# High Speed Fuses

## Section Contents



Scan this tag to get the latest product information for High Speed Fuses.

# General Applications

### Rated Voltage

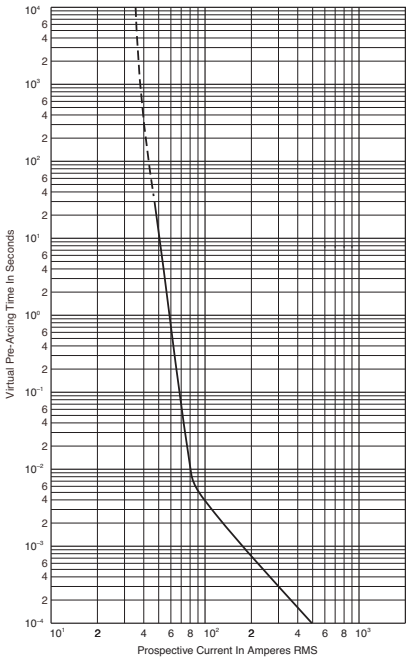
The AC voltage rating of Bussmann fuses is given in volts rms. Fuses tested to IEC are tested at 5% above their rated voltage. British Style BS 88 fuses are tested at 10% above its rated voltage. UL recognition tests are performed at the rated voltage.

### Rated Current

Rated current is given in amps rms. Bussmann fuses can continuously carry the rated current.

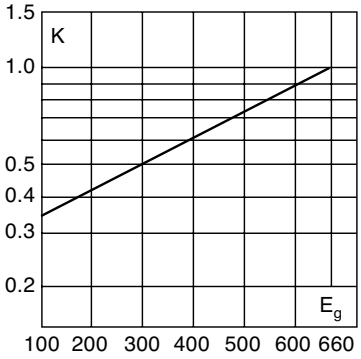
### Melting Characteristic

The melting characteristic shows the virtual melting time in seconds as a function of the prospective current in amps rms. The fuses are specially constructed for short-circuit protection against high level fault currents. Loading and operation of the fuse in the non-continuous/dashed section of the melt curve must be avoided. The curve can also be read as the real melting time as a function of the RMS value of the pre-arc current.



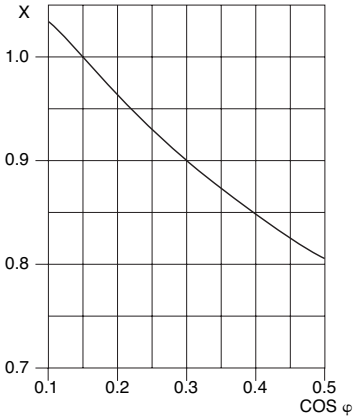

### Clearing Integrals

The total clearing $I^2t$ at rated voltage and at power factor of 15% are given in the electrical characteristics. For other voltages, the clearing $I^2t$ is found by multiplying by correction factor, K, given as a function of applied working voltage, $E_g$, (rms).



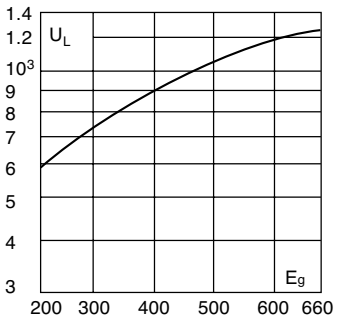

### Power Factor

For other power factor values, the total clearing integral can be calculated as a multiple of the clearing integrals, the correction factor K and the correction factor X.



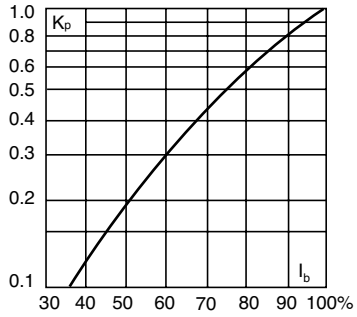

### Arc Voltage

This curve gives the peak arc voltage, $U_L$, which may appear across the fuse during its operation as a function of the applied working voltage, $E_g$, (rms) at a power factor of 15%.



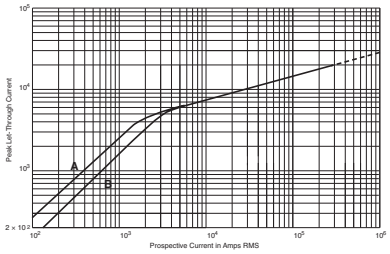

### Power Losses

Watts loss at rated current is given in the electrical characteristics. The curve allows the calculation of the power losses at load currents lower than the rated current. The correction factor, $K_p$, is given as a function of the RMS load current, $I_b$, in % of the rated current.




### Cut-Off Current

A fuse operation relating to short-circuits only. When a fuse operates in its current-limiting range, it will clear a short-




circuit in less than ½ cycle. Also, it will limit the instantaneous peak let-through current to a value substantially less than

# General Applications

that obtainable in the same circuit if that fuse were replaced with a solid conductor of equal impedance.

A asymmetrical current
B symmetrical current

### Parallel Connection

When fuses are connected in parallel it is recommended that the applied voltage does not exceed 0.9 $U_N$ (the rated voltage of the fuse). This is due to the fact that the energy released within the fuses may be unevenly shared between the parallel connected barrels.

When fuses are connected in parallel, one must take into account that the current sharing is not necessarily equal. And it must be checked, that the maximum load current is not exceeded.

### Series Connection

Fuses in series may not equally divide the applied voltage. It is recommended that series connected fuses should only be operated at fault currents that yield melting times less than 10 ms and a recovery voltage per fuse of less than or equal to 0.9 $U_N$ (the rated voltage of the fuse).

### Mounting Guidance

The recommendations below have to be followed when mounting a Bussmann fuse with end plate threaded holes.

1. Screw in studs: 5 N•m Max, 3 N•m Min
2. Attachment of the fuse to bussbar by means of nut and washer:

| Thread Configuration | Torque (N•m)* Max | Min |
|---|---|---|
| 5/16" – 18, M8 | 25 | 20 |
| 3/8" – 16, M10 | 45 | 40 |
| 3/8" – 24 | 45 | 40 |
| 1/2" – 13, M12 | 65 | 50 |
| 1/2" – 20 | 65 | 50 |

*1 N•m = 0.7375 lb-ft

### Overloads

The design of Bussmann fuses is such that they can be operated under rather severe operating conditions imposed by overloads (any load current in excess of the maximum permissible load current).

In applications, there will be a maximum overload current, Imax, which can be imposed on the fuse with a corresponding duration and frequency of occurrence.

Time durations fall into two categories:

1. Overloads longer than one second
2. Overloads less than one second termed "impulse" loads.

The following table gives general application guidelines which, in the expression Imax < (% factor) x $I_t$. $I_t$ is the melting current corresponding to the time "t" of the overload duration as read from the time-current curve of the fuse. The guidelines in the table below determine the acceptability of the selected fuses for a given $I_{max}$.

| Frequency of Occurrence | Overloads (> 1 sec) | Impulse Loads (< 1 sec) |
|---|---|---|
| Less than once per month | $I_{max} < 80\% \times I_t$ | $I_{max} < 70\% \times I_t$ |
| Less than twice per week | $I_{max} < 70\% \times I_t$ | $I_{max} < 60\% \times I_t$ |
| Several times per day | $I_{max} < 60\% \times I_t$ | — |

When impulse loads are an intrinsic/normal parameter of the load current either as single pulse or in trains of pulses or when their level is higher than the melting current at 0.01 seconds (per time-current curve), contact Bussmann for application assistance.

In addition to the parameters set forth in the preceding table, the RMS value of the load current as calculated for any period of 10 minutes or more should not exceed the maximum permissible load current.

Furthermore, it is important that a fuse should not be applied in the non-continuous/dashed portion of the associated time-current curve.

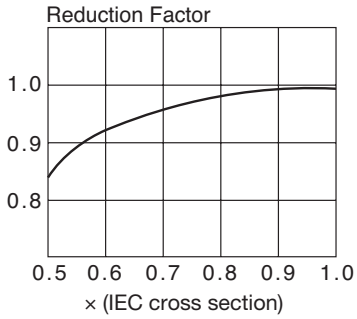
Any time-current combination point which falls in the non-continuous/dashed portion of the time-current curve is beyond the capability of the fuse to operate properly.

### DC Operation

Depending upon the short-circuit time constant and the magnitude of the prospective short-circuit current, the dc voltage at which a fuse can be applied may be less than its ac rating. Long time constants require a lower dc voltage. Conversely, however, higher available prospective short-circuit currents result in faster fuse openings and thus permit a fuse to be operated at a higher DC voltage.

Consult Bussmann for additional information and application assistance when fuses have to operate under DC conditions.

### Load Current Versus Conductor Cross Section

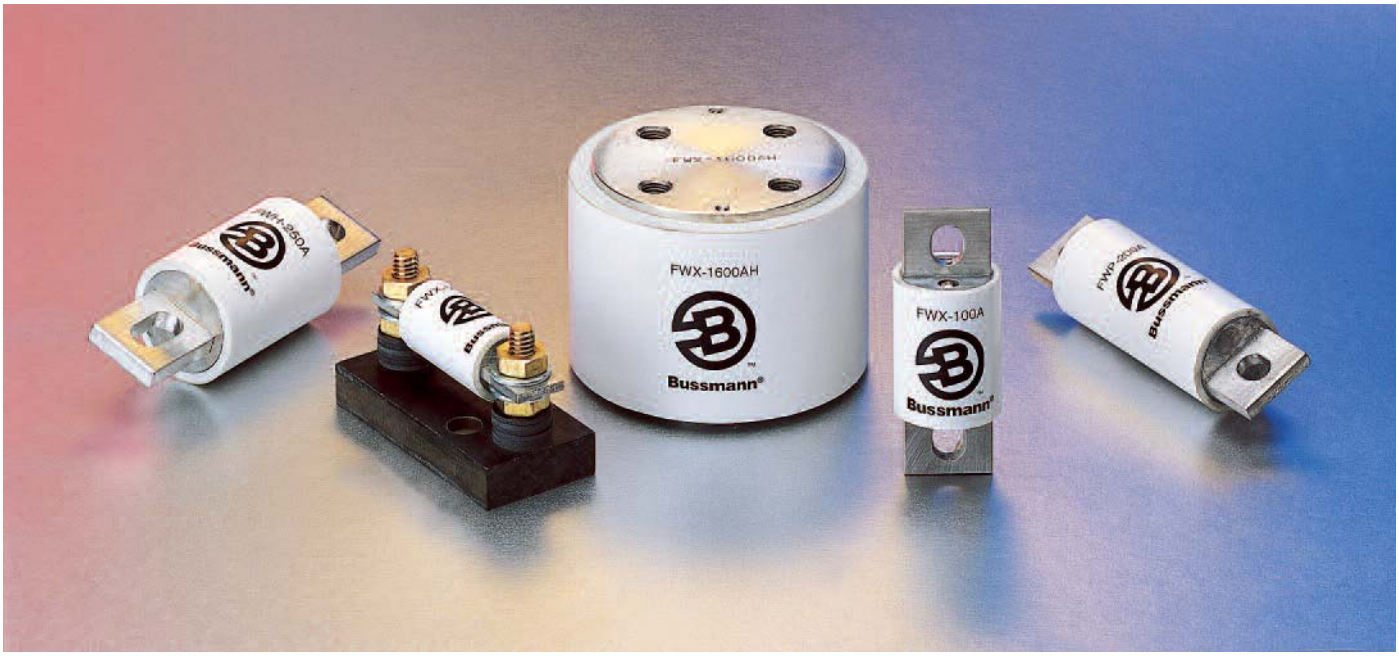



Reduction of permissible load current when the conductor cross section is less than that given in IEC Publication 269-1 & 4 valid for Bussmann high speed fuses.

### Application Assistance

If you have application problems or need a fuse outside our standard program, please contact the nearest Bussmann representative. Phone numbers are shown on the back cover.

# North American Fuses




## Introduction

### North American Contents



### North American Fuse Ranges

| Amps | Volts | AC | DC |
|---|---|---|---|
| 1000-4000 | 130 | X | X |
| 70-1000 | 150 | X | X |
| 35-2500 | 250 | X | X |
| 35-1600 | 500 | X | X |
| 1-1000 | 600 | X | — |
| 5-1200 | 700 | X | X |
| 40-600 | 800 | — | X |
| 35-2000 | 1000 | X | — |

### General Information

Bussmann offers a complete range of North American blade and flush-end style fuses and accessories. Their design and construction were optimized to provide:

- Low energy let-through ($I^2t$)
- Low watts loss
- Superior cycling capability
- Low arc voltage
- Excellent DC performance

North American style fuses provide an excellent solution for medium power applications. While there are currently no published standards for these fuses, the industry has standardized on mounting centers that accept Bussmann fuses.

### Voltage Rating

All Bussmann North American style fuses are tested at their rated voltage. Bussmann should be consulted for applications exceeding those values.

### Accessories

External and internal open fuse indication is available for selected portions of the North American line. Fuse blocks are available for most applications.

# Drive Fuse High Speed Fuses

## DFJ Class J


### Specifications

**Description:** High speed, current-limiting fuse. The Bussmann Drive Fuse will provide maximum protection for AC and DC drives and controllers and meet NEC® branch circuit protection requirements. The Drive Fuse has the lowest $I^2t$ of any branch circuit fuse to protect power semiconductor devices that utilize diodes, GTOs, SCRs and SSRs.

**Dimensions:** See page 21 for Class J dimensions.

**Construction:** Melamine tube with silver fuse element.

**Ratings:**

Volts — 600Vac (or less), 450Vdc (or less)

Amps — 1-600A

IR — 200kA RMS Sym., 100kA DC

**Agency Information:** CE, Std. 248-8, Class J, UL Listed, Guide JDDZ, File E4273, CSA Certified, Class 1422-02, File 53787.

### Features and Benefits

- Easily coordinated with existing and new variable speed drives and electric controllers.
- Standard Class J dimensions allowing the use of readily available fuse blocks, holders, and switches.
- Allows the lowest let-thru energy of any branch circuit overcurrent protective device.

### Typical Applications

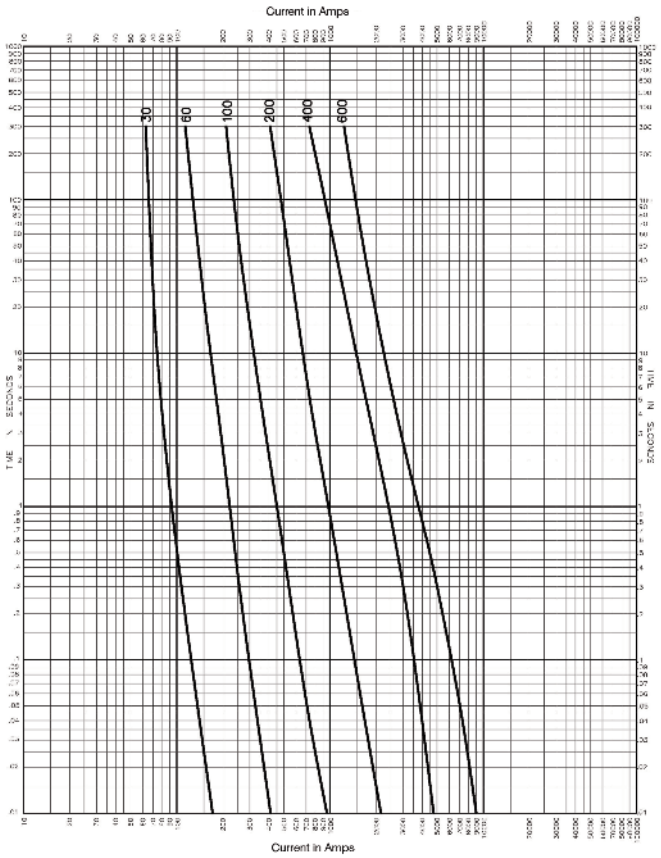
- Protection of AC and DC drives
- Equipment using power semiconductor devices

### Catalog Numbers (Amps)

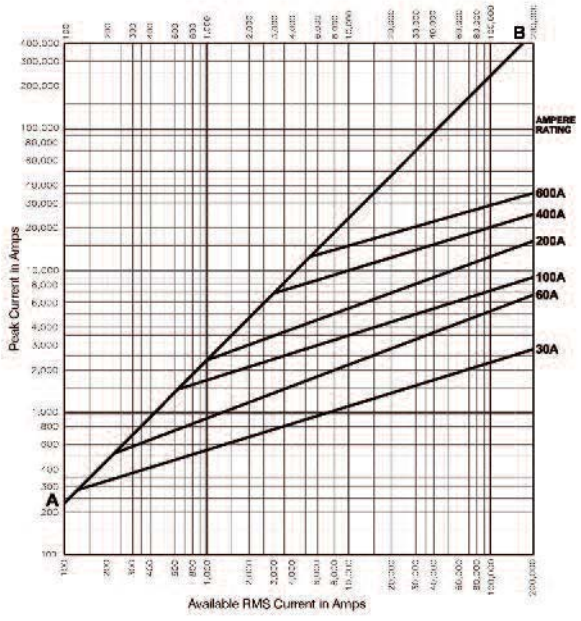
| | | | |
|---|---|---|---|
| DFJ-1 | DFJ-15 | DFJ-70 | DFJ-225 |
| DFJ-2 | DFJ-20 | DFJ-80 | DFJ-250 |
| DFJ-3 | DFJ-25 | DFJ-90 | DFJ-300 |
| DFJ-4 | DFJ-30 | DFJ-100 | DFJ-350 |
| DFJ-5 | DFJ-35 | DFJ-110 | DFJ-400 |
| DFJ-6 | DFJ-40 | DFJ-125 | DFJ-450 |
| DFJ-8 | DFJ-45 | DFJ-150 | DFJ-500 |
| DFJ-10 | DFJ-50 | DFJ-175 | DFJ-600 |
| DFJ-12 | DFJ-60 | DFJ-200 | |

**Data Sheet: 1048**

### Time-Current Characteristic Curves—Average Melt




### Current Limitation Curves



# North American — FWA 130V: 1000-4000A

## FWA


**Specifications**

**Description:** North American style flush-end high speed fuses.

**Dimensions:** See Dimensions illustrations.

**Ratings:**

Volts: — 130Vac

Amps: — 1000-4000A

IR: — 200kA RMS Sym.

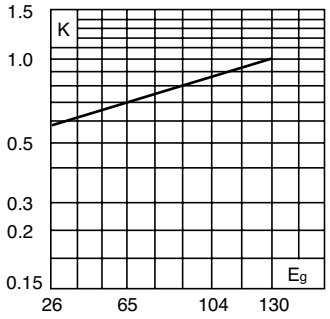
— 50kA @130Vdc

**Agency Information:** CE, UL Recognized JFHR2.E91958 on 1000-2000A fuses

### Electrical Characteristics

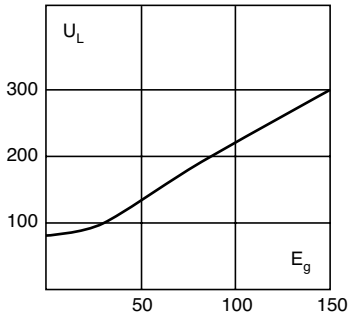
#### Total Clearing $I^2t$

The total clearing $I^2t$ at rated voltage and at power factor of 15% are given in the electrical characteristics. For other voltages, the clearing $I^2t$ is found by multiplying by correction factor, K, given as a function of applied working voltage, $E_g$, (rms).



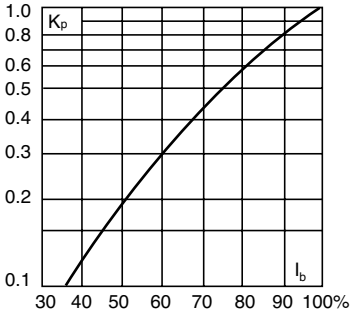

#### Arc Voltage

This curve gives the peak arc voltage, $U_L$, which may appear across the fuse during its operation as a function of the applied working voltage, $E_g$, (rms) at a power factor of 15%.




#### Power Losses

Watts loss at rated current is given in the electrical characteristics. The curve allows the calculation of the power losses at load currents lower than the rated current. The correction factor, $K_p$, is given as a function of the RMS load current, $I_b$, in % of the rated current.




### Catalog Numbers

| Catalog Numbers | Electrical Characteristics | | | |
|---|---|---|---|---|
| | Rated Current RMS-Amps | $I^2t$ ($A^2$ Sec) | | Watts Loss |
| | | Pre-arc | Clearing at 130V | |
| FWA-1000AH | 1000 | 170000 | 460000 | 60 |
| FWA-1200AH | 1200 | 270000 | 730000 | 70 |
| FWA-1500AH | 1500 | 520000 | 1400000 | 78 |
| FWA-2000AH | 2000 | 860000 | 2400000 | 108 |
| FWA-2500AH | 2500 | 1500000 | 4100000 | 130 |
| FWA-3000AH | 3000 | 2100000 | 5700000 | 150 |
| FWA-4000AH | 4000 | 3400000 | 9200000 | 257 |

• Watts loss provided at rated current.

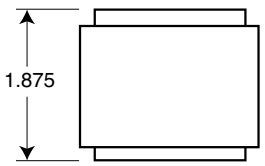
• See accessories on page 141.

### Dimensions - in

| Catalog Number | Fig. | B | C | D | Thread Depth |
|---|---|---|---|---|---|
| FWA-1000AH-2000AH | 1 | 2.0 | 1.0 | — | Tapped ⅜"-24 x ½" |
| FWA-2500AH-3000AH | 1 | 3.0 | 1.5 | — | Tapped ½"-20 x ½" |
| FWA-4000AH | 2 | 3.5 | 1.5 | 1.5 | Tapped ½"-20 x ½" |

1mm = 0.0394" / 1" = 25.4mm

Fig. 1: 1000-3000A



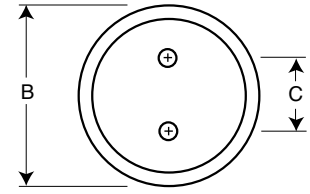
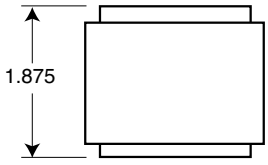
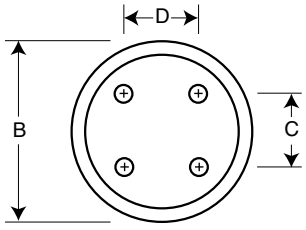




Fig. 2: 4000A




### Features and Benefits

- Excellent DC performance
- Low arc voltage and low energy let-through ($I^2t$)
- Low watts loss
- Superior cycling capability

### Typical Applications

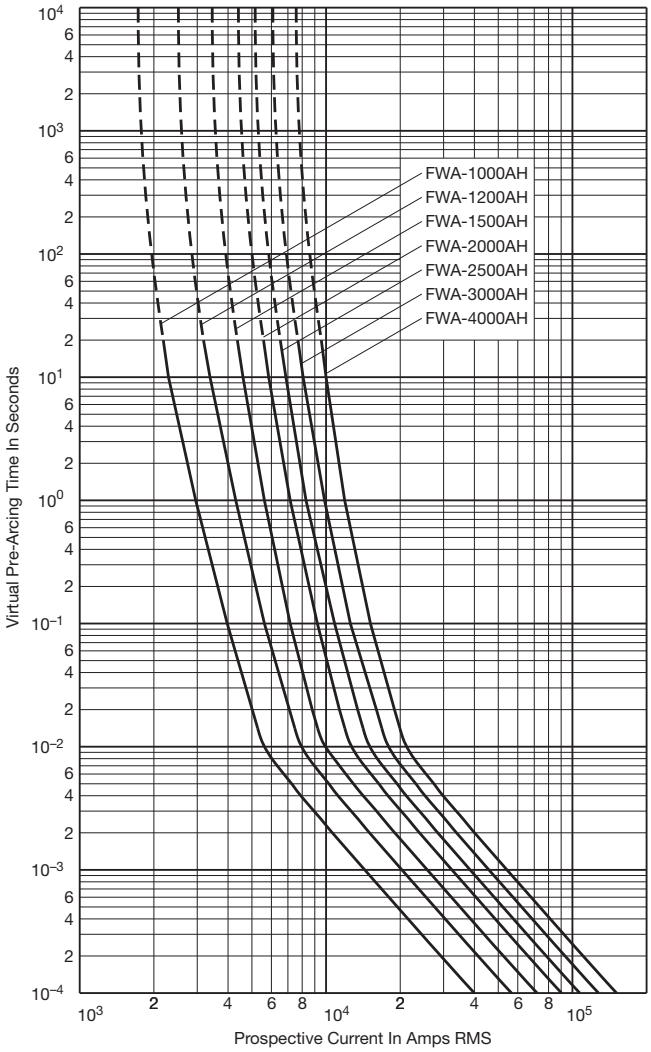
- DC Common bus
- DC Drives
- Power converters/rectifiers
- Reduced voltage starters

**Data Sheet: 720001**

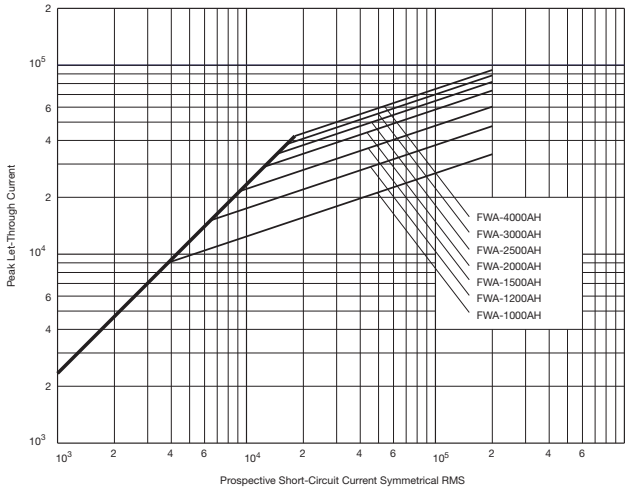
# North American — FWA 130V: 1000-4000A

## FWA 1000-4000A: 130V

### Time-Current Curve




### Peak Let-Through Curve




**Data Sheet: 35785301**

# North American — FWA 150V: 70-1000A

## FWA


### Specifications

**Description:** North American style stud-mount fuses.

**Dimensions:** See Dimensions illustrations.

**Ratings:**

Volts: — 150Vac/dc*

Amps: — 70-1000A

IR: — 100kA Sym. (70-400A)

— 200kA Sym. (450-1000A)

— 20kA @150Vdc (70-800A)

— 100kA @ 80Vdc (70-1000A)

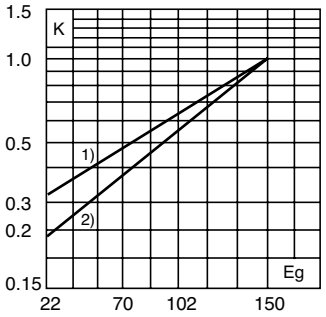
*1000A rated @ 80Vdc.

**Agency Information:** CE, UL Recognized JFHR2.E91958

### Electrical Characteristics

#### Total Clearing I²t

The total clearing I²t at rated voltage and at power factor of 15% are given in the electrical characteristics. For other voltages, the clearing I²t is found by multiplying by correction factor, K, given as a function of applied working voltage, $E_g$, (rms).




1) 500-1000A Range
2) 70-400A Range

### Dimensions - in

Fig. 1: 70-400A

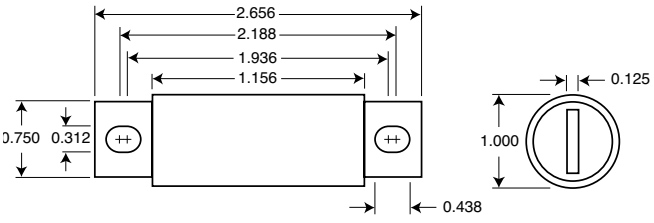
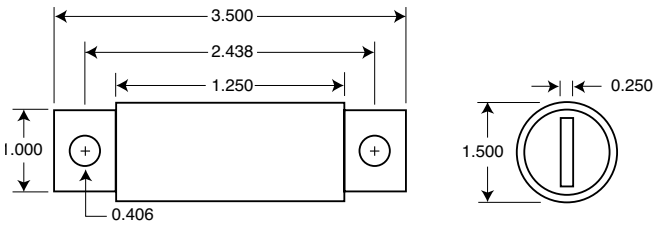


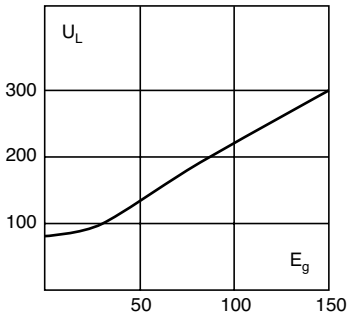

Fig. 2: 500-1000A




1mm = 0.0394" / 1" = 25.4mm

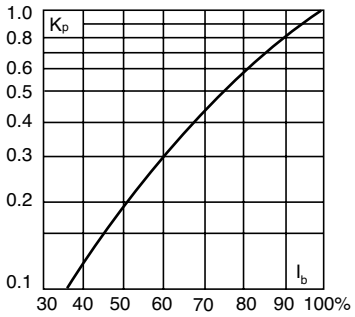
### Arc Voltage

This curve gives the peak arc voltage, $U_L$, which may appear across the fuse during its operation as a function of the applied working voltage, $E_g$, (rms) at a power factor of 15%.




### Power Losses

Watts loss at rated current is given in the electrical characteristics. The curve allows the calculation of the power losses at load currents lower than the rated current. The correction factor, $K_p$, is given as a function of the RMS load current, $I_b$, in % of the rated current.




### Catalog Numbers

| Catalog Number | Electrical Characteristics: Rated Current RMS-Amps | I²t (A² Sec): Pre-arc | I²t (A² Sec): Clearing at 150V | Watts Loss |
|---|---|---|---|---|
| FWA-70B | 70 | 470 | 4000 | 6.9 |
| FWA-80B | 80 | 670 | 6000 | 7.7 |
| FWA-100B | 100 | 1200 | 12000 | 9.0 |
| FWA-125B | 125 | 1870 | 18000 | 11.2 |
| FWA-150B | 150 | 2700 | 26000 | 13.5 |
| FWA-200B | 200 | 4780 | 45000 | 17.6 |
| FWA-250B | 250 | 7470 | 70000 | 22.5 |
| FWA-300B | 300 | 10760 | 100000 | 27.0 |
| FWA-350B | 350 | 15700 | 140000 | 30.6 |
| FWA-400B | 400 | 20300 | 180000 | 35.2 |
| FWA-500A | 500 | 39000 | 120000 | 35.0 |
| FWA-600A | 600 | 46000 | 140000 | 47.0 |
| FWA-700A | 700 | 75000 | 220000 | 49.0 |
| FWA-800A | 800 | 92000 | 280000 | 58.0 |
| FWA-1000A | 1000 | 170000 | 510000 | 60.0 |

• Watts loss provided at rated current.
• See accessories on page 141.

### Features and Benefits

- Excellent DC performance
- Low arc voltage and low energy let-through (I²t)
- Low watts loss
- Superior cycling capability

### Typical Applications

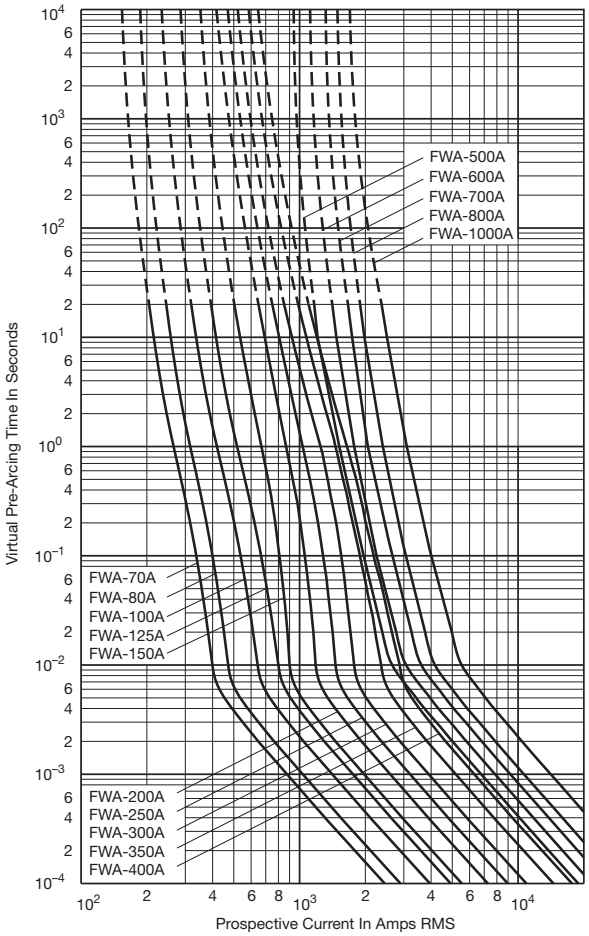
- DC Common bus
- DC Drives
- Power converters/rectifiers
- Reduced voltage starters

**Data Sheet: 720002**

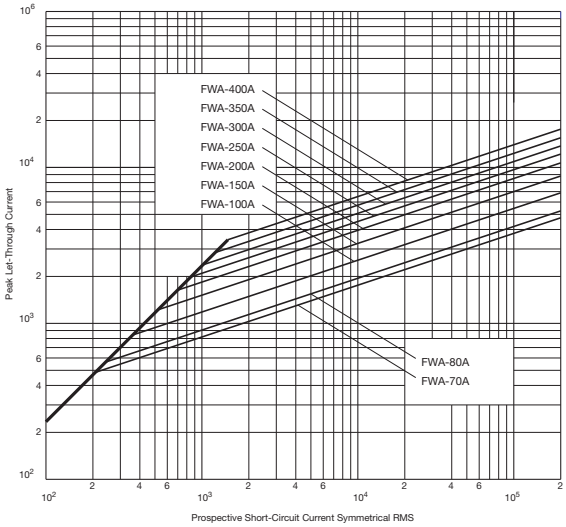
# North American — FWA 150V: 70-1000A

## FWA 70-1000A: 150V

### Time-Current Curve




### Peak Let-Through Curve




**Data Sheet: 35785310**

# North American — FWX 250V: 35-2500A

## FWX


### Specifications

**Description:** North American style stud-mount and flush-end fuses.

**Dimensions:** See Dimensions illustrations.

**Ratings:**

Volts: — 250Vac/dc

Amps: — 35-2500A

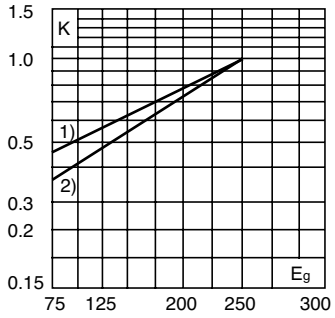
IR: — 200kA RMS Sym.
50kA@250Vdc (35-800A)

**Agency Information:** CE, UL Recognized JFHR2.E56412 & CSA Component Acceptance file Class 1422-30, (53787) on 35-800A fuses (50kA IR @250Vdc).

### Electrical Characteristics

#### Total Clearing I²t

The total clearing I²t at rated voltage and at power factor of 15% are given in the electrical characteristics. For other voltages, the clearing I²t is found by multiplying by correction factor, K, given as a function of applied working voltage, $E_g$, (rms).




1) 35-800A Range
2) 1000-2500A Range

### Dimensions - in

| Amp Range | Fig. | A | B | C | D | E | F | G | H | J | Tapped Thread Depth |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 35-60 | 1 | 3.19 | 0.81 | 1.59 | 2.59 | 2.25 | 0.34 | 0.63 | 0.13 | 0.52 | — |
| 70-200 | 1 | 3.13 | 1.22 | 1.59 | 2.44 | 2.19 | 0.34 | 1.00 | 0.19 | 0.47 | — |
| 225-600 | 1 | 3.84 | 1.50 | 1.59 | 2.94 | 2.25 | 0.41 | 1.00 | 0.25 | 0.75 | — |
| 700-800 | 1 | 3.84 | 2.00 | 1.59 | 3.03 | 2.28 | 0.41 | 1.50 | 0.25 | 0.78 | — |
| 1000-1200 | 2 | 2.59 | 3.00 | 1.50 | — | — | — | — | — | — | ⅜"-24 x ½" |
| 1500-2500 | 3 | 2.59 | 3.50 | 1.50 | 1.50 | — | — | — | — | — | ⅜"--24 x ½" |

1mm = 0.0394" / 1" = 25.4mm

Fig. 1: 35-800A

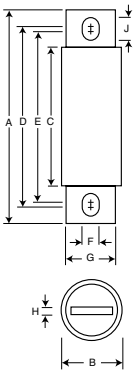



Fig. 2: 1000-1200A

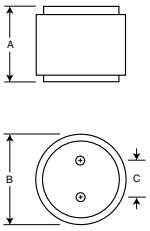
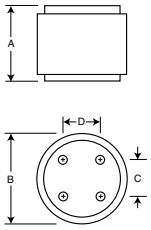
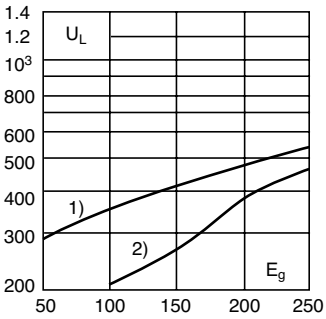



Fig. 3: 1500-2500A




### Arc Voltage

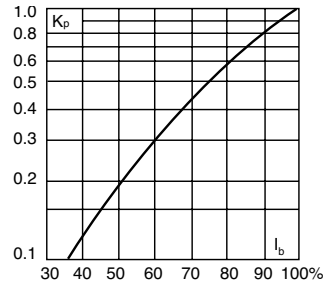
This curve gives the peak arc voltage, $U_L$, which may appear across the fuse during its operation as a function of the applied working voltage, $E_g$, (rms) at a power factor of 15%.




1) 35-800A Range
2) 1000-2500A Range

### Power Losses

Watts loss at rated current is given in the electrical char acteristics. The curve allows the calculation of the power losses at load currents lower than the rated current. The correction factor, $K_p$, is given as a function of the RMS load current, $I_b$, in % of the rated current.




### Catalog Numbers

| Catalog Number | Electrical Characteristics: Rated Current RMS-Amps | I²t (A² Sec): Pre-arc | I²t (A² Sec): Clearing at 250V | Watts Loss |
|---|---|---|---|---|
| FWX-35A | 35 | 50 | 230 | 4.2 |
| FWX-40A | 40 | 60 | 310 | 5.2 |
| FWX-45A | 45 | 80 | 390 | 5.7 |
| FWX-50A | 50 | 100 | 520 | 6.0 |
| FWX-60A | 60 | 140 | 740 | 8.1 |
| FWX-70A | 70 | 330 | 1400 | 7.2 |
| FWX-80A | 80 | 430 | 1850 | 8.1 |
| FWX-90A | 90 | 570 | 2450 | 9.0 |
| FWX-100A | 100 | 740 | 3150 | 10.0 |
| FWX-125A | 125 | 1130 | 4850 | 12.5 |
| FWX-150A | 150 | 1620 | 6950 | 15.7 |
| FWX-175A | 175 | 2170 | 9300 | 18.5 |
| FWX-200A | 200 | 2790 | 12000 | 22 |
| FWX-225A | 225 | 3210 | 14700 | 24 |
| FWX-250A | 250 | 3960 | 18100 | 27 |
| FWX-275A | 275 | 4720 | 21600 | 31 |
| FWX-300A | 300 | 6000 | 27300 | 32 |
| FWX-350A | 350 | 10600 | 48600 | 39 |
| FWX-400A | 400 | 14500 | 66100 | 44 |
| FWX-450A | 450 | 22100 | 101000 | 49 |
| FWX-500A | 500 | 28000 | 128000 | 54 |
| FWX-600A | 600 | 41100 | 188000 | 62 |
| FWX-700A | 700 | 48800 | 190000 | 72 |
| FWX-800A | 800 | 59000 | 230000 | 84 |
| FWX-1000AH | 1000 | 44000 | 360000 | 100 |
| FWX-1200AH | 1200 | 92000 | 750000 | 103 |
| FWX-1500AH | 1500 | 120000 | 880000 | 140 |
| FWX-1600AH | 1600 | 160000 | 1200000 | 140 |
| FWX-2000AH | 2000 | 320000 | 2300000 | 151 |
| FWX-2500AH | 2500 | 670000 | 4700000 | 163 |

• Watts loss provided at rated current. • See accessories on page 141.

### Features and Benefits

- Excellent DC performance
- Low arc voltage and low energy let-through (I²t)
- Superior cycling capability

### Typical Applications

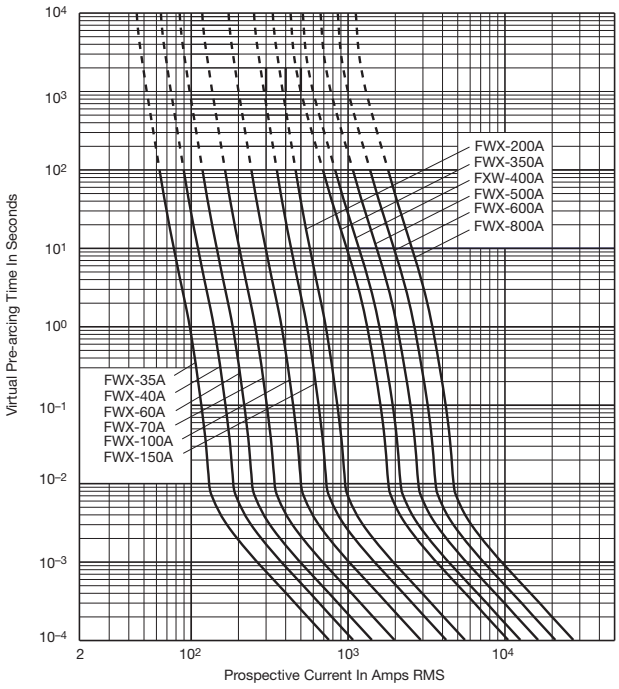
- DC Common bus
- DC Drives
- Power converters/rectifiers
- Reduced voltage starters

**Data Sheet: 720005**

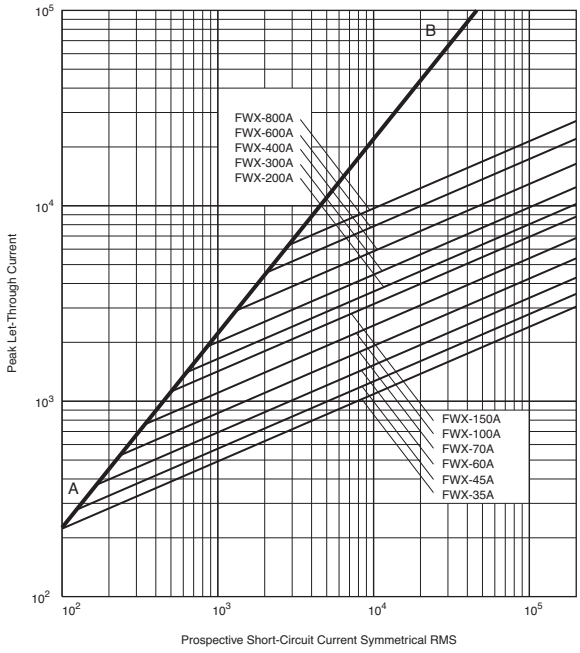
# North American — FWX 250V: 35-2500A

## FWX 35-800A: 250V

### Time-Current Curve



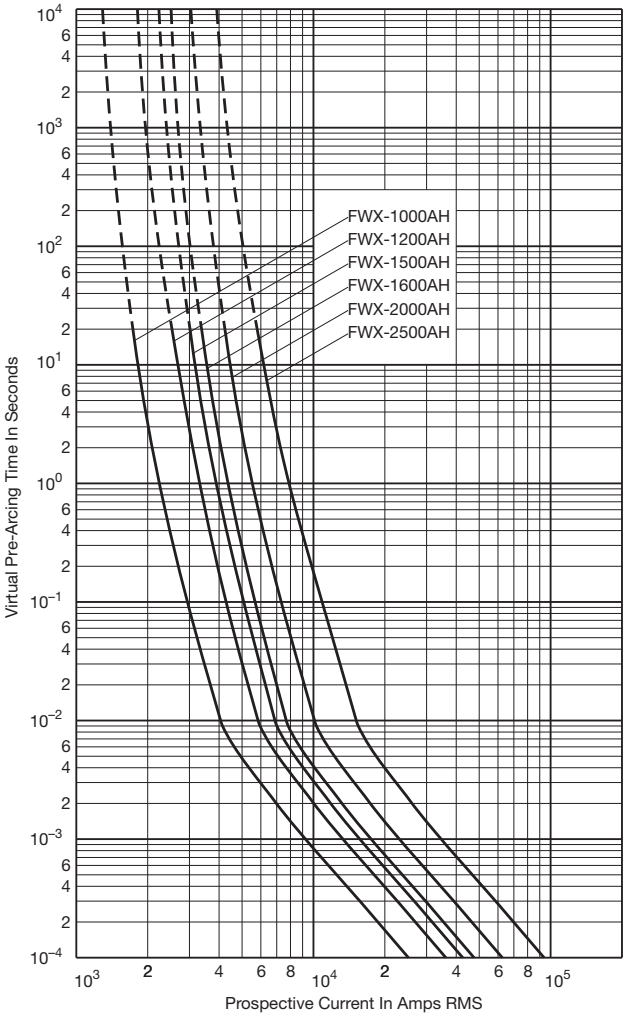

### Peak Let-Through Curve



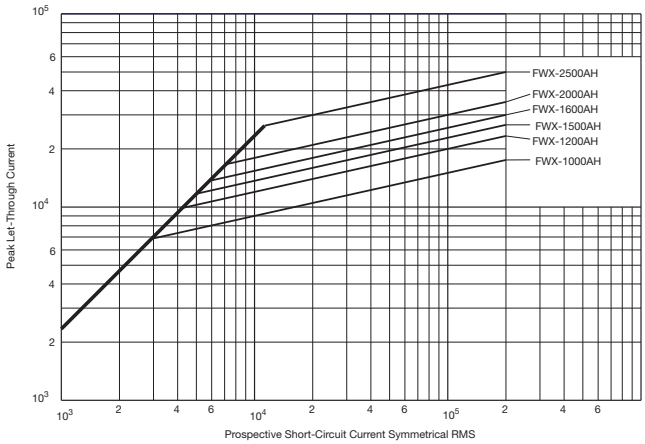

**Data Sheet: 359**

## FWX 1000-2500A(H): 250V

### Time-Current Curve




### Peak Let-Through Curve




**Data Sheet: 35785299**

# North American — FWH 500V: 35-1600A

## FWH

### Specifications

**Description:** North American style stud-mount fuses.

**Dimensions:** See Dimensions illustration.

**Ratings:**

Volts: — 500Vac/dc (35-800A only)

Amps: — 35-1600A

IR: — 200kA Sym.

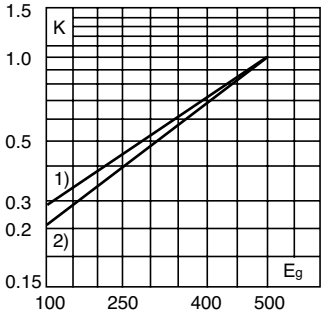
— 50kA @ 500Vdc (35-800A)

**Agency Information:** CE, UL Recognition JFHR2.E91958 FWH-_B (35-200A, 1000-1200A), JFHR2.E56412 FWH-_A (225-600A), CSA Component Acceptance Class 1422-30, File 53787 (35-1600A).

### Electrical Characteristics

#### Total Clearing I²t

The total clearing I²t at rated voltage and at power factor of 15% are given in the electrical characteristics. For other voltages, the clearing I²t is found by multiplying by correction factor, K, given as a function of applied working voltage, $E_g$, (rms).




1) 35-800A Range
2) 1000-1600A Range

### Dimensions - in

| Amp Range | Fig. | A | B | C | D | E | F | G | H | J |
|---|---|---|---|---|---|---|---|---|---|---|
| 35-60 | 1 | 3.188 | 0.813 | 1.593 | 2.541 | 2.193 | 0.344 | 0.719 | 0.125 | 0.518 |
| 70-100 | 1 | 3.625 | 0.947 | 1.736 | 2.853 | 2.807 | 0.352 | 0.750 | 0.125 | 0.375 |
| 125-200 | 1 | 3.625 | 1.156 | 1.836 | 2.892 | 2.768 | 0.344 | 1.000 | 0.188 | 0.406 |
| 225-400 | 1 | 4.340 | 1.500 | 2.090 | 3.440 | 2.750 | 0.410 | 1.000 | 0.250 | 0.750 |
| 450-600 | 1 | 4.340 | 2.000 | 2.090 | 3.530 | 2.780 | 0.410 | 1.500 | 0.250 | 0.780 |
| 700-800 | 1 | 6.340 | 2.500 | 2.090 | 4.970 | 3.440 | 0.530 | 2.000 | 0.380 | 1.300 |
| 1000-1200 | 1 | 6.969 | 3.000 | 3.219 | 5.465 | 4.475 | 0.625 | 2.375 | 0.438 | 1.120 |
| 1400-1600 | 2 | See Drawing | | | | | | | | |

1mm = 0.0394" / 1" = 25.4mm

Fig. 1: 35-1200A

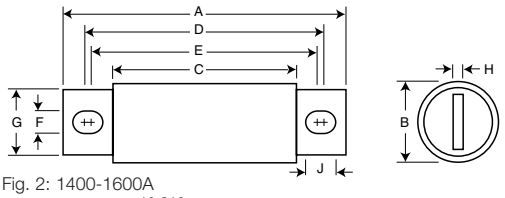
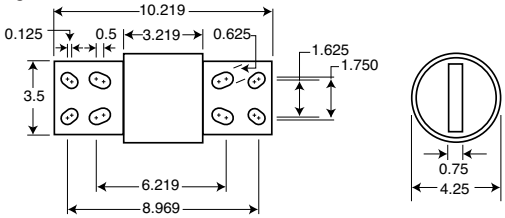
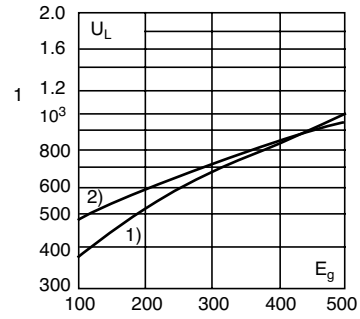



Fig. 2: 1400-1600A




### Arc Voltage

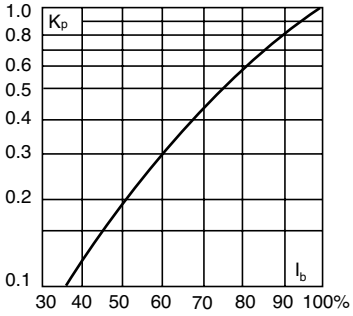
This curve gives the peak arc voltage, $U_L$, which may appear across the fuse during its operation as a function of theapplied working voltage, $E_g$, (rms) at a power factor of 15%.




1) 35-200 & 1000-1600A Range
2) 225-800A Range

### Power Losses

Watts loss at rated current is given in the electrical characteristics. The curve allows the calculation of the power losses at load currents lower than the rated current. The correction factor, $K_p$, is given as a function of the RMS load current, Ib, in % of the rated current.




### Catalog Numbers

| Catalog Numbers | Electrical Characteristics: Rated Current RMS-Amps | I²t (A² Sec): Pre-arc | I²t (A² Sec): Clearing at 500V | Watts Loss |
|---|---|---|---|---|
| FWH-35B | 35 | 34 | 150 | 8 |
| FWH-40B | 40 | 76 | 320 | 7.5 |
| FWH-45B | 45 | 105 | 450 | 7.5 |
| FWH-50B | 50 | 135 | 670 | 7.5 |
| FWH-60B | 60 | 210 | 900 | 9.9 |
| FWH-70B | 70 | 210 | 900 | 10.6 |
| FWH-80B | 80 | 305 | 1400 | 12.7 |
| FWH-90B | 90 | 360 | 1600 | 15 |
| FWH-100B | 100 | 475 | 2000 | 17 |
| FWH-125B | 125 | 800 | 3500 | 25 |
| FWH-150B | 150 | 1100 | 4600 | 30 |
| FWH-175B | 175 | 1450 | 6200 | 35 |
| FWH-200B | 200 | 1900 | 8500 | 40 |
| FWH-225A | 225 | 4600 | 23300 | 39 |
| FWH-250A | 250 | 6300 | 32200 | 41 |
| FWH-275A | 275 | 7900 | 40300 | 46 |
| FWH-300A | 300 | 9800 | 49800 | 51 |
| FWH-325A | 325 | 13700 | 63800 | 53 |
| FWH-350A | 350 | 14500 | 72900 | 58 |
| FWH-400A | 400 | 19200 | 96700 | 65 |
| FWH-450A | 450 | 24700 | 127000 | 74 |
| FWH-500A | 500 | 29200 | 149000 | 84 |
| FWH-600A | 600 | 41300 | 206000 | 108 |
| FWH-700A | 700 | 55000 | 298000 | 120 |
| FWH-800A | 800 | 76200 | 409000 | 129 |
| FWH-1000A | 1000 | 92000 | 450000 | 145 |
| FWH-1200A | 1200 | 122000 | 600000 | 180 |
| FWH-1400A | 1400 | 200000 | 1000000 | 210 |
| FWH-1600A | 1600 | 290000 | 1400000 | 230 |

• Watts loss provided at rated current. • See accessories on page 141.

### Features and Benefits

- Excellent DC performance
- Low arc voltage and low energy let-through (I²t)
- Superior cycling capability

### Typical Applications

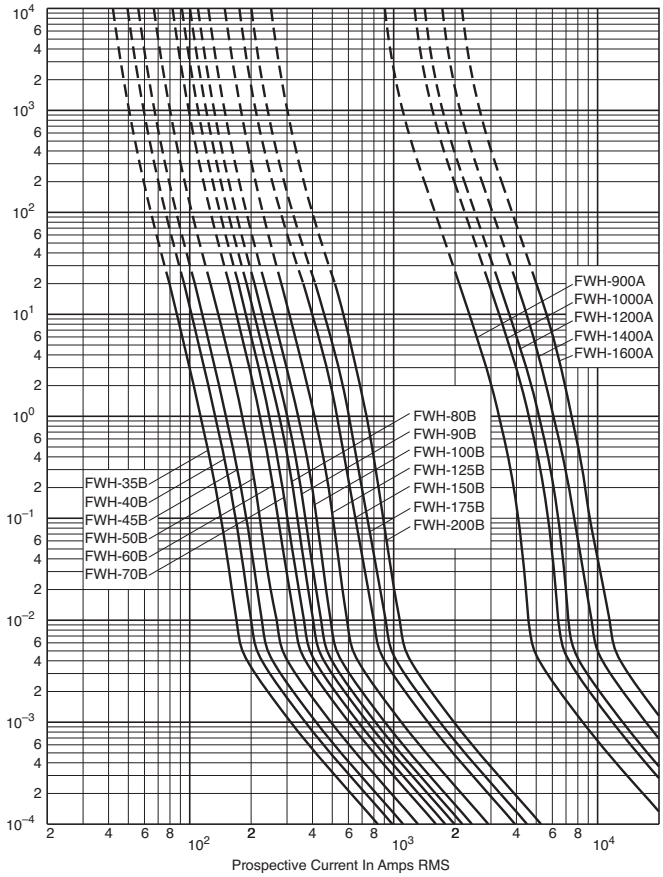
- DC Common bus
- DC Drives
- Power converters/rectifiers
- Reduced voltage starters

**Data Sheet: 720007**

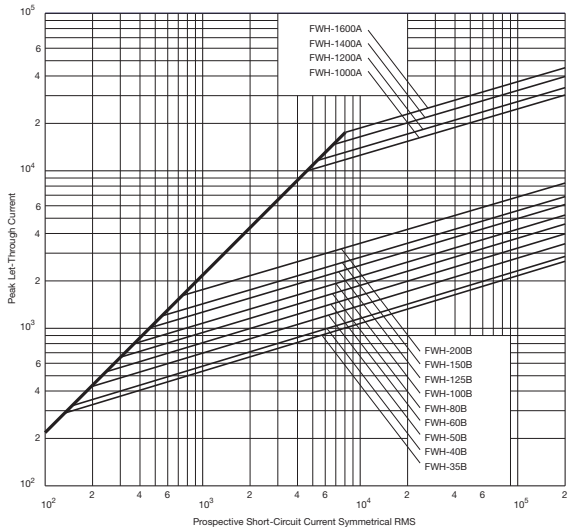
# North American — FWH 500V: 35-1600A

## FWH 35-200A(B) & 900-1600A(A): 500V

### Time-Current Curve



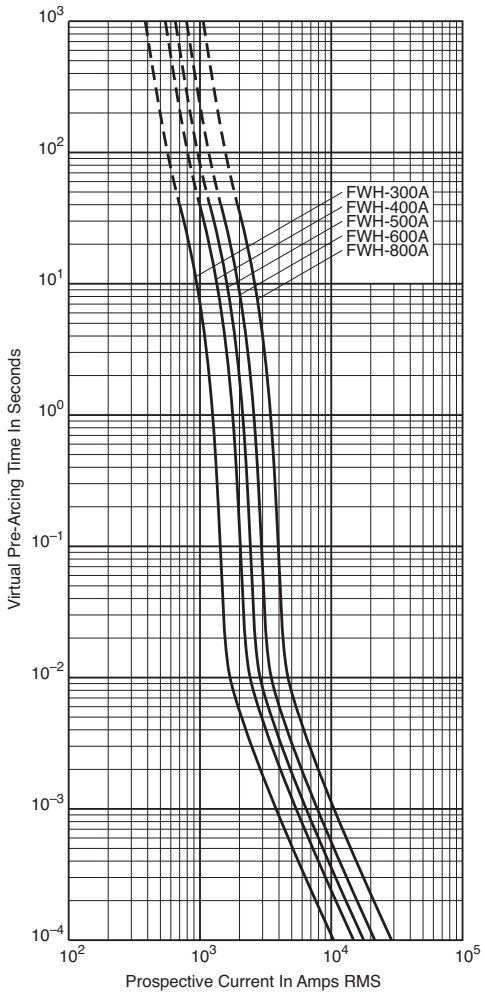

### Peak Let-Through Curve



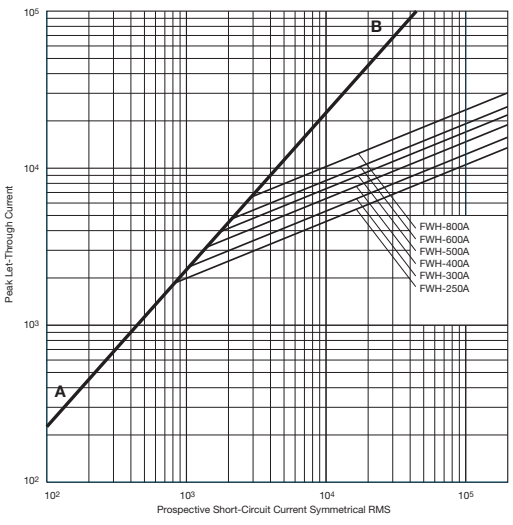

**Data Sheet: 35785304**

## FWH 250-800A: 500V

### Time-Current Curve




### Peak Let-Through Curve




**Data Sheet: 360**

# North American — KAC 600V: 1-1000A

## KAC

**Specifications**

**Description:** North American style stud-mount fuses. These 600V fuses are supplied as replacements only. For new installations, Bussmann recommends the 700V FWP Series fuse.

**Dimensions:** See Dimensions illustrations.

**Ratings:**

Volts: — 600Vac

Amps: — 1-1000A

IR: — 200kA RMS Sym.

**Agency Information:** CE, UL Recognition JFHR2.E56413 on 1-600A only.


**Catalog Numbers (Amps)**

| | | |
|---|---|---|
| KAC-1 | KAC-25 | KAC-175 |
| KAC-2 | KAC-30 | KAC-200 |
| KAC-3 | KAC-35 | KAC-225 |
| KAC-4 | KAC-40 | KAC-250 |
| KAC-5 | KAC-45 | KAC-300 |
| KAC-6 | KAC-50 | KAC-350 |
| KAC-7 | KAC-60 | KAC-400 |
| KAC-8 | KAC-70 | KAC-450 |
| KAC-9 | KAC-80 | KAC-500 |
| KAC-10 | KAC-90 | KAC-600 |
| KAC-12 | KAC-100 | KAC-700 |
| KAC-15 | KAC-110 | KAC-800 |
| KAC-17.5 | KAC-125 | KAC-1000 |
| KAC-20 | KAC-150 | |

• See accessories on page 141.

**Features and Benefits**

- Low arc voltage and low energy let-through ($I^2t$)
- Low watts loss
- Superior cycling capability

**Typical Applications**

- Power converters/rectifiers
- Reduced voltage starters

**Dimensions - in**

| Amp Range | Fig. | A | B1 | B2 | B3 | C | D | E | F | G | H |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1-30A | 1 | 2.875 | 2.500 | – | – | 1.875 | 0.406 | – | 0.563 | 0.063 | 0.257 |
| 35-60A | 2 | 4.375 | – | 3.750 | 3.500 | 2.750 | 0.625 | 0.343 | 0.813 | 0.094 | 0.468 |
| 70-100A | 2 | 5.000 | – | 4.063 | 3.656 | 2.750 | 0.750 | 0.406 | 1.000 | 0.125 | 0.609 |
| 110-200A | 2 | 5.140 | – | 4.390 | 3.766 | 2.906 | 1.000 | 0.406 | 1.500 | 0.188 | 0.718 |
| 225-400A | 2 | 6.182 | – | 4.815 | 4.565 | 3.000 | 1.625 | 0.562 | 2.000 | 0.250 | 0.687 |
| 450-800A | 1 | 6.250 | 4.750 | – | – | 3.063 | 2.000 | – | 2.500 | 0.250 | 0.563 |
| 1000A | 1 | 7.250 | 4.750 | – | – | 3.063 | 2.750 | – | 3.500 | 0.375 | 0.563 |

1mm = 0.0394″ / 1″ = 25.4mm

Fig. 1: 1-30 & 450-1000A

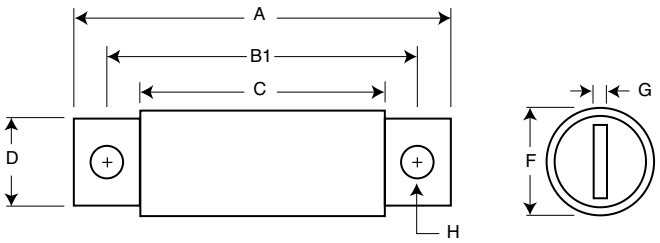
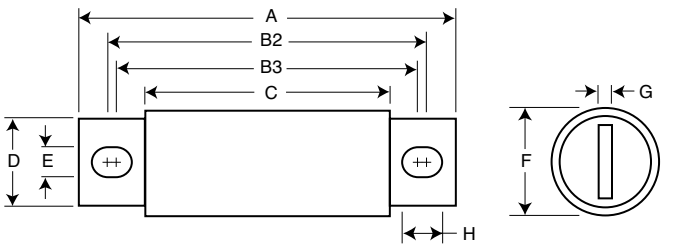



Fig. 2: 35-400A




**Data Sheet: 720009**

# North American — KBC 600V: 35-800A

## KBC


**Specifications**

**Description:** North American style stud-mount and flush-end fuses. These 600V fuses are supplied as replacements only. For new installations, Bussmann recommends the 700V FWP Series fuse.

**Dimensions:** See Dimensions illustrations.

**Ratings:**

Volts: — 600Vac

Amps: — 35-800A

IR: — 200kA RMS Sym.

**Agency Information:** CE, UL Recognition JFHR2.E56412 on 35-600A only.

**Catalog Numbers (Amps)**

| | | |
|---|---|---|
| KBC-35 | KBC-100 | KBC-300 |
| KBC-40 | KBC-110 | KBC-350 |
| KBC-45 | KBC-125 | KBC-400 |
| KBC-50 | KBC-150 | KBC-450 |
| KBC-60 | KBC-175 | KBC-500 |
| KBC-70 | KBC-200 | KBC-600 |
| KBC-80 | KBC-225 | KBC-800 |
| KBC-90 | KBC-250 | |

• See accessories on page 141.

**Features and Benefits**

- Low arc voltage and low energy let-through ($I^2t$)
- Low watts loss
- Superior cycling capability

**Typical Applications**

- Power converters/rectifiers
- Reduced voltage starters

**Dimensions - in**

| Amp Range | Fig. | A | B | C | D | E | F | G | H | I |
|---|---|---|---|---|---|---|---|---|---|---|
| 35-60A | 1 | 4.375 | 3.750 | 3.500 | 2.750 | 0.343 | 0.625 | 0.813 | 0.094 | 0.468 |
| 70-100A | 2 | See Drawing | | | | | | | | |
| 110-200A | 1 | 4.406 | 3.719 | 3.594 | 2.906 | 0.312 | 0.875 | 1.219 | 0.187 | 0.375 |
| 225-400A | 1 | 5.125 | 4.188 | 3.563 | 2.906 | 0.406 | 1.000 | 1.500 | 0.250 | 0.719 |
| 450-600A | 1 | 5.125 | 4.389 | 3.687 | 2.875 | 0.406 | 1.500 | 2.000 | 0.250 | 0.757 |
| 800A | 3 | See Drawing | | | | | | | | |

1mm = 0.0394" / 1" = 25.4mm

Fig. 1: 35-60 and 110-600A

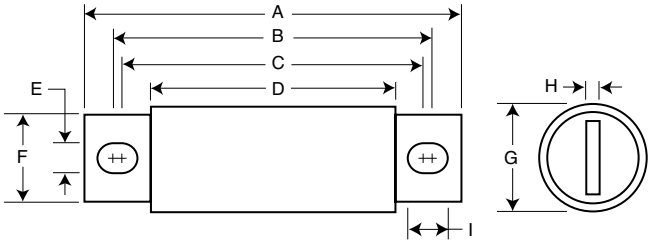



Fig. 2: 70-100A

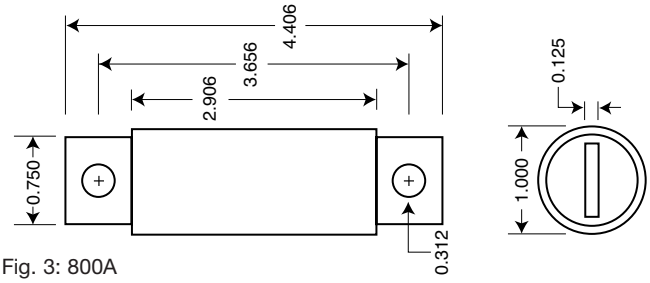
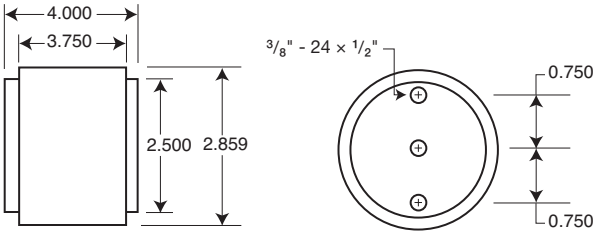



Fig. 3: 800A




**Data Sheet: 720010**

# North American — FWP 700V: 5-1200A

## FWP


**Specifications**

**Description:** North American style stud-mount fuses.

**Dimensions:** See Dimensions illustrations.

**Ratings:**

Volts: — 700Vac/dc

Amps: — 5-1200A

IR: — 200kA RMS Sym.

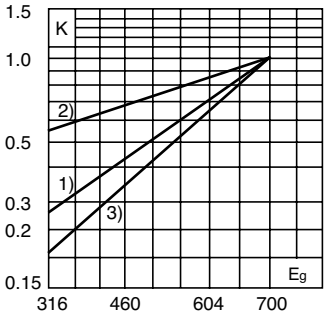
— 50kA @700Vdc

**Agency Information:** CE, UL Recognition JFHR2.E91958 FWP-_B (5-100A, 700-1200A), JFHR2.E56412 FWP-_A (125-600A) & CSA Component Acceptance file Class 1422-30, (53787) on 5-800A

### Electrical Characteristics

### Total Clearing I²t

The total clearing I²t at rated voltage and at power factor of 15% are given in the electrical characteristics. For other voltages, the clearing I²t is found by multiplying by correction factor, K, given as a function of applied working voltage, $E_g$, (rms).




1) 35-100A Range
2) 125-600A Range
3) 700-1200A Range

### Dimensions - in

| Amp Range | Fig. | A | B | C | D | E | F | G | H | I |
|---|---|---|---|---|---|---|---|---|---|---|
| 5-30 | 1 | 2.870 | 0.563 | 1.855 | 2.477 | 2.477 | 0.250 | 0.405 | 0.063 | 0.250 |
| 35-60 | 1 | 4.375 | 0.813 | 2.750 | 3.708 | 3.312 | 0.344 | 0.725 | 0.125 | 0.542 |
| 70-100 | 1 | 4.406 | 0.947 | 2.594 | 3.625 | 3.563 | 0.344 | 0.750 | 0.125 | 0.375 |
| 125-200 | 1 | 5.090 | 1.500 | 2.840 | 4.190 | 3.500 | 0.410 | 1.000 | 0.250 | 0.750 |
| 225-400 | 1 | 5.090 | 2.000 | 2.840 | 4.280 | 3.530 | 0.410 | 1.500 | 0.250 | 0.780 |
| 450-600 | 1 | 7.090 | 2.500 | 2.840 | 5.720 | 4.190 | 0.530 | 2.000 | 0.380 | 1.300 |
| 700-800 | 1 | 6.630 | 2.000 | 2.844 | 5.562 | 5.062 | 0.625 | 1.500 | 0.250 | 0.875 |
| 900-1000 | 2 | See Drawing | | | | | | | | |
| 1200 | 3 | See Drawing | | | | | | | | |

1mm = 0.0394" / 1" = 25.4mm

Fig. 1: 5-800A

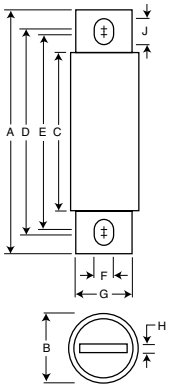



Fig. 2: 900-1000A

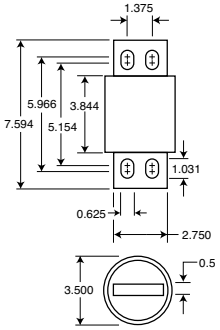
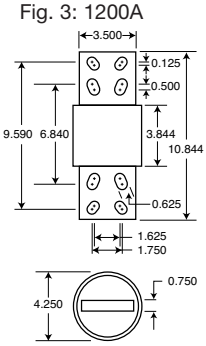
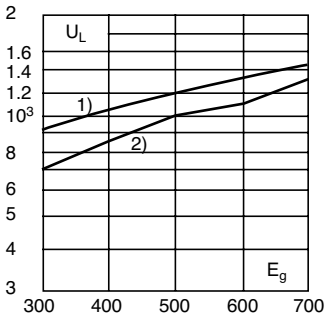



Fig. 3: 1200A




### Arc Voltage

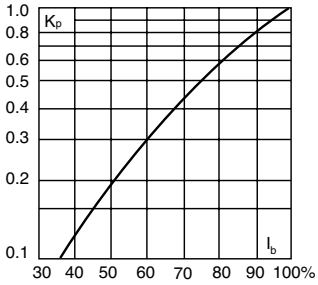
This curve gives the peak arc voltage, $U_L$, which may appear across the fuse during its operation as a function of the applied working voltage, $E_g$, (rms) at a power factor of 15%.




1) 125-600A Range
2) 35-100 & 700-1200A Range

### Power Losses

Watts loss at rated current is given in the electrical characteristics. The curve allows the calculation of the power losses at load currents lower than the rated current. The correction factor, $K_p$, is given as a function of the RMS load current, $I_b$, in % of the rated current.




### Catalog Numbers

| Catalog Numbers | Electrical Characteristics: Rated Current RMS-Amps | I²t (A² Sec): Pre-arc | I²t (A² Sec): Clearing at 700V | Watts Loss |
|---|---|---|---|---|
| FWP-5B | 5 | 1.6 | 10 | 1.5 |
| FWP-10B | 10 | 3.6 | 20 | 4 |
| FWP-15B | 15 | 10 | 75 | 5.5 |
| FWP-20B | 20 | 26 | 180 | 6 |
| FWP-25B | 25 | 44 | 340 | 7 |
| FWP-30B | 30 | 58 | 450 | 9 |
| FWP-35B | 35 | 34 | 160 | 12 |
| FWP-40B | 40 | 76 | 320 | 12 |
| FWP-50B | 50 | 135 | 600 | 12 |
| FWP-60B | 60 | 210 | 950 | 15.5 |
| FWP-70B | 70 | 305 | 2000 | 18 |
| FWP-80B | 80 | 360 | 2400 | 21 |
| FWP-90B | 90 | 415 | 2700 | 25 |
| FWP-100B | 100 | 540 | 3500 | 27 |
| FWP-125A | 125 | 1800 | 7300 | 28 |
| FWP-150A | 150 | 2900 | 11700 | 32 |
| FWP-175A | 175 | 4200 | 16700 | 35 |
| FWP-200A | 200 | 5500 | 22000 | 43 |
| FWP-225A | 225 | 7700 | 31300 | 45 |
| FWP-250A | 250 | 10500 | 42500 | 48 |
| FWP-300A | 300 | 17600 | 71200 | 58 |
| FWP-350A | 350 | 23700 | 95600 | 65 |
| FWP-400A | 400 | 31000 | 125000 | 78 |
| FWP-450A | 450 | 36400 | 137000 | 94 |
| FWP-500A | 500 | 45200 | 170000 | 107 |
| FWP-600A | 600 | 66700 | 250000 | 122 |
| FWP-700A | 700 | 54000 | 300000 | 125 |
| FWP-800A | 800 | 78000 | 450000 | 140 |
| FWP-900A | 900 | 91500 | 530000 | 150 |
| FWP-1000A | 1000 | 120000 | 600000 | 170 |
| FWP-1200A | 1200 | 195000 | 1100000 | 190 |

• Watts loss provided at rated current. • See accessories on page 141.

### Features and Benefits

- Excellent DC performance
- Low arc voltage and low energy let-through (I²t)
- Superior cycling capability

### Typical Applications

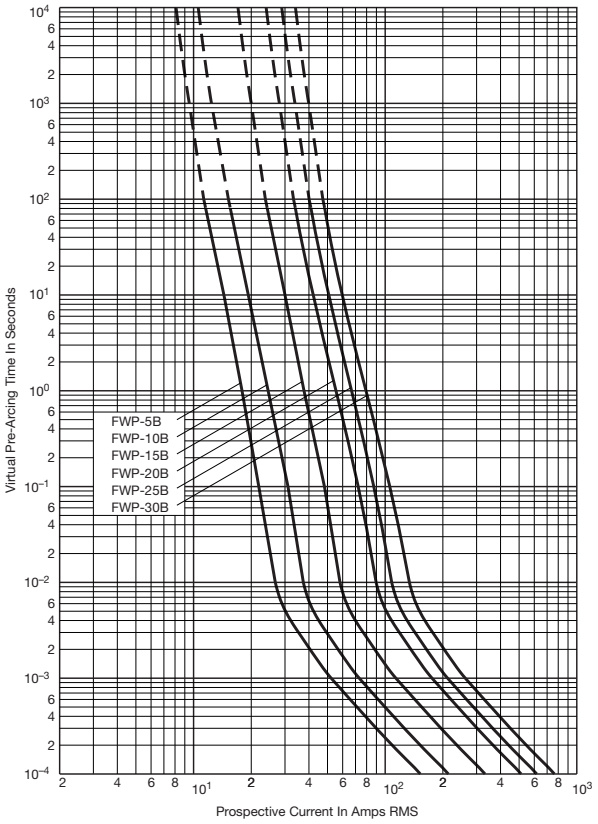
- DC Common bus
- DC Drives
- Power converters/rectifiers
- Reduced voltage starters

**Data Sheet: 720012**

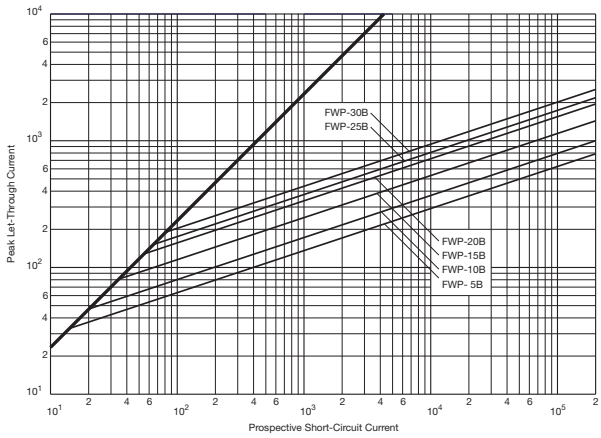
# North American — FWP 700V: 5-1200A

## FWP 5-30A(B): 700V

### Time-Current Curve



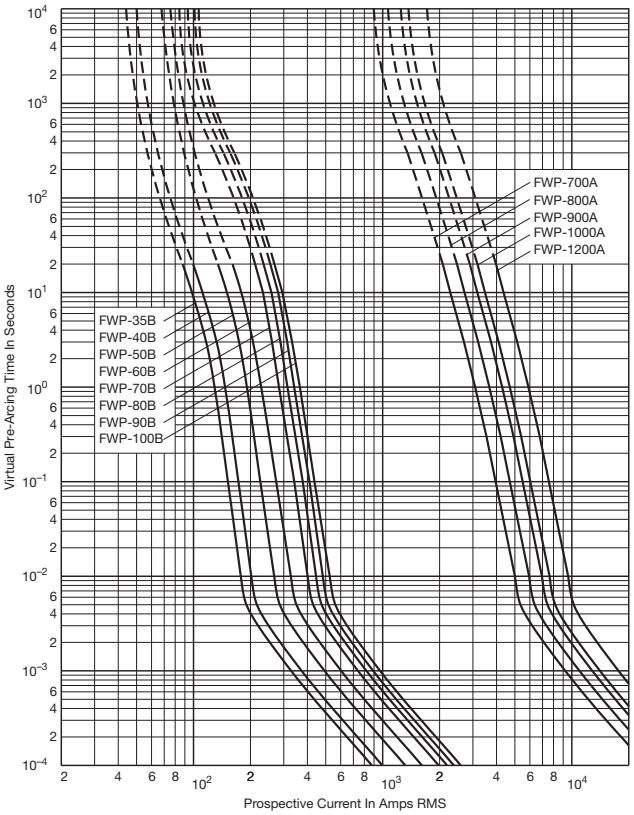

### Peak Let-Through Curve



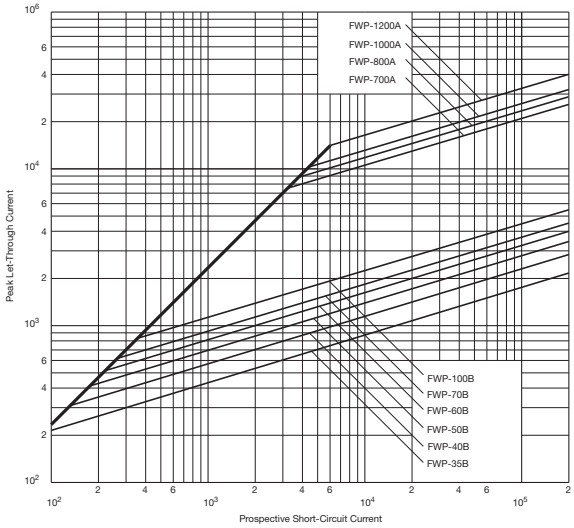

**Data Sheet: 35785316**

## FWP 35-100A(B) & 700-1200A(A): 700V

### Time-Current Curve




### Peak Let-Through Curve

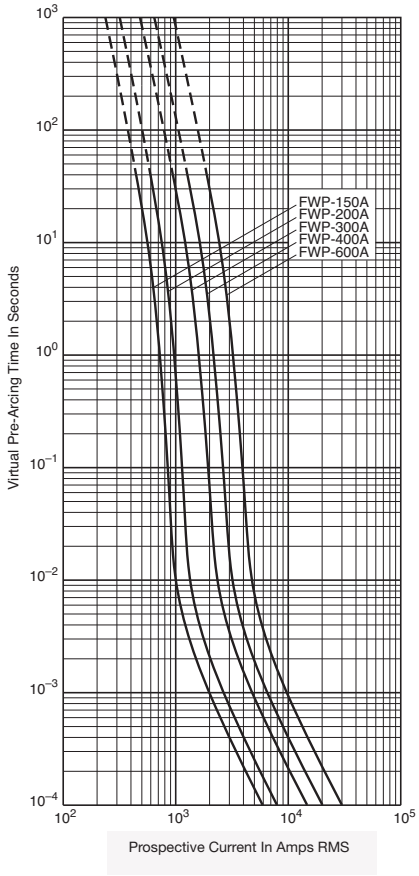



**Data Sheet: 35785308**

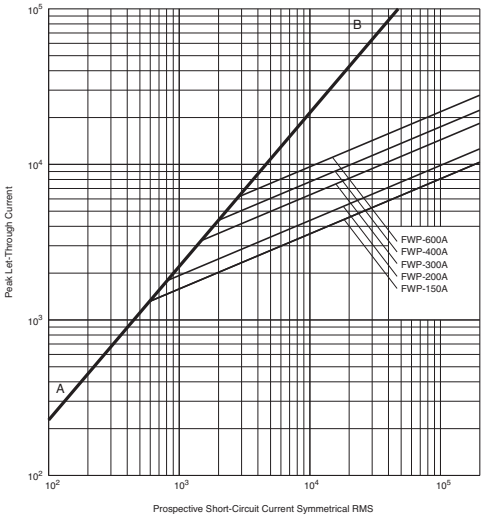
# North American — FWP 700V: 5-1200A

## FWP 150-600A: 700V

### Time-Current Curve




### Peak Let-Through Curve




**Data Sheet: 361**

# North American — FWJ 1000V: 35-2000A

## FWJ


**Specifications**

**Description:** North American style stud-mount fuses.

**Dimensions:** See Dimensions illustration.

**Ratings:**

Volts: — 1000Vac/800Vdc

Amps: — 35-2000A

IR: — 25kA (35-200A)

— 100kA (250-2000A)

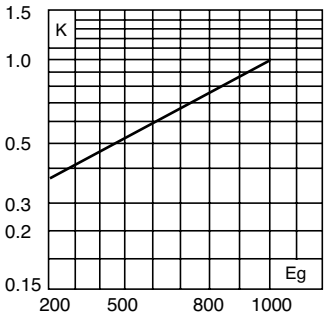
— 50kA @ 800Vdc (35-200A, 450-600A)

**Agency Information:** CE, UL Recognition JFHR8.E91958 on 35-600A only.

### Electrical Characteristics

#### Total Clearing I²t

The total clearing I²t at rated voltage and at power factor of 15% are given in the electrical characteristics. For other voltages, the clearing I²t is found by multiplying by correction factor, K, given as a function of applied working voltage, $E_g$, (rms).

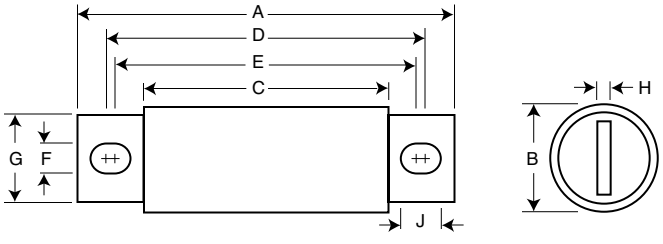



### Dimensions - in

| Amp Range | Fig. | A | B | C | D | E | F | G | H | I |
|---|---|---|---|---|---|---|---|---|---|---|
| 35-60 | 1 | 5.000 | 0.940 | 3.110 | 4.235 | 4.180 | 0.352 | 0.750 | 0.125 | 0.380 |
| 70-100 | 1 | 4.932 | 1.125 | 3.085 | 4.266 | 4.156 | 0.352 | 1.000 | 0.188 | 0.407 |
| 125-200 | 1 | 5.685 | 1.526 | 3.261 | 4.803 | 4.055 | 0.445 | 1.000 | 0.250 | 0.819 |
| 250-400 | 1 | 5.768 | 2.000 | 3.500 | 4.811 | 4.150 | 0.433 | 1.500 | 0.250 | 0.764 |
| 500-600 | 1 | 7.201 | 2.500 | 3.465 | 5.984 | 4.706 | 0.562 | 2.000 | 0.375 | 1.201 |
| 800-2000 | 1 | 6.811 | 3.500 | 3.312 | 5.472 | 4.962 | 0.625 | 2.750 | 0.500 | 0.880 |

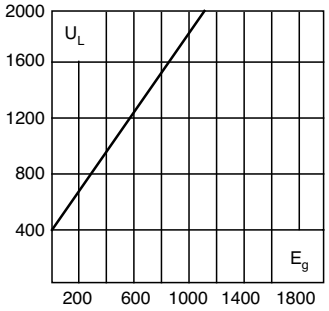
1mm = 0.0394" / 1" = 25.4mm

Fig. 1: 35-2000A



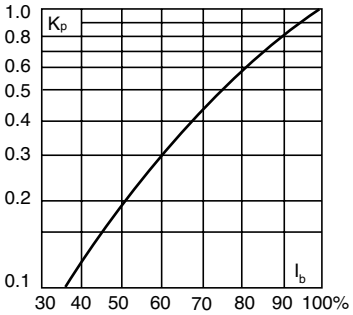

### Arc Voltage

This curve gives the peak arc voltage, $U_L$, which may appear across the fuse during its operation as a function of the applied working voltage, $E_g$, (rms) at a power factor of 15%.




### Power Losses

Watts loss at rated current is given in the electrical characteristics. The curve allows the calculation of the power losses at load currents lower than the rated current. The correction factor, $K_p$, is given as a function of the RMS load current, $I_b$, in % of the rated current.




### Catalog Numbers

| Catalog Numbers | Electrical Characteristics: Rated Current RMS-Amps | I2t (A2 Sec): Pre-arc | I2t (A2 Sec): Clearing at 1000V | Watts Loss |
|---|---|---|---|---|
| FWJ-35A | 35 | 210 | 2000 | 7 |
| FWJ-40A | 40 | 300 | 2500 | 8 |
| FWJ-50A | 50 | 470 | 3500 | 10 |
| FWJ-60A | 60 | 670 | 5000 | 11 |
| FWJ-70A | 70 | 1100 | 6900 | 12 |
| FWJ-80A | 80 | 1550 | 9700 | 13 |
| FWJ-90A | 90 | 1900 | 12000 | 14 |
| FWJ-100A | 100 | 2800 | 17500 | 15 |
| FWJ-125A | 125 | 4800 | 35000 | 16 |
| FWJ-150A | 150 | 6300 | 45000 | 25 |
| FWJ-175A | 175 | 7500 | 65000 | 30 |
| FWJ-200A | 200 | 11700 | 80000 | 32 |
| FWJ-250A | 250 | 16000 | 112000 | 50 |
| FWJ-300A | 300 | 23500 | 164000 | 56 |
| FWJ-350A | 350 | 33000 | 231000 | 62 |
| FWJ-400A | 400 | 47000 | 330000 | 67 |
| FWJ-500A | 500 | 39500 | 329000 | 95 |
| FWJ-600A | 600 | 61000 | 520000 | 105 |
| FWJ-800A | 800 | 87000 | 500000 | 182 |
| FWJ-1000A | 1000 | 190000 | 1100000 | 206 |
| FWJ-1200A | 1200 | 370000 | 2100000 | 240 |
| FWJ-1400A | 1400 | 470000 | 2700000 | 248 |
| FWJ-1600A | 1600 | 700000 | 4000000 | 267 |
| FWJ-1800A | 1800 | 925000 | 5300000 | 239 |
| FWJ-2000A | 2000 | 1330000 | 7600000 | 244 |

• Watts loss provided at rated current.

• See accessories on page 141.

### Features and Benefits

- Excellent DC performance
- Low arc voltage and low energy let-through (I²t)
- Low watts loss
- Superior cycling capability

### Typical Applications

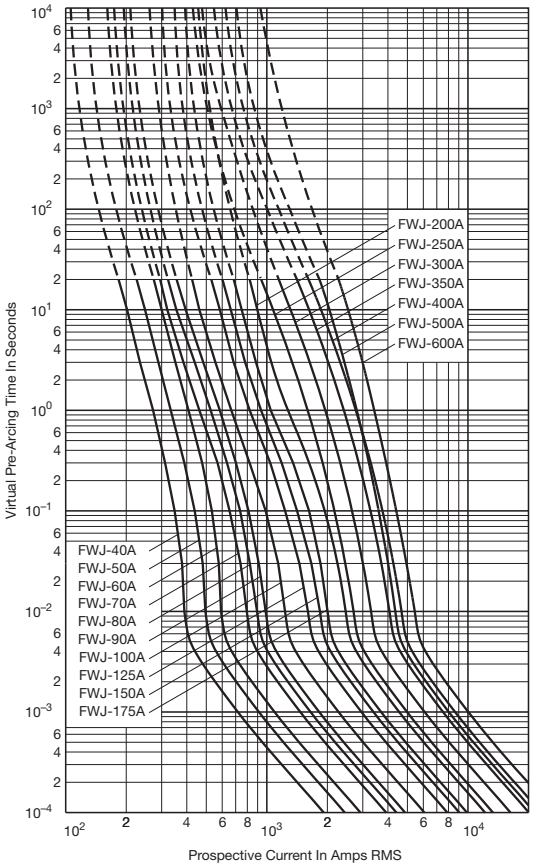
- DC Common bus
- DC Drives
- Power converters/rectifiers
- Reduced voltage starters

**Data Sheet: 720027**

# North American — FWJ 1000V: 35-2000A

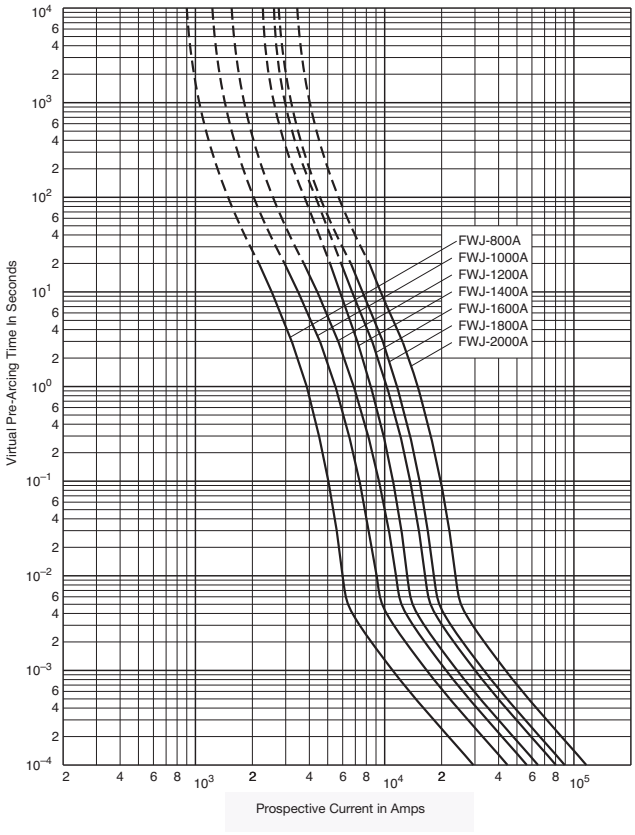
## FWJ 35-600A: 1000V

### Time-Current Curve



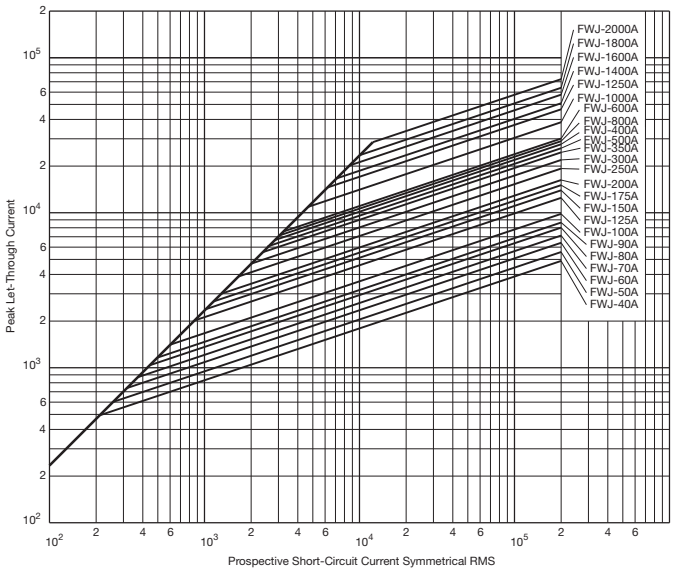

## FWJ 800-2000A: 1000V

### Time-Current Curve




**Data Sheet: 35785309**

### Peak Let-Through Curve




**Data Sheet: 35785303**

# North American Fuse Accessories

## Fuse Bases (Blocks)

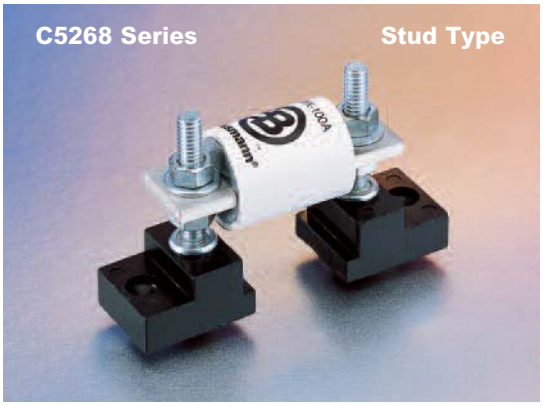
### Modular Style

Bussmann offers a comprehensive line of fuse bases that provide the user with design and manufacturing flexibility. Two identical half bases make up a Bussmann modular fuse base. These “split” units can be panel mounted any distance apart to accommodate any length fuse.

### Stud Type (Not sold in pairs)

The simpler design is the C5268 Series modular fuse base. With this design, the fuse terminal and cable (with termination) are mounted on the same stud, minimizing labor needed for installation. The stud type base is available in the configuration shown in the table below.

| Catalog Number | Max Fuse Amp Rating | Stud Height (in) | Stud Dia. & Threads |
|---|---|---|---|
| C5268-1 | 200 | 1.00 | 5/16″-18 |
| C5268-2 | 200 | 1.75 | 5/16″-18 |
| C5268-3 | 200 | 0.75 | 5/16″-18 |
| C5268-4 | 100 | 1.00 | 1/4″-20 |
| C5268-5 | 100 | 1.75 | 1/4″-20 |

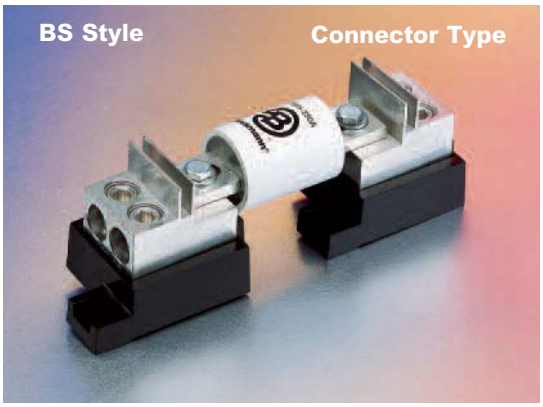



### Connector Type

Bussmann also offers a modular style fuse base that utilizes a tin-plated connector (for wire termination and heat dissipation) and a plated-steel stud (for fuse mounting). The connector type fuse base is available in the configurations shown below. Consult Bussmann for additional product details.

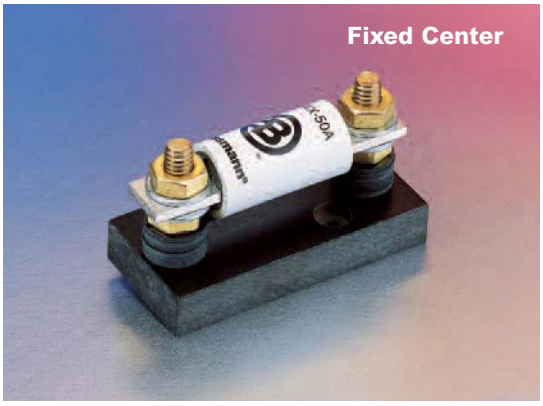
| Modular Base Style | Max Voltage | Max Fuse Amp Rating | Data Sheet Number |
|---|---|---|---|
| 1BS101 | 600 | 100 | 1206 |
| 1BS102 | 600 | 400 | 1207 |
| 1BS103 | 600 | 400 | 1208 |
| 1BS104 | 600 | 600 | 1209 |
| BH-0xxx | 700 | 100 | 1200 |
| BH-1xxx | 2500 | 400 | 1201 |
| BH-2xxx | 5000 | 400 | 1202 |
| BH-3xxx | 1250 | 700 | 1203 |

Refer to page 306 for BH style holders.

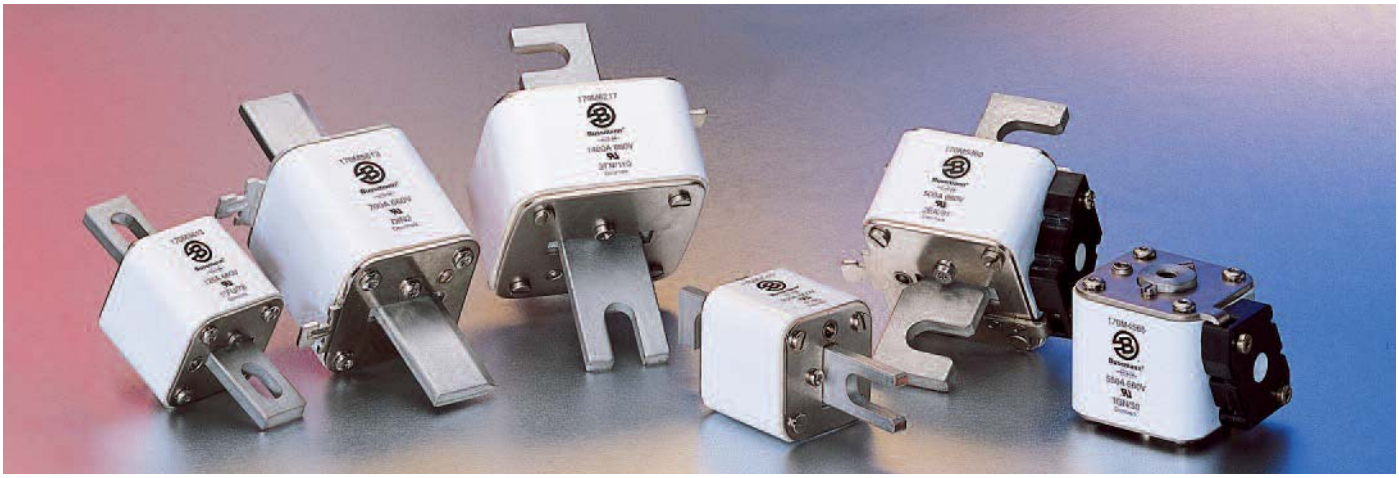



### Fixed Center Base Style

Bussmann offers a comprehensive line of fixed mount style fuse bases under the trademark TRON™ rectifier fuse blocks. The cable and fuse connections are similar to the stud type fuse base — both are mounted on the same stud. Consult Bussmann for complete product details.



# Square Body Fuses



## Introduction



| Volts (IEC/UL) | Size | Class | Fuse Style | Page |
|---|---|---|---|---|
| 690/700 | 000,00 | aR | DIN 43 653 | 145-147 |
| | | aR | Flush End Contact | 145-147 |
| | | aR | DIN 43 620 | 148-149 |
| | 1*, 1, 2, 3 | aR | DIN 43 653 | 150-151 |
| | | aR | Flush End Contact | 152-153 |
| | | aR | US Style | 154-155 |
| | | aR | French Style | 156-157 |
| | | aR | Fuse Curves | 158-159 |
| | 1*, 2, 3 | aR | DIN 43 620 | 160-162 |
| | 4 | aR | Flush End Contact | 163-164 |
| | 23, 24 | aR | Flush End Contact | 165-166 |
| | 00, 1, 2, 3 | aR | DIN 43 620 | 168-171 |
| 1000 | 00 | aR | DIN 43 653 | 172-173 |
| | 1*, 1, 2, 3 | aR | DIN 43 653 | 174-175 |
| | | aR | Flush End Contact | 176-177 |
| | | aR | US Style | 178-179 |
| | | aR | Fuse Curves | 180-181 |
| | 4 | aR | Flush End Contact | 182-184 |
| | 24 | aR | Flush End Contact | 185-186 |
| 1250/1300 | 1*, 1, 2, 3 | aR | DIN 43 653 | 187-188 |
| | | aR | Flush End Contact | 189-190 |
| | | aR | US Style | 191-192 |
| | | aR | Fuse Curves | 193-194 |
| | 4 | aR | Flush End Contact | 195-197 |
| | 23 | aR | Flush End Contact | 198-199 |
| 1000-2000 | 5 | aR | Flush End Contact | 200 |
| DC Fuses | | | | 201-211 |



### Square Body Fuse Ranges

| Amps | Volts | AC | DC |
|---|---|---|---|
| 10-7500 | 690 | X | — |
| 50-1400 | 1250 | X | — |

### General Information

Designed and tested to:
- IEC 60269: Part 4
- UL Recognized

Bussmann offers a complete range of square body style fuses and accessories. Their unique design and construction provide:
- Minimal energy let-through ($I^2t$)
- Low operating temperature
- Low watts loss

Square body style fuses are a very attractive solution for high power applications which require a compact design with superior performance. The construction and design of square body style fuses make it easy for Bussmann to manufacture custom products. Our cataloged offering provides only a sample of the wide variety of product which is available.

Each square body style fuse is available with a number of different end fittings. Options include:
- DIN 43 653
- DIN 43 620
- Flush End (Metric/US)
- French Style
- US Style

### Voltage Rating

All Bussmann square body style fuses are tested to IEC 60269: Part 4. This standard requires a test voltage which is 5% higher than the rated voltage. In North America, fuses are required to clear only their rated voltage.

### Accessories

Square Body style fuses are available with three different open fuse indicator systems. Options include visual indication and indication utilizing a microswitch. Fuse blocks are also available for most applications.

# Square Body Applications

### Maximum Permissible Load Current

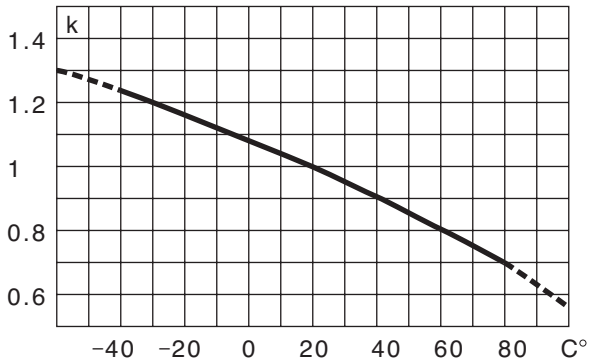
The rated current value of Bussmann fuses is based on the ambient temperature in the space immediately below the fuse of 20°C. The following graph gives correction factors (k) for a range of temperatures (–40°C to +80°C). Maximum permissible continuous load currents can be calculated by applying the following formula:

$I_b \leq I_n \approx k \approx (1 + 0.05\ V) \times K_b$

where

**$I_b$ = Maximum permissible continuous load current**
**$I_n$ = Rated current of fuse**
**k = Temperature correction factor**
**v = Velocity of cooling air in m/s (max. 5 m/s).**
**$K_b$ = Fuse load constant 1.0**

### Temperature Correction Curve




The maximum permissible continuous load current Ib of a fuse can be checked empirically (i.e., by satisfying the formula below) by making simple voltage and temperature measurements under actual operating conditions after the fuse has been installed in its operating location and loaded at the calculated Ib value:

$\frac{E_2}{E_1} \approx (0.92 + 0.004t) \leq N$

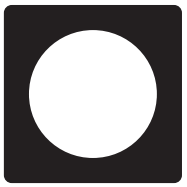
where

**$E_1$ = Voltage drop across fuse after 5 seconds**
**$E_2$ = Voltage drop across fuse after 2 hours**
**t = Air temperature at start of test (°C)**
**N = Constant**

| Fuse Rated Voltage (IEC) | N |
|---|---|
| 690 | 1.5 |
| 1250 | 1.6 |

## Body Cross Section

Standard fuse program includes barrels with different cross sections.

| Size | 000 | 00 | 1 | 1 | 2 | 3 | 4 |
|---|---|---|---|---|---|---|---|
| Maximum Cross-section (mm) | 21 × 36 | 30 × 47 | 45 × 45 | 53 × 53 | 61 × 61 | 76 × 76 | 105 × 105 |
| |  |  |  |  |  |  |  |

# Square Body Applications

### Example Application of Square Body High Speed Fuses Subject to Overload and Impulse Loading

Select a short-blade indicating fuse with indicator/adapter to permit the use of a single-pole microswitch for remote indication and determine if the fuse selected will meet the following application parameters.

### Application Parameters

**Load Currents Expected**

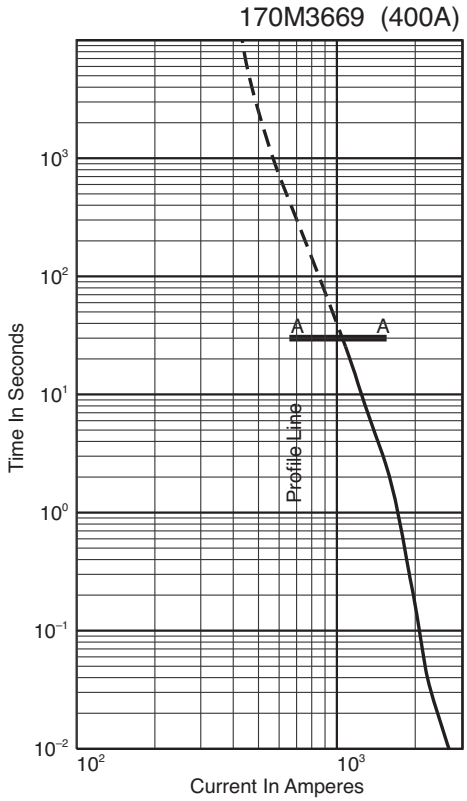
| Load Type | Duration | Frequency of Occurrence | Amps |
|---|---|---|---|
| (1) Normal | Continuous | — | 300A |
| (2) Overload | 60 Seconds | Once Per Hour | 500A |
| (3a) (3b) Overload | 10 Seconds<br>20 Seconds (max.) | 2-3 Times Per Week<br>Once Per Month | 700A |
| (4) Impulse | 0.5 Seconds | Less Than Once Per Month | 1100A |
| **Voltage Data** | | | |
| (5) Voltage Applied to Fuse During Fault Conditions (+10%) | | | 400V |
| **Temperature Data** | | | |
| (6) Temperature Inside Cubicle in Which Fuse is Located (Natural Convection Cooling Only) 60°C | | | |
| **Thyrister Data** | | | |
| (7) Thyrister Peak Voltage Withstand | | | 1000V |
| (8) Thyrister $I^2t$ Withstand at 10 Milliseconds* | | | 90,000A²s |

*Note: The $I^2t$ withstand of the thyrister may be given for other impulse durations (i.e., 1.5 ms, 3.5 ms, or 8.3 ms); however, the stated fuse $I^2t$ is valid for all impulse durations of 10 ms or less.

### Application Procedure

| Step | Procedure | Remarks |
|---|---|---|
| (1) Select a short-blade fuse to permit mounting of microswitch 170H0069 | 1.1 Taking into consideration only the continuous load current and ambient temperature, from Table on page 127 tentatively select fuse 170M3669 400A, 690V). | — |
| (2) Determine $I^2t$ (total clearing) at 440V. | 2.1 See Table, page 127. Note $I^2t$ is 105,000A²s at rated voltage of 690V.<br>2.2 From the figure on page 126, note that correction factor K = 0.65.<br>2.3 $I^2t_{660V} \times K = I^2t_{440V}$<br>105,000 × 0.65 = 68,250 | OK |
| (3) Determine maximum arc voltage at 440V | 3.1 From the figure on page 126, note that maximum voltage at 440V is 900V | OK |
| (4) Determine maximum permissible continuous load current $I_b$. | 4.1 Per page 115 data,<br>$I_b = I_n \times k \times (1 + 0.05V) \times K_b$<br>$I_b$ = 400A × 0.8 × (1 + 0) × 1<br>$I_b$ = 320A | — |
| (5) Plot a "line profile" showing the expected load and overload currents. Determine that overload and impulse load currents do not exceed their maximum permissible values. | 5.0 Calculate $I_{max}$ per Table, High Speed Fuse Application Guide page 16, for each overload and impulse load. | — |
| (Item 2) | 5.1 $I_{max} < 60\% \times I_t$<br>500A < 60% × 950A<br>500A < 570A | OK |
| (Item 3a) | 5.2 $I_{max} < 60\% \times I_t$<br>700A < 60% × 1360A<br>700A < 780A | OK |
| (Item 3b) | 5.3 $I_{max} < 70\% \times I_t$<br>700A < 70% × 1150A<br>700A < 805A | OK |
| (Item 4) | 5.4 $I_{max} < 70\% \times I_t$<br>1100A < 70% × 1800A<br>1100A < 1260A | OK |

The tentatively selected fuse 170M3669 with microswitch 170H0069 meets all application parameters; no further selection would be necessary.




### Calculation of Watt Loss

From the Table on page 127, watt loss at 400 amps is 60 watts. The continuous load current of 300A is 75% of rated current (400A). From page 126, the correction factor $K_p$ = 0.5.

$$\text{Watt Loss}_{75\%} = \text{Watt Loss}_{100\%} \times K_p$$
$$= 60W \times 0.5$$
$$= 30 \text{ watts}$$

### Special Fuses

Other high speed fuses are available from Bussmann with voltage ratings of 380 to 10,000V and current ratings up to 10,000A in a single unit configuration. Fuses can be supplied with open fuse, "pin" indicators. Various types of microswitches are also available (see page 212).

# Square Body DIN 43 653 — 690V/700V (IEC/UL): 10-400A

## 690V/700V (IEC/UL) 10-400A


**Specifications**

**Description:** Square body DIN 43-653 stud mount high speed fuses.

**Dimensions:** See dimensions illustration.

**Ratings:**

Volts: — 690Vac (IEC)
— 700Vac (UL)

Amps: — 10-400A

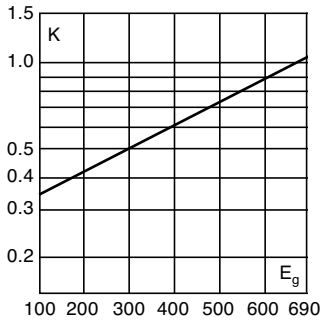
IR: — 200kA RMS Sym.

**Agency Information:** CE, Designed and tested to IEC 60269: Part 4. UL Recognized E125085.JFHR2, CSA Certified: Class 53787, File 1422-30 on Size 000.

### Electrical Characteristics

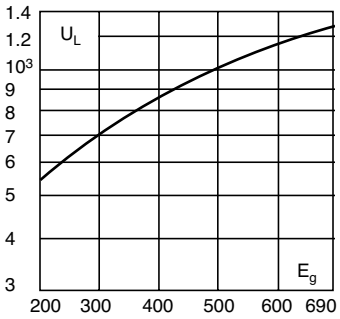
### Total Clearing I²t

The total clearing I²t at rated voltage and at power factor of 15% are given in the electrical characteristics. For other voltages, the clearing I²t is found by multiplying by correction factor, K, given as a function of applied working voltage, $E_g$, (rms).



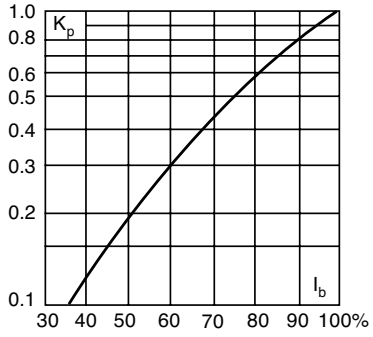

### Arc Voltage

This curve gives the peak arc voltage, $U_L$, which may appear across the fuse during its operation as a function of the applied working voltage, $E_g$, (rms) at a power factor of 15%.




### Power Losses

Watts loss at rated current is given in the electrical characteristics. The curve allows the calculation of the power losses at load currents lower than the rated current. The correction factor, $K_p$, is given as a function of the RMS load current, $I_b$, in % of the rated current.




### Features and Benefits

- Excellent DC performance
- Low arc voltage and low energy let-through (I²t)
- Low watts loss
- Superior cycling capability

### Typical Applications

- DC Common bus
- DC Drives
- Power converters/rectifiers

**For Other Voltage Ratings in This Body Style**

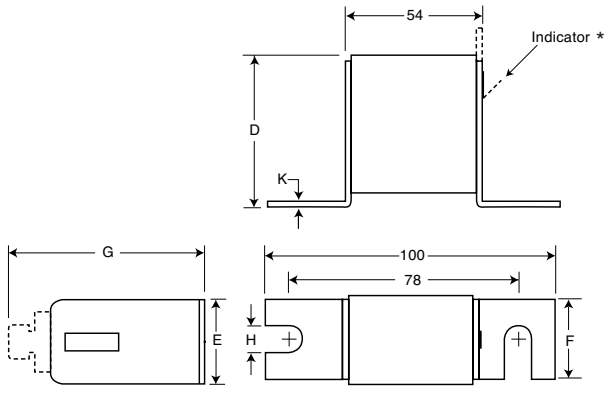
• See page 172 (1000V)

### Dimensions - mm

Type -U/80, -/80, -TN/80

| Size | D | E | F | G | H | K |
|---|---|---|---|---|---|---|
| 000 | 40 | 21 | 20 | 51 | 8 | 2 |
| 00 | 51 | 30 | 28 | 67 | 10 | 2 |

1mm = 0.0394" / 1" = 25.4mm

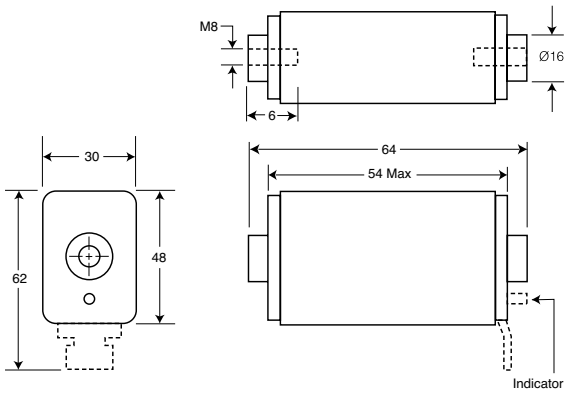



* Indication for Size 00 fuses is a red pin.

### Dimensions (mm)

Type 00B/60, 00BTN/60

1mm = 0.0394" / 1" = 25.4mm



# Square Body DIN 43 653 — 690V/700V (IEC/UL): 10-400A

## Catalog Numbers

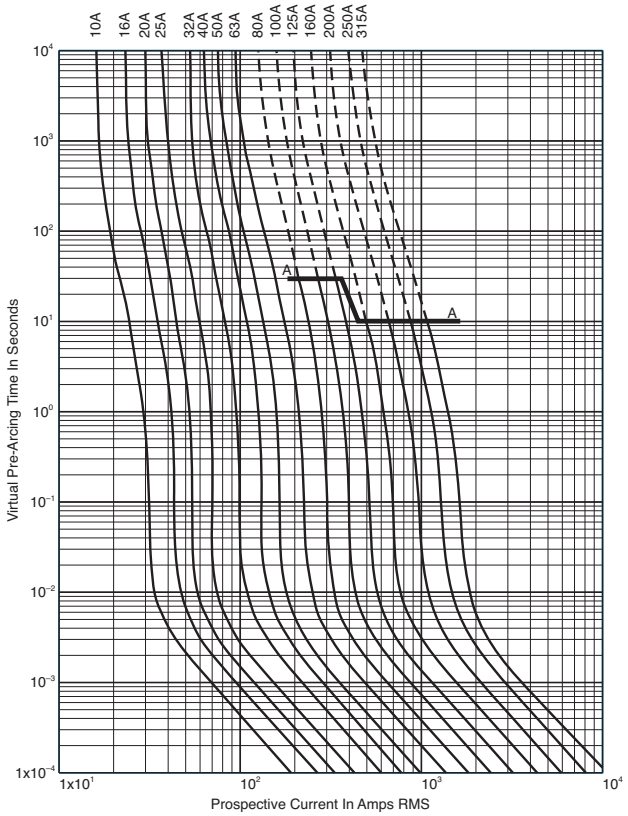
| Catalog Numbers | | | | | Size | Electrical Characteristics | | | |
|---|---|---|---|---|---|---|---|---|---|
| -U/80 Without Indicator | -/80 Visual Indicator | -TN/80 Type T Indicator for Micro | 00B/60 Visual Indicator | 00BTN/60 Type T Indicator for Micro | | Rated Current RMS-Amps | I²t (A² Sec) Pre-arc | I²t (A² Sec) Clearing at 660V | Watts Loss |
| 170M1308 | 170M1358 | 170M1408 | | | | 10 | 3.8 | 25.5 | 3.0 |
| 170M1309 | 170M1359 | 170M1409 | | | | 16 | 7.2 | 48 | 5.5 |
| 170M1310 | 170M1360 | 170M1410 | | | | 20 | 11.5 | 78 | 7 |
| 170M1311 | 170M1361 | 170M1411 | | | | 25 | 19 | 130 | 9 |
| 170M1312 | 170M1362 | 170M1412 | | | | 32 | 40 | 270 | 10 |
| 170M1313 | 170M1363 | 170M1413 | | | | 40 | 69 | 460 | 12 |
| 170M1314 | 170M1364 | 170M1414 | | | | 50 | 115 | 770 | 15 |
| 170M1315 | 170M1365 | 170M1415 | | | 000 | 63 | 215 | 1450 | 16 |
| 170M1316 | 170M1366 | 170M1416 | | | | 80 | 380 | 2550 | 19 |
| 170M1317 | 170M1367 | 170M1417 | | | | 100 | 695 | 4650 | 24 |
| 170M1318 | 170M1368 | 170M1418 | | | | 125 | 1200 | 8500 | 28 |
| 170M1319 | 170M1369 | 170M1419 | | | | 160 | 2300 | 16000 | 32 |
| 170M1320 | 170M1370 | 170M1420 | | | | 200 | 4200 | 28000 | 37 |
| 170M1321 | 170M1371 | 170M1421 | | | | 250 | 7750 | 51500 | 42 |
| 170M1322 | 170M1372 | 170M1422 | | | | 315 | 12000 | 80500 | 52 |
| | 170M2608 | 170M2658 | 170M2708 | 170M2758 | | 25 | 19 | 130 | 6 |
| | 170M2609 | 170M2659 | 170M2709 | 170M2759 | | 32 | 28.5 | 195 | 7 |
| | 170M2610 | 170M2660 | 170M2710 | 170M2760 | | 40 | 50 | 360 | 9 |
| | 170M2611 | 170M2661 | 170M2711 | 170M2761 | | 50 | 95 | 640 | 10 |
| | 170M2612 | 170M2662 | 170M2712 | 170M2762 | | 63 | 170 | 1200 | 12 |
| | 170M2613 | 170M2663 | 170M2713 | 170M2763 | | 80 | 310 | 2100 | 15 |
| | 170M2614 | 170M2664 | 170M2714 | 170M2764 | 00 | 100 | 620 | 4150 | 20 |
| | 170M2615 | 170M2665 | 170M2715 | 170M2765 | | 125 | 1000 | 6950 | 25 |
| | 170M2616 | 170M2666 | 170M2716 | 170M2766 | | 160 | 1900 | 13000 | 30 |
| | 170M2617 | 170M2667 | 170M2717 | 170M2767 | | 200 | 3400 | 23000 | 35 |
| | 170M2618 | 170M2668 | 170M2718 | 170M2768 | | 250 | 6250 | 42000 | 45 |
| | 170M2619 | 170M2669 | 170M2719 | 170M2769 | | 315 | 10000 | 68500 | 55 |
| | 170M2620 | 170M2670 | 170M2720 | 170M2770 | | 350 | 13500 | 91500 | 60 |
| | 170M2621 | 170M2671 | 170M2721 | 170M2771 | | 400 | 18000 | 125000 | 70 |

- Watts loss provided at rated current.
- Microswitch indicator ordered separately.
- See accessories on pages 212-213.
- For fuse curves see page 147.

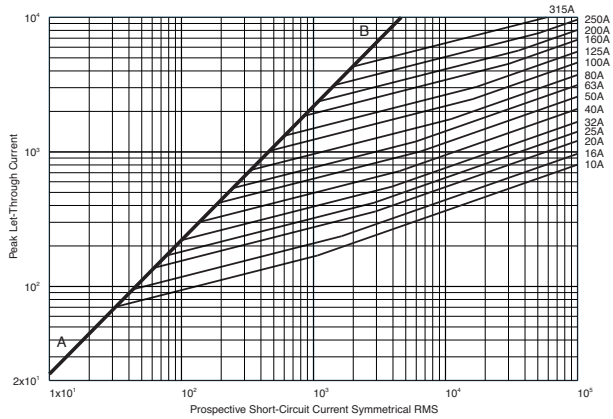
# Square Body Size 000, 00 — 690V/700V (IEC/UL): 10-400A

## Size 000 — 10-315A: 690V

### Time-Current Curve



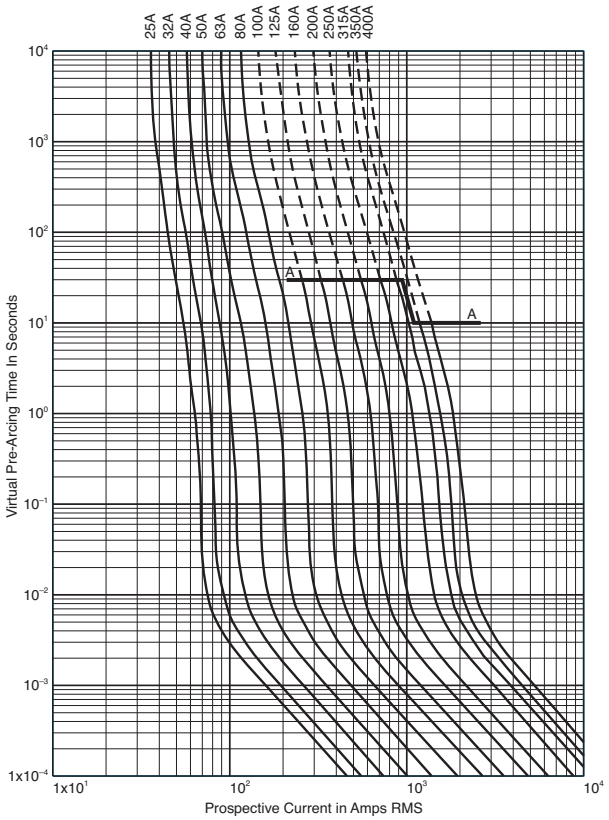

### Peak Let-Through Curve



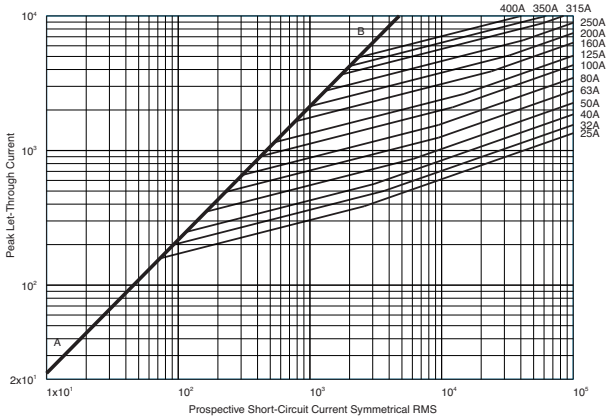

**Data Sheet: 17056310**

## Size 00 — 25-400A: 690V

### Time-Current Curve




### Peak Let-Through Curve




**Data Sheet: 172056312**

# Square Body DIN 43 620 — 690V (IEC/UL): 10-315A

## 690V (IEC/UL) 10-315A

**Specifications**

**Description:** Square body DIN 43 620 blade style high speed fuses.

**Dimensions:** See dimensions illustration.

**Ratings:**

Volts: — 690Vac

Amps: — 10-315A

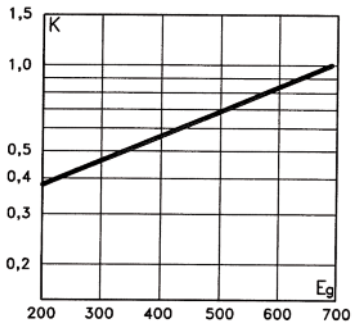
IR: — 200kA RMS Sym.

**Agency Information:** CE, Designed and tested to IEC 60269: Part 4. UL Recognized E125085.JFHR2. & CSA Component Acceptance file Class 1422-30, (53787)

### Electrical Characteristics

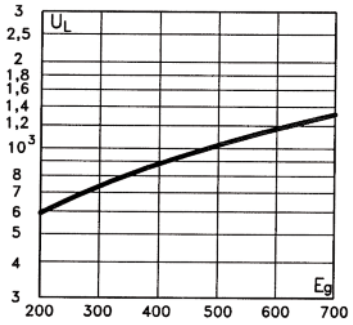
#### Total Clearing I²t

The total clearing I²t at rated voltage and at power factor of 15% are given in the electrical characteristics. For other voltages, the clearing I²t is found by multiplying by correction factor, K, given as a function of applied working voltage, $E_g$, (rms).



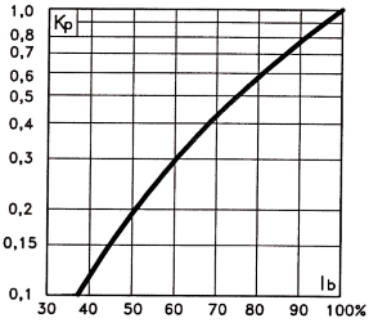

### Arc Voltage

This curve gives the peak arc voltage, $U_L$, which may appear across the fuse during its operation as a function of theapplied working voltage, $E_g$, (rms) at a power factor of 15%.




### Power Losses

Watts loss at rated current is given in the electrical characteristics. The curve allows the calculation of the power losses at load currents lower than the rated current. The correction factor, $K_p$, is given as a function of the RMS load current, $I_b$, in % of the rated current.




### Features and Benefits

- Excellent DC performance
- Low arc voltage and low energy let-through (I²t)
- Low watts loss
- Superior cycling capability

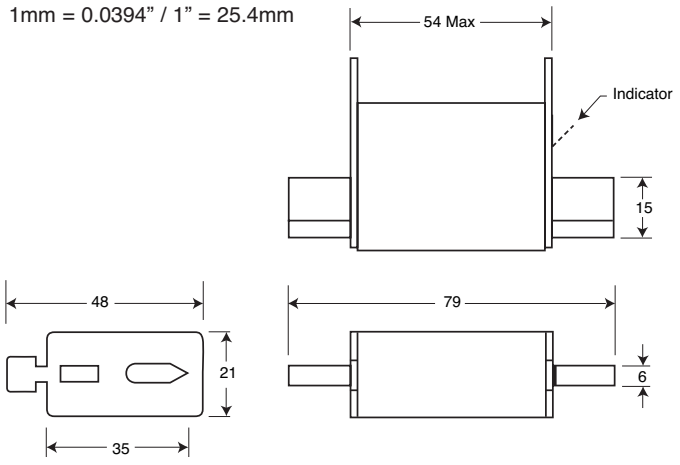
### Typical Applications

- DC Common bus
- DC Drives
- Power converters/rectifiers
- Reduced voltage starters

### Dimensions - mm

DIN 000 Type T

1mm = 0.0394" / 1" = 25.4mm



# Square Body DIN 43 620 — 690V (IEC/UL): 10-315A

## Catalog Numbers

| Catalog Numbers DIN Type T Indicator for Micro | Size | Electrical Characteristics | | | |
|---|---|---|---|---|---|
| | | Rated Current RMS-Amps | $I^2t$ ($A^2$ Sec) Pre-arc | $I^2t$ ($A^2$ Sec) Clearing at 660V | Watts Loss |
| 170M1558D | | 10 | 4 | 27 | 2.5 |
| 170M1559D | | 16 | 7 | 51 | 4 |
| 170M1560D | | 20 | 11.5 | 82.5 | 5 |
| 170M1561D | | 25 | 19 | 140 | 6 |
| 170M1562D | | 32 | 40 | 285 | 7 |
| 170M1563D | | 40 | 65 | 490 | 8.5 |
| 170M1564D | 000 | 50 | 115 | 815 | 9.5 |
| 170M1565D | | 63 | 215 | 1550 | 11.5 |
| 170M1566D | | 80 | 380 | 2700 | 15 |
| 170M1567D | | 100 | 695 | 4950 | 16.5 |
| 170M1568D | | 125 | 1180 | 8250 | 21.5 |
| 170M1569D | | 160 | 2300 | 16500 | 25 |
| 170M1570D | | 200 | 4350 | 31000 | 29.5 |
| 170M1571D | | 250 | 7900 | 56000 | 35.5 |
| 170M1572D | 00 | 315 | 12000 | 84500 | 45 |

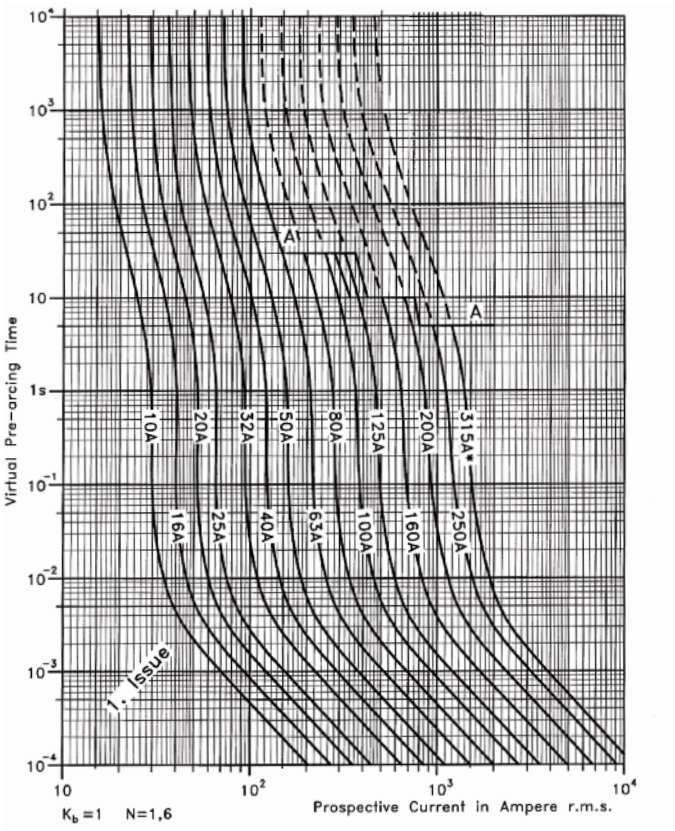
- Watts loss provided at rated current.
- Microswitch indicator ordered separately. See accessories on pages 212-213.

### Rated Current

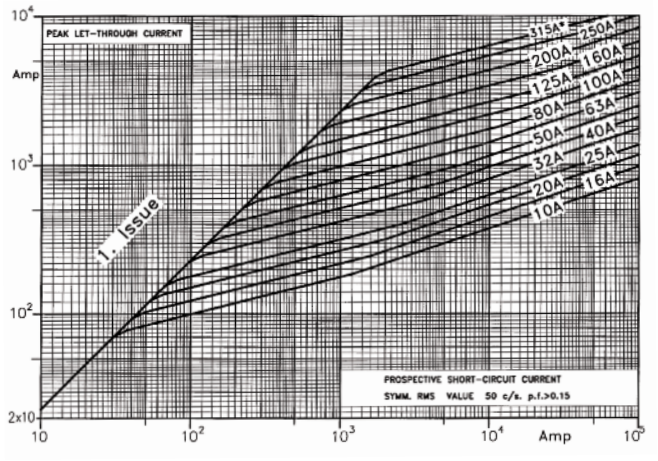
The rated current of this fuse range has been given with copper conductors that have a current density of 1.3A/mm² (IEC 60269-4). For conductor cross section according to IEC 60269-1, the fuses with a rated current higher than 125A must be derated. Please contact Bussmann for application assistance.

## Size 000 — 10-315A: 690V

### Time-Current Curve




### Peak Let-Through Curve




**Data Sheet: 72056310**

# Square Body DIN 43 653 — 690V/700V (IEC/UL): 40-2000A

## 690V/700V (IEC/UL) 40-2000A

**Specifications**
Description: Square body DIN 43 653 stud-mount high speed fuses.

**Dimensions:** See dimensions illustration.

**Ratings:**

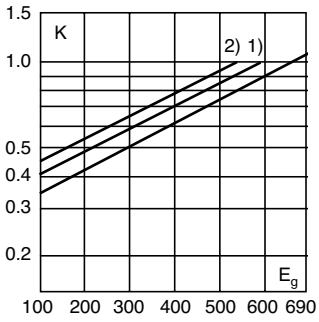
Volts: — 690Vac (IEC)
— 700Vac (UL)
Amps: — 40-2000A
IR: — 200kA RMS Sym.

**Agency Information:** CE, Designed and tested to IEC 60269: Part 4. UL Recognized E125085.JFHR2, CSA Certified: Class 53787, File 1422-30.


### Electrical Characteristics

**Total Clearing I²t**

The total clearing I²t at rated voltage and at power factor of 15% are given in the electrical characteristics. For other voltages, the clearing I²t is found by multiplying by correction factor, K, given as a function of applied working voltage, $E_g$, (rms).



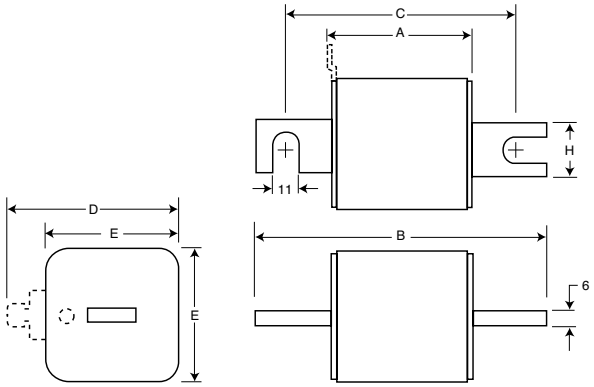

1) Rated voltage 600V
2) Rated voltage 550V

**Dimensions - mm**

| Size | A | B | B** | C | C** | D*** | E | H |
|---|---|---|---|---|---|---|---|---|
| 1* | 50 | 104 | 134 | 78 | 108 | 58 | 45 | 22 |
| 1 | 50 | 108 | 138 | 78 | 108 | 66 | 53 | 25 |
| 2 | 50 | 108 | 138 | 78 | 108 | 75 | 61 | 25 |
| 3 | 51 | 109 | 139 | 78 | 108 | 90 | 76 | 30 |

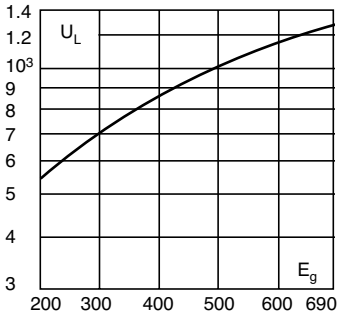
**Valid for fuses type -/110, -TN/110.
***Microswitch.
1mm = 0.0394" / 1" = 25.4mm

Type -/80, -TN/80, -/110, -TN/110.



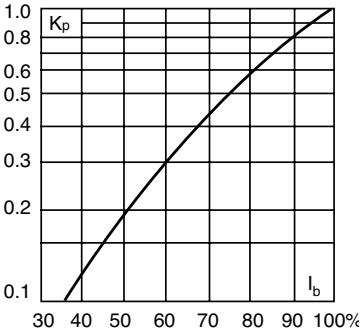

### Arc Voltage

This curve gives the peak arc voltage, $U_L$, which may appear across the fuse during its operation as a function of theapplied working voltage, $E_g$, (rms) at a power factor of 15%.




### Power Losses

Watts loss at rated current is given in the electrical characteristics. The curve allows the calculation of the power losses at load currents lower than the rated current. The correction factor, $K_p$, is given as a function of the RMS load current, $I_b$, in % of the rated current.




### Features and Benefits

- Excellent DC performance
- Low arc voltage and low energy let-through (I²t)
- Low watts loss
- Superior cycling capability

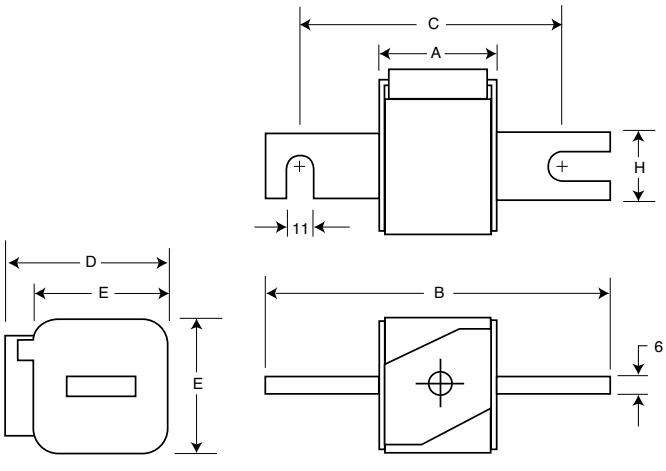
### Typical Applications

- DC Common bus
- DC Drives
- Power converters/rectifiers
- Reduced voltage starters

**For Other Voltage Ratings in This Body Style**

• See pages 174 (1000V) and 187 (1250V/1300V)

Type -KN/80, -KN/110



# Square Body DIN 43 653 — 690V/700V (IEC/UL): 40-2000A

## Catalog Numbers

| Catalog Numbers | | | | | | Size | Electrical Characteristics | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| -/80 Visual Watts Indicator | -TN/80 Type T Indicator for Micro | -KN/80 Type K Indicator for Micro | -/110 Visual for Micro | -TN/110 Type T Indicator for Micro | -KN/110 Type K Indicator -KN/80 | | Rated RMS-Amps | I²t (A² Sec) Current Pre-arc | I²t (A² Sec) at 660V | Clearing Loss |
| 170M3008 | 170M3058 | 170M3108 | 170M3158 | 170M3208 | 170M3258 | | 40 | 40 | 270 | 9 |
| 170M3009 | 170M3059 | 170M3109 | 170M3159 | 170M3209 | 170M3259 | | 50 | 77 | 515 | 11 |
| 170M3010 | 170M3060 | 170M3110 | 170M3160 | 170M3210 | 170M3260 | | 63 | 115 | 770 | 14 |
| 170M3011 | 170M3061 | 170M3111 | 170M3161 | 170M3211 | 170M3261 | | 80 | 185 | 1250 | 18 |
| 170M3012 | 170M3062 | 170M3112 | 170M3162 | 170M3212 | 170M3262 | | 100 | 360 | 2450 | 21 |
| 170M3013 | 170M3063 | 170M3113 | 170M3163 | 170M3213 | 170M3263 | | 125 | 550 | 3700 | 26 |
| 170M3014 | 170M3064 | 170M3114 | 170M3164 | 170M3214 | 170M3264 | | 160 | 1100 | 7500 | 30 |
| 170M3015 | 170M3065 | 170M3115 | 170M3165 | 170M3215 | 170M3265 | | 200 | 2200 | 15000 | 35 |
| 170M3016 | 170M3066 | 170M3116 | 170M3166 | 170M3216 | 170M3266 | 1* | 250 | 4200 | 28500 | 40 |
| 170M3017 | 170M3067 | 170M3117 | 170M3167 | 170M3217 | 170M3267 | | 315 | 7000 | 46500 | 50 |
| 170M3018 | 170M3068 | 170M3118 | 170M3168 | 170M3218 | 170M3268 | | 350 | 10000 | 68500 | 55 |
| 170M3019 | 170M3069 | 170M3119 | 170M3169 | 170M3219 | 170M3269 | | 400 | 15000 | 105000 | 60 |
| 170M3020 | 170M3070 | 170M3120 | 170M3170 | 170M3220 | 170M3270 | | 450 | 21000 | 140000 | 65 |
| 170M3021 | 170M3071 | 170M3121 | 170M3171 | 170M3221 | 170M3271 | | 500 | 27000 | 180000 | 70 |
| 170M3022 | 170M3072 | 170M3122 | 170M3172 | 170M3222 | 170M3272 | | 550 | 34000 | 230000 | 75 |
| 170M3023 | 170M3073 | 170M3123 | 170M3173 | 170M3223 | 170M3273 | | 630 | 48500 | 325000 | 80 |
| 170M4008 | 170M4058 | 170M4108 | 170M4158 | 170M4208 | 170M4258 | | 200 | 1650 | 11500 | 45 |
| 170M4009 | 170M4059 | 170M4109 | 170M4159 | 170M4209 | 170M4259 | | 250 | 3100 | 21000 | 55 |
| 170M4010 | 170M4060 | 170M4110 | 170M4160 | 170M4210 | 170M4260 | | 315 | 6200 | 42000 | 58 |
| 170M4011 | 170M4061 | 170M4111 | 170M4161 | 170M4211 | 170M4261 | | 350 | 8500 | 59000 | 60 |
| 170M4012 | 170M4062 | 170M4112 | 170M4162 | 170M4212 | 170M4262 | | 400 | 13500 | 91500 | 65 |
| 170M4013 | 170M4063 | 170M4113 | 170M4163 | 170M4213 | 170M4263 | | 450 | 17000 | 120000 | 70 |
| 170M4014 | 170M4064 | 170M4114 | 170M4164 | 170M4214 | 170M4264 | 1 | 500 | 25000 | 170000 | 72 |
| 170M4015 | 170M4065 | 170M4115 | 170M4165 | 170M4215 | 170M4265 | | 550 | 34000 | 230000 | 75 |
| 170M4016 | 170M4066 | 170M4116 | 170M4166 | 170M4216 | 170M4266 | | 630 | 52000 | 350000 | 80 |
| 170M4017 | 170M4067 | 170M4117 | 170M4167 | 170M4217 | 170M4267 | | 700 | 69500 | 465000 | 85 |
| 170M4018 | 170M4068 | 170M4118 | 170M4168 | 170M4218 | 170M4268 | | 800 | 105000 | 725000 | 95 |
| 170M4019 | 170M4069 | 170M4119 | 170M4169 | 170M4219 | 170M4269 | | ‡900 | 155000 | ‡850000 | 100 |
| 170M5008 | 170M5058 | 170M5108 | 170M5158 | 170M5208 | 170M5258 | | 400 | 11000 | 74000 | 65 |
| 170M5009 | 170M5059 | 170M5109 | 170M5159 | 170M5209 | 170M5259 | | 450 | 15500 | 105000 | 70 |
| 170M5010 | 170M5060 | 170M5110 | 170M5160 | 170M5210 | 170M5260 | | 500 | 21500 | 145000 | 75 |
| 170M5011 | 170M5061 | 170M5111 | 170M5161 | 170M5211 | 170M5261 | | 550 | 28000 | 190000 | 80 |
| 170M5012 | 170M5062 | 170M5112 | 170M5162 | 170M5212 | 170M5262 | | 630 | 41000 | 275000 | 90 |
| 170M5013 | 170M5063 | 170M5113 | 170M5163 | 170M5213 | 170M5263 | 2 | 700 | 60500 | 405000 | 95 |
| 170M5014 | 170M5064 | 170M5114 | 170M5164 | 170M5214 | 170M5264 | | 800 | 86000 | 575000 | 105 |
| 170M5015 | 170M5065 | 170M5115 | 170M5165 | 170M5215 | 170M5265 | | 900 | 125000 | 840000 | 110 |
| 170M5016 | 170M5066 | 170M5116 | 170M5166 | 170M5216 | 170M5266 | | 1000 | 180000 | 1250000 | 115 |
| 170M5017 | 170M5067 | 170M5117 | 170M5167 | 170M5217 | 170M5267 | | 1100 | 245000 | 1600000 | 120 |
| 170M5018 | 170M5068 | 170M5118 | 170M5168 | 170M5218 | 170M5268 | | 1250 | 365000 | 2400000 | 130 |
| 170M6008 | 170M6058 | 170M6108 | 170M6158 | 170M6208 | 170M6258 | | 500 | 14000 | 95000 | 95 |
| 170M6009 | 170M6059 | 170M6109 | 170M6159 | 170M6209 | 170M6259 | | 550 | 19500 | 135000 | 100 |
| 170M6010 | 170M6060 | 170M6110 | 170M6160 | 170M6210 | 170M6260 | | 630 | 31000 | 210000 | 105 |
| 170M6011 | 170M6061 | 170M6111 | 170M6161 | 170M6211 | 170M6261 | | 700 | 44500 | 300000 | 110 |
| 170M6012 | 170M6062 | 170M6112 | 170M6162 | 170M6212 | 170M6262 | | 800 | 69500 | 465000 | 115 |
| 170M6013 | 170M6063 | 170M6113 | 170M6163 | 170M6213 | 170M6263 | | 900 | 100000 | 670000 | 120 |
| 170M6014 | 170M6064 | 170M6114 | 170M6164 | 170M6214 | 170M6264 | 3 | 1000 | 140000 | 945000 | 125 |
| 170M6015 | 170M6065 | 170M6115 | 170M6165 | 170M6215 | 170M6265 | | 1100 | 190000 | 1300000 | 130 |
| 170M6016 | 170M6066 | 170M6116 | 170M6166 | 170M6216 | 170M6266 | | 1250 | 290000 | 1950000 | 140 |
| 170M6017 | 170M6067 | 170M6117 | 170M6167 | 170M6217 | 170M6267 | | 1400 | 370000 | 2450000 | 155 |
| 170M6018 | 170M6068 | 170M6118 | 170M6168 | 170M6218 | 170M6268 | | 1500 | 460000 | 3100000 | 160 |
| 170M6019 | 170M6069 | 170M6119 | 170M6169 | 170M6219 | 170M6269 | | 1600 | 580000 | 3900000 | 160 |
| 170M6020 | 170M6070 | 170M6120 | 170M6170 | 170M6220 | 170M6270 | | †1800 | 880000 | †5250000 | 165 |
| 170M6021 | 170M6071 | 170M6121 | 170M6171 | 170M6221 | 170M6271 | | ‡2000 | 1150000 | ‡6350000 | 175 |

†Rated voltage (IEC) 600V.
‡Rated voltage (IEC) 550V.
• Watts loss provided at rated current.
• Microswitch indicator ordered separately. See accessories on pages 212-213.
• For fuse curves see pages 158 and 159.

# Square Body Flush End Contact — 690V/700V (IEC/UL): 40-2000A

## 690V/700V (IEC/UL) 40-2000A

### Specifications

**Description:** Square body flush end contact high speed fuses.

**Dimensions:** See dimensions illustrations.

**Ratings:**

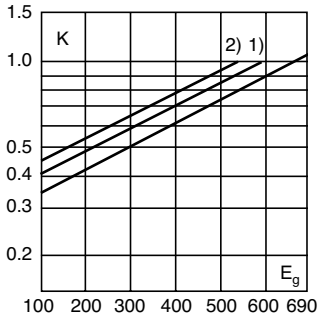
Volts: — 690Vac (IEC)
— 700Vac (UL)
Amps: — 40-2000A
IR: — 200kA RMS Sym.


**Agency Information:** CE, Designed and tested to IEC 60269: Part 4. UL Recognized E125085.JFHR2, CSA Certified: Class 53787, File 1422-30.

### Electrical Characteristics

#### Total Clearing $I^2t$

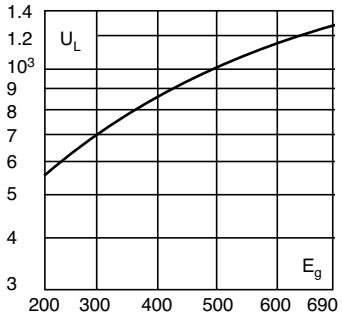
The total clearing $I^2t$ at rated voltage and at power factor of 15% are given in the electrical characteristics. For other voltages, the clearing $I^2t$ is found by multiplying by correction factor, K, given as a function of applied working voltage, $E_g$, (rms).




1) Rated voltage 600V.
2) Rated voltage 550V

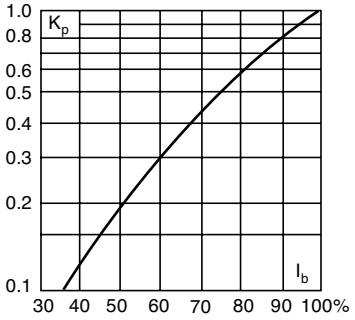
#### Arc Voltage

This curve gives the peak arc voltage, $U_L$, which may appear across the fuse during its operation as a function of theapplied working voltage, $E_g$, (rms) at a power factor of 15%.




#### Power Losses

Watts loss at rated current is given in the electrical characteristics. The curve allows the calculation of the power losses at load currents lower than the rated current. The correction factor, $K_p$, is given as a function of the RMS load current, $I_b$, in % of the rated current.




### Features and Benefits

- Excellent DC performance
- Low arc voltage and low energy let-through ($I^2t$)
- Low watts loss
- Superior cycling capability

### Typical Applications

- DC Common bus
- DC Drives
- Power converters/rectifiers
- Reduced voltage starters

**For Other Voltage Ratings in This Body Style**

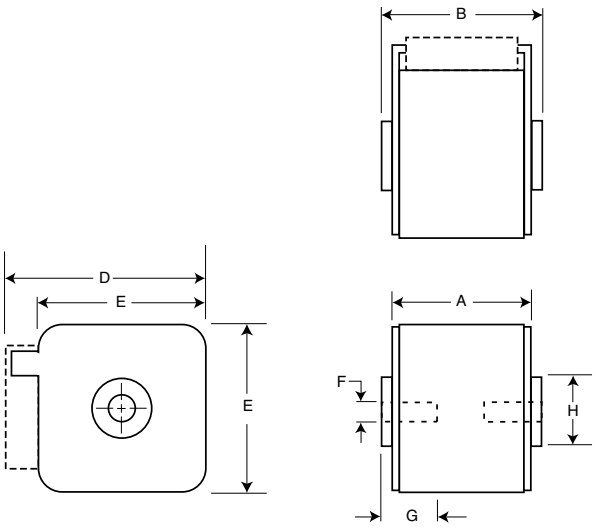
• See pages 176 (1000V) and 189 (1250V/1300V)

### Dimensions - mm

Type -B/-, -BKN/-, -G/-, -GKN/-

| Size | A | B | D | E | F | F** (in) | G | H |
|---|---|---|---|---|---|---|---|---|
| 1* | 50 | 51 | 59 | 45 | M8 | 5/16" - 18 UNC-2B | 5 | ø17 |
| 1 | 50 | 51 | 69 | 53 | M8 | 5/16" - 18 UNC-2B | 8 | ø20 |
| 2 | 50 | 51 | 77 | 61 | M10 | 3/8" - 16 UNC-2B | 10 | ø24 |
| 3 | 51 | 53 | 92 | 76 | M12 | 1/2" - 13 UNC-2B | 10 | ø30 |

**Valid for fuses type -G/- & -GKN/-.
NB: B = 65 for: Size 2, 1100-1250A
Size 3, 1600-2000A
1mm = 0.0394" / 1" = 25.4mm



# Square Body Flush End Contact — 690V/700V (IEC/UL): 40-2000A

## Catalog Numbers

| Catalog Numbers | | | | Size | Electrical Characteristics | | | |
|---|---|---|---|---|---|---|---|---|
| -B/- Visual Indicator | -BKN/- Type K Indicator for Micro | -G/- Visual Indicator | -GKN/- Type K Indicator for Micro | | Rated Current RMS-Amps | $I^2t$ ($A^2$ Sec) Pre-arc | $I^2t$ ($A^2$ Sec) Clearing at 660V | Watts Loss |
| 170M3408 | 170M3458 | 170M3508 | 170M3558 | | 40 | 40 | 270 | 9 |
| 170M3409 | 170M3459 | 170M3509 | 170M3559 | | 50 | 77 | 515 | 11 |
| 170M3410 | 170M3460 | 170M3510 | 170M3560 | | 63 | 115 | 770 | 14 |
| 170M3411 | 170M3461 | 170M3511 | 170M3561 | | 80 | 185 | 1250 | 18 |
| 170M3412 | 170M3462 | 170M3512 | 170M3562 | | 100 | 360 | 2450 | 21 |
| 170M3413 | 170M3463 | 170M3513 | 170M3563 | | 125 | 550 | 3700 | 26 |
| 170M3414 | 170M3464 | 170M3514 | 170M3564 | | 160 | 1100 | 7500 | 30 |
| 170M3415 | 170M3465 | 170M3515 | 170M3565 | | 200 | 2200 | 15000 | 35 |
| 170M3416 | 170M3466 | 170M3516 | 170M3566 | 1* | 250 | 4200 | 28500 | 40 |
| 170M3417 | 170M3467 | 170M3517 | 170M3567 | | 315 | 7000 | 46500 | 50 |
| 170M3418 | 170M3468 | 170M3518 | 170M3568 | | 350 | 10000 | 68500 | 55 |
| 170M3419 | 170M3469 | 170M3519 | 170M3569 | | 400 | 15000 | 105000 | 60 |
| 170M3420 | 170M3470 | 170M3520 | 170M3570 | | 450 | 21000 | 140000 | 65 |
| 170M3421 | 170M3471 | 170M3521 | 170M3571 | | 500 | 27000 | 180000 | 70 |
| 170M3422 | 170M3472 | 170M3522 | 170M3572 | | 550 | 34000 | 230000 | 75 |
| 170M3423 | 170M3473 | 170M3523 | 170M3573 | | 630 | 48500 | 325000 | 80 |
| 170M4408 | 170M4458 | 170M4508 | 170M4558 | | 200 | 1650 | 11500 | 45 |
| 170M4409 | 170M4459 | 170M4509 | 170M4559 | | 250 | 3100 | 21000 | 55 |
| 170M4410 | 170M4460 | 170M4510 | 170M4560 | | 315 | 6200 | 42000 | 58 |
| 170M4411 | 170M4461 | 170M4511 | 170M4561 | | 350 | 8500 | 59000 | 60 |
| 170M4412 | 170M4462 | 170M4512 | 170M4562 | | 400 | 13500 | 91500 | 65 |
| 170M4413 | 170M4463 | 170M4513 | 170M4563 | | 450 | 17000 | 120000 | 70 |
| 170M4414 | 170M4464 | 170M4514 | 170M4564 | 1 | 500 | 25000 | 170000 | 72 |
| 170M4415 | 170M4465 | 170M4515 | 170M4565 | | 550 | 34000 | 230000 | 75 |
| 170M4416 | 170M4466 | 170M4516 | 170M4566 | | 630 | 52000 | 350000 | 80 |
| 170M4417 | 170M4467 | 170M4517 | 170M4567 | | 700 | 69500 | 465000 | 85 |
| 170M4418 | 170M4468 | 170M4518 | 170M4568 | | 800 | 105000 | 725000 | 95 |
| 170M4419 | 170M4469 | 170M4519 | 170M4569 | | ‡900 | 155000 | ‡850000 | 100 |
| 170M5408 | 170M5458 | 170M5508 | 170M5558 | | 400 | 11000 | 74000 | 65 |
| 170M5409 | 170M5459 | 170M5509 | 170M5559 | | 450 | 15500 | 105000 | 70 |
| 170M5410 | 170M5460 | 170M5510 | 170M5560 | | 500 | 21500 | 145000 | 75 |
| 170M5411 | 170M5461 | 170M5511 | 170M5561 | | 550 | 28000 | 190000 | 80 |
| 170M5412 | 170M5462 | 170M5512 | 170M5562 | | 630 | 41000 | 275000 | 90 |
| 170M5413 | 170M5463 | 170M5513 | 170M5563 | 2 | 700 | 60500 | 405000 | 95 |
| 170M5414 | 170M5464 | 170M5514 | 170M5564 | | 800 | 86000 | 575000 | 105 |
| 170M5415 | 170M5465 | 170M5515 | 170M5565 | | 900 | 125000 | 840000 | 110 |
| 170M5416 | 170M5466 | 170M5516 | 170M5566 | | 1000 | 180000 | 1250000 | 115 |
| 170M5417 | 170M5467 | 170M5517 | 170M5567 | | 1100 | 245000 | 1600000 | 120 |
| 170M5418 | 170M5468 | 170M5518 | 170M5568 | | 1250 | 365000 | 2400000 | 130 |
| 170M6408 | 170M6458 | 170M6508 | 170M6558 | | 500 | 14000 | 95000 | 95 |
| 170M6409 | 170M6459 | 170M6509 | 170M6559 | | 550 | 19500 | 135000 | 100 |
| 170M6410 | 170M6460 | 170M6510 | 170M6560 | | 630 | 31000 | 210000 | 105 |
| 170M6411 | 170M6461 | 170M6511 | 170M6561 | | 700 | 44500 | 300000 | 110 |
| 170M6412 | 170M6462 | 170M6512 | 170M6562 | | 800 | 69500 | 465000 | 115 |
| 170M6413 | 170M6463 | 170M6513 | 170M6563 | | 900 | 100000 | 670000 | 120 |
| 170M6414 | 170M6464 | 170M6514 | 170M6564 | 3 | 1000 | 140000 | 945000 | 125 |
| 170M6415 | 170M6465 | 170M6515 | 170M6565 | | 1100 | 190000 | 1300000 | 130 |
| 170M6416 | 170M6466 | 170M6516 | 170M6566 | | 1250 | 290000 | 1950000 | 140 |
| 170M6417 | 170M6467 | 170M6517 | 170M6567 | | 1400 | 370000 | 2450000 | 155 |
| 170M6418 | 170M6468 | 170M6518 | 170M6568 | | 1500 | 460000 | 3100000 | 160 |
| 170M6419 | 170M6469 | 170M6519 | 170M6569 | | 1600 | 580000 | 3900000 | 160 |
| 170M6420 | 170M6470 | 170M6520 | 170M6570 | | †1800 | 880000 | †5250000 | 165 |
| 170M6421 | 170M6471 | 170M6521 | 170M6571 | | ‡2000 | 1150000 | ‡6350000 | 175 |

†Rated voltage (IEC) 600V.
‡Rated voltage (IEC) 550V.
• Watts loss provided at rated current.
• Microswitch indicator ordered separately. See accessories on pages 212-213.
• For fuse curves see pages 158 and 159.

# Square Body US Style — 690V/700V (IEC): 40-2000A

## 690V/700V (IEC) 40-2000A

### Specifications

**Description:** Square body US style high speed fuses.

**Dimensions:** See dimensions illustration.

**Ratings:**

Volts: — 690Vac (IEC)
— 700Vac (UL)

Amps: — 40-200A

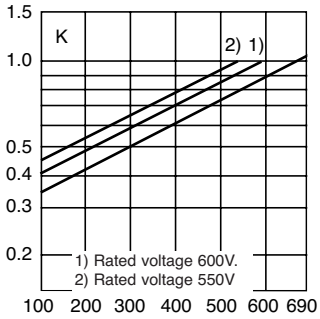
IR: — 200kA RMS Sym.

**Agency Information:** CE, Designed and tested to IEC 60269: Part 4. UL Recognized E125085.JFHR2, CSA Certified: Class 53787, File 1422-30.

### Electrical Characteristics

#### Total Clearing $I^2t$

The total clearing $I^2t$ at rated voltage and at power factor of 15% are given in the electrical characteristics. For other voltages, the clearing $I^2t$ is found by multiplying by correction factor, K, given as a function of applied working voltage, $E_g$, (rms).

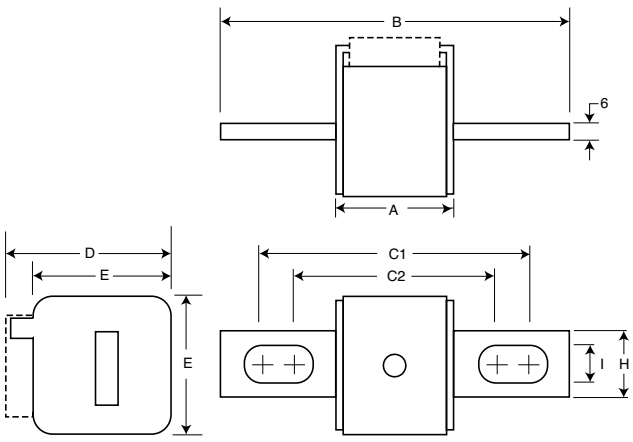



#### Dimensions - mm

Type -FU/-, -FKE/-, FU/115-, -FKE/115

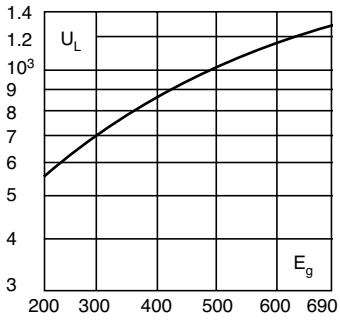
| Size | A | B | B** | C1 | C1** | C2 | C2** | D | E | H | I |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1* | 50 | 110 | 148 | 85 | 123 | 72 | 110 | 59 | 45 | 20 | 10 |
| 1 | 50 | 136 | 157 | 104 | 126 | 78 | 100 | 69 | 53 | 25 | 14 |
| 2 | 50 | 135 | 159 | 105 | 125 | 78 | 99 | 77 | 61 | 25 | 14 |
| 3 | 51 | 135 | 155 | 106 | 125 | 77 | 97 | 92 | 76 | 36 | 16 |

**Valid for fuses type -FU/115 & -FKE/115.
1mm = 0.0394" / 1" = 25.4mm



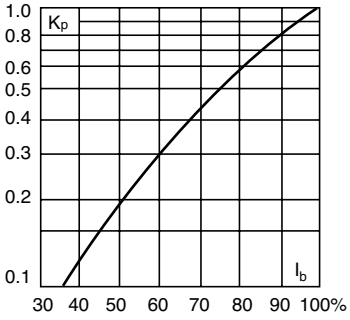

#### Arc Voltage

This curve gives the peak arc voltage, $U_L$, which may appear across the fuse during its operation as a function of theapplied working voltage, $E_g$, (rms) at a power factor of 15%.




#### Power Losses

Watts loss at rated current is given in the electrical characteristics. The curve allows the calculation of the power losses at load currents lower than the rated current. The correction factor, $K_p$, is given as a function of the RMS load current, $I_b$, in % of the rated current.




#### Features and Benefits

- Excellent DC performance
- Low arc voltage and low energy let-through ($I^2t$)
- Low watts loss
- Superior cycling capability

#### Typical Applications

- DC Common bus
- DC Drives
- Power converters/rectifiers
- Reduced voltage starters

#### For Other Voltage Ratings in This Body Style

• See pages 178 (1000V) and 191 (1250V/1300V)

# Square Body US style — 690V/700V (IEC): 40-2000A

## Catalog Numbers

| Catalog Numbers | | | | Size | Electrical Characteristics | | | |
|---|---|---|---|---|---|---|---|---|
| -FU/- Without Indicator | -FKE/- Type K Indicator for Micro | -FU/115 Without Indicator | -FKE/115 Type K Indicator for Micro | | Rated Current RMS-Amps | $I^2t$ ($A^2$ Sec) Pre-arc | $I^2t$ ($A^2$ Sec) Clearing at 660V | Watts Loss |
| 170M3608 | 170M3658 | 170M3708 | 170M3758 | | 40 | 40 | 270 | 9 |
| 170M3609 | 170M3659 | 170M3709 | 170M3759 | | 50 | 77 | 515 | 11 |
| 170M3610 | 170M3660 | 170M3710 | 170M3760 | | 63 | 115 | 770 | 14 |
| 170M3611 | 170M3661 | 170M3711 | 170M3761 | | 80 | 185 | 1250 | 18 |
| 170M3612 | 170M3662 | 170M3712 | 170M3762 | | 100 | 360 | 2450 | 21 |
| 170M3613 | 170M3663 | 170M3713 | 170M3763 | | 125 | 550 | 3700 | 26 |
| 170M3614 | 170M3664 | 170M3714 | 170M3764 | | 160 | 1100 | 7500 | 30 |
| 170M3615 | 170M3665 | 170M3715 | 170M3765 | | 200 | 2200 | 15000 | 35 |
| 170M3616 | 170M3666 | 170M3716 | 170M3766 | 1* | 250 | 4200 | 28500 | 40 |
| 170M3617 | 170M3667 | 170M3717 | 170M3767 | | 315 | 7000 | 46500 | 50 |
| 170M3618 | 170M3668 | 170M3718 | 170M3768 | | 350 | 10000 | 68500 | 55 |
| 170M3619 | 170M3669 | 170M3719 | 170M3769 | | 400 | 15000 | 105000 | 60 |
| 170M3620 | 170M3670 | 170M3720 | 170M3770 | | 450 | 21000 | 140000 | 65 |
| 170M3621 | 170M3671 | 170M3721 | 170M3771 | | 500 | 27000 | 180000 | 70 |
| 170M3622 | 170M3672 | 170M3722 | 170M3772 | | 550 | 34000 | 230000 | 75 |
| 170M3623 | 170M3673 | 170M3723 | 170M3773 | | 630 | 48500 | 325000 | 80 |
| 170M4608 | 170M4658 | 170M4708 | 170M4758 | | 200 | 1650 | 11500 | 45 |
| 170M4609 | 170M4659 | 170M4709 | 170M4759 | | 250 | 3100 | 21000 | 55 |
| 170M4610 | 170M4660 | 170M4710 | 170M4760 | | 315 | 6200 | 42000 | 58 |
| 170M4611 | 170M4661 | 170M4711 | 170M4761 | | 350 | 8500 | 59000 | 60 |
| 170M4612 | 170M4662 | 170M4712 | 170M4762 | | 400 | 13500 | 91500 | 65 |
| 170M4613 | 170M4663 | 170M4713 | 170M4763 | 1 | 450 | 17000 | 120000 | 70 |
| 170M4614 | 170M4664 | 170M4714 | 170M4764 | | 500 | 25000 | 170000 | 72 |
| 170M4615 | 170M4665 | 170M4715 | 170M4765 | | 550 | 34000 | 230000 | 75 |
| 170M4616 | 170M4666 | 170M4716 | 170M4766 | | 630 | 52000 | 350000 | 80 |
| 170M4617 | 170M4667 | 170M4717 | 170M4767 | | 700 | 69500 | 465000 | 85 |
| 170M4618 | 170M4668 | 170M4718 | 170M4768 | | 800 | 105000 | 725000 | 95 |
| 170M4619 | 170M4669 | 170M4719 | 170M4769 | | ‡900 | 155000 | ‡850000 | 100 |
| 170M5608 | 170M5658 | 170M5708 | 170M5758 | | 400 | 11000 | 74000 | 65 |
| 170M5609 | 170M5659 | 170M5709 | 170M5759 | | 450 | 15500 | 105000 | 70 |
| 170M5610 | 170M5660 | 170M5710 | 170M5760 | | 500 | 21500 | 145000 | 75 |
| 170M5611 | 170M5661 | 170M5711 | 170M5761 | | 550 | 28000 | 190000 | 80 |
| 170M5612 | 170M5662 | 170M5712 | 170M5762 | | 630 | 41000 | 275000 | 90 |
| 170M5613 | 170M5663 | 170M5713 | 170M5763 | 2 | 700 | 60500 | 405000 | 95 |
| 170M5614 | 170M5664 | 170M5714 | 170M5764 | | 800 | 86000 | 575000 | 105 |
| 170M5615 | 170M5665 | 170M5715 | 170M5765 | | 900 | 125000 | 840000 | 110 |
| 170M5616 | 170M5666 | 170M5716 | 170M5766 | | 1000 | 180000 | 1250000 | 115 |
| 170M5617 | 170M5667 | 170M5717 | 170M5767 | | 1100 | 245000 | 1600000 | 120 |
| 170M5618 | 170M5668 | 170M5718 | 170M5768 | | 1250 | 365000 | 2400000 | 130 |
| 170M6608 | 170M6658 | 170M6708 | 170M6758 | | 500 | 14000 | 95000 | 95 |
| 170M6609 | 170M6659 | 170M6709 | 170M6759 | | 550 | 19500 | 135000 | 100 |
| 170M6610 | 170M6660 | 170M6710 | 170M6760 | | 630 | 31000 | 210000 | 105 |
| 170M6611 | 170M6661 | 170M6711 | 170M6761 | | 700 | 44500 | 300000 | 110 |
| 170M6612 | 170M6662 | 170M6712 | 170M6762 | | 800 | 69500 | 465000 | 115 |
| 170M6613 | 170M6663 | 170M6713 | 170M6763 | | 900 | 100000 | 670000 | 120 |
| 170M6614 | 170M6664 | 170M6714 | 170M6764 | | 1000 | 140000 | 945000 | 125 |
| 170M6615 | 170M6665 | 170M6715 | 170M6765 | 3 | 1100 | 190000 | 1300000 | 130 |
| 170M6616 | 170M6666 | 170M6716 | 170M6766 | | 1250 | 290000 | 1950000 | 140 |
| 170M6617 | 170M6667 | 170M6717 | 170M6767 | | 1400 | 370000 | 2450000 | 155 |
| 170M6618 | 170M6668 | 170M6718 | 170M6768 | | 1500 | 460000 | 3100000 | 160 |
| 170M6619 | 170M6669 | 170M6719 | 170M6769 | | 1600 | 580000 | 3900000 | 160 |
| 170M6620 | 170M6670 | 170M6720 | 170M6770 | | †1800 | 880000 | †5250000 | 165 |
| 170M6621 | 170M6671 | 170M6721 | 170M6771 | | ‡2000 | 1150000 | ‡6350000 | 175 |

†Rated voltage (IEC) 600V.
‡Rated voltage (IEC) 550V.
• Watts loss provided at rated current.
• Microswitch indicator ordered separately. See accessories on pages 212-213.
• For fuse curves see pages 158 and 159.

# Square Body French Style — 690V/700V (IEC/UL): 40-1500A

## 690V/700V (IEC/UL) 40-1500A

**Specifications**

**Description:** Square body French style high speed fuses.

**Dimensions:** See dimensions illustration.

**Ratings:**

Volts: — 690Vac (IEC)
— 700Vac (UL)

Amps: — 40-1500A

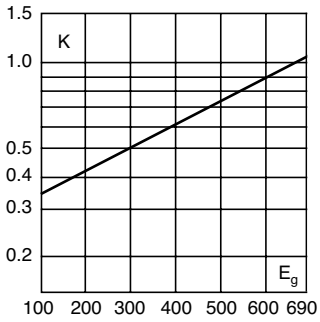
IR: — 200kA RMS Sym.

**Agency Information:** CE, Designed and tested to IEC 60269: Part 4. UL Recognized E125085.JFHR2 & CSA Component Acceptance file Class 1422-30, (53787) on Sizes (1, 2, 3) only

### Electrical Characteristics

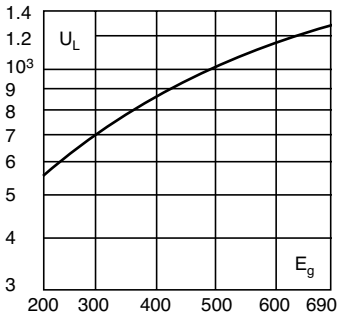
### Total Clearing I²t

The total clearing I²t at rated voltage and at power factor of 15% are given in the electrical characteristics. For other voltages, the clearing I²t is found by multiplying by correction factor, K, given as a function of applied working voltage, $E_g$, (rms).



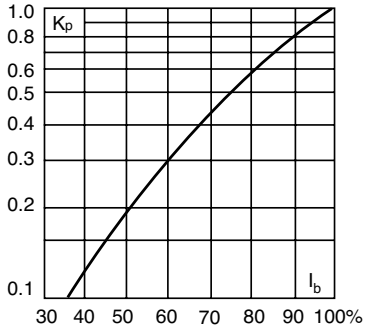

### Arc Voltage

This curve gives the peak arc voltage, $U_L$, which may appear across the fuse during its operation as a function of theapplied working voltage, $E_g$, (rms) at a power factor of 15%.




### Power Losses

Watts loss at rated current is given in the electrical characteristics. The curve allows the calculation of the power losses at load currents lower than the rated current. The correction factor, $K_p$, is given as a function of the RMS load current, $I_b$, in % of the rated current.




### Features and Benefits

- Excellent DC performance
- Low arc voltage and low energy let-through (I²t)
- Low watts loss
- Superior cycling capability

### Typical Applications

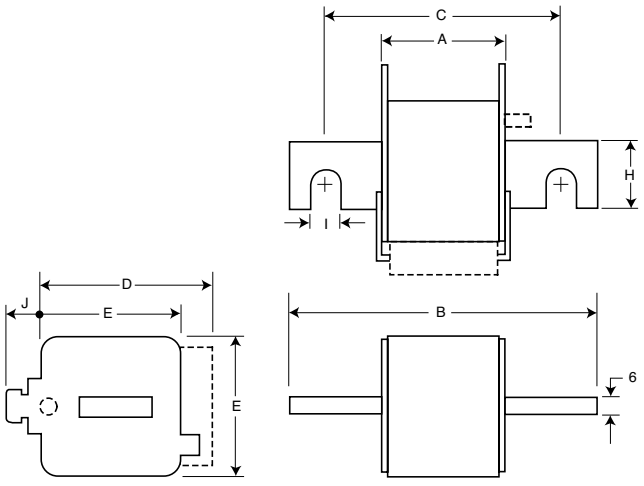
- DC Common bus
- DC Drives
- Power converters/rectifiers
- Reduced voltage starters

### Dimensions - mm

Type -E/-, -EKN/-

| Size | A | B | C | D | E | H | I | J |
|---|---|---|---|---|---|---|---|---|
| 1* | 50 | 102 | 76 | 59 | 45 | 18 | 9 | 13 |
| 1 | 50 | 111 | 86 | 69 | 53 | 25 | 11 | 11 |
| 2 | 50 | 126 | 91 | 77 | 61 | 30 | 13 | 12 |
| 3 | 51 | 126 | 91 | 92 | 76 | 36 | 13 | 13 |

1mm = 0.0394" / 1" = 25.4mm



# Square Body French Style — 690V/700V (IEC/UL): 40-1500A

## Catalog Numbers

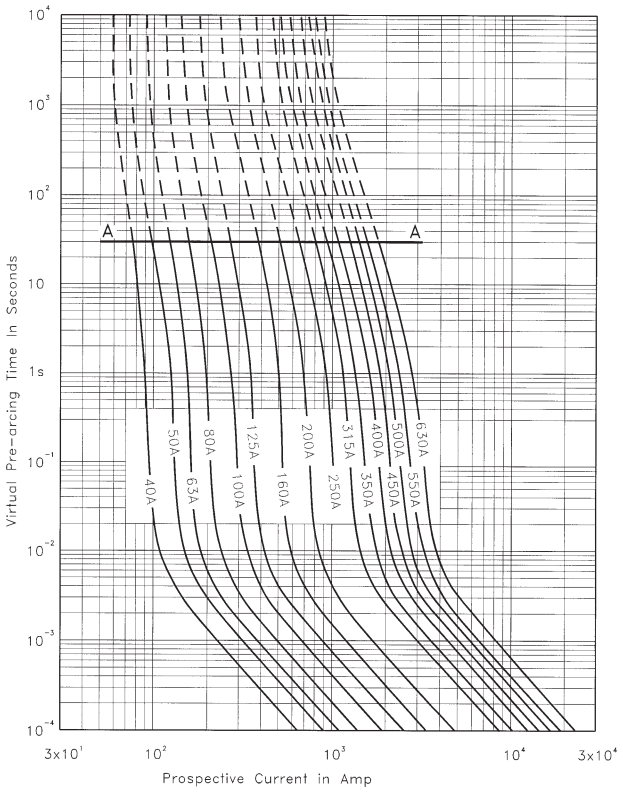
| Catalog Numbers | | | Electrical Characteristics | | | |
|---|---|---|---|---|---|---|
| -E/ Type T Indicator For Micro | -EKN/- Type K Indicator for Micro | Size | Rated Current RMS-Amps | I2t (A2 Sec) Pre-arc | I2t (A2 Sec) Clearing at 660V | Watts Loss |
| 170M3308 | 170M3358 | | 40 | 40 | 270 | 9 |
| 170M3309 | 170M3359 | | 50 | 77 | 515 | 11 |
| 170M3310 | 170M3360 | | 63 | 115 | 770 | 14 |
| 170M3311 | 170M3361 | | 80 | 185 | 1250 | 18 |
| 170M3312 | 170M3362 | | 100 | 360 | 2450 | 21 |
| 170M3313 | 170M3363 | | 125 | 550 | 3700 | 26 |
| 170M3314 | 170M3364 | | 160 | 1100 | 7500 | 30 |
| 170M3315 | 170M3365 | 1* | 200 | 2200 | 15000 | 35 |
| 170M3316 | 170M3366 | | 250 | 4200 | 28500 | 40 |
| 170M3317 | 170M3367 | | 315 | 7000 | 46500 | 50 |
| 170M3318 | 170M3368 | | 350 | 10000 | 68500 | 55 |
| 170M3319 | 170M3369 | | 400 | 15000 | 105000 | 60 |
| 170M3320 | 170M3370 | | 450 | 21000 | 140000 | 65 |
| 170M3321 | 170M3371 | | 500 | 27000 | 180000 | 70 |
| 170M4308 | 170M4358 | | 200 | 1650 | 11500 | 45 |
| 170M4309 | 170M4359 | | 250 | 3100 | 21000 | 55 |
| 170M4310 | 170M4360 | | 315 | 6200 | 42000 | 58 |
| 170M4311 | 170M4361 | | 350 | 8500 | 59000 | 60 |
| 170M4312 | 170M4362 | | 400 | 13500 | 91500 | 65 |
| 170M4313 | 170M4363 | 1 | 450 | 17000 | 120000 | 70 |
| 170M4314 | 170M4364 | | 500 | 25000 | 170000 | 72 |
| 170M4315 | 170M4365 | | 550 | 34000 | 230000 | 75 |
| 170M4316 | 170M4366 | | 630 | 52000 | 350000 | 80 |
| 170M4317 | 170M4367 | | 700 | 69500 | 465000 | 85 |
| 170M4318 | 170M4368 | | 800 | 105000 | 725000 | 95 |
| 170M5308 | 170M5358 | | 400 | 11000 | 74000 | 65 |
| 170M5309 | 170M5359 | | 450 | 15500 | 105000 | 70 |
| 170M5310 | 170M5360 | | 500 | 21500 | 145000 | 75 |
| 170M5311 | 170M5361 | | 550 | 28000 | 190000 | 80 |
| 170M5312 | 170M5362 | 2 | 630 | 41000 | 275000 | 90 |
| 170M5313 | 170M5363 | | 700 | 60500 | 405000 | 95 |
| 170M5314 | 170M5364 | | 800 | 86000 | 575000 | 105 |
| 170M5315 | 170M5365 | | 900 | 125000 | 840000 | 110 |
| 170M5316 | 170M5366 | | 1000 | 180000 | 1250000 | 115 |
| 170M6308 | 170M6358 | | 500 | 14000 | 95000 | 95 |
| 170M6309 | 170M6359 | | 550 | 19500 | 135000 | 100 |
| 170M6310 | 170M6360 | | 630 | 31000 | 210000 | 105 |
| 170M6311 | 170M6361 | | 700 | 44500 | 300000 | 110 |
| 170M6312 | 170M6362 | | 800 | 69500 | 465000 | 115 |
| 170M6313 | 170M6363 | 3 | 900 | 100000 | 670000 | 120 |
| 170M6314 | 170M6364 | | 1000 | 140000 | 945000 | 125 |
| 170M6315 | 170M6365 | | 1100 | 190000 | 1300000 | 130 |
| 170M6316 | 170M6366 | | 1250 | 290000 | 1950000 | 140 |
| 170M6317 | 170M6367 | | 1400 | 370000 | 2450000 | 155 |
| 170M6318 | 170M6368 | | 1500 | 460000 | 3100000 | 160 |

- Watts loss provided at rated current.
- Microswitch indicator ordered separately. See accessories on pages 212-213.
- For fuse curves see pages 158 and 159.

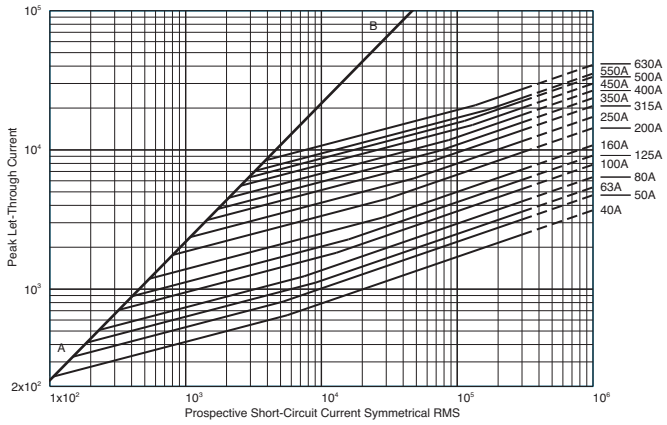
# Square Body, French Style - Size 1*, 1 — 690V/700V (IEC/UL): 40-2000A

## Size 1* — 40-630A: 690V

### Time-Current Curve

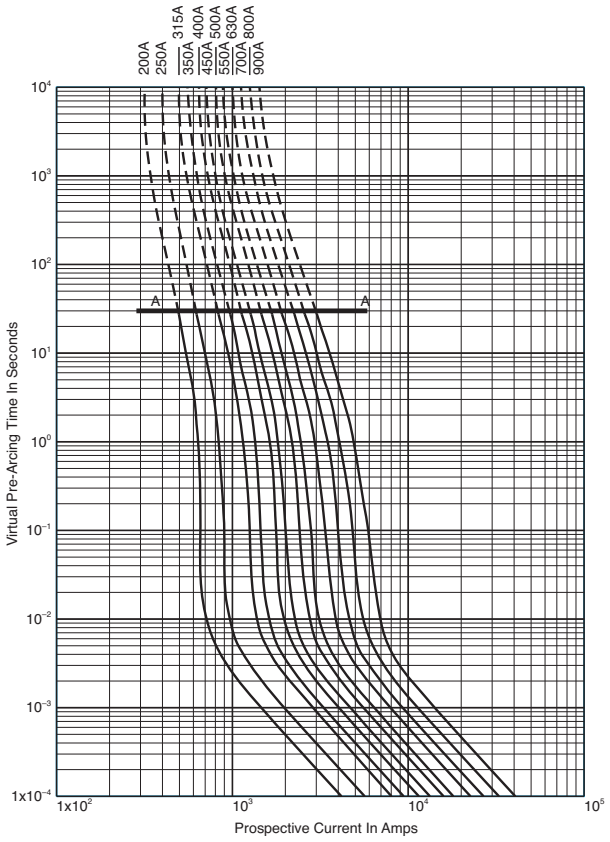



### Peak Let-Through Curve

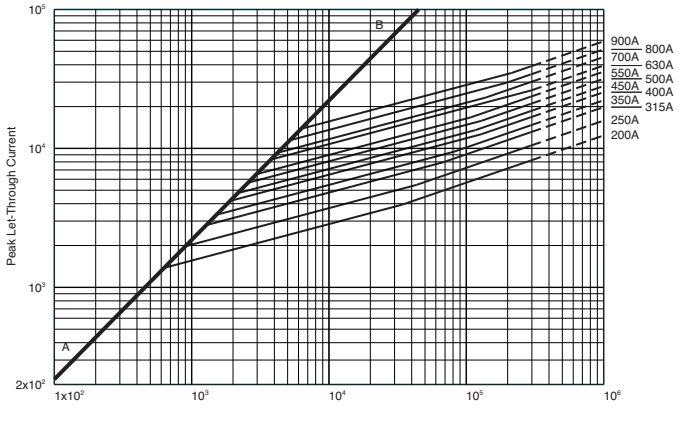



## Size 1 — 200-900A: 690V

### Time-Current Curve




### Peak Let-Through Curve




900 amp fuse is derated to 550V (IEC).

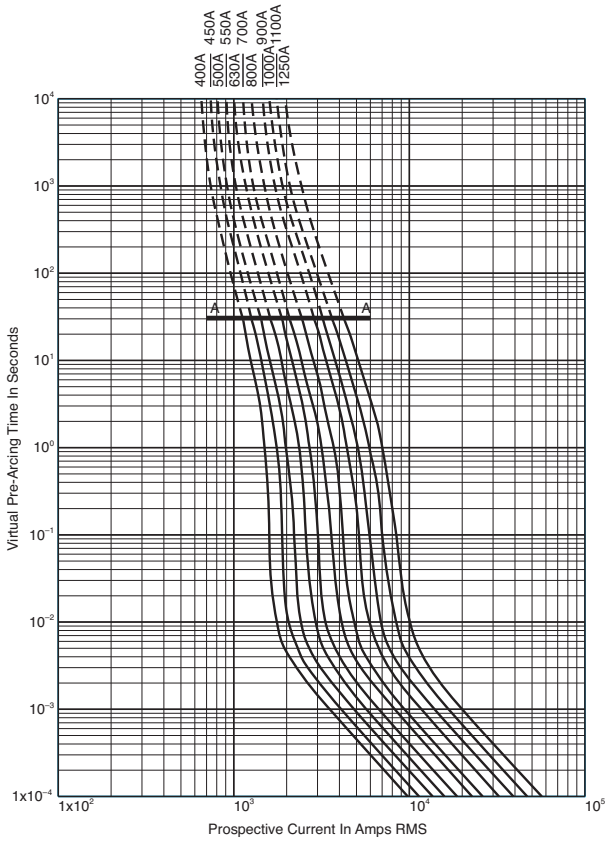
**Data Sheet: 17056314**

**Data Sheet: 17056316**

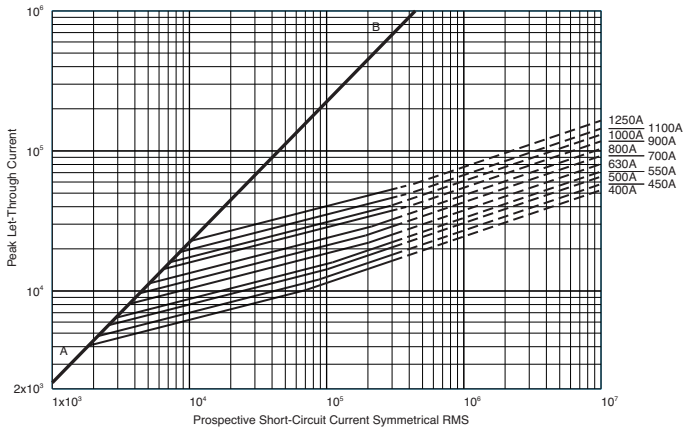
# Square Body, French Style - Size 2, 3 — 690V/700V (IEC/UL): 40-2000A

## Size 2 — 400-1250A: 690V

### Time-Current Curve



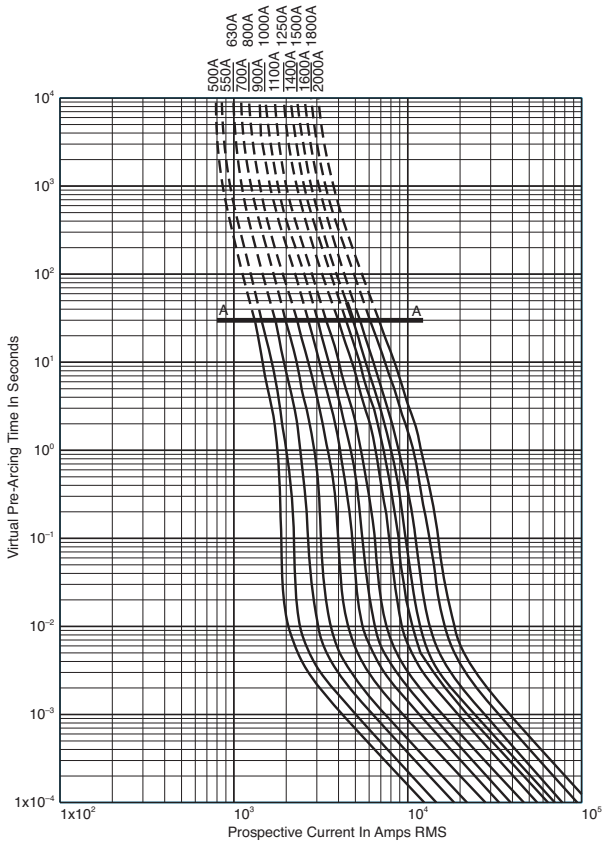

### Peak Let-Through Curve



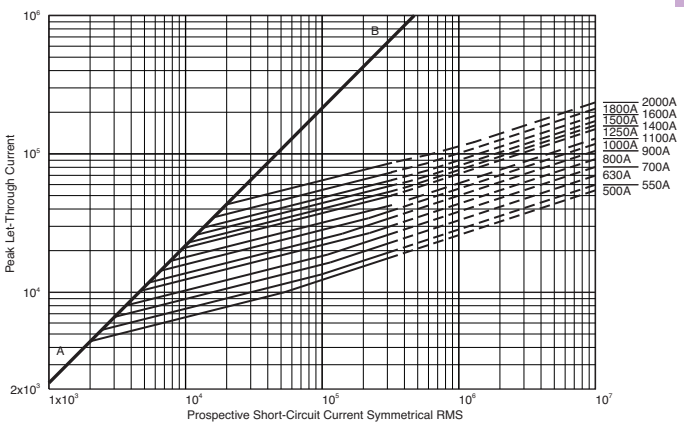

**Data Sheet: 17056318**

## Size 3 — 500-2000A: 690V

### Time-Current Curve




### Peak Let-Through Curve




1800A fuse is derated to 600V (IEC).
2000A fuse is derated to 550V (IEC).

**Data Sheet: 17056320**

# Square Body DIN 43 620 — 690V/700V (IEC/UL): 40-1000A

## 690V/700V (IEC/UL) 40-1000A

**Specifications**

**Description:** Square body DIN 43 620 blade style high speed fuses.

**Dimensions:** See dimensions illustration.

**Ratings:**

Volts: — 690Vac (IEC)
— 700Vac (UL)

Amps: — 40-1000A

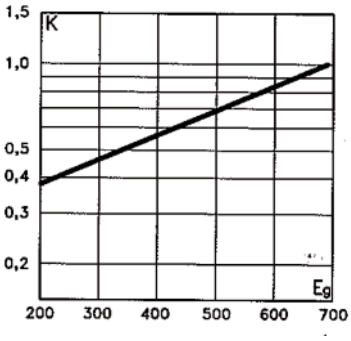
IR: — 200kA RMS Sym.

**Agency Information:** CE, Designed and tested to IEC 60269: Part 4. UL Recognized E125085.JFHR2.

### Electrical Characteristics

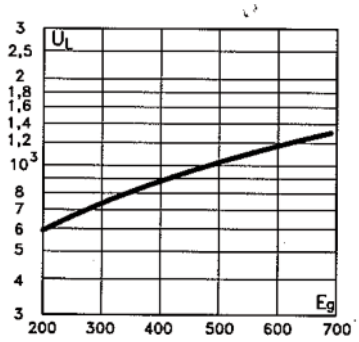
#### Total Clearing $I^2t$

The total clearing $I^2t$ at rated voltage and at power factor of 15% are given in the electrical characteristics. For other voltages, the clearing $I^2t$ is found by multiplying by correction factor, K, given as a function of applied working voltage, $E_g$, (rms).



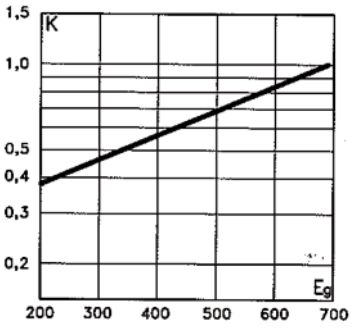

#### Arc Voltage

This curve gives the peak arc voltage, $U_L$, which may appear across the fuse during its operation as a function of theapplied working voltage, $E_g$, (rms) at a power factor of 15%.




#### Power Losses

Watts loss at rated current is given in the electrical characteristics. The curve allows the calculation of the power losses at load currents lower than the rated current. The correction factor, $K_p$, is given as a function of the RMS load current, $I_b$, in % of the rated current.




#### Features and Benefits

- Excellent DC performance
- Low arc voltage and low energy let-through ($I^2t$)
- Low watts loss
- Superior cycling capability

#### Typical Applications

- DC Common bus
- DC Drives
- Power converters/rectifiers
- Reduced voltage starters

**For Full Range Fuses in This Body Style**

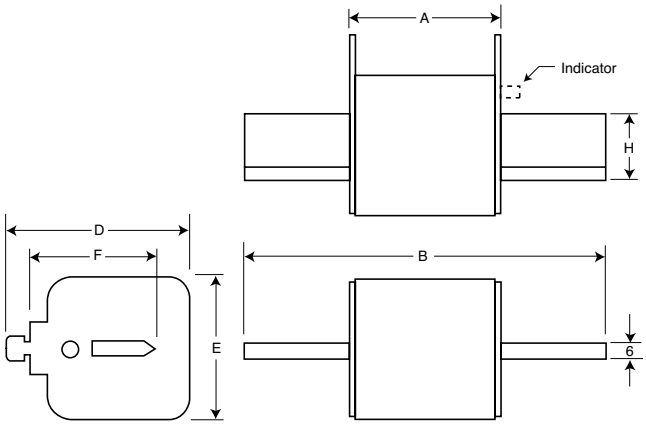
• See page 168

**Dimensions (mm)**

Type DIN 1*, DIN 2, DIN 3

| Size | A | B | D | E | F | H |
|---|---|---|---|---|---|---|
| 1* | 69 | 135 | 58 | 45 | 40 | 20 |
| 2 | 69 | 150 | 71 | 55 | 48 | 26 |
| 3 | 68 | 150 | 88 | 76 | 60 | 33 |

1mm = 0.0394" / 1" = 25.4mm



# Square Body DIN 43 620 — 690V/700V (IEC/UL): 40-600A

## Catalog Numbers

| Catalog Numbers DIN Type T Indicator for Micro | Size | Electrical Characteristics Rated Current RMS-Amps | I²t (A²Sec) Pre-arc | I²t (A²Sec) Clearing at 660V | Watts Loss |
|---|---|---|---|---|---|
| 170M3808D | | 40 | 40 | 285 | 4 |
| 170M3809D | | 50 | 78 | 550 | 4.5 |
| 170M3810D | | 63 | 120 | 850 | 6.5 |
| 170M3811D | | 80 | 185 | 1350 | 8.5 |
| 170M3812D | | 100 | 360 | 2600 | 10 |
| 170M3813D | | 125 | 550 | 3900 | 11 |
| 170M3814D | | 160 | 1150 | 8250 | 12 |
| 170M3815D | | 200 | 2300 | 16500 | 12.5 |
| 170M3816D | 1* | 250 | 4350 | 31000 | 16 |
| 170M3817D | | 315 | 7300 | 52000 | 20 |
| 170M3818D | | 350 | 10000 | 73000 | 21.5 |
| 170M3819D | | 400 | 16000 | 115000 | 60 |
| 170M4863D | | 450 | 21500 | 155000 | 26.3 |
| 170M4864D | | 500 | 27000 | 190000 | 28.5 |
| 170M4865D | | 550 | 33500 | 240000 | 33 |
| 170M4866D | | 630 | 48500 | 345000 | 37.5 |
| 170M4867D | | 700 | 69500 | 495000 | 39 |
| 170M5808D | | 400 | 11000 | 79000 | 29 |
| 170M5809D | | 450 | 16000 | 115000 | 32 |
| 170M5810D | | 500 | 21500 | 155000 | 34 |
| 170M5811D | | 550 | 29000 | 215000 | 36 |
| 170M5812D | 2 | 630 | 41000 | 295000 | 42 |
| 170M5813D | | 700 | 60500 | 430000 | 43 |
| 170M5814D | | 800 | 86000 | 610000 | 48 |
| 170M5820D | | 900 | 125000 | 895000 | 52 |
| 170M5816D | | 1000 | 180000 | 1300000 | 53 |
| 170M5817D | | 1100 | 245000 | 1750000 | 56 |
| 170M6808D | | 500 | 14000 | 99500 | 43 |
| 170M6809D | | 550 | 19500 | 140000 | 44 |
| 170M6810D | | 630 | 31000 | 220000 | 45 |
| 170M6811D | | 700 | 45000 | 320000 | 46 |
| 170M6812D | | 800 | 69500 | 490000 | 48 |
| 170M6813D | 3 | 900 | 100000 | 720000 | 50 |
| 170M6814D | | 1000 | 140000 | 985000 | 56 |
| 170M6892D | | 1100 | 190000 | 1400000 | 57 |
| 170M8554D | | 1250 | 300000 | 2150000 | 61 |
| 170M8555D | | 1400 | 380000 | 2700000 | 70 |
| 170M8556D | | 1500 | 470000 | 3350000 | 72 |
| 170M8557D | | 1600 | 585000 | 4150000 | 74 |

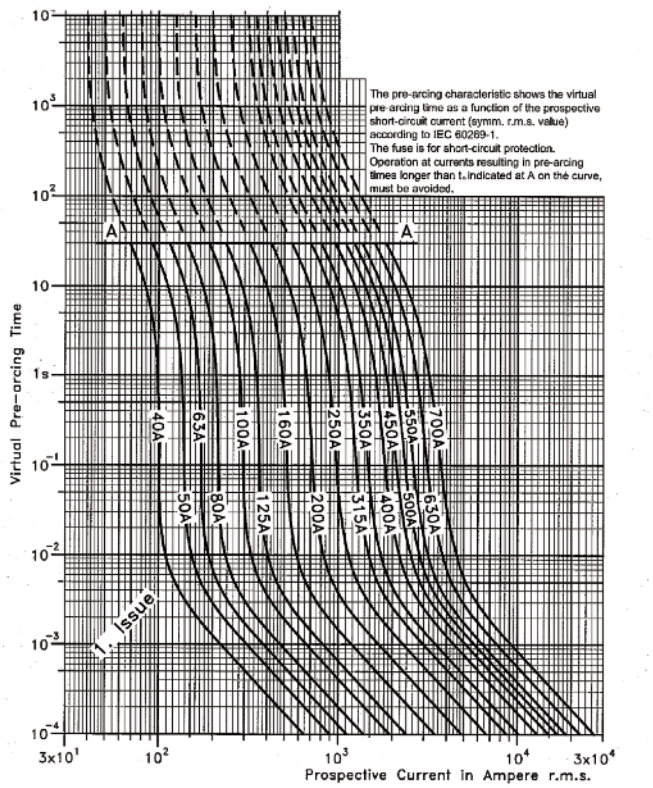
- Watts loss provided at rated current.
- Microswitch indicator ordered separately. See accessories on pages 212-213.
- For fuse curves see page 162.

### Rated Current

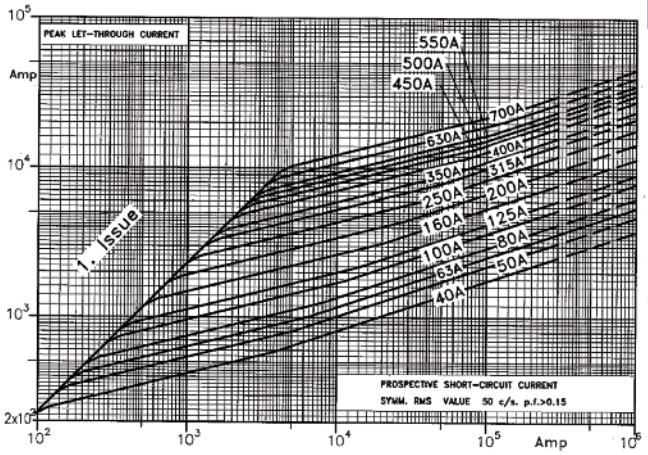
The rated current of this fuse range has been given with copper conductors that have a current density of 1.3A/mm² (IEC 60269-4). For conductor cross section according to IEC 60269-1, the fuses must be derated. Please contact Bussmann for application assistance.

## Size 1* — 40-630A: 690V

### Time-Current Curve




### Peak Let-Through Curve

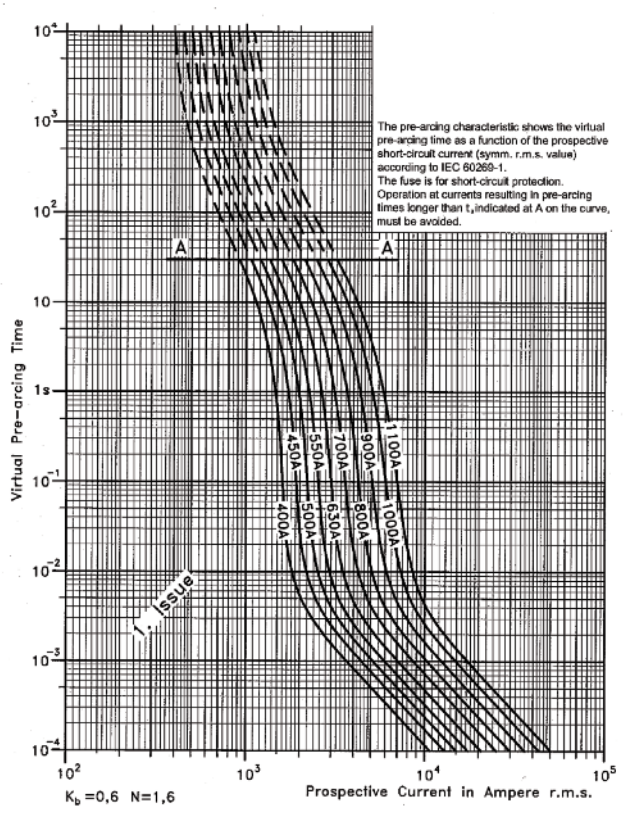



**Data Sheet: 17056314**

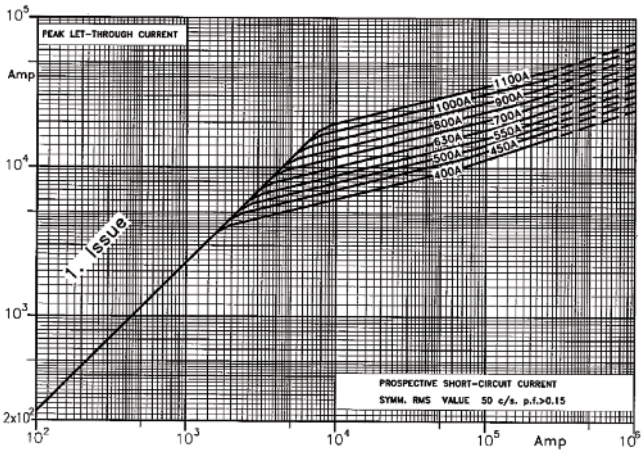
# Square Body DIN 43 620 — 690V/700V (IEC/UL): 40-1000A

## Size 2 — 400-1250A: 690V

### Time-Current Curve



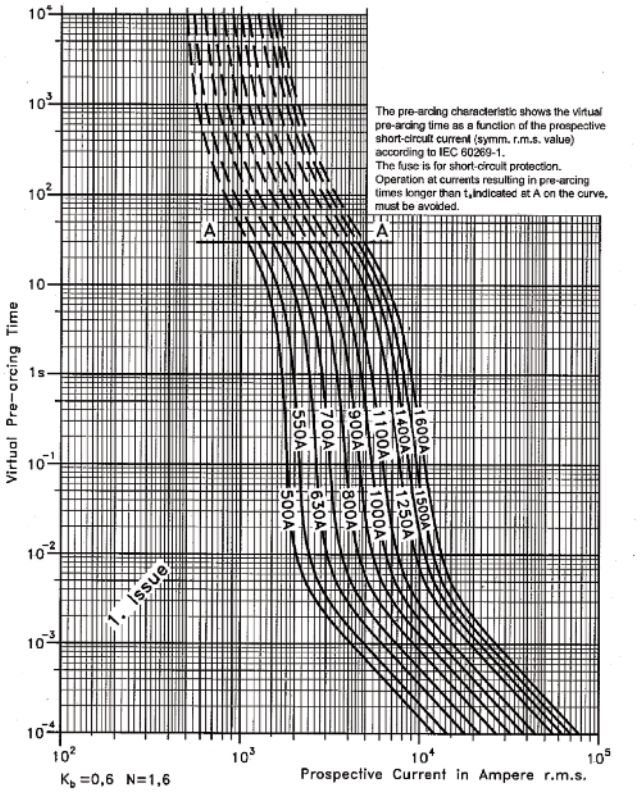

### Peak Let-Through Curve



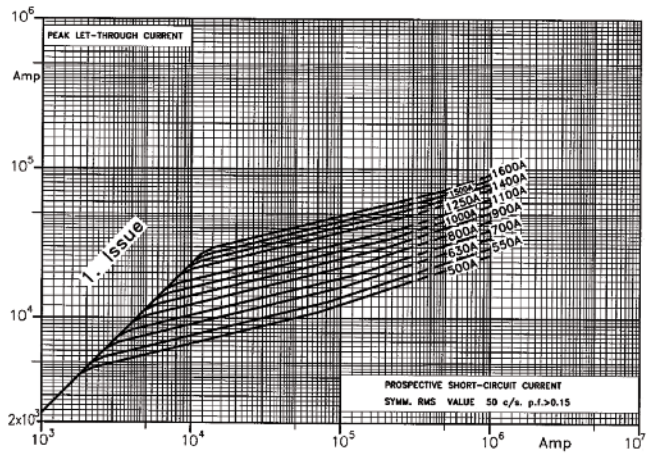

**Data Sheet: 17056318**

## Size 3 — 500-2000A: 690V

### Time-Current Curve




### Peak Let-Through Curve




**Data Sheet: 17056320**

# Square Body Flush End Contact — 690/700V (IEC/UL): 1000-4000A

## 690V (IEC) 1000-4000A

### Specifications

**Description:** Square body flush end contact high speed fuses.

**Dimensions:** See dimensions illustrations.

**Ratings:**

Volts: — 690Vac

Amps: — 1000-4000A

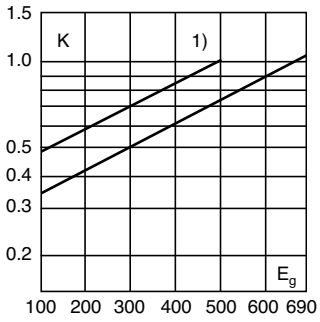
IR: — 200kA RMS Sym.

**Agency Information:** CE, Designed and tested to IEC 60269: Part 4. UL Recognized E125085.JFHR2.

### Electrical Characteristics

#### Total Clearing I²t

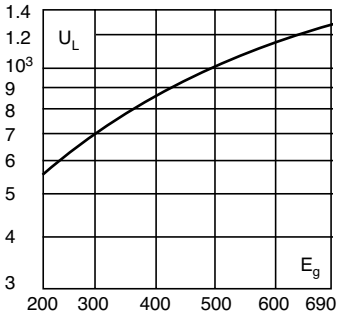
The total clearing I²t at rated voltage and at power factor of 15% are given in the electrical characteristics. For other voltages, the clearing I²t is found by multiplying by correction factor, K, given as a function of applied working voltage, $E_g$, (rms).




1) Rated voltage 500V

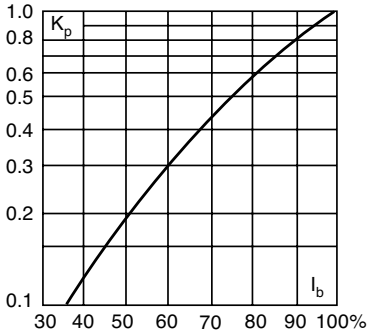
#### Arc Voltage

This curve gives the peak arc voltage, $U_L$, which may appear across the fuse during its operation as a function of the applied working voltage, $E_g$, (rms) at a power factor of 15%.




#### Power Losses

Watts loss at rated current is given in the electrical characteristics. The curve allows the calculation of the power losses at load currents lower than the rated current. The correction factor, $K_p$, is given as a function of the RMS load current, $I_b$, in % of the rated current.




### Features and Benefits

- Excellent DC performance
- Low arc voltage and low energy let-through (I²t)
- Low watts loss
- Superior cycling capability

### Typical Applications

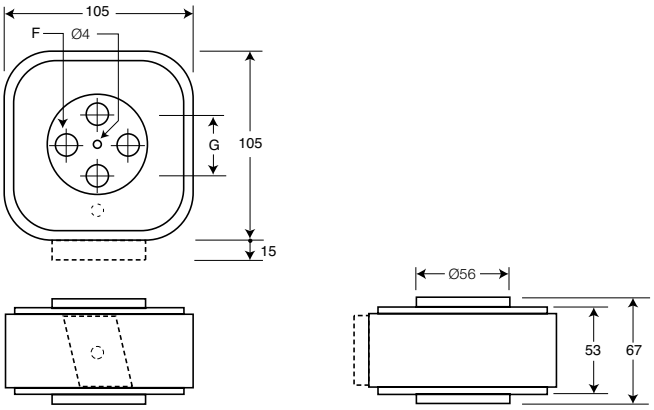
- DC Common bus
- DC Drives
- Power converters/rectifiers
- Reduced voltage starters

### Dimensions - mm

Type 4B/-, 4BKN/-, 4G/-, 4GKN/-

| Size | F (in) | G |
|---|---|---|
| 4B | M10 10 deep | 33 |
| 4G | ½" -13 UNC-2B 10 deep | 38 |

1mm = 0.0394" / 1" = 25.4mm




**For Other Voltage Ratings in This Body Style**

• See pages 182 (1000V) and 195 (1250V)

# Square Body Flush End Contact — 690V (IEC): 1000-4000A

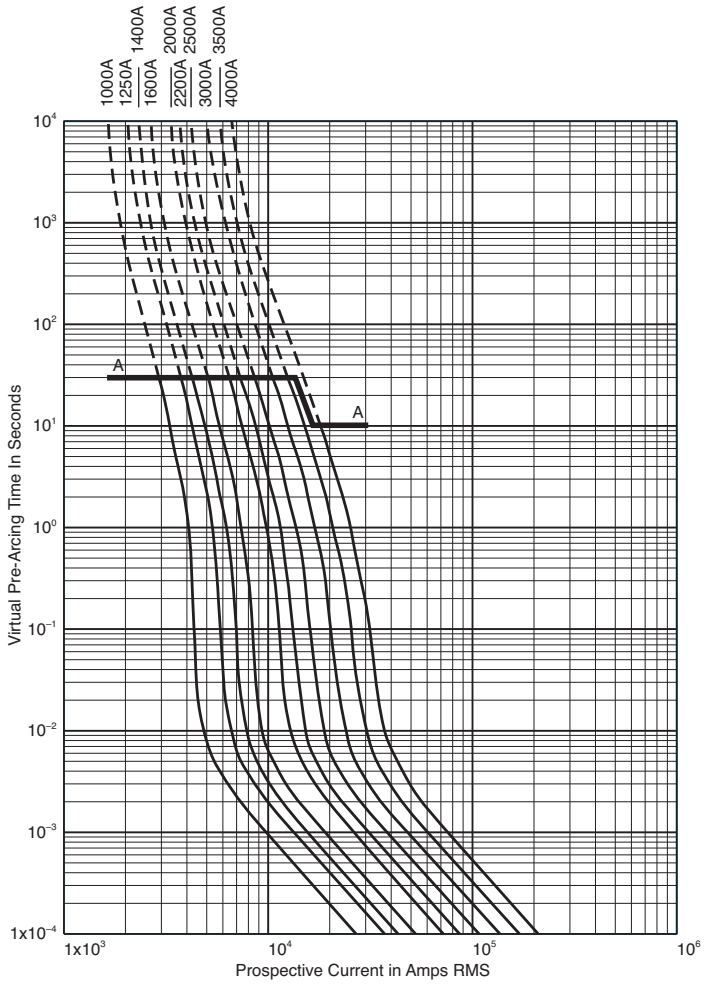
## Catalog Numbers

| Catalog Numbers | | | | Size | Electrical Characteristics | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Rated Current RMS | | $I^2t$ ($A^2$ Sec) | | Watts Loss | |
| -B/- Visual Indicator | -BKN/- Type K Indicator for Micro | -G/- Visual Indicator | -GKN/- Type K Indicator for Micro | | Norm. Cool. | Liquid Cool. | Pre-arc | Clearing at 660V | Norm. Cool. | Liquid Cool. |
| 170M7058 | 170M7078 | 170M7098 | 170M7118 | | 1000 | 1350 | 76000 | 505000 | 175 | 315 |
| 170M7059 | 170M7079 | 170M7099 | 170M7119 | | 1250 | 1700 | 145000 | 965000 | 195 | 355 |
| 170M7060 | 170M7080 | 170M7100 | 170M7120 | | 1400 | 1900 | 205000 | 1400000 | 205 | 375 |
| 170M7061 | 170M7081 | 170M7101 | 170M7121 | | 1600 | 2200 | 305000 | 2050000 | 220 | 405 |
| 170M7062 | 170M7082 | 170M7102 | 170M7122 | 4 | 2000 | 2700 | 600000 | 3950000 | 245 | 445 |
| 170M7063 | 170M7083 | 170M7103 | 170M7123 | | 2500 | 3400 | 1200000 | 7800000 | 275 | 495 |
| 170M7064 | 170M7084 | 170M7104 | 170M7124 | | 3000 | 4100 | 2000000 | 13500000 | 305 | 555 |
| 170M7065 | 170M7085 | 170M7105 | 170M7125 | | 3500 | 4700 | 3250000 | 22000000 | 325 | 585 |
| 170M7066 | 170M7086 | 170M7106 | 170M7126 | | †4000 | †5400 | 4700000 | †28000000 | 355 | 640 |

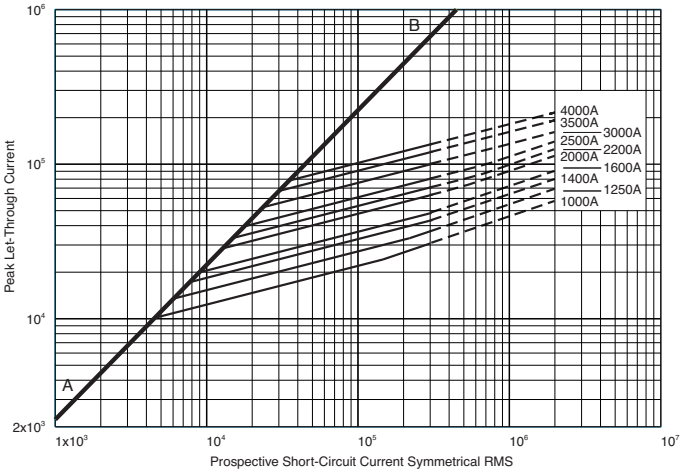
†Rated voltage (IEC) 500V.
• Watts loss provided at rated current.
• Liquid Cool. = Liquid cooling. Temperature on the terminals not to exceed 60°C.
• Microswitch indicator ordered separately. See accessories on pages 212-213.

## Size 4 — 1000-4000A: 690V

### Time-Current Curve




### Peak Let-Through Curve




4000A fuse is derated to 500V (IEC).

**Data Sheet: 17056328**

# Square Body Flush End Contact Size 23, 24 — 660V (IEC): 1000-7500A

## 660V (IEC) 1000-7500A

**Specifications**

**Description:** High speed square body fuses, for the protection of the power rectifier section of the equipment.

**Dimensions:** See dimensions illustrations.

**Ratings:**

Volts: — 660Vac

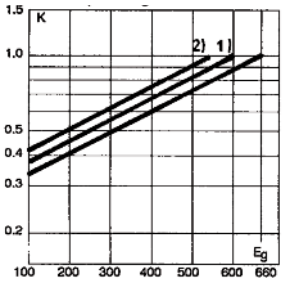
Amps: — 1000-4000A

IR: — 300kA RMS Sym.

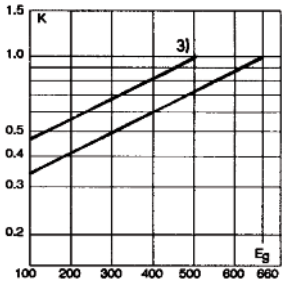
**Agency Information:** CE, Designed and tested to IEC 60269: Part 4. UL Recognized E125085.JFHR2.

### Electrical Characteristics

**Total clearing I²t**



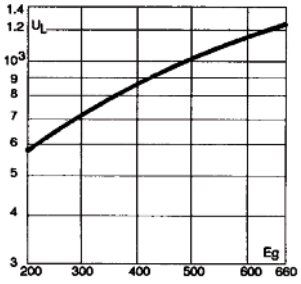

Size 23



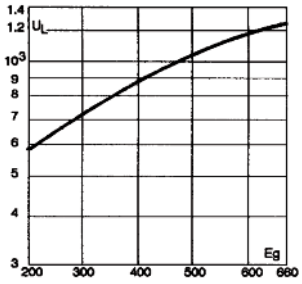

Size 24

The total clearing I²t at rated voltage and at power factor of 15% are given in the electrical characteristics. For other voltages, the clearing I²t is found by multiplying by correction factor, K, given as a function of applied working voltage, $E_g$, (rms).

**Arc Voltage**



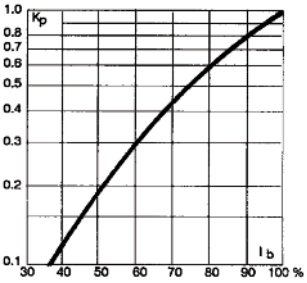

Size 23



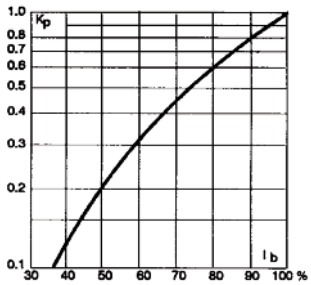

Size 24

This curve gives the peak arc voltage, $U_L$, which may appear across the fuse during its operation as a function of the applied working voltage $E_g$ , (rms) at a power factor of 15%.

**Power Losses**




Size 23




Size 24

Watts loss at rated current is given in the electrical characteristics. The curve allows the calculation of the power losses at load currents lower than the rated current. The correction factor, $K_p$, is given as a function of the RMS load current, $I_b$, in % of the rated current.

### Features and Benefits

- Low watts loss
- Superior cycling capability

### Typical Applications

- Power converters/rectifiers
- Reduced voltage starters

**For Other Voltage Ratings in This Body Style**

• See pages 185 (1000V) and 198 (1250V)

# Square Body Flush End Contact Size 23, 24 — 660V (IEC): 1000-7500A

| Fuse Size | Catalogue Number | | | | | | Electrical Characteristics | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | -BU/55 Visual Indicator | -BKE/55 Type K Indicator | -BKN/55 Type K Indicator | -GU/55 Visual Indicator | -GKE/55 Type K Indicator | -GKN/55 Type K Indicator | Rated Voltage (V) | Rated Current RMS-Amp | $I^2t$ ($A^2$Sec) Pre-arc | $I^2t$ ($A^2$Sec) Clearing at 660V | Watt Loss (W) |
| 23 | 170M6858 | 170M6898 | 170M6878 | 170M6918 | 170M6958 | 170M6938 | 660 | 1000 | 79,000 | 530,000 | 170.0 |
| | 170M6859 | 170M6899 | 170M6879 | 170M6919 | 170M6959 | 170M6939 | | 1100 | 95,000 | 635,000 | 185.0 |
| | 170M6860 | 170M6900 | 170M6880 | 170M6920 | 170M6960 | 170M6940 | | 1250 | 155,000 | 1,050,000 | 190.0 |
| | 170M6861 | 170M6901 | 170M6881 | 170M6921 | 170M6961 | 170M6941 | | 1400 | 200,000 | 1,350,000 | 210.0 |
| | 170M6862 | 170M6902 | 170M6882 | 170M6922 | 170M6962 | 170M6942 | | 1500 | 240,000 | 1,650,000 | 215.0 |
| | 170M6863 | 170M6903 | 170M6883 | 170M6923 | 170M6963 | 170M6943 | | 1600 | 315,000 | 2,150,000 | 220.0 |
| | 170M6864 | 170M6904 | 170M6884 | 170M6924 | 170M6964 | 170M6944 | | 1800 | 450,000 | 3,050,000 | 230.0 |
| | 170M6865 | 170M6905 | 170M6885 | 170M6925 | 170M6965 | 170M6945 | | 2000 | 625,000 | 4,200,000 | 240.0 |
| | 170M6866 | 170M6906 | 170M6886 | 170M6926 | 170M6966 | 170M6946 | | 2200 | 805,000 | 5,400,000 | 255.0 |
| | 170M6867 | 170M6907 | 170M6887 | 170M6927 | 170M6967 | 170M6947 | | 2500 | 1,250,000 | 8,350,000 | 265.0 |
| | 170M6868 | 170M6908 | 170M6888 | 170M6928 | 170M6968 | 170M6948 | | 3000 | 2,250,000 | 15,500,000 | 285.0 |
| | 170M6869 | 170M6909 | 170M6889 | 170M6929 | 170M6969 | 170M6949 | 600 | 3500 | 3,450,000 | 21,000,000 | 315.0 |
| | 170M6870 | 170M6910 | 170M6890 | 170M6930 | 170M6970 | 170M6950 | 550 | 4000 | 5,000,000 | 27,500,000 | 340.0 |

Data Sheet: 170K6326

## Catalog Numbers:

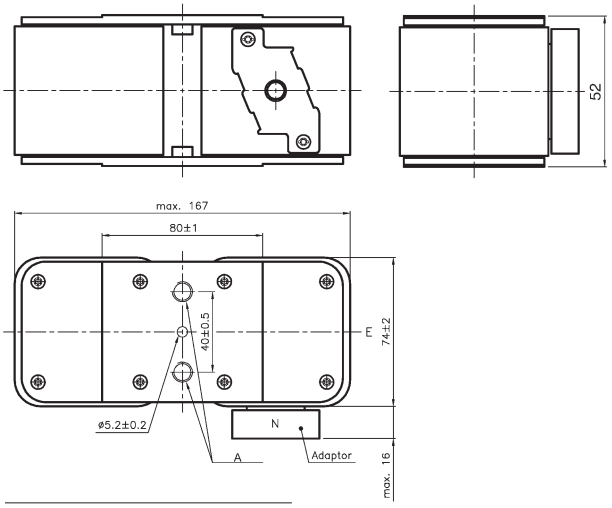
| Fuse Size | Catalogue Number | | | | Electrical Characteristics | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | -BU/60 without Indicator | -BKN/60 Type K Indicator | -GU/60 without Indicator | -GKN/60 Type K Indicator | Rated Voltage (V) | Rated Current RMS-Amp | $I^2t$ ($A^2$Sec) Pre-arc | $I^2t$ ($A^2$Sec) Clearing at 660V | Watts Loss (W) |
| 24 | 170M7138 | 170M7158 | 170M7198 | 170M7218 | 690 | 2000 | 340000 | 2300000 | 340 |
| | 170M7139 | 170M7159 | 170M7199 | 170M7219 | | 2500 | 650000 | 4350000 | 390 |
| | 170M7140 | 170M7160 | 170M7200 | 170M7220 | | 3000 | 1100000 | 7300000 | 430 |
| | 170M7141 | 170M7161 | 170M7201 | 170M7221 | | 3500 | 1800000 | 12000000 | 460 |
| | 170M7142 | 170M7162 | 170M7202 | 170M7222 | | 4000 | 2700000 | 18000000 | 490 |
| | 170M7143 | 170M7163 | 170M7203 | 170M7223 | | 4500 | 3800000 | 25500000 | 520 |
| | 170M7144 | 170M7164 | 170M7204 | 170M7224 | | 5000 | 5450000 | 36500000 | 540 |
| | 170M7145 | 170M7165 | 170M7205 | 170M7225 | | 5500 | 7400000 | 49500000 | 560 |
| | 170M7146 | 170M7166 | 170M7206 | 170M7226 | | 6000 | 9600000 | 64000000 | 580 |
| | 170M7147 | 170M7167 | 170M7207 | 170M7227 | | 6500 | 12500000 | 83000000 | 600 |
| | 170M7148 | 170M7168 | 170M7208 | 170M7228 | | 7000 | 15000000 | 100000000 | 630 |
| | 170M7149 | 170M7169 | 170M7209 | 170M7229 | 500 | 7500 | 18500000 | †93000000 | 660 |

† $A^2s$ @ 500V
Data Sheet: 170K6332

## Dimensions - mm

### Size 23

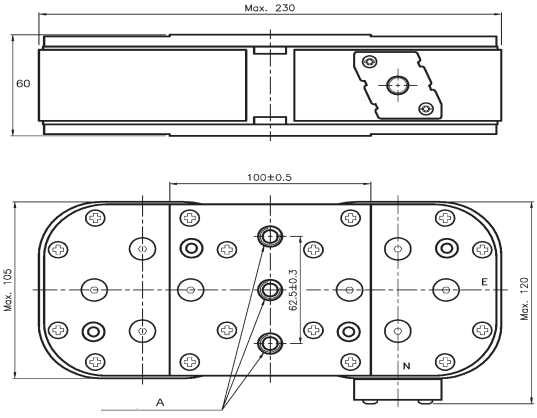
Type – BU/55, -BKE/55, -BKN/55, -GU/55, -GKE/55, -GKN/55




| Size | A |
|---|---|
| 23G | 2x2 M10 |
| 23B | 3/8" 16UNC-2B |

### Size 24

Type – BU/55, -BKE/55, -BKN/55, -GU/55, -GKE/55, -GKN/55

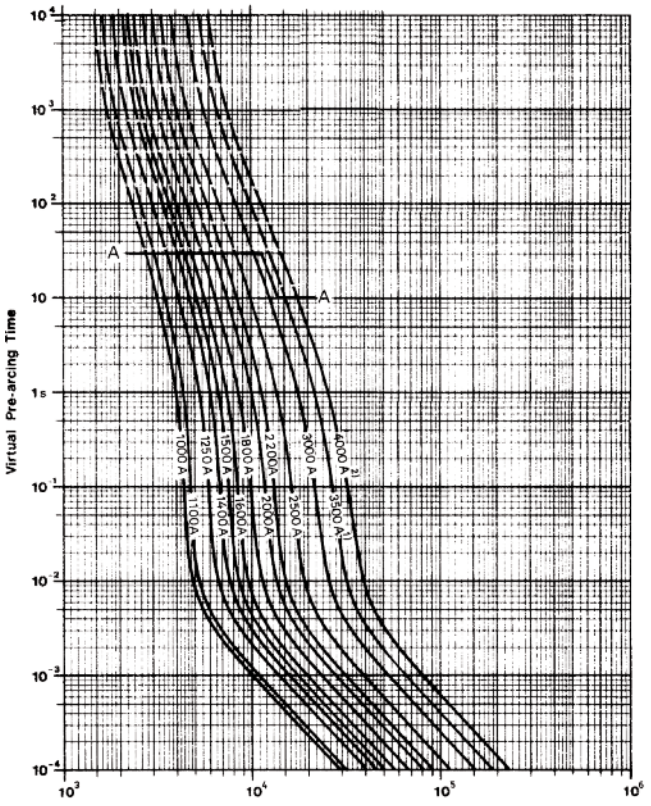



| Size | A |
|---|---|
| 24BKN | 2x3 M12 |
| 24GKN | 2x3 1/2" 16UNC-2B |

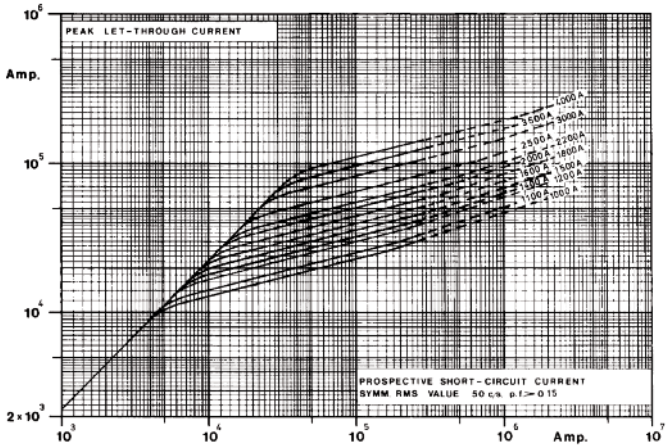
# Square Body Flush End Contact Size 23, 24 — 660V (IEC): 1000-7500A

## Size 23 — 10000-4000A: 660V

### Time-Current Curve



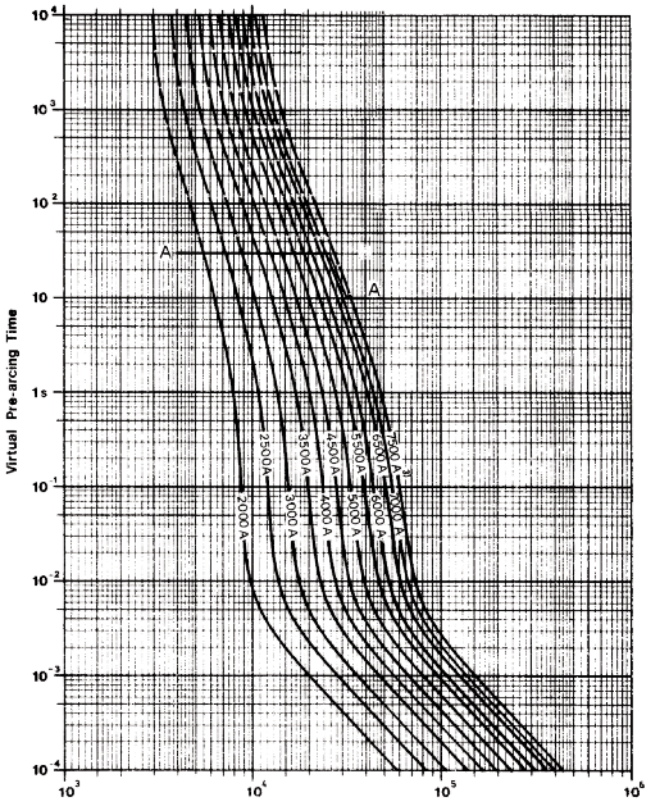

### Peak Let-Through Curve



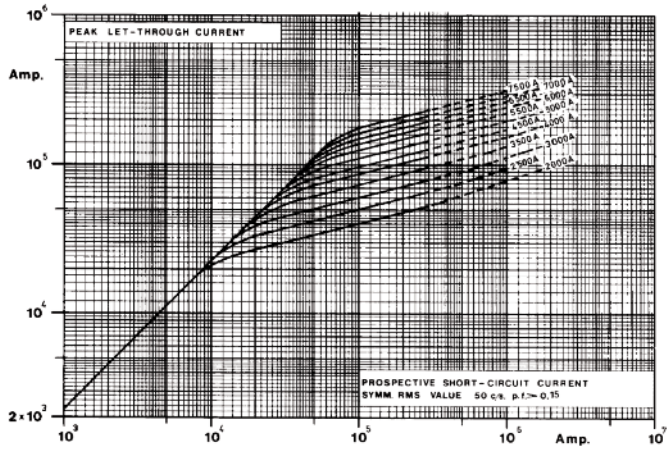

**Data Sheet: Available upon request**

## Size 24 — 2000-7500A: 660V

### Time-Current Curve




### Peak Let-Through Curve




**Data Sheet: Available upon request**

# Square Body DIN 43 620 — 690V (IEC): 10-800A Class gR — Full Range Fuses

## 690V (IEC) 10-800A

**Specifications**

**Description:** Square body DIN 43 620 blade style high speed fuses.

**Dimensions:** See dimensions illustration.

**Ratings:**

Volts: — 690Vac (IEC)

Amps: — 10-800A

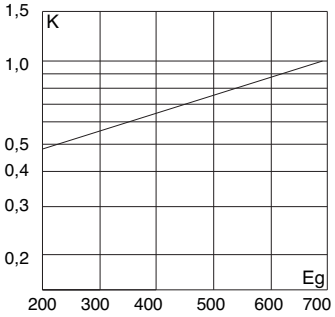
IR: — 300kA RMS Sym.

**Agency Information:** CE, Designed and tested to IEC 60269: Part 4. UL Recognized E125085.JFHR2.

**Electrical Characteristics**

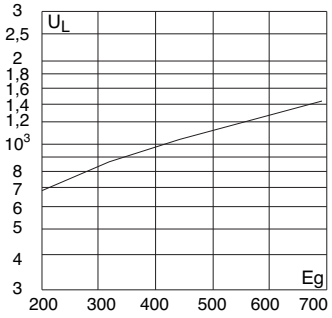
### Total clearing $I^2t$

The total clearing $I^2t$ at rated voltage and at power factor of 15% are given in the electrical characteristics. For other voltages, the clearing $I^2t$ is found by multiplying by correction factor, K, given as a function of applied working voltage, $E_g$, (rms).



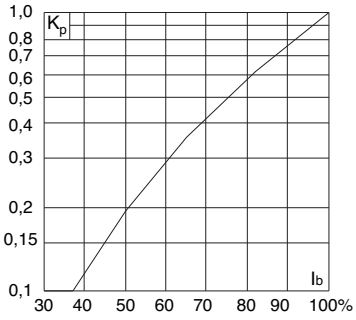

### Arc Voltage

This curve gives the peak arc voltage, $U_L$, which may appear across the fuse during its operation as a function of the applied working voltage $E_g$ , (rms) at a power factor of 15%.




### Power Losses

Watts loss at rated current is given in the electrical characteristics. The curve allows the calculation of the power losses at load currents lower than the rated current. The correction factor, $K_p$, is given as a function of the RMS load current, $I_b$, in % of the rated current.




### Features and Benefits

- Excellent DC performance
- Low arc voltage and low energy let-through ($I^2t$)
- Low watts loss
- Superior cycling capability

### Typical Applications

- DC Common bus
- DC Drives
- Power converters/rectifiers
- Reduced voltage starters

**For Operating Class aR Fuses in This Body Style**

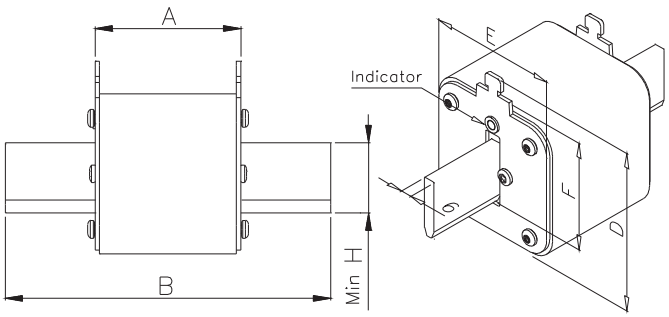
• See page 160

### Dimensions - mm

Type DIN 00, DIN 1, DIN 2, DIN 3

| Size | A | B Max | D Max | E | F Min | H |
|---|---|---|---|---|---|---|
| 00 | 49 | 78.5 | 60 | 30 | 35 | 15 |
| 1 | 68 | 135 | 66 | 52 | 40 | 20 |
| 2 | 68 | 150 | 74 | 60 | 48 | 25 |
| 3 | 68 | 150 | 89 | 75 | 60 | 32 |

1 mm = 0.0394" 1" = 25.4 mm



# Square Body DIN 43 620 — 690V (IEC): 10-800A Class gR — Full Range Fuses

## Catalog Numbers

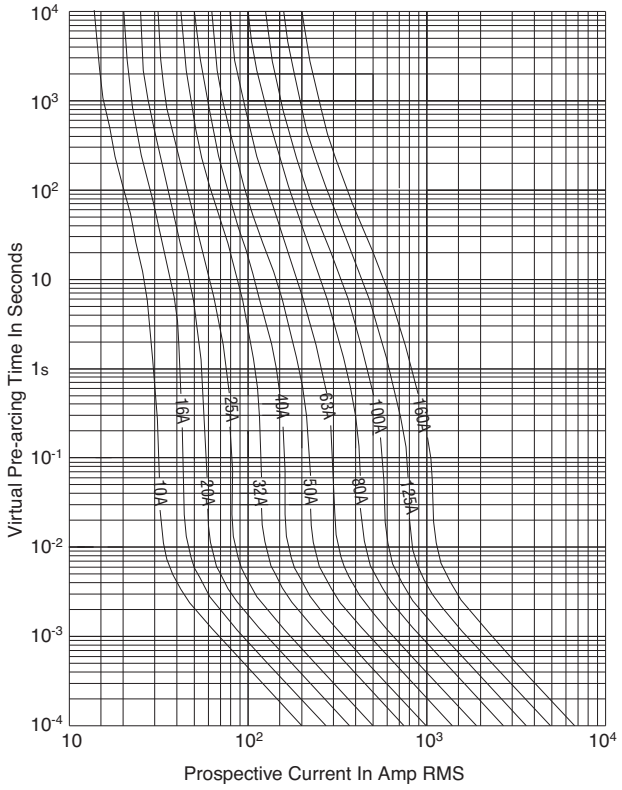
| Catalog Numbers | | Electrical Characteristics | | | |
|---|---|---|---|---|---|
| Type T Indicator For Micro | Size | RMS Amp Rating* | $I^2t$ ($A^2$ Sec) Pre-arc | $I^2t$ ($A^2$ Sec) Clearing at 600V | Watts Loss |
| 170M2691 | | 10 | 3.8 | 20 | 3.5 |
| 170M2692 | | 16 | 7.2 | 38 | 5.5 |
| 170M2693 | | 20 | 13 | 70 | 6 |
| 170M2694 | | 25 | 24 | 125 | 8 |
| 170M2695 | | 32 | 53 | 275 | 9 |
| 170M2696 | | 40 | 95 | 490 | 10 |
| 170M2697 | 00 | 50 | 185 | 1000 | 11 |
| 170M2698 | | 63 | 345 | 1800 | 14 |
| 170M2699 | | 80 | 695 | 3600 | 16 |
| 170M2700 | | 100 | 1250 | 6650 | 19 |
| 170M2701 | | 125 | 2300 | 12000 | 23 |
| 170M2702 | | 160 | 4350 | 22500 | 29 |
| 170M4176 | | 50 | 135 | 705 | 12 |
| 170M4177 | | 63 | 245 | 1300 | 15 |
| 170M4178 | | 80 | 500 | 2600 | 17 |
| 170M4179 | | 100 | 950 | 4850 | 20 |
| 170M4180 | | 125 | 1850 | 9500 | 23 |
| 170M4181 | 1 | 160 | 3450 | 18000 | 28 |
| 170M4182 | | 200 | 6750 | 34500 | 31 |
| 170M4183 | | 250 | 13500 | 70500 | 35 |
| 170M4184 | | 315 | 26000 | 135000 | 41 |
| 170M4185 | | 350 | 34000 | 175000 | 45 |
| 170M4186 | | 400 | 48500 | 250000 | 48 |
| 170M5881 | | 200 | 5650 | 29000 | 33 |
| 170M5882 | | 250 | 10000 | 52500 | 40 |
| 170M5883 | | 315 | 19500 | 105000 | 46 |
| 170M5884 | | 350 | 26000 | 135000 | 50 |
| 170M5885 | 2 | 400 | 39500 | 205000 | 53 |
| 170M5886 | | 450 | 55500 | 290000 | 59 |
| 170M5887 | | 500 | 73000 | 375000 | 66 |
| 170M5888 | | 550 | 100000 | 515000 | 70 |
| 170M5889 | | 630 | 150000 | 770000 | 79 |
| 170M6080 | | 350 | 23000 | 120000 | 55 |
| 170M6081 | | 400 | 34000 | 175000 | 59 |
| 170M6082 | | 450 | 48500 | 250000 | 62 |
| 170M6083 | | 500 | 64000 | 330000 | 67 |
| 170M6084 | 3 | 550 | 84500 | 435000 | 70 |
| 170M6085 | | 630 | 125000 | 645000 | 85 |
| 170M6086 | | 700 | 160000 | 840000 | 93 |
| 170M6087 | | 800 | 245000 | 1300000 | 99 |

*The RMS amp rating of this fuse range is given with open fuse bases connected to copper conductors according to IEC 60269, Part 1, table 10. When used in enclosed fuse bases/ disconnects, derating factors have to be observed.
Please contact Bussmann for application assistance.
• Watts loss provided at rated current.
• Microswitch ordered separately. See accessories on page 212-213.
• For fuse curves see pages 170 and 171.

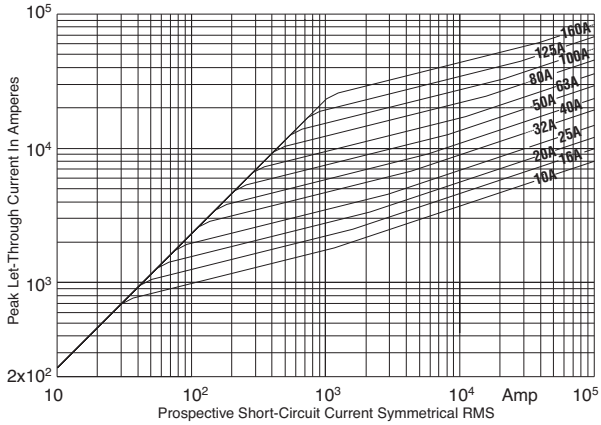
# Square Body, DIN 43 620 - Size 00, 1 — 690V (IEC): 10-800A Class gR — Full Range Fuses

## Size 00 — 10-160A: 690V

### Time-Current Curve

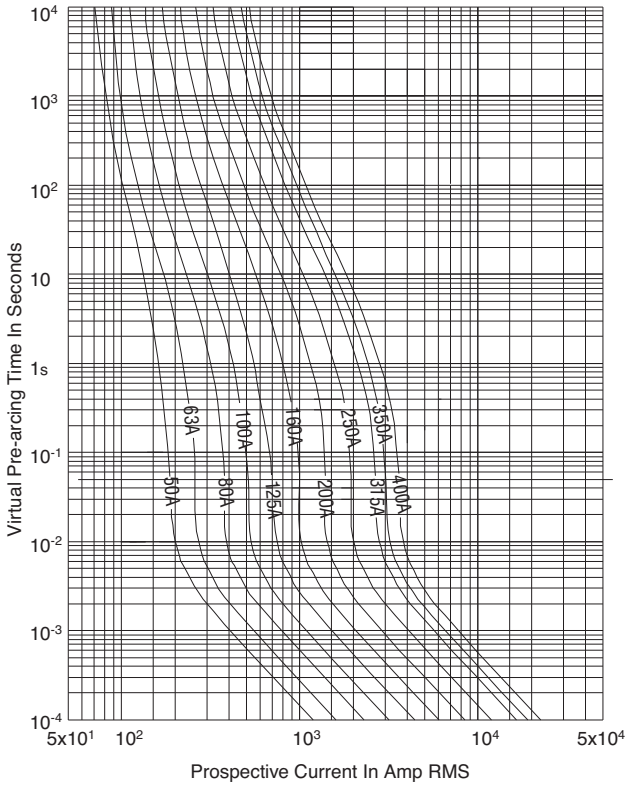



### Peak Let-Through Curve

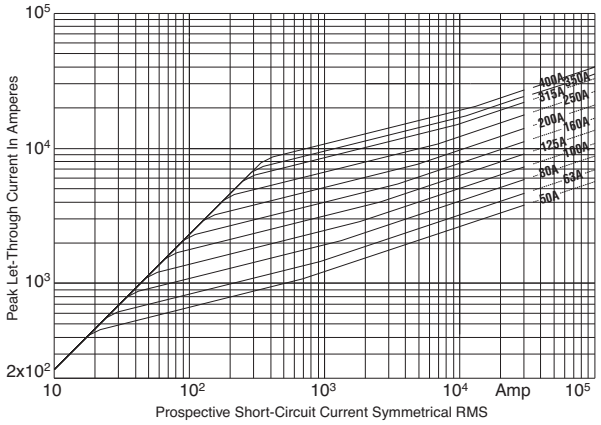



## Size 1 — 50-400A: 690V

### Time-Current Curve



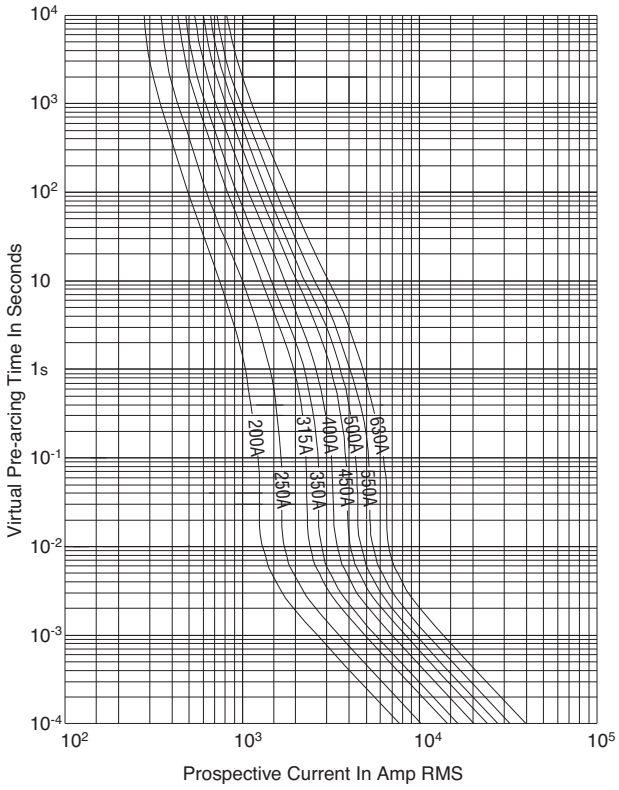

### Peak Let-Through Curve



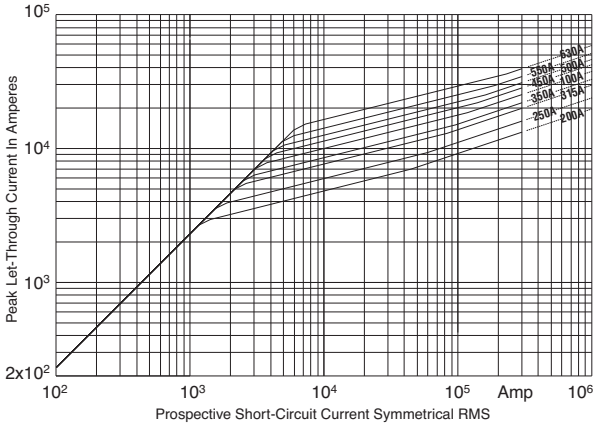
# Square Body, DIN 43 620 - Size 2, 3 — 690V (IEC): 10-800A Class gR — Full Range Fuses

## Size 2 — 200-630A: 690V

### Time-Current Curve

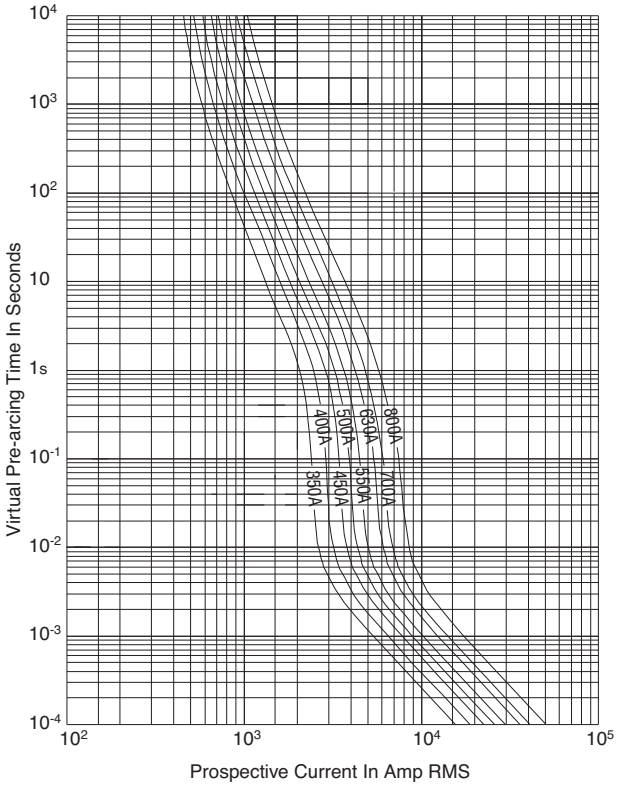



### Peak Let-Through Curve

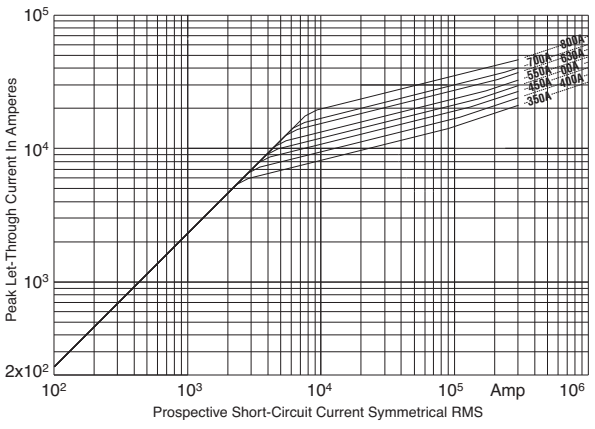



## Size 3 — 350-800A: 690V

### Time-Current Curve




### Peak Let-Through Curve



# Square Body DIN 43 653 — 1000V (IEC): 20-315A

## 1000V (IEC) 20-315A

**Specifications**
Description: Square body DIN 43 653 stud-mount high speed fuses.

**Dimensions:** See dimensions illustration.

**Ratings:**

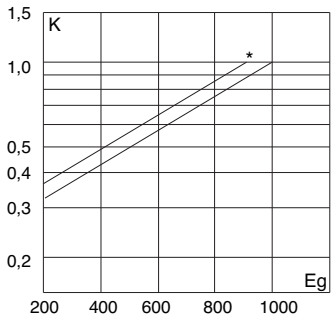
Volts: — 1000Vac (20-250A)
— 900Vac (315A)
Amps: — 20-315A
IR: — 150kA RMS Sym.

**Agency Information:** CE, Designed and tested to IEC 60269: Part 4. UL Recognized E125085.JFHR2.

### Electrical Characteristics

#### Total clearing $I^2t$

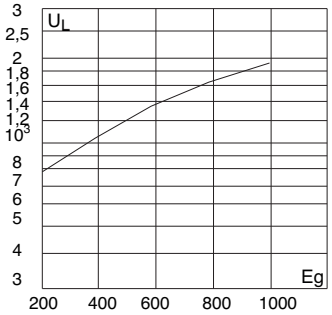
The total clearing $I^2t$ at rated voltage and at power factor of 15% are given in the electrical characteristics. For other voltages, the clearing $I^2t$ is found by multi-plying by correction factor, K, given as a function of applied working voltage, $E_g$, (rms).




*Rated voltage 900V

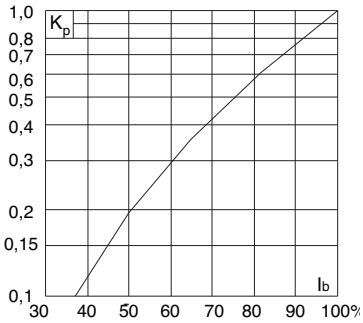
#### Arc Voltage

This curve gives the peak arc voltage, $U_L$, which may appear across the fuse during its operation as a function of the applied working voltage $E_g$, (rms) at a power factor of 15%.




#### Power Losses

Watts loss at rated current is given in the electrical characteristics. The curve allows the calculation of the power losses at load currents lower than the rated current. The correction factor, $K_p$, is given as a function of the RMS load current, $I_b$, in % of the rated current.




#### Features and Benefits

- Excellent DC performance
- Low arc voltage and low energy let-through ($I^2t$)
- Low watts loss
- Superior cycling capability

#### Typical Applications

- DC Common bus
- DC Drives
- Power converters/rectifiers
- Reduced voltage starters

#### For Other Voltage Ratings in This Body Style

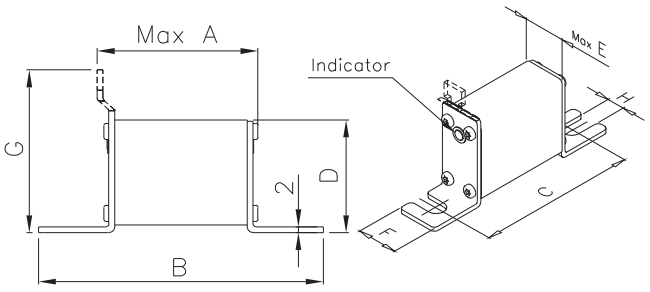
• See page 145 (690V/700V)

#### Dimensions - mm

Type 00TN/80 – 00/80

| Size | Max A | B | C | D | Max E | F | G | H |
|---|---|---|---|---|---|---|---|---|
| 00/80 | 54 | 98 | 78 | 51 | 30 | 28 | | 10 |
| 00TN/80 | 54 | 98 | 78 | 51 | 30 | 28 | 67 | 10 |

1mm = 0.0394" / 1" = 25.4mm



# Square Body DIN 43 653 — 1000V (IEC): 20-315A

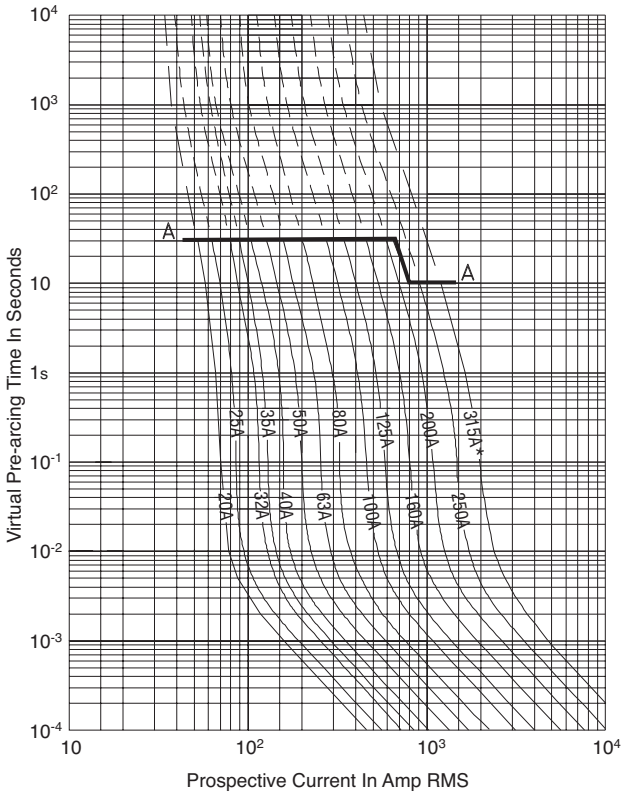
## Catalog Numbers

| Catalog Numbers | | | Electrical Characteristics | | | | |
|---|---|---|---|---|---|---|---|
| 00/80 Visual Indicator for Micro | 00TN/80 Type T Indicator for Micro | Size | Rated Voltage | Rated Current RMS Amps | $I^2t$ ($A^2$ Sec) Pre-arc | $I^2t$ ($A^2$ Sec) Clearing at Rated Voltage | Watts Loss |
| 170M4802 | 170M4822 | | 1000 | 20 | 20 | 140 | 5 |
| 170M4803 | 170M4823 | | 1000 | 25 | 30 | 210 | 7 |
| 170M4804 | 170M4824 | | 1000 | 32 | 55 | 390 | 9 |
| 170M4805 | 170M4825 | | 1000 | 35 | 69 | 500 | 10 |
| 170M4806 | 170M4826 | | 1000 | 40 | 100 | 690 | 11 |
| 170M4807 | 170M4827 | | 1000 | 50 | 170 | 1200 | 13 |
| 170M4808 | 170M4828 | | 1000 | 63 | 280 | 2000 | 18 |
| 170M4809 | 170M4829 | 00 | 1000 | 80 | 500 | 3500 | 22 |
| 170M4810 | 170M4830 | | 1000 | 100 | 950 | 6850 | 25 |
| 170M4811 | 170M4831 | | 1000 | 125 | 1500 | 11500 | 33 |
| 170M4812 | 170M4832 | | 1000 | 160 | 3000 | 22000 | 37 |
| 170M4813 | 170M4833 | | 1000 | 200 | 5600 | 40500 | 40 |
| 170M4814 | 170M4834 | | 1000 | 250 | 10000 | 74000 | 48 |
| 170M4815 | 170M4835 | | 900 | 315 | 18000 | 115000 | 58 |

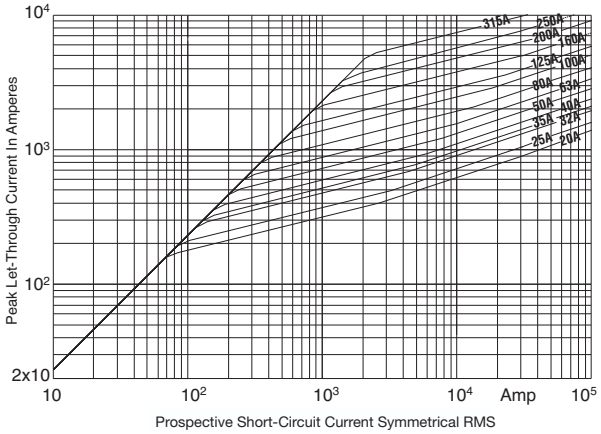
• Watts loss provided at rated current.
• Microswitch ordered separately. See accessories on page 212-213.

## Size 00 — 20-315A: 1000V

### Time-Current Curve




### Peak Let-Through Curve




* 315A fuse is derated to 900V

# Square Body DIN 43 653 — 1000V (IEC): 50-1400A

## 1000V (IEC) 50-1400A

### Specifications

**Description:** Square body mount high speed fuses.

**Dimensions:** See dimensions illustrations.

Ratings:

Volts: — 1000Vac.

Amps: — 50-1400A

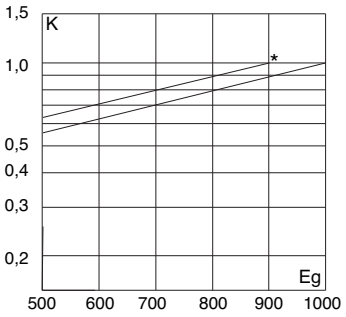
IR: — 125kA RMS Sym.

**Agency Information:** CE, Designed and tested to IEC 60269: Part 4. UL Recognized E125085.JFHR2.

### Electrical Characteristics

#### Total clearing I²t

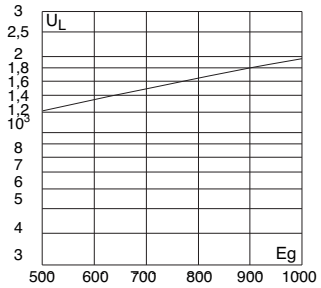
The total clearing I²t at rated voltage and at power factor of 15% are given in the electrical characteristics. For other voltages, the clearing I²t is found by multiplying by correction factor, K, given as a function of applied working voltage, $E_g$, (rms).




*Rated voltage 900V

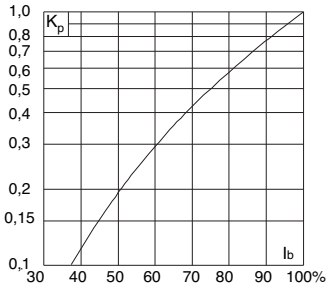
#### Arc Voltage

This curve gives the peak arc voltage, $U_L$, which may appear across the fuse during its operation as a function of the applied working voltage $E_g$, (rms) at a power factor of 15%.




#### Power Losses

Watts loss at rated current is given in the electrical characteristics. The curve allows the calculation of the power losses at load currents lower than the rated current. The correction factor, $K_p$, is given as a function of the RMS load current, $I_b$, in % of the rated current.




#### Features and Benefits

- Excellent DC performance
- Low arc voltage and low energy let-through (I²t)
- Low watts loss
- Superior cycling capability

#### Typical Applications

- DC Common bus
- DC Drives
- Power converters/rectifiers
- Reduced voltage starters

#### For Other Voltage Ratings in This Body Style

• See pages 150 (690V/700V) and 187 (1250V/1300V)

### Dimensions - mm

Type –KN/110

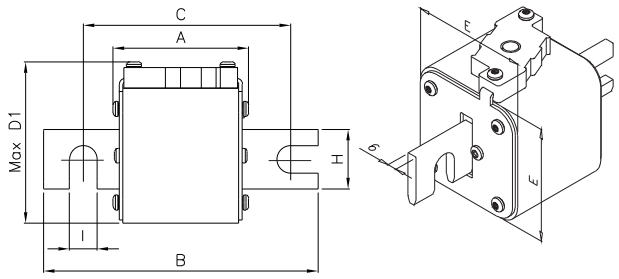
| Size | A | B | C | Max D1 | E | G | H | I |
|---|---|---|---|---|---|---|---|---|
| 1*KN/110 | 80 | 138 | 108 | 61 | 43 | 6 | 22 | 11 |
| 1KN/110 | 80 | 138 | 108 | 69 | 51 | 6 | 25 | 11 |
| 2KN/110 | 80 | 138 | 108 | 77 | 59 | 6 | 25 | 11 |
| 3KN/110 | 81 | 139 | 108 | 92 | 74 | 6 | 30 | 11 |

Type –TN/110

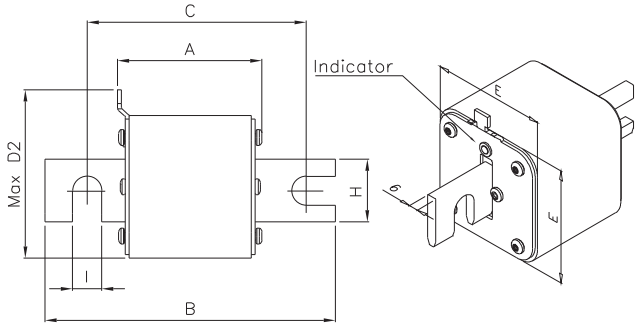
| Size | A | B | C | Max D2 | E | G | H | I |
|---|---|---|---|---|---|---|---|---|
| 1*TN/110 | 80 | 138 | 108 | 61 | 43 | 6 | 22 | 11 |
| 1TN/110 | 80 | 138 | 108 | 69 | 51 | 6 | 25 | 11 |
| 2TN/110 | 80 | 138 | 108 | 75 | 59 | 6 | 25 | 11 |
| 3TN/110 | 81 | 139 | 108 | 90 | 74 | 6 | 30 | 11 |

1mm = 0.0394" / 1" = 25.4mm

Type-KN/110




Type-TN/110



# Square Body DIN 43 653 — 1000V (IEC): 50-1400A

## Catalog Numbers

| Catalog Numbers | | | Electrical Characteristics | | | | |
|---|---|---|---|---|---|---|---|
| -KN/110 Type K Indicator for Micro | -TN/110 Type T Indicator for Micro | Size | Rated Voltage | Rated Current RMS Amps | $I^2t$ ($A^2$ Sec) Pre-arc | $I^2t$ ($A^2$ Sec) Clearing at Rated Voltage | Watts Loss |
| 170M3965 | 170M3981 | | 1000 | 50 | 135 | 815 | 20 |
| 170M3966 | 170M3982 | | 1000 | 63 | 215 | 1300 | 25 |
| 170M3967 | 170M3983 | | 1000 | 80 | 460 | 2750 | 30 |
| 170M3968 | 170M3984 | | 1000 | 100 | 860 | 5100 | 35 |
| 170M3969 | 170M3985 | | 1000 | 125 | 1450 | 8600 | 40 |
| 170M3970 | 170M3986 | 1* | 1000 | 160 | 2850 | 17500 | 45 |
| 170M3971 | 170M3987 | | 1000 | 200 | 4950 | 29500 | 48 |
| 170M3972 | 170M3988 | | 1000 | 250 | 9550 | 57000 | 50 |
| 170M3973 | 170M3989 | | 1000 | 315 | 21500 | 130000 | 60 |
| 170M3974 | 170M3990 | | 1000 | 350 | 29000 | 175000 | 65 |
| 170M3975 | 170M3991 | | 1000 | 400 | 42000 | 250000 | 70 |
| 170M4965 | 170M4980 | | 1000 | 160 | 2200 | 13500 | 40 |
| 170M4966 | 170M4981 | | 1000 | 200 | 4150 | 24500 | 45 |
| 170M4967 | 170M4982 | | 1000 | 250 | 7750 | 46000 | 52 |
| 170M4968 | 170M4983 | | 1000 | 315 | 16500 | 98500 | 60 |
| 170M4969 | 170M4984 | 1 | 1000 | 350 | 21500 | 130000 | 65 |
| 170M4970 | 170M4985 | | 1000 | 400 | 31000 | 185000 | 70 |
| 170M4971 | 170M4986 | | 1000 | 450 | 44500 | 265000 | 80 |
| 170M4972 | 170M4987 | | 1000 | 500 | 63000 | 375000 | 85 |
| 170M4973 | 170M4988 | | 1000 | 550 | 84500 | 500000 | 90 |
| 170M4974 | 170M4989 | | 1000 | 630 | 125000 | 755000 | 98 |
| 170M5966 | 170M5981 | | 1000 | 250 | 6750 | 40000 | 65 |
| 170M5967 | 170M5982 | | 1000 | 315 | 13500 | 81500 | 75 |
| 170M5968 | 170M5983 | | 1000 | 350 | 16500 | 99000 | 80 |
| 170M5969 | 170M5984 | | 1000 | 400 | 26000 | 155000 | 85 |
| 170M5970 | 170M5985 | | 1000 | 450 | 35500 | 210000 | 90 |
| 170M5971 | 170M5986 | 2 | 1000 | 500 | 49500 | 295000 | 95 |
| 170M5972 | 170M5987 | | 1000 | 550 | 66000 | 390000 | 100 |
| 170M5973 | 170M5988 | | 1000 | 630 | 93500 | 555000 | 110 |
| 170M5974 | 170M5989 | | 1000 | 700 | 130000 | 770000 | 115 |
| 170M5975 | 170M5990 | | 1000 | 800 | 195000 | 1200000 | 125 |
| 170M8614 | 170M8629 | | 1000 | 315 | 9200 | 54500 | 90 |
| 170M8615 | 170M8630 | | 1000 | 350 | 13000 | 77500 | 95 |
| 170M8616 | 170M8631 | | 1000 | 400 | 19000 | 115000 | 105 |
| 170M8617 | 170M8632 | | 1000 | 450 | 27000 | 160000 | 107 |
| 170M8618 | 170M8633 | | 1000 | 500 | 37500 | 225000 | 110 |
| 170M8619 | 170M8634 | | 1000 | 550 | 52000 | 310000 | 115 |
| 170M8620 | 170M8635 | 3 | 1000 | 630 | 82500 | 490000 | 120 |
| 170M8621 | 170M8636 | | 1000 | 700 | 115000 | 700000 | 125 |
| 170M8622 | 170M8637 | | 1000 | 800 | 170000 | 1050000 | 135 |
| 170M8623 | 170M8638 | | 1000 | 900 | 250000 | 1500000 | 145 |
| 170M8624 | 170M8639 | | 1000 | 1000 | 340000 | 2050000 | 150 |
| 170M8625 | 170M8640 | | 1000 | 1100 | 460000 | 2750000 | 155 |
| 170M8626 | 170M8641 | | 1000 | 1250 | 575000 | 3400000 | 175 |
| 170M8627 | 170M8642 | | 900 | 1400 | 795000 | 4200000 | 185 |

- Watts loss provided at rated current.
- Microswitch ordered separately. See accessories on page 212-213.
- For fuse curves see pages 180 and 181.

# Square Body Flush End Contact — 1000V (IEC): 50–1400A

## 1000V (IEC) 50–1400A

**Specifications**

**Description:** Square body flush end contact high speed fuses.

**Dimensions:** See dimensions illustration.

**Ratings:**

Volts: — 1000Vac.

Amps: — 50-1400A

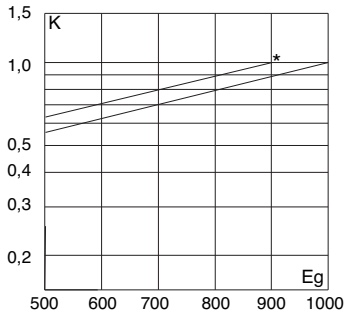
IR: — 150kA (Est. 300kA) RMS Sym.

**Agency Information:** CE, Designed and tested to IEC 60269: Part 4. UL Recognized E125085.JFHR2.

### Electrical Characteristics

#### Total clearing $I^2t$

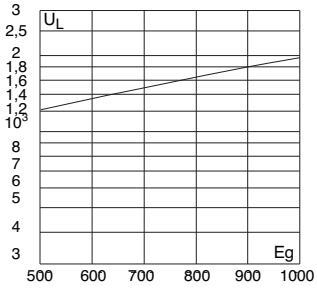
The total clearing $I^2t$ at rated voltage and at power factor of 15% are given in the electrical characteristics. For other voltages, the clearing $I^2t$ is found by multiplying by correction factor, K, given as a function of applied working voltage, $E_g$, (rms).




*Rated voltage 900V

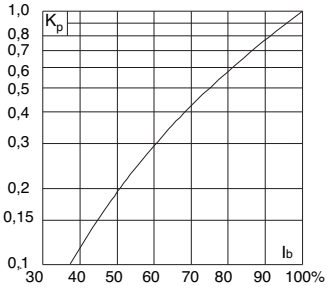
#### Arc Voltage

This curve gives the peak arc voltage, $U_L$, which may appear across the fuse during its operation as a function of the applied working voltage $E_g$, (rms) at a power factor of 15%.




#### Power Losses

Watts loss at rated current is given in the electrical characteristics. The curve allows the calculation of the power losses at load currents lower than the rated current. The correction factor, $K_p$, is given as a function of the RMS load current, $I_b$, in % of the rated current.




#### Features and Benefits

- Excellent DC performance
- Low arc voltage and low energy let-through ($I^2t$)
- Low watts loss
- Superior cycling capability

#### Typical Applications

- DC Common bus
- DC Drives
- Power converters/rectifiers
- Reduced voltage starters

**For Other Voltage Ratings in This Body Style**

• See pages 152 (690V/700V) and 189 (1250V/1300V)

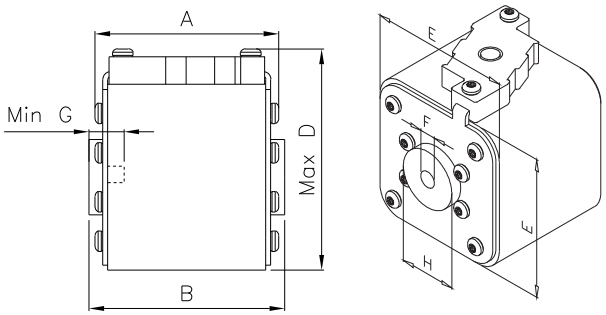
### Dimensions - mm

Type –BKN/- and –GKN/-

| Size | A | B | Max D | E | F | F* (in) | Min G | H |
|---|---|---|---|---|---|---|---|---|
| 1*BKN/75+GKN/75 | 72.5 | 74 | 61 | 43 | M8 | 5/16" – 18 UNC-2B | 5 | ø17.5 |
| 1BKN/75+GKN/75 | 73.2 | 74 | 69 | 52 | M8 | 5/16" – 18 UNC-2B | 8 | ø20 |
| 2BKN/75+GKN/75 | 73.2 | 74.4 | 77 | 59 | M10 | 3/8" – 16 UNC-2B | 10 | ø24 |
| 3BKN/75+GKN/75 | 73.3 | 75.4 | 92 | 74 | M12 | 1/2" – 13 UNC-2B | 10 | ø30 |
| 3BKN/90+GKN/90 | 80.3 | 91.4 | 92 | 74 | M12 | 1/2" – 13 UNC-2B | 10 | ø30 |

* Valid for fuses type –GKN/-.

1mm = 0.0394" / 1" = 25.4mm



# Square Body Flush End Contact — 1000V (IEC): 50–1400A

## Catalog Numbers

| Catalog Numbers | | | Electrical Characteristics | | | | |
|---|---|---|---|---|---|---|---|
| | | | | | $I^2t$ ($A^2$ Sec) | | |
| -BKN/- Type K Indicator for Micro | -GKN/- Type K Indicator for Micro | Size | Rated Voltage | Rated Current RMS-Amps | Pre-arc | Clearing at Rated Voltage | Watts Loss |
| 170M3951 | 170M3921 | | 1000 | 50 | 135 | 815 | 20 |
| 170M3952 | 170M3922 | | 1000 | 63 | 215 | 1300 | 25 |
| 170M3953 | 170M3923 | | 1000 | 80 | 460 | 2750 | 30 |
| 170M3954 | 170M3924 | | 1000 | 100 | 860 | 5100 | 35 |
| 170M3955 | 170M3925 | | 1000 | 125 | 1450 | 8600 | 40 |
| 170M3956 | 170M3926 | 1* | 1000 | 160 | 2850 | 17500 | 45 |
| 170M3957 | 170M3927 | | 1000 | 200 | 4950 | 29500 | 48 |
| 170M3958 | 170M3928 | | 1000 | 250 | 9550 | 57000 | 50 |
| 170M3959 | 170M3929 | | 1000 | 315 | 21500 | 130000 | 60 |
| 170M3960 | 170M3930 | | 1000 | 350 | 29000 | 175000 | 65 |
| 170M3961 | 170M3931 | | 1000 | 400 | 42000 | 250000 | 70 |
| 170M4951 | 170M4921 | | 1000 | 160 | 2200 | 13500 | 40 |
| 170M4952 | 170M4922 | | 1000 | 200 | 4150 | 24500 | 45 |
| 170M4953 | 170M4923 | | 1000 | 250 | 7750 | 46000 | 52 |
| 170M4954 | 170M4924 | | 1000 | 315 | 16500 | 98500 | 60 |
| 170M4955 | 170M4925 | 1 | 1000 | 350 | 21500 | 130000 | 65 |
| 170M4956 | 170M4926 | | 1000 | 400 | 31000 | 185000 | 70 |
| 170M4957 | 170M4927 | | 1000 | 450 | 44500 | 265000 | 80 |
| 170M4958 | 170M4928 | | 1000 | 500 | 63000 | 375000 | 85 |
| 170M4959 | 170M4929 | | 1000 | 550 | 84500 | 500000 | 90 |
| 170M4960 | 170M4930 | | 1000 | 630 | 125000 | 755000 | 98 |
| 170M5952 | 170M5922 | | 1000 | 250 | 6750 | 40000 | 65 |
| 170M5953 | 170M5923 | | 1000 | 315 | 13500 | 81500 | 75 |
| 170M5954 | 170M5924 | | 1000 | 350 | 16500 | 99000 | 80 |
| 170M5955 | 170M5925 | | 1000 | 400 | 26000 | 155000 | 85 |
| 170M5956 | 170M5926 | | 1000 | 450 | 35500 | 210000 | 90 |
| 170M5957 | 170M5927 | 2 | 1000 | 500 | 49500 | 295000 | 95 |
| 170M5958 | 170M5928 | | 1000 | 550 | 66000 | 390000 | 100 |
| 170M5959 | 170M5929 | | 1000 | 630 | 93500 | 555000 | 110 |
| 170M5960 | 170M5930 | | 1000 | 700 | 130000 | 770000 | 115 |
| 170M5961 | 170M5931 | | 1000 | 800 | 195000 | 1200000 | 125 |
| 170M8600 | 170M8500 | | 1000 | 315 | 9200 | 54500 | 90 |
| 170M8601 | 170M8501 | | 1000 | 350 | 13000 | 77500 | 95 |
| 170M8602 | 170M8502 | | 1000 | 400 | 19000 | 115000 | 105 |
| 170M8603 | 170M8503 | | 1000 | 450 | 27000 | 160000 | 107 |
| 170M8604 | 170M8504 | | 1000 | 500 | 37500 | 225000 | 110 |
| 170M8605 | 170M8505 | | 1000 | 550 | 52000 | 310000 | 115 |
| 170M8606 | 170M8506 | 3 | 1000 | 630 | 82500 | 490000 | 120 |
| 170M8607 | 170M8507 | | 1000 | 700 | 115000 | 700000 | 125 |
| 170M8608 | 170M8508 | | 1000 | 800 | 170000 | 1050000 | 135 |
| 170M8609 | 170M8509 | | 1000 | 900 | 250000 | 1500000 | 145 |
| 170M8610 | 170M8510 | | 1000 | 1000 | 340000 | 2050000 | 150 |
| 170M8611 | 170M8511 | | 1000 | 1100 | 460000 | 2750000 | 155 |
| 170M8612** | 170M8512** | | 1000 | 1250 | 575000 | 3400000 | 175 |
| 170M8613** | 170M8513** | | 900 | 1400 | 795000 | 4200000 | 185 |

**Overall length is 90mm, for all other fuses the overall length is 75mm.

- Watts loss provided at rated current.
- Microswitch ordered separately. See accessories on page 212-213.
- For fuse curves see pages 180 and 181.

# Square Body US style — 1000V (IEC): 50-1400A

## 1000V (IEC) 50-1400A

**Specifications**

**Description:** Square body US style high speed fuses.

**Dimensions:** See dimensions illustration.

**Ratings:**

Volts: — 1000Vac.

Amps: — 50-1400A

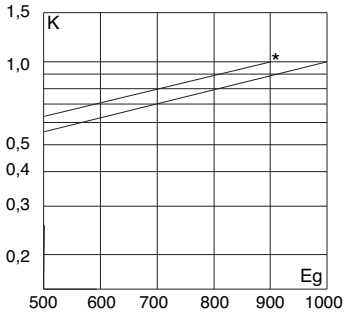
IR: — 150kA RMS Sym.

**Agency Information:** CE, Designed and tested to IEC 60269: Part 4. UL Recognized E125085.JFHR2.

### Electrical Characteristics

#### Total clearing $I^2t$

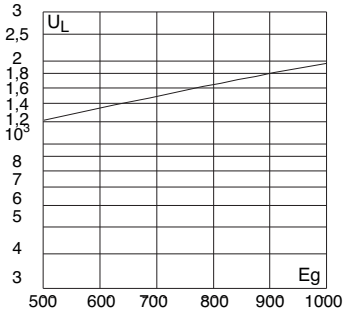
The total clearing $I^2t$ at rated voltage and at power factor of 15% are given in the electrical characteristics. For other voltages, the clearing $I^2t$ is found by multiplying by correction factor, K, given as a function of applied working voltage, $E_g$, (rms).




*Rated voltage 900V

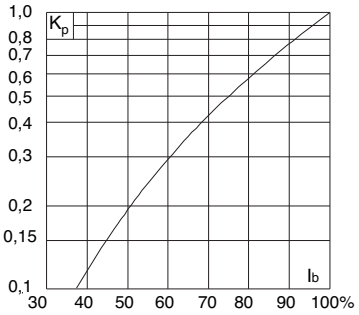
#### Arc Voltage

This curve gives the peak arc voltage, $U_L$, which may appear across the fuse during its operation as a function of the applied working voltage $E_g$, (rms) at a power factor of 15%.




#### Power Losses

Watts loss at rated current is given in the electrical characteristics. The curve allows the calculation of the power losses at load currents lower than the rated current. The correction factor, $K_p$, is given as a function of the RMS load current, $I_b$, in % of the rated current.




#### Features and Benefits

- Excellent DC performance
- Low arc voltage and low energy let-through ($I^2t$)
- Low watts loss
- Superior cycling capability

#### Typical Applications

- DC Common bus
- DC Drives
- Power converters/rectifiers
- Reduced voltage starters

#### For Other Voltage Ratings in This Body Style

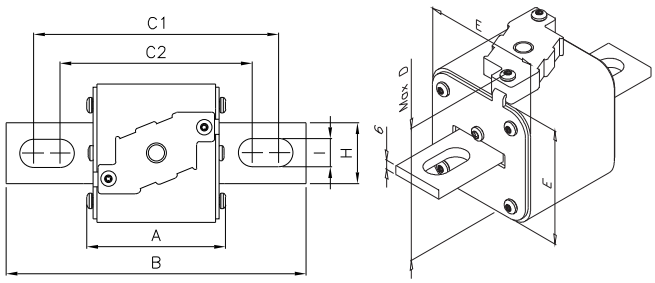
• See pages 154 (690V/700V) and 191 (1250V/1300)

#### Dimensions - mm

Type –FKE/115

| Size | B | C1 | C2 | D | E | H | I |
|---|---|---|---|---|---|---|---|
| 1*FKE/115 | 156 | 130 | 101 | 59 | 45 | 20 | 10 |
| 1FKE/115 | 160 | 127 | 102 | 69 | 53 | 25 | 14 |
| 2FKE/115 | 160 | 127 | 102 | 77 | 61 | 25 | 14 |
| 3FKE/115 | 159 | 128 | 101 | 92 | 76 | 36 | 16 |

1mm = 0.0394" / 1" = 25.4mm



# Square Body US style — 1000V (IEC): 50-1400A

## Catalog Numbers

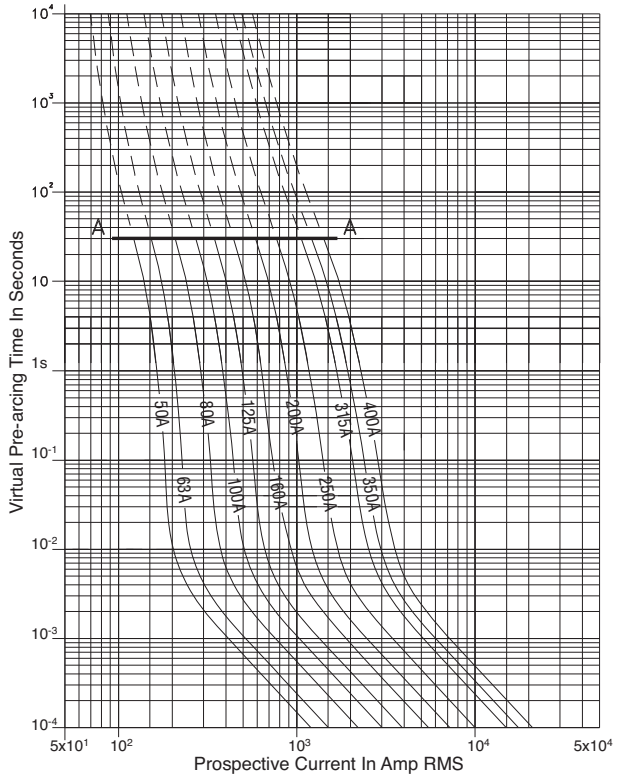
| Catalog Numbers -FKE/115 Type K Indicator for Micro | Size | Electrical Characteristics | | | |
|---|---|---|---|---|---|
| | | Rated Current RMS-Amps | $I^2t$ ($A^2$ Sec) Pre-arc | $I^2t$ ($A^2$ Sec) Clearing at 1000V | Watts Loss |
| 170M3531 | | 50 | 135 | 815 | 20 |
| 170M3532 | | 63 | 215 | 1300 | 25 |
| 170M3533 | | 80 | 460 | 2750 | 30 |
| 170M3534 | | 100 | 860 | 5100 | 35 |
| 170M3535 | | 125 | 1450 | 8600 | 40 |
| 170M3536 | 1* | 160 | 2850 | 17500 | 45 |
| 170M3537 | | 200 | 4950 | 29500 | 48 |
| 170M3538 | | 250 | 9550 | 57000 | 50 |
| 170M3539 | | 315 | 21500 | 130000 | 60 |
| 170M3540 | | 350 | 29000 | 175000 | 65 |
| 170M3541 | | 400 | 42000 | 250000 | 70 |
| 170M4531 | | 160 | 2200 | 13500 | 40 |
| 170M4532 | | 200 | 4150 | 24500 | 45 |
| 170M4533 | | 250 | 7750 | 46000 | 52 |
| 170M4534 | | 315 | 16500 | 98500 | 60 |
| 170M4535 | | 350 | 21500 | 130000 | 65 |
| 170M4536 | 1 | 400 | 31000 | 185000 | 70 |
| 170M4537 | | 450 | 44500 | 265000 | 80 |
| 170M4538 | | 500 | 63000 | 375000 | 85 |
| 170M4539 | | 550 | 84500 | 500000 | 90 |
| 170M4540 | | 630 | 125000 | 755000 | 98 |
| 170M5531 | | 250 | 6750 | 40000 | 65 |
| 170M5532 | | 315 | 13500 | 81500 | 75 |
| 170M5533 | | 350 | 16500 | 99000 | 80 |
| 170M5534 | | 400 | 26000 | 155000 | 85 |
| 170M5535 | | 450 | 35500 | 210000 | 90 |
| 170M5536 | 2 | 500 | 49500 | 295000 | 95 |
| 170M5537 | | 550 | 66000 | 390000 | 100 |
| 170M5538 | | 630 | 93500 | 555000 | 110 |
| 170M5539 | | 700 | 130000 | 770000 | 115 |
| 170M5540 | | 800 | 195000 | 1200000 | 125 |
| 170M8531 | | 315 | 9200 | 54500 | 90 |
| 170M8532 | | 350 | 13000 | 77500 | 95 |
| 170M8533 | | 400 | 19000 | 115000 | 105 |
| 170M8534 | | 450 | 27000 | 160000 | 107 |
| 170M8535 | | 500 | 37500 | 225000 | 110 |
| 170M8536 | | 550 | 52000 | 310000 | 115 |
| 170M8537 | 3 | 630 | 82500 | 490000 | 120 |
| 170M8538 | | 700 | 115000 | 700000 | 125 |
| 170M8539 | | 800 | 170000 | 1050000 | 135 |
| 170M8540 | | 900 | 250000 | 1500000 | 145 |
| 170M8541 | | 1000 | 340000 | 2050000 | 150 |
| 170M8542 | | 1100 | 460000 | 2750000 | 155 |
| 170M8543 | | 1250 | 575000 | 3400000 | 175 |
| 170M8544* | | 1400 | 795000 | 4200000* | 185 |

* Rated voltage 900V.
- Watts loss provided at rated current.
- Microswitch ordered separately. See accessories on pages 212-213.
- For fuse curves see pages 180 and 181.

# Square Body, US style - Size 1*, 1 — 1000V (IEC): 50-1400A

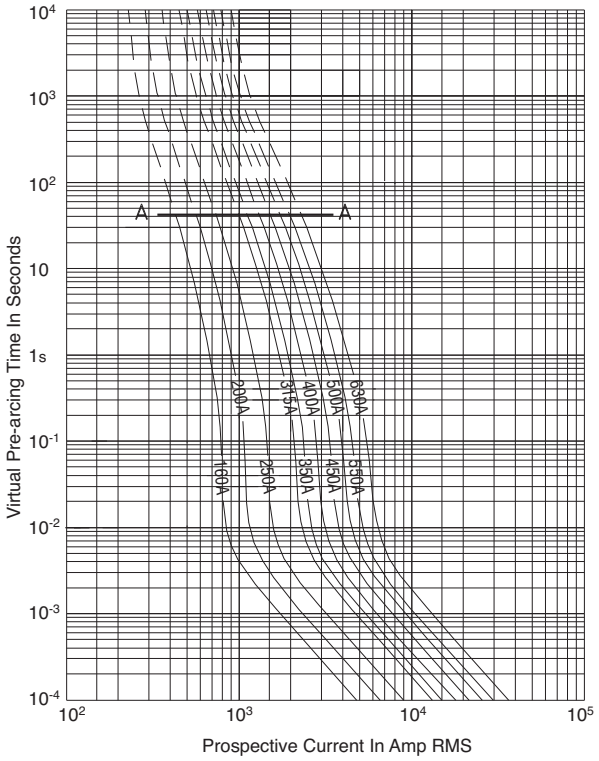
## Size 1* — 50-400A: 1000V

### Time-Current Curve

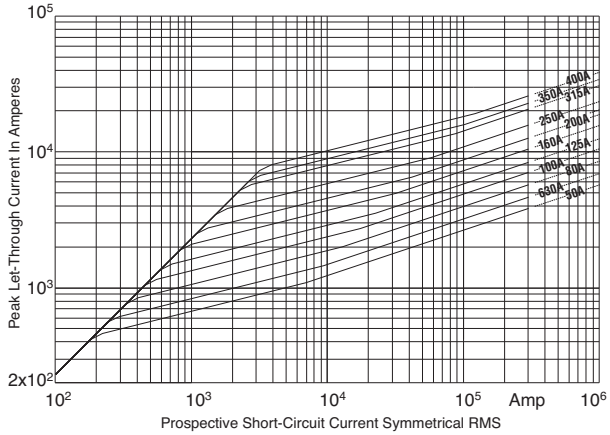



## Size 1 — 160-630A: 1000V

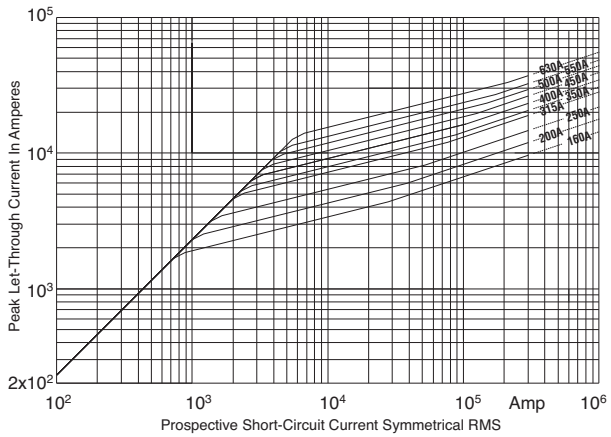
### Time-Current Curve




### Peak Let-Through Curve



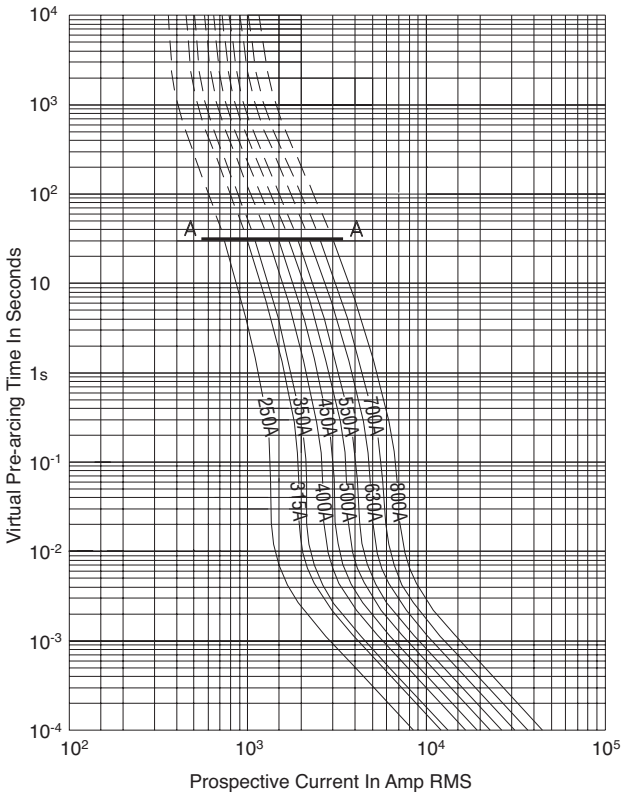

### Peak Let-Through Curve



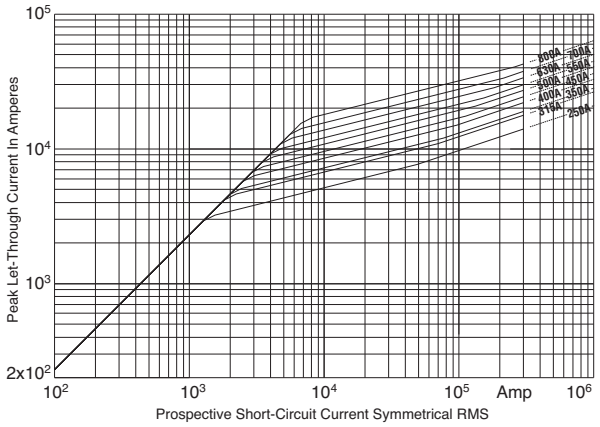
# Square Body, US style - Size 2, 3 — 1000V (IEC): 50-1400A

## Size 2 — 250-800A: 1000V

### Time-Current Curve

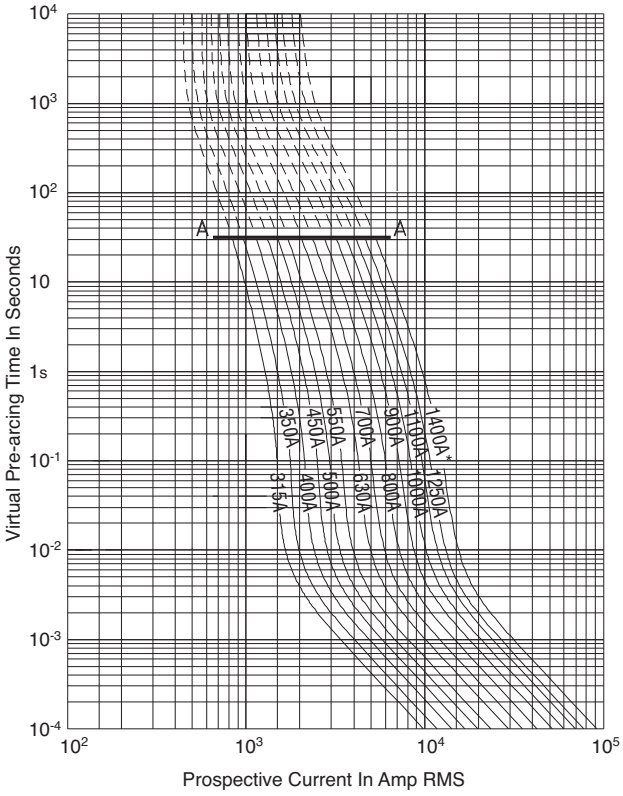



### Peak Let-Through Curve

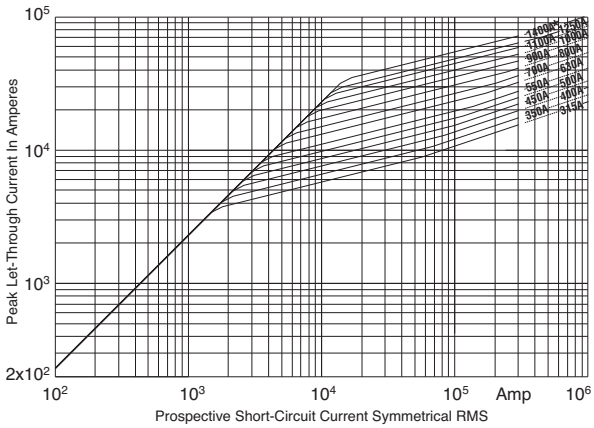



## Size 3 — 315-1400A: 1000V

### Time-Current Curve




### Peak Let-Through Curve



# Square Body Flush End Contact Size 4 — 1000V (IEC): 1000-2700A

## 1000V (IEC) 1000-2700A

### Specifications


**Description:** Square body DIN 43 620 blade style high speed fuses.

**Dimensions:** See dimensions illustration.

**Ratings:**

Volts: — 1000Vac (IEC)

Amps: — 1000-2700A

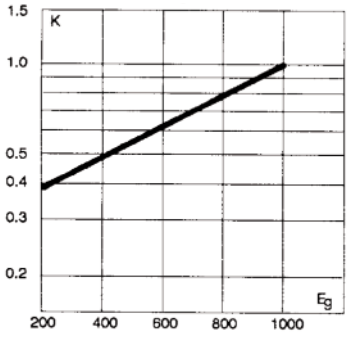
IR: — 125kA RMS Sym.

**Agency Information:** CE, Designed and tested to IEC 60269: Part 4. UL Recognized E125085.JFHR2.

### Electrical Characteristics

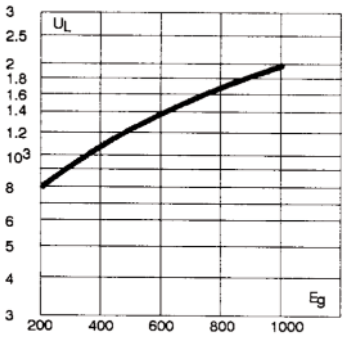
#### Total clearing $I^2t$

The total clearing $I^2t$ at rated voltage and at power factor of 15% are given in the electrical characteristics. For other voltages, the clearing $I^2t$ is found by multiplying by correction factor, K, given as a function of applied working voltage, $E_g$, (rms).



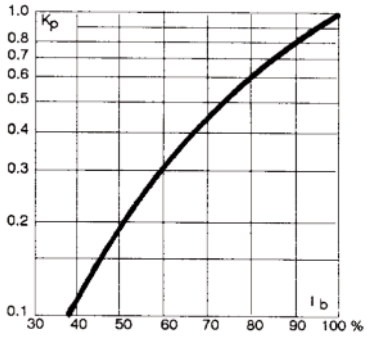

#### Arc Voltage

This curve gives the peak arc voltage, $U_L$, which may appear across the fuse during its operation as a function of the applied working voltage $E_g$ , (rms) at a power factor of 15%.




#### Power Losses

Watts loss at rated current is given in the electrical characteristics. The curve allows the calculation of the power losses at load currents lower than the rated current. The correction factor, $K_p$, is given as a function of the RMS load current, $I_b$, in % of the rated current.




#### Features and Benefits

- Excellent DC performance
- Low arc voltage and low energy let-through ($I^2t$)
- Low watts loss
- Superior cycling capability

#### Typical Applications

- DC Common bus
- DC Drives
- Power converters/rectifiers
- Reduced voltage starters

#### For Other Voltage Ratings in This Body Style

• See pages 163 (690V/700V) and 195 (1250V)

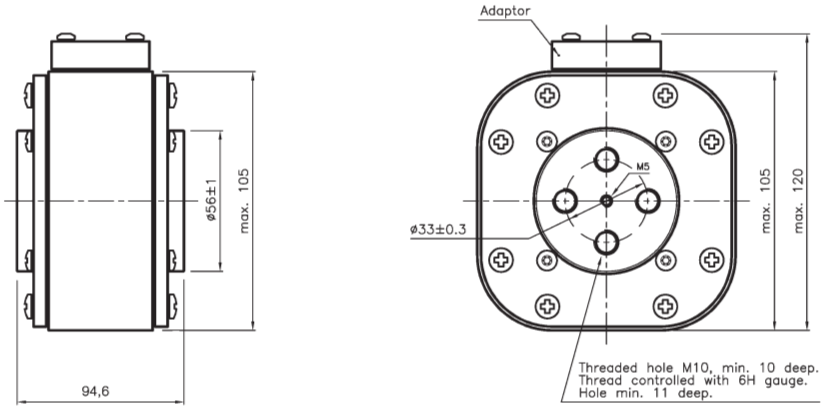
### Catalog Numbers

| Fuse Size | Catalog Number | | Electrical Characteristics | | | | |
|---|---|---|---|---|---|---|---|
| | -BKN/95 Type K Indicator | -SBKN/90 Type K Indicator | Rated Voltage (V) | Rated Current RMS-Amp | $I^2t$ ($A^2Sec$) | | Watt Loss (W) |
| | | | | | Pre-arc | Clearing at 1000V | |
| 4 | — | 170M7542 | 1000 | 1000 | 180000 | 1100000 | 195 |
| | — | 170M7031 | | 1100 | 250000 | 1500000 | 200 |
| | 170M7636 | 170M7548 | | 1500 | 600000 | 3600000 | 250 |
| | 170M7639 | 170M7034 | | 1700 | 850000 | 5000000 | 260 |
| | 170M7963 | 170M7544 | | 2000 | 1450000 | 8600000 | 270 |
| | 170M7090 | 170M7035 | | 2200 | 2000000 | 12000000 | 280 |
| | 170M7640 | 170M7036 | | 2500 | 3000000 | 18000000 | 295 |
| | 170M7658 | 170M7037 | | 2700 | 3700000 | 22000000 | 310 |

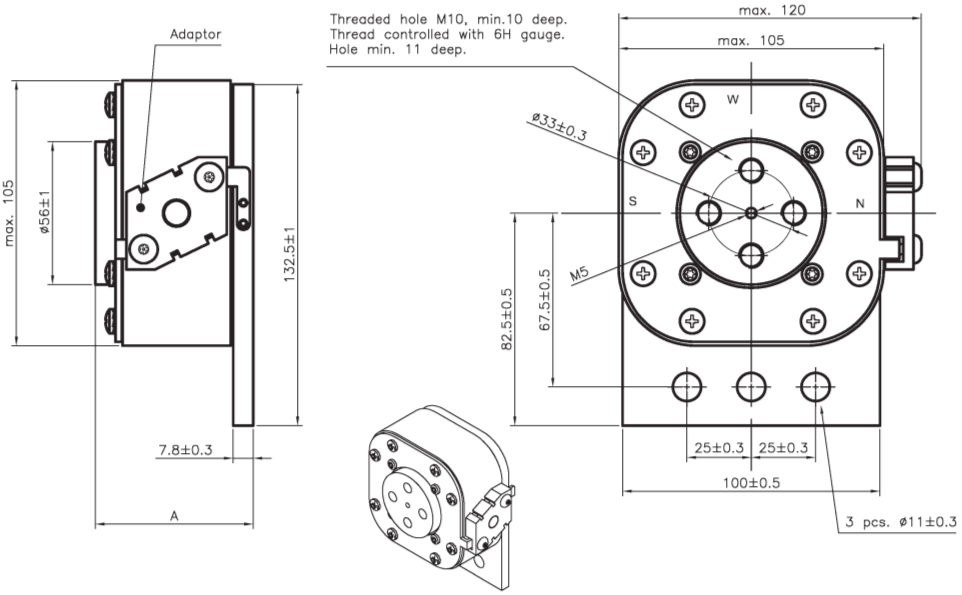
# Square Body Flush End Contact Size 4 — 1000V (IEC): 1000-2700A

## Dimensions - mm

Type 4BKN/95



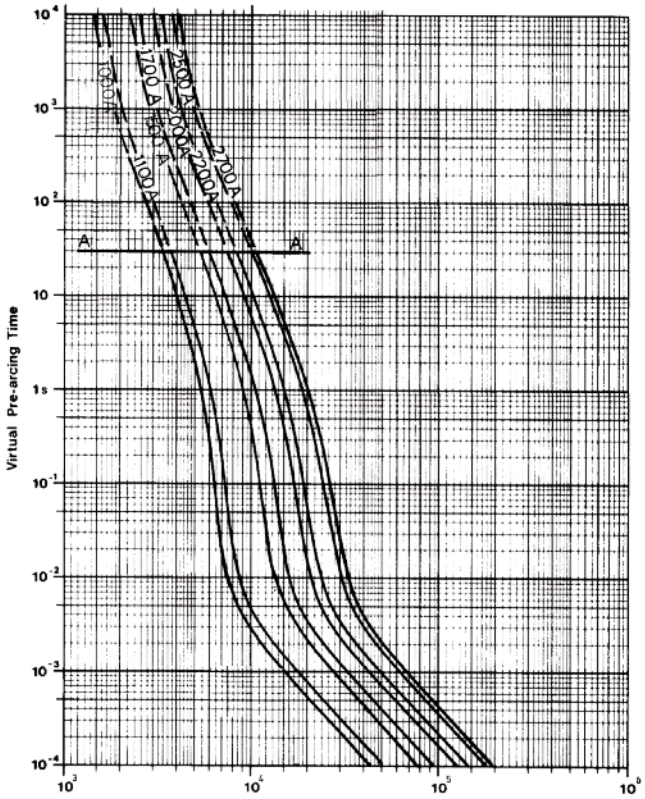

Type 4SBKN/95



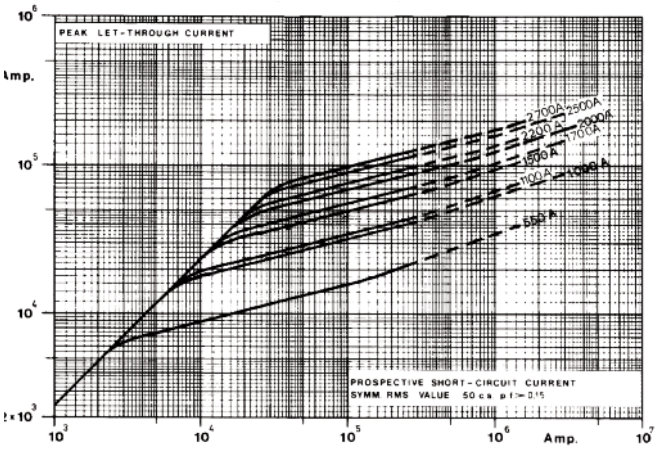
# Square Body Flush End Contact Size 4 — 1000V (IEC): 1000-2700A

## Size 4 — 1000-2700A: 660V

### Time-Current Curve




### Peak Let-Through Curve




**Data Sheet: Available upon request**

# Square Body Flush End Contact Size 24 — 1000V (IEC): 2000-5000A

## 1000V (IEC) 2000-5000A

**Specifications**

**Description:** High speed square body fuses, for the protection of the power rectifier section of the equipment.

**Dimensions:** See dimensions illustration.

**Ratings:**

Volts: — 1000Vac

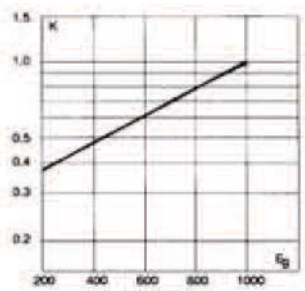
Amps: — 2000-5000A

IR: — 300kA RMS Sym.

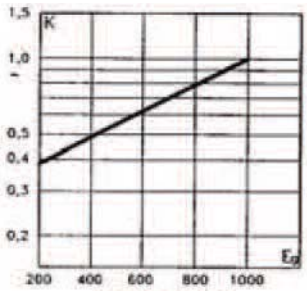
**Agency Information:** CE, Designed and tested to IEC 60269: Part 4. UL Recognized E125085.JFHR2.

### Electrical Characteristics

**Total clearing I²t**



2000-3500A



4200-5000A

The total clearing I²t at rated voltage and at power factor of 15% are given in the electrical characteristics. For other voltages, the clearing I²t is found by multiplying by correction factor, K, given as a function of applied working voltage, $E_g$, (rms).

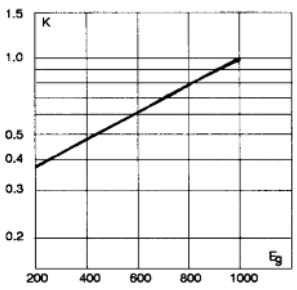
### Features and Benefits

- Low watts loss
- Superior cycling capability

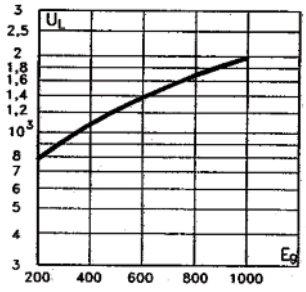
### Typical Applications

- Power converters/rectifiers
- Reduced voltage starters

**Arc Voltage**

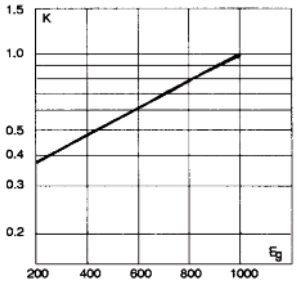


2000-3500A

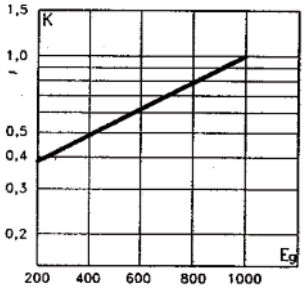


4200-5000A

This curve gives the peak arc voltage, $U_L$, which may appear across the fuse during its operation as a function of the applied working voltage $E_g$ , (rms) at a power factor of 15%.



2000-3500A



4200-5000A

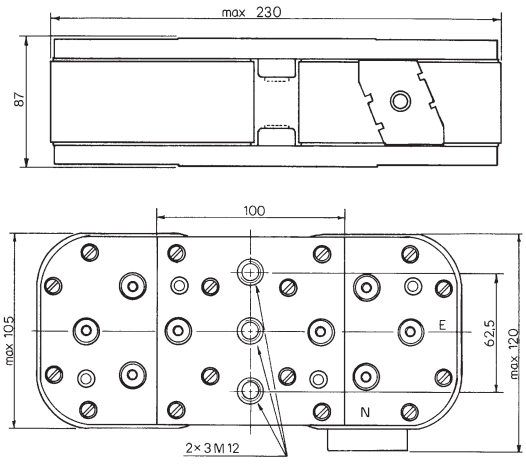
**Power Losses**

Watts loss at rated current is given in the electrical characteristics. The curve allows the calculation of the power losses at load currents lower than the rated current. The correction factor, $K_p$, is given as a function of the RMS load current, $I_b$, in % of the rated current.

**For Other Voltage Ratings in This Body Style**

- See pages 165 (660V) and 198 (1250V)

**Dimensions - mm**




### Catalog Numbers

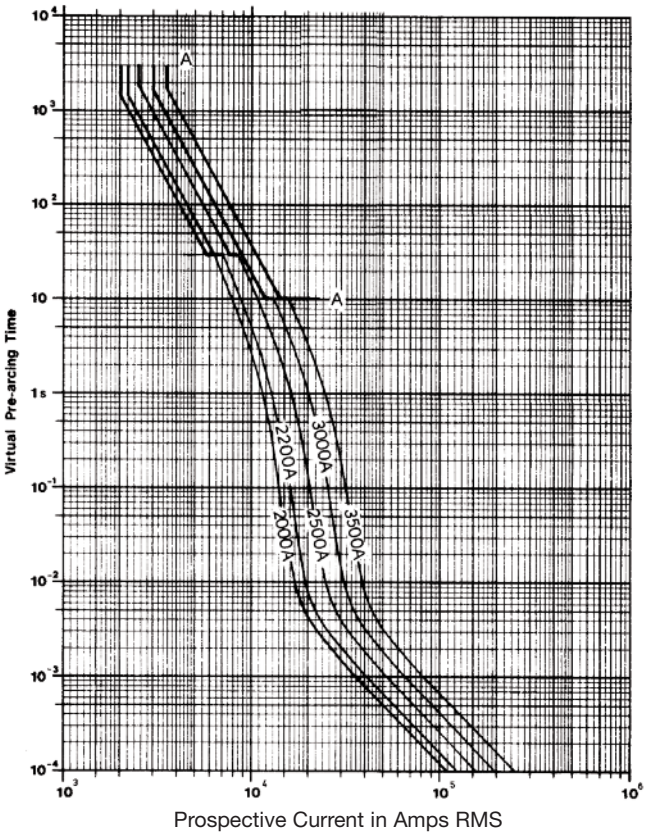
| Fuse Size | Cat. Number -BKN/85 Type K Indicator | Electrical Characteristics: Rated Voltage (V) | Rated Current RMS-Amp | I²t (A²Sec) Pre-arc | I²t (A²Sec) Clearing at 1000V | Watt Loss (W) |
|---|---|---|---|---|---|---|
| 24 | 170M7608 | 1000 | 2000 | 885000 | 5700000 | 345 |
| | 170M7680 | | 3000 | 2900000 | 19000000 | 430 |
| | 170M7567 | | 3200 | 3300000 | 20000000 | 440 |
| | 170M7568 | | 3500 | 4500000 | 27000000 | 450 |
| | 170M7569 | | 4000 | 6800000 | 40000000 | 475 |
| | 170M7498 | | 4200 | 8000000 | 47500000 | 485 |
| | 170M7488 | | 4500 | 10000000 | 59000000 | 495 |
| | 170M7622 | | 5000 | 14000000 | 82500000 | 540 |

Data Sheet: 170K7540, 170K8514

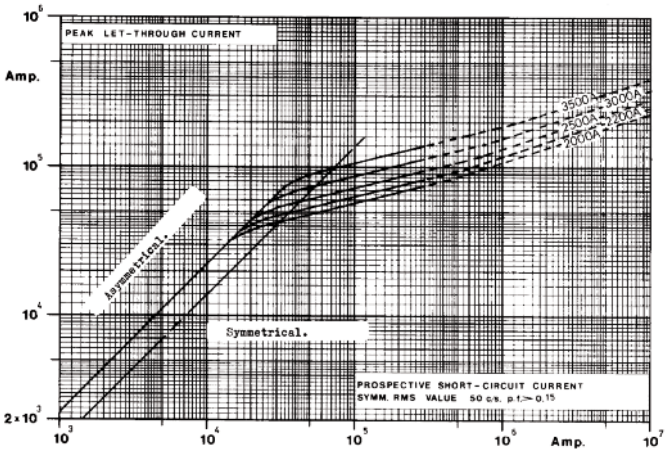
# Square Body Flush End Contact Size 24 — 1000V (IEC): 2000-5000A

## Size 24 — 2000-3500A: 1000V

### Time-Current Curve



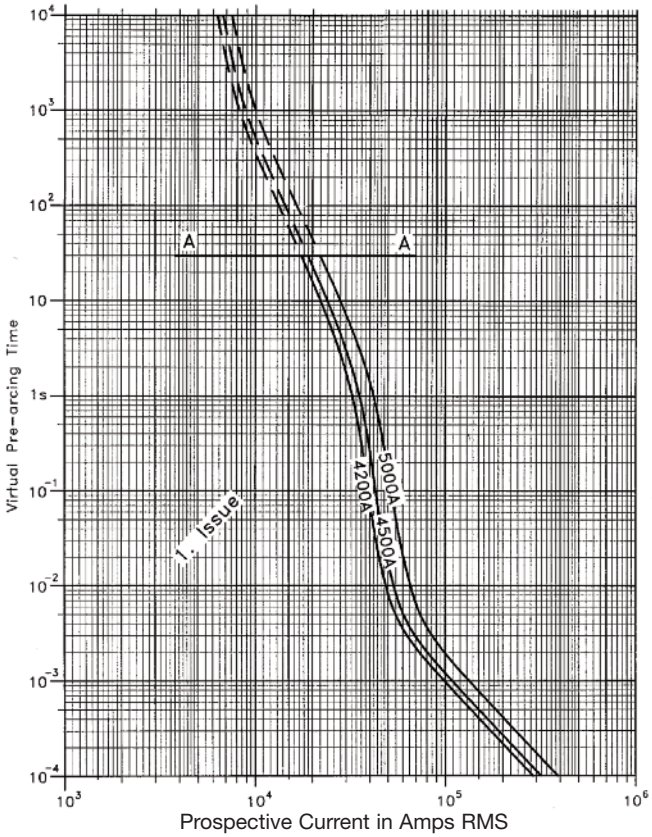

### Peak Let-Through Curve



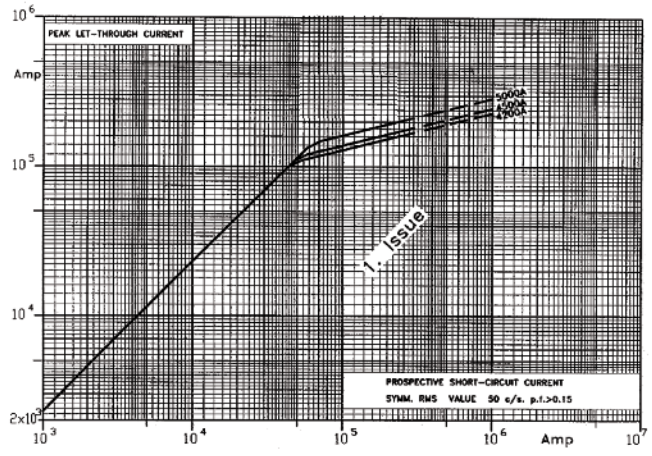

**Data Sheet: Available upon request**

## Size 24 — 4200-5000A: 1000V

### Time-Current Curve




### Peak Let-Through Curve




**Data Sheet: Available upon request**

# Square Body DIN 43 653 — 1250V/1300V (IEC/UL): 50-1400A

## 1250V/1300V (IEC/UL) 50-1400A

**Specifications**

**Description:** Square body DIN 43 653 stud-mount high speed fuses.

**Dimensions:** See dimensions illustration.

**Ratings:**

Volts: — 1250Vac (IEC)
— 1300Vac (UL)

Amps: — 50-1400A

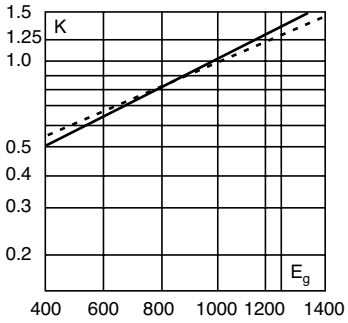
IR: — 100kA RMS Sym.

**Agency Information:** CE, Designed and tested to IEC 60269: Part 4. UL Recognized E125085.JFHR2, CSA Certified: Class 53787, File 1422-30.

### Electrical Characteristics

**Total Clearing $I^2t$**

The total clearing $I^2t$ at rated voltage and at power factor of 15% are given in the electrical characteristics. For other voltages, the clearing $I^2t$ is found by multiplying by correction factor, K, given as a function of applied working voltage, $E_g$, (rms).

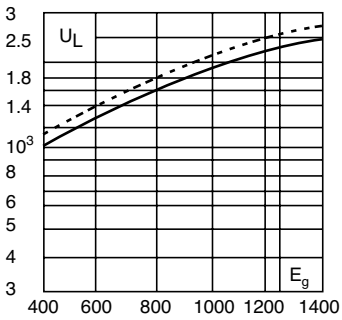



Dashed lines (- - - - - -) apply to the following amperages:.

| Size | Amps. |
|---|---|
| 1* | 400A |
| 1 | 500-630A |
| 2 | 630-1000A |
| 3 | 800-1400A |

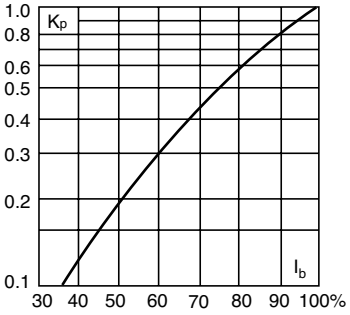
**Arc Voltage**

This curve gives the peak arc voltage, $U_L$, which may appear across the fuse during its operation as a function of theapplied working voltage, $E_g$, (rms) at a power factor of 15%.




**Power Losses**

Watts loss at rated current is given in the electrical characteristics. The curve allows the calculation of the power losses at load currents lower than the rated current. The correction factor, $K_p$, is given as a function of the RMS load current, $I_b$, in % of the rated current.




### Features and Benefits

- Excellent DC performance
- Low arc voltage and low energy let-through ($I^2t$)
- Low watts loss
- Superior cycling capability

### Typical Applications

- DC Common bus
- DC Drives
- Power converters/rectifiers
- Reduced voltage starters

**For Other Voltage Ratings in This Body Style**

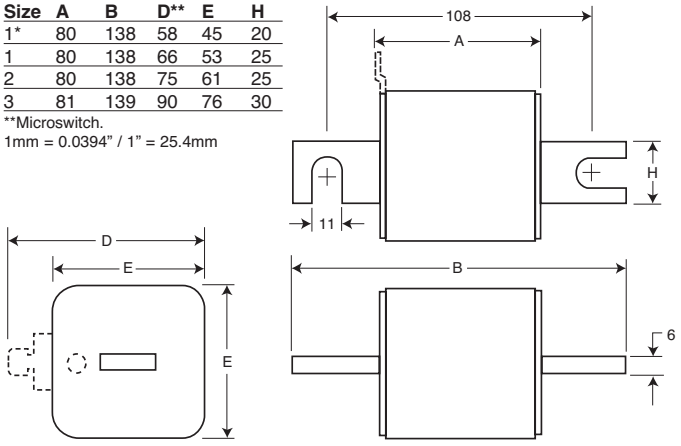
• See pages 150 (690V/700V) and 176 (1000V)

### Dimensions - mm

Type -/110, -TN/110

| Size | A | B | D** | E | H |
|---|---|---|---|---|---|
| 1* | 80 | 138 | 58 | 45 | 20 |
| 1 | 80 | 138 | 66 | 53 | 25 |
| 2 | 80 | 138 | 75 | 61 | 25 |
| 3 | 81 | 139 | 90 | 76 | 30 |

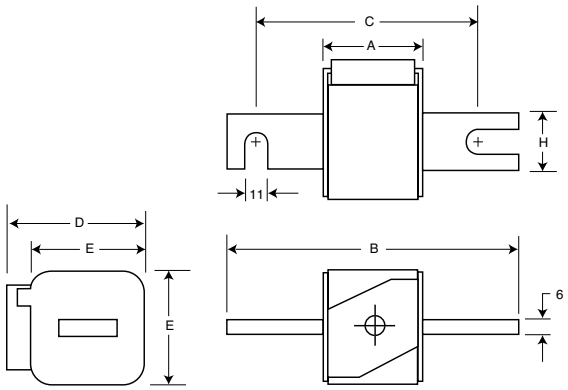
**Microswitch.
1mm = 0.0394" / 1" = 25.4mm




Type -KN/110

| Size | A | B | D | E | H |
|---|---|---|---|---|---|
| 1* | 80 | 138 | 58 | 45 | 20 |
| 1 | 80 | 138 | 66 | 53 | 25 |
| 2 | 80 | 138 | 75 | 61 | 25 |
| 3 | 81 | 139 | 90 | 76 | 30 |

1mm = 0.0394" / 1" = 25.4mm



# Square Body DIN 43 653 — 1250V/1300V (IEC/UL): 50-1400A

## Catalog Numbers

| Catalog Numbers | | | | Electrical Characteristics | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | | | $I^2t$ ($A^2$ Sec) | | | |
| -/110 Visual Indicator | -TN/110 Type T Indicator for Micro | -KN/110 Type K Indicator for Micro | Size | Rated Current RMS-Amps | Pre-arc | Clearing at 1000V | Clearing at 1250V | Watts Loss |
| 170M3138 | 170M3188 | 170M3238 | | 50 | 135 | 815 | 1100 | 15 |
| 170M3139 | 170M3189 | 170M3239 | | 63 | 215 | 1300 | 1750 | 20 |
| 170M3140 | 170M3190 | 170M3240 | | 80 | 420 | 2500 | 3350 | 25 |
| 170M3141 | 170M3191 | 170M3241 | | 100 | 750 | 4450 | 5950 | 30 |
| 170M3142 | 170M3192 | 170M3242 | | 125 | 1450 | 9000 | 11500 | 35 |
| 170M3143 | 170M3193 | 170M3243 | 1* | 160 | 2600 | 16000 | 21000 | 40 |
| 170M3144 | 170M3194 | 170M3244 | | 200 | 5150 | 31000 | 41000 | 45 |
| 170M3145 | 170M3195 | 170M3245 | | 250 | 9200 | 54500 | 73000 | 55 |
| 170M3146 | 170M3196 | 170M3246 | | 315 | 18500 | 115000 | 150000 | 60 |
| 170M3147 | 170M3197 | 170M3247 | | 350 | 27000 | 165000 | 220000 | 65 |
| 170M3148 | 170M3198 | 170M3248 | | 400 | 53000 | 265000 | 335000 | 70 |
| 170M4138 | 170M4188 | 170M4238 | | 160 | 1900 | 11500 | 15500 | 45 |
| 170M4139 | 170M4189 | 170M4239 | | 200 | 3800 | 22500 | 30000 | 50 |
| 170M4140 | 170M4190 | 170M4240 | | 250 | 7750 | 46000 | 61500 | 60 |
| 170M4141 | 170M4191 | 170M4241 | | 315 | 15000 | 90000 | 120000 | 65 |
| 170M4142 | 170M4192 | 170M4242 | 1 | 350 | 20000 | 125000 | 165000 | 70 |
| 170M4143 | 170M4193 | 170M4243 | | 400 | 29500 | 175000 | 235000 | 75 |
| 170M4144 | 170M4194 | 170M4244 | | 450 | 42000 | 250000 | 335000 | 80 |
| 170M4145 | 170M4195 | 170M4245 | | 500 | 69500 | 340000 | 435000 | 85 |
| 170M4146 | 170M4196 | 170M4246 | | 550 | 95000 | 465000 | 590000 | 95 |
| 170M4147 | 170M4197 | 170M4247 | | 630† | 130000 | 660000 | | 100 |
| 170M5138 | 170M5188 | 170M5238 | | 250 | 6500 | 38500 | 51500 | 65 |
| 170M5139 | 170M5189 | 170M5239 | | 280 | 9350 | 55500 | 74500 | 70 |
| 170M5140 | 170M5190 | 170M5240 | | 315 | 13000 | 77500 | 105000 | 75 |
| 170M5141 | 170M5191 | 170M5241 | | 350 | 16500 | 97500 | 135000 | 80 |
| 170M5142 | 170M5192 | 170M5242 | | 400 | 23000 | 140000 | 180000 | 85 |
| 170M5143 | 170M5193 | 170M5243 | | 450 | 34000 | 205000 | 270000 | 90 |
| 170M5144 | 170M5194 | 170M5244 | 2 | 500 | 48000 | 285000 | 380000 | 95 |
| 170M5145 | 170M5195 | 170M5245 | | 550 | 62000 | 370000 | 495000 | 100 |
| 170M5146 | 170M5196 | 170M5246 | | 630 | 115000 | 575000 | 730000 | 110 |
| 170M5147 | 170M5197 | 170M5247 | | 700 | 160000 | 795000 | 1050000 | 115 |
| 170M5148 | 170M5198 | 170M5248 | | 800 | 245000 | 1200000 | 1550000 | 120 |
| 170M5149 | 170M5199 | 170M5249 | | 900† | 360000 | 1750000 | | 125 |
| 170M5150 | 170M5200 | 170M5250 | | 1000† | 480000 | 2350000 | | 135 |
| 170M6138 | 170M6188 | 170M6238 | | 315 | 9500 | 58000 | 77500 | 85 |
| 170M6139 | 170M6189 | 170M6239 | | 350 | 13500 | 81500 | 110000 | 90 |
| 170M6140 | 170M6190 | 170M6240 | | 400 | 19500 | 120000 | 160000 | 95 |
| 170M6141 | 170M6191 | 170M6241 | | 450 | 31000 | 185000 | 245000 | 100 |
| 170M6142 | 170M6192 | 170M6242 | | 500 | 39000 | 235000 | 310000 | 105 |
| 170M6143 | 170M6193 | 170M6243 | | 550 | 55000 | 325000 | 435000 | 110 |
| 170M6144 | 170M6194 | 170M6244 | 3 | 630 | 83500 | 495000 | 665000 | 115 |
| 170M6145 | 170M6195 | 170M6245 | | 700 | 115000 | 705000 | 940000 | 120 |
| 170M6146 | 170M6196 | 170M6246 | | 800‡ | 205000 | 995000 | 1300000 | 125 |
| 170M6147 | 170M6197 | 170M6247 | | 900‡ | 305000 | 1500000 | 1900000 | 130 |
| 170M6148 | 170M6198 | 170M6248 | | 1000‡ | 450000 | 2150000 | 2750000 | 135 |
| 170M6149 | 170M6199 | 170M6249 | | 1100‡ | 575000 | 2800000 | 3600000 | 140 |
| 170M6150 | 170M6200 | 170M6250 | | 1250† | 810000 | 3950000 | | 145 |
| 170M6151 | 170M6201 | 170M6251 | | 1400† | 1250000 | 6000000 | | 150 |

†Rated voltage (IEC) 1100V.
‡Rated voltage (IEC) 1250V.
• Watts loss provided at rated current.
• Microswitch indicator ordered separately. See accessories on pages 212-213.
• For fuse curves see pages 193 and 194.

# Square Body Flush End Contact — 1250V/1300V (IEC/UL): 50-1400A

## 1250V/1300V (IEC/UL) 50-1400A

### Specifications

**Description:** Square body flush end contact high speed fuses.

**Dimensions:** See dimensions illustrations.

**Ratings:**

Volts: — 1250Vac (IEC)
— 1300Vac (UL)

Amps: — 50-1400A

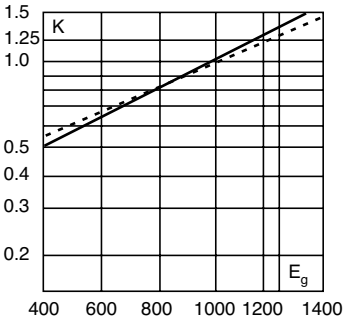
IR: — 100kA RMS Sym.

**Agency Information:** CE, Designed and tested to IEC 60269: Part 4. UL Recognized E125085.JFHR2, CSA Certified: Class 53787, File 1422-30.

### Electrical Characteristics

#### Total Clearing I²t

The total clearing I²t at rated voltage and at power factor of 15% are given in the electrical characteristics. For other voltages, the clearing I²t is found by multiplying by correction factor, K, given as a function of applied working voltage, $E_g$, (rms).

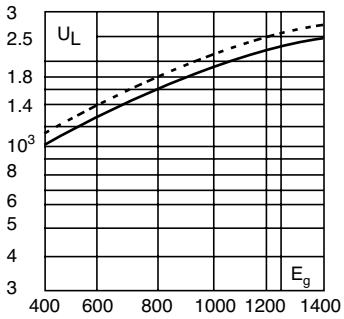



Dashed lines (- - - - - -) apply to the following amperages:.

| Size | Amps. |
|---|---|
| 1* | 400A |
| 1 | 500-630A |
| 2 | 630-1000A |
| 3 | 800-1400A |

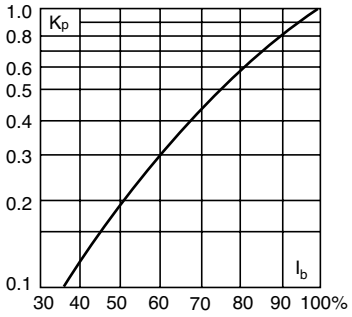
#### Arc Voltage

This curve gives the peak arc voltage, $U_L$, which may appear across the fuse during its operation as a function of theapplied working voltage, $E_g$, (rms) at a power factor of 15%.




#### Power Losses

Watts loss at rated current is given in the electrical characteristics. The curve allows the calculation of the power losses at load currents lower than the rated current. The correction factor, $K_p$, is given as a function of the RMS load current, $I_b$, in % of the rated current.




### Features and Benefits

- Excellent DC performance
- Low arc voltage and low energy let-through (I²t)
- Low watts loss
- Superior cycling capability

### Typical Applications

- DC Common bus
- DC Drives
- Power converters/rectifiers
- Reduced voltage starters

**For Other Voltage Ratings in This Body Style**

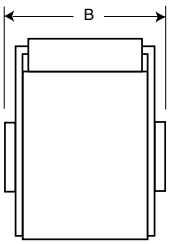
• See pages 152 (690V/700V) and 176 (1000V)

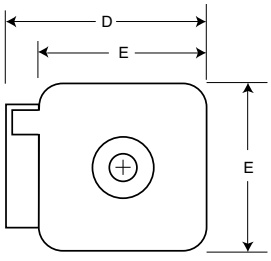
### Dimensions - mm

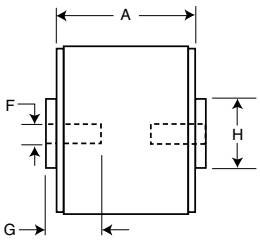
Type -BKN/-, -GKN/-

| Size | Type | A | B | D | E | F | F** (in) | G | H |
|---|---|---|---|---|---|---|---|---|---|
| 1* | BKN + GKN/75 | 74 | 75 | 59 | 45 | M8 | 5/16" - 18 UNC-2B | 5 | Ø17 |
| 1* | BKN/80 | 80 | 81 | 59 | 45 | M8 | | 5 | Ø17 |
| 1 | BKN + GKN/75 | 74 | 75 | 69 | 53 | M8 | 5/16" - 18 UNC-2B | 8 | Ø20 |
| 1 | BKN/80 | 80 | 81 | 69 | 53 | M8 | | 8 | Ø20 |
| 2 | BKN + GKN/75 | 74 | 75 | 77 | 61 | M10 | 3/8" - 16 UNC-2B | 10 | Ø24 |
| 2 | BKN/80 | 80 | 81 | 77 | 61 | M10 | | 10 | Ø24 |
| 2 | BKN + GKN/90 | 80 | 91 | 77 | 61 | M10 | 3/8" - 16 UNC-2B | 10 | Ø24 |
| 3 | BKN + GKN/75 | 74 | 76 | 92 | 76 | M12 | 1/2" - 13 UNC-2B | 10 | Ø30 |
| 3 | BKN/80 | 81 | 83 | 92 | 76 | M12 | | 10 | Ø30 |
| 3 | BKN + GKN/90 | 81 | 91 | 92 | 76 | M12 | 1/2" - 13 UNC-2B | 10 | Ø30 |

**Valid for fuses type -GKN/-.
1mm = 0.0394" / 1" = 25.4mm



# Square Body Flush End Contact — 1250V/1300V (IEC/UL): 50-1400A

## Catalog Numbers

| Catalog Numbers | | | | | | Electrical Characteristics | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| -BKN/75 Type K Indicator for Micro | -BKN/80 Type K Indicator for Micro | -BKN/90 Type K Indicator for Micro | -GKN/75 Type K Indicator for Micro | -GKN/90 Type K Indicator for Micro | Size | Rated Current RMS-Amps | I²t (A²Sec) Pre-arc | I²t (A²Sec) Clearing at 1000V | I²t (A²Sec) Clearing at 1250V | Watts Loss |
| 170M3388 | 170M3438 | | 170M3488 | | | 50 | 135 | 815 | 1100 | 15 |
| 170M3389 | 170M3439 | | 170M3489 | | | 63 | 215 | 1300 | 1750 | 20 |
| 170M3390 | 170M3440 | | 170M3490 | | | 80 | 420 | 2500 | 3350 | 25 |
| 170M3391 | 170M3441 | | 170M3491 | | | 100 | 750 | 4450 | 5950 | 30 |
| 170M3392 | 170M3442 | | 170M3492 | | | 125 | 1450 | 9000 | 11500 | 35 |
| 170M3393 | 170M3443 | | 170M3493 | | 1* | 160 | 2600 | 16000 | 21000 | 40 |
| 170M3394 | 170M3444 | | 170M3494 | | | 200 | 5150 | 31000 | 41000 | 45 |
| 170M3395 | 170M3445 | | 170M3495 | | | 250 | 9200 | 54500 | 73000 | 55 |
| 170M3396 | 170M3446 | | 170M3496 | | | 315 | 18500 | 115000 | 150000 | 60 |
| 170M3397 | 170M3447 | | 170M3497 | | | 350 | 27000 | 165000 | 220000 | 65 |
| | 170M3448 | | | | | 400 | 53000 | 265000 | 335000 | 70 |
| 170M4388 | 170M4438 | | 170M4488 | | | 160 | 1900 | 11500 | 15500 | 45 |
| 170M4389 | 170M4439 | | 170M4489 | | | 200 | 3800 | 22500 | 30000 | 50 |
| 170M4390 | 170M4440 | | 170M4490 | | | 250 | 7750 | 46000 | 61500 | 60 |
| 170M4391 | 170M4441 | | 170M4491 | | | 315 | 15000 | 90000 | 120000 | 65 |
| 170M4392 | 170M4442 | | 170M4492 | | | 350 | 20000 | 125000 | 165000 | 70 |
| 170M4393 | 170M4443 | | 170M4493 | | 1 | 400 | 29500 | 175000 | 235000 | 75 |
| 170M4394 | 170M4444 | | 170M4494 | | | 450 | 42000 | 250000 | 335000 | 80 |
| 170M4395† | 170M4445 | | 170M4495† | | | 500 | 69500 | 340000 | 435000 | 85 |
| 170M4396‡ | 170M4446 | | 170M4496‡ | | | 550 | 95000 | 465000 | 590000 | 95 |
| 170M4397‡ | 170M4447† | | 170M4497‡ | | | 630 | 130000 | 660000 | | 100 |
| 170M5388 | 170M5438 | | 170M5588 | | | 250 | 6500 | 38500 | 51500 | 65 |
| 170M5389 | 170M5439 | | 170M5589 | | | 280 | 9350 | 55500 | 74500 | 70 |
| 170M5390 | 170M5440 | | 170M5590 | | | 315 | 13000 | 77500 | 105000 | 75 |
| 170M5391 | 170M5441 | | 170M5591 | | | 350 | 16500 | 97500 | 135000 | 80 |
| 170M5392 | 170M5442 | | 170M5592 | | | 400 | 23000 | 140000 | 180000 | 85 |
| 170M5393 | 170M5443 | | 170M5593 | | | 450 | 34000 | 205000 | 270000 | 90 |
| 170M5394 | 170M5444 | 170M5494 | 170M5594 | 170M5644 | 2 | 500 | 48000 | 285000 | 380000 | 95 |
| 170M5395 | 170M5445 | 170M5495 | 170M5595 | 170M5645 | | 550 | 62000 | 370000 | 495000 | 100 |
| 170M5396† | 170M5446 | 170M5496 | 170M5596† | 170M5646 | | 630 | 115000 | 575000 | 730000 | 110 |
| 170M5397‡ | 170M5447† | 170M5497 | 170M5597‡ | 170M5647 | | 700 | 160000 | 795000 | 1050000 | 115 |
| 170M5398‡ | 170M5448‡ | 170M5498 | 170M5598‡ | 170M5648 | | 800 | 245000 | 1200000 | 1550000 | 120 |
| | | 170M5499 | | 170M5649 | | 900† | 360000 | 1750000 | | 125 |
| | | 170M5500 | | 170M5650 | | 1000† | 480000 | 2350000 | | 135 |
| 170M6338 | 170M6538 | | 170M6588 | | | 315 | 9500 | 58000 | 77500 | 85 |
| 170M6339 | 170M6539 | | 170M6589 | | | 350 | 13500 | 81500 | 110000 | 90 |
| 170M6340 | 170M6540 | | 170M6590 | | | 400 | 19500 | 120000 | 160000 | 95 |
| 170M6341 | 170M6541 | | 170M6591 | | | 450 | 31000 | 185000 | 245000 | 100 |
| 170M6342 | 170M6542 | | 170M6592 | | | 500 | 39000 | 235000 | 310000 | 105 |
| 170M6343 | 170M6543 | | 170M6593 | | | 550 | 55000 | 325000 | 435000 | 110 |
| 170M6344 | 170M6544 | 170M6494 | 170M6594 | 170M6644 | | 630 | 83500 | 495000 | 665000 | 115 |
| 170M6345 | 170M6545 | 170M6495 | 170M6595 | 170M6645 | 3 | 700 | 115000 | 705000 | 940000 | 120 |
| 170M6346† | 170M6546 | 170M6496¥ | 170M6596† | 170M6646¥ | | 800 | 205000 | 995000 | 1300000 | 125 |
| 170M6347‡ | 170M6547† | 170M6497¥ | 170M6597‡ | 170M6647¥ | | 900 | 305000 | 1500000 | 1900000 | 130 |
| 170M6348‡ | 170M6548† | 170M6498¥ | 170M6598‡ | 170M6648¥ | | 1000 | 450000 | 2150000 | 2750000 | 135 |
| 170M6349‡ | 170M6549‡ | 170M6499¥ | 170M6599‡ | 170M6649¥ | | 1100 | 575000 | 2800000 | 3600000 | 140 |
| | | 170M6500 | | 170M6650 | | 1250† | 810000 | 3950000 | | 145 |
| | | 170M6501 | | 170M6651 | | 1400† | 1250000 | 6000000 | | 150 |

†Rated voltage (IEC) 1100V.
‡Rated voltage (IEC) 1000V.
¥Rated voltage (IEC) 1250V.
• Watts loss provided at rated current.
• Microswitch indicator ordered separately. See accessories on pages 212-213.
• For fuse curves see pages 193 and 194.

# Square Body US Style — 1250V/1300V (IEC/UL): 50-1400A

## 1250V/1300V (IEC/UL) 50-1400A

**Specifications**

**Description:** Square body US style high speed fuses.

**Dimensions:** See dimensions illustration.

**Ratings:**

Volts: — 1250Vac (IEC)
— 1300Vac (UL)

Amps: — 50-1400A

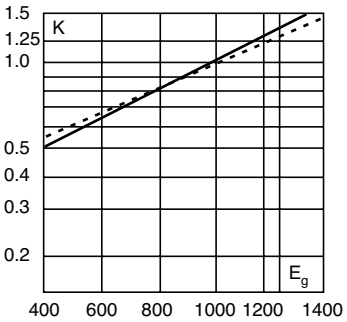
IR: — 100kA RMS Sym.

**Agency Information:** CE, Designed and tested to IEC 60269: Part 4. UL Recognized E125085.JFHR2, CSA Certified: Class 53787, File 1422-30.

**Electrical Characteristics**

**Total Clearing $I^2t$**

The total clearing $I^2t$ at rated voltage and at power factor of 15% are given in the electrical characteristics. For other voltages, the clearing $I^2t$ is found by multiplying by correction factor, K, given as a function of applied working voltage, $E_g$, (rms).

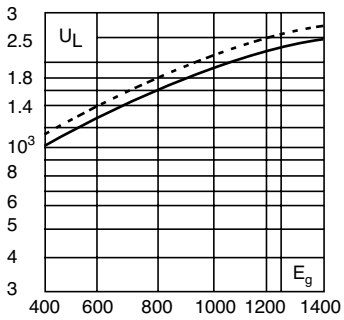



Dashed lines (- - - - - -) apply to the following amperages:.

| Size | Amps. |
|---|---|
| 1* | 400A |
| 1 | 500-630A |
| 2 | 630-1000A |
| 3 | 800-1400A |

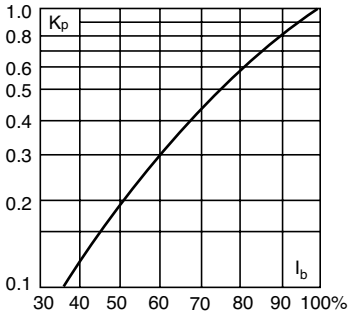
**Arc Voltage**

This curve gives the peak arc voltage, $U_L$, which may appear across the fuse during its operation as a function of theapplied working voltage, $E_g$, (rms) at a power factor of 15%.




**Power Losses**

Watts loss at rated current is given in the electrical characteristics. The curve allows the calculation of the power losses at load currents lower than the rated current. The correction factor, $K_p$, is given as a function of the RMS load current, $I_b$, in % of the rated current.




**Features and Benefits**

- Excellent DC performance
- Low arc voltage and low energy let-through ($I^2t$)
- Low watts loss
- Superior cycling capability

**Typical Applications**

- DC Common bus
- DC Drives
- Power converters/rectifiers
- Reduced voltage starters

**For Other Voltage Ratings in This Body Style**

• See pages 153 (690V/700V) and 178 (1000V)

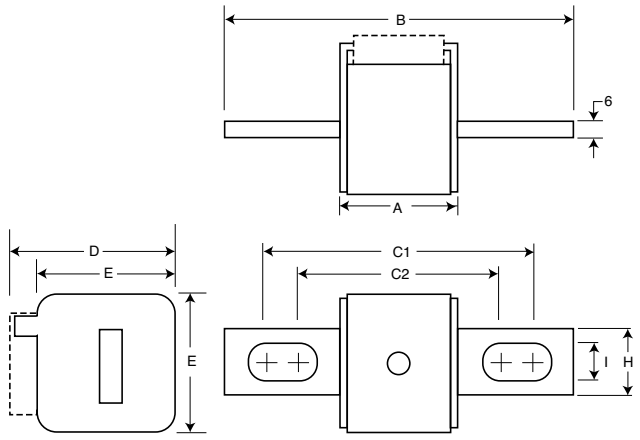


**Dimensions - mm**

Type -FU/115, -FKE/115

| Size | B | C1 | C2 | D | E | H | I |
|---|---|---|---|---|---|---|---|
| 1* | 156 | 130 | 101 | 59 | 45 | 20 | 10 |
| 1 | 160 | 127 | 102 | 69 | 53 | 25 | 14 |
| 2 | 160 | 127 | 102 | 77 | 61 | 25 | 14 |
| 3 | 159 | 128 | 101 | 92 | 76 | 36 | 16 |

1mm = 0.0394" / 1" = 25.4mm



# Square Body US Style — 1250V/1300V (IEC/UL): 50-1400A

## Catalog Numbers

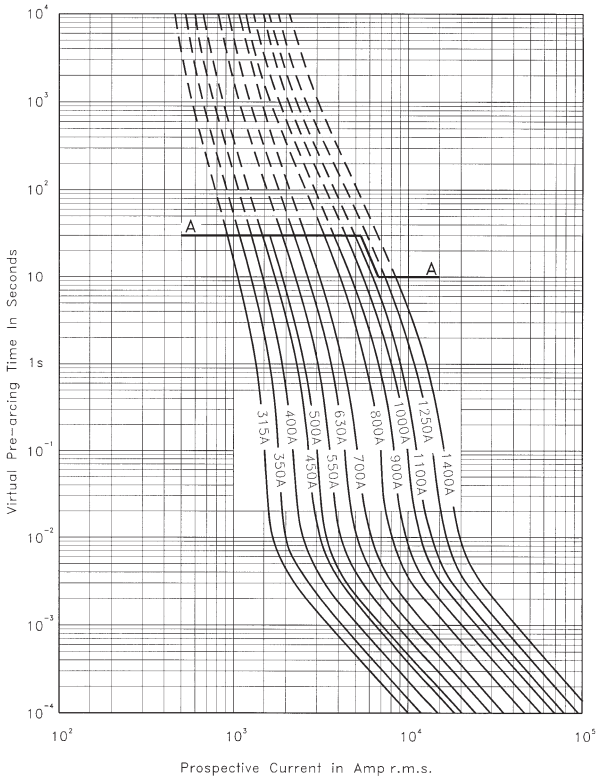
| Catalog Numbers | | | Electrical Characteristics | | | | |
|---|---|---|---|---|---|---|---|
| | | | | $I^2t$ ($A^2$ Sec) | | | |
| -FU/115 Without Indicator | -FKE/115 Type K Indicator for Micro | Size | Rated Current RMS-Amps | Pre-arc | Clearing at 1000V | Clearing at 1250V | Watts Loss |
| 170M3688 | 170M3738 | | 50 | 135 | 815 | 1100 | 15 |
| 170M3689 | 170M3739 | | 63 | 215 | 1300 | 1750 | 20 |
| 170M3690 | 170M3740 | | 80 | 420 | 2500 | 3350 | 25 |
| 170M3691 | 170M3741 | | 100 | 750 | 4450 | 5950 | 30 |
| 170M3692 | 170M3742 | | 125 | 1450 | 9000 | 11500 | 35 |
| 170M3693 | 170M3743 | 1* | 160 | 2600 | 16000 | 21000 | 40 |
| 170M3694 | 170M3744 | | 200 | 5150 | 31000 | 41000 | 45 |
| 170M3695 | 170M3745 | | 250 | 9200 | 54500 | 73000 | 55 |
| 170M3696 | 170M3746 | | 315 | 18500 | 115000 | 150000 | 60 |
| 170M3697 | 170M3747 | | 350 | 27000 | 165000 | 220000 | 65 |
| 170M4688 | 170M4738 | | 160 | 1900 | 11500 | 15500 | 45 |
| 170M4689 | 170M4739 | | 200 | 3800 | 22500 | 30000 | 50 |
| 170M4690 | 170M4740 | | 250 | 7750 | 46000 | 61500 | 60 |
| 170M4691 | 170M4741 | | 315 | 15000 | 90000 | 120000 | 65 |
| 170M4692 | 170M4742 | 1 | 350 | 20000 | 125000 | 165000 | 70 |
| 170M4693 | 170M4743 | | 400 | 29500 | 175000 | 235000 | 75 |
| 170M4694 | 170M4744 | | 450 | 42000 | 250000 | 335000 | 80 |
| 170M4695 | 170M4745 | | 500† | 69500 | 340000 | | 85 |
| 170M4696 | 170M4746 | | 550† | 95000 | 465000 | | 95 |
| 170M4697 | 170M4747 | | 630‡ | 130000 | 660000 | | 100 |
| 170M5688 | 170M5738 | | 250 | 6500 | 38500 | 51500 | 65 |
| 170M5689 | 170M5739 | | 280 | 9350 | 55500 | 74500 | 70 |
| 170M5690 | 170M5740 | | 315 | 13000 | 77500 | 105000 | 75 |
| 170M5691 | 170M5741 | | 350 | 16500 | 97500 | 135000 | 80 |
| 170M5692 | 170M5742 | | 400 | 23000 | 140000 | 180000 | 85 |
| 170M5693 | 170M5743 | | 450 | 34000 | 205000 | 270000 | 90 |
| 170M5694 | 170M5744 | 2 | 500 | 48000 | 285000 | 380000 | 95 |
| 170M5695 | 170M5745 | | 550 | 62000 | 370000 | 495000 | 100 |
| 170M5696 | 170M5746 | | 630 | 115000 | 575000 | 730000 | 110 |
| 170M5697 | 170M5747 | | 700† | 160000 | 795000 | | 115 |
| 170M5698 | 170M5748 | | 800† | 245000 | 1200000 | | 120 |
| 170M5699 | 170M5749 | | 900‡ | 360000 | 1750000 | | 125 |
| 170M5700 | 170M5750 | | 1000‡ | 480000 | 2350000 | | 135 |
| 170M6688 | 170M6738 | | 315 | 9500 | 58000 | 77500 | 185 |
| 170M6689 | 170M6739 | | 350 | 13500 | 81500 | 110000 | 90 |
| 170M6690 | 170M6740 | | 400 | 19500 | 120000 | 160000 | 95 |
| 170M6691 | 170M6741 | | 450 | 31000 | 185000 | 245000 | 100 |
| 170M6692 | 170M6742 | | 500 | 39000 | 235000 | 310000 | 105 |
| 170M6693 | 170M6743 | | 550 | 55000 | 325000 | 435000 | 110 |
| 170M6694 | 170M6744 | 3 | 630 | 83500 | 495000 | 665000 | 115 |
| 170M6695 | 170M6745 | | 700 | 115000 | 705000 | 940000 | 120 |
| 170M6696 | 170M6746 | | 800 | 205000 | 995000 | 1300000 | 125 |
| 170M6697 | 170M6747 | | 900 | 305000 | 1500000 | 1900000 | 130 |
| 170M6698† | 170M6748† | | 1000¥ | 450000 | 2150000 | | 135 |
| 170M6699† | 170M6749† | | 1100¥ | 575000 | 2800000 | | 140 |
| 170M6700‡ | 170M6750‡ | | 1250¥ | 810000 | 3950000 | | 145 |
| 170M6701‡ | 170M6751‡ | | 1400¥ | 1250000 | 6000000 | | 150 |

†Rated voltage (IEC) 1100.
‡Rated voltage (IEC) 1000V.
¥ UL Recognition at 1000V.
• Watts loss provided at rated current.
• Microswitch indicator ordered separately. See accessories on pages 212-213.
• For fuse curves see pages 193 and 194.

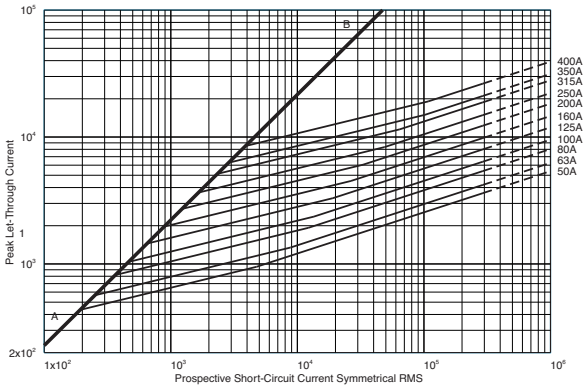
# Square Body Size 1*, 1 — 1250V/1300V (IEC/UL): 50-1400A

## Size 1* — 50-400A:1250V

### Time-Current Curve

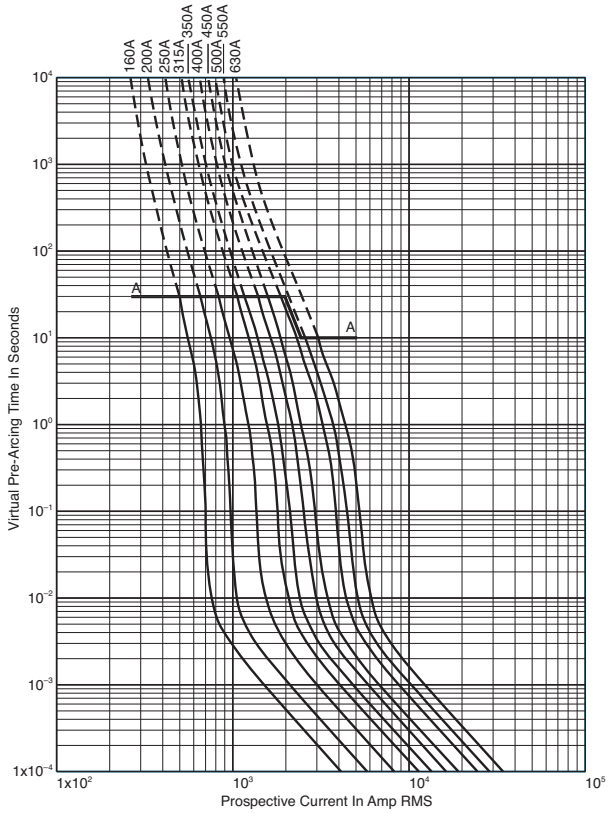



### Peak Let-Through Curve

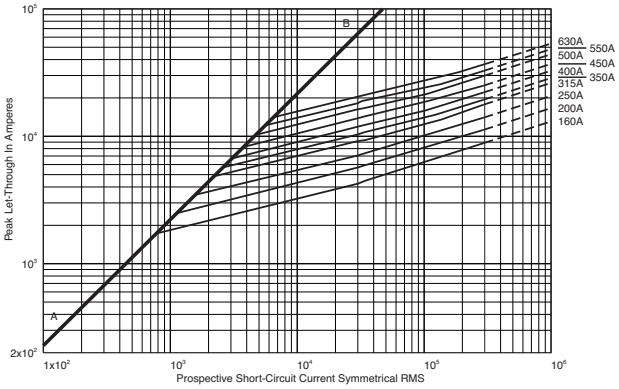



## Size 1 — 160-630A: 1250V

### Time-Current Curve




### Peak Let-Through Curve




630A fuse is derated to 1100V (IEC).

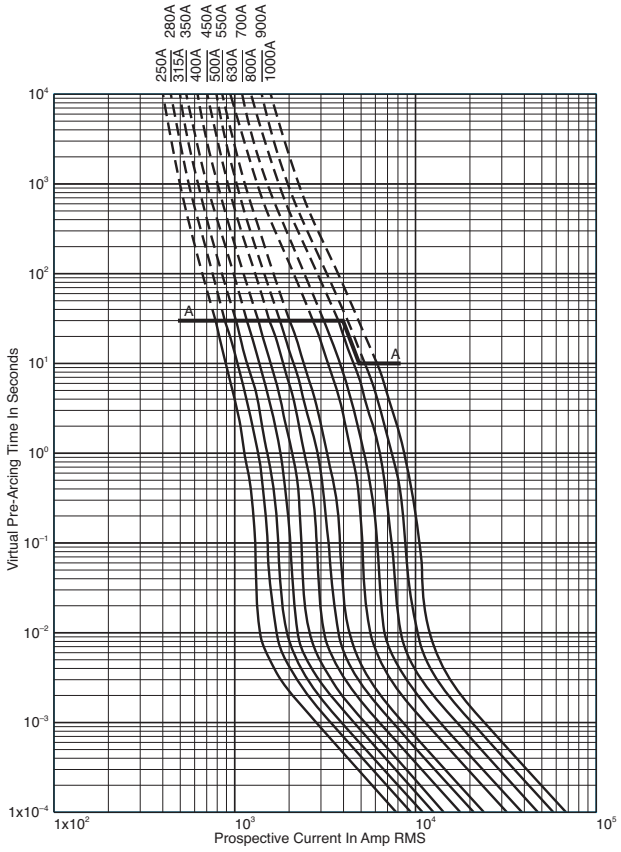
**Data Sheet: 17056630**

**Data Sheet: 17056632**

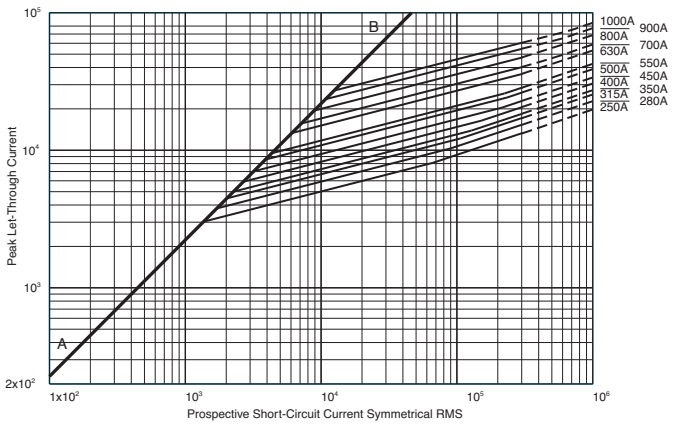
# Square Body Size 2, 3 — 1250V/1300V (IEC/UL): 50-1400A

## Size 2 — 250-1000A: 1250V

### Time-Current Curve




### Peak Let-Through Curve

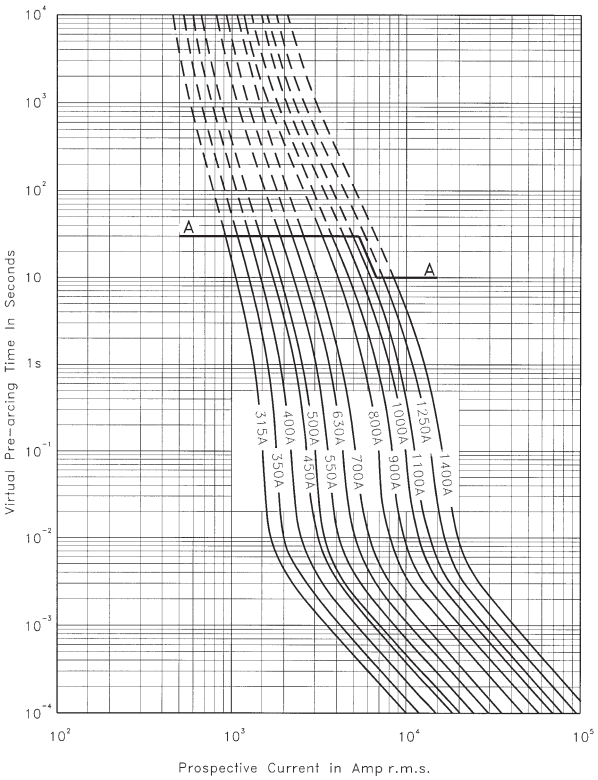



900-1000A fuses are derated to 1100V (IEC).

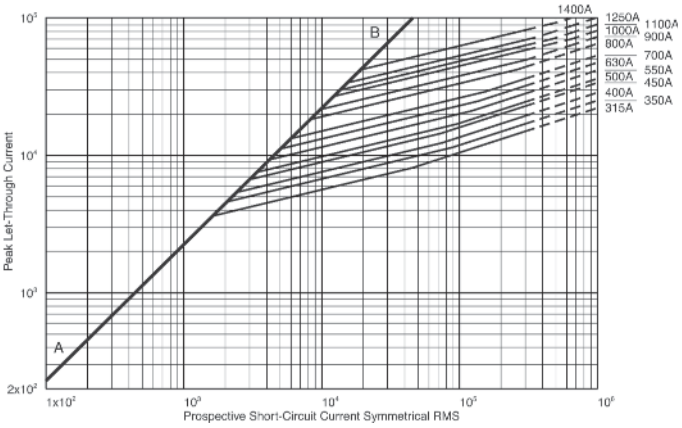
**Data Sheet: 17056634**

## Size 3 — 315-1400A: 1250V

### Time-Current Curve




### Peak Let-Through Curve




1250-1400A fuses are derated to 1100V (IEC).

**Data Sheet: 17056636**

# Square Body Flush End Contact Size 4 — 1250V (IEC): 1400-2500A

## 1250V (IEC) 1400-2500A

**Specifications**


**Description:** High speed square body fuses, for the protection of the power rectifier section of the equipment.

**Dimensions:** See dimensions illustration.

**Ratings:**

Volts: — 1250Vac (IEC)

Amps: — 1400-2500A

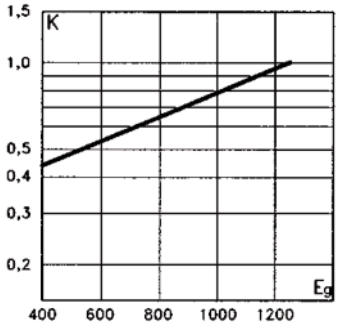
IR: — 125kA RMS Sym.

**Agency Information:** CE, Designed and tested to IEC 60269: Part 4. UL Recognized E125085.JFHR2.

### Electrical Characteristics

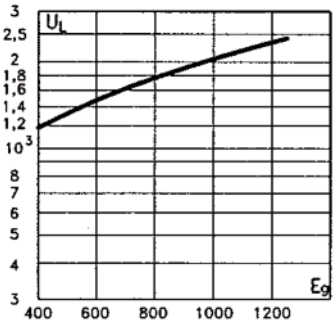
#### Total clearing I²t

The total clearing I²t at rated voltage and at power factor of 15% are given in the electrical characteristics. For other voltages, the clearing I²t is found by multiplying by correction factor, K, given as a function of applied working voltage, $E_g$, (rms).



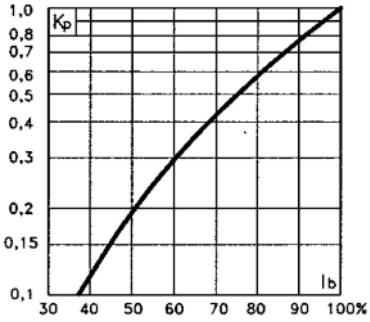

#### Arc Voltage

This curve gives the peak arc voltage, $U_L$, which may appear across the fuse during its operation as a function of the applied working voltage $E_g$ , (rms) at a power factor of 15%.




#### Power Losses

Watts loss at rated current is given in the electrical characteristics. The curve allows the calculation of the power losses at load currents lower than the rated current. The correction factor, $K_p$, is given as a function of the RMS load current, $I_b$, in % of the rated current.




#### Features and Benefits

- Excellent DC performance
- Low arc voltage and low energy let-through (I²t)
- Low watts loss
- Superior cycling capability

#### Typical Applications

- DC Common bus
- DC Drives
- Power converters/rectifiers
- Reduced voltage starters

**For Other Voltage Ratings in This Body Style**

• See pages 163 (690V/700V) and 182 (1000V)

### Catalog Numbers

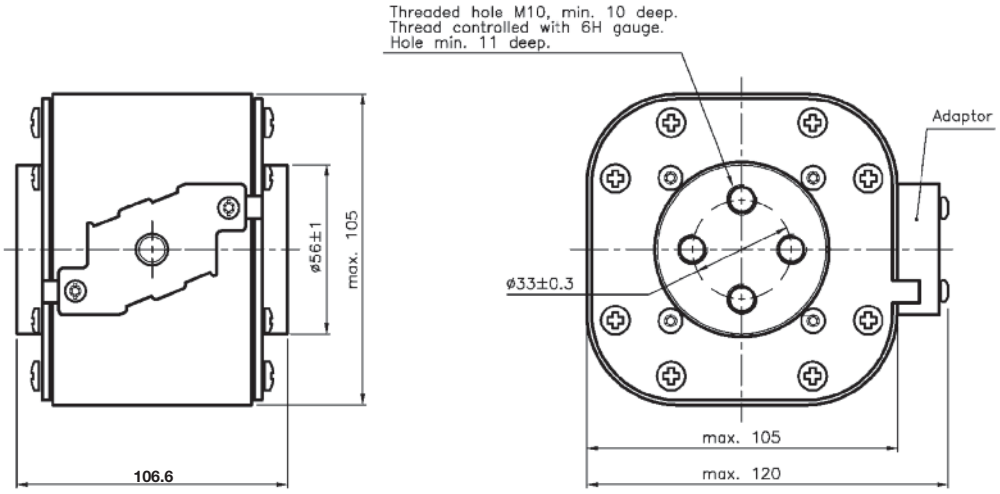
| Fuse Size | Catalog Number | | Electrical Characteristics | | | | |
|---|---|---|---|---|---|---|---|
| | -BKN/105 Type K Indicator | -SBKN/105 Type K Indicator | Rated Voltage (V) | Rated Current RMS-Amp | I²t (A²Sec) Pre-arc | I²t (A²Sec) Clearing at 1250V | Watt Loss (W) |
| 4 | 170M7217 | 170M7512 | 1250 | 1400 | 800000 | 5000000 | 195 |
| | 170M7597 | 170M7510 | | 1500 | 1000000 | 6200000 | 200 |
| | 170M7676 | 170M7511 | | 1700 | 1400000 | 8700000 | 220 |
| | 170M7532 | 170M7976 | | 1800 | 1700000 | 11000000 | 225 |
| | 170M7633 | 170M7513 | | 2000 | 2300000 | 14500000 | 235 |
| | 170M7592 | 170M7546 | | 2200 | 3100000 | 19500000 | 245 |
| | 170M7107 | 170M7516 | | 2400 | 4000000 | 25000000 | 255 |
| | 170M7595 | 170M7978 | | 2500 | 4500000 | 28000000 | 260 |

Data Sheet: 170K6640 , 170K6642

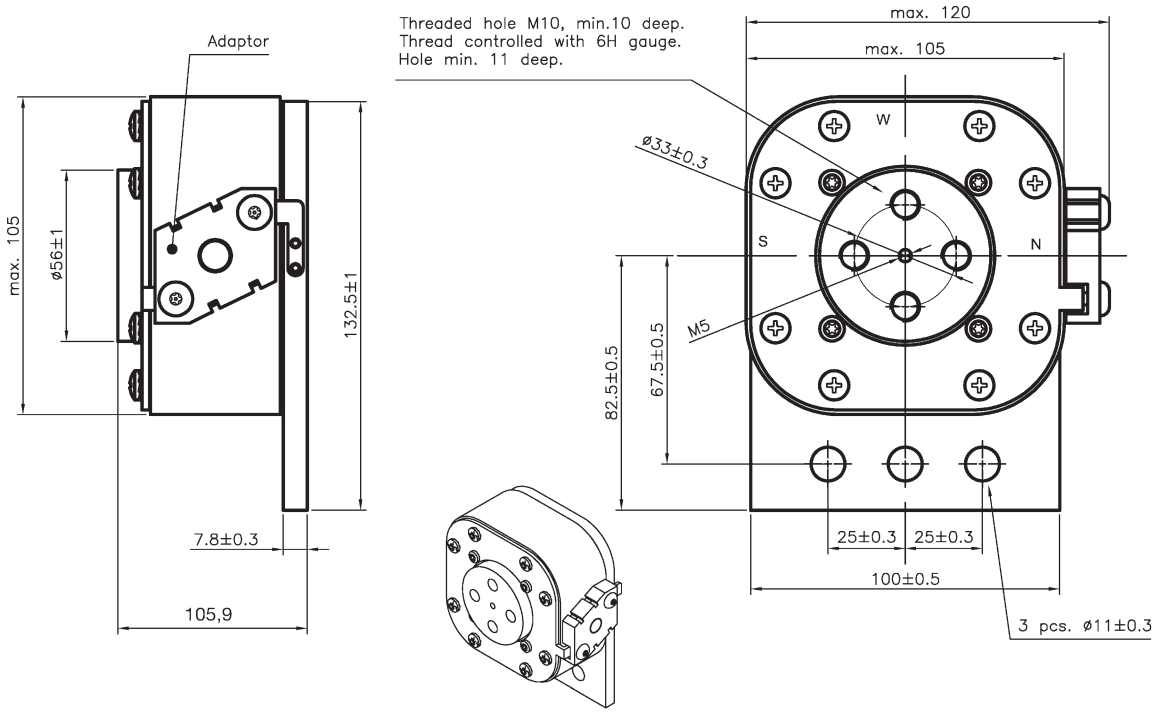
# Square Body Flush End Contact Size 4 — 1250V (IEC): 1400-2500A

## Dimensions - mm

Type 4BKN/105



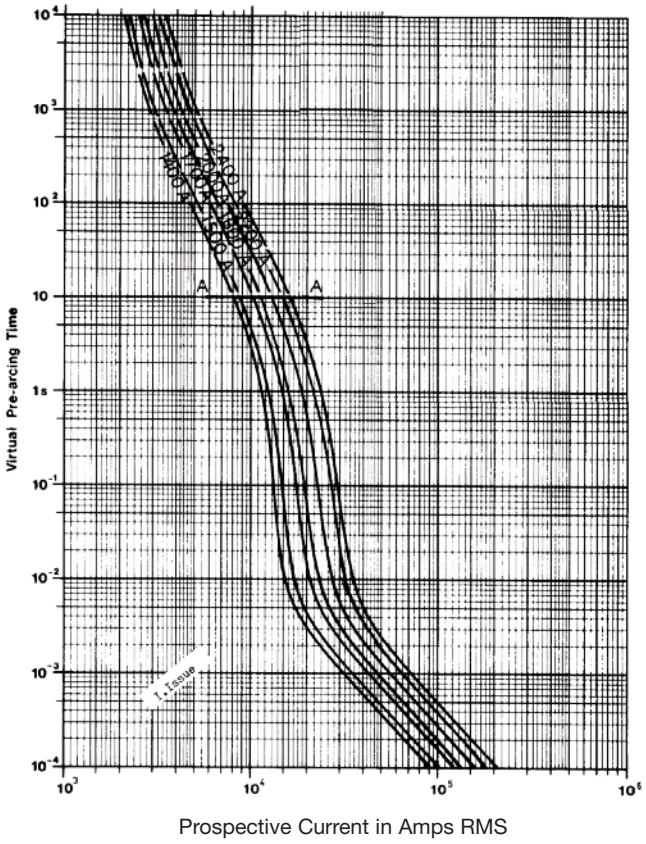

Type 4SBKN/105



# Square Body Flush End Contact Size 4 — 1250V (IEC): 1400-2500A

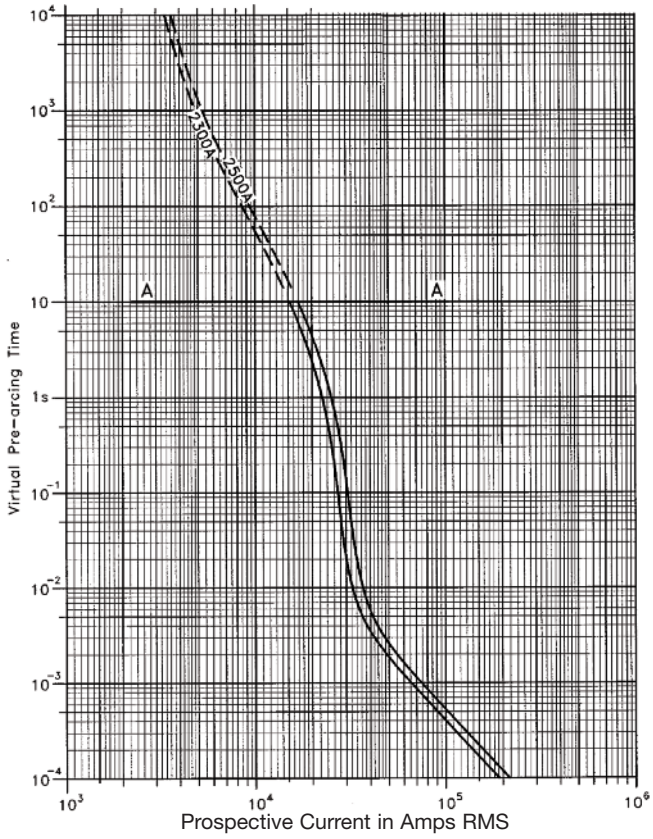
## Size 4 — 1400-2400A: 1250V

**Time-Current Curve**

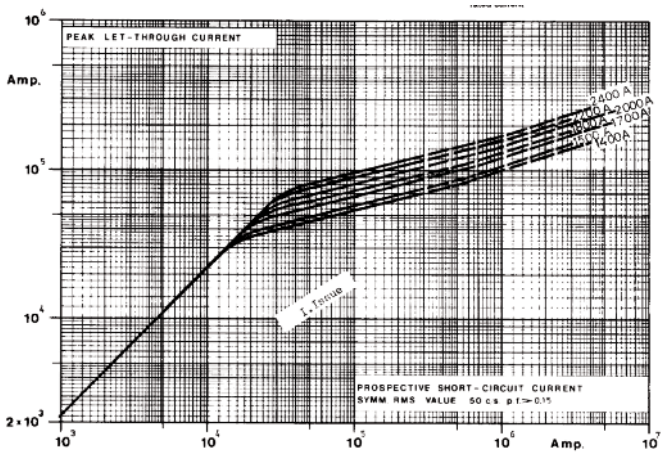



## Size 4 — 2300-2500A: 1250V

**Time-Current Curve**

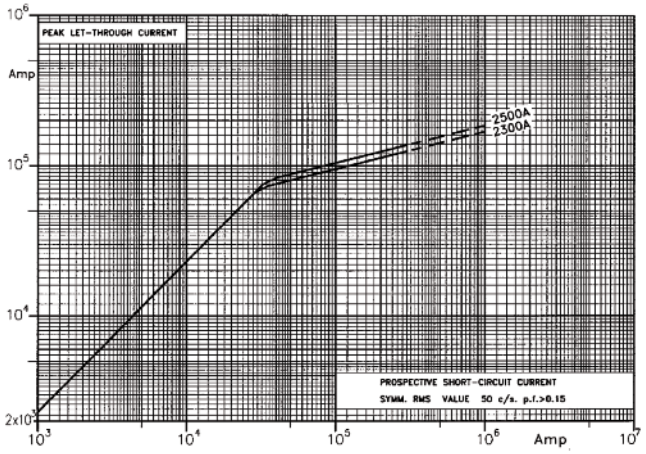



**Peak Let-Through Curve**




**Data Sheet: Available upon request**

**Peak Let-Through Curve**




**Data Sheet: Available upon request**

# Square Body Flush End Contact Size 23— 1250V (IEC/UL): 630-2800A

## 1250V (IEC) 630-2800A

### Specifications

**Description:** High speed square body fuses, for the protection of the power rectifier section of the equipment.

**Dimensions:** See dimensions illustration.

**Ratings:**

Volts: — 1250Vac (IEC)

Amps: — 630-2800A

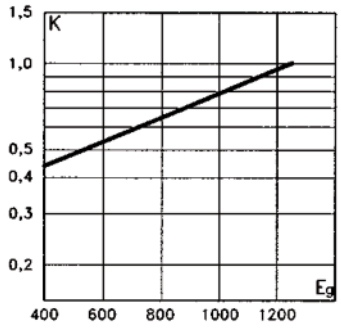
IR: — 125kA RMS Sym.

**Agency Information:** CE, Designed and tested to IEC 60269: Part 4. UL Recognized.

### Electrical Characteristics

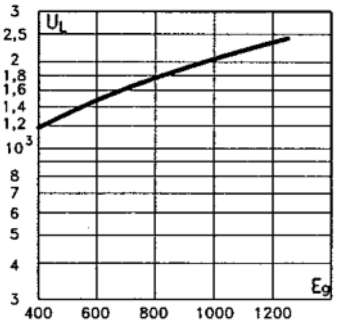
#### Total clearing $I^2t$

The total clearing $I^2t$ at rated voltage and at power factor of 15% are given in the electrical characteristics. For other voltages, the clearing $I^2t$ is found by multiplying by correction factor, K, given as a function of applied working voltage, $E_g$, (rms).



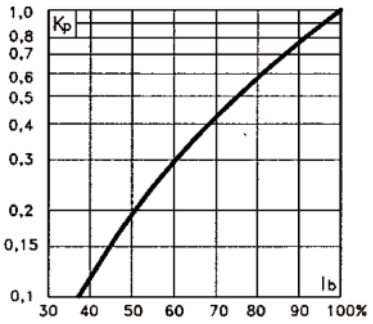

#### Arc Voltage

This curve gives the peak arc voltage, $U_L$, which may appear across the fuse during its operation as a function of the applied working voltage $E_g$ , (rms) at a power factor of 15%.




#### Power Losses

Watts loss at rated current is given in the electrical characteristics. The curve allows the calculation of the power losses at load currents lower than the rated current. The correction factor, $K_p$, is given as a function of the RMS load current, $I_b$, in % of the rated current.




### Features and Benefits

- Excellent DC performance
- Low arc voltage and low energy let-through ($I^2t$)
- Low watts loss
- Superior cycling capability

### Typical Applications

- DC Common bus
- DC Drives
- Power converters/rectifiers
- Reduced voltage starters

**For Other Voltage Ratings in This Body Style**

• See pages 165 (660V) and 185 (1000V)

### Catalog Numbers

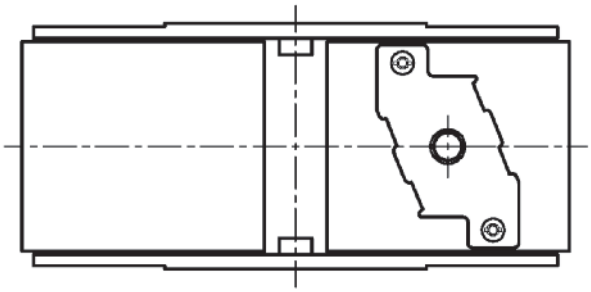
| Fuse Size | Catalog Number | | | | | | Electrical Characteristics | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | -BU/75 without Indicator | -BKE/75 Type K Indicator | -BKN/75 Type K Indicator | -BU/80 without Indicator | -BKE/80 Type K Indicator | -BKN/80 Type K Indicator | Rated Voltage (V) | Rated Current RMS-Amp | $I^2t$ ($A^2$Sec) Pre-arc | $I^2t$ ($A^2$Sec) Clearing at 1250V | Watts Loss (W) |
| 23 | 170M6775 | 170M6795 | 170M6785 | | | | 1250 | 630 | 38000 | 310000 | 170 |
| | 170M6776 | 170M6796 | 170M6786 | | | | | 700 | 54000 | 440000 | 180 |
| | 170M6777 | 170M6797 | 170M6787 | | | | | 800 | 78000 | 640000 | 190 |
| | 170M6805 | 170M6807 | 170M6806 | | | | | 900 | 120000 | 980000 | 200 |
| | 170M6778 | 170M6798 | 170M6788 | | | | | 1000 | 155000 | 1250000 | 210 |
| | 170M6779 | 170M6799 | 170M6789 | | | | | 1100 | 220000 | 1750000 | 220 |
| | 170M6780 | 170M6800 | 170M6790 | | | | | 1250 | 330000 | 2700000 | 230 |
| | 170M6781 | 170M6801 | 170M6791 | | | | | 1400 | 460000 | 3800000 | 240 |
| | 170M6782 | 170M6802 | 170M6792 | | | | | 1600 | 820000 | 5200000 | 250 |
| | 170M6783 | 170M6803 | 170M6793 | | | | | 1800 | 1200000 | 7600000 | 260 |
| | | | | 170M6784 | 170M6804 | 170M6794 | | 2000 | 1800000 | 11000000 | 270 |
| | | | | 170M6815 | 170M6833 | 170M6827 | | 2200 | 2300000 | 14500000 | 280 |
| | | | | 170M6816 | 170M6834 | 170M6828 | 1100 | 2500 | 3200000 | †16000000 | 290 |
| | | | | 170M6817 | 170M6835 | 170M6829 | | 2800 | 5000000 | †24000000 | 300 |

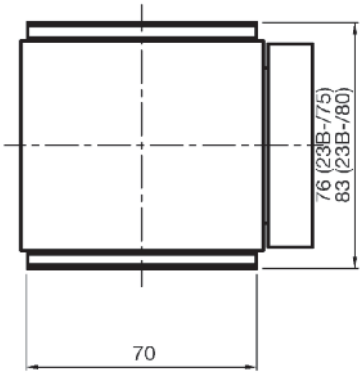
† $A^2s$ @ 1000V

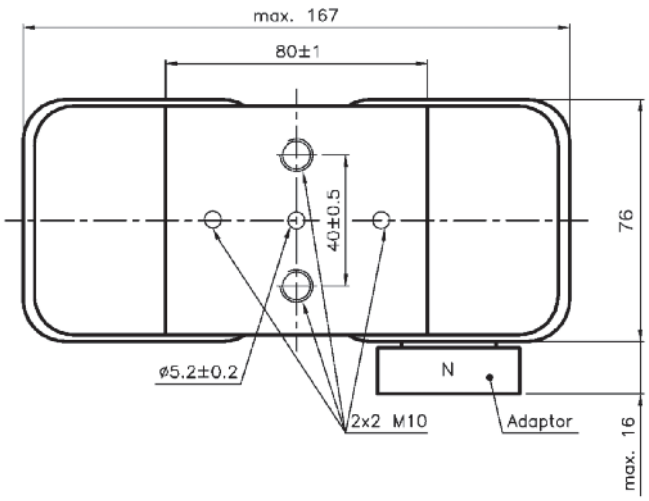
Data Sheet: 170K6638

# Square Body Flush End Contact Size 23— 1250V (IEC/UL): 630-2800A

## Dimensions - mm

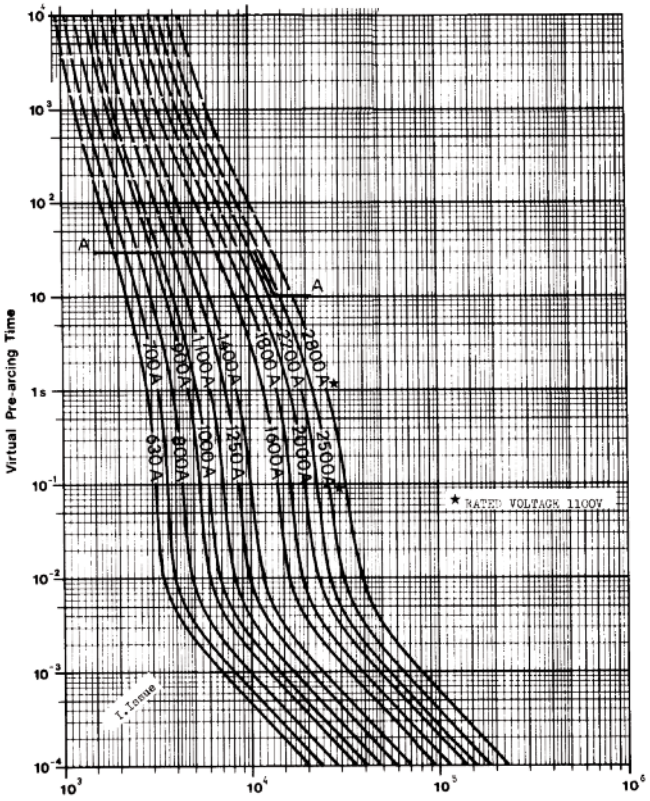




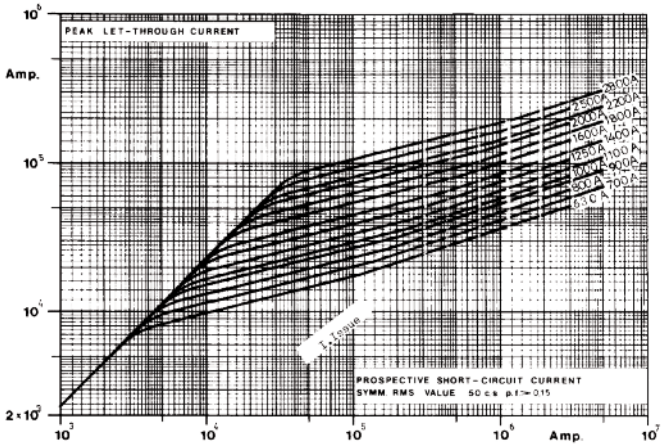

## Size 23 — 630-2800A: 1250V

### Time-Current Curve



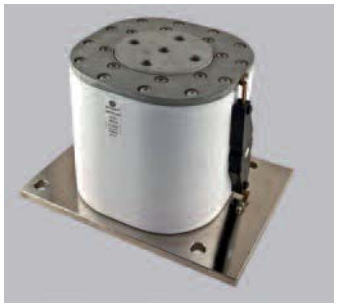

Prospective Current in Amps RMS

### Peak Let-Through Curve



# Square Body Flush End Contact Size 5— 1000V-2000V: 1800-5000A

## 1000V (IEC) 1800-5000A



**Specifications**

**Description:** High speed square body fuses, for the protection or isolation for components such as diodes, silicon controlled rectifiers (SCRs), Gate torn-Off Thyristors (GTOs) and IGBTs.

**Dimensions:** See dimensions illustration.

**Ratings:**

Volts: — 1000-2000Vac (IEC)

Amps: — 1800-5000A

IR: — 300kA RMS Sym. estimated, 197kA tested

**Agency Information:** Consult Bussmann. bulehighspeedtechnical@cooperindustries.com

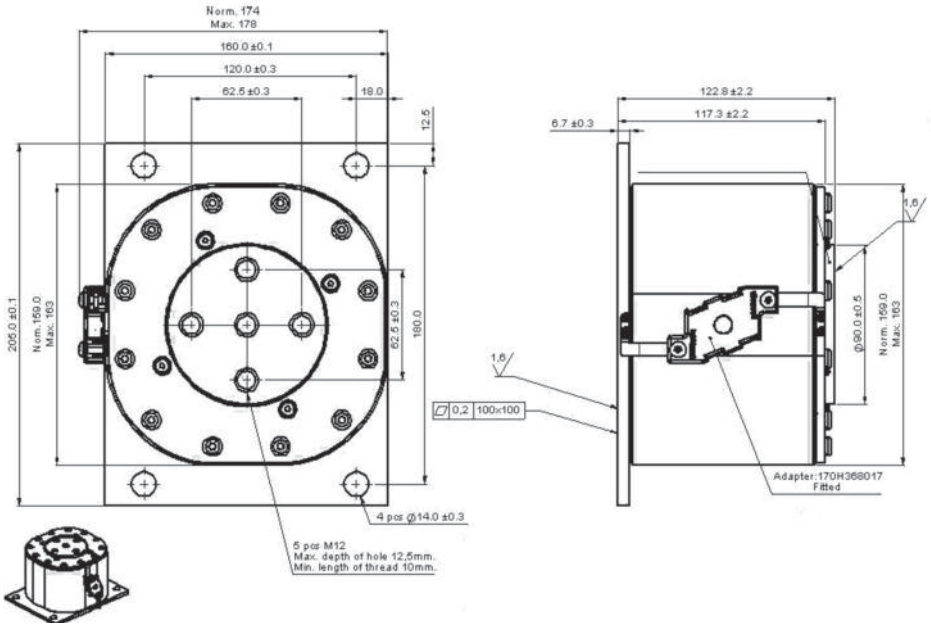
**Features and Benefits**

- Excellent DC performance
- Low arc voltage and low energy let-through ($I^2t$)
- Low watts loss
- Superior cycling capability

**Typical Applications**

- AC and DC drives
- High power converters/rectifiers

**Dimensions - mm (in)**




This dimension drawing is an example of the range of size 5 fuses available.

**Contact Bussmann for available parts and technical information.**

# Square Body DC Fuses — 750Vdc: 63-500A

## 750Vdc 63-500A

### Specifications

**Description:** High speed fuses, for the protection of DC circuits in equipment.

**Dimensions:** See dimensions illustration.

**Ratings:**

Volts: — 750Vdc

Amps: — 63-500A

IR: — 750Vdc IR: 100kA, L/R = 100 ms.

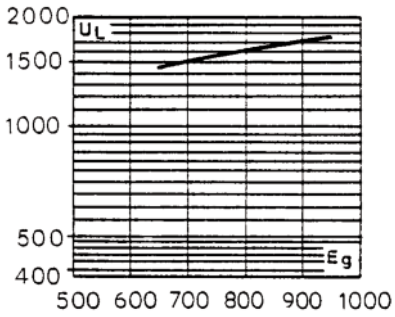
— 1000Vdc IR: 100kA, L/R = 40 ms

**Agency Information:** Consult Cooper Bussmann.

### Electrical Characteristics

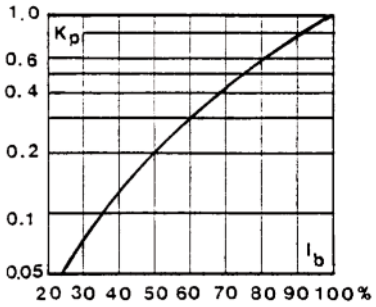
#### Arc Voltage

This curve gives the peak arc voltage, $U_L$, which may appear across the fuse during its operation as a function of the applied working voltage $E_g$.




#### Power Losses

Watts loss at rated current is given in the electrical characteristics. The curve allows the calculation of the power losses at load currents lower than the rated current. The correction factor, $K_p$, is given as a function of the RMS load current, $I_b$, in % of the rated current.




### Features and Benefits

- Excellent DC performance
- Low arc voltage and low energy let-through ($I^2t$)
- Low watts loss
- Superior cycling capability

### Typical Applications

- DC common bus
- DC drives
- Power converters/rectifiers
- Reduced voltage starters

### Catalog Numbers

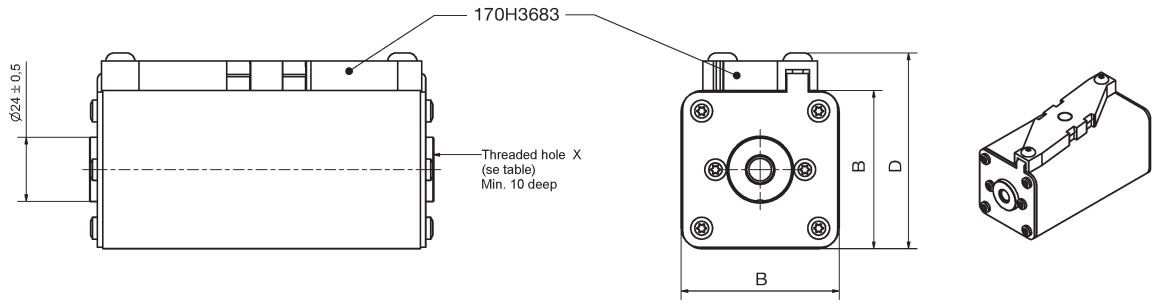
| Fuse Size | Catalog Numbers | | Electrical Characteristics | | |
|---|---|---|---|---|---|
| | -BK/130 | -EK/- | Rated Voltage (Vdc) | Rated Current RMS-Amp | Watt Loss (W) |
| 1* | 170E3577 | 170E3583 | 750 | 63 | 10.0 |
| | 170E3578 | 170E3584 | | 80 | 13.0 |
| | 170E3579 | 170E3585 | | 100 | 16.0 |
| | 170E3580 | 170E3586 | | 125 | 21.0 |
| | 170E3581 | 170E3587 | | 160 | 26.0 |
| 1 | 170E5417 | 170E5420 | | 200 | 37.0 |
| | 170E5418 | 170E5421 | | 250 | 46.0 |
| 2 | 170E8335 | 170E8345 | | 250 | 47.0 |
| | 170E8336 | 170E8346 | | 315 | 57.0 |
| | 170E8337 | 170E8347 | | 400 | 73.0 |
| 3 | 170E9681 | 170E9685 | | 500 | 91.0 |

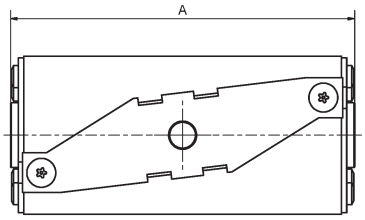
Data Sheet: Size 1*: 170K3620
Size 1: 170K3622
Size 2: 170K3624
Size 3: 170K3626
Microswitch: 170H0069, 170H3027 (gold)

# Square Body DC Fuses — 750Vdc: 63-500A

## Dimensions - mm

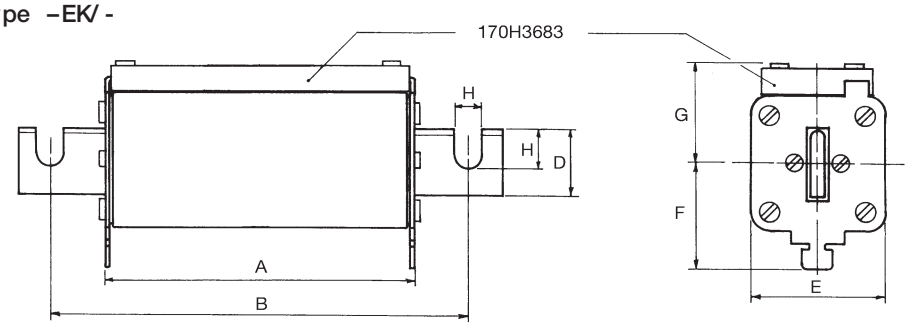
Type –BK/ 130

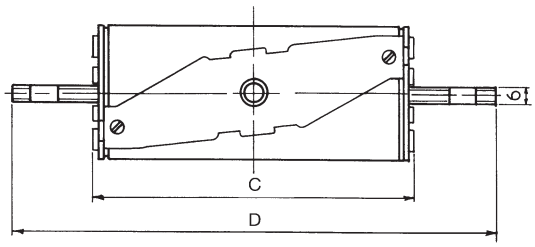



| Size/Type | A | B | D |
|---|---|---|---|
| 1* BK/130 | 129 | 43 | 61 |
| 1 BK/130 | 130 | 51 | 69 |
| 2 BK/130 | 130 | 59 | 77 |
| 3 BK/130 | 131 | 74 | 90 |

Type –EK/ -



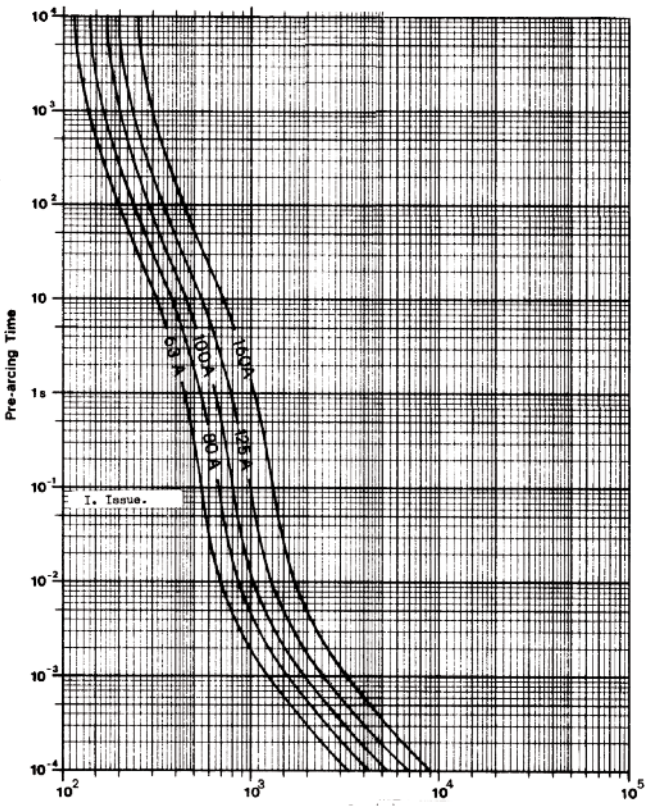




| Size/Type | A | B | C | D | E | F | G | H | I | J |
|---|---|---|---|---|---|---|---|---|---|---|
| 1* EK/155 | 124 | 156 | 129 | 180 | 43 | 36 | 41 | 9 | 9 | 18 |
| 1 EK/165 | 124 | 166 | 129 | 191 | 51 | 37 | 41 | 11 | 14 | 25 |
| 2 EK/170 | 124 | 170 | 129 | 205 | 59 | 42 | 48 | 13 | 21 | 30 |
| 3 EK/170 | 125 | 170 | 130 | 206 | 74 | 51 | 56 | 13 | 20 | 36 |

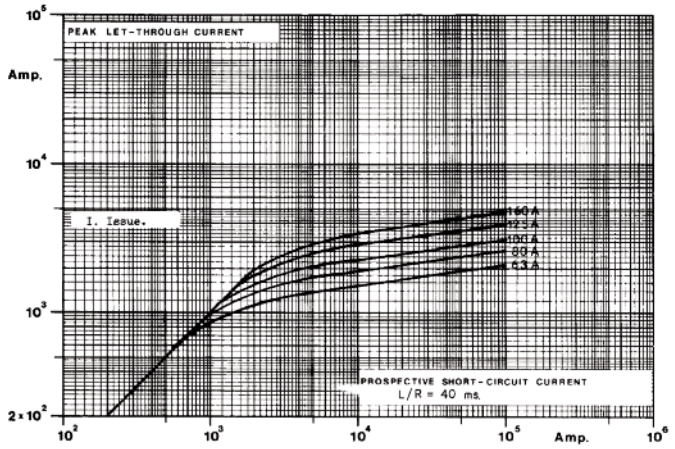
# Square Body DC Fuses — 750Vdc: 63-500A

## Square Body DC Fuse — 63-160A: 750V

**Time-Current Curve**



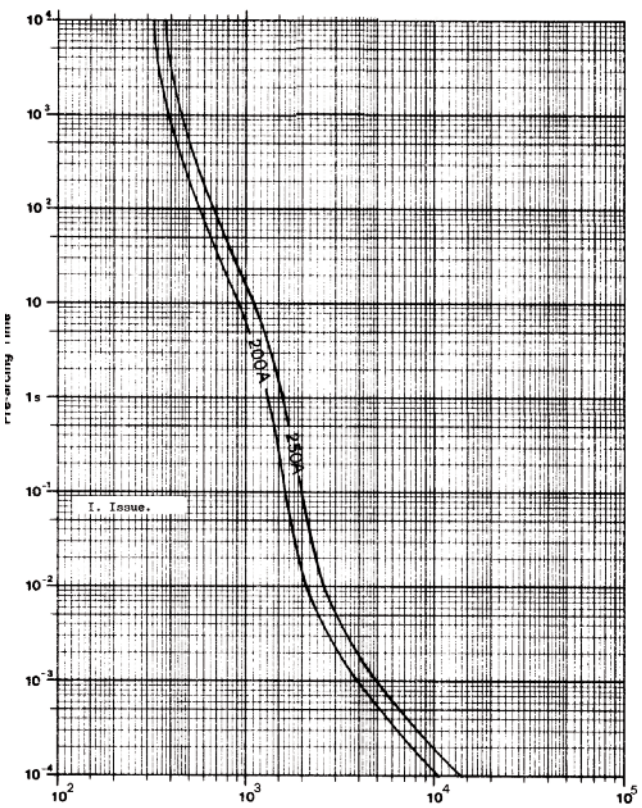

**Peak Let-Through Curve**



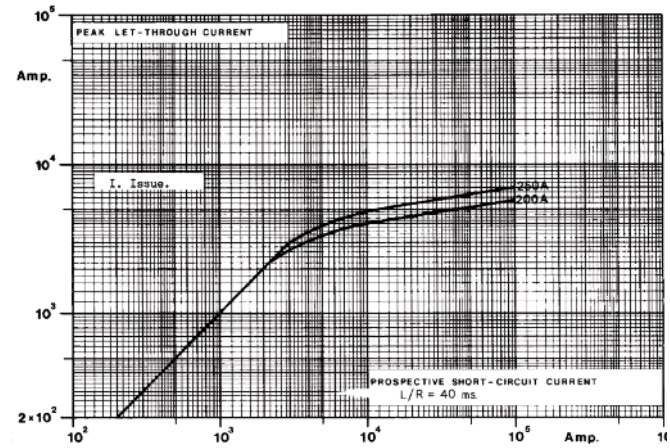

**Data Sheet: Available upon request**

## Square Body DC Fuse — 200-250A: 750V

**Time-Current Curve**




**Peak Let-Through Curve**

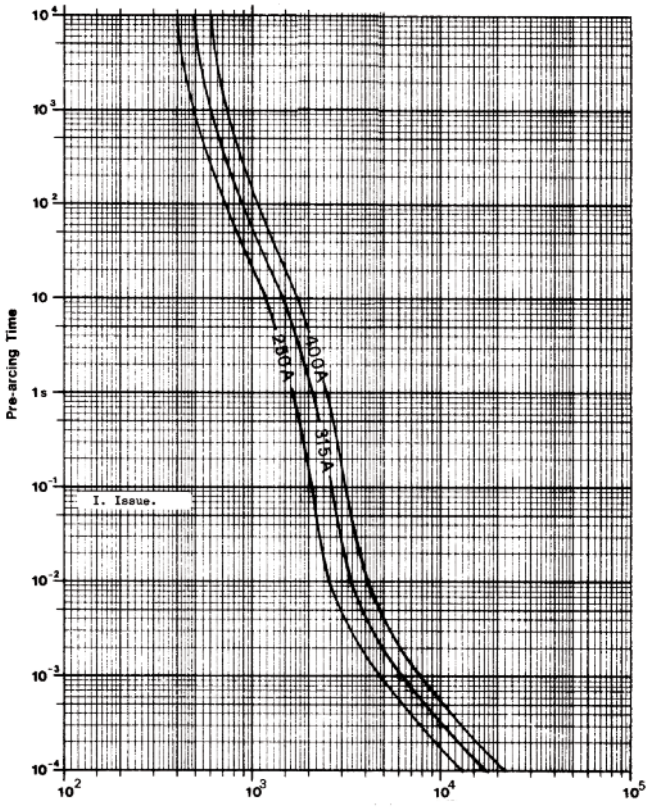



**Data Sheet: Available upon request**

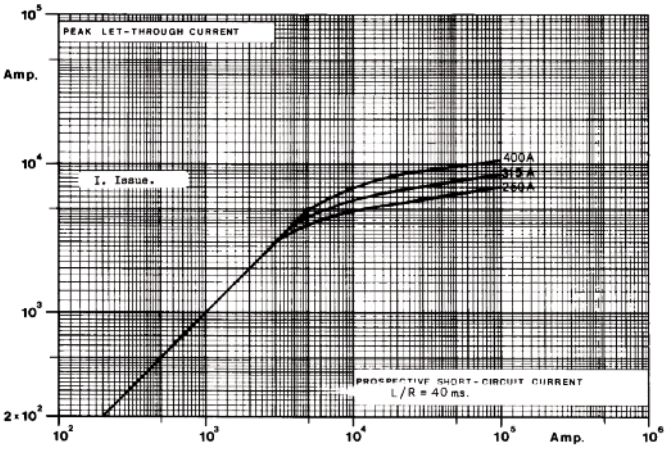
# Square Body DC Fuses — 750Vdc: 63-500A

## Square Body DC Fuse — 250-400A: 750V

**Time-Current Curve**



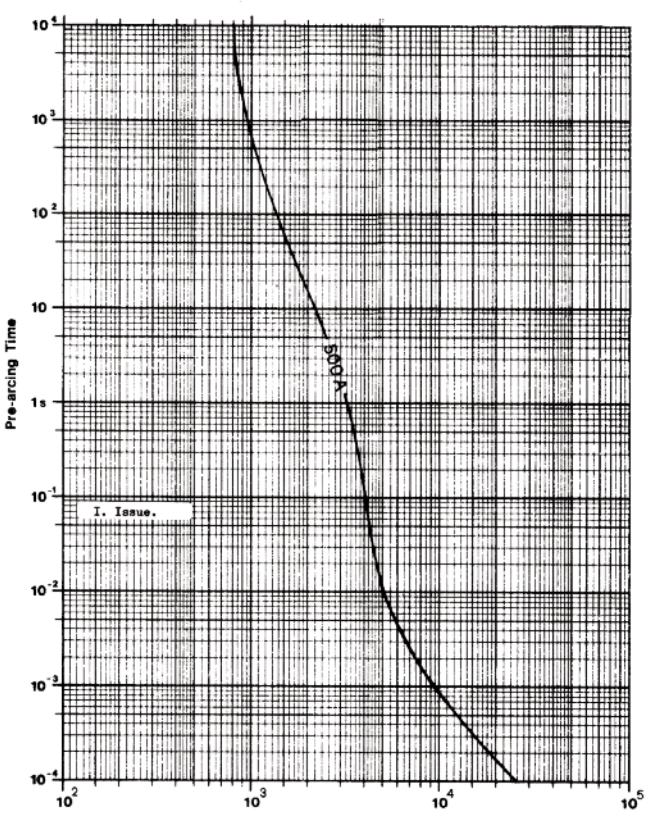

**Peak Let-Through Curve**



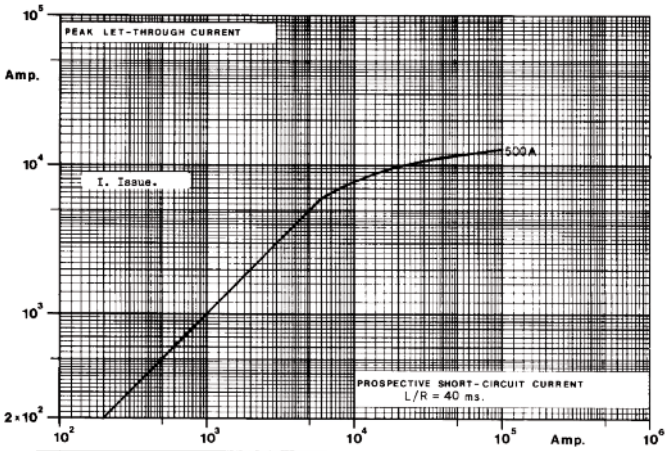

**Data Sheet: Available upon request**

## Square Body DC Fuse — 500A: 750V

**Time-Current Curve**




**Peak Let-Through Curve**




**Data Sheet: Available upon request**

# Square Body DC Fuses — 1200Vdc: 160-420A

## 1200Vdc 160-420A

### Specifications

**Description:** High speed fuses that provide superior protection in light and heavy harsh DC traction applications as 1200Vdc and below circuits, and as DC link/power converters.

**Dimensions:** See dimensions illustration.

**Ratings:**

Volts: — 1200Vdc

Amps: — 160-420A

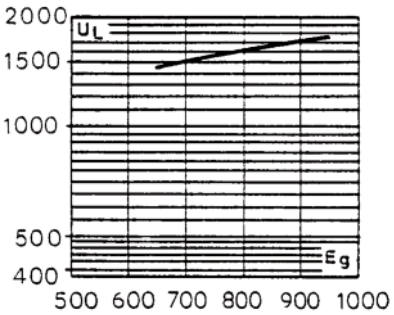
IR: — 1200Vdc = 100kA L/R: 15 ms.

**Agency Information:** Consult Cooper Bussmann.

### Electrical Characteristics

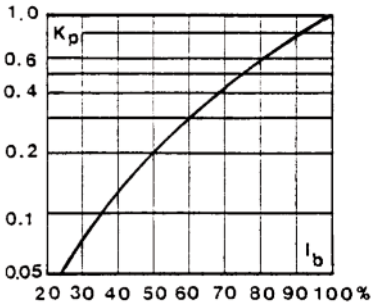
#### Arc Voltage

This curve gives the peak arc voltage, $U_L$, which may appear across the fuse during its operation as a function of the applied working voltage $E_g$.




#### Power Losses

Watts loss at rated current is given in the electrical characteristics. The curve allows the calculation of the power losses at load currents lower than the rated current. The correction factor, $K_p$, is given as a function of the RMS load current, $I_b$, in % of the rated current.




#### Features and Benefits

- Excellent DC performance
- Low arc voltage and low energy let-through ($I^2t$)
- Low watts loss
- Superior cycling capability

#### Typical Applications

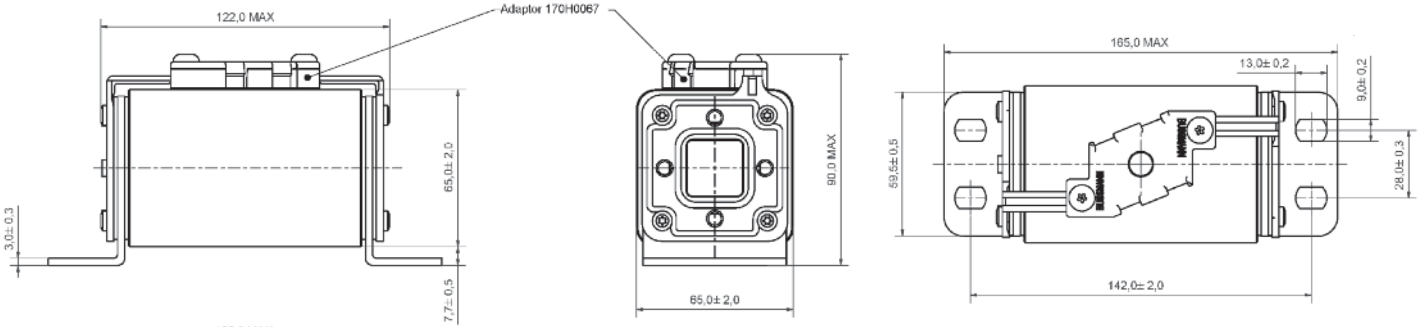
- DC Common bus
- DC Drives
- Power converters/rectifiers
- Reduced voltage starters

### Catalog Numbers

| Fuse Type | Cat. Numbers -SKNB/140 Type K Indicator | Electrical Characteristics: Rated Voltage (Vdc) | Rated Current RMS-Amp | Max $I^2t$ ($A^2Sec$) @ 1000Vdc L/R = 15ms | Max $I^2t$ ($A^2Sec$) @ 1000Vdc L/R = 45ms | Watts Loss (W) |
|---|---|---|---|---|---|---|
| 2SKN / 140 | 170F8230 | 1200 | 160 | 12000 | 20000 | 75.0 |
| | 170F8231 | | 200 | 20000 | 35000 | 85.0 |
| | 170F8232 | | 250 | 43000 | 75000 | 94.0 |
| | 170F8233 | | 315 | 87000 | 150000 | 104.0 |
| | 170F8234 | | 400 | 180000 | 310000 | 120.0 |
| | 170F8235 | | 420 | 215000 | 375000 | 122.0 |

Data Sheet: 170K5520
Microswitch: 170H0069, 170H3027 (gold)

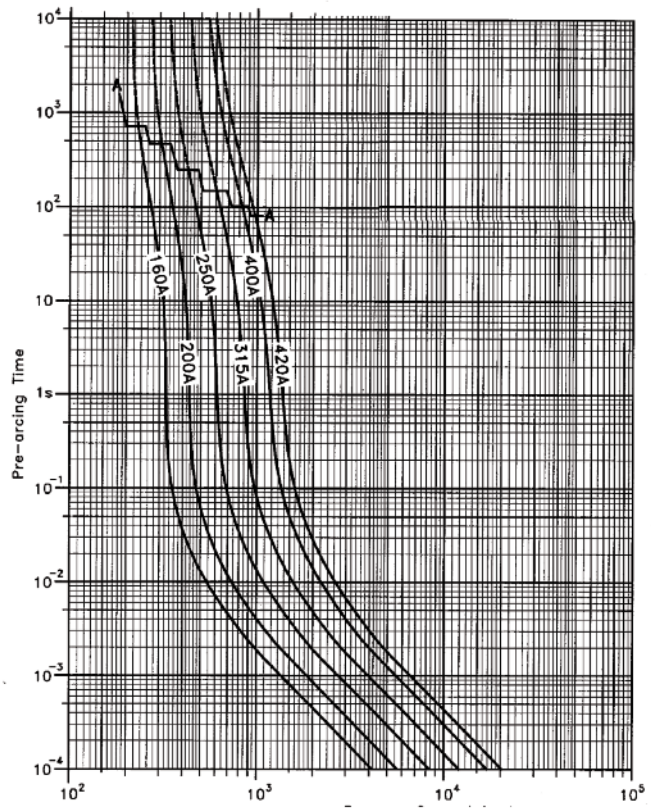
### Dimensions - mm



# Square Body DC Fuses — 1200Vdc: 160-420A

## Square Body DC Fuse — 160-420A: 1200V

**Time-Current Curve**




**Data Sheet: Available upon request**

# Square Body DC fuses — 2000Vdc: 10-125A

## 2000Vdc 10-125A

**Specifications**

**Description:** High speed fuses for the protection of DC circuits in equipment.

**Dimensions:** See dimensions illustration.

**Ratings:**

Volts: — 1200Vdc

Amps: — 160-420A

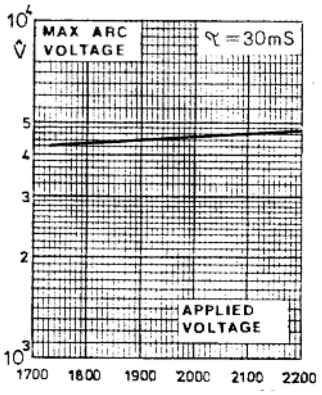
IR: — 1200Vdc = 100kA L/R: 15 ms.

**Agency Information:** Consult Bussmann.

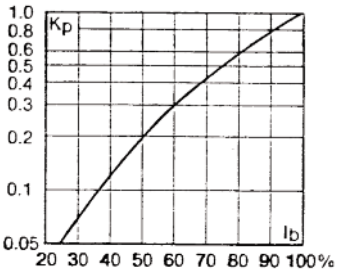
### Electrical Characteristics

### Arc Voltage

This curve gives the peak arc voltage, $U_L$, which may appear across the fuse during its operation as a function of the applied working voltage $E_g$.




### Power Losses




Watts loss at rated current is given in the electrical characteristics. The curve allows the calculation of the power losses at load currents lower than the rated current. The correction factor, $K_p$, is given as a function of the RMS load current, $I_b$, in % of the rated current.

### Features and Benefits

- Excellent DC performance
- Low arc voltage and low energy let-through ($I^2t$)
- Low watts loss
- Superior cycling capability

### Typical Applications

- DC Common bus
- DC Drives
- Power converters/rectifiers
- Reduced voltage starters

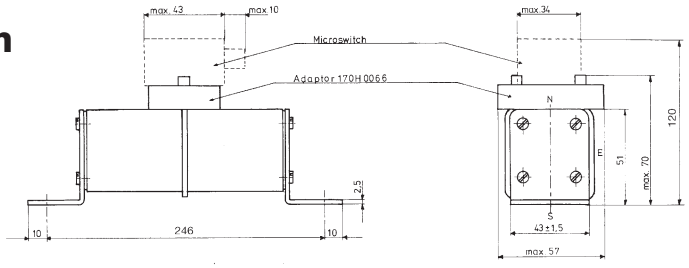
### Catalog Numbers

| Fuse Type | Cat. Number -SKN/246 Type K Indicator | Electrical Characteristics Rated Voltage (Vdc) | Rated Current RMS-Amp | Watt Loss (W) |
|---|---|---|---|---|
| 1*SKN/246 | 170E3976 | 2000 | 10 | 7 |
| | 170E3970 | | 16 | 11 |
| | 170E3950 | | 20 | 13 |
| | 170E3951 | | 25 | 17 |
| | 170E3952 | | 32 | 22 |
| | 170E3953 | | 40 | 27 |
| | 170E3954 | | 50 | 34 |
| | 170E3955 | | 63 | 43 |
| | 170E3956 | | 80 | 50 |

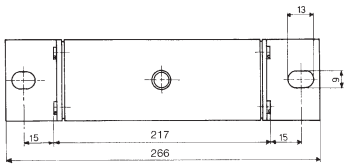
| Fuse Type | Cat. Number -SKN/246 Type K Indicator | Electrical Characteristics Rated Voltage (Vdc) | Rated Current RMS-Amp | Watt Loss (W) |
|---|---|---|---|---|
| 1*SKN/246 | 170E3937 | 2000 | 20 | 13 |
| | 170E3938 | | 25 | 16 |
| | 170E3939 | | 32 | 20 |
| | 170E3940 | | 40 | 25 |
| | 170E3941 | | 50 | 32 |
| | 170E3942 | | 63 | 40 |
| | 170E3943 | | 80 | 51 |
| | 170E3944 | | 100 | 64 |
| | 170E3945 | | 125 | 80 |

## Dimensions - mm

Data Sheet: 170K4538
Microswitch: 170H0239, 170H3030 (gold)



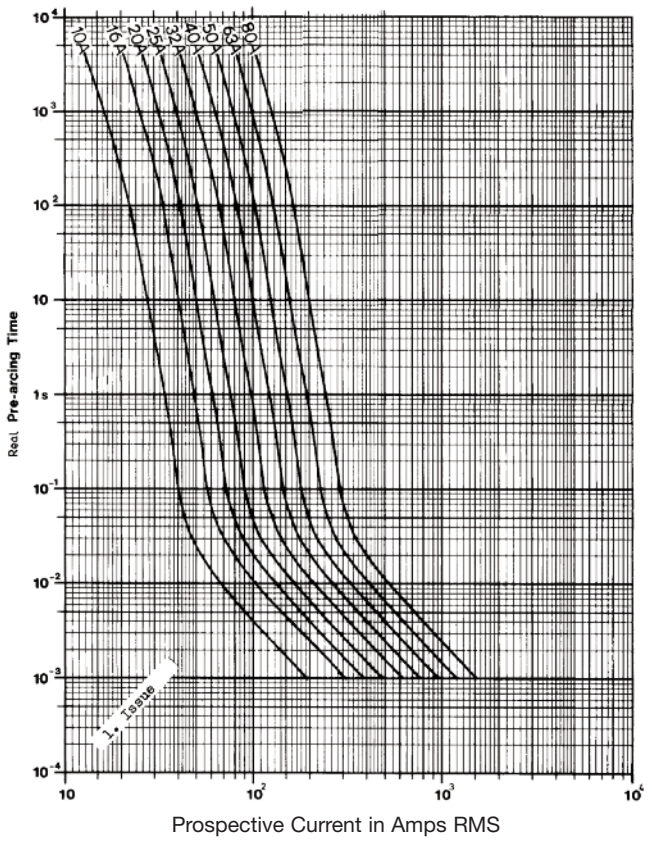

Data Sheet: 170K4900
Microswitch: 170H0239, 170H3030 (gold)



# Square Body DC fuses — 2000Vdc: 10-125A

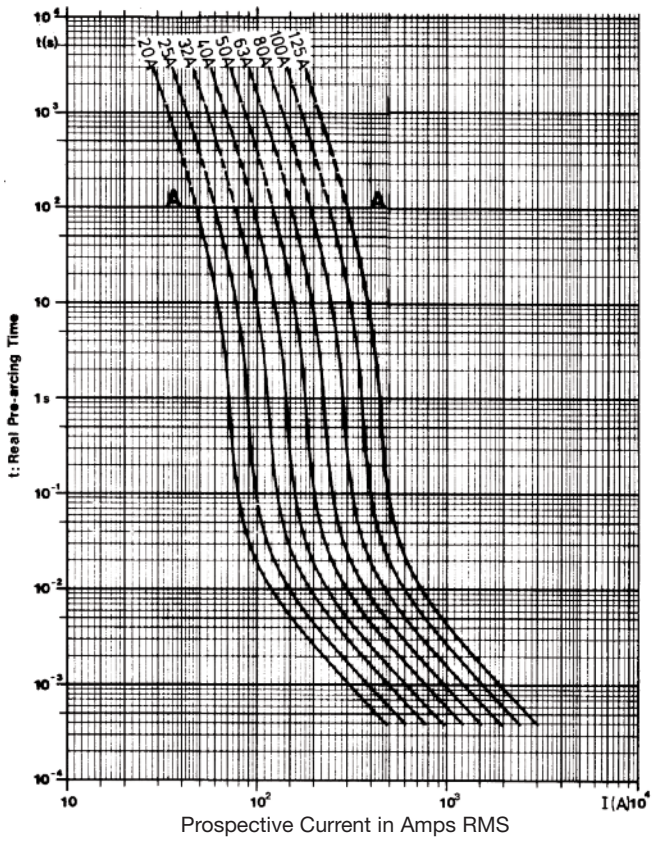
## Square Body DC Fuses — 10-80A: 2000V

**Time-Current Curve**

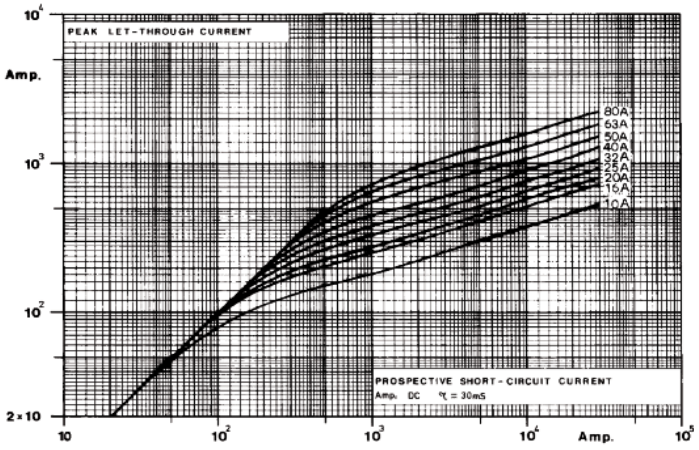



## Square Body DC Fuses — 20-125A: 2000V

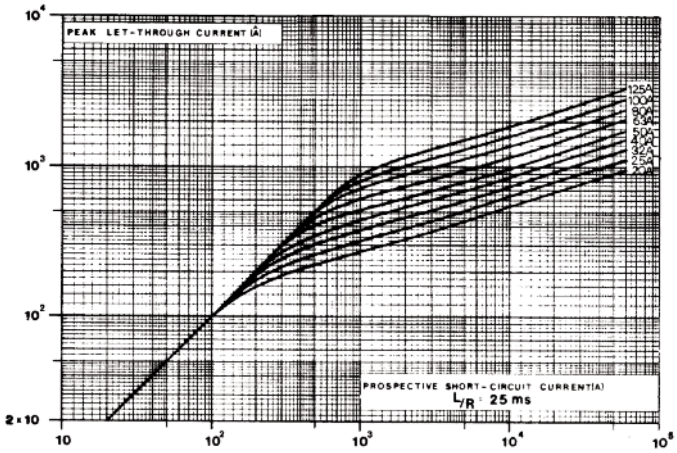
**Time-Current Curve**




**Peak Let-Through Curve**




**Peak Let-Through Curve**




**Data Sheet: Available upon request**

**Data Sheet: Available upon request**

# Square Body DC Fuses — 4000Vdc: 20-450A

## 4000Vdc 20-450A

### Specifications

**Description:** High speed fuses for the protection of DC circuits in equipment.

**Dimensions:** See dimensions illustration.

**Ratings:**

Volts: — 4000Vdc

Amps: — 20-450A

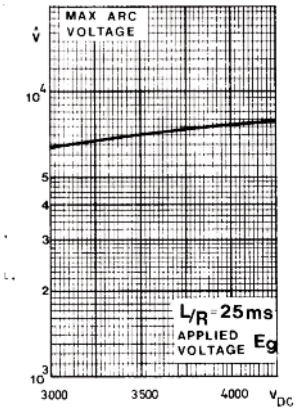
IR: — 60kA L/R: 25 ms.

**Agency Information:** Consult Bussmann.

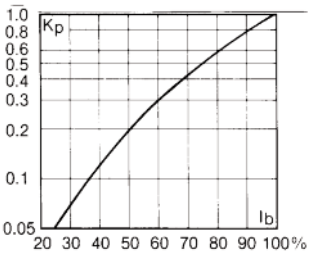
### Electrical Characteristics

#### Arc Voltage

This curve gives the peak arc voltage, $U_L$, which may appear across the fuse during its operation as a function of the applied working voltage $E_g$.




#### Power Losses




Watts loss at rated current is given in the electrical characteristics. The curve allows the calculation of the power losses at load currents lower than the rated current. The correction factor, $K_p$, is given as a function of the RMS load current, $I_b$, in % of the rated current.

#### Features and Benefits

- Excellent DC performance
- Low arc voltage and low energy let-through ($I^2t$)
- Low watts loss
- Superior cycling capability

#### Typical Applications

- DC Common bus
- DC Drives
- Power converters/rectifiers
- Reduced voltage starters

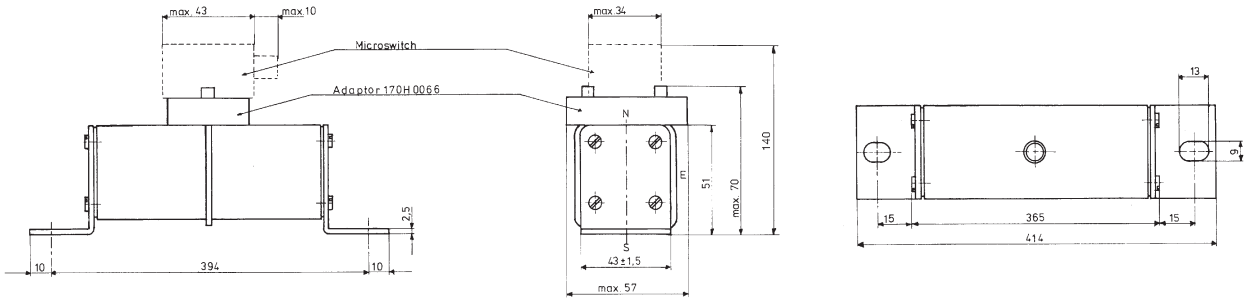
### Catalog Numbers

| Fuse Type | Cat. Numbers | | Electrical Characteristics | |
|---|---|---|---|---|
| | -SKN/394 Type K Indicator | Rated Voltage (Vdc) | Rated Current RMS-Amp | Watts Loss (W) |
| 1*SKN/394 | 170E3914 | 4000 | 20 | 23 |
| | 170E3915 | | 25 | 28 |
| | 170E3916 | | 32 | 34 |
| | 170E3917 | | 40 | 45 |
| | 170E3918 | | 50 | 57 |
| | 170E3919 | | 63 | 72 |
| | 170E3984 | | 80 | 91 |
| | 170E3933 | | 100 | 114 |
| | 170E3922 | | 125 | 143 |
| 2 SKN/394 | 170E8882 | | 160 | 182 |
| | 170E8883 | | 200 | 228 |
| | 170E8884 | | 250 | 285 |
| 2//2SKN/394 | 170E8885 | | 315 | 360 |
| | 170E8886 | | 350 | 400 |
| | 170E8887 | | 400 | 455 |
| | 170E8888 | | 450 | 515 |

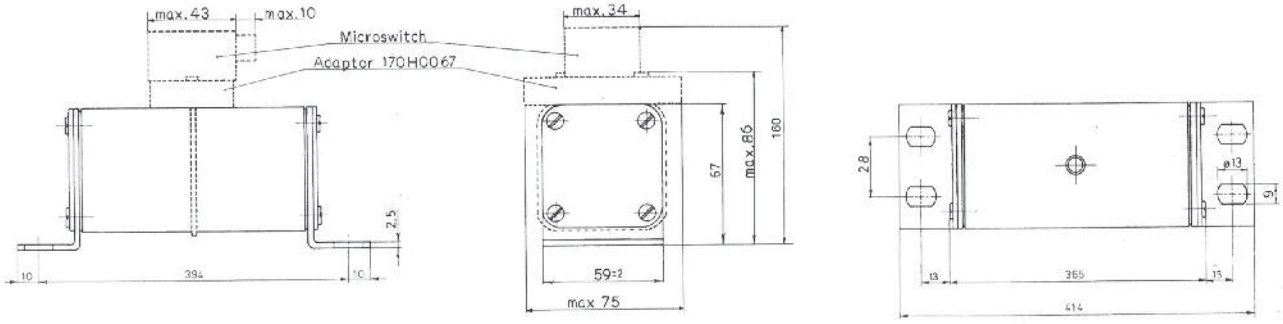
# DC Fuses — 4000Vdc: 20-450A

## Dimensions - mm

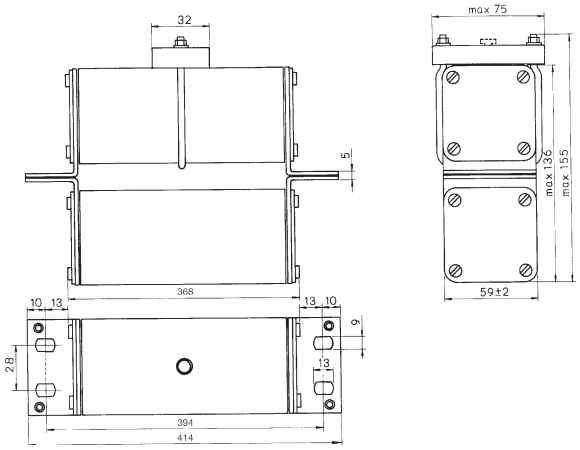
### Type 1* SKN/ 394




### Type 2SKN/ 394



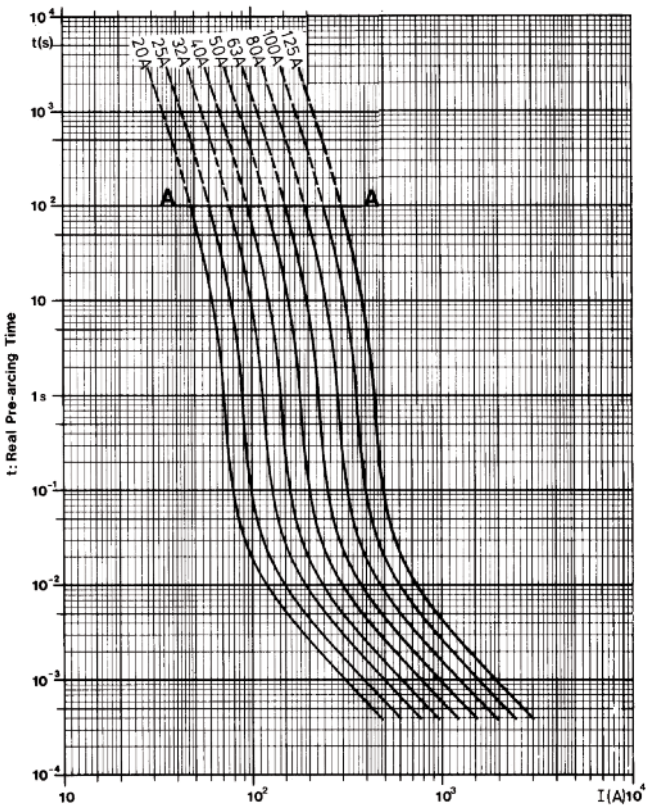

### Type 2/ / SKN/ 394



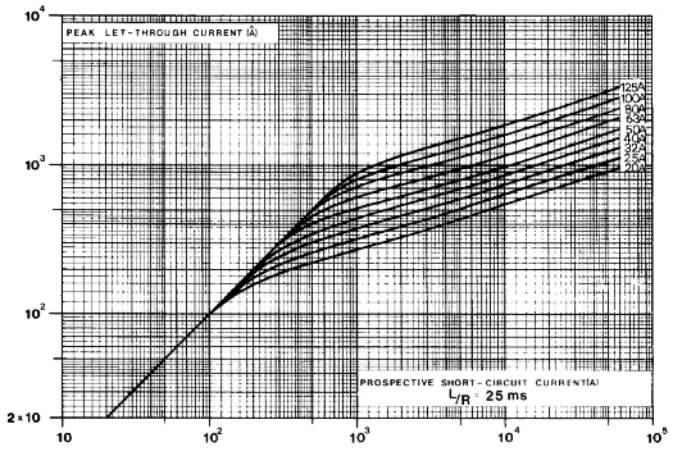
# Square Body DC Fuses — 4000Vdc: 20-450A

## Square Body DC Fuses — 20-125A: 2000V

**Time-Current Curve**



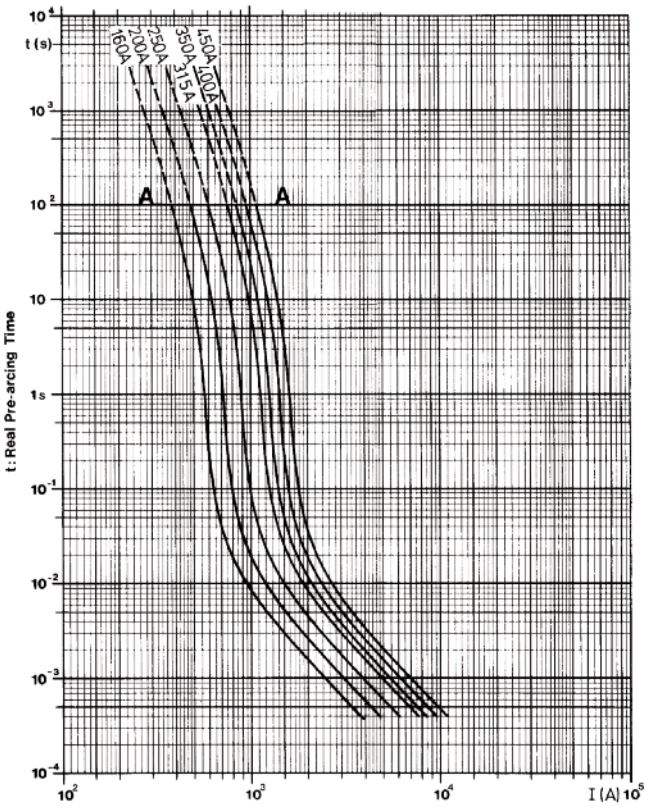

**Peak Let-Through Curve**



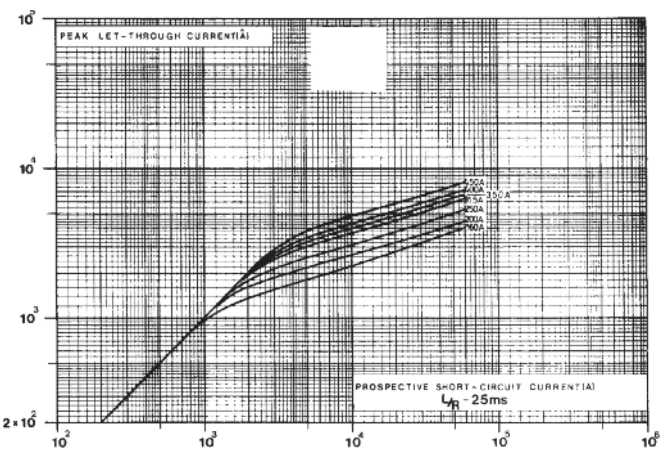

**Data Sheet: Available upon request**

## Square Body DC Fuses — 160-450A: 4000V

**Time-Current Curve**




**Peak Let-Through Curve**




**Data Sheet: Available upon request**

# Square Body Fuse Accessories

## Indicator Systems

Typower ZILOX fuses are available with three different indicator systems.

### 1. Visual Indicator

The indicator situated in one cover plate is clearly visible as soon as the fuse has operated. The minimum voltage for operating the indicator is 20V.

### 2. Type T Indicator

The indicator is situated on one cover plate with a cover plate tag to accommodate an auxiliary switch. The minimum voltage for operating the indicator is 20V. A special low voltage indicator (1.5V) is available on request.

### 3. Type K Indicator

This indicator is situated on the fuse body. It is covered by an adapter for snap-on mounting of an auxiliary switch. The operating voltage of the indicator is 1.5V. As a matter of safety, the factory mounted adapter must not be removed from the fuse.


## Microswitch

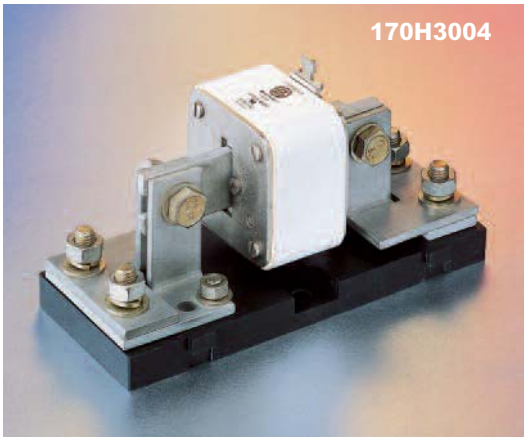
The Typower ZILOX fuses with either type T indicator or type K indicator can be equipped with a microswitch for remote electrical indication of fuse operations. All microswitches have one normally open and one normally closed contact. Ratings are 2A, 250Vac.

| Microswitch | 6.3 x 0.8mm Lugs | 2.8 x 0.5mm Lugs | Indicator Type |
|---|---|---|---|
| 170H0235 | X | | T |
| 170H0236 | X | | T |
| 170H0237 | | X | T |
| 170H0238 | | X | T |
| 170H0069 | X | | K |

| Size | DIN 43 653 Type T | Type K | DIN 43 620 Type T | Type K | French Style Type T | Type K | Flush End Type T | Type K | US Style Type K |
|---|---|---|---|---|---|---|---|---|---|
| 000 | 170H0236 | | 170H0236 | | | | | | |
| | 170H0238 | | 170H0238 | | | | | | |
| 00 | 170H0235 | | | | | | 170H0235 | | |
| | 170H0237 | | | | | | 170H0237 | | |
| 1* | 170H0235 | 170H0069 | 170H0235 | | 170H0236 | 170H0069 | | 170H0069 | 170H0069 |
| | 170H0237 | | 170H0237 | | 170H0238 | | | | |
| 1 | 170H0235 | 170H0069 | | | 170H0236 | 170H0069 | | 170H0069 | 170H0069 |
| | 170H0237 | | | | 170H0238 | | | | |
| 2 | 170H0235 | 170H0069 | 170H0235 | | 170H0236 | 170H0069 | | 170H0069 | 170H0069 |
| | 170H0237 | | 170H0237 | | 170H0238 | | | | |
| 3 | 170H0235 | 170H0069 | 170H0236 | | 170H0236 | 170H0069 | | 170H0069 | 170H0069 |
| | 170H0237 | | 170H0238 | | 170H0238 | | | | |
| 4 | | | | | | | | 170H0069 | |
| 23 | | | | | | | | 170H0069 | |
| 24 | | | | | | | | 170H0069 | |

# Square Body Fuse Accessories

## Fuse Bases (Blocks)




### DIN 43 653 Fuse Bases

For the Typower ZILOX fuses according to DIN 43 653, the following fuse bases are available:

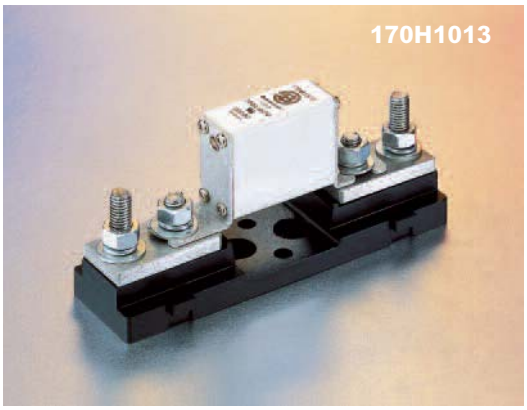
| Catalog Number | Max Volts | Amp Rating | Center Distance |
|---|---|---|---|
| 170H3003 | 1000 | 630 | 80mm |
| 170H3004 | 1000 | 1250 | 80mm |
| 170H3005 | 1400 | 630 | 110mm |
| 170H3006 | 1400 | 1250 | 110mm |

The fuse bases rated 1250A can also be used for the fuses with higher rated current if the maximum load current is derated according to the table below:

| Fuse Amp Rating | Max Amp Load In Fuse Base |
|---|---|
| 1400 | 1325 |
| 1500 | 1400 |
| 1600 | 1500 |
| 1800 | 1650 |
| 2000 | 1800 |

| Fixed Center Base Style | Max Volts | Max. Fuse Amp Rating | Fuse Size |
|---|---|---|---|
| 170H1007 | 1000 | 400 | 00, 000 |
| 170H1013 | 660 | 200 | 0000,000 |

UL Recognized to UL 512.

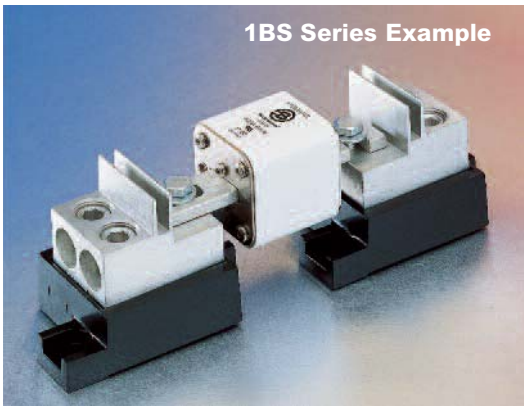



### Universal Fuse Bases

For the Typower ZILOX fuses according to DIN 43 653, French style and North American style, the following fuse bases are available:

| Modular Base Style | Max Volts | Max. Fuse Amp Rating | Data Sheet |
|---|---|---|---|
| 1BS101 | 600 | 100 | 1206 |
| 1BS102 | 600 | 400 | 1207 |
| 1BS103 | 600 | 400 | 1208 |
| 1BS104 | 600 | 600 | 1209 |
| BH-0xxx | 700 | 200 | 1200 |
| BH-1xxx | 2500 | 400 | 1201 |
| BH-2xxx | 5000 | 400 | 1202 |
| BH-3xxx | 1250 | 700 | 1203 |

Modular fuse bases are UL Recognized to UL 512 and meet the spacing requirements of UL 347. Contact your Bussmann sales representative for more complete ordering information.




### DIN 43 620 Fuse Bases

| Size | Part Number |
|---|---|
| 000-00 | SB00-D |
| 1*, 1 | SB1-D |
| 2,3 | SB2-D |

# British BS 88 Fuses


## Introduction

### British BS 88 Contents



### Accessories



### British BS 88 Fuse Ranges

| Amps | Vac | Vdc |
|---|---|---|
| 6-900 | 240 | 150 |
| 6-710 | 690 | 500 |

### General Information

Designed and tested to:
- BS 88: Part 4
- IEC 269: Part 4
- UL Recognized

Bussmann offers the industry's widest range of British style semiconductor fuses and accessories.

Bussmann British style products use innovative arc quenching techniques and high grade materials to provide:
- Minimal energy let-through ($I^2t$)
- Excellent DC performance
- Good surge withstand profile

British style fuses are typically found in equipment manufactured in the United Kingdom or British Commonwealth countries. However, North American manufacturers have begun to specify British style fuses — particularly in UPS applications at 240V or less — to take advantage of their size, performance and cost benefits.

### Voltage Rating

All Bussmann British style fuses are tested to IEC 269: Part 4. This standard requires a test voltage which is 5% higher than the rated voltage. In North America, fuses are required to clear only their rated voltage.

### Accessories

Trip-indicator fuses are available for use in parallel with the main fuse. Indicator fuses can be attached to the associated fuselink, or mounted separately in panel-mounted fuseclips. In addition, a push-on adapter and microswitch attachment are available, to provide remote indication. Fuse blocks are also available for most applications.

# British BS 88 — 240V: 6-900A

## LCT, LET, LMT, LMMT

**Specifications**

**Description:** BS 88 style stud-mount fuses.

**Dimensions:** See dimensions illustrations.

**Ratings:**

Volts: — 240Vac/150Vdc

Amps: — 6-900A

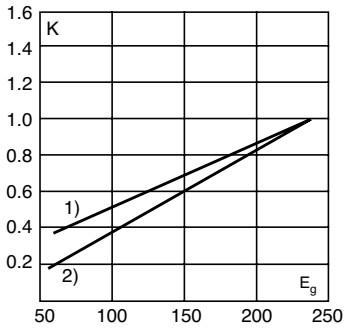
IR: — 200kA RMS Sym.

**Agency Information:** CE, Designed and tested to: BS 88 Part 4, IEC 269 Part 4, UL Recognized. All fuses above have been tested at 318Vac. Consult Bussmann for specific UL Recognition status.

### Electrical Characteristics

#### Total Clearing I²t

The total clearing I²t at rated voltage and at power factor of 15% are given in the electrical characteristics. For other voltages, the clearing I²t is found by multiplying by correction factor, K, given as a function of applied working voltage, $E_g$, (rms).




1) LCT
2) LET, LMT, LMMT

### Dimensions - mm

Fig. 1: LCT

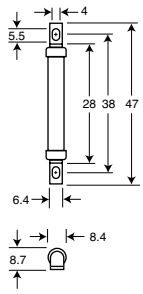



Fig. 2: LET

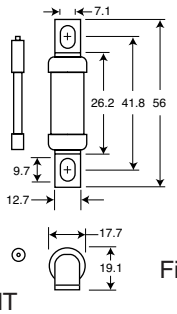
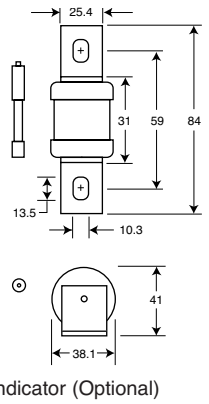
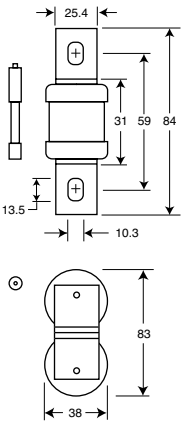



Fig. 3: LMT




Indicator (Optional)

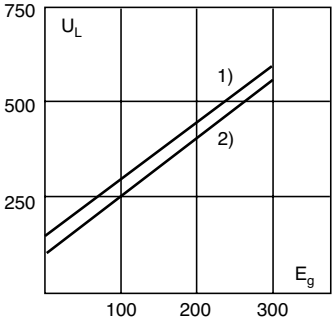
Fig. 4: LMMT




1mm = 0.0394" / 1" = 25.4mm

### Arc Voltage

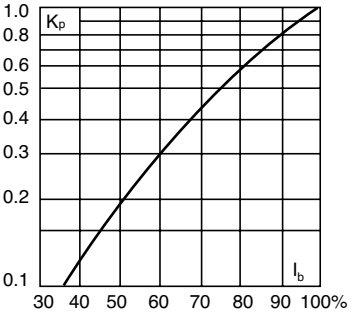
This curve gives the peak arc voltage, $U_L$, which may appear across the fuse during its operation as a function of theapplied working voltage, $E_g$, (rms) at a power factor of 15%.




1) LCT
2) LET, LMT, LMMT

### Power Losses

Watts loss at rated current is given in the electrical characteristics. The curve allows the calculation of the power losses at load currents lower than the rated current. The correction factor, $K_p$, is given as a function of the RMS load current, $I_b$, in % of the rated current.




### Catalog Numbers

**Electrical Characteristics**

| Catalog Numbers | Type | Rated Current RMS-Amps | I²t (A² Sec) Pre-arc | I²t (A² Sec) Clearing at 120V | I²t (A² Sec) Clearing at 240V | Watts Loss |
|---|---|---|---|---|---|---|
| 6LCT | | 6 | 2 | 6 | 9 | 1.0 |
| 10LCT | | 10 | 3.8 | 12 | 22 | 2.5 |
| 12LCT | LCT | 12 | 7 | 22 | 32 | 2.5 |
| 16LCT | | 16 | 20 | 50 | 100 | 2.5 |
| 20LCT | | 20 | 25 | 80 | 160 | 4.0 |
| 25LET | | 25 | 18 | 120 | 250 | 4.0 |
| 32LET | | 32 | 32 | 200 | 450 | 5.0 |
| 35LET | | 35 | 50 | 320 | 600 | 5.0 |
| 50LET | | 50 | 100 | 500 | 1400 | 7.0 |
| 63LET | LET | 63 | 180 | 1100 | 2200 | 9.0 |
| 80LET | | 80 | 300 | 1900 | 3800 | 10.0 |
| 100LET | | 100 | 600 | 3800 | 7500 | 10.0 |
| 125LET | | 125 | 600 | 3800 | 7500 | 16.0 |
| 160LET | | 160 | 1100 | 7000 | 16000 | 20.0 |
| 180LETa | | 180 | 1600 | 12000 | 29000 | 21.0 |
| 160LMT | | 160 | 1100 | 7000 | 16000 | 17.0 |
| 200LMT | | 200 | 1500 | 10000 | 20000 | 28.0 |
| 250LMT | | 250 | 3200 | 20000 | 40000 | 28.0 |
| 315LMT | LMT | 315 | 6000 | 35000 | 75000 | 35.0 |
| 355LMT | | 355 | 8000 | 50000 | 100000 | 35.0 |
| 400LMT | | 400 | 14000 | 70000 | 160000 | 40.0 |
| 450LMT | | 450 | 18000 | 100000 | 220000 | 42.0 |
| 400LMMT | | 400 | 6000 | 35000 | 80000 | 60.0 |
| 500LMMT | | 500 | 14000 | 80000 | 170000 | 64.0 |
| 630LMMT | LMMT | 630 | 24000 | 150000 | 300000 | 75.0 |
| 710LMMT | | 710 | 32000 | 200000 | 460000 | 77.0 |
| 800LMMT | | 800 | 52000 | 300000 | 600000 | 82.0 |
| 900LMMT | | 900 | 75000 | 400000 | 800000 | 97.0 |

- Watts loss provided at rated current.
- Note: 7LET, 10LET, 12LET and 16LET are available for replacement purposes on existing equipment.
- See accessories on page 222.

### Features and Benefits

- Excellent cycling capability
- Excellent DC performance
- Low arc voltage and low energy let-through (I²t)

### Typical Applications

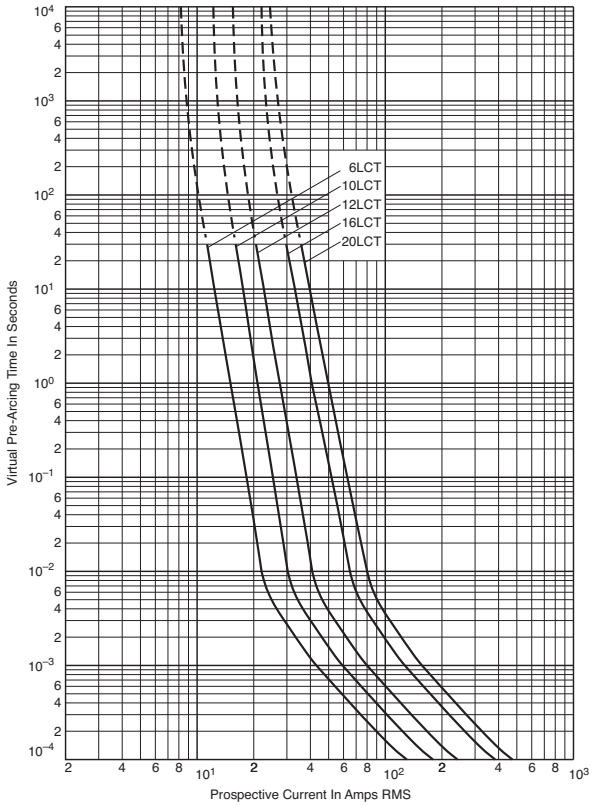
- DC Common bus
- AC and DC drives
- Power converters/rectifiers
- Reduced voltage starters

**Data Sheet: 720004**

# British BS 88 — 240V: 6-900A

## LCT 6-20A: 240V

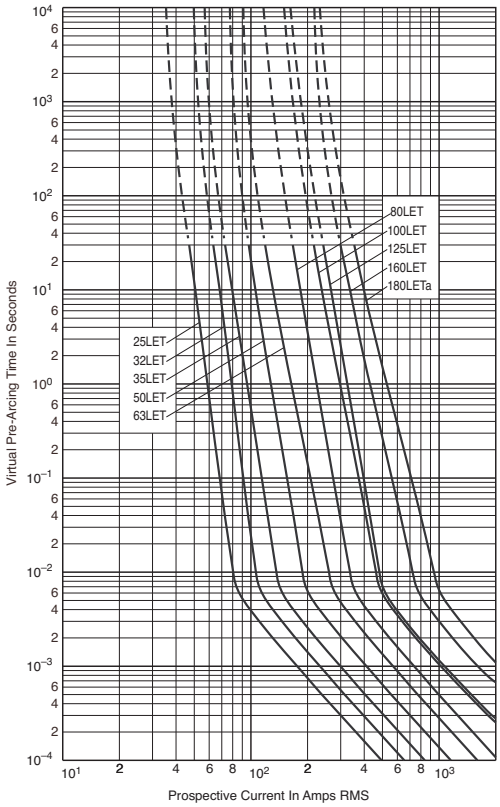
### Time-Current Curve




**Data Sheet: 35785296**

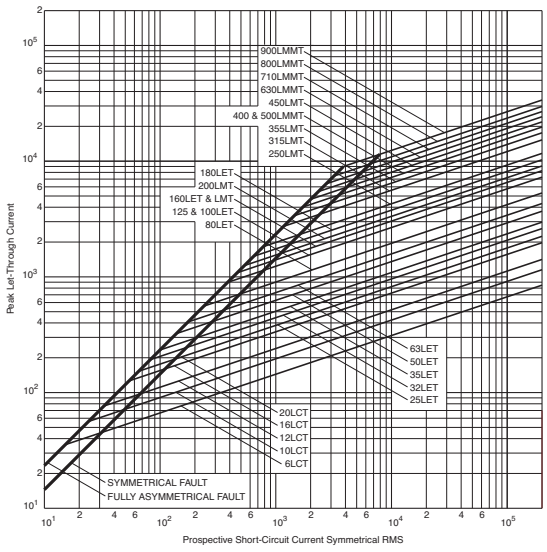
## LET 25-180A: 240V

### Time-Current Curve




**Data Sheet: 35785293**

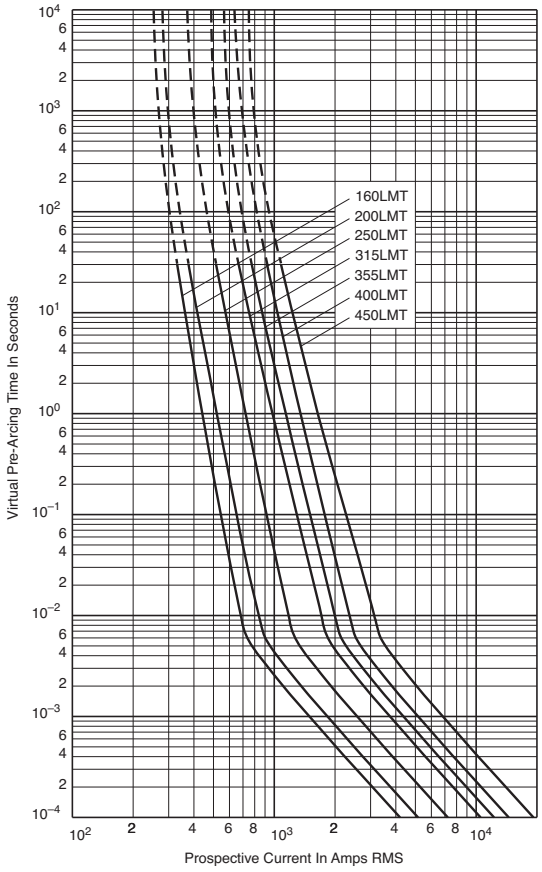
### Peak Let-Through Curve



# British BS 88 — 240V: 6-900A

## LMT 160-450A: 240V

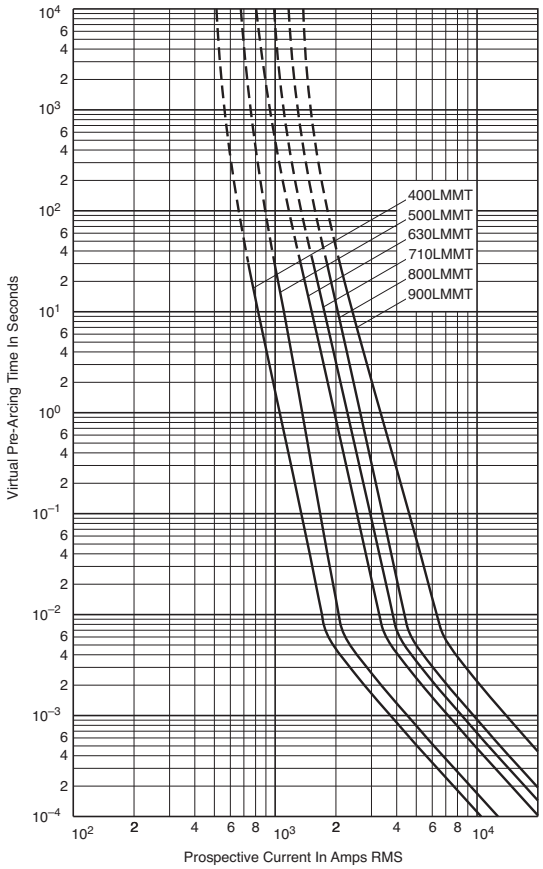
### Time-Current Curve




**Data Sheet: 35785294**

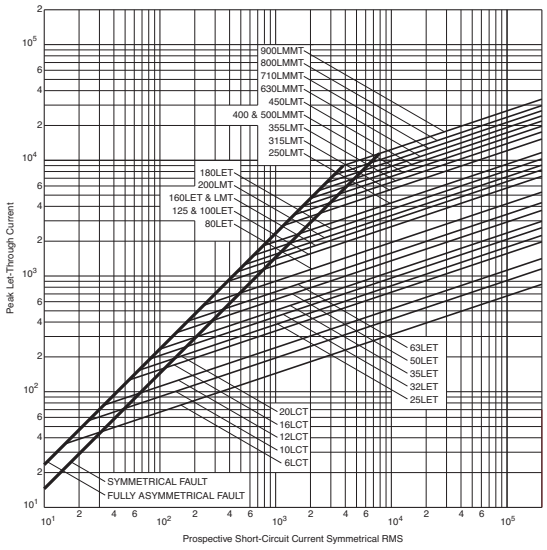
## LMMT 400-900A: 240V

### Time-Current Curve




**Data Sheet: 35785295**

### Peak Let-Through Curve



# British BS 88 — 690V: 6-710A

## CT, ET, FE, EET, FEE, FM, FMM, MT, MMT

**Specifications**

**Description:** BS 88 style stud-mount fuses.

**Dimensions:** See dimensions illustrations.

**Ratings:**

Volts: — 690Vac/500Vdc

Amps: — 6-710A

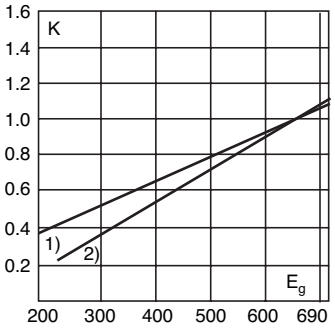
IR: — 200kA RMS Sym.

**Agency Information:** CE, Designed and tested to: BS 88 Part 4, IEC 269 Part 4, UL Recognized. MT and MMT — 350Vdc (IEC) rating. Consult Bussmann for UL Recognition status.

### Electrical Characteristics

#### Total Clearing I²t

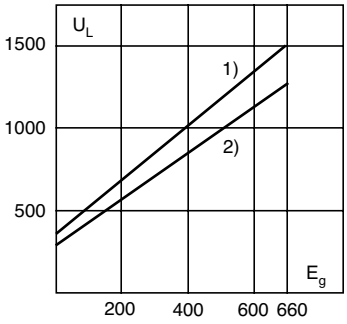
The total clearing I²t at rated voltage and at power factor of 15% are given in the electrical characteristics. For other voltages, the clearing I²t is found by multiplying by correction factor, K, given as a function of applied working voltage, $E_g$, (rms).




1) CT, ET, EET, FE, FEE, MT, MMT
2) FM, FMM

#### Arc Voltage

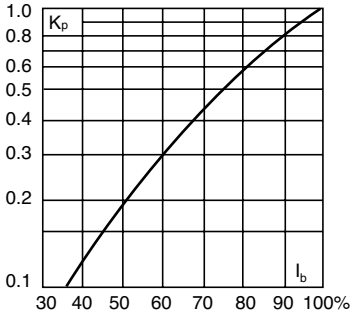
This curve gives the peak arc voltage, $U_L$, which may appear across the fuse during its operation as a function of the applied working voltage, $E_g$, (rms) at a power factor of 15%.




1) CT
2) ET, FE, EET, FEE, FM, FMM

#### Power Losses

Watts loss at rated current is given in the electrical characteristics. The curve allows the calculation of the power losses at load currents lower than the rated current. The correction factor, $K_p$, is given as a function of the RMS load current, Ib, in % of the rated current.




#### Features and Benefits

- Excellent cycling capability
- Excellent DC performance
- Low arc voltage and low energy let-through (I²t)
- Low watts loss

#### Typical Applications

- DC Common bus
- DC Drives
- Power converters/rectifiers
- Reduced voltage starters

**Dimensions - mm**

Fig. 1: CT

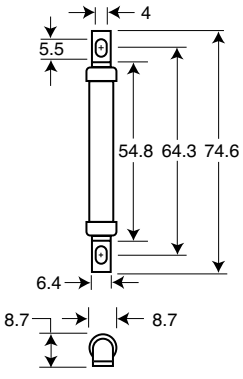



Fig. 2: ET, FE

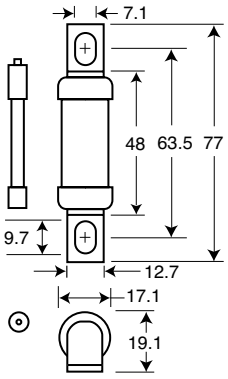



Fig. 3: EET, FEE

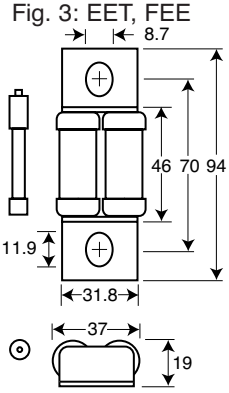



Fig. 4: FM, MT

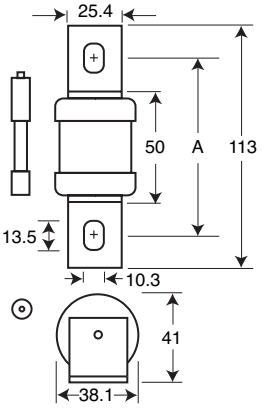
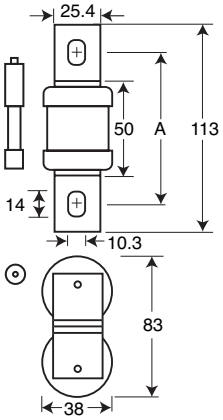



Fig. 5: FMM, MMT




1mm = 0.0394" / 1" = 25.4mm

Figs. 4 & 5 "A" Dimensions

| Type | "A" |
|---|---|
| FM | 80-85mm |
| FMM | 80-85mm |
| MT | 85mm |
| MMT | 85mm |

**Data Sheet: 720024**

# British BS 88 — 690V: 6-710A

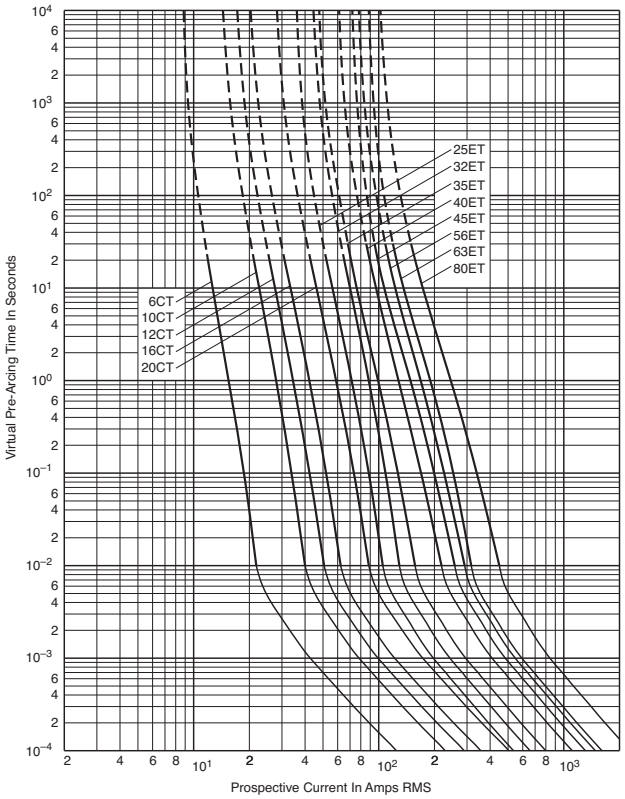
## Catalog Numbers

| Catalog Numbers | Type | Electrical Characteristics | | | | |
|---|---|---|---|---|---|---|
| | | Rated Current RMS-Amps | I²t (A² Sec) | | | Watts Loss |
| | | | Pre-arc | Clearing at 415V | Clearing at 660V | |
| 6CT | CT | 6 | 1.8 | 8.5 | 12 | 2 |
| 10CT | | 10 | 7 | 30 | 48 | 3 |
| 12CT | | 12 | 10 | 40 | 65 | 3 |
| 16CT | | 16 | 16 | 66 | 110 | 7 |
| 20CT | | 20 | 32 | 150 | 220 | 7 |
| 25ET | ET | 25 | 25 | 150 | 250 | 7 |
| 32ET | | 32 | 32 | 190 | 350 | 11 |
| 35ET | | 35 | 52 | 310 | 500 | 11 |
| 40ET | | 40 | 103 | 600 | 900 | 9 |
| 45ET | | 45 | 103 | 680 | 1100 | 11 |
| 56ET | | 56 | 135 | 950 | 1500 | 14 |
| 63ET | | 63 | 171 | 1200 | 2000 | 16 |
| 80ET | | 80 | 360 | 2500 | 4000 | 18 |
| 35FE | FE | 35 | 33 | 130 | 200 | 9 |
| 40FE | | 40 | 52 | 180 | 300 | 9 |
| 45FE | | 45 | 76 | 270 | 450 | 11 |
| 50FE | | 50 | 103 | 380 | 600 | 11 |
| 63FE | | 63 | 135 | 480 | 750 | 12 |
| 71FE | | 71 | 210 | 600 | 950 | 17 |
| 80FE | | 80 | 250 | 900 | 1500 | 20 |
| 90FE | | 90 | 360 | 1300 | 2100 | 20 |
| 100FE | | 100 | 470 | 1800 | 2800 | 23 |
| 90EET | EET | 90 | 490 | 3000 | 4500 | 19 |
| 110EET | | 110 | 600 | 4000 | 6500 | 27 |
| 140EET | | 140 | 1050 | 7000 | 12000 | 35 |
| 160EET | | 160 | 1500 | 10000 | 17000 | 39 |
| 100FEE | FEE | 100 | 400 | 1600 | 2400 | 24 |
| 120FEE | | 120 | 540 | 1900 | 3100 | 32 |
| 140FEE | | 140 | 850 | 2500 | 3800 | 36 |
| 160FEE | | 160 | 1000 | 3700 | 5700 | 46 |
| 180FEE | | 180 | 1400 | 5300 | 8400 | 46 |
| 200FEE | | 200 | 1900 | 7100 | 11400 | 52 |
| 180FM | FM | 180 | 1400 | 7500 | 13500 | 40 |
| 200FM | | 200 | 2600 | 10500 | 18500 | 40 |
| 225FM | | 225 | 3700 | 14500 | 26500 | 44 |
| 250FM | | 250 | 5200 | 20500 | 37500 | 48 |
| 280FM | | 280 | 7000 | 30500 | 55000 | 48 |
| 315FM | | 315 | 10000 | 40000 | 77000 | 55 |
| 350FM | | 350 | 15000 | 60000 | 105000 | 55 |
| 400FMM | FMM | 400 | 10000 | 40000 | 72500 | 85 |
| 450FMM | | 450 | 15000 | 60000 | 105000 | 90 |
| 500FMM | | 500 | 20000 | 82000 | 150000 | 100 |
| 550FMM | | 550 | 30000 | 120000 | 215000 | 100 |
| 630FMM | | 630 | 45000 | 180000 | 310000 | 100 |
| 700FMM | | 700 | 60000 | 245000 | 420000 | 120 |
| 160MT | MT | 160 | 2400 | 15000 | 25000 | 26 |
| 180MT | | 180 | 3800 | 25000 | 38000 | 26 |
| 200MT | | 200 | 6000 | 40000 | 58000 | 27 |
| 250MT | | 250 | 11500 | 80000 | 110000 | 32 |
| 280MT | | 280 | 16500 | 100000 | 150000 | 35 |
| 315MT | | 315 | 19000 | 125000 | 180000 | 42 |
| 355MT | | 355 | 22000 | 160000 | 200000 | 51 |
| 180MMT | MMT | 180 | 1650 | 12000 | 18000 | 42 |
| 200MMT | | 200 | 2200 | 16000 | 23000 | 42 |
| 225MMT | | 225 | 3700 | 26000 | 40000 | 42 |
| 280MMT | | 280 | 6600 | 47000 | 70000 | 47 |
| 315MMT | | 315 | 8600 | 62000 | 91000 | 51 |
| 355MMT | | 355 | 13500 | 97000 | 140000 | 54 |
| 400MMT | | 400 | 21000 | 150000 | 220000 | 60 |
| 450MMT | | 450 | 30000 | 220000 | 320000 | 57 |
| 500MMT | | 500 | 42000 | 300000 | 450000 | 64 |
| 560MMT | | 560 | 60000 | 430000 | 640000 | 64 |
| 630MMT | | 630 | 68500 | 500000 | 720000 | 86 |
| 710MMT | | 710 | 78000 | 600000 | 850000 | 105 |

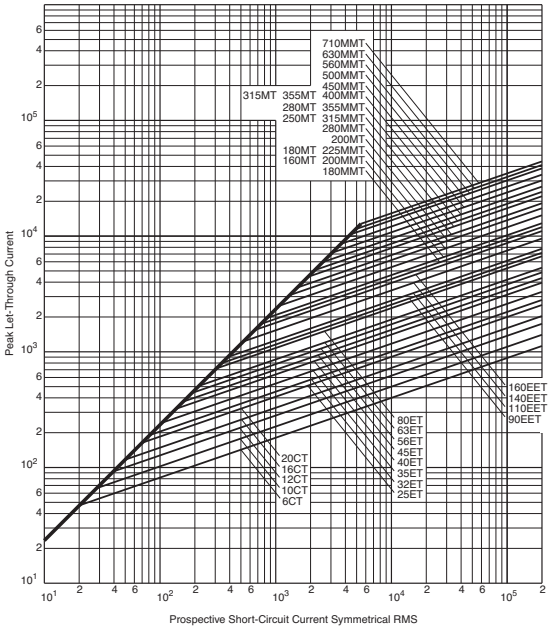
- Watts loss provided at rated current.
- Note: FC, 8ET, 12ET, 15ET, 20ET, 65EET and 75EET are available for replacement purposes on existing equipment.
- See accessories on page 222.

## CT 6-20, ET 25-80A: 690V

### Time-Current Curve




### Peak Let-Through Curve

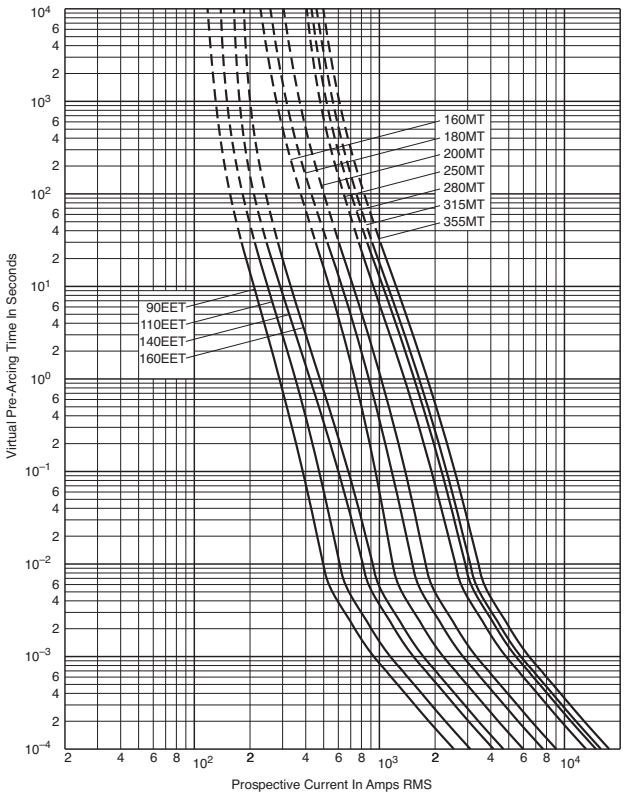



**Data Sheet: 35785312**

# British BS 88 — 690V: 6-710A

## EET 90-160A, MT 160-355A: 690V

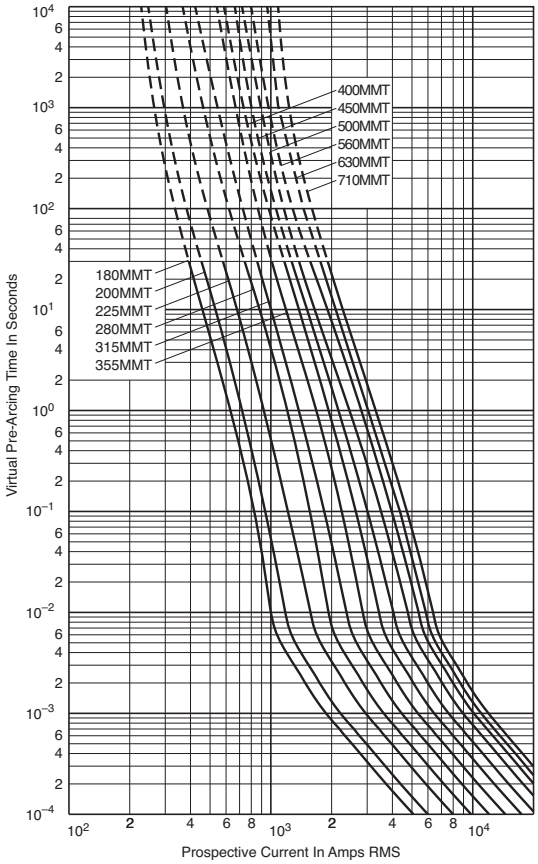
### Time-Current Curve




**Data Sheet: 35785313**

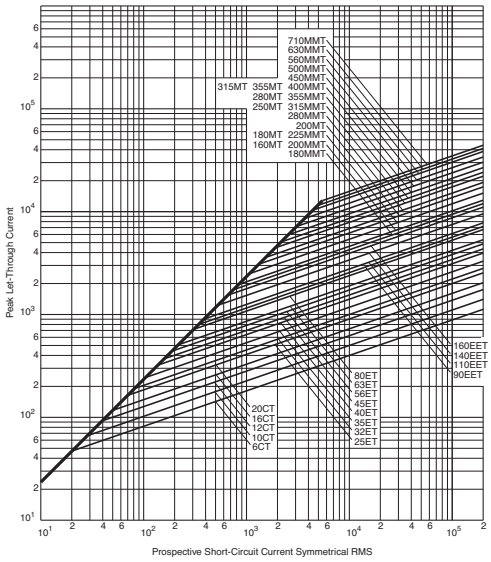
## MMT 180-710A: 690V

### Time-Current Curve




**Data Sheet: 35785311**

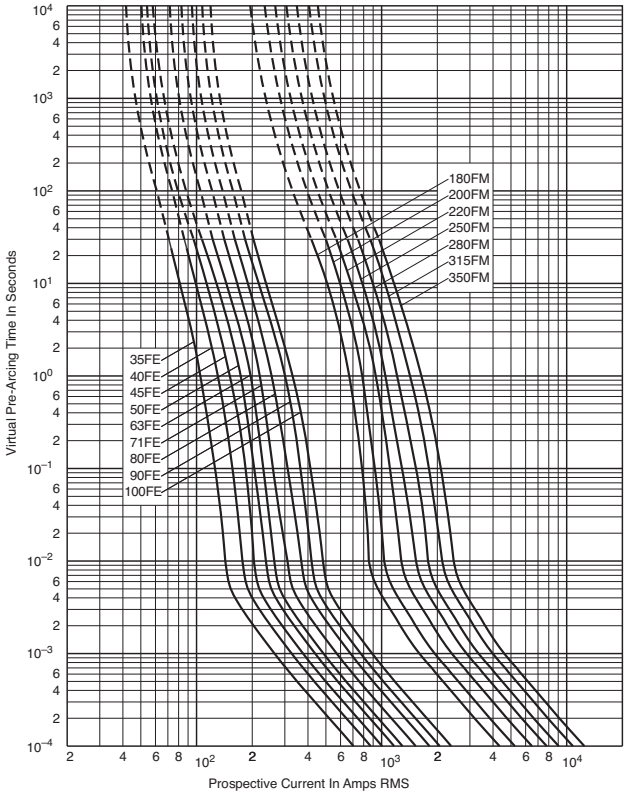
### Peak Let-Through Curve



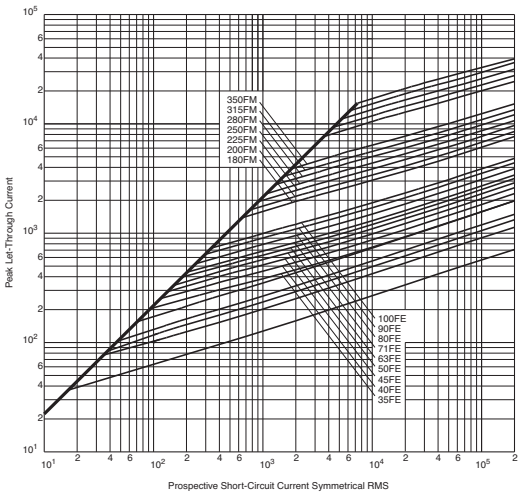
# British BS 88 — 690V: 6-710A

## FE 35-100A & FM 180-350A: 690V

### Time-Current Curve



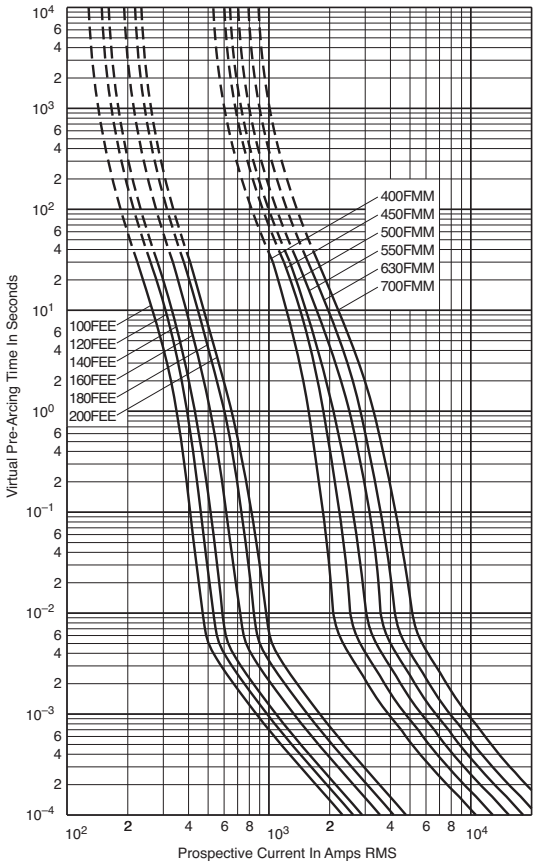

### Peak Let-Through Curve



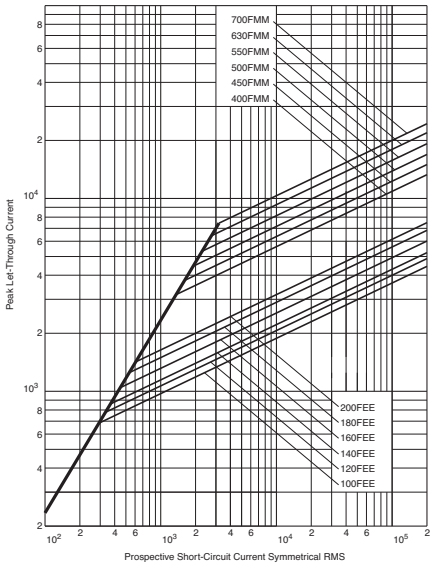

**Data Sheet: 35785314**

## FEE 100-200A & FMM 400-700A: 690V

### Time-Current Curve




### Peak Let-Through Curve




**Data Sheet: 35785292**

# British BS 88 Fuse Accessories

## Indicator System

## Trip-Indicators

Trip-indicators are available for use in parallel with the main fuse. They can either be attached to the associated fuse or mounted separately in panel mounted fuse clips, reference CL1. A push-on adapter and microswitch attachment is available for use with the trip indicator to give the facility of remote indication, reference MAI.

Fuse ratings of 20A and below cannot usually accommodate a trip-indicator.

When a trip-indicator is to be attached to the main fuse an accessory pack comprising a pair of mounting clips and an appropriate trip indicator would be required. The clips are snapped onto the fuse end caps and the indicator is pressed into clips as shown.

### Electrical Specifications

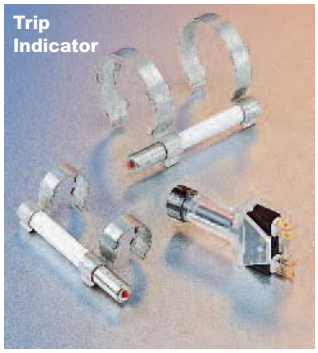
| Type | TI500 | TI700 |
|---|---|---|
| Maximum RMS Voltage | 500 | 700 |
| Maximum Peak Voltage | 700 | 1000 |
| Maximum DC Voltage | 130 | 350 |
| Cold Resistance (ohms) | 0.3 | 0.45 |
| Maximum permissible steady-state current | 1.5A | 1.5A |
| Interrupting Capacity (RMS Symm.) | 100,000 | 100,000 |
| Pre-Arcing $I^2t$ | 23 | 23 |
| Total $I^2t$ (max volts) | 46 | 46 |

### Fuse Indicator Kits

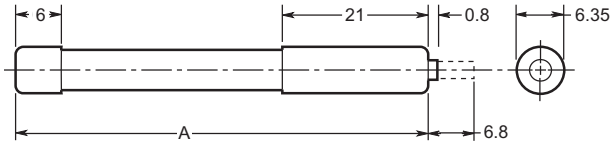
| Kit. Ref. | Details | RMS Volts | For use with Fuse Ref. |
|---|---|---|---|
| EC-250 | Fuse Mount | 250 | LET |
| MC250 | Indicator Kits | 250 | LMT & LMMT |
| EC-600 | (Includes one | 660 | FE, FEE & ET |
| MC600 | indicator | 660 | FM & FMM |
| MC700 | and two clips) | 700 | MT & MMT |

### CL1 Panel Mount Clips

CL1 Panel mount fuse clips are available for mounting a trip-indicator when mounting directly on the fuse is impractical. Order part number CL1.

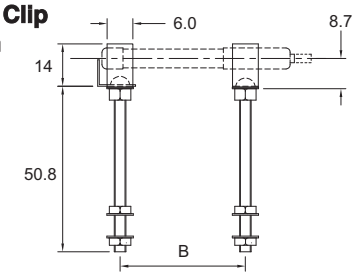



### Trip-Indicator Dimensions - mm




| Ref. | Dim. "A" (mm) | RMS Volts |
|---|---|---|
| TI250 | 37.6 | 250 |
| TI500 | 47.5 | 500 |
| TI600 | 55.7 | 600 |
| TI700 | 61.8 | 700 |
| TI1100 | 98.4 | 1100 |
| TI1500 | 120.6 | 1500 |
| TI2000 | 147.5 | 2000 |
| TI2500 | 198.3 | 2500 |

### CL1 Panel Mount Clip Dimensions - mm



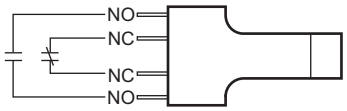

## Microswitch Adapter – MAI

We offer a microswitch, complete with adapter for securing the indicator. The microswitch is provided with double pole, single throw contacts, having both a normally open and a normally closed position. A special material has been employed in the construction of the adapter to provide reliable operation in the range of temperatures associated with standard operating conditions and during fuse operation.

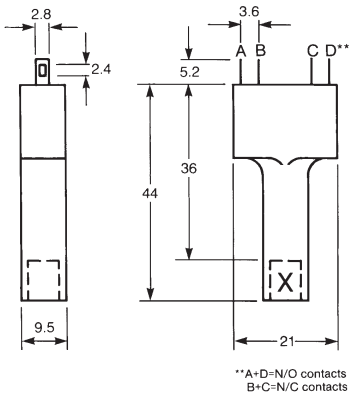
### Microswitch and Adapter Type MAI

| | |
|---|---|
| **Current Rating:** | |
| AC 50/60Hz resistive load @ 250V RMS | 4A |
| AC 50/60Hz resistive load @ 127V RMS | 6A |
| DC, resistive load @ 110Vdc | 0.7A DC |
| DC, resistive load @ 30Vdc | 2A DC |
| **Maximum Working Voltage:** | |
| Contact-to-contact (RMS) | 1000V |
| Contact-to-contact (RMS) | 1500V |
| **Maximum DC Volts:** | 110Vdc |

### Terminal Arrangement




### Dimensions in mm



# Ferrule Fuses


## Table of Contents



### Accessories



### Ferrule Fuse Ranges

| Volts | Amps | AC | DC |
|---|---|---|---|
| 150 | 5-60 | X | X |
| 250 | 1-50 | X | X |
| 500 | 0.25-30 | X | X |
| 600 | 6-32 | X | X |
| 700 (22 x 58mm) | 20-100 | X | — |
| 700 (14 x 51mm) | 1-50 | X | X |
| 750 | 5-60 | X | X |
| 1000 | 20-30 | X | X (800Vdc) |
| 1250 | 20-30 | X | X (1000Vdc) |
| 1500 | 8-15 | X | X (1000Vdc) |
| 2000 | 2-6 | X | X (1000Vdc) |

### General Information

Bussmann offers a full line of ferrule style (cylindrical clip-mounted) fuses, designed and tested to meet standards and requirements in various locations around the world. Their unique design and construction provide:

- Superior cycling capability
- Low energy let-through ($I^2t$)

Ferrule fuses provide an excellent solution for small UPS, small ac drives and other low power applications where space is at a premium.

### Voltage Rating

All Bussmann ferrule fuses — except 690V — have been tested at their rated voltage. The 690V ferrule fuse has been tested to the IEC 60269 standard, which requires clearing at the rated voltage +5%.

### Accessories

Ferrule fuses may be mounted in fuseclips, fuse holders, fuse blocks or fused switches. A variety of products are available. Please consult Bussmann Application Engineering to discuss your requirement.

# Ferrule — FWA 150V: 5-60A

## FWA 5-30A (10 x 38mm)
## 35-60A (21 X 51mm)

### Specifications

**Description:** Ferrule style high speed fuses.

**Dimensions:** See dimensions illustration.

**Ratings:**

Volts: — 150Vac/dc

Amps: — 5-60A

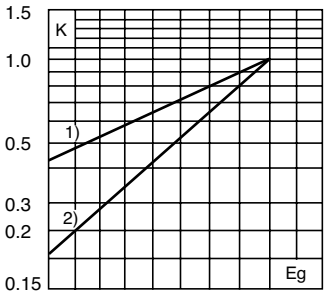
IR: — 100kA Sym.

**Agency Information:** CE, UL Recognition JFHR2.E91958


### Electrical Characteristics

#### Total Clearing I²t

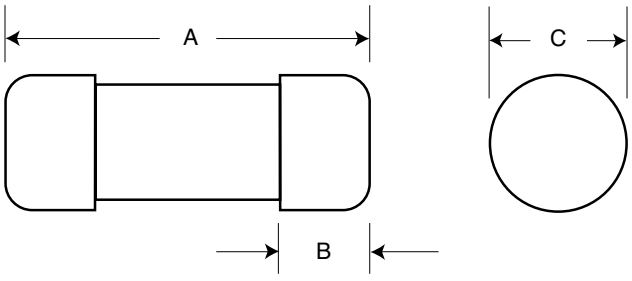
The total clearing I²t at rated voltage and at power factor of 15% are given in the electrical characteristics. For other voltages, the clearing I²t is found by multiplying by correction factor, K, given as a function of applied working voltage, $E_g$, (rms).




1) 5-30A Range
2) 35-60A Range

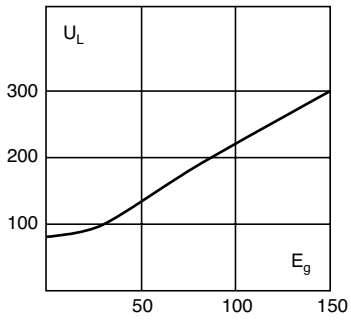
### Dimensions - in (mm)

| Amp Range | Dimensions A | B | C |
|---|---|---|---|
| 5-30 | 1.5 (38.1) | 0.375 (9.5) | 0.406 (10.3) |
| 35-60 | 2.0 (50.8) | 0.625 (15.9) | 0.811 (20.6) |



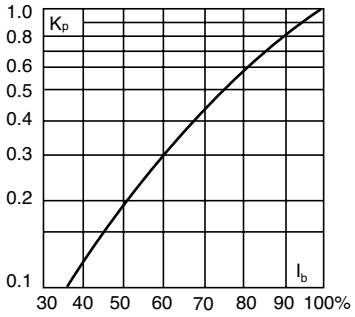

### Arc Voltage

This curve gives the peak arc voltage, $U_L$, which may appear across the fuse during its operation as a function of theapplied working voltage, $E_g$, (rms) at a power factor of 15%.




### Power Losses

Watts loss at rated current is given in the electrical characteristics. The curve allows the calculation of the power losses at load currents lower than the rated current. The correction factor, $K_p$, is given as a function of the RMS load current, $I_b$, in % of the rated current.




### Catalog Numbers

| Catalog Numbers | Size | Electrical Characteristics: Rated Current RMS-Amps | I²t (A² Sec): Pre-arc | I²t (A² Sec): Clearing at 150V | Watts Loss |
|---|---|---|---|---|---|
| FWA-5A10F | 10 x 38mm (13/32" x 1½") | 5 | 1.6 | 8 | 1 |
| FWA-10A10F | | 10 | 3.6 | 16 | 2.7 |
| FWA-15A10F | | 15 | 14 | 55 | 3.3 |
| FWA-20A10F | | 20 | 33 | 130 | 3.8 |
| FWA-25A10F | | 25 | 58 | 220 | 4.9 |
| FWA-30A10F | | 30 | 100 | 400 | 4.9 |
| FWA-35A21F | 21 x 51mm (13/16" x 2") | 35 | 75 | 800 | 4.5 |
| FWA-40A21F | | 40 | 100 | 1000 | 5.1 |
| FWA-45A21F | | 45 | 130 | 1300 | 6 |
| FWA-50A21F | | 50 | 170 | 1600 | 7.3 |
| FWA-60A21F | | 60 | 250 | 2400 | 8.0 |

• Watts loss provided at rated current.
• See accessories on page 243.

### Features and Benefits

- Excellent cycling capability and DC performance
- Low arc voltage and low energy let-through (I²t)
- Low watts loss in a compact size
- Used with finger-safe holders/blocks

### Typical Applications

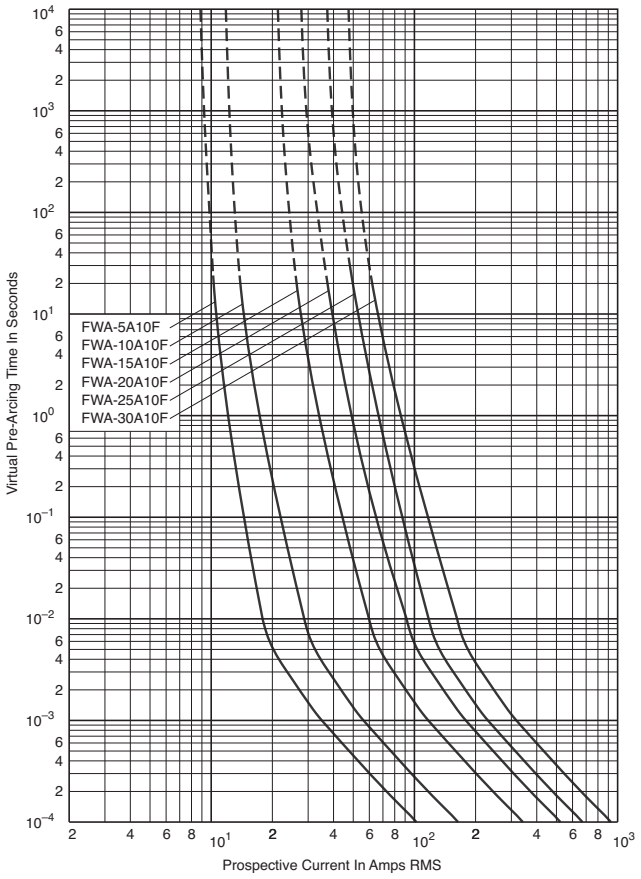
- DC Common bus
- DC Drives
- Power converters/rectifiers
- Reduced voltage starters

**Data Sheet: 720003**

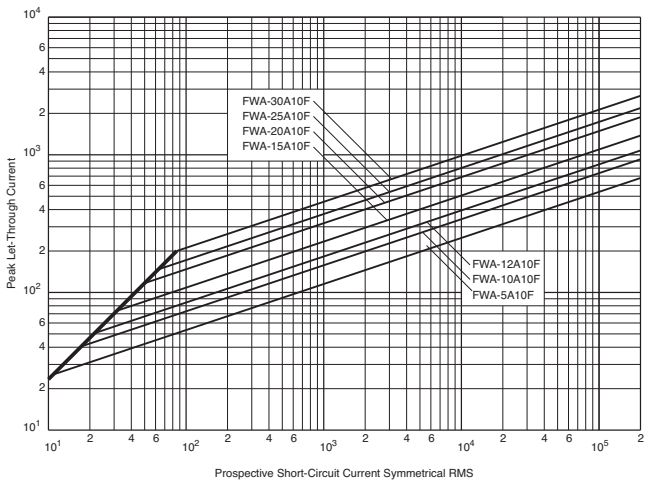
# Ferrule — FWA 150V: 5-60A

## FWA 5-30A: 150V (10 x 38mm)

### Time-Current Curve



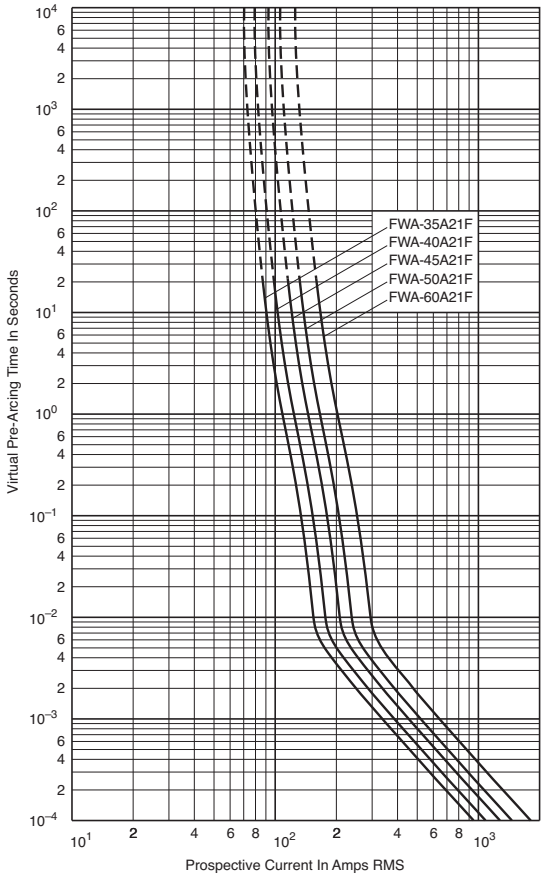

### Peak Let-Through Curve



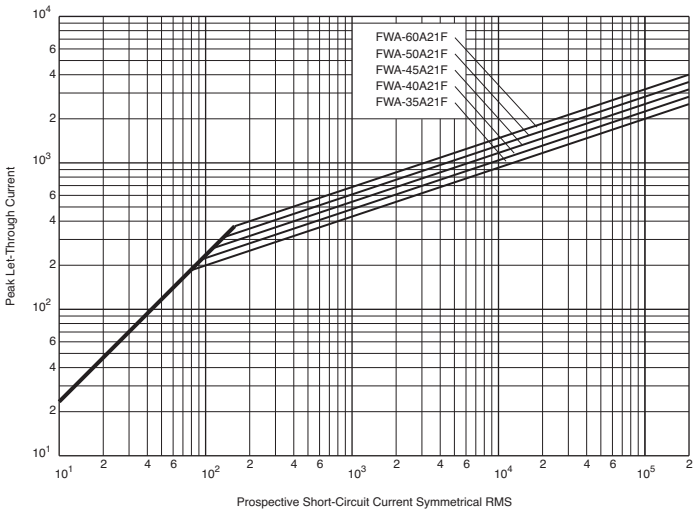

**Data Sheet: 35785317**

## FWA 35-60A: 150V (21 x 51mm)

### Time-Current Curve




### Peak Let-Through Curve




**Data Sheet: 35785305**

# Ferrule — FWX 250V (UL): 1-50A

## FWX (14 x 51mm)

**Specifications**

**Description:** Ferrule style high speed fuses.

**Dimensions:** See dimensions illustration.

**Ratings:**

Volts: — 250Vac/dc

Amps: — 1-50A

IR: — 200kA RMS Sym.

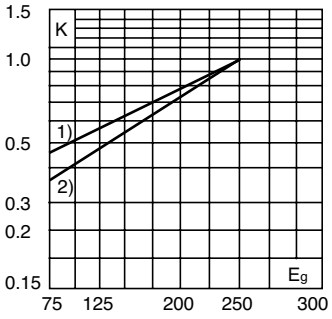
— 50kA @ 250Vdc

**Agency Information:** CE, UL Recognition JFHR2.E91958 1-50A & CSA Component Acceptance file Class 1422-30, 1422-90 (53787) 5-30A

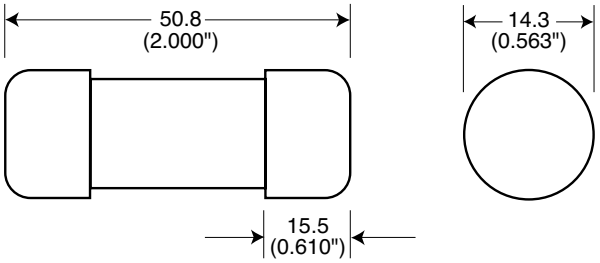
### Electrical Characteristics

#### Total Clearing $I^2t$

The total clearing $I^2t$ at rated voltage and at power factor of 15% are given in the electrical characteristics. For other voltages, the clearing $I^2t$ is found by multiplying by correction factor, K, given as a function of applied working voltage, $E_g$, (rms).

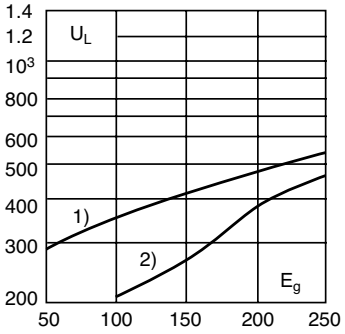



### Dimensions - mm (in)



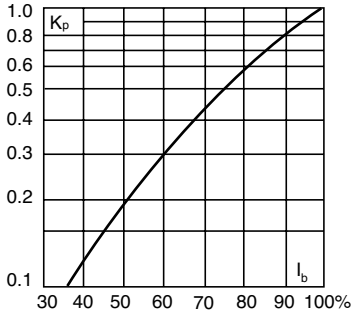

### Arc Voltage

This curve gives the peak arc voltage, $U_L$, which may appear across the fuse during its operation as a function of the applied working voltage, $E_g$, (rms) at a power factor of 15%.




### Power Losses

Watts loss at rated current is given in the electrical characteristics. The curve allows the calculation of the power losses at load currents lower than the rated current. The correction factor, $K_p$, is given as a function of the RMS load current, $I_b$, in % of the rated current.




### Catalog Numbers

| Catalog Number | Size | Electrical Characteristics: Rated Current RMS-Amps | $I^2t$ ($A^2Sec$): Pre-arc | $I^2t$ ($A^2Sec$): Clearing at 250V | Watts Loss |
|---|---|---|---|---|---|
| FWX-1A14F | | 1 | — | — | — |
| FWX-2A14F | | 2 | — | — | — |
| FWX-3A14F | | 3 | — | — | — |
| FWX-4A14F | | 4 | — | — | — |
| FWX-5A14F | 14 x 51mm | 5 | 1.6 | 13 | 1.3 |
| FWX-10A14F | (9/16" x 2") | 10 | 3.6 | 24 | 3.4 |
| FWX-15A14F | | 15 | 14 | 83 | 3.8 |
| FWX-20A14F | | 20 | 33 | 200 | 4.6 |
| FWX-25A14F | | 25 | 58 | 300 | 5.3 |
| FWX-30A14F | | 30 | 100 | 500 | 5.9 |
| FWX-50A14F | | 50 | 200 | 1800 | 5.7 |

• Watts loss provided at rated current.

• (250Vdc/Interrupting rating 50kA) UL Recognition & CSA Component Acceptance on 5 through 30A only. Consult Bussmann for additional ratings.

• See accessories on page 243.

### Features and Benefits

- Excellent cycling capability and DC performance
- Low arc voltage and low energy let-through ($I^2t$)
- Low watts loss in a compact size
- Used with finger-safe holders/blocks

### Typical Applications

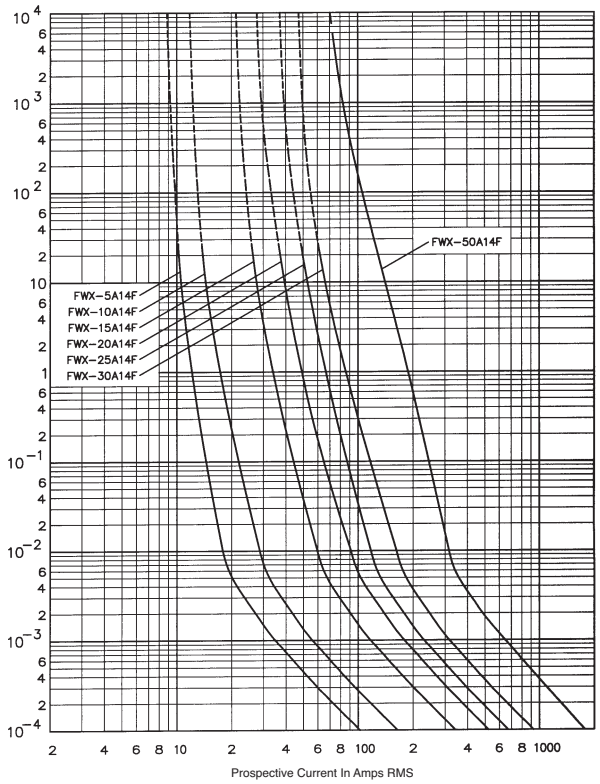
- DC Common bus
- DC Drives
- Power converters/rectifiers
- Reduced voltage starters

**Data Sheet: 720006**

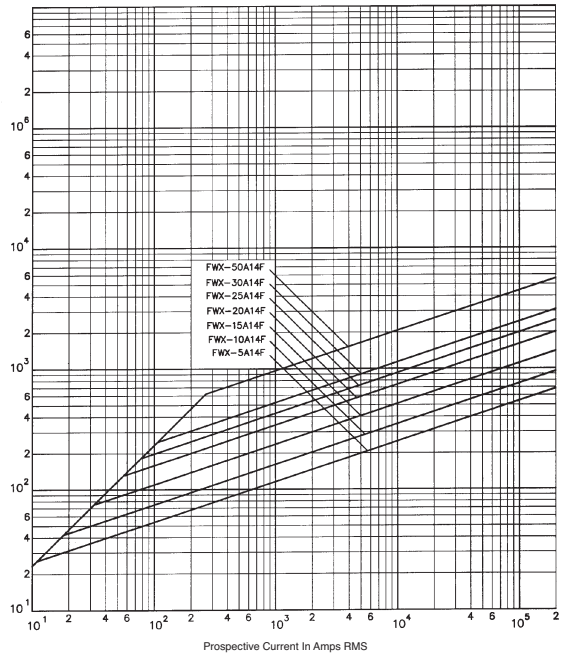
# Ferrule — FWX 250V (UL): 1-50A

## FWX 1-30A: 250V (14 x 51mm)

### Time-Current Curve




### Peak Let-Through Curve




**Data Sheet: 35785302**

# Ferrule — FWH 500V: 0.25-30A

## FWH (6 x 32mm)


**Specifications**

**Description:** Ferrule style high speed fuses.

**Dimensions:** See dimensions illustrations.

**Ratings:**

Volts: — 500Vac (0.25-6.3A)
500Vdc (2-5A)

Amps: — 0.25-30A

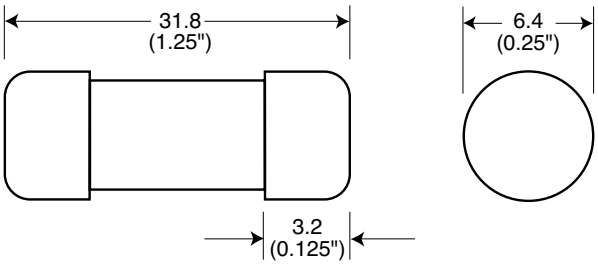
IR: — 50kA at ≥ 20% pf (0.25-20A)
— 20kA at ≥ 20% pf (25-30A)

**Agency Information:** CE, UL Recognition JFHR2.E91958 0.25-30A, CSA Component Acceptance file Class 1422-30, 1422-90 (53787) 0.25-7A

**Opening Times**

| Amp Ratings | 150% | 200% | 300% |
|---|---|---|---|
| 0.25-7 | > 30 min | < 30 min | ≤ 10 sec |
| 10-30 | < 30 min | < 30 min | ≤ 10 sec |

**Dimensions - mm (inches)**




### Catalog Numbers

| Catalog Numbers | Size | Electrical Characteristics | | | |
|---|---|---|---|---|---|
| | | Rated Current RMS-Amps | I²t (A² Sec) Pre-arc | I²t (A² Sec) Clearing at 500V | Watts Loss |
| FWH-.250A6F | | 0.25* | 0.01 | 0.05 | 2.7 |
| FWH-.500A6F | | 0.5* | 0.05 | 0.25 | 1.2 |
| FWH-001A6F | | 1* | 0.4 | 2 | 1.7 |
| FWH-002A6F | | 2* | 1.3 | 3.5 | 3.2 |
| FWH-3.15A6F | | 3.15* | 3.1 | 7.7 | 2.9 |
| FWH-005A6F | | 5* | 15 | 40 | 2.1 |
| FWH-6.30A6F | 6 x 32mm | 6.3* | 36 | 90 | 2.3 |
| FWH-007A6F | (¼" x 1¼") | 7* | 50 | 125 | 2.5 |
| FWH-010A6F | | 10** | 9.9 | 139 | 2.86 |
| FWH-12.5A6F | | 12.5** | 20 | 60 | 3.53 |
| FWH-015A6F | | 15** | 44 | 146 | 3.08 |
| FWH-016A6F | | 16** | 48 | 177 | 4.48 |
| FWH-020A6F | | 20** | 75 | 259 | 4.26 |
| FWH-025A6F | | 25** | 126 | 345 | — |
| FWH-030A6F | | 30** | 145 | 430 | — |

*300% minimum opening current at rated voltage.
**200% minimum opening current at rated voltage.
• Consult Bussmann for DC ratings.
• See accessories on page 243.

### Features and Benefits

- Excellent cycling capability and DC performance
- Low arc voltage and low energy let-through ($I^2t$)
- Low watts loss in a compact size
- Used with finger-safe holders/blocks

### Typical Applications

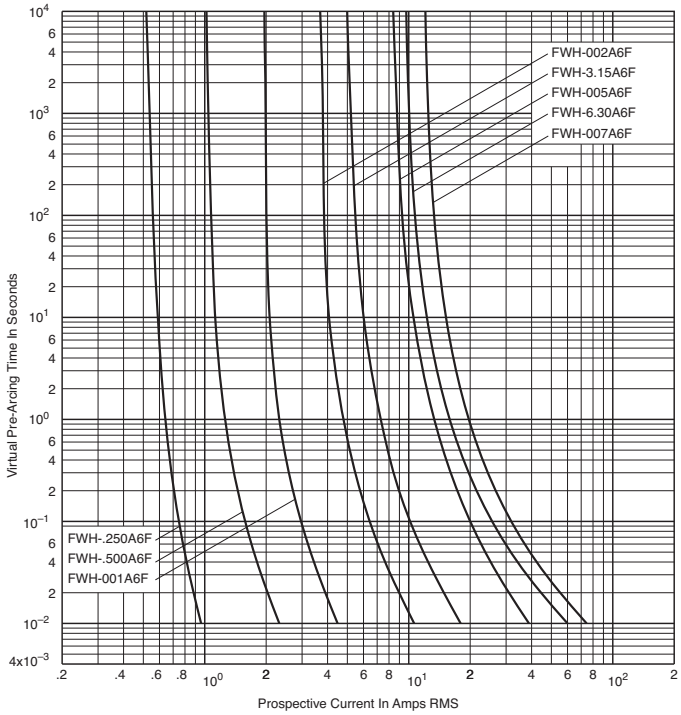
- DC Common bus
- DC Drives
- Power converters/rectifiers
- Reduced voltage starters

**Data Sheet: 720038**

# Ferrule — FWH 500V: 0.25-30A

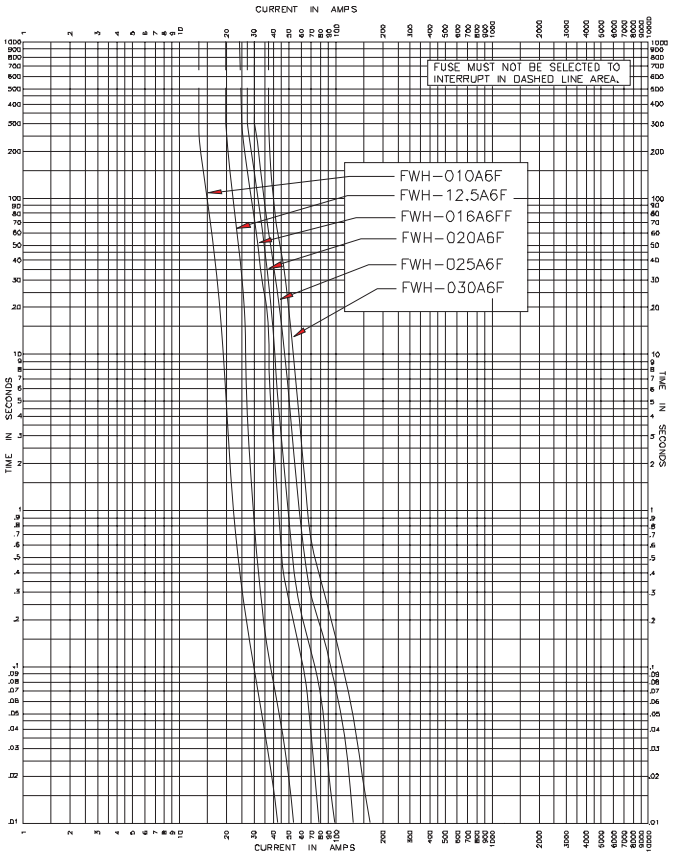
## FWH 0.25-7A: 500V (6 x 32mm)

### Time-Current Curve




## FWH 10-30A: 500V (6 x 32mm)

### Time-Current Curve




**Data Sheet: 35785256**

**Data Sheet: 50955**

# Ferrule — FWH 500V: 1-30A

## FWH (14 x 51mm)

**Specifications**

**Description:** Ferrule style high speed fuses.

**Dimensions:** See Dimensions illustration.

**Ratings:**

Volts: — 500Vac

Amps: — 1-30A

IR: — 200kA RMS Sym.

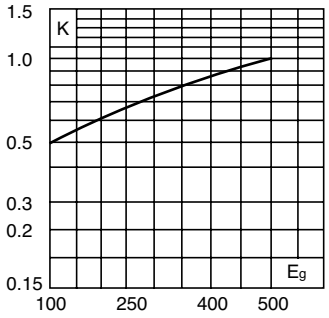
— 50kA @500Vdc


**Agency Information:** CE, UL Recognition 1- 30A & CSA Component Acceptance file Class 1422-30, (53787) on: 5 - 30A.

### Electrical Characteristics

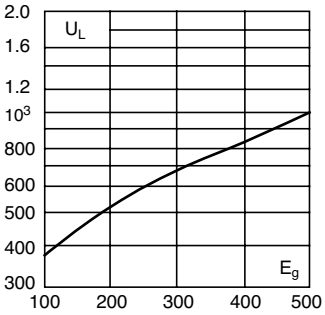
#### Total Clearing $I^2t$

The total clearing $I^2t$ at rated voltage and at power factor of 15% are given in the electrical characteristics. For other voltages, the clearing $I^2t$ is found by multiplying by correction factor, K, given as a function of applied working voltage, $E_g$, (rms).



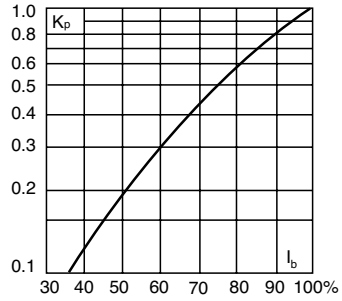

#### Arc Voltage

This curve gives the peak arc voltage, $U_L$, which may appear across the fuse during its operation as a function of the applied working voltage, $E_g$, (rms) at a power factor of 15%.




#### Power Losses

Watts loss at rated current is given in the electrical characteristics. The curve allows the calculation of the power losses at load currents lower than the rated current. The correction factor, $K_p$, is given as a function of the RMS load current, $I_b$, in % of the rated current.

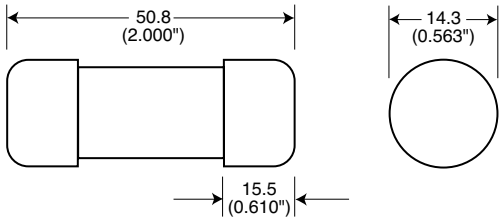



### Catalog Numbers

| Catalog Numbers | Size | Electrical Characteristics | | | |
|---|---|---|---|---|---|
| | | Rated Current RMS-Amps | $I^2t$ ($A^2$ Sec) Pre-arc | $I^2t$ ($A^2$ Sec) Clearing at 500V | Watts Loss |
| FWH-1A14F | 14 x 51mm | 1 | — | — | — |
| FWH-2A14F | (9/16" x 2") | 2 | — | — | — |
| FWH-3A14F | | 3 | — | — | 2.3 |
| FWH-4A14F | | 4 | — | — | — |
| FWH-5A14F | | 5 | 1.6 | 6.4 | 1.5 |
| FWH-6A14F | | 6 | 1.6 | 6.4 | 1.5 |
| FWH-10A14F | | 10 | 3.6 | 13 | 4 |
| FWH-12A14F | | 12 | — | — | — |
| FWH-15A14F | | 15 | 10 | 40 | 5.5 |
| FWH-20A14F | | 20 | 26 | 96 | 6 |
| FWH-25A14F | | 25 | 49 | 191 | 7 |
| FWH-30A14F | | 30 | 58 | 232 | 9 |

• Watts loss provided at rated current.
• See accessories on page 243.

### Dimensions - mm (inches)




### Features and Benefits

- Excellent cycling capability and dc performance
- Low arc voltage and low energy let-through ($I^2t$)
- Low watts loss in a compact size
- Used with finger-safe holders/blocks

### Typical Applications

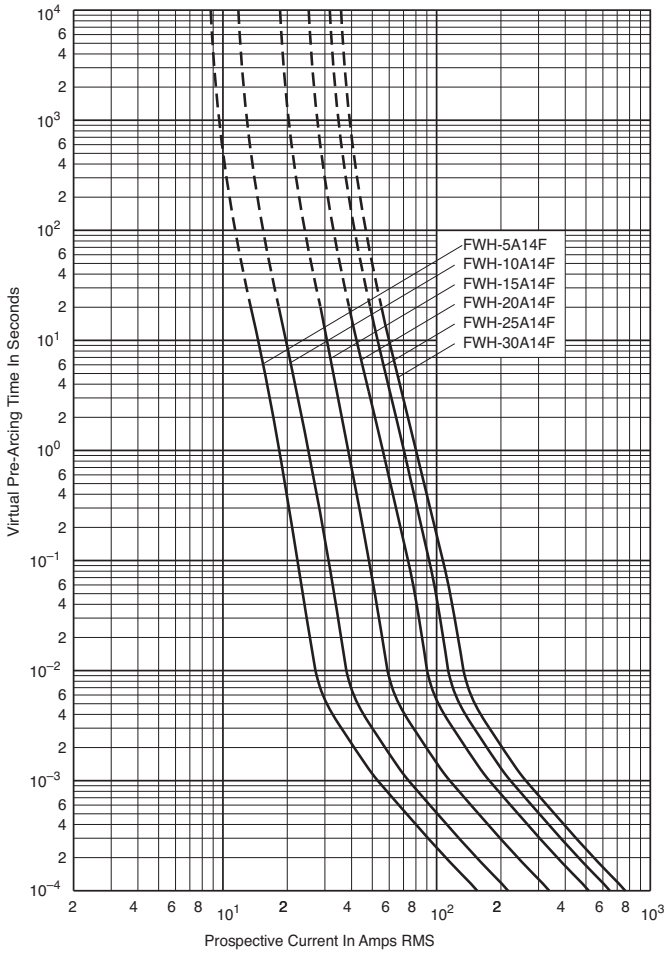
- DC common bus
- DC drives
- Power converters/rectifiers
- Reduced voltage starters

**Data Sheet: 720008**

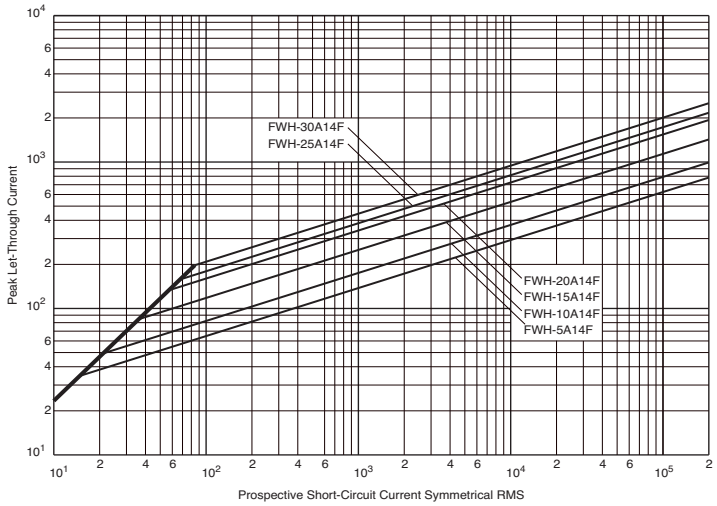
# Ferrule — FWH 500V: 1-30A

## FWH 1-30A: 500V (14 x 51mm)

### Time-Current Curve




### Peak Let-Through Curve




**Data Sheet: 35785298**

# Ferrule — FWC 600V: 6-32A

## FWC (10 x 38mm)

**Specifications**

**Description:** Ferrule style high speed fuses.

**Dimensions:** See dimensions illustration.

**Ratings:**

Volts: — 600Vac/700Vdc (6-25A)
600Vac (30-32A)

Amps: — 6-32A

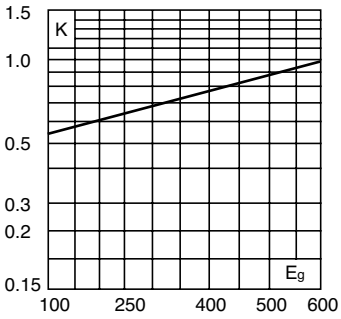
IR: — 200kA RMS Sym.
— 50kA @ 700Vdc (6-25A)

**Agency Information:** CE, UL Recognition JFHR8.E91958 6-32A. & CSA Component Acceptance file Class 1422-30, (53787) on (6-32A)

### Electrical Characteristics

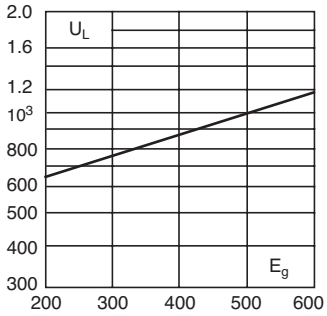
#### Total Clearing $I^2t$

The total clearing $I^2t$ at rated voltage and at power factor of 15% are given in the electrical characteristics. For other voltages, the clearing $I^2t$ is found by multiplying by correction factor, K, given as a function of applied working voltage, $E_g$, (rms).



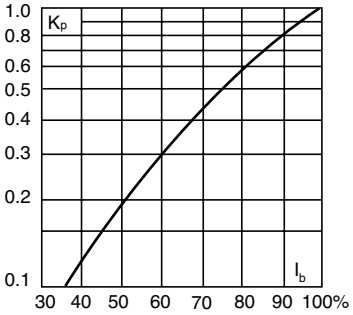

#### Arc Voltage

This curve gives the peak arc voltage, $U_L$, which may appear across the fuse during its operation as a function of theapplied working voltage, $E_g$, (rms) at a power factor of 15%.




#### Power Losses

Watts loss at rated current is given in the electrical characteristics. The curve allows the calculation of the power losses at load currents lower than the rated current. The correction factor, $K_p$, is given as a function of the RMS load current, $I_b$, in % of the rated current.

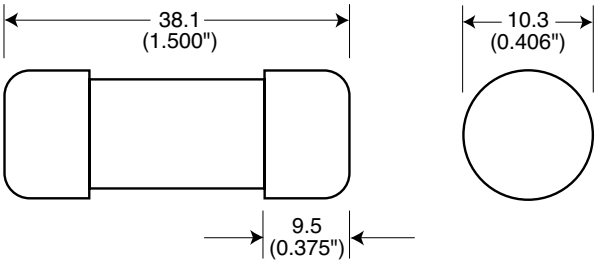



### Catalog Numbers

| Catalog Numbers | Size | Electrical Characteristics: Rated Current RMS-Amps | $I^2t$ ($A^2$ Sec): Pre-arc | $I^2t$ ($A^2$ Sec): Clearing at 600V | Watts Loss |
|---|---|---|---|---|---|
| FWC-6A10F | | 6 | 4 | 30 | 1.5 |
| FWC-8A10F | | 8 | 6 | 50 | 2.0 |
| FWC-10A10F | | 10 | 9 | 70 | 2.5 |
| FWC-12A10F | 10 x 38mm | 12 | 15 | 120 | 3.0 |
| FWC-16A10F | (13/32" x 1½") | 16 | 25 | 150 | 3.5 |
| FWC-20A10F | | 20 | 34 | 260 | 4.8 |
| FWC-25A10F | | 25 | 60 | 390 | 6.0 |
| FWC-30A10F | | 30 | 95 | 600 | 7.5 |
| FWC-32A10F | | 32 | 95 | 600 | 7.5 |

• Watts loss provided at rated current.
• See accessories on page 243.

### Dimensions - mm (in)




### Features and Benefits

- Excellent cycling capability and DC performance
- Low arc voltage and low energy let-through ($I^2t$)
- Low watts loss in a compact size
- Used with finger-safe holders/blocks

### Typical Applications

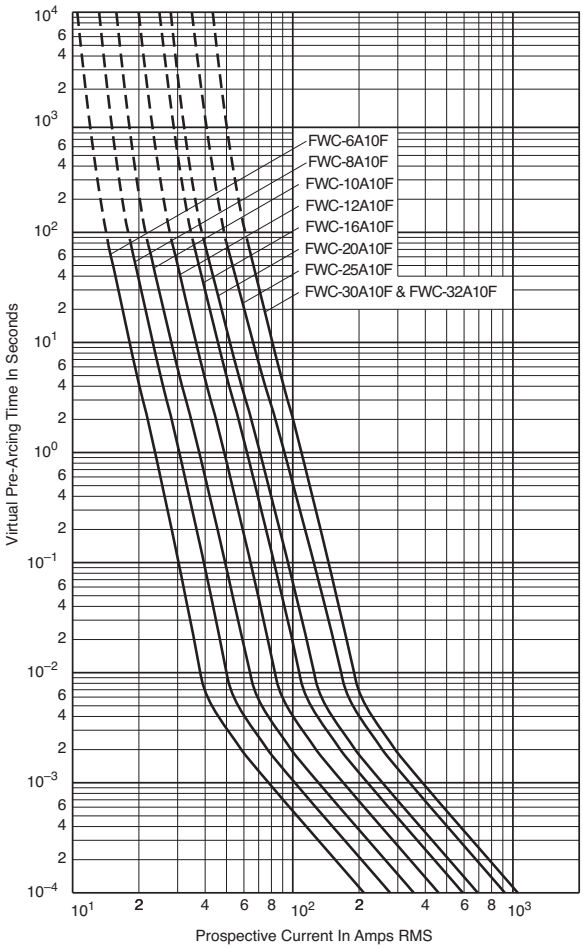
- DC Common bus
- DC Drives
- Power converters/rectifiers
- Reduced voltage starters

**Data Sheet: 720011**

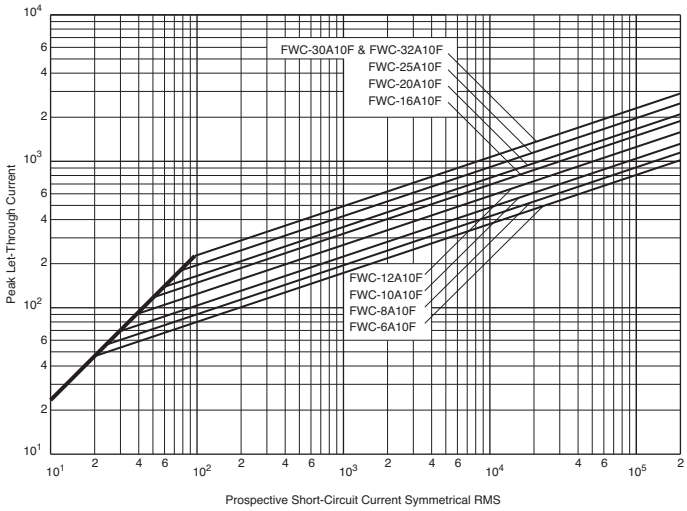
# Ferrule — FWC 600V: 6-32A

## FWC 6-32A: 600V (10 x 38mm)

### Time-Current Curve




### Peak Let-Through Curve




**Data Sheet: 35785306**

# Ferrule — FWP 690V/700V (IEC/UL): 1-50A, Striker Optional

## FWP (14 x 51mm)


FWP with striker option.

### Specifications

**Description:** Ferrule style high speed fuses with and without indicating striker.

**Dimensions:** See dimensions illustrations.

**Ratings:**

Volts: — 690Vac (IEC)
— 700Vac (UL)
— 800Vdc (5-50A)

Amps: — 1-50A

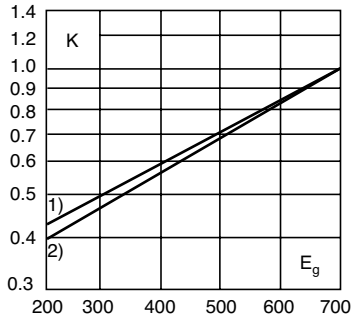
IR: — 200kA RMS Sym.
— 50kA @800Vdc

**Agency Information:** CE, UL Recognition JFHR2.E91958, CSA Component Acceptance file Class 1422-30, 1422-90 (53787) for versions without indicator only. Designed and tested to IEC 60269: Part 4.

### Electrical Characteristics

#### Total Clearing I²t

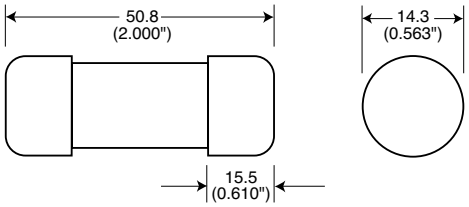
The total clearing I²t at rated voltage and at power factor of 15% are given in the electrical characteristics. For other voltages, the clearing I²t is found by multiplying by correction factor, K, given as a function of applied working voltage, $E_g$, (rms).



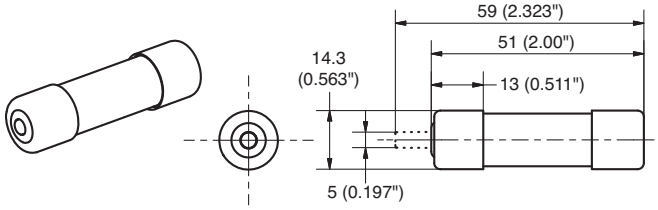

1) 5-30A Range
2) 32-50A Range

### Dimensions - mm (in)

#### Without Striker

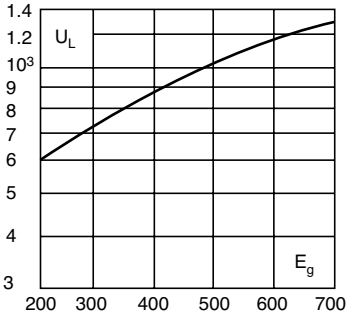



#### With Striker



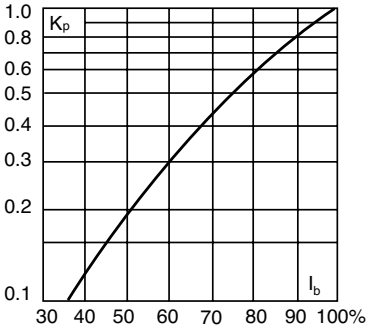

### Arc Voltage

This curve gives the peak arc voltage, $U_L$, which may appear across the fuse during its operation as a function of theapplied working voltage, $E_g$, (rms) at a power factor of 15%.




### Power Losses

Watts loss at rated current is given in the electrical characteristics. The curve allows the calculation of the power losses at load currents lower than the rated current. The correction factor, $K_p$, is given as a function of the RMS load current, $I_b$, in % of the rated current.




### Catalog Numbers

| Catalog Numbers | Size | Electrical Characteristics: Current RMS-Amps | Rated I²t (A² Sec): Minimum Melting | Rated I²t (A² Sec): Clearing At Rated Voltage | Watts Loss |
|---|---|---|---|---|---|
| Without Striker | | | | | |
| FWP-1A14F | | 1 | — | — | — |
| FWP-2A14F | | 2 | — | — | — |
| FWP-2.5A14F | | 2.5 | — | — | — |
| FWP-3A14F | | 3 | — | — | — |
| FWP-4A14F | | 4 | — | — | — |
| FWP-5A14F | 14 x 51mm | 5 | 1.6 | 11.0 | 1.5 |
| FWP-10A14F | (9/16" x 2") | 10 | 3.6 | 38.5 | 4 |
| FWP-15A14F | | 15 | 8.6 | 70 | 5.5 |
| FWP-20A14F | | 20 | 26.0 | 230 | 6 |
| FWP-25A14F | | 25 | 46.5 | 375 | 7 |
| FWP-30A14F | | 30 | 58 | 485 | 9 |
| FWP-32A14F | | 32 | 68 | 600 | 7.6 |
| FWP-40A14F | | 40 | 84 | 750 | 8 |
| FWP-50A14F | | 50 | 200 | 1800 | 9 |
| With Striker* | | | | | |
| FWP-10A14FI | | 10 | 3.6 | 38.5 | 4 |
| FWP-15A14FI | | 15 | 8.6 | 70 | 5.5 |
| FWP-20A14FI | 14 x 51mm | 20 | 26.0 | 230 | 6 |
| FWP-25A14FI | (9/16" x 2") | 25 | 46.5 | 375 | 7 |
| FWP-30A14FI | | 30 | 58 | 485 | 9 |
| FWP-32A14FI | | 32 | 68 | 600 | 7.6 |
| FWP-40A14FI | | 40 | 84 | 750 | 8 |
| FWP-50A14FI | | 50 | 200 | 1800 | 9 |

*Striker range is 600Vdc only
• Watts loss provided at rated current.
• See accessories on page 243.

### Features and Benefits

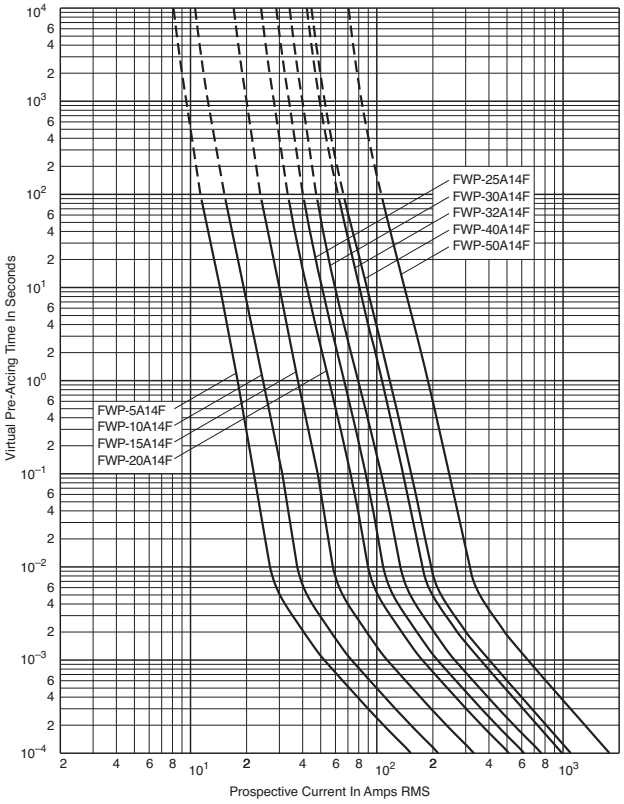
- Excellent cycling capability and DC performance
- Low arc voltage and low energy let-through (I²t)
- Low watts loss in a compact size
- Used with finger-safe holders/blocks

**Data Sheet: 720025**

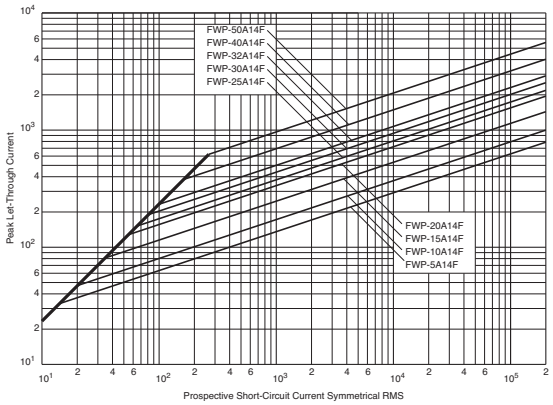
# Ferrule — FWP 690V/700V (IEC/UL): 1-50A, Striker Optional

## Without Striker
## FWP 5-50A: 660V/700V (14 x 51mm)

### Time-Current Curve




### Peak Let-Through Curve




**Data Sheet: 35785307**

# Ferrule — FWP 690V/700V (IEC/UL): 20-100A, Striker Optional

## FWP (22 x 58mm)


FWP with striker option.

**Specifications**

**Description:** Ferrule style high speed fuses with and without indicating striker.

**Dimensions:** See dimensions illustration.

**Ratings:**

Volts: — 690Vac (IEC)
— 700Vac (UL)
— 500Vac
— 500Vdc (20-100A)

Amps: — 20-100A

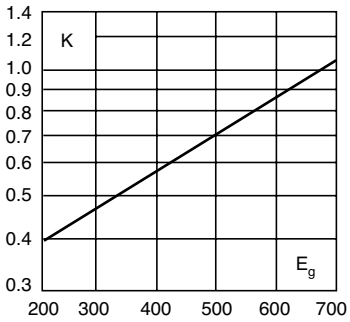
IR: — 200kA RMS Sym.
— 50kA @ 500Vdc

**Agency Information:** CE, UL Recognition JFHR2.E91958, CSA Component Acceptance file Class 1422-30, 1422-90 (53787)

### Electrical Characteristics

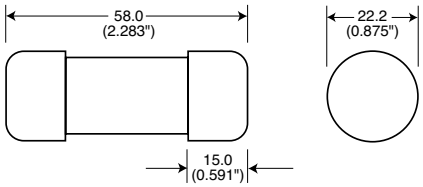
#### Total Clearing I²t

The total clearing I²t at rated voltage and at power factor of 15% are given in the electrical characteristics. For other voltages, the clearing I²t is found by multiplying by correction factor, K, given as a function of applied working voltage, $E_g$, (rms).

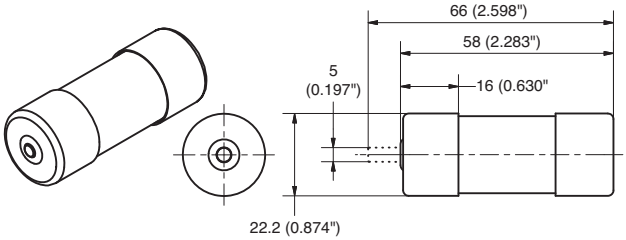



### Dimensions - mm (in)

#### Without Striker

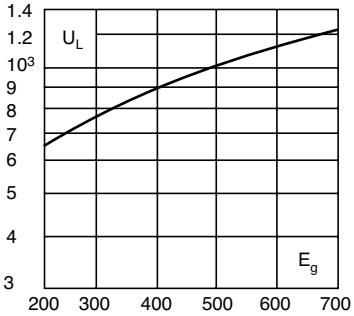



#### With Striker



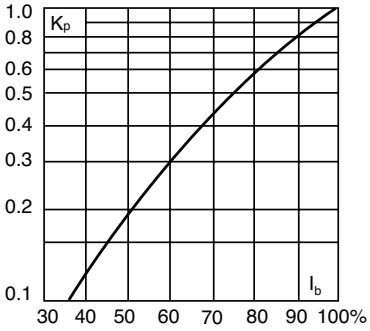

### Arc Voltage

This curve gives the peak arc voltage, $U_L$, which may appear across the fuse during its operation as a function of theapplied working voltage, $E_g$, (rms) at a power factor of 15%.




### Power Losses

Watts loss at rated current is given in the electrical characteristics. The curve allows the calculation of the power losses at load currents lower than the rated current. The correction factor, $K_p$, is given as a function of the RMS load current, $I_b$, in % of the rated current.




### Catalog Numbers

| Catalog Numbers | Size | Electrical Characteristics: Rated Current RMS-Amps | I²t (A² Sec): Minimum Melting | I²t (A² Sec): Clearing At Rated Voltage | Watts Loss |
|---|---|---|---|---|---|
| Without Striker | | | | | |
| FWP-20A22F | | 20 | 19.0 | 260 | 5 |
| FWP-25A22F | | 25 | 34.0 | 410 | 6 |
| FWP-32A22F | 22 x 58mm | 32 | 53.5 | 605 | 8 |
| FWP-40A22F | (⅞" x 2³⁄₃₂") | 40 | 68 | 750 | 9 |
| FWP-50A22F | | 50 | 135 | 1600 | 9.5 |
| FWP-63A22F | | 63 | 280 | 3080 | 11 |
| FWP-80A22F | | 80 | 600 | 6600 | 13.5 |
| FWP-100A22F | | 100* | 1100 | 12500 | 16 |
| With Striker | | | | | |
| FWP-20A22FI | | 20 | 19.0 | 260 | 5 |
| FWP-25A22FI | | 25 | 34.0 | 410 | 6 |
| FWP-32A22FI | 22 x 58mm | 32 | 53.5 | 605 | 8 |
| FWP-40A22FI | (⅞" x 2³⁄₃₂") | 40 | 68 | 750 | 9 |
| FWP-50A22FI | | 50 | 135 | 1600 | 9.5 |
| FWP-63A22FI | | 63 | 280 | 3080 | 11 |
| FWP-80A22FI | | 80 | 600 | 6600 | 13.5 |
| FWP-100A22FI | | 100* | 1100 | 12500 | 16 |

*IEC/UL Voltage rating 690/700

### Features and Benefits

- Excellent cycling capability and DC performance
- Low arc voltage and low energy let-through (I²t)
- Low watts loss in a compact size
- Used with finger-safe holders/blocks

### Typical Applications

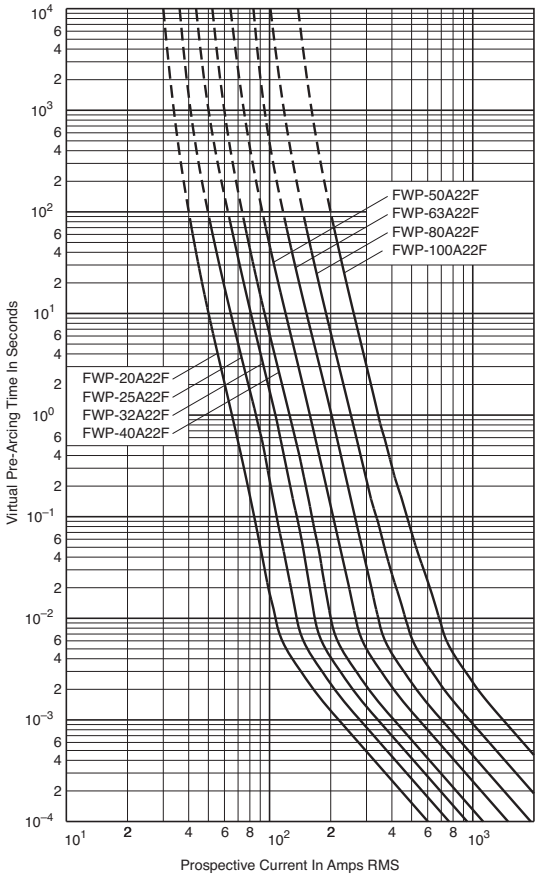
- DC Common bus
- DC Drives
- Power converters/rectifiers
- Reduced voltage starters

**Data Sheet: 720026**

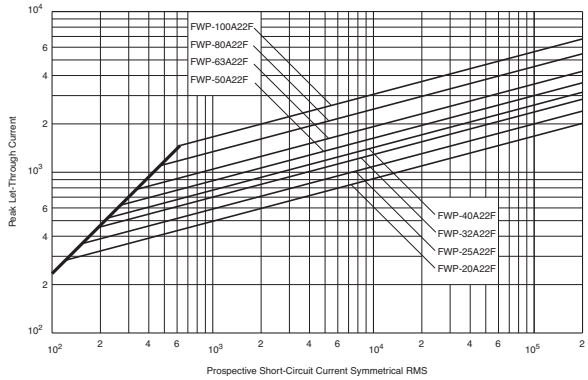
# Ferrule — FWP 690V/700V (IEC/UL): 20-100A, Striker Optional

## Without Striker
## FWP 20-100A: 660V/700V (22 x 58mm)

### Time-Current Curve




### Peak Let-Through Curve




**Data Sheet: 35785291**

# Ferrule — FWK 750V: 5-60A

## FWK 5-30A (20 x 127mm)
## 35-60A (25 x 146mm)

### Specifications

**Description:** Ferrule style high speed fuses.

**Dimensions:** See Dimensions illustrations.

**Ratings:**

Volts: — 750Vac
— 750Vdc (Time constant = 10-15mS)

Amps: — 5-60A

IR: — 45kA RMS Sym.

**Agency Information:** CE

### Catalog Numbers

| Catalog Numbers | Size | Electrical Characteristics | | |
|---|---|---|---|---|
| | | Rated Current RMS-Amps | I²t (A² Sec) Pre-arc | I²t (A² Sec) Clearing at 750Vdc |
| FWK-5A20F | 20 x 127mm (13/16" x 5") | 5 | 8.5 | 16 |
| FWK-8A20F | | 8 | 50 | 100 |
| FWK-10A20F | | 10 | 95 | 200 |
| FWK-15A20F | | 15 | 100 | 240 |
| FWK-20A20F | | 20 | 125 | 315 |
| FWK-25A20F | | 25 | 400 | 1100 |
| FWK-30A20F | | 30 | 800 | 2600 |
| FWK-35A25F | 25 x 146mm (1" x 5¾") | 35 | 1300 | 4300 |
| FWK-40A25F | | 40 | 1600 | 5300 |
| FWK-50A25F | | 50 | 3100 | 12000 |
| FWK-60A25F | | 60 | 5900 | 24000 |

Recommended fuseholders for 20x127, -2, -3
Recommended fuseclips for 20x127, 1A1837
Recommended fuseclips for 25x146, A3354705

### Features and Benefits

- Excellent cycling capability and DC performance
- Low arc voltage and low energy let-through (I²t)
- Low watts loss in a compact size
- Used with finger-safe holders/blocks

### Typical Applications

- DC Common bus
- DC Drives
- Power converters/rectifiers
- Reduced voltage starters

### Dimensions - mm (in)

Fig. 1: 5-30A

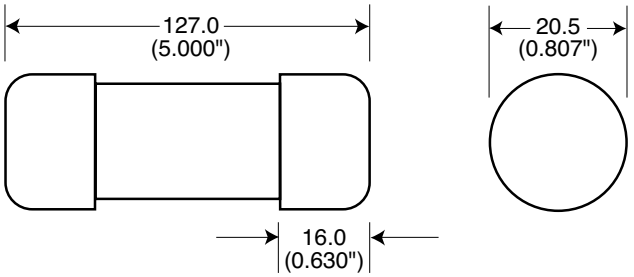
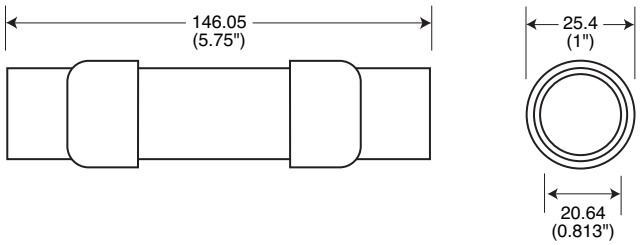



Fig. 2: 35-60A

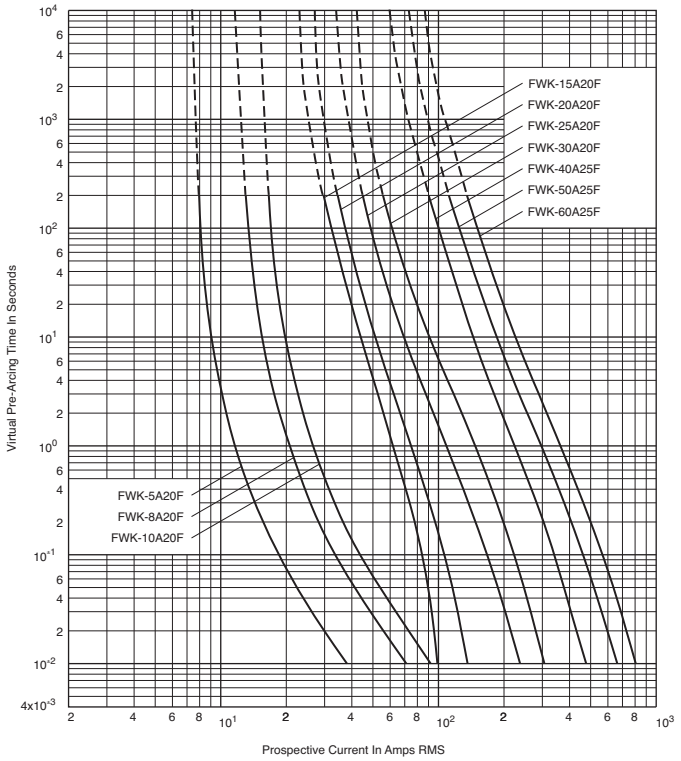



**Data Sheet: 720039**

# Ferrule — FWK 750V: 5-60A

## FWK 750V: 5-30A (20 x 127mm)
## 35-60A (25 x 146mm)

### Time-Current Curve






**Data Sheet: 720028**

# Ferrule — FWJ 1000V: 20-30A

## FWJ (14 x 67mm)

### Specifications

**Description:** Ferrule style high speed fuses.

**Dimensions:** See dimensions illustration.

**Ratings:**

Volts: — 1000Vac/800Vdc

Amps: — 20-30A

IR: — 25kA RMS Sym.

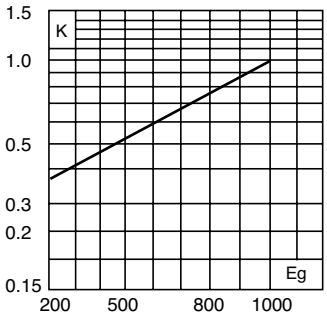
— 20kA @ 800Vdc

**Agency Information:** CE, UL Recognized JFHR2.E91958

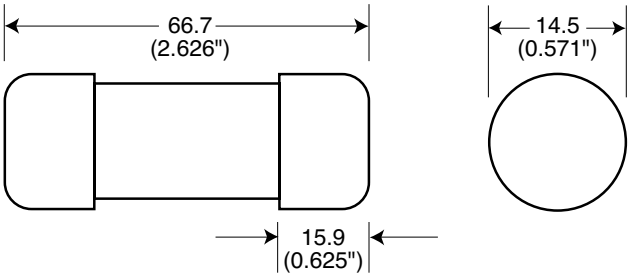
### Electrical Characteristics

#### Total Clearing I²t

The total clearing I²t at rated voltage and at power factor of 15% are given in the electrical characteristics. For other voltages, the clearing I²t is found by multiplying by correction factor, K, given as a function of applied working voltage, $E_g$, (rms).




### Dimensions - mm (in)

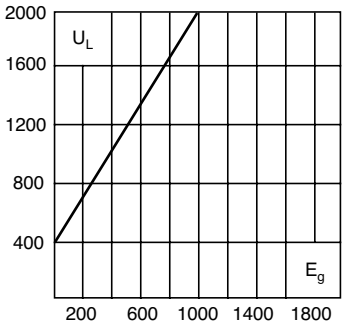



### Fuseclips:

• Catalog Number: 5591 (see data sheet 2132)

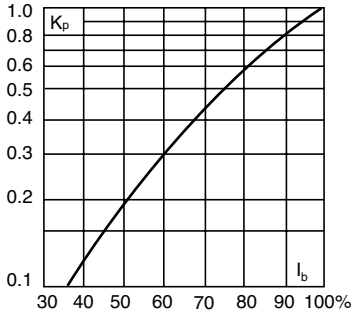
### Arc Voltage

This curve gives the peak arc voltage, $U_L$, which may appear across the fuse during its operation as a function of theapplied working voltage, $E_g$, (rms) at a power factor of 15%.




### Power Losses

Watts loss at rated current is given in the electrical characteristics. The curve allows the calculation of the power losses at load currents lower than the rated current. The correction factor, Kp, is given as a function of the RMS load current, $I_b$, in % of the rated current.




### Catalog Numbers

| Catalog Numbers | Size | Electrical Characteristics | | | |
|---|---|---|---|---|---|
| | | Rated Current RMS-Amps | I²t (A² Sec) | | Watts Loss |
| | | | Pre-arc | Clearing at 1000V | |
| FWJ-20A14F | 14 x 67mm | 20 | 25 | 220 | 9 |
| FWJ-25A14F | (9/16" x 2 5/8") | 25 | 33 | 350 | 11 |
| FWJ-30A14F | | 30 | 52 | 450 | 14 |

• Watts loss provided at rated current.

• See accessories on page 243.

### Features and Benefits

- Excellent cycling capability and DC performance
- Low arc voltage and low energy let-through (I²t)
- Low watts loss in a compact size
- Used with finger-safe holders/blocks

### Typical Applications

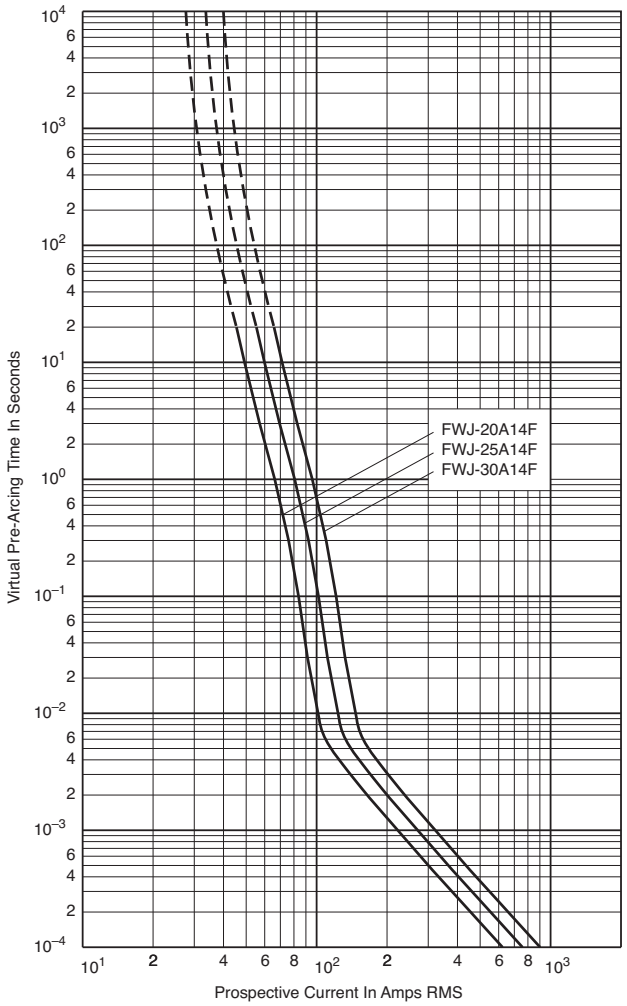
- DC Common bus
- DC Drives
- Power converters/rectifiers
- Reduced voltage starters

**Data Sheet: 35785031**

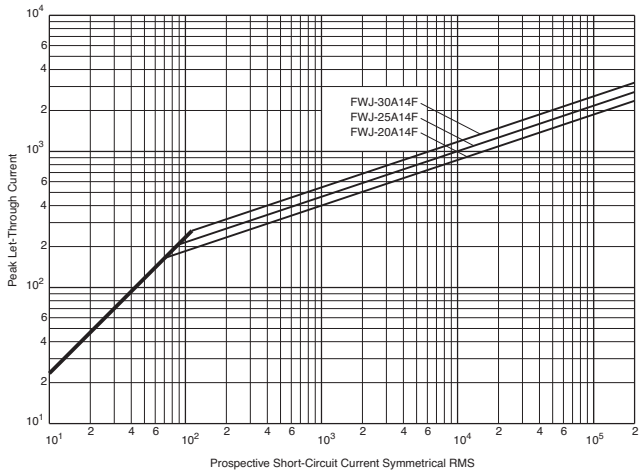
# Ferrule — FWJ 1000V: 20-30A

## FWJ 20-30A: 1000V (14 x 67mm)

### Time-Current Curve




### Peak Let-Through Curve




**Data Sheet: 35785315**

# Ferrule — FWS/FWL 1000Vdc: 2-30A

## FWS 2-15A (20 x 127mm)
## FWL 20-30A (20 x 127mm)


**Specifications**

**Description:** Ferrule style full range fuses.

**Dimensions:** See dimensions illustrations.

**Ratings:**

Volts: — 1200Vac (FWL 20-30A)
— 1400Vac (FWS 8-15A)
— 2100Vac (FWS 2-6A)
— 1000Vdc (FWL/FWS 2-30)

Amps: — 2-30A

IR: — 45kA RMS Sym.
— 30kA @ 1000Vdc

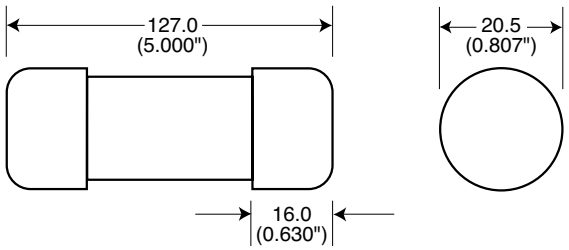
**Agency Information:** CE, IEC 60077

**Catalog Numbers**

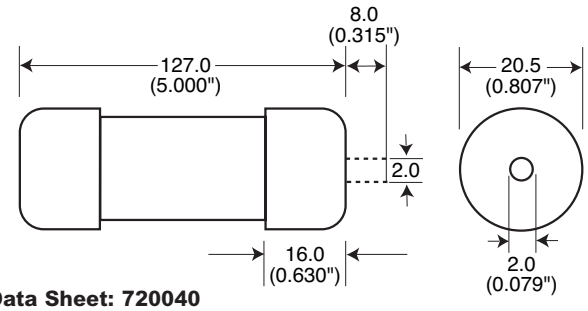
| Catalog Numbers | Size | Electrical Characteristics: Rated Current RMS-Amps | I²t (A² Sec): Pre-arc | I²t (A² Sec): Clearing at 1000Vdc | Watts Loss |
|---|---|---|---|---|---|
| FWS-2A20F | 20 x 127mm (13/16" x 5") | 2 | 0.8 | 2.4 | 4.4 |
| FWS-6A20F | | 6 | 27 | 81 | 6.7 |
| FWS-8A20F | | 8 | 64 | 192 | 7.6 |
| FWS-10A20F | | 10 | 118 | 277 | 3.0 |
| FWS-12A20F | | 12 | 170 | 380 | 3.4 |
| FWS-15A20F | | 15 | 209 | 500 | 5.0 |
| FWL-20A20F | 20 x 127mm (13/16" x 5") | 20 | 675 | 1550 | 5.9 |
| FWL-25A20F | | 25 | 1200 | 2760 | 6.5 |
| FWL-30A20F | | 30 | 1850 | 4300 | 7.5 |

- ADD "I" to catalog number for indicating version.
- Enclosed finger-safe fuse holder – CH127
- See accessories on page 243.
- Watts loss provided at rated current.

**Dimensions - mm (in)**




**Indicating Version – Dimensions - mm (in)**




**Data Sheet: 720040**

**Features and Benefits**

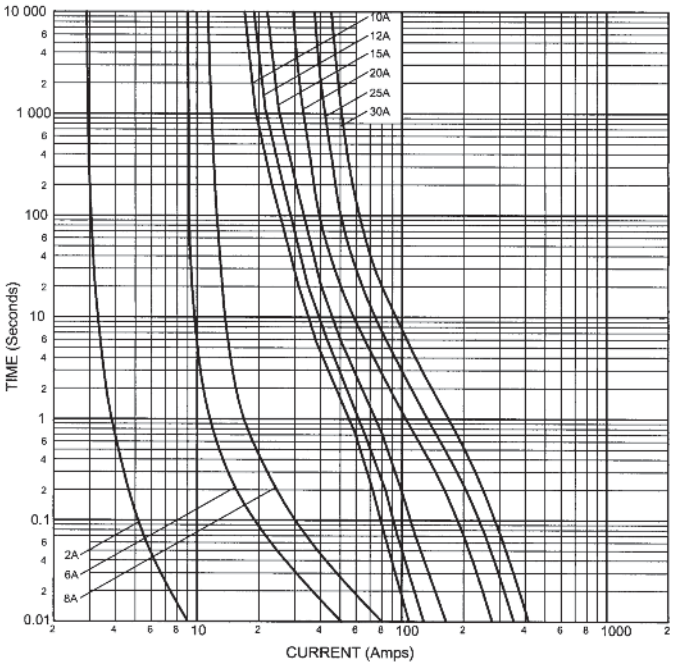
- Excellent cycling capability and DC performance
- Low arc voltage and low energy let-through ($I^2t$)
- Low watts loss in a compact size
- Used with finger-safe holders/blocks

**Typical Applications**

- DC Common bus
- DC Drives
- Power converters/rectifiers
- Reduced voltage starters
- Traction aux circuits
- Capacitor protection

## FWL/FWS 2-30A: 1000Vdc 2-30A (20 x 127mm)

**Time-Current Curve**






For product data sheets, visit www.cooperbussmann.com/DatasheetsEle

# Ferrule Fuse Accessories

## Fuse Holders

**Specifications**
**Catalog Symbol:** CH Series
**Description:** DIN-Rail mount fuse holders
**Agency Information:** UL File E14853, Guide IZLT Listed, IZLT2 Recognized CSA: File 47235, CHPV and CHM - Class 6225-30, CHCC - Class 6225-01
**Ratings:** 600V/30A (UL) 690V/32A (IEC)

**Features and Benefits**
- Finger-safe design - No exposed contacts
- DIN-Rail mount (35mm) - Fits standard mounting rails
- Optional open fuse indication lights tells fuse status at a glance
- Handle/fusepuller easily installs and removes fuses
- Available in single and multi-pole configurations
- Wire ready lugs and spade terminal connections save installation time
- CE marking
- Available up to 1000Vdc
- PLC device available for remote monitoring

**Typical Applications**
- Switchboard panel, control consoles, small motors, transformers, and similar applications

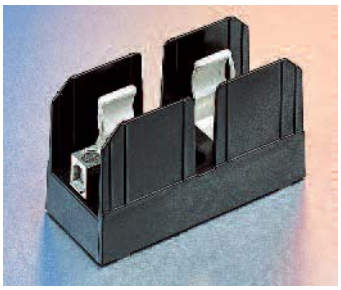
**Recommended Cooper Bussmann Fuse Types**

| | |
|---|---|
| Class CC | North American Class CC Fuses - LP-CC, FNQ-R, KTK-R |
| 10 x 38 | North American Midget Fuses - FNQ, KTK, AGU, BAF, BAN, FNM, FWA, FWC, & PV |
| 14 x 51 | FWX, FWH, FWP & NON |
| 22 x 58 | FWP |

See pages 274-280 for CH Series fuse holder information.

**Data Sheet: 2053**

## Fuse Blocks



**Specifications**
**Catalog Symbol:** J70100, J70032
**Description:** Fuse blocks for 22x58mm & 14x51mm fuses.
**Ratings:**
Volts: — 700Vac/dc
Amps: — 32-100A
Withstand: — 200kA RMS Sym.
**Agency Information:** CE, UL Recognized, Guide IZLT2, File E14853
**Flammability Rating:** UL 94V0

**Catalog Numbers**

| Catalog Numbers | Fuse Size | Amps | Poles | Max Wire Size | Terminations |
|---|---|---|---|---|---|
| J70032-1CR | 14x51 | 32 | 1 | #2 | Box Lug w/ Retaining Clip |
| J70032-2CR | | 32 | 2 | #2 | |
| J70032-3CR | | 32 | 3 | #2 | |
| J70100-1CR | 22x58 | 100 | 1 | #2 | |
| J70100-2CR | | 100 | 2 | #2 | |
| J70100-3CR | | 100 | 3 | #2 | |

**Data Sheet: 1211**

# High speed fuses


Faster lead-time.
Better protection.
More energy efficient.

**Bussmann**
by EATON