Quick Product List

Surge Protection

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ISKRA ZAŠČITE

BE ON THE SAFE SIDE

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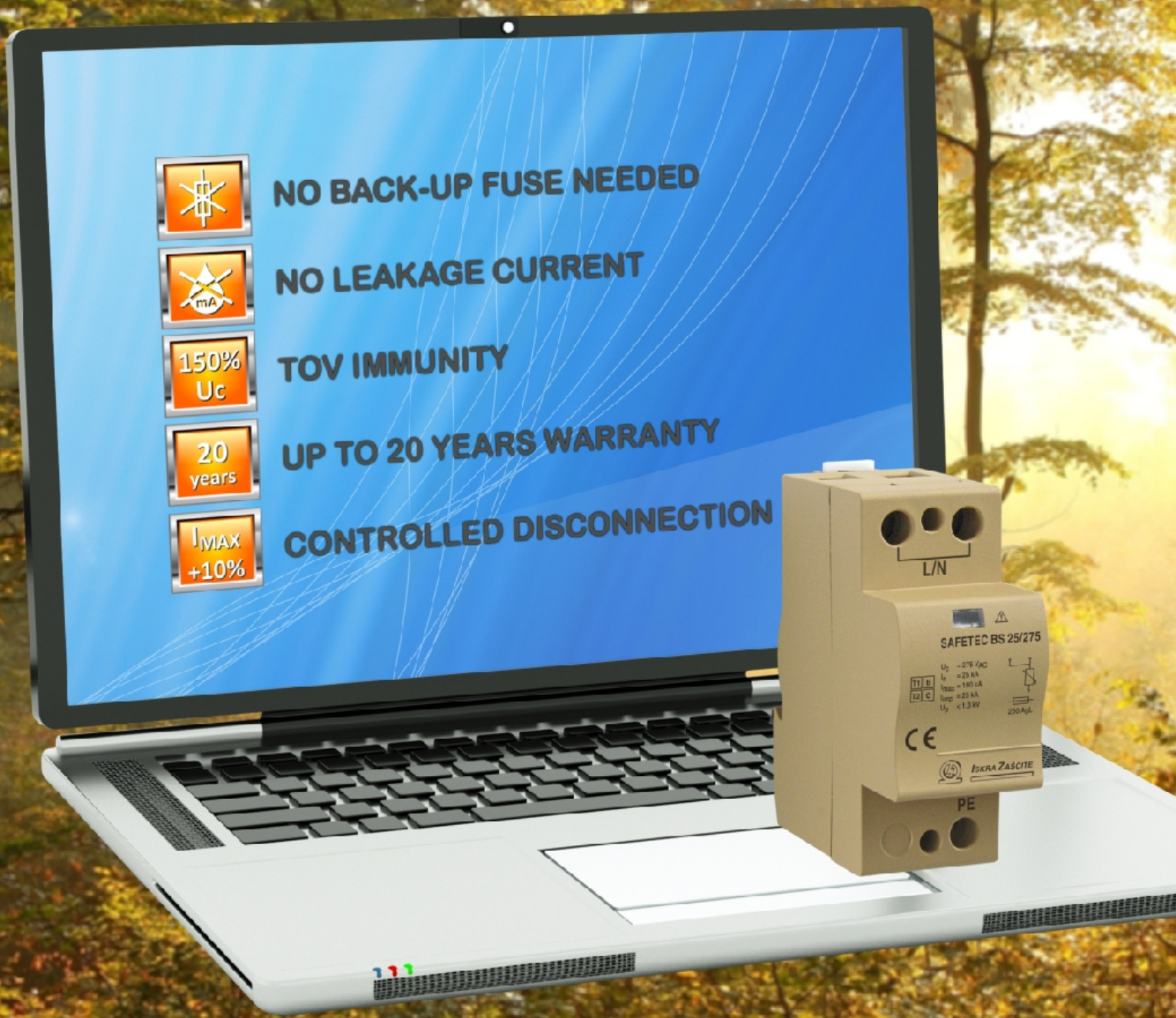
BE SAFETEC® Technology



ISKRA ZAŠČITE

BE ON THE SAFE SIDE

Contents

Surface Protective Devices for Low Voltage Power Systems

TECHNICAL CHARACTERISTICS

Category IEC/EN/VDE	Description	Product Name	Product Photo	Network Type TN-C	TN-S	TT	IT	U_C (V_{AC})	I_n per pole (8/20) (kA)	I_{max} per pole (8/20) (kA)	U_{oc}/I_{sc} per pole (1.2/50, 8/20) (kV/kA)	I_{imp} per pole (10/350) (kA)	Back-up fuse	Remote signalization of failure	Housing IP 20 Dimensions DIN 43880
Class I, II Type 1, 2 B+C with TOV immunity	SINGLE-POLE Surge Protective Devices I_{imp}: up to 50kA (10/350)	SAFETEC BS(R) 50	 NEW	✓	✓	✓**	✓	150, 275, 440 *	25	100	/	50	/	✓	Compact 4TE
		SAFETEC BS(R) 25	 NEW	✓	✓	✓**	✓	150, 275, 440 *	25	100	/	25	/	✓	Compact 2TE
		SAFETUBE BS 100	 NEW			✓		255	100	100	/	100	/		Compact 2TE
	SINGLE-POLE N-PE Surge Protective Devices I_{imp}: up to 100kA (10/350)	SAFETUBE BS 50	 NEW			✓		255	50	100	/	50	/		Compact 2TE
Class I, II Type 1, 2 B+C with TOV immunity	MULTI-POLE Single-phase Surge Protective Devices I_{imp}: 25kA per pole (10/350)	SAFEBLOC BS(R) 50 (2+0)	 NEW		✓			150, 275, 440 *	25	100	/	25	/	✓	Compact 4TE
		SAFEBLOC BS(R) 50 (1+1)	 NEW			✓		150, 275, 440 * (L-N) 255 (N-PE)	25/50 (L-N/N-PE)	100/100 (L-N/N/PE)	/	25/50 (L-N/N/PE)	/	✓	Compact 3TE
	MULTI-POLE Three-phase Surge Protective Devices I_{imp}: 25kA per pole (10/350)	SAFEBLOC BS(R) 75 (3+0)	 NEW	✓				150, 275, 440 *	25	100	/	25	/	✓	Compact 8TE
		SAFEBLOC BS(R) 100 (4+0)	 NEW		✓			150, 275, 440 *	25	100	/	25	/	✓	Compact 8TE
		SAFEBLOC BS(R) 100 (3+1)	 NEW			✓		150, 275, 440 * (L-N) 255 (N-PE)	25/100 (L-N/N-PE)	100/100 (L-N/N/PE)	/	25/100 (L-N/N/PE)	/	✓	Compact 8TE
	MULTI-POLE Single-phase Surge Protective Devices I_{imp}: 12.5kA per pole (10/350)	SAFEBLOC BS(R) 25 (2+0)	 NEW		✓			150, 275, 440 *	20	50	/	12.5	/	✓	Compact 2TE
		SAFEBLOC BS(R) 25 (1+1)	 NEW			✓		150, 275, 440 * (L-N) 255 (N-PE)	20/50 (L-N/N-PE)	50/100 (L-N/N/PE)	/	12.5/50 (L-N/N/PE)	/	✓	Compact 2TE
	MULTI-POLE Three-phase Surge Protective Devices I_{imp}: 12.5kA per pole (10/350)	SAFEBLOC BS(R) 37.5 (3+0)	 NEW	✓				150, 275, 440 *	20	50	/	12.5	/	✓	Compact 3TE
		SAFEBLOC BS(R) 50 (4+0)	 NEW		✓			150, 275,440 *	20	50	/	12.5	/	✓	Compact 4TE
		SAFEBLOC BS(R) 50 (3+1)	 NEW			✓		150, 275, 440 * (L-N) 255 (N-PE)	20/50 (L-N/N-PE)	50/100 (L-N/N/PE)	/	12.5/50 (L-N/N/PE)	/	✓	Compact 4TE

* Other values on customer request ** For L-N protection mode in TT system

TECHNICAL CHARACTERISTICS

Category IEC/EN/VDE	Description	Product Name	Product Photo	Network Type TN-C	TN-S	TT	IT	U_C (V_{AC})	I_n per pole (8/20) (kA)	I_{max} per pole (8/20) (kA)	U_{oc}/I_{sc} per pole (1.2/50, 8/20) (kV/kA)	I_{imp} per pole (10/350) (kA)	Back-up fuse	Remote signalization of failure	Housing IP 20 Dimensions DIN 43880
Class I, II Type 1, 2 B+C	SINGLE-POLE Surge Protective Devices I_{imp}: up to 50kA (10/350)	**PROTEC BS(R) 50**		✓	✓	✓**	✓	150, 275, 320, 385, 440 *	25	100	/	50	500 A gL	✓	Compact 2TE, 4TE
		PROTEC BS(R) 35		✓	✓	✓**	✓	150, 275, 320, 385, 440 *	25	100	/	35	315 A gL	✓	Compact 2TE, 3TE
		PROTEC BS(R) 25		✓	✓	✓**	✓	150, 275, 320, 385, 440 *	25	100	/	25	250 A gL	✓	Compact 2TE
		PROTEC B2N(R) 12.5		✓	✓	✓**	✓	150, 275, 320, 385, 440 *	20	50	/	12.5	160 A gL	✓	Compact 1TE
	SINGLE-POLE N-PE Surge Protective Devices I_{imp}: up to 100kA (10/350)	**PROTUBE BS 100, 50**				✓		255	100, 50	100, 100	/	100, 50	/		Compact 2TE
		PROTUBE B2N(R) 50				✓		255	50	100	/	50	/	✓	Compact 1TE
Class I, II, III Type 1, 2, 3 B+C+D	MULTI-POLE Single-phase Surge Protective Devices I_{imp}: up to 50kA per pole (10/350)	**PROBLOC BS(R) 100 (1+1)**				✓		150, 275, 320, 385, 440 * (L-N) 255 (N-PE)	25/100 (L-N/N-PE)	100/100 (L-N/N/PE)	/	50/100 (L-N/N/PE)	250 A gL	✓	Compact 4TE, 8TE
		PROBLOC BS(R) 50 (2+0)			✓			150, 275, 320, 385, 440 *	25	100	/	25	250 A gL	✓	Compact 2TE, 4TE
		PROBLOC BS(R) 50 (1+1)				✓		150, 275, 320, 385, 440 * (L-N) 255 (N-PE)	25/50 (L-N/N-PE)	100/100 (L-N/N/PE)	/	25/50 (L-N/N/PE)	250 A gL	✓	Compact 3TE
	MULTI-POLE Three-phase Surge Protective Devices I_{imp}: 25kA per pole (10/350)	**PROBLOC BS(R) 75 (3+0)**		✓				150, 275, 320, 385, 440 *	25	100	10/5	25	250 A gL	✓	Compact 3TE, 8TE
		PROBLOC BS(R) 100 (4+0)			✓			150, 275, 320, 385, 440 *	25	100	10/5	25	250 A gL	✓	Compact 4TE, 8TE
		PROBLOC BS(R) 100 (3+1)				✓		150, 275, 320, 385, 440 * (L-N) 255 (N-PE)	25/100 (L-N/N-PE)	100/100 (L-N/N/PE)	10/5	25/100 (L-N/N/PE)	250 A gL	✓	Compact 5TE, 8TE
	MULTI-POLE Single-phase Surge Protective Devices I_{imp}: 12.5kA per pole (10/350)	**PROBLOC BS(R) 25 (2+0)**			✓			150, 275, 320, 385, 440 *	20	50	/	12.5	250 A gL	✓	Compact 2TE
		PROBLOC BS(R) 25 (1+1)				✓		150, 275, 320, 385, 440 * (L-N) 255 (N-PE)	20/50 (L-N/N/PE)	50/100 (L-N/N/PE)	/	12.5/50 (L-N/N/PE)	250 A gL	✓	Compact 2TE
	MULTI-POLE Three-phase Surge Protective Devices I_{imp}: 12.5kA per pole (10/350)	**PROBLOC BS(R) 37.5 (3+0)**		✓				150, 275, 320, 385, 440 *	20	50	10/5	12.5	250 A gL	✓	Compact 3TE
		PROBLOC BS(R) 50 (4+0)			✓			150, 275, 320, 385, 440 *	20	50	10/5	12.5	250 A gL	✓	Compact 4TE
		PROBLOC BS(R) 50 (3+1)				✓		150, 275, 320, 385, 440 * (L-N) 255 (N-PE)	20/50 (L-N/N/PE)	50/100 (L-N/N/PE)	10/5	12.5/50 (L-N/N/PE)	250 A gL	✓	Compact 4TE

* Other values on customer request ** For L-N protection mode in TT system

TECHNICAL CHARACTERISTICS

Category IEC/EN/VDE	Description	Product Name	Product Photo	Network Type TN-C	TN-S	TT	IT	U_C (V_{AC})	I_n per pole (8/20) (kA)	I_{max} per pole (8/20) (kA)	U_{oc}/I_{sc} per pole (1.2/50, 8/20) (kV/kA)	I_{imp} per pole (10/350) (kA)	Back-up fuse	Remote signalization of failure	Housing IP 20 Dimensions DIN 43880
Class I, II, III Type 1, 2, 3 B+C+D	SINGLE-POLE Surge Protective Devices I_{imp}: 12.5kA per pole (10/350)	**PROTEC B2S(R) 12.5**		✓	✓	✓**	✓	150, 275, 320, 385, 440 *	25	60	10/5	12.5	160 A gL	✓	Modular 1TE
	MULTI-POLE Single-phase Surge Protective Devices I_{imp}: 12.5kA per pole (10/350)	**PROTEC B2S(R) 25 (2+0)**			✓			150, 275, 320, 385, 440 *	25	60	10/5	12.5	160 A gL	✓	Modular 2TE
		PROTEC B2S(R) 25 (1+1)				✓		150, 275, 320, 385, 440 * (L-N) 255 (N-PE)	25/30 (L-N/N-PE)	60/50 (L-N/N-PE)	10/5	12.5/50 (L-L-N/N-PE)	160 A gL	✓	Modular 2TE
	MULTI-POLE Three-phase Surge Protective Devices I_{imp}: 12.5kA per pole (10/350)	**PROTEC B2S(R) 37,5 (3+0)**		✓				150, 275, 320, 385, 440 *	25	60	10/5	12.5	160 A gL	✓	Modular 3TE
		PROTEC B2S(R) 50 (4+0)			✓			150, 275, 320, 385, 440 *	25	60	10/5	12,5	160 A gL	✓	Modular 4TE
		PROTEC B2S(R) 50 (3+1)				✓		150, 275, 320, 385, 440 * (L-N) 255 (N-PE)	25/30 (L-N/N-PE)	60/50 (L-N/N-PE)	10/5	12.5/50 (L-L-N/N-PE)	160 A gL	✓	Modular 4TE
Class II Type 2 C with TOV immunity	SINGLE-POLE Surge Protective Devices I_{max}: 40kA(8/20)	**SAFETEC C(R) 40**		✓	✓	✓**	✓	150, 275, 440 *	20	40	/	/	/	✓	Modular 1TE
	MULTI-POLE Single-phase Surge Protective Devices I_{max}: 40kA per pole (8/20)	**SAFETEC C(R) 80 (2+0)**			✓			150, 275, 440 *	20	40	/	/	/	✓	Modular 2TE
		SAFETEC C(R) 80 (1+1)				✓		150, 275, 440 * (L-N) 255 (N-PE)	20/20 (L-N/N-PE)	40/40 (L-N/N-PE)	/	/	/	✓	Modular 2TE
	MULTI-POLE Three-phase Surge Protective Devices I_{max}: 40kA per pole (8/20)	**SAFETEC C(R) 120 (3+0)**		✓				150, 275, 440 *	20	40	/	/	/	✓	Modular 3TE
		SAFETEC C(R) 160 (4+0)			✓			150, 275, 440 *	20	40	/	/	/	✓	Modular 4TE
		SAFETEC C(R) 160 (3+1)				✓		150, 275, 440 * (L-N) 255 (N-PE)	20/20 (L-N/N-PE)	40/40 (L-N/N-PE)	/	/	/	✓	Modular 4TE
Class II Type 2 C	SINGLE-POLE Surge Protective Devices I_{max}: 40kA(8/20)	**PROTEC C(R) 40**		✓	✓	✓**	✓	150, 275, 320, 385, 440 *	20	40	/	/	125 A gL	✓	Modular 1TE
	SINGLE-POLE N-PE Surge Protective Devices I_{max}: 40kA (8/20)	**PROTUBE C 40**				✓		255	20	40	/	/	/		Modular 1TE
	MULTI-POLE Single-phase Surge Protective Devices I_{max}: 40kA per pole (8/20)	**PROTEC C(R) 80 (2+0)**			✓			150, 275, 320, 385, 440 *	20	40	/	/	125 A gL	✓	Modular 2TE
		PROTEC C(R) 80 (1+1)				✓		150, 275, 320, 385, 440 * (L-N) 255 (N-PE)	20/20 (L-N/N-PE)	40/40 (L-N/N-PE)	/	/	125 A gL	✓	Modular 2TE
	MULTI-POLE Three-phase Surge Protective Devices I_{max}: 40kA per pole (8/20)	**PROTEC C(R) 120 (3+0)**		✓				150, 275, 320, 385, 440 *	20	40	/	/	125 A gL	✓	Modular 3TE
		PROTEC C(R) 160 (4+0)			✓			150, 275, 320, 385, 440 *	20	40	/	/	125 A gL	✓	Modular 4TE
		PROTEC C(R) 160 (3+1)				✓		150, 275, 320, 385, 440 * (L-N) 255 (N-PE)	20/20 (L-N/N-PE)	40/40 (L-N/N-PE)	/	/	125 A gL	✓	Modular 4TE

* Other values on customer request ** For L-N protection mode in TT system

TECHNICAL CHARACTERISTICS

Category IEC/EN/VDE	Description	Product Name	Product Photo	Network Type TN-C	TN-S	TT	IT	U_C (V_{AC})	I_n per pole (8/20) (kA)	I_{max} per pole (8/20) (kA)	U_{oc}/I_{sc} per pole (1.2/50, 8/20) (kV/kA)	I_{imp} per pole (10/350) (kA)	Back-up fuse	Remote signalization of failure	Housing IP 20 Dimensions DIN 43880
Class II Type 2 C	SINGLE-POLE Surge Protective Devices I_{max}: up to 40kA (8/20)	**PROTEC C(R) 20**		✓	✓	✓**	✓	**150, 275, 320, 385, 440 ***	**10**	**20**	/	/	**100 A gL**	✓	**Modular 1TE**
		PROTEC CN(R) 40		✓	✓	✓**	✓	**150, 275, 320, 385, 440 ***	**20**	**40**	/	/	**125 A gL**	✓	**Compact 1TE**
		PROTEC CN(R) 20		✓	✓	✓**	✓	**150, 275, 320, 385, 440 ***	**10**	**20**	/	/	**100 A gL**	✓	**Compact 1TE**
	SINGLE-POLE N-PE Surge Protective Devices I_{max}: 40kA (8/20)	**PROTUBE CN 40**				✓		**255**	**20**	**40**	/	/	/		**Compact 1TE**
	MULTI-POLE Single-phase Surge Protective Devices I_{max}: 40kA per pole (8/20)	**PROTEC CM(R) 80 (2+0)**			✓			**150, 275, 320, 385, 440 ***	**15**	**40**	/	/	**100 A gL**	✓	**Modular 1TE**
		PROTEC CM(R) 80 (1+1)				✓		**150, 275, 320, 385, 440 *** (L-N) **255** (N-PE)	**15/20** (L-N/N-PE)	**40**	/	/	**100 A gL**	✓	**Modular 1TE**
		PROTEC CM(R) 80A (1+1)				✓		**150, 275, 320, 385, 440 *** (L-N) **255** (N-PE)	**15/20** (L-N/N-PE)	**40**	/	/	**100 A gL**	✓	**Modular 1TE**
	SINGLE-POLE Single-phase Surge Protective Devices I_{max}: up to 40kA (8/20)	**PROTEC CG(R) 40**		✓	✓	✓	✓	**150, 275, 385**	**20**	**40**	/	/	**125 A gL**	✓	**Modular 1TE**
		PROTEC CG(R) 20		✓	✓	✓	✓	**150, 275, 385**	**10**	**20**	/	/	**125 A gL**	✓	**Modular 1TE**
	MULTI-POLE Single-phase Surge Protective Devices I_{max}: 40kA per pole (8/20)	**PROTEC CMG(R) 40 (2+0)**			✓	✓	✓	**150, 275**	**10** (L/N-PE, L/N)	**20** (L/N-PE, L/N)	/	/	**125 A gL**	✓	**Modular 1TE**
Class III Type 3 D	SINGLE & MULTI-POLE Surge Protective Devices U_{oc}/I_{sc}: up to 10kV/5kA (1.2/50, 8/20)	**PROTEC D(R) 10**		✓	✓	✓**	✓	**150, 275, 320, 385, 440 ***	/	**10**	**10/5**	/	**63 A gL**	✓	**Modular 1TE**
		PROTEC DM(R) 20 (2+0)		✓	✓		✓	**150, 275, 320, 385, 440 ***	/	**10**	**10/5**	/	**63 A gL**	✓	**Modular 1TE**
		PROTEC DMG(R) 20 (2+0)		✓	✓		✓	**320**	/	**10**	**10/5**	/	**63 A gL**	✓	**Modular 1TE**
	Cable ducts	**MPE-ZE50**			✓	✓	✓	**320**	/	**5**	**5/2.5**	/	**35 A gL**	**LED**	
	Cable ducts, wiring socket	**MPE-MINI**			✓	✓	✓	**275**	/	/	**6/3**	/	**16 A gL**	**Buzzer**	**Compact**
	Power socket	**ZE 200 PS**			✓	✓	✓	**275**	/	/	**6/3**	/	**16 A gL**	**Green and red light**	**Compact**
	PCB	**VTC 10**		✓	✓		✓	**150, 275, 320, 440**	/	**10**	**10/5**	/	/	**Disconnector**	

* Other values on customer request ** For L-N protection mode in TT system

Surge Protective Devices for Low Voltage Power Systems

TECHNICAL CHARACTERISTICS

Category IEC/EN/VDE	Description	Product Name	Product Photo	Network Type TN-C	TN-S	TT	IT	U_C (V_{AC})	U_n (V)	I_L (A)	U_{OC}/I_{SC} (1.2/50, 8/20) (kV/kA)	Thermal protection	Remote signalization of failure	Housing IP 20 Dimensions DIN 43880
Class III Type 3 C	MULTI-POLE Surge Protective Devices with Filter	**PROFILT D 10A, 16A, 25A, 30A**			✓	✓	✓	**275/50 (60)Hz**	**230/50 (60)Hz**	**10, 16, 25, 30**	**6/3**	✓	**Red light**	**Compact 4TE**
		PROFILT D 8A			✓	✓		**275/50 (60)Hz**	**230/50 (60)Hz**	**8**	**6/3**	✓	**Red light**	**Compact 2TE**

Surge Protective Devices for DC Power Supplies (See page 18, Surge Protective Devices for Data / Signal Systems)

Surge Protective Devices for Overhead Power Lines

TECHNICAL CHARACTERISTICS

Category IEC/EN/VDE	Description	Product Name	Product Photo	Network Type TN-C	TN-S	TT	IT	U_C (V_{AC})	I_n per pole (8/20) (kA)	I_{max} per pole (8/20) (kA)	U_{OC}/I_{SC} per pole (1.2/50, 8/20) (kV/kA)	I_{imp} per pole (10/350) (kA)	Remote signalization of failure	Housing
Class II Type 2 A	SINGLE-POLE Surge Protective Devices for Overhead Power Lines I_{max}: up to 40kA (10/350)	**PROTEC AQ 40**		✓	✓		✓	**150, 275, 320, 385, 440 ***	**20**	**40**	/	/	✓	**Compact IP20**
		PROTEC AQS 40		✓	✓		✓	**150, 275, 320, 440 ***	**20**	**40**	/	/	✓	**Compact IP67**
		PROTEC A 30		✓	✓		✓	**150, 275, 320, 385, 440 ***	**15**	**30**	/	/	✓	**Compact IP20**
		PROTEC AQ 25		✓	✓		✓	**150, 275, 320, 385, 440 ***	**10**	**25**	/	/	✓	**Compact IP20**

Isolating Spark Gap (ISG) for Equipotential Bonding

TECHNICAL CHARACTERISTICS

Category IEC/EN/VDE	Description	Product Name	Product Photo	Applications	U_{sdcn} (100 V/s) (V)	U_{si} (1kV/ µs) (V)	I_{max} (8/20) (kA)	Capacitance (pF)	Resistance (GΩ)	Housing
	• Isolation Spark Gaps • Equipotential bonding • I_{max}= 100kA	**EPZ 100**		- Lightning potencial bonding - Petrochemical industry	**350, 500**	**1000**	**1000**	**< 10**	**1**	**IP67**
	Ex nC IIC IECEx BAS07. 0021U Ⓔx II 3G Baseefa 07ATEX0107U - 30ºC < Ta < 70ºC, IP 67	**EPZ 10 Ex**			**350, 500**	**1000**	**1000**	**< 10**	**1**	**IP67**

* Other values on customer request

Surge Protective Devices for Photovoltaic Systems

TECHNICAL CHARACTERISTICS

Category IEC/EN/VDE	Description	Product Name	Product Photo	U_{CPV} (V_{DC})	I_{SCWPV} (A)	I_n (+) - PE/(-) - PE (kA) (8/20)	I_{max} (+) - PE/(-) - PE (kA) (8/20)	I_{imp} per pole (kA) (10/350)	TOV withstand for unlimited time	Back-up fuse	Remote signalization of failure	Housing IP 20 Dimensions DIN 43880
Class I, II Type 1, 2 B+C	MULTI-POLE SPD for PV Systems I_{imp}: 12.5kA per pole (10/350)	**SAFETEC BS(R) 12.5 PV** with TOV immunity	 NEW	600, 1000, 1500	1000	20	40	12.5	1.5 x U_{CPV}	/	✓	Compact 4TE
		PV PROTEC BS(R) 12.5		550, 1000	/	20	40	12.5	/	/	✓	Compact 4TE
Class II Type 2 C	MULTI-POLE SPD for PV Systems I_{max}: 40kA per pole (8/20)	**SAFETEC C(R) PV** with TOV immunity		75, 300, 600, 1000	1000	10, 20, 20, 20	20, 40, 40, 40	/	1.5 x U_{CPV}	/	✓	Modular 2TE
		SAFETEC C(R) Y PV with TOV immunity		1000, 1200, 1500	1000	20, 20, 20	40, 40, 40	/	1.5 x U_{CPV}	/	✓	Modular 3TE
		PV PROTEC C(R) 40		100, 550	/	20, 20	40, 40	/	/	/	✓	Modular 2TE
		PV PROTEC C(R) 40		1000	/	20	40	/	/	/	✓	Modular 3TE

Surge Protective Devices for Wind Turbine Systems

TECHNICAL CHARACTERISTICS

Category IEC/EN/VDE	Description	Product Name	Product Photo	U_C (V_{AC})	I_n (kA) (8/20)	I_{max} per pole (kA) (8/20)	I_{imp} per pole (kA) (10/350)	TOV withstand for unlimited time	Back-up fuse	Remote signalization of failure	Housing IP 20 Dimensions DIN 43880
Class I Type 1 B	SINGLE-POLE SPD for WT Systems I_{imp}: up to 25kA (10/350)	**SAFETEC BS(R) 25 WT** with TOV immunity	 NEW	440, 600, 690, 750	40	80	25	1.5 x U_C	/	✓	Compact 4TE
		SAFETEC BS(R) 12.5 WT with TOV immunity	 NEW	440, 600, 690, 750	20	40	12.5	1.5 x U_C	/	✓	Compact 2TE
		WT PROTEC BS(R) 25		440, 600, 690, 750	40	80	25	/	250	✓	Compact 4TE
		WT PROTEC BS(R) 12.5		440, 600, 690, 750	20	40	12.5	/	250	✓	Compact 2TE
Class II Type 2 C	MULTI-POLE SPD for WT Systems I_{max}: 25kA per pole (8/20)	**SAFETEC C(R) 750 (3+0) WT** with TOV immunity		440, 600, 690, 750	12.5/37.5 (L-PEN/L1+L2+L3-PEN)	25/75 (L-PEN/L1+L2+L3-PEN)	/	1.5 x U_C	/	✓	Modular 3TE

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Surge Protective Devices for Low Voltage Power Systems

	Description	Product Name	Product Photo	Network Type TN-C	TN-S	TT	Phases	U_C (V_{AC})	I_L (A)	I_n per pole (8/20) (kA)	I_{max} per pole (8/20) (kA)	U_{OC}/I_{SC} (1.2/50, 8/20) (kV/kA)	I_{imp} per pole (10/350) (kA)	Surge filter	Box dimensions (W x H x D - mm)	Housing material/ Degree of protection
Class I, II Type 1, 2 B+C	• Surge Protection for advanced applications in electronic technology • Ideal for primary service protection applications • High surge current rating • Efficient low-pass filtering • Reduced let-through voltage • Reduced dv/dt	**PROFILT PSF 3/40/xxxTT 50kA**			✓	✓	3	320, 385	40	50	150	/	50	✓	40 x 50 x 21	Steel IP 65
		PROFILT PSF 3/63/xxxTT 50kA			✓	✓	3	320, 385	63	50	150	/	50	✓	40 x 50 x 21	Steel IP 65
		PROFILT PSF 1/40/xxxTT 50kA			✓	✓	1	320, 385	40	50	150	/	50	✓	40 x 30 x 15.5	Steel IP 65
		PROFILT PSF 1/63/xxxTT 50kA			✓	✓	1	320, 385	63	50	150	/	50	✓	40 x 30 x 15.5	Steel IP 65
		PROFILT PSF 3/40/xxxTT 25kA			✓	✓	3	320, 385	40	25	100	/	25	✓	40 x 50 x 21	Steel IP 65
		PROFILT PSF 3/63/xxxTT 25kA			✓	✓	3	320, 385	63	25	100	/	25	✓	40 x 50 x 21	Steel IP 65
		PROFILT PSF 1/40/xxxTT 25kA			✓	✓	1	320, 385	40	25	100	/	25	✓	40 x 30 x 15.5	Steel IP 65
		PROFILT PSF 1/63/xxxTT 25kA			✓	✓	1	320, 385	63	25	100	/	25	✓	40 x 30 x 15.5	Steel IP 65
Class II Type 2 C	• Surge protection in moisture and water-resistant enclosures	**PBS-C80 (2+0)-F16**			✓		1	320	16	20	40	/	/	/	9.8 x 24.8 x 11.4	Tech. polymer
		PBS-C80 (1+1)-F16				✓	1	320	16	20/20 (L-N/N-PE)	40/40 (L-N/N-PE)	/	/	/	9.8 x 24.8 x 11.4	IP 65
Class III Type 3 D	• Surge protection in moisture and water-resistant enclosures	**PBS-D10 (2+0)-F16**			✓		1	320	16	/	/	10/5	/	/	9.8 x 24.8 x 11.4	Tech. polymer IP 65
Class II Type 2 C	• Surge protection in moisture and water-resistant enclosures	**PBL-C160 (4+0)-F16**			✓		3	320	16	20	40	/	/	/	34 x 33.5 x 17.5	Tech. polymer
		PBL-C160 (3+1)-F16				✓	3	320	16	20/20 (L-N/N-PE)	40/40 (L-N/N-PE)	/	/	/	34 x 33.5 x 17.5	IP 44
Class III Type 3 D	• Surge protection in moisture and water-resistant enclosures	**PBL-D40 (4+0)-F16**			✓		3	320	16	/	/	10/5	/	/	34 x 33.5 x 17.5	Tech. polymer IP 44
Class II Type 2 C	• Surge protection in moisture and water-resistant enclosures	**PBL-C160 (4+0)-F16**			✓		3	320	/	20	40	/	/	/	14.3 x 21 x 10	Tech. polymer
		PBL-C160 (3+1)-F16				✓	3	320	/	20/20 (L-N/N-PE)	40/40 (L-N/N-PE)	/	/	/	14.3 x 21 x 10	IP 65
Class III Type 3 D	• Surge protection in moisture and water-resistant enclosures	**PBL-D40 (4+0)-F16**			✓		3	320	/	/	/	10/5	/	/	14.3 x 21 x 10	Tech. polymer IP 65

Surge Protective Devices for Data / Signal Systems

TECHNICAL CHARACTERISTICS

Product Group	Description	Product Name	Product Photo	Connection/Signal	U_n (V_{DC})	U_c (V_{DC})	I_L at 25°C (A)	I_n (8/20) (kA)	I_{max} (8/20) (kA)	Housing IP 20 Dimensions DIN 43880
Data/Signal Lines	• Single-pair SPD • Coarse and Fine Protection • Over-current Protection	SMH-SH	 NEW	- 20 mA current loop - Analogue tel. line - RS 232, - RS 422, - V.11, - RS 485 - Thermal probe PT 100, - TTL	5, 12, 15, 24, 30, 48, 60, 110	6, 15, 18, 28, 33, 52, 64, 170	1	10	20	Modular 12mm
	• Single-pair SPD • Coarse and Fine Protection • Over-current Protection	SMH-RC	 NEW	- 20 mA current loop - Analogue tel. line - RS 232, - RS 422, - V.11, - RS 485 - Thermal probe PT 100, - TTL	5, 12, 15, 24, 30, 48, 60, 110	6, 15, 18, 28, 33, 52, 64, 170	1	10	20	Modular 12mm
	• Single-pair SPD; 2-pair SPD • Coarse and Fine Protection	SMI, SMI2	 NEW	- 20 mA current loop - Analogue tel. line - RS 232, - RS 422, - V.11, - RS 485 - Thermal probe PT 100, - TTL	5, 12, 15, 24, 30, 48, 60, 110	6, 15, 18, 28, 33, 52, 64, 170	1	20	30	Modular 12mm
	• Single-pair SPD • Coarse and Fine Protection • Over-current Protection	SMH-TC		- 20 mA current loop - Analogue tel. line - RS 232, - RS 422, - V.11, - RS 485 - Thermal probe PT 100, - TTL	5, 12, 15, 24, 30, 48, 60, 110	6, 15, 18, 28, 33, 52, 64, 170	1	10	20	Modular 12mm
	• 2-pair SPD • Coarse and Fine Protection • Over-current Protection	SMH2-TC		- 20 mA current loop - Analogue tel. line - RS 232, - RS 422, - V.11, - RS 485 - Thermal probe PT 100, - TTL	5, 12, 15, 24, 30, 48, 60, 110	6, 15, 18, 28, 33, 52, 64, 170	1	10	20	Modular 12mm
	• Single-pair SPD • Coarse and Fine Protection	NMH-TC		- 20 mA current loop - Analogue tel. line - RS 232, - RS 422, - V.11, - RS 485 - Thermal probe PT 100, - TTL	5, 12, 15, 24, 30, 48, 60, 110	6, 15, 18, 28, 33, 52, 64, 170	1	10	20	Compact 12mm
	• 2-pair SPD • Coarse and Fine Protection	NMH2-TC		- 20 mA current loop - Analogue tel. line - RS 232, - RS 422, - V.11, - RS 485 - Thermal probe PT 100, - TTL	5, 12, 15, 24, 30, 48, 60, 110	6, 15, 18, 28, 33, 52, 64, 170	0.8	10	20	Compact 12mm
	• Single-pair SPD, 2-pair SPD • Coarse and Fine Protection • Over-current Protection	IM-TD		- 20 mA current loop - Analogue tel. line - RS 232, - RS 422, - V.11, - RS 485 - Thermal probe PT 100, - TTL	5, 12, 15, 24, 30, 48, 60, 110	6, 15, 18, 28, 33, 52, 64, 170	0.145, 1	10	20	Modular 1TE
	• Single-pair SPD • Coarse and Fine Protection	IMH-TC		- 20 mA current loop - Analogue tel. line - RS 232, - RS 422, - V.11, - RS 485 - Thermal probe PT 100, - TTL	5, 12, 15, 24, 30, 48, 60, 110	6, 15, 18, 28, 33, 52, 64, 170	1	10	20	Modular 1TE
	• Single-pair SPD • Coarse and Fine Protection • Insulation Resistance to Earth	SMH-SG		- Analogue tel. line - RS 232, - RS 485 - Thermal probe PT 100	5, 12, 15, 24, 30, 48, 60, 110	6, 15, 18, 28, 33, 52, 64, 170	1	10	20	Modular 12mm
	• Single-pair SPD • Coarse and Fine Protection • Insulation Resistance to Earth	VMS-TC		- Analogue tel. line - RS 485 - Thermal probe PT 100	5, 12, 15, 24, 30, 48, 60, 110	6, 15, 18, 28, 33, 52, 64, 170	1	10	20	Modular 1TE
	• Single-pair SPD • Coarse and Fine Protection	VMO		- 20 mA current loop - Analogue tel. line - RS 232, - RS 422, - V.11, - RS 485 - Thermal probe PT 100, - TTL	5, 12, 15, 24, 30, 48, 60, 110	6, 15, 18, 28, 33, 52, 64, 170	1	20	30	Modular 1TE
	• Single-pair SPD • Coarse Protection Only • Coordination Elements	SMH-TDR		- Analogue tel. line	110	170	0.3	10	20	Modular 12mm
	• 2-pair SPD • Coarse Protection only • Coordination Elements	SMH2-TDR		- Analogue tel. Line	110	170	0.3	10	20	Modular 12mm
	• Single-pair SPD • Coarse Protection only • Coordination Elements	VM-TDR		- Analogue tel. Line	110	170	0.3	10	20	Modular 1TE

Surge Protective Devices for Data / Signal Systems

TECHNICAL CHARACTERISTICS

Product Group	Description	Product Name	Product Photo	Connection/Signal	U_n (V_{DC})	U_c (V_{DC})	I_L at 25°C (A)	I_n (8/20) (kA)	I_{max} (8/20) (kA)	Housing IP 20 Dimensions DIN 43880
Data/Signal Lines	• Single-pair SPD • Fine Protection only	SMH2-DF	 NEW	- 20 mA current loop	5, 12, 24, 60	7, 15, 28, 64	1	0.5	1	Modular 12mm
	• Single-pair SPD • Fine Protection only	IM-VF	 NEW	- 20 mA current loop	24	31	10	0.5	1	Compact 6mm
	• Single-pair SPD • Fine Protection only	IM-DF		- 20 mA current loop	5, 12, 24, 60	7, 15, 28, 64	10	0.5, 0.5, 0.25, 0.1	/	Compact 6mm
	• Single-pair SPD • Coarse and Fine Protection • Increased Sparkover Voltage • Overcurrent Protection	SMH-20K SMH-20D		- Analogue tel. Line - 20 mA current loop - Thermal probe PT 100	230 24, 60	320 28, 64	5 0.145	10 10	20 20	Modular 12mm
	• 2-pair SPD • Coarse and Fine Protection • Increased Sparkover Voltage • Overcurrent Protection	SMH2-20K SMH2-20D		- Analogue tel. Line - 20 mA current loop - Thermal probe PT 100	230 24, 60	320 28, 64	5 0.145	10 10	20 20	Modular 12mm
	• SPD for DC power supplies and data lines • Coarse and Fine Protection	SMH-TC+PS		- DC power supply + 1 data line - CAN bus	24	28	1	10	20	Modular 12mm
	• Single-pair SPD, PCB assembly • Coarse and Fine Protection • Over-current Protection	LZ-SMH		- 20 mA current loop - Analogue tel. line - RS 232, - RS 422, - V.11, - RS 485 - Thermal probe PT 100, - TTL	12, 24	15, 28	1	10	20	/
xDSL Technologies	• Single-pair SPD • For xDSL Transmission • Coarse and Fine Protection	IM-xDSL		- Analogue tel. line - xDSL (VDSL class 1 only)	120	170	0.2	10	20	Modular 1TE
DC Power Supplies	• Single-pair SPD • For DC Power Supplies • Coarse and Fine Protection	SMH-PS		- DC power system	12, 24, 48	15, 28, 52	4	10	20	Modular 12mm
	• Single-pair SPD • For DC Power Supplies • Coarse and Fine Protection	VM-DC		- DC power system	12, 24	15, 28	10	10	20	Modular 1TE
	• SPD for DC Power Supplies • Class I/Type 1/B • Iimp= 10kA • Mechanical Flag + Remote Contacts (R)	DC PROTEC B(R) 10		- DC power system	24, 48	30, 60	/	20	60	Compact 4TE
	• SPD for DC Power Supplies • Class II/Type 2/C • Mechanical Flag + Remote Contacts (R)	DC PROTEC C(R) 40		- DC power system	24, 48	30, 60	/	20	40	Compact 2TE
	• DC and AC Power Supplies • Class III / Type 3 / D • U_{OC}/I_{SC} (1.2/50, 8/20)= 4kV/2kA, 6kV/3kA • Remote contacts + LED	PROTEC DMDR 20		- DC and AC power system	24, 48, 60, 120	34/44, 60, 75, 150$V_{AC/DC}$	/	1.2, 2.5, 2.5, 4	3, 6, 6, 10	Modular 1TE
	• Single-pole SPD • Class II/Type 2/C • Mechanical Flag + Remote Contacts (R)	PROTEC C(R) 40		- DC and AC power system	/	75/100$V_{AC/DC}$	/	20	40	Modular 1TE
	• Single-pole SPD • Class II/Type 2/C • Mechanical Flag + Remote Contacts (R)	PROTEC CN(R) 40		- DC and AC power system	/	75/100$V_{AC/DC}$	/	20	40	Compact 1TE

TECHNICAL CHARACTERISTICS

Product Group	Description	Product Name	Product Photo	Connection/Signal	U_n (V_{DC})	U_c (V_{DC})	I_L at 25°C (A)	I_n (8/20) (kA)	I_{max} (8/20) (kA)	Housing IP 20 Dimensions DIN 43880
Data Protocol	• 4-wire SPD (2 lines) • Coarse and Fine Protection	**VM-RS**		- RS 422 - V.11 - RS 485	**5**	**6**	**0.5**	**20**	/	**Compact 2TE**
	• D-SUB, 9-pole SPD • All Pins Protected	**IM-DB 9**		- RS 232	**12**	**15**	/	**0.1** (line-line)	**0.2** (line-line)	**Compact**
	• D-SUB, 15-pole SPD • Coarse and Fine Protection	**IM-DB 15RS**		- RS 422 - V.11 - X.21	**5**	**6**	**0,5**	**20**	/	**Compact**
Local Area Networks	• LAN Protector (1 way) • All 4 Pairs Protected • Freq. < 100MHz, Cat. 5 Capable • Termination: RJ45, Cat. 5 Connectors	**LZ-NET** **LZ-NET PoE** **LZ-NET STP**		- LAN (up to Cat. 5)	**5** **48** **5**	**6** **58** **6**	/	**0.3** (line-line; line-PG) **0.06** (line-line; line-PG) **0.3** (line-line; line-PG)	/	**Compact**
	• LAN Protector (1 way) • All 4 Pairs Protected • Freq. < 250MHz, Cat. 6 Capable • Termination: RJ45, Shielded	**LZ-NET 6**		- LAN (up to Cat. 6)	**48**	**48**	**1**	**0.15** (line-line) **10** (lines-PG)	/	**Compact 19mm**
	• LAN Protector • 19″ Rack Patch Panel up to 24 way • All 4 Pairs Protected • Freq. < 100MHz, Cat. 5 Capable • Termination: RJ45, Cat. 5 Connectors	**LZ-24NET 19** **LZ-24NET 19 PoE**		- LAN (up to Cat. 5)	**5** **48**	**6** **58**	/	**0.3** (line-line; line-PG) **0.06** (line-line; line-PG)	/	**Compact** /
	• Combined POWER/LAN Protector • All 4 Pairs in the UTB Protected • Freq. < 100MHz, Cat. 5 Capable • Termination: RJ45, Cat. 5 Connectors	**ZE 200 NET**		- LAN (up to Cat. 5)	**5** 230V / 50Hz	**6** 275V / 50Hz	/	**0.3** (line-line; line-PG) 3kA (L(N) - PE, L-N) 10kA (L+N-PE)	/	**Compact** /
Combined Plug-in Surge Protection	• Combined POWER/LAN Protector • All 4 Pairs in the UTB Protected • Freq. < 100MHz, Cat. 5 Capable • Termination: RJ45, Cat. 5 Connectors • Compact, Ergonomic Packaging	**ZES-76 TEL-TV**		- TV, telephone line	**110** (Tel.); **50** (Coax.) 230V / 50Hz	**170** (Tel.); **70** (Coax.) 275V / 50Hz	/	**2.5** (Tel.); **5** (Coax)	/	**Compact** /
	• Combined POWER/DATA Protector • Coax Protected • Tel. Protected • Termination: RJ11, IEC Connector • Compact, Ergonomic Packaging	**ZES-7 TEL-TV**		- TV, telephone line	**110** (Tel.); **50** (Coax.) 230V / 50Hz	**170** (Tel.); **70** (Coax.) 275V / 50Hz	/	**2.5** (Tel.); **5** (Coax.)	/	**Compact** /
	• Combined POWER/DATA Protector • Coax Protected • Tel. Protected • Termination: RJ11, IEC Connector • Master-slave Function	**ZES 1M+5S**		- TV, telephone line	**110** (Tel.); **50** (Coax.) 230V / 50Hz	**170** (Tel.); **70** (Coax.) 275V / 50Hz	/	**2.5** (Tel.); **5** (Coax.)	/	**Compact** /
	• Combined POWER/DATA Protector • Coax Protected • Tel. Protected • Termination: RJ11, IEC Connector • Master-slave Function (USB, Hub)	**ZES 1M+4S** **TEL-NET TUSB Hub**		- TV, telephone line - LAN (up to Cat. 5)	**110** 230V / 50Hz	**170** 275V / 50Hz	/	**2.5**	/	**Compact** /
	• POWER Protector • Uoc = 3kV • Compact, Ergonomic Packaging	**ZES 6**			230V / 50Hz	275V / 50Hz	/	/	/	**Compact** /

TECHNICAL CHARACTERISTICS

Product Group	Description	Product Name	Product Photo	Connection/Signal	U_n (V_{DC})	U_c (V_{DC})	I_L at 25°C (A)	I_n (8/20) (kA)	I_{max} (8/20) (kA)	Termination
Coaxial/RF	• Coaxial BNC Protector • For CCTV and Arcnet • Coarse and Fine Protection • Indirect Shield Earthing	ZV-BNC		- Arcnet	5, 12	6, 14	0.1	10	/	BNC - Type M-F and F-F
	• Coaxial Protector • For TV and Cable TV • Direct Shield Earthing	ZV-1 ZV1-F		- TV - Cable TV	48 48	66 60	0.1 0.1	5 5	/ /	IEC F
	• Coaxial Protector • For RF Anntena System • Freq.: DC to 2.4GHz • GDT	CCP-BNC		- Analog video	/	70, 180, 280	/	10	20	BNC - Type M-F and F-F
	• Coaxial Protector • For Base Station RF Antenna System • Freq.: DC to 2.5GHz • GDT	CCP-7/16		- GSM - GPS - Radio systems	/	70, 180, 280	/	10	20	7/16 - Type M-F
	• Coaxial Protector • For RF Antenna System • Freq.: DC to 2.4GHz • GDT	CCP-N		- GSM - GPS - Radio systems	/	70, 180, 280	/	10	20	N - Type M-F and F-F
	• Coaxial Protector • For RF Antenna System • Freq.: DC to 6.0GHz • GDT	CCP-N-6G		- GSM - GPS - Radio systems	/	180	/	10	20	N - Type M-F and F-F
	• Coaxial Protector • For RF Antenna System • Freq.: DC to 600MHz • GDT	CCP-UHF		- Radio systems	/	70, 180, 280	/	10	20	UHF - Type M-F and F-F
	• Coaxial Protector • For RF Antenna System (USA CCTV and CATV System) • Freq.: DC to 2.0GHz • GDT	CCP-F		- Cable TV	/	70, 180	/	10	20	F - Type M-F and F-F
	• Coaxial Protector • For RF Antenna System (EU CCTV and CATV System) • Freq.: DC to 2.0GHz • GDT	CCP-TV		- TV	/	70, 180	/	10	20	TV - Type M-F and F-F
	• Coaxial Protector • For RF Antenna System • Freq.: DC to 865-965MHz, 1700-1950MHz	CCP-L/4-7/16		- GSM	/	0	/	15	30	L/4-7/16 - Type M-F and F-F
	• Coaxial Protector • For RF Antenna System • Freq.: DC to 865-965MHz, 1700-1950MHz	CCP-L/4-N		- GSM	/	0	/	15	30	L/4-N - Type M-F and F-F

TECHNICAL CHARACTERISTICS

Product Group	Description	Product Name	Product Photo	Connection/Signal	U_n (V_{DC})	U_c (V_{DC})	I_L at 25°C (A)	I_n (8/20) (kA)	I_{max} (8/20) (kA)	Housing dim. Degree of protection
Ex	• Single-pair SPD • For Hazardous Areas (Ex) • Coarse and Fine Protection • Insulation Resistance to Earth Ⓔx II 1 G EEx ia IIC T4 Baseefa 04 ATEX 0209X	**IM-15Ex** **IM-30Ex**		- Hazardous Areas	**15** **30**	**18** **33**	**0.5** **0.5**	**10** **10**	**20** **20**	**1TE** **IP20**
Line Fitting	• Single-pair SPD • For 3/4" Pipe Installations • Coarse and Fine Protection • tA < 1ns	**PLP**		- 20mA current loop	**24**	**28**	**0.145**	**10** **10**	**20** **20**	**IP 55**
Terminal Connection	• OEM PCB module • Single-pair SPD • Coarse Protection Only • PCB Hybrid • Flying Leads or Screw Terminals	**IM-GD**		- Analogue tel. line - xDSL (VDSL class 1 only) - EIB	**110**	**120**	**6**	**5**	**10**	**IP20**
PCB Mounting	• OEM PCB module • Single-pair SPD • Coarse and Fine Protection • PCB Hybrid • PCB Pins	**IM-NF**		- RS 232, - RS 422, - V.11, - RS 485 - Thermal probe PT 100 - TTL	**5, 15, 24**	**6, 18, 28**	**0.145**	**5**	**10**	**IP20**

Surge Protective Modules for Telecommunications

TECHNICAL CHARACTERISTICS

Product Group	Description	Product Name	Product Photo	Applications	U_C (V_{DC})	I_L at 20°C (mA)	I_n (8/20) (kA)	I_{max} (8/20) (kA)	Thermal protection	Overcurrent protection
LPA 02 I	• Simple protection modules for **ISKRA** strips • Single-pair or 10-pair • Overvoltage and overcurrent protection • Coarse protection - longitidunal and transversal direction • Protection level: < 900V • Response time: 100ns	**LPA 02 IM**		Telecommunicaton - POTS - ADSL - xDSL - ISDN S0, S2M, U - P-MUX - PCM-E1 - PCM 100V - Modem Analogue - Modem DatexP Data Transmission - RS 232 - RS 485 - Ethernet - Token Ring Measuring Technology - TTL - TTY 24V	**180**	**300**	**5**	**10**	**TC**	**/**
		LPA 02 I			**180**	**300**	**5**	**10**	**TD**	**/**
		LPA 02 I 10M			**180**	**300**	**5**	**10**	**TD**	**/**
		LPA 02 I-PTC			**180**	**150**	**5**	**10**	**TD**	**PTC**
		LPA 02 I 10-PTC			**180**	**150**	**5**	**10**	**TD**	**PTC**
		LPA 02 I/BT-HIB2			**180**	**60**	**5**	**10**	**TD**	**PTC**
LPA 02 K	• Simple protection modules for **KRONE** strips • Single-pair or 10-pair • Overvoltage and overcurrent protection • Coarse protection - longitidunal and transversal direction • Protection level: < 900V • Response time: 100ns	**MGZ LL/K10**			**180**	**/**	**/**	**10**	**TC**	**/**
		LPA 02 K1M-TK			**180**	**300**	**5**	**10**	**TC**	**/**
		LPA 02 K1			**180**	**300**	**5**	**10**	**TD**	**/**
		LPA 02 K10			**180**	**300**	**5**	**10**	**TD**	**/**
		LPA 02 K1-PTC			**180**	**150**	**5**	**10**	**TD**	**PTC**
		LPA 02 K10-PTC			**180**	**150**	**5**	**10**	**TD**	**PTC**
		LPA 02 K1/BT-HIB2			**180**	**60**	**5**	**10**	**TD**	**PTC**
		LPA 02 K1M-TK-PTC			**180**	**150**	**5**	**10**	**TC**	**PTC**
		LPA 02 M/PTC-BPO			**245**	**60**	**5**	**10**	**/**	**PTC**
LPA 04 K1M	• Complex protection modules for **KRONE** strips • Single-pair • Overvoltage and overcurrent protection • Coarse and fine protection • Thermal protection • Protection level: 15 - 600V • Response time: 1 - 25ns	**LPA 04 K1M-TK-E 5, 12, 15, 24, 48, 60, 110**			**6, 12, 18, 28, 85, 100, 180**	**150**	**5**	**10**	**TC**	**PTC**
		LPA 04 K1M-TK-C 5, 12, 15, 24, 48, 60, 110			**6, 12, 18, 28, 85, 100, 180**	**150**	**5**	**10**	**TC**	**PTC**

* TC - thermal clip, TD - thermal decoupler, PTC - resistor with a positive temperature coeficient

TECHNICAL CHARACTERISTICS

Product Group	Description	Product Name	Product Photo	Applications	U_C (V_{DC})	I_L at 20°C (mA)	I_n (8/20) (kA)	I_{max} (8/20) (kA)	Thermal protection	Overcurrent protection
LPA 08 I	• Complex protection modules for **ISKRA** strips • Single-pair or 10-pair • Overvoltage and overcurrent protection • Coarse protection - longitidunal and transversal direction • Fine protection - longitidunal and transversal direction • Protection level: < 400V, < 600V • Response time: 1ns, 5ns, 25ns	**LPA 08 I**		Telecommunicaton - POTS - ADSL - xDSL - ISDN S0, S2M, U - P-MUX - PCM-E1 - PCM 100V - Modem Analogue - Modem DatexP Data Transmission - RS 232 - RS 485 Measuring Technology - TTL - TTY 24V	**180**	**150**	**5**	**10**	**TD**	**/**
		LPA 08 I-PTC			**180**	**150**	**5**	**10**	**TD**	**PTC**
		LPA 08 I10-PTC			**180**	**150**	**5**	**10**	**TD**	**PTC**
		LPA 08 I-BT/PTC			**180**	**150**	**5**	**10**	**TD**	**PTC**
		LPA 08 I-SID			**180**	**150**	**5**	**10**	**TD**	**/**
		LPA 08 I-PTC-SID			**180**	**150**	**5**	**10**	**TD**	**PTC**
		LPA 08 I-BT-HIB2			**180**	**60**	**5**	**10**	**TD**	**hibrid PTC**
		LPA 08 I-BT-HIB-T			**180**	**60**	**5**	**10**	**TD**	**hibrid PTC**
LPA 08 K	• Complex protection modules for **KRONE** strips • Single-pair or 10-pair • Overvoltage and overcurrent protection • Coarse protection - longitidunal and transversal direction • Fine protection - longitidunal and transversal direction • Protection level: < 400V, < 600V • Response time: 1ns, 5ns, 25ns	**LPA 08 K1**			**180**	**150**	**5**	**10**	**TD**	**/**
		LPA 08 K10			**180**	**150**	**5**	**10**	**TD**	**/**
		LPA 08 K1-PTC			**180**	**150**	**5**	**10**	**TD**	**PTC**
		LPA 08 K10-PTC			**180**	**150**	**5**	**10**	**TD**	**PTC**
		LPA 08 K1-SID			**180**	**150**	**5**	**10**	**TD**	**/**
		LPA 08 K10-SID			**180**	**150**	**5**	**10**	**TD**	**/**
		LPA 08 K1-PTC-SID			**180**	**150**	**5**	**10**	**TD**	**PTC**
		LPA 08 K10-PTC-SID			**180**	**150**	**5**	**10**	**TD**	**PTC**
		LPA 08 K1/BT-HIB2			**180**	**60**	**5**	**10**	**TD**	**hibrid PTC**
		LPA 08 K1/BT-HIB-T			**180**	**60**	**5**	**10**	**TD**	**hibrid PTC**

* TC - thermal clip, TD - thermal decoupler, PTC - resistor with a positive temperature coeficient

Surge Protective Modules for Telecommunications

TECHNICAL CHARACTERISTICS

Product Group	Description	Product Name	Product Photo	Applications	U_C (V_{DC})	I_L at 20°C (mA)	I_n (8/20) (kA)	I_{max} (8/20) (kA)	Thermal protection	Overcurrent protection
LPA 08 I	• Complex protection modules for **ISKRA** strips • Single-pair or 10-pair • Overvoltage and overcurrent protection • Coarse protection - longitidunal and transversal direction • Fine protection - longitidunal and transversal direction • Protection level: < 100V - < 700V • Response time: 1ns, 5ns, 25ns	LPA 08 I-PCM		Telecommunicaton - POTS - ADSL - xDSL - ISDN S0, S2M, U - P-MUX - PCM-E1 - PCM 100V - Modem Analogue - Modem DatexP Data Transmission - RS 232 - RS 485 Measuring Technology - TTL - TTY 24V	180	200	5	10	TD	/
		LPA 08 I-PCM10			280	200	5	10	TD	/
		LPA 08 I-2Mbit/s			8	200	5	10	TD	/
		LPA 08 I-xDSL			180	200	5	10	TD	/
		LPA 08 I-PTC-xDSL			180	150	5	10	TD	PTC
		LPA 08 IL			160	150	5	10	TD	PTC
LPA 08 K	• Complex protection modules for **KRONE** strips • Single-pair or 10-pair • Overvoltage and overcurrent protection • Coarse protection - longitidunal and transversal direction • Fine protection - longitidunal and transversal direction • Protection level: < 100V - < 700V • Response time: 1ns, 5ns, 25ns	LPA 08 K1-PCM			180	200	5	10	TD	/
		LPA 08 K10-PCM			180	200	5	10	TD	/
		LPA 08 K1-PCM10			280	200	5	10	TD	/
		LPA 08 K10-PCM10			280	200	5	10	TD	/
		LPA 08 K1-2Mbit/s			8	200	5	10	TD	/
		LPA 08 K1-xDSL			180	200	5	10	TD	/
		LPA 08 K1-PTC-xDSL			180	150	5	10	TD	PTC
		LPA 08 K1M-TK-T110			180	150	5	10	TC	PTC
		LPA 08 K1 PTC-VAR			180	60	5	10	TD	PTC
		LPA 08 K1L			160	150	5	10	TD	PTC

* TC - thermal clip, TD - thermal decoupler, PTC - resistor with a positive temperature coeficient

Surge Protective Modules for Telecommunications

TECHNICAL CHARACTERISTICS

Product Group	Description	Product Name	Product Photo	Applications	U_C (V_{DC})	I_L at 20°C (mA)	I_n (8/20) (kA)	I_{max} (8/20) (kA)	Thermal protection	Overcurrent protection
LPA2 02	• Complex protection modules for small **ISKRA** strips • 2-pair • Overvoltage and overcurrent protection • Coarse protection - longitidunal and transversal direction • Fine protection - longitidunal and transversal direction • Protection level: < 900V • Response time: 100ns	LPA2 02 IH		Telecommunicaton - POTS - ADSL - xDSL - ISDN S0, S2M, U - P-MUX - PCM-E1 - PCM 100V - Modem Analogue - Modem DatexP Data Transmission - RS 232 - RS 485 - Ethernet - Token Ring Measuring Technology - TTL - TTY 24V	180	300	5	10	TD	/
		LPA2 02 IH-R			180	200	5	10	TD	/
		LPA2 02 I-PTC			180	150	5	10	TD	PTC
LPA2 08	• Protection level: < 300V • Response time: 5ns	LPA 08 I-PTC D			180	150	5	10	TD	PTC
		LPA 08 IH-RD			180	200	5	10	TD	/

DSL Low-pass Filter for POTS & ISDN

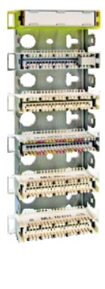
TECHNICAL CHARACTERISTICS

Product Group	Description	Product Name	Product Photo	Applications	No. of splitters (LPF)	Used for disconnection strip	Overvoltage protection	Overcurrent protection	Thermal protection	Cut freguency (kHz)	Loop current (mA)
LPF COMBO	• Low pass filter for POTS and ISDN • ISDN : 135 Ω (2B1Q) • POTS : 600 Ω • Single-pair • Overvoltage and overcurrent protection (optional) • Coarse protection - longitudinal and transversal direction (optional) • Thermal protection (optional) • ETSI standard TS 101 952-1-4	LPF1-LL/K-COMBO		Telecommunicaton - POTS - ISDN - ADSL - ADSL2 - VDSL - VDSL2	1	LL/K; LL/I	NO	NO	NO	138	100
		LPF-MLL/I COMBO			1	MLL/I 4LPF	NO	NO	NO	138	100
		LPF-MLL/I P.C.PTC-COMBO			1	MLL/I 4LPF	YES	YES	YES	138	100
LPF POTS	• Low pass filter for POTS • POTS : 600 Ω • Single-pair • Standards: ITU-T G.992.1, ITU-T G.992.3, ITU-T G.993.2	LPF1-KH-DSL-POTS		Telecommunicaton - POTS - ADSL - ADSL2 - VDSL - VDSL2	1	LL/K; LL/I	NO	NO	NO	25	60
		LPF-MLL/I-POTS			1	MLL/I 4LPF	NO	NO	NO	25	60

* TC - thermal clip, TD - thermal decoupler, PTC - resistor with a positive temperature coeficient

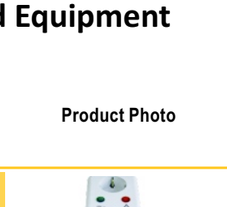
Equipment for Telephone Exchanges

Product Group	Description	Product Name	Product Photo	Use
Standard STRIPS	• **Terminal strips** • Designed for use on the exchange side only • The 3x6 version - for digital 2Mbit/s transmissions • The K version - Krone compatible	**LR/I**		• Connecting telephone lines • Insertion of measuring or marking modules or disconnecting plugs
		LR/K		
		LR/I 3x6		
	• **Disconnecting strips** • Installed as termination on both the line and exchange side of wiring • Earthing contact • The 3x6 version - for digital 2Mbit/s transmissions • The K version - Krone compatible	**LL/I**		• Connecting telephone lines • Installation of overvoltage protection modules • Testing of lines • Disconnection specific lines and line labeling
		LL/K		
		LL/I 3x6		
	• **Switching strips** • Designed for use on the line side only • Earthing contact • No signal without inserted protective module	**LS/I**		• Connecting telephone lines • Installation of overvoltage protection modules
	• **Earthing strips**	**LO/I**		• Equipotential bonding earth points
	• **Inscription strips**	**LN/I**		• Labeling
Earthing Mounting Frame	• For 1 - 11 strips • Frame height 22 mm • Stainless steel	**NMI**		• Mounting the various types of standard strips • Earthing link for the overvoltage protection • Entry for the cable bundles

Product Group	Description	Product Name	Product Photo	Use
Small STRIPS	• **Terminal strips** • Designed for use on the exchange side only • The 3x6 version - for digital 2Mbit/s transmissions	**MLR 10/I**		• Connecting telephone lines • Insertion of measuring or marking modules or disconnecting plugs
		MLR 10/I 3x6		
	• **Disconnecting strips** • Installed as termination on both the line and exchange side of wiring • Earthing contact • The 3x6 version - for digital 2Mbit/s transmissions	**MLL 10/I**		• Connecting telephone lines • Installation of overvoltage protection modules • Testing of lines • Disconnection specific lines and line labeling
		MLL 10/I 3x6		
	• **Switching strips** • Designed for use on the line side only • Earthing contact • No signal without inserted protective module	**MLS 10/I**		• Connecting telephone lines • Installation of overvoltage protection modules • Testing of lines
	• **Earthing strips**	**MLO 10/I**		• Equipotential bonding earth points
	• **Inscription strips**	**MLN 10/I**		• Labeling
	• **Disconnecting strip** • Installed as termination on both the line and exchange side of wiring • Earthing contact	**MLL 4LPF**		• Connecting xDSL telephone lines • Installation of overvoltage protection modules • Testing of lines • Disconnection specific lines and line labeling
Earthing Mounting Frame	• For 1 - 11 strips • Frame height 12 mm • Stainless steel	**NMIM**		• Mounting the various types of small strips • Earthing link for the overvoltage protection • Entry for the cable bundles

Independent Line Protection for Terminals and Equipment

TECHNICAL CHARACTERISTICS

Product Group	Description	Product Name	Product Photo	Applications	Data part U_C (V_{DC})	I_L at 20°C (mA)	I_n (8/20) (kA)	I_{max} (8/20) (kA)	Thermal/ overcurrent protection	Power part U_n (V_{AC})	U_C (V_{AC})	I_L at 20°C (A)	I_n (8/20) (kA)	U_{OC}/I_{SC} (1.2/50, 8/20) (kV/kA)
ZE 200	• Combined plug-in adapter with overvoltage protection • Power protection (230V/50Hz) • Line protection • Overvoltage and overcurrent protection • Coarse protection - longitidunal and transversal direction • Fine protection - longitidunal and transversal direction	ZE 200 xDSL		Telecommunicaton - POTS - ADSL - xDSL - ISDN S0, S2M, U - P-MUX - PCM-E1 - PCM 100V - Modem Analogue - Modem DatexP Data Transmission - RS 232 - RS 485 - Ethernet - Token Ring Measuring Technology - TTL - TTY 24V	175	150	2.5	5	TD/PTC	230	275	16	6	10
		ZE 200 ISDN-S0			9/56	150	2.5	5	TC/PTC	230	275	16	6	10
		ZE 200 ISDN-BA			155	150	2.5	5	TD/PTC	230	275	16	6	10
		ZE 200 FAX-TEL			175	150	2.5	5	TD/PTC	230	275	16	6	10
LZ	• Line protection • Overvoltage and overcurrent protection • Coarse protection - longitidunal and transversal direction • Fine protection - longitidunal and transversal direction	LZ-DSL 01P		Telecommunicaton - POTS - ADSL - xDSL - ISDN S0, S2M, U - P-MUX - PCM-E1 - PCM 100V	175	150	2.5	5	TC/PTC					
		LZ-ISDN-BA/TEL			155	150	2.5	5	TC/PTC					
LZ-2 LZD	• Line protection 1 - 6 lines • Overvoltage and overcurrent protection • Coarse protection - longitidunal and transversal direction • Fine protection - longitidunal and transversal direction	LZ-2A		Telecommunicaton - POTS - ISDN	175	200	5	10	TC					
		LZD-2AB			175	200	5	10	TC					

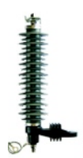
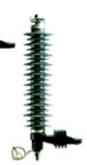
DSL Low-pass Filter for POTS & ISDN

TECHNICAL CHARACTERISTICS

Product Group	Description	Product Name	Product Photo	Applications	No. of splitters (LPF)	Overvoltage protection	Overcurrent protection	Thermal protection	Cut freguency (kHz)	Loop current (mA)
LPF -DSL COMBO	• Low pass filter for POTS and ISDN • ISDN : 135 Ω (2B1Q) • POTS : 600 Ω • Single-pair • Overvoltage protection • Coarse protection • ETSI standard TS 101 952-1-4	LPF-DSL01P DSL-COMBO		Telecommunicaton - POTS - ISDN - ADSL - ADSL2 - VDSL - VDSL2	1	YES	NO	NO	138	80

Surge Protective Devices for Medium Voltage Power Systems

TECHNICAL CHARACTERISTICS

Category IEC/EN/VDE	Description	Product Name	Product Photo	Rated voltage U_r (kV)	Max. continuous operating voltage U_c (kV)	Nominal discharge current 8/20 µs I_n (kA)	Class line discharge (10kA and up)	Energy absorption capability kJ/kV (Uc/Ur)	Rated short circuit current (kA)	Rated frequency (Hz)	Housing insulation withstand: Dry lightning 1.2/50 (kV)	Housing insulation withstand: 60 s wet withstand power frequency (kV)	Creepage distance/ rated voltage ratio (mm/kV)
Class 1	• Medium Voltage Surge Arresters • Low residual voltage • High energy input capacity • Stable U-I characteristics even after multiple strokes • Proof against ageing • Explosion and shatter-resistant design • IEC 60099-4:2006; IEEE 62.11 2005 MSAIZ xx BD L(O) O - outdoor appl. L - indoor appl. Disconnector Bracket Ur (kV) rated voltage	MSAIZ 3		3	2.55	10	1	4.4/3.6	20	15 - 62	40	20	51.0
		MSAIZ 6		6	5.10	10	1	4.4/3.6	20	15 - 62	60	25	45.0
		MSAIZ 9		9	5.65	10	1	4.4/3.6	20	15 - 62	65	30	42.0
		MSAIZ 10		10	8.40	10	1	4.4/3.6	20	15 - 62	75	30	38.0
		MSAIZ 11		11	9.35	10	1	4.4/3.6	20	15 - 62	85	40	40.7
		MSAIZ 12		12	10.20	10	1	4.4/3.6	20	15 - 62	95	40	37.7
		MSAIZ 15		15	12.70	10	1	4.4/3.6	20	15 - 62	105	50	37.8
		MSAIZ 18		18	15.30	10	1	4.4/3.6	20	15 - 62	120	55	38.0
		MSAIZ 21		21	17.00	10	1	4.4/3.6	20	15 - 62	125	58	35.0
		MSAIZ 24		24	19.50	10	1	4.4/3.6	20	15 - 62	135	60	35.6
		MSAIZ 27		27	22.00	10	1	4.4/3.6	20	15 - 62	155	65	36.0
		MSAIZ 30		30	24.40	10	1	4.4/3.6	20	15 - 62	170	70	34.7
		MSAIZ 33		33	26.70	10	1	4.4/3.6	20	15 - 62	185	75	33.1
		MSAIZ 36		36	29.00	10	1	4.4/3.6	20	15 - 62	190	85	32.3
		MSAIZ 42		42	34.00	10	1	4.4/3.6	20	15 - 62	185	85	32.0

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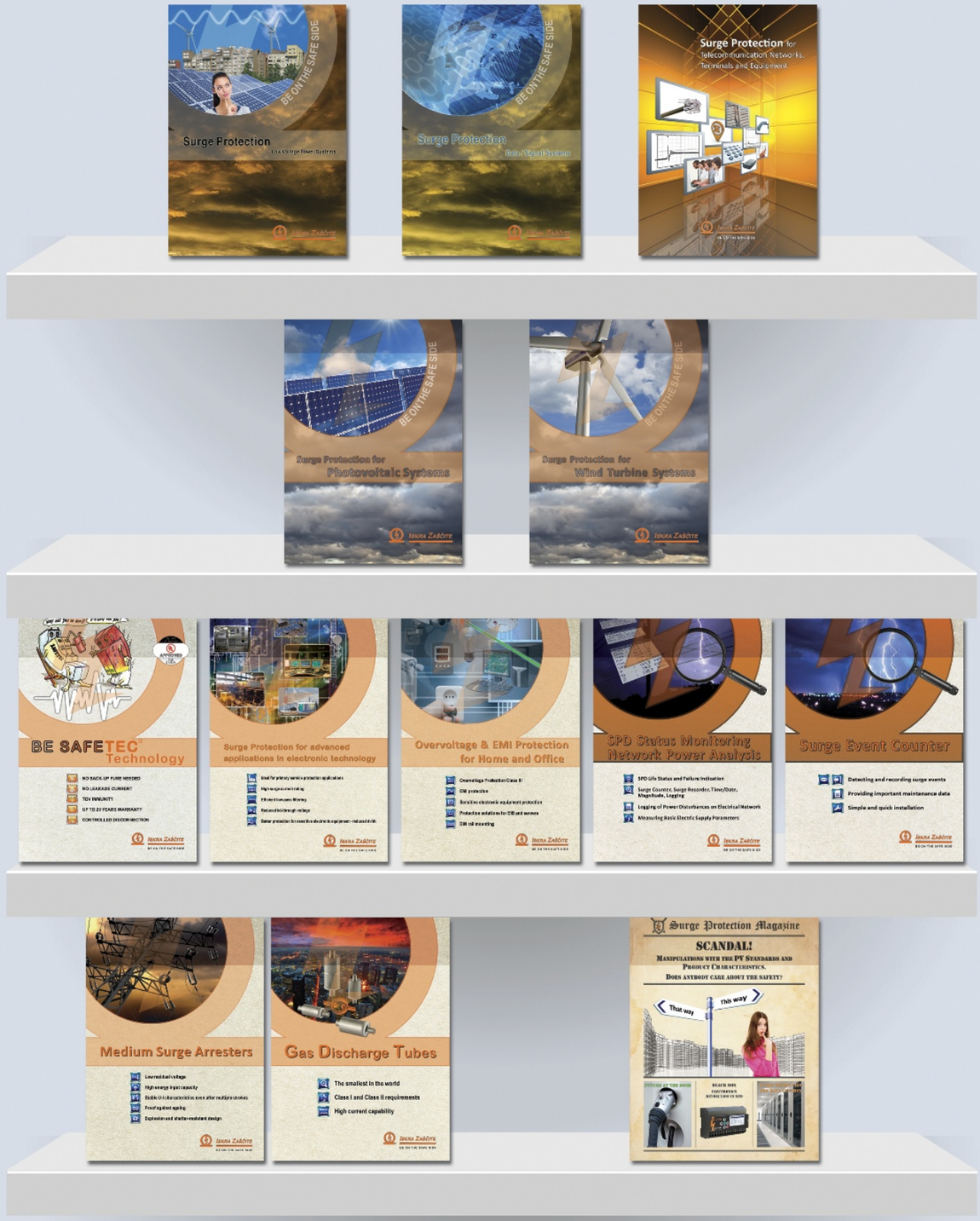
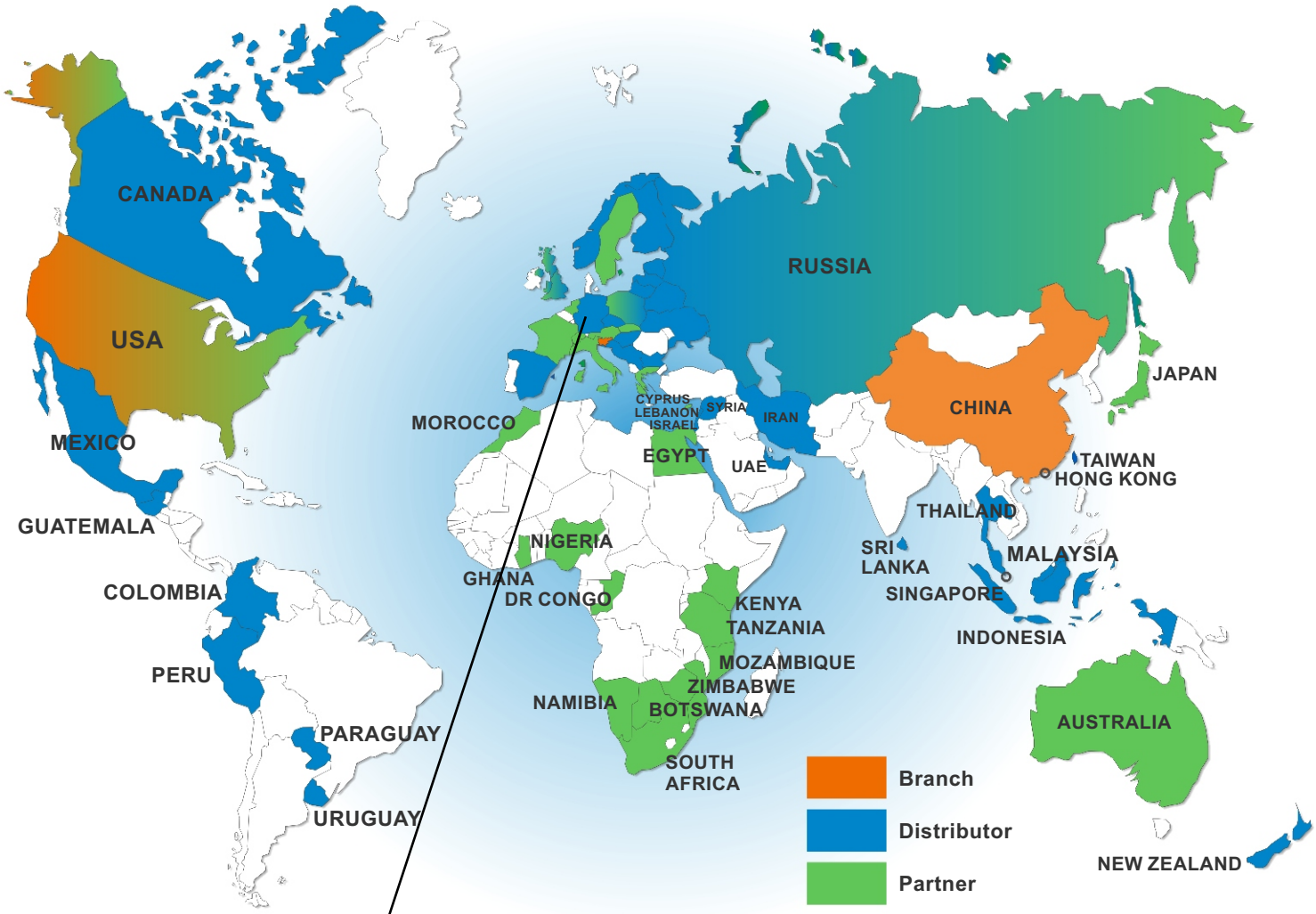
Power Quality

Product Group	Description	Product Name	Product Photo	Use
SPD Status Monitoring Network Power Analysis	• SPD Life Status and Failure Indication • Surge Counter • Surge Recorder • Time/Date • Magnitude • Logging of Power Disturbances on Electrical Network • Measuring Basic Electric Supply Parameters	**ProAlyser**		• A powerful tool with which we have an overview over power quality • 100% safety with online monitoring of SPD • Used in any electrical cabinet, where power quality and surge protection are important.
Surge Event Counter	• Mechanical counter • Self-energising, no battery power needed • Integral current sensor • Ease of installation in-line series connection with PE • Permanent record of surge events, non-resettable	**ProSEC I**		• Used in any electrical cabinet, where information about harmful surge events is needed • Monitoring the exact number of surges that would otherwise pass through without our knowledge • Recommended installation to multiple power supply junctions so we can pinpoint the origins and area of surge influence
	• 3-digit LCD display • Internal current sensor or optional external sensor • Ease of installation inline series connection with PE wire of SPD or external snap-on toroid sensor • Counter test and reset functions • Low battery test function (LED indication)	**ProSEC II**		
Advanced Surge Event Counter	• Surge amplitude measurment • Time and date of event logging • Event warning • Colour LCD • Long-lasting backup battery • Indication of SPD degradation	**ProSEC III**		• Displays number, amplitude, date and time of surge events • Installed on junctions near important electrical equipment that can be disturbed or harmed by surges

Surge Protection Publications





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Published by: ISKRA ZAŠČITE, d.o.o. / Januar 2012 / Design: Dacar /