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Fax ++45/44357787

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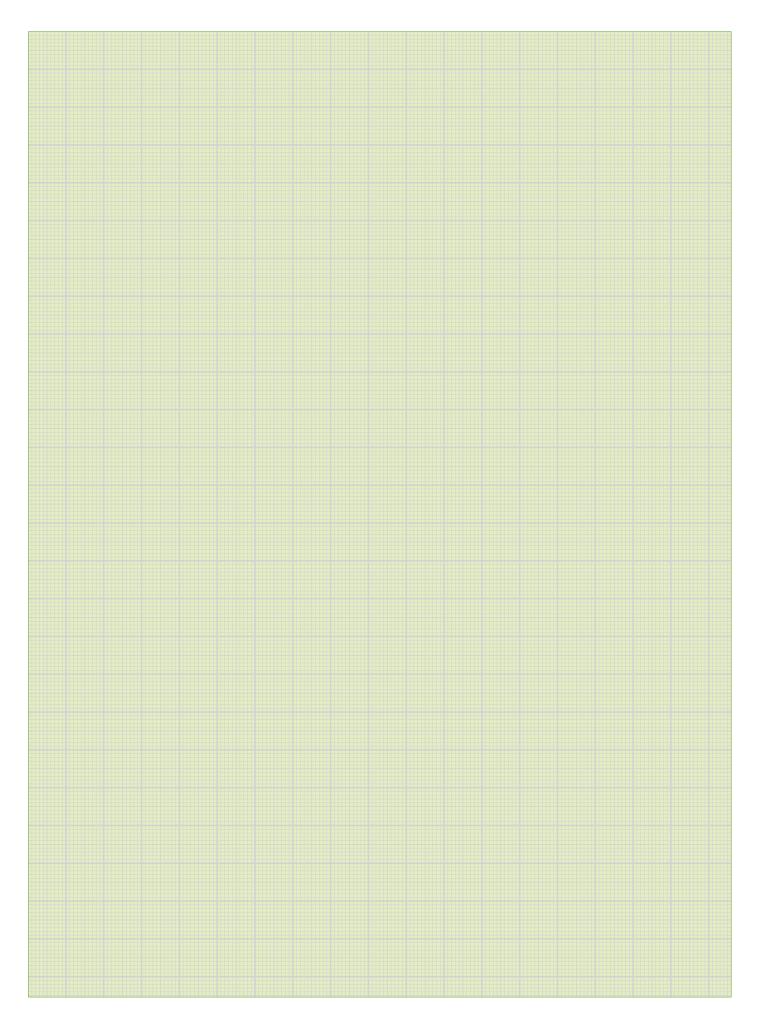
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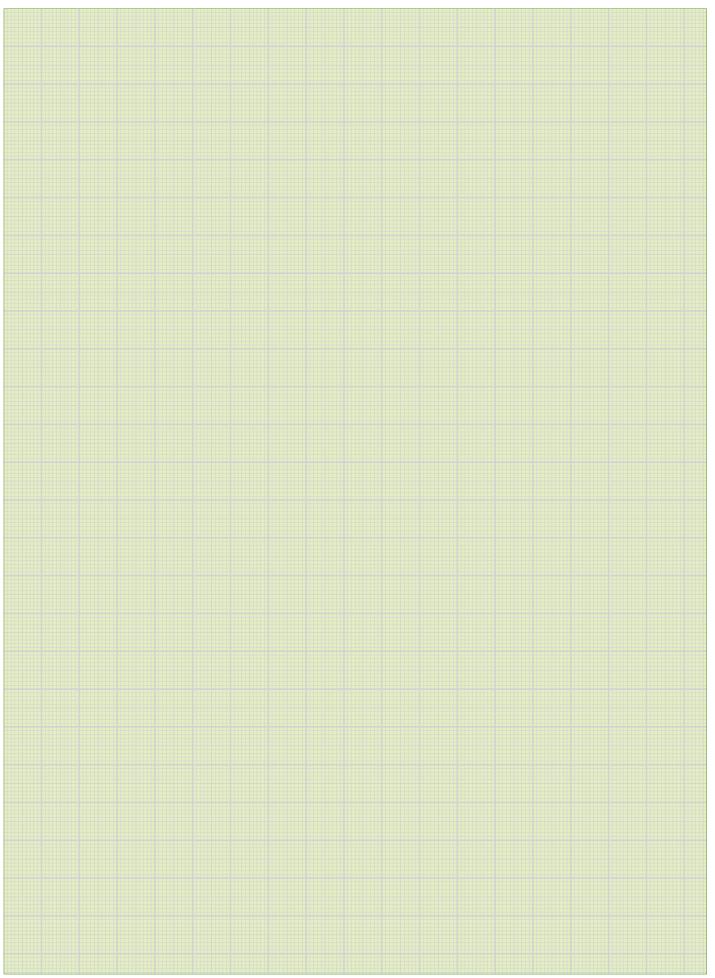
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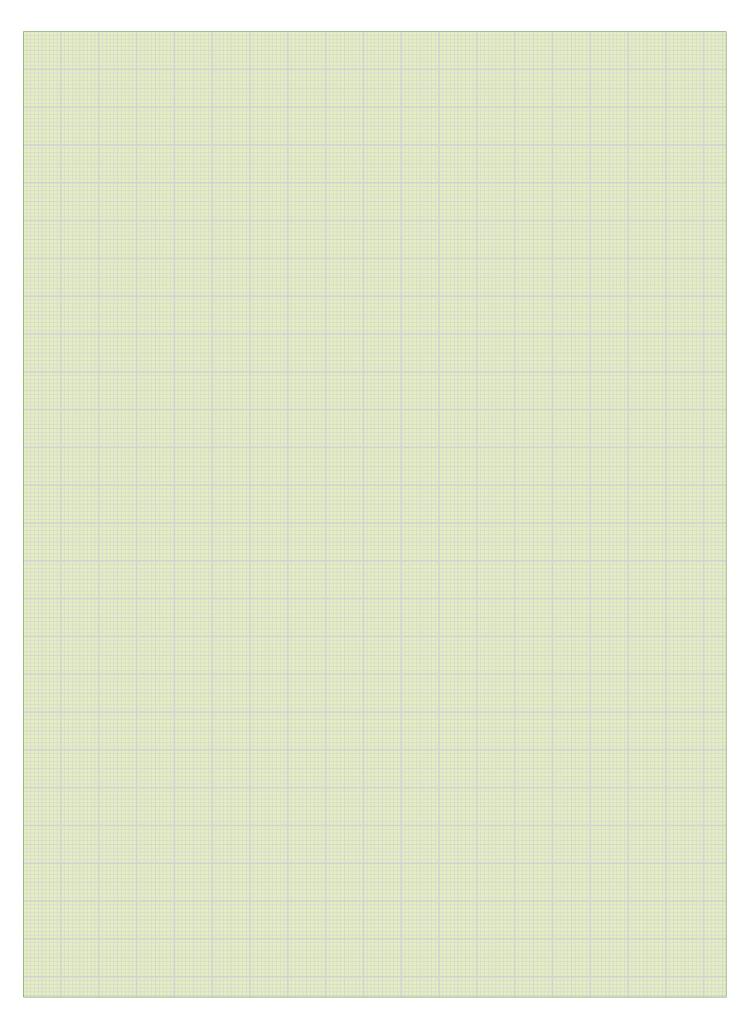


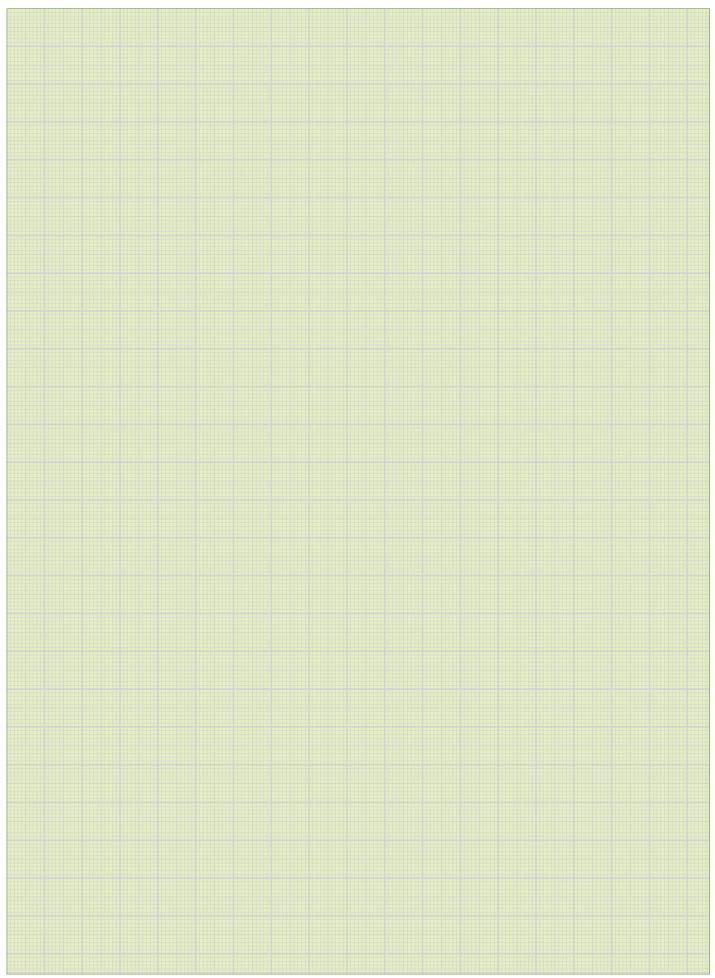
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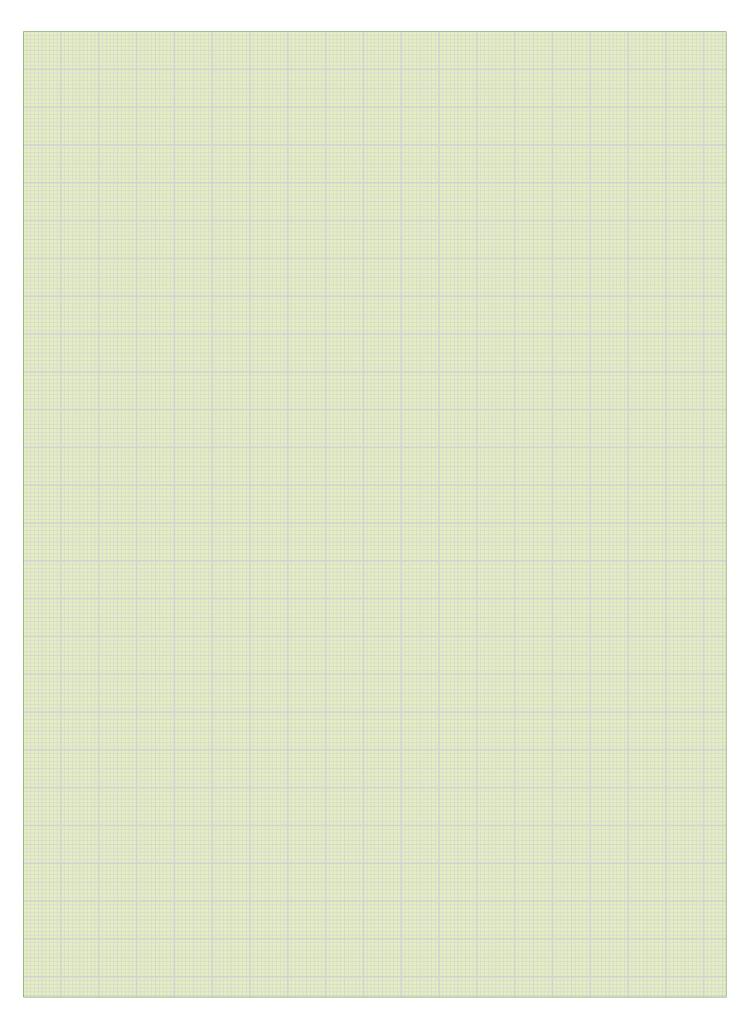


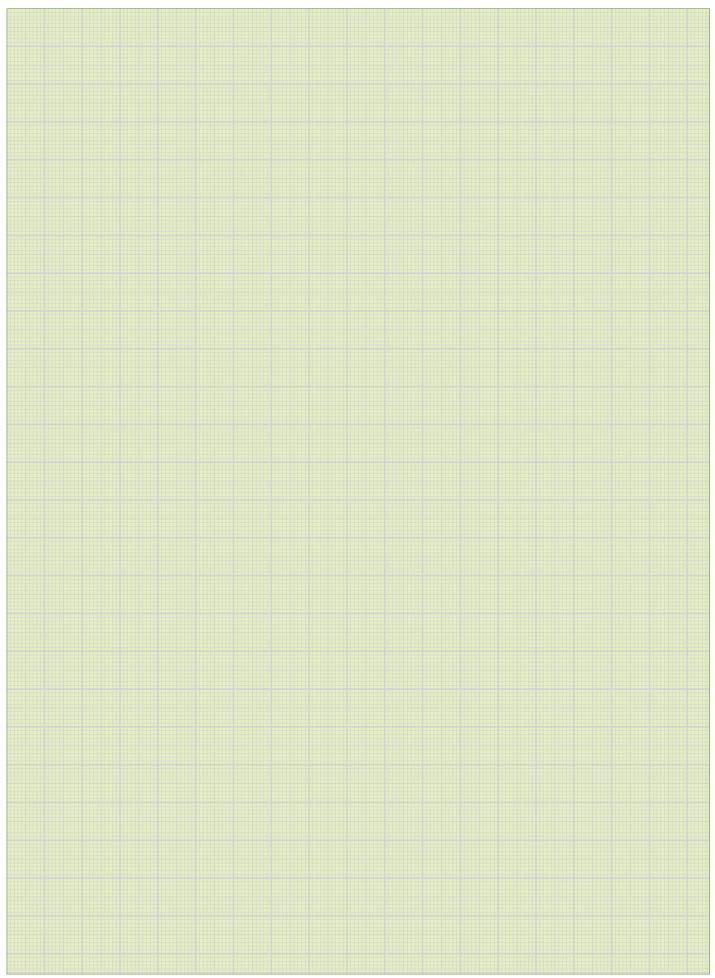


















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