Square body fuses

Introduction

Square Body Contents

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

Cooper 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 Cooper 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/U.S.)
- French Style
- US Style

Voltage Rating

All Cooper 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

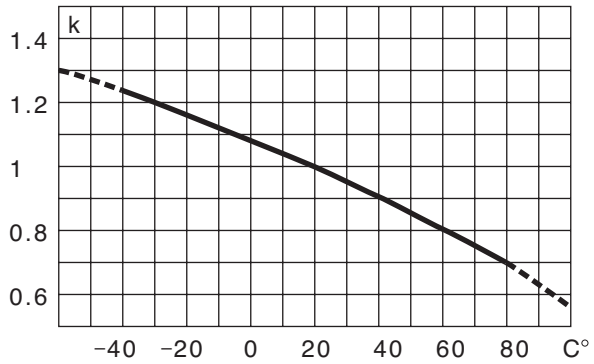
The rated current value of Cooper Bussmann® fuses is based on the ambient temperature in the space immediately below the fuse of 20°C. The following graph gives correction factors (k) for a range of temperatures (–40°C to +80°C). Maximum permissible continuous load currents can be calculated by applying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

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

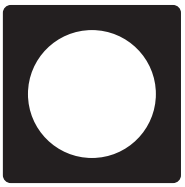
where

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

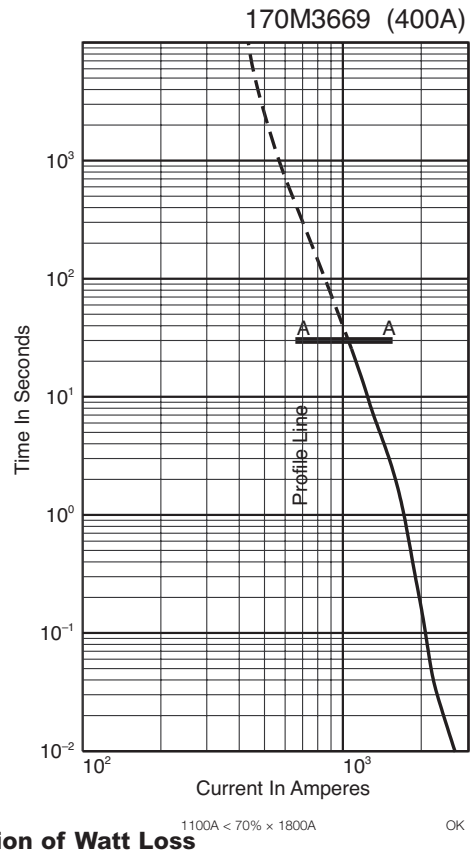
Load Type	Duration	Frequency of Occurrence	Amps
(1) Normal	Continuous	—	300A
(2) Overload	60 Seconds	Once Per Hour	500A
(3a) (3b) Overload	10 Seconds 20 Seconds (max.)	2-3 Times Per Week Once Per Month	700A
(4) Impulse	0.5 Seconds	Less Than Once Per Month	1100A
Voltage Data			
(5) Voltage Applied to 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*			90,000A^2s

*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 MSW710-1S or 170H0069	1.1 Taking into consideration only the continuous load current and ambient temperature, from Table on page 12 of our application guide tentatively select fuse 170M3519 page 50, 400A, 690V).	—
(2) Determine I^2t (total clearing) at 44V.	2.1 See Table, page 150. Note I^2t is 105,000A^2s at rated voltage of 690V. 2.2 From the figure on page 149, note that correction factor K = 0.65. 2.3 $I^2t_{660V} \times K = I^2t_{440V}$ $105{,}000 \times 0.65 = 68{,}250$	
(3) Determine maximum arc voltage at 440V	3.1 From the figure on page 53, note that maximum voltage at 440V is 900V	OK
(4) Determine maximum permissible continuous load current I_b.	4.1 Per page 15 data, $I_b = I_n \times k \times (1 + 0.05V) \times K_b$ $I_b = 400A \times 0.8 \times (1 + 0) \times 1$ $I_b = 320A$	—
(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, page 16, for each overload and impulse load.	—
(Item 2)	5.1 $I_{max} < 60\% \times I_t$ $500A < 60\% \times 950A$ $500A < 570A$	OK
(Item 3a)	5.2 $I_{max} < 60\% \times I_t$ $700A < 60\% \times 1360A$ $700A < 780A$	OK
(Item 3b)	5.3 $I_{max} < 70\% \times I_t$ $700A < 70\% \times 1150A$ $700A < 805A$	OK
(Item 4)	5.4 $I_{max} < 70\% \times I_t$ $1100A < 70\% \times 1800A$ $1100A < 1260A$	OK

The tentatively selected fuse 170M3519 with microswitch 170H0069 meets all application parameters; no further selection would be necessary.



Calculation of Watt Loss

From the Table on page 154, watt loss at 400 amperes is 60 watts. The continuous load current of 300A is 75% of rated current (400A). From page 154:

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 Cooper 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 160).

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:

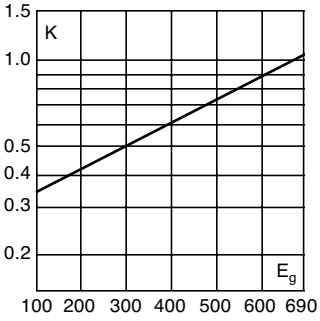
Volts: — 690Vac (IEC)
— 700Vac (UL)
Amps: — 10-400A
IR: — 200kA RMS Sym.

Agency Information: CE, Designed and tested to IEC 60269: Part 4, UL Recognized. UL Recognition/CSA Component Acceptance on Size 000.

Electrical Characteristics

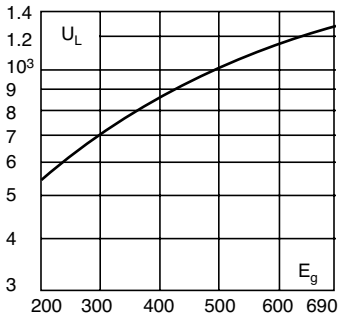
Total Clearing I²t

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).



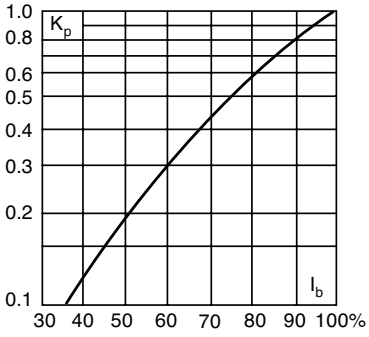
Arc Voltage

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

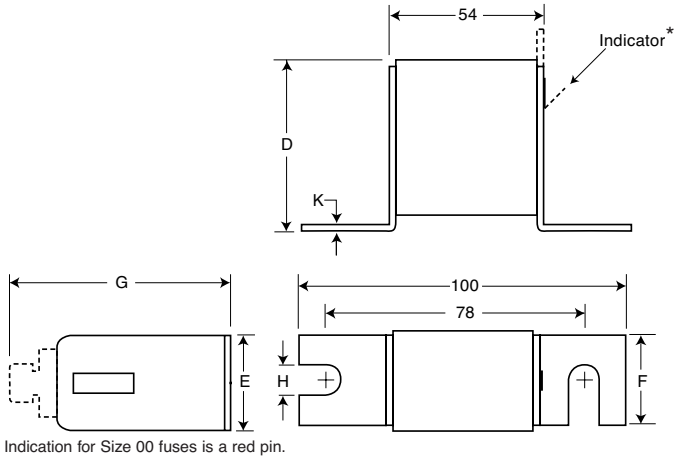
- DC common bus
- DC drives
- Power converters/rectifiers
- Reduced voltage starters

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.

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

Catalog Numbers

Catalog Numbers				Electrical Characteristics			
					I2t (A2 Sec)		
-U/80 Without Indicator	-/80 Visual Indicator	-TN/80 Type T Indicator for Micro	Size	Rated Current RMS-Amps	Pre-arc	Clearing at 660V	Watts Loss
170M1308	170M1358	170M1408	000	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		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	00	25	19	130	6
	170M2609	170M2659		32	28.5	195	7
	170M2610	170M2660		40	50	360	9
	170M2611	170M2661		50	95	640	10
	170M2612	170M2662		63	170	1200	12
	170M2613	170M2663		80	310	2100	15
	170M2614	170M2664		100	620	4150	20
	170M2615	170M2665		125	1000	6950	25
	170M2616	170M2666		160	1900	13000	30
	170M2617	170M2667		200	3400	23000	35
	170M2618	170M2668		250	6250	42000	45
	170M2619	170M2669		315	10000	68500	55
	170M2620	170M2670		350	13500	91500	60
	170M2621	170M2671		400	18000	125000	70

- Watts loss provided at rated current.
- Microswitch indicator ordered separately.
- See accessories on pages 179-180.

Did You Know?

Cooper Bussmann® Paul P. Gubany Center Now Has DC Testing Capability

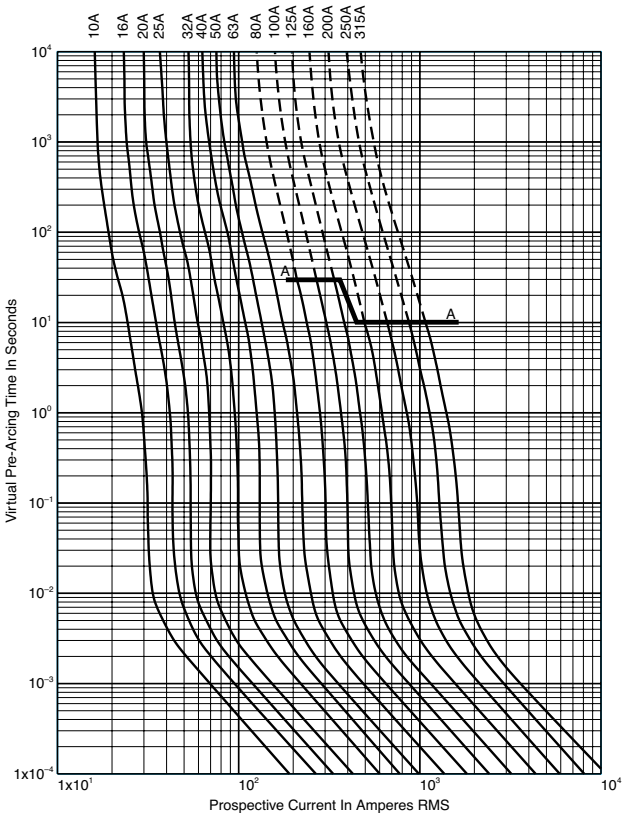
Cooper Bussmann Paul P. Gubany Center (high-power testing) and Product Development Center (low-power testing) in St. Louis offers DC power short-circuit testing up to 100,000A over a voltage range of 100 to 1000. Applications include telecommunications products, (UPS) uninterruptible power supplies and any DC photovoltaic uses.

The Gubany Center also offers AC testing for UL, CSA, ASTA and ANCE standards. It has equipment capable of generating 300,000A of current at 600V AC three-phase, under carefully controlled conditions. It offers a wider range of current voltage and frequency configurations than any other facility of its kind in the world, and is built to exceed the short circuit capacity of today's high power electrical distribution systems.

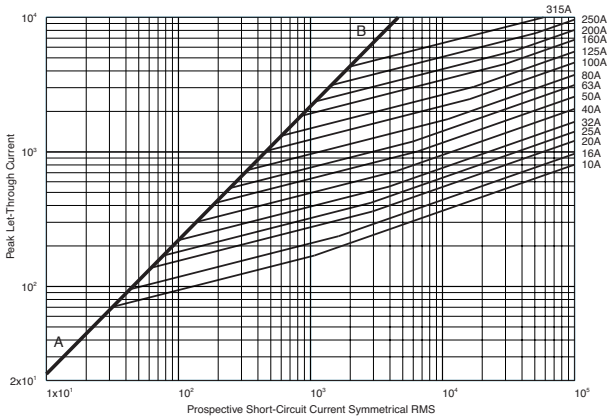
Square body DIN 43 653 — 690V/700V (IEC/UL): 10-400A

Size 000 — 10-315A: 690V

Time-Current Curve



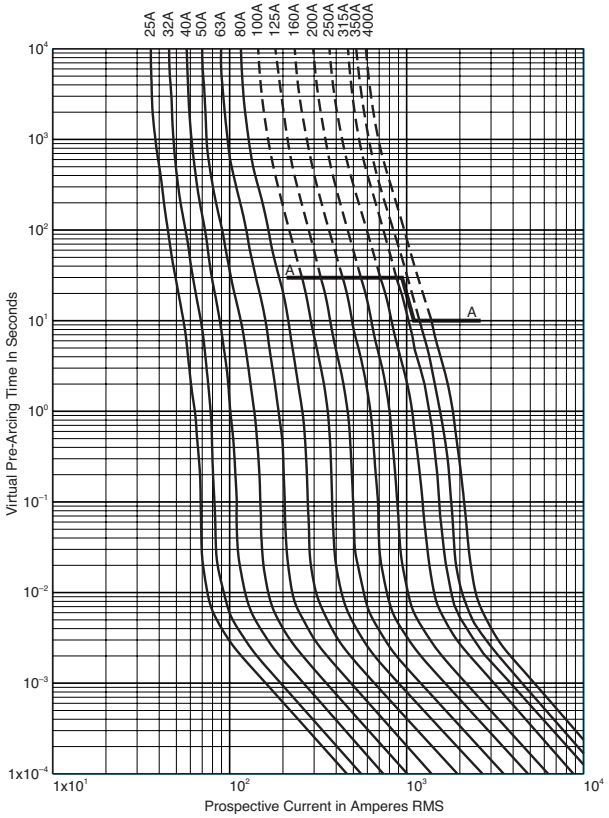
Peak Let-Through Curve



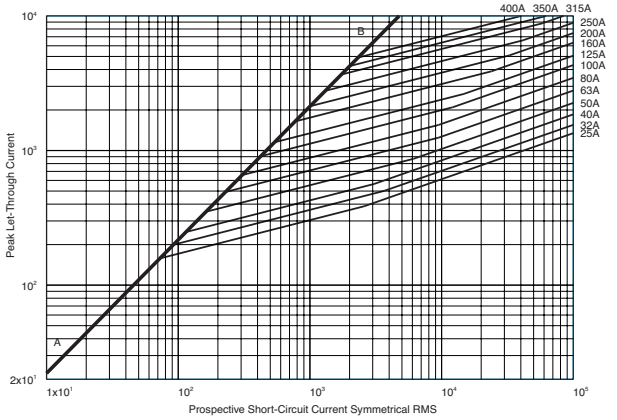
Data Sheet: 72056310

Size 00 — 25-400A: 690V

Time-Current Curve



Peak Let-Through Curve



Data Sheet: 72056312

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:

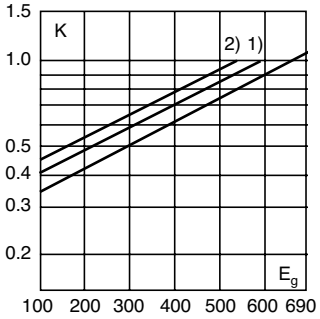
Volts: — 690Vac (IEC)
— 700Vac (UL)
Amps: — 40-2000A
IR: — 200kA RMS Sym.

Agency Information: CE, Designed and tested to IEC 60269: Part 4, UL Recognized. Consult Cooper Bussmann for UL Recognition/CSA Component Acceptance status.

Electrical Characteristics

Total Clearing I²t

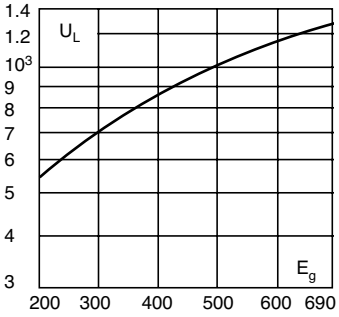
The total clearing I²t at rated voltage and at power factor of 15% are given in the electrical characteristics. For other voltages, the clearing I²t is found by multiplying by correction factor, K, given as a function of applied working voltage, E_g, (rms).



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

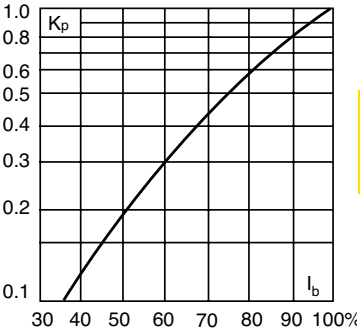
Arc Voltage

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

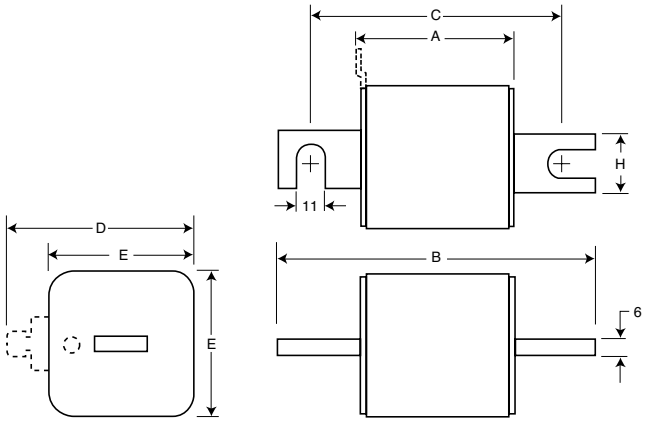
- DC common bus
- DC drives
- Power converters/rectifiers
- Reduced voltage starters

Dimensions (mm)

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

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



Did You Know?

Cooper Bussmann® fuses are used in all kinds of oil-well drilling equipment around the world.

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

Catalog Numbers

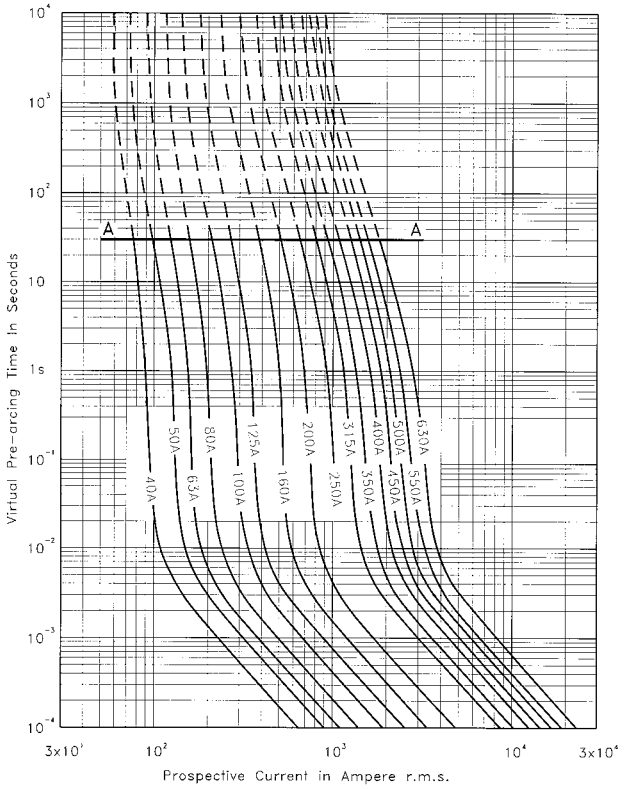
Catalog Numbers					Electrical Characteristics			
						I^2t (A^2 Sec)		
-/80 Visual Watts Indicator	-TN/80 Type T Indicator for Micro	-/110 Visual Indicator	-TN/110 Type T Indicator for Micro	Size	Rated RMS-Amps	Current Pre-arc	at 660V	Clearing Loss
170M3008	170M3058	170M3158	170M3208	1*	40	40	270	9
170M3009	170M3059	170M3159	170M3209		50	77	515	11
170M3010	170M3060	170M3160	170M3210		63	115	770	14
170M3011	170M3061	170M3161	170M3211		80	185	1250	18
170M3012	170M3062	170M3162	170M3212		100	360	2450	21
170M3013	170M3063	170M3163	170M3213		125	550	3700	26
170M3014	170M3064	170M3164	170M3214		160	1100	7500	30
170M3015	170M3065	170M3165	170M3215		200	2200	15000	35
170M3016	170M3066	170M3166	170M3216		250	4200	28500	40
170M3017	170M3067	170M3167	170M3217		315	7000	46500	50
170M3018	170M3068	170M3168	170M3218		350	10000	68500	55
170M3019	170M3069	170M3169	170M3219		400	15000	105000	60
170M3020	170M3070	170M3170	170M3220		450	21000	140000	65
170M3021	170M3071	170M3171	170M3221		500	27000	180000	70
170M3022	170M3072	170M3172	170M3222		550	34000	230000	75
170M3023	170M3073	170M3173	170M3223		630	48500	325000	80
170M4008	170M4058	170M4158	170M4208	1	200	1650	11500	45
170M4009	170M4059	170M4159	170M4209		250	3100	21000	55
170M4010	170M4060	170M4160	170M4210		315	6200	42000	58
170M4011	170M4061	170M4161	170M4211		350	8500	59000	60
170M4012	170M4062	170M4162	170M4212		400	13500	91500	65
170M4013	170M4063	170M4163	170M4213		450	17000	120000	70
170M4014	170M4064	170M4164	170M4214		500	25000	170000	72
170M4015	170M4065	170M4165	170M4215		550	34000	230000	75
170M4016	170M4066	170M4166	170M4216		630	52000	350000	80
170M4017	170M4067	170M4167	170M4217		700	69500	465000	85
170M4018	170M4068	170M4168	170M4218		800	105000	725000	95
170M4019	170M4069	170M4169	170M4219		‡900	155000	‡850000	100
170M5008	170M5058	170M5158	170M5208	2	400	11000	74000	65
170M5009	170M5059	170M5159	170M5209		450	15500	105000	70
170M5010	170M5060	170M5160	170M5210		500	21500	145000	75
170M5011	170M5061	170M5161	170M5211		550	28000	190000	80
170M5012	170M5062	170M5162	170M5212		630	41000	275000	90
170M5013	170M5063	170M5163	170M5213		700	60500	405000	95
170M5014	170M5064	170M5164	170M5214		800	86000	575000	105
170M5015	170M5065	170M5165	170M5215		900	125000	840000	110
170M5016	170M5066	170M5166	170M5216		1000	180000	1250000	115
170M5017	170M5067	170M5167	170M5217		1100	245000	1600000	120
170M5018	170M5068	170M5168	170M5218		1250	365000	2400000	130
170M6008	170M6058	170M6158	170M6208	3	500	14000	95000	95
170M6009	170M6059	170M6159	170M6209		550	19500	135000	100
170M6010	170M6060	170M6160	170M6210		630	31000	210000	105
170M6011	170M6061	170M6161	170M6211		700	44500	300000	110
170M6012	170M6062	170M6162	170M6212		800	69500	465000	115
170M6013	170M6063	170M6163	170M6213		900	100000	670000	120
170M6014	170M6064	170M6164	170M6214		1000	140000	945000	125
170M6015	170M6065	170M6165	170M6215		1100	190000	1300000	130
170M6016	170M6066	170M6166	170M6216		1250	290000	1950000	140
170M6017	170M6067	170M6167	170M6217		1400	370000	2450000	155
170M6018	170M6068	170M6168	170M6218		1500	460000	3100000	160
170M6019	170M6069	170M6169	170M6219		1600	580000	3900000	160
170M6020	170M6070	170M6170	170M6220		†1800	880000	†5250000	165
170M6021	170M6071	170M6171	170M6221		‡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 179-180.

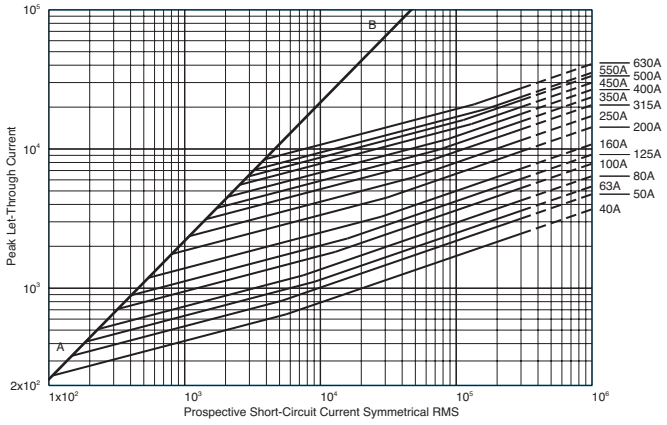
Square body DIN 43 653 — 690V/700V (IEC/UL): 40-2000A

Size 1* — 40-630A: 690V

Time-Current Curve



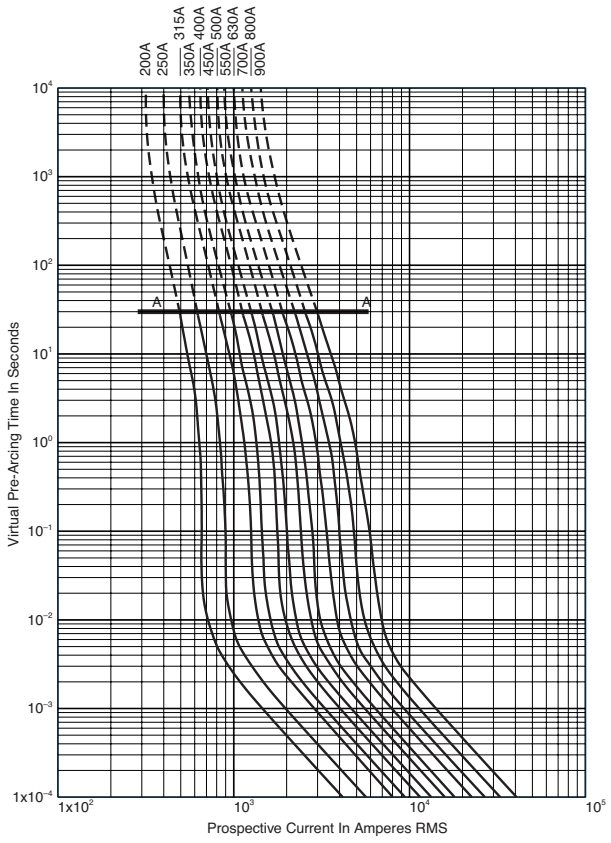
Peak Let-Through Curve



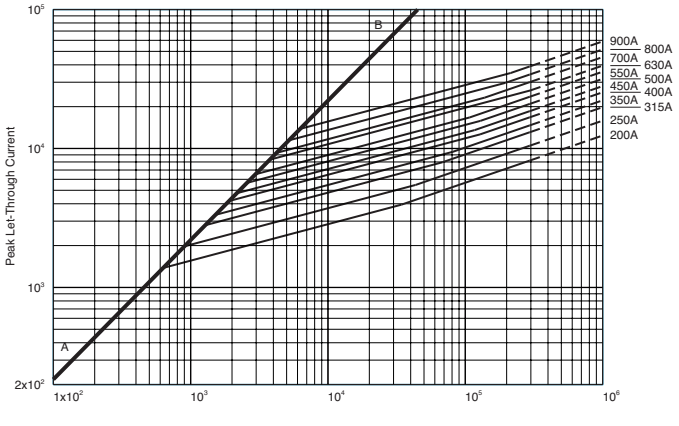
Data Sheet: 17056314

Size 1 — 200-900A: 690V

Time-Current Curve



Peak Let-Through Curve



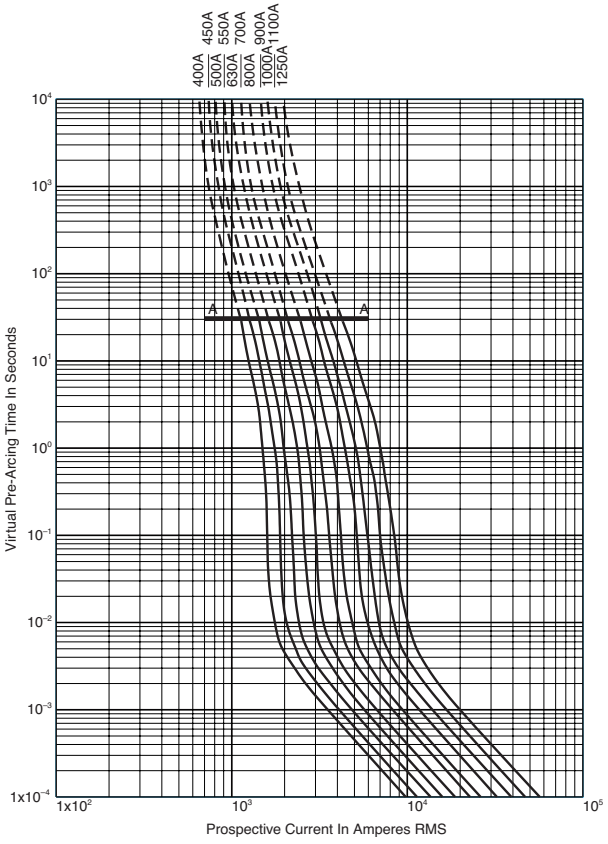
900 amp fuse is derated to 550V (IEC).

Data Sheet: 17056316

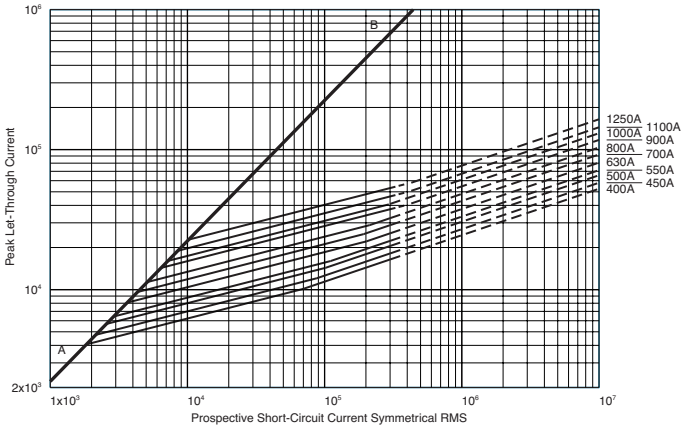
Square body DIN 43 653 — 690V/700V (IEC/UL): 40-2000A

Size 2 — 400-1250A: 690V

Time-Current Curve



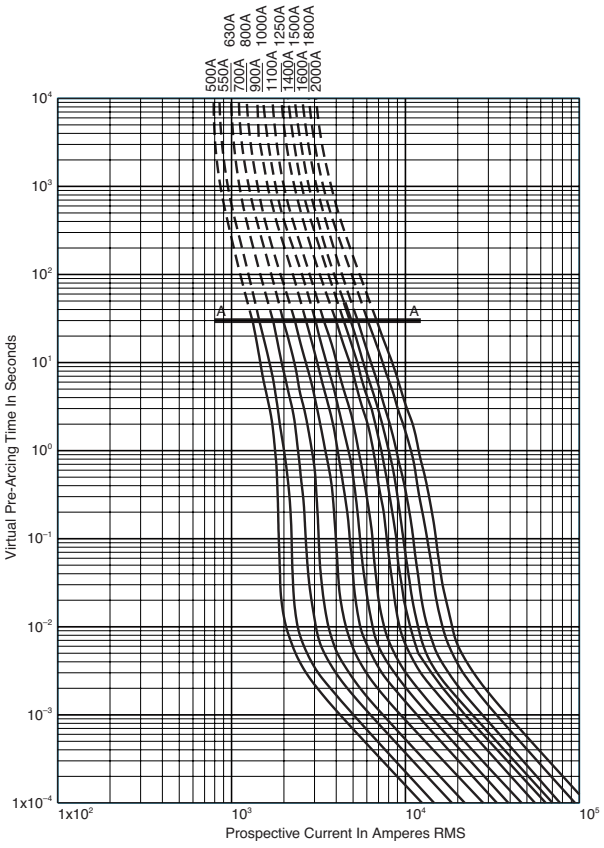
Peak Let-Through Curve



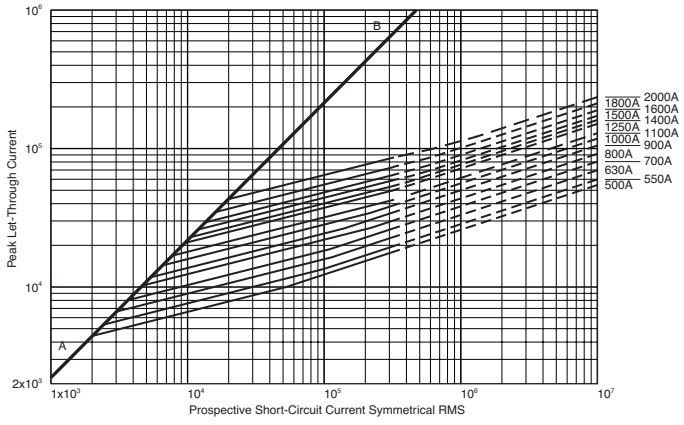
Data Sheet: 17056318

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).

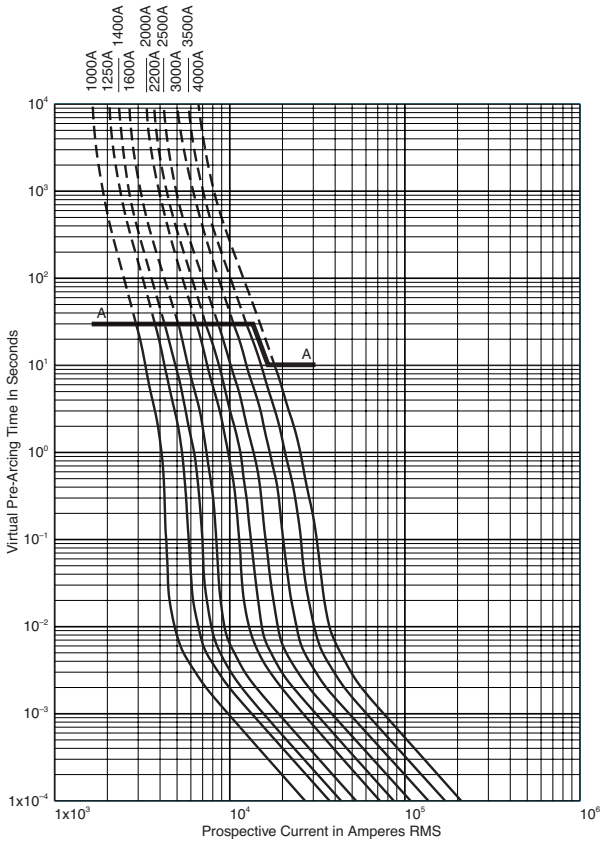
Data Sheet: 17056320

For product data sheets, visit www.cooperbussmann.com/products/datasheet.asp

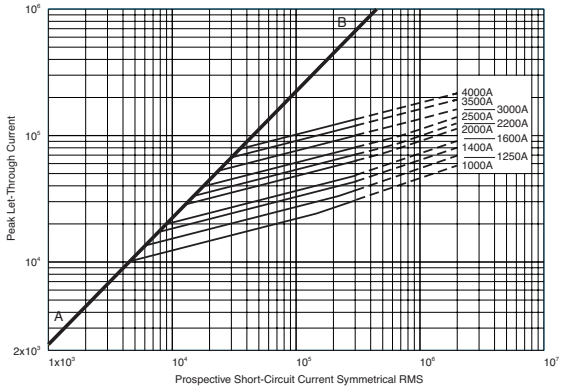
Square body DIN 43 653 — 690V/700V (IEC/UL): 40-2000A

Size 4 — 1000-4000A: 690V

Time-Current Curve



Peak Let-Through Curve



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

Did You Know?

Cooper Bussmann® Customer Satisfaction Minimizes Downtime Caused by the 2003 North American Northeast Coast Blackout

An enormous power failure blacked out population centers from New York City to Toronto on Thursday, August 14, 2003. As power slowly came back on, surges and spikes began to "blow" existing fuses. Airports reopened Friday.

The Cooper Bussmann Customer Satisfaction team handled 11 emergency phone calls that weekend, including:

A Michigan-based utility required a large fuse order to protect its control switches before it could reactivate electrical power to thousands of customers. Ordered Friday, 8:27 p.m. Order delivered Saturday, 12:30 p.m.

An Indiana steel mill required specialized fuses. A Cooper Bussmann engineer was called to assist. Ordered Sunday, 1:46 p.m. Order delivered same day, 11:00 p.m.

A pharmaceutical plant in New Jersey needed to get its line back up. Ordered Saturday 10:36 a.m. Order delivered Sunday, 4:00 a.m.

An Ontario utility required more than 100 Cooper Bussmann® Fusetron® FRN-R-200 fuses. Ordered Saturday, 11:01 a.m.. Order delivered Sunday, 9:00 a.m. including customs processing.

Data Sheet: 17056328

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.

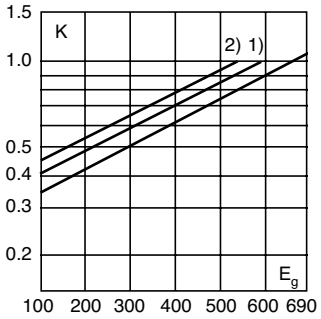
Ratings:
Volts: — 690Vac (IEC)
— 700Vac (UL)
Amps: — 40-2000A
IR: — 200kA RMS Sym.

Agency Information: CE, Designed and tested to IEC 60269: Part 4, UL Recognized. Consult Cooper Bussmann for UL Recognition/CSA Component Acceptance status.

Electrical Characteristics

Total Clearing I^2t

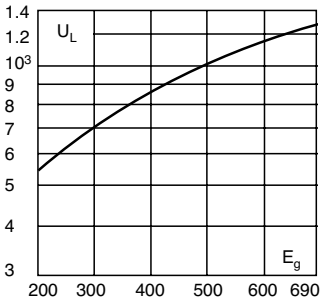
The total clearing I^2t at rated voltage and at power factor of 15% are given in the electrical characteristics. For other voltages, the clearing I^2t is found by multiplying by correction factor, K, given as a function of applied working voltage, E_g, (rms).



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

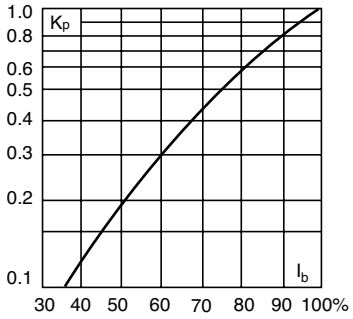
Arc Voltage

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

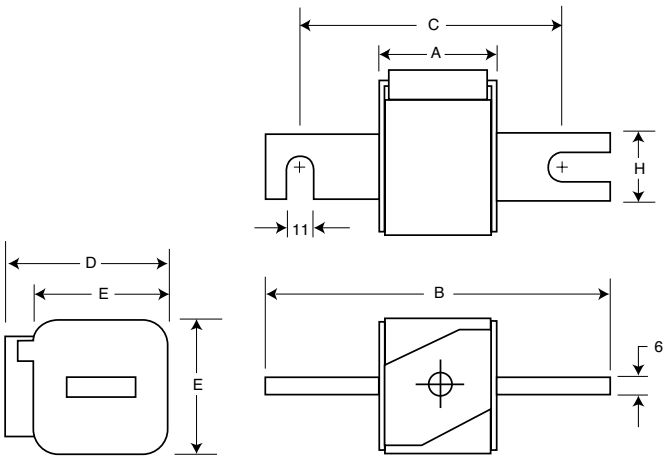
- DC common bus
- DC drives
- Power converters/rectifiers
- Reduced voltage starters

Dimensions (mm)

Type -KN/80, -KN/110

Size	A	B	B**	C	C**	D	E	H
1*	50	104	134	78	108	59	45	22
1	50	108	138	78	108	69	53	25
2	50	108	138	78	108	77	61	25
3	51	109	139	78	108	92	76	30

**Valid for fuse type -KN/110.
1mm = 0.0394" / 1" = 25.4mm



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

Catalog Numbers

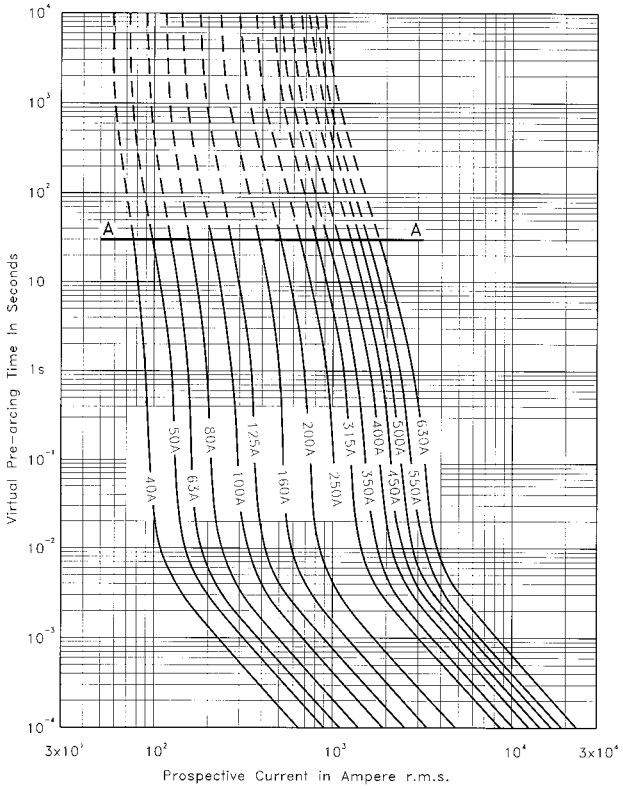
Catalog Numbers			Electrical Characteristics			
-KN/80 Type K Indicator for Micro	-KN/110 Type K Indicator for Micro	Size	Rated Current RMS-Amps	I^2t (A^2 Sec) Pre-arc	I^2t (A^2 Sec) Clearing at 660V	Watts Loss
170M3108	170M3258	1*	40	40	270	9
170M3109	170M3259		50	77	515	11
170M3110	170M3260		63	115	770	14
170M3111	170M3261		80	185	1250	18
170M3112	170M3262		100	360	2450	21
170M3113	170M3263		125	550	3700	26
170M3114	170M3264		160	1100	7500	30
170M3115	170M3265		200	2200	15000	35
170M3116	170M3266		250	4200	28500	40
170M3117	170M3267		315	7000	46500	50
170M3118	170M3268		350	10000	68500	55
170M3119	170M3269		400	15000	105000	60
170M3120	170M3270		450	21000	140000	65
170M3121	170M3271		500	27000	180000	70
170M3122	170M3272		550	34000	230000	75
170M3123	170M3273		630	48500	325000	80
170M4108	170M4258	1	200	1650	11500	45
170M4109	170M4259		250	3100	21000	55
170M4110	170M4260		315	6200	42000	58
170M4111	170M4261		350	8500	59000	60
170M4112	170M4262		400	13500	91500	65
170M4113	170M4263		450	17000	120000	70
170M4114	170M4264		500	25000	170000	72
170M4115	170M4265		550	34000	230000	75
170M4116	170M4266		630	52000	350000	80
170M4117	170M4267		700	69500	465000	85
170M4118	170M4268		800	105000	725000	95
170M4119	170M4269		‡900	155000	‡850000	100
170M5108	170M5258	2	400	11000	74000	65
170M5109	170M5259		450	15500	105000	70
170M5110	170M5260		500	21500	145000	75
170M5111	170M5261		550	28000	190000	80
170M5112	170M5262		630	41000	275000	90
170M5113	170M5263		700	60500	405000	95
170M5114	170M5264		800	86000	575000	105
170M5115	170M5265		900	125000	840000	110
170M5116	170M5266		1000	180000	1250000	115
170M5117	170M5267		1100	245000	1600000	120
170M5118	170M5268		1250	365000	2400000	130
170M6108	170M6258	3	500	14000	95000	95
170M6109	170M6259		550	19500	135000	100
170M6110	170M6260		630	31000	210000	105
170M6111	170M6261		700	44500	300000	110
170M6112	170M6262		800	69500	465000	115
170M6113	170M6263		900	100000	670000	120
170M6114	170M6264		1000	140000	945000	125
170M6115	170M6265		1100	190000	1300000	130
170M6116	170M6266		1250	290000	1950000	140
170M6117	170M6267		1400	370000	2450000	155
170M6118	170M6268		1500	460000	3100000	160
170M6119	170M6269		1600	580000	3900000	160
170M6120	170M6270		†1800	880000	†5250000	165
170M6121	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 179-180.

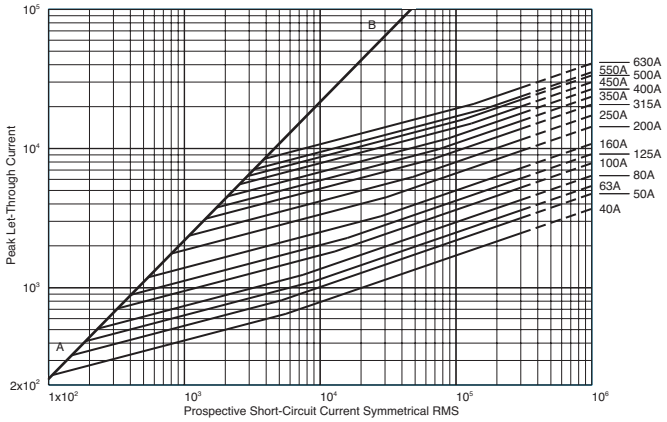
Square body DIN 43 653 — 690V/700V (IEC/UL): 40-2000A

Size 1* — 40-630A: 690V

Time-Current Curve



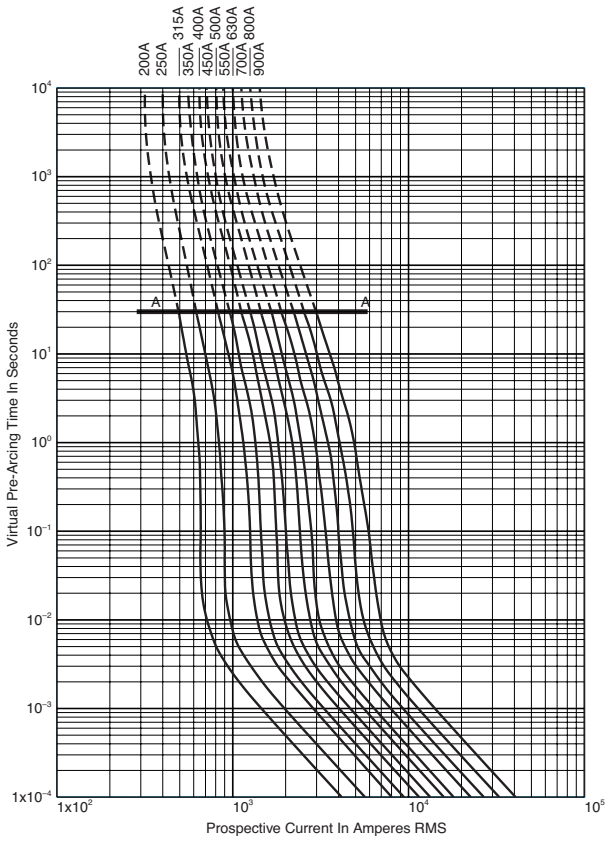
Peak Let-Through Curve



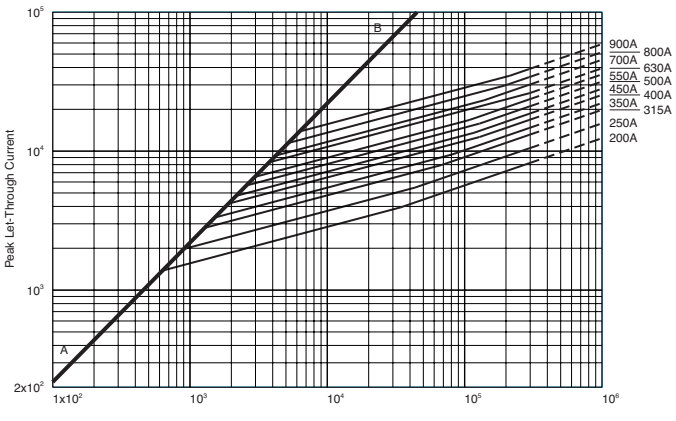
Data Sheet: 17056314

Size 1 — 200-900A: 690V

Time-Current Curve



Peak Let-Through Curve



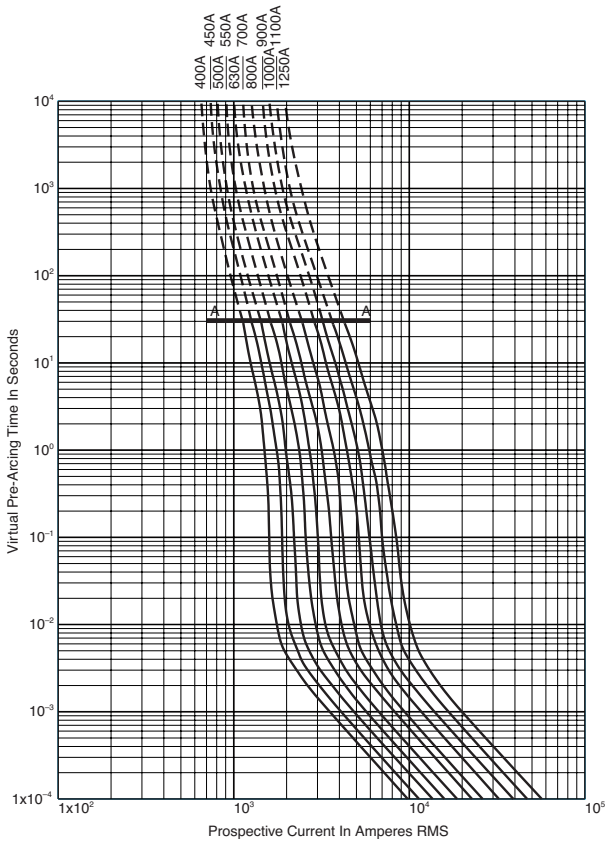
900 amp fuse is derated to 550V (IEC).

Data Sheet: 17056316

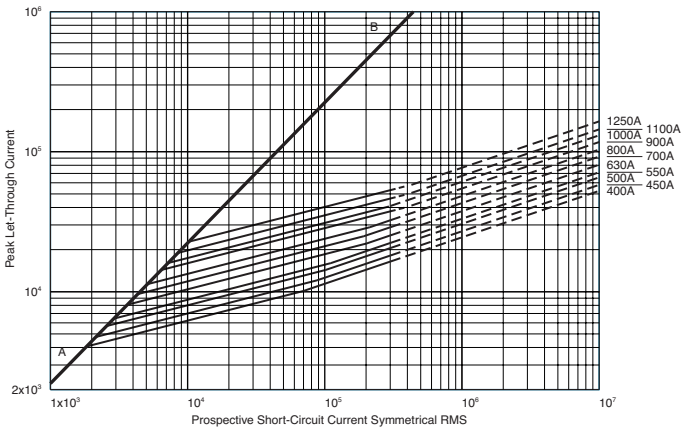
Square body DIN 43 653 — 690V/700V (IEC/UL): 40-2000A

Size 2 — 400-1250A: 690V

Time-Current Curve



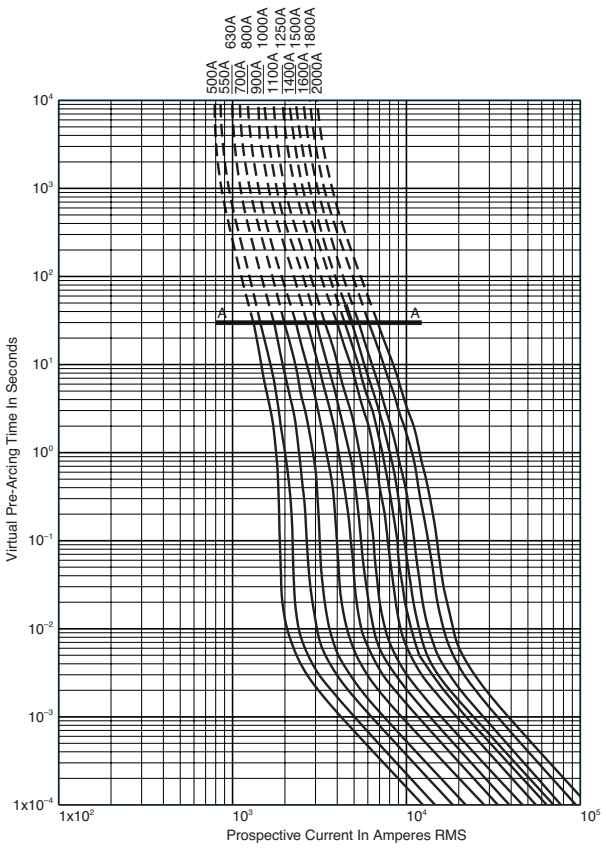
Peak Let-Through Curve



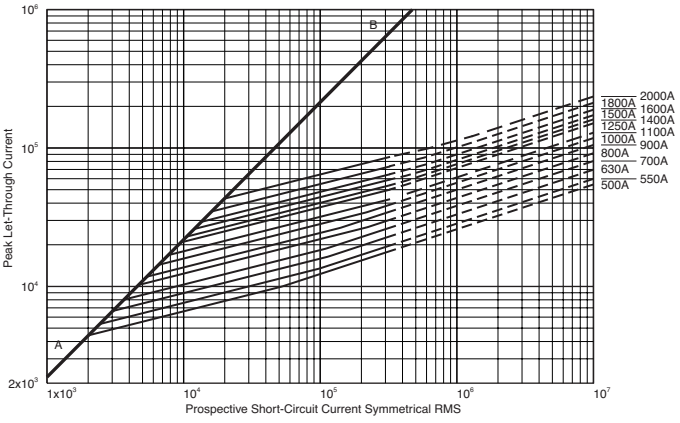
Data Sheet: 17056318

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 43 653 — 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

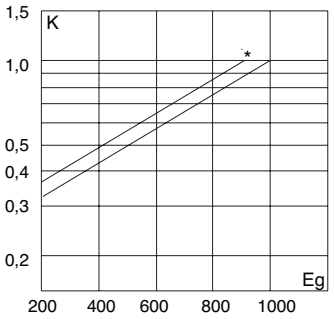
IR: — 150kA RMS Sym.

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

Electrical Characteristics

Total clearing I^2t

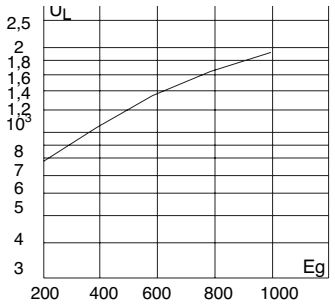
The total clearing I^2t at rated voltage and at power factor of 15% are given in the electrical characteristics. For other voltages, the clearing I^2t is found by multi-plying by correction factor, K, given as a function of applied working voltage, E_g, (rms).



*Rated voltage 900V

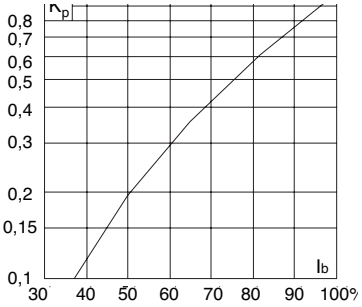
Arc Voltage

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

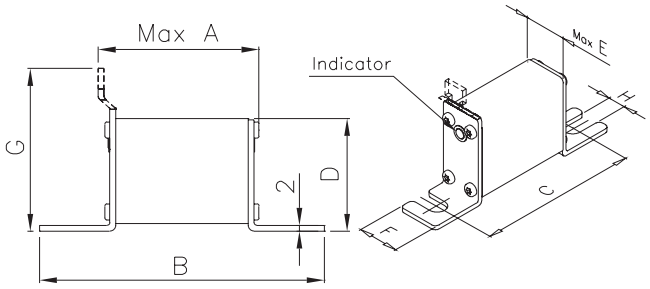
- DC common bus
- DC drives
- Power converters/rectifiers
- Reduced voltage starters

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



For product data sheets, visit www.cooperbussmann.com/products/datasheet.asp

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

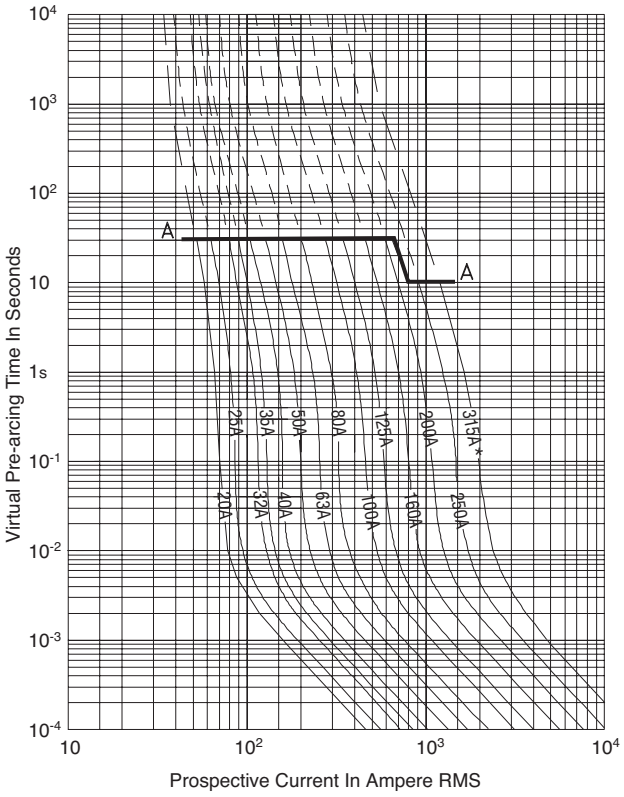
Catalog Numbers

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	00	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		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

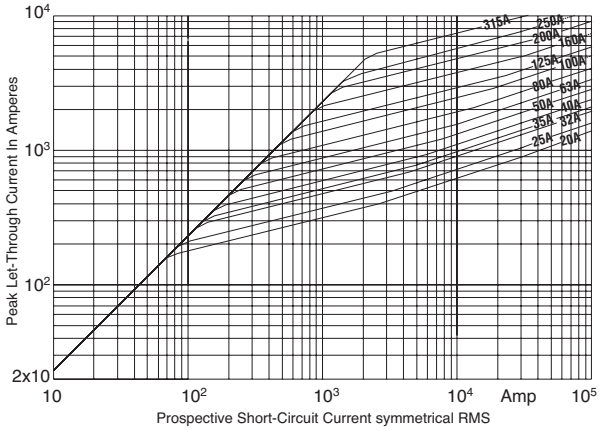
• Watts loss provided at rated current.
• Microswitch ordered separately. See accessories on page 179-180.

Size 00 — 20-315A: 1000V

Time-Current Curve



Peak Let-Through Curve



* 315A fuse is derated to 900V

Data Sheet: 17058504

Did You Know?

Protect the Promise of Customer Satisfaction

Our customer satisfaction team answers your calls 8:00 a.m. – 4:30 p.m. for all US time zones, receiving and responding to an average of 1600 calls and 700 emails every day.

We also offer emergency after-hours service.

Phone: 636-527-3877
email: busscustsat@cooperbussmann.com
Toll-free fax: 800-544-2570
Emergency after-hour phone: 314-995-1342

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

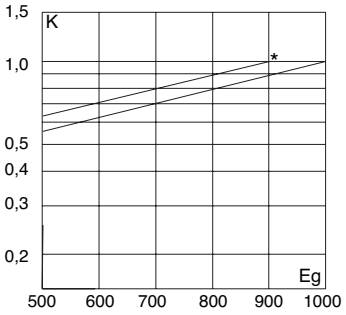
IR: — 150kA RMS Sym.

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

Electrical Characteristics

Total clearing I²t

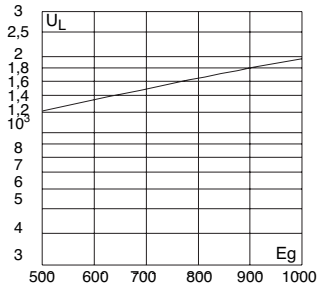
The total clearing I²t at rated voltage and at power factor of 15% are given in the electrical characteristics. For other voltages, the clearing I²t is found by multiplying by correction factor, K, given as a function of applied working voltage, E_g, (rms).



*Rated voltage 900V

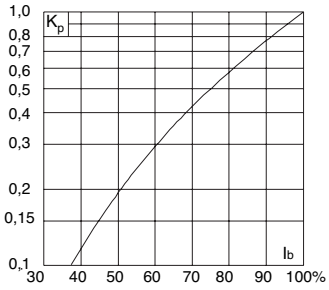
Arc Voltage

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

Dimensions (mm)

Type –KN/110

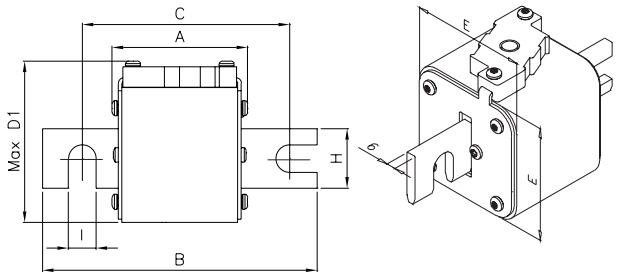
Size	A	B	C	Max D1	E	G	H	I.
1*KN/110	80	138	108	61	43	6	22	11
1KN/110	80	138	108	69	51	6	25	11
2KN/110	80	138	108	77	59	6	25	11
3KN/110	81	139	108	92	74	6	30	11

Type –TN/110

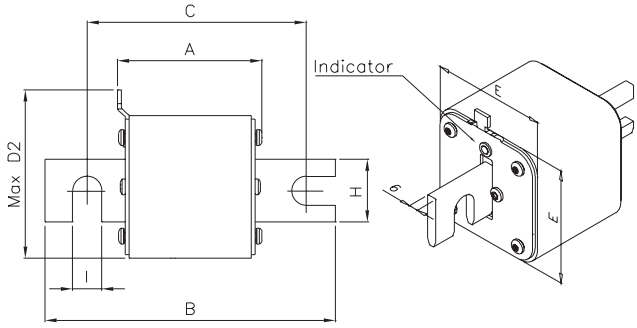
Size	A	B	C	Max D2	E	G	H	I
1*TN/110	80	138	108	61	43	6	22	11
1TN/110	80	138	108	69	51	6	25	11
2TN/110	80	138	108	75	59	6	25	11
3TN/110	81	139	108	90	74	6	30	11

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	1*	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		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	1	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		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	2	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		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	3	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		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 179-180.

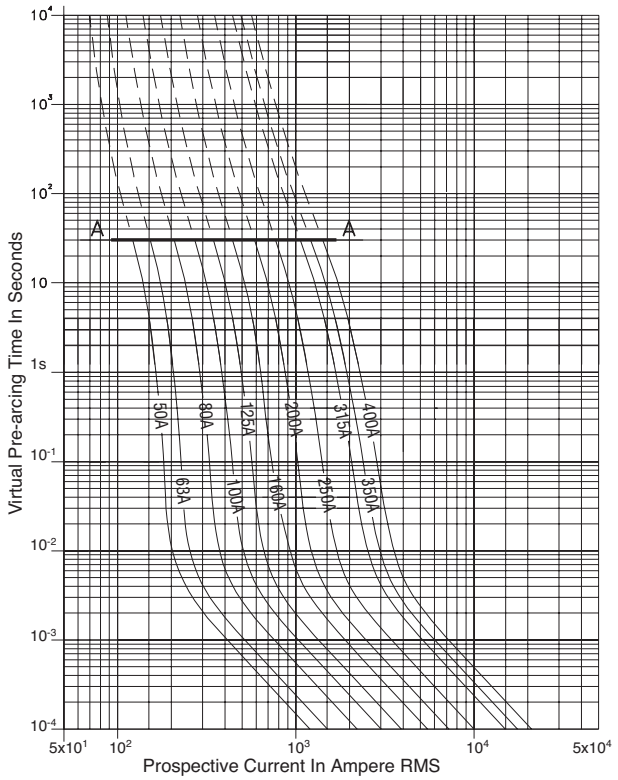
Did You Know?

Inverters in the world's strongest icebreaker ships in Finland and in Russia are protected with Cooper Bussmann® high speed fuses, 12000V, 500A.

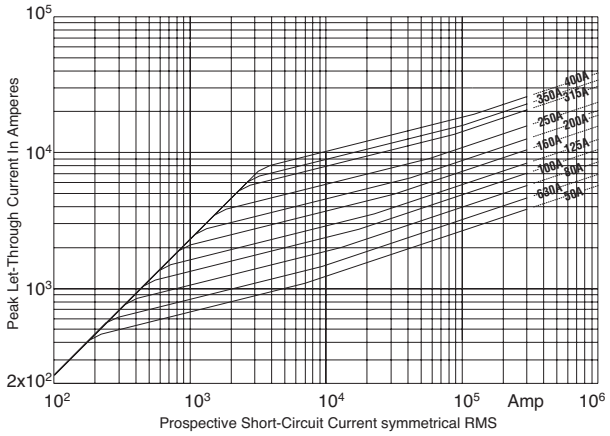
Square body DIN 43 653 — 1000V (IEC): 50-1400A

Size 1* — 50-400A: 1000V

Time-Current Curve



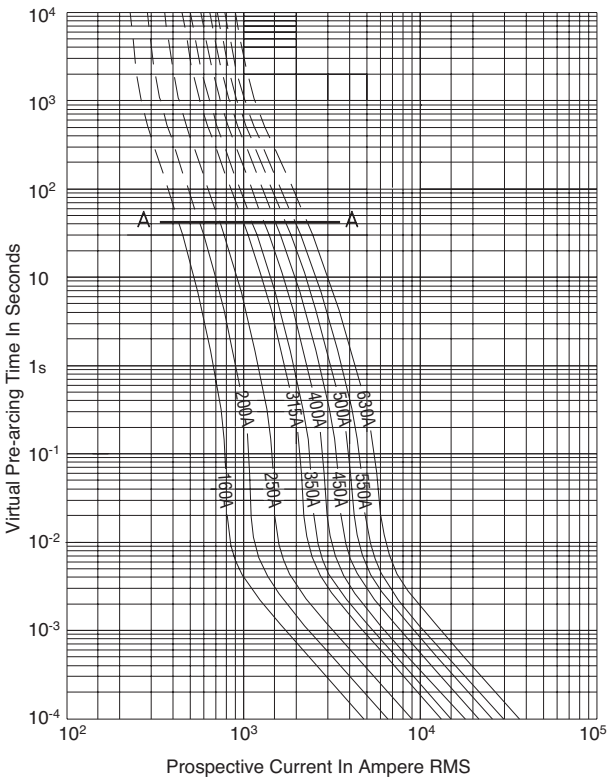
Peak Let-Through Curve



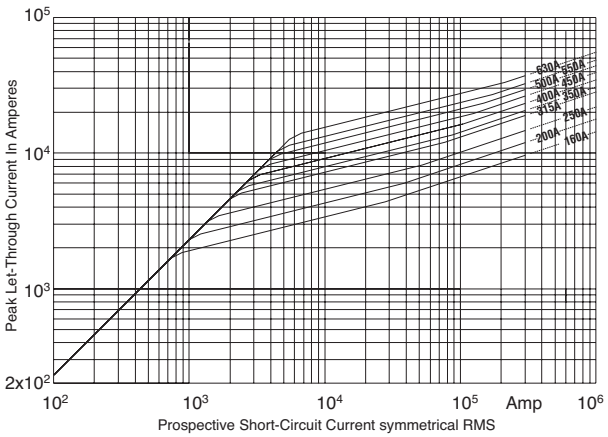
Data Sheet: 17058564

Size 1 — 160-630A: 1000V

Time-Current Curve



Peak Let-Through Curve

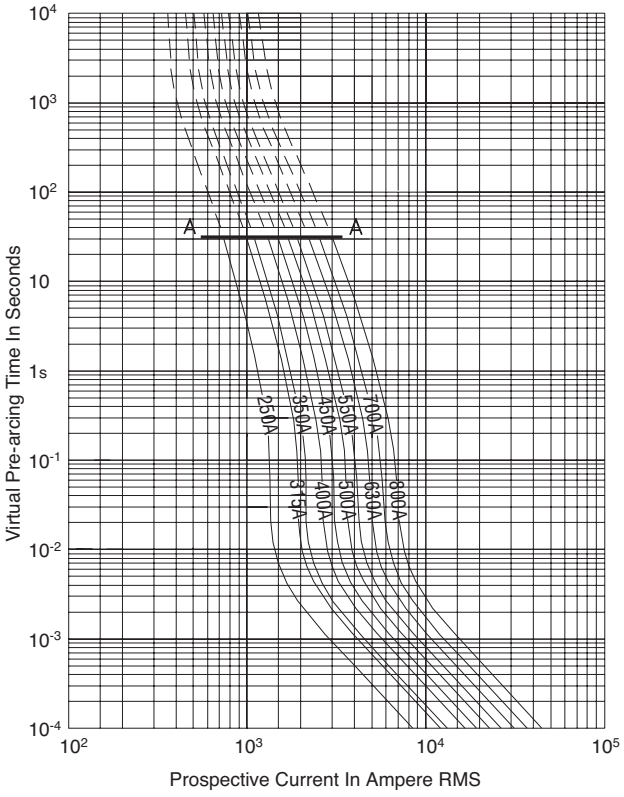


Data Sheet: 17058566

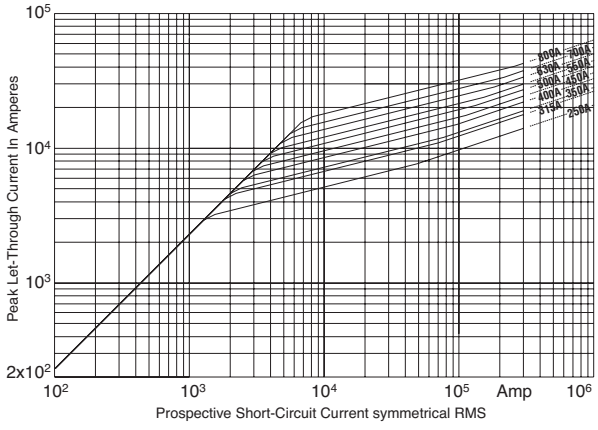
Square body DIN 43 653 — 1000V (IEC): 50-1400A

Size 2 — 250-800A: 1000V

Time-Current Curve



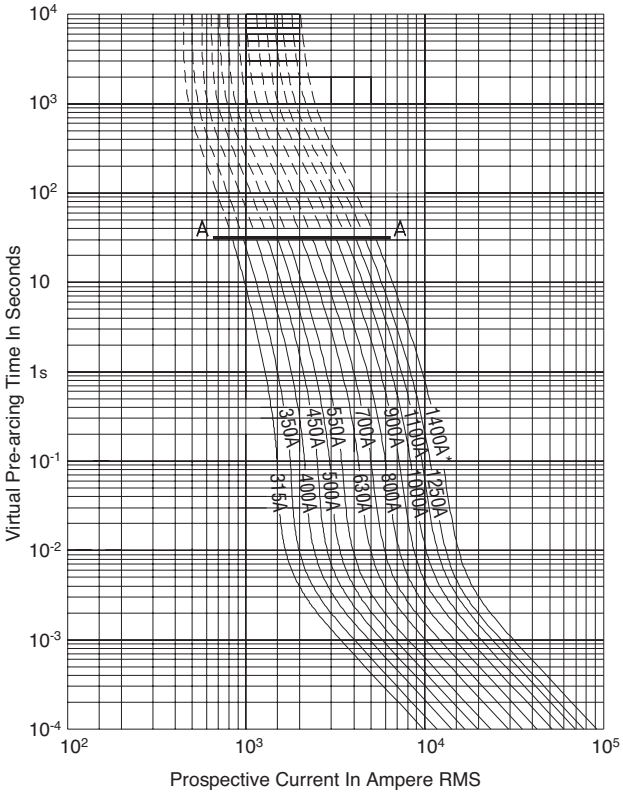
Peak Let-Through Curve



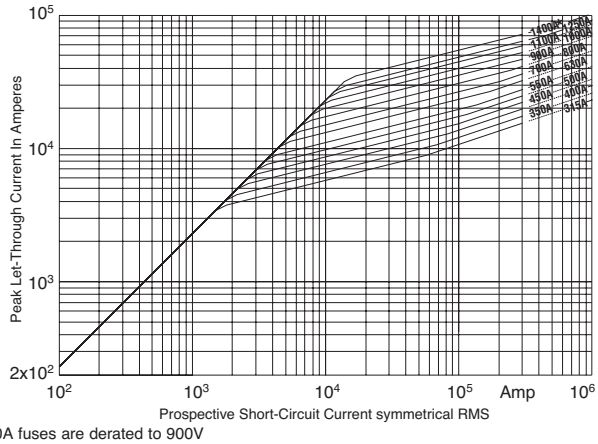
Data Sheet: 17058568

Size 3 — 315-1400A: 1000V

Time-Current Curve



Peak Let-Through Curve



* 1400A fuses are derated to 900V

Data Sheet: 17058570

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:

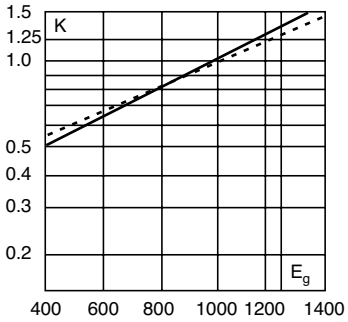
Volts: — 1250Vac (IEC)
— 1300Vac (UL)
Amps: — 50-1400A
IR: — 100kA RMS Sym.

Agency Information: CE, Designed and tested to IEC 60269: Part 4, UL Recognized. Consult Cooper Bussmann for UL Recognition/CSA Component Acceptance status.

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).

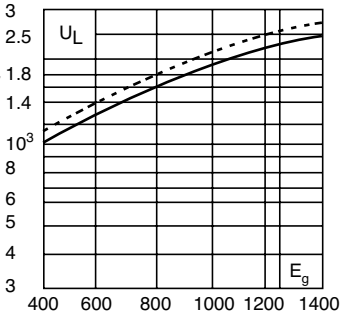


Dashed lines (- - - - - -) apply to the following amperages:.

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

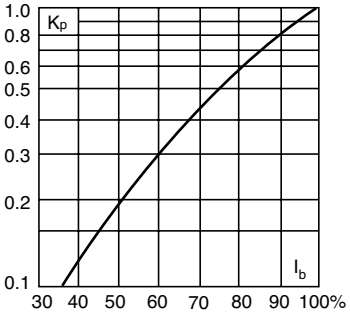
Arc Voltage

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

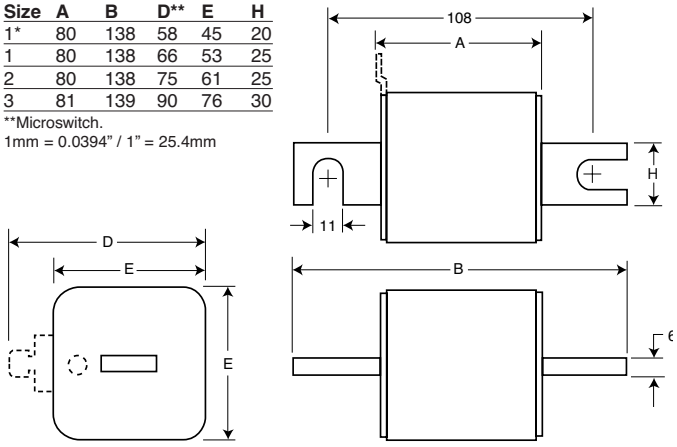
- DC common bus
- DC drives
- Power converters/rectifiers
- Reduced voltage starters

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



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

Catalog Numbers

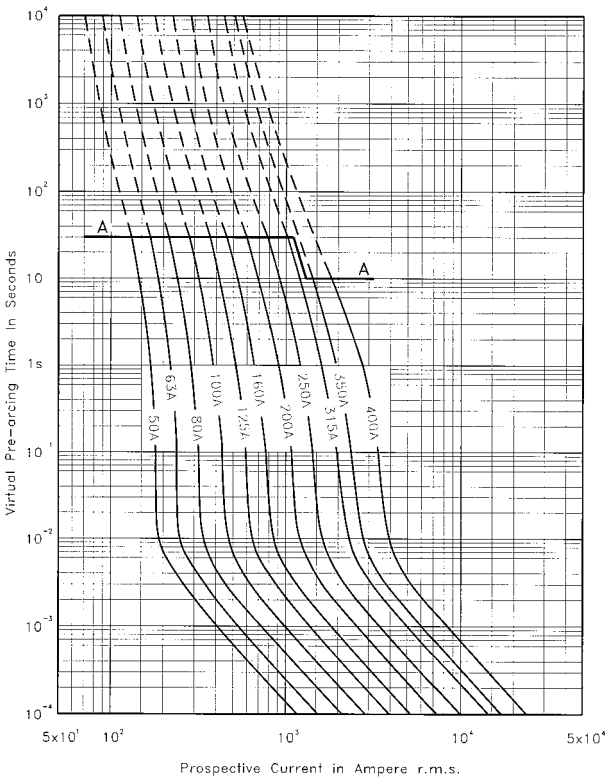
Catalog Numbers			Electrical Characteristics				
				I^2t (A^2 Sec)			
-/110 Visual Indicator	-TN/110 Type T Indicator for Micro	Size	Rated Current RMS-Amps	Pre-arc	Clearing at 1000V	Clearing at 1250V	Watts Loss
170M3138	170M3188	1*	50	135	815	1100	15
170M3139	170M3189		63	215	1300	1750	20
170M3140	170M3190		80	420	2500	3350	25
170M3141	170M3191		100	750	4450	5950	30
170M3142	170M3192		125	1450	9000	11500	35
170M3143	170M3193		160	2600	16000	21000	40
170M3144	170M3194		200	5150	31000	41000	45
170M3145	170M3195		250	9200	54500	73000	55
170M3146	170M3196		315	18500	115000	150000	60
170M3147	170M3197		350	27000	165000	220000	65
170M3148	170M3198		400	53000	265000	335000	70
170M4138	170M4188	1	160	1900	11500	15500	45
170M4139	170M4189		200	3800	22500	30000	50
170M4140	170M4190		250	7750	46000	61500	60
170M4141	170M4191		315	15000	90000	120000	65
170M4142	170M4192		350	20000	125000	165000	70
170M4143	170M4193		400	29500	175000	235000	75
170M4144	170M4194		450	42000	250000	335000	80
170M4145	170M4195		500	69500	340000	435000	85
170M4146	170M4196		550	95000	465000	590000	95
170M4147	170M4197		†630	130000	660000		100
170M5138	170M5188	2	250	6500	38500	51500	65
170M5139	170M5189		280	9350	55500	74500	70
170M5140	170M5190		315	13000	77500	105000	75
170M5141	170M5191		350	16500	97500	135000	80
170M5142	170M5192		400	23000	140000	180000	85
170M5143	170M5193		450	34000	205000	270000	90
170M5144	170M5194		500	48000	285000	380000	95
170M5145	170M5195		550	62000	370000	495000	100
170M5146	170M5196		630	115000	575000	730000	110
170M5147	170M5197		700	160000	795000	1050000	115
170M5148	170M5198		800	245000	1200000	1550000	120
170M5149	170M5199		†900	360000	1750000		125
170M5150	170M5200		†1000	480000	2350000		135
170M6138	170M6188	3	315	9500	58000	77500	85
170M6139	170M6189		350	13500	81500	110000	90
170M6140	170M6190		400	19500	120000	160000	95
170M6141	170M6191		450	31000	185000	245000	100
170M6142	170M6192		500	39000	235000	310000	105
170M6143	170M6193		550	55000	325000	435000	110
170M6144	170M6194		630	83500	495000	665000	115
170M6145	170M6195		700	115000	705000	940000	120
170M6146	170M6196		‡800	205000	995000	1300000	125
170M6147	170M6197		‡900	305000	1500000	1900000	130
170M6148	170M6198		‡1000	450000	2150000	2750000	135
170M6149	170M6199		‡1100	575000	2800000	3600000	140
170M6150	170M6200		†1250	810000	3950000		145
170M6151	170M6201		†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 179-180.

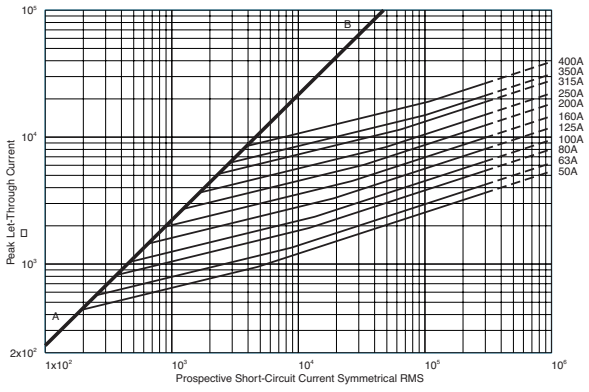
Square body DIN 43 653 — 1250V/1300V (IEC/UL): 50-1400A

Size 1* — 50-400A:1250V

Time-Current Curve



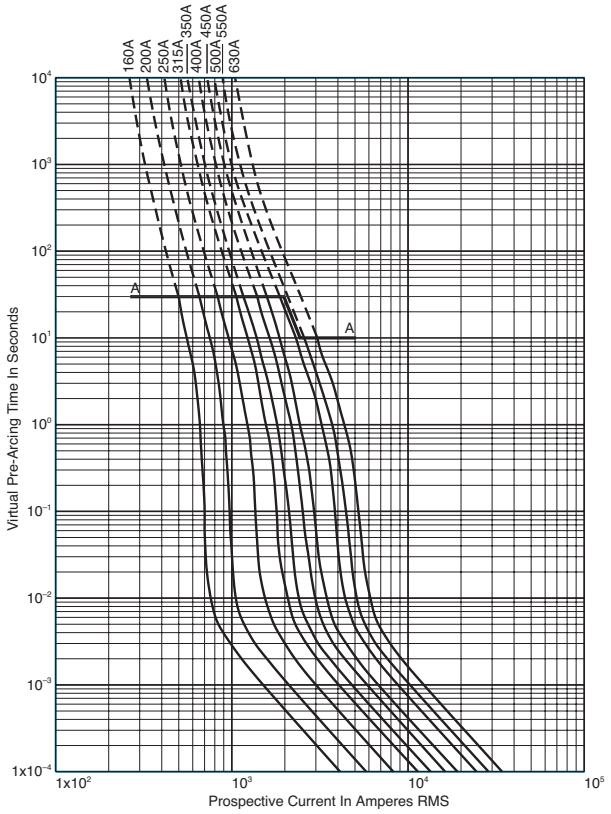
Peak Let-Through Curve



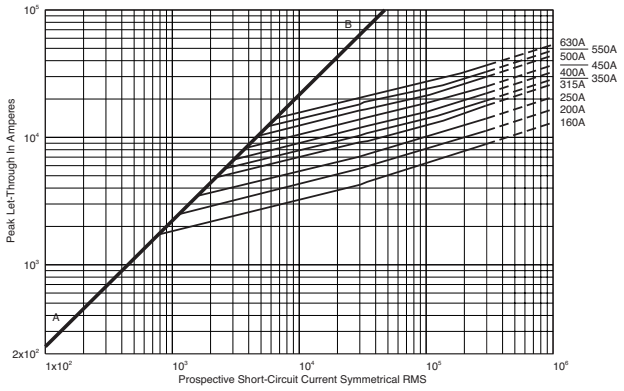
Data Sheet: 17056630

Size 1 — 160-630A: 1250V

Time-Current Curve



Peak Let-Through Curve



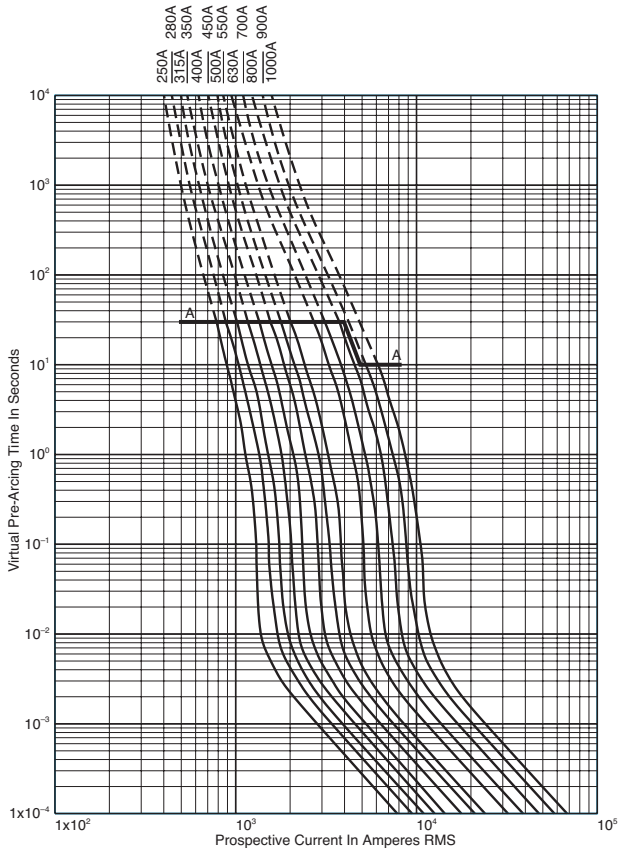
630A fuse is derated to 1100V (IEC).

Data Sheet: 17056632

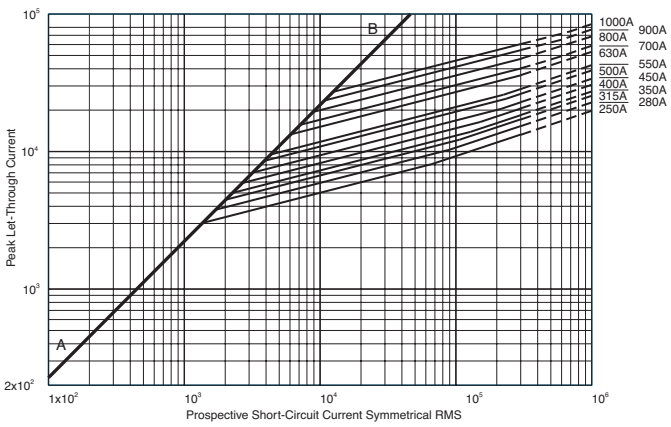
Square body DIN 43 653 — 1250V/1300V (IEC/UL): 50-1400A

Size 2 — 250-1000A: 1250V

Time-Current Curve



Peak Let-Through Curve

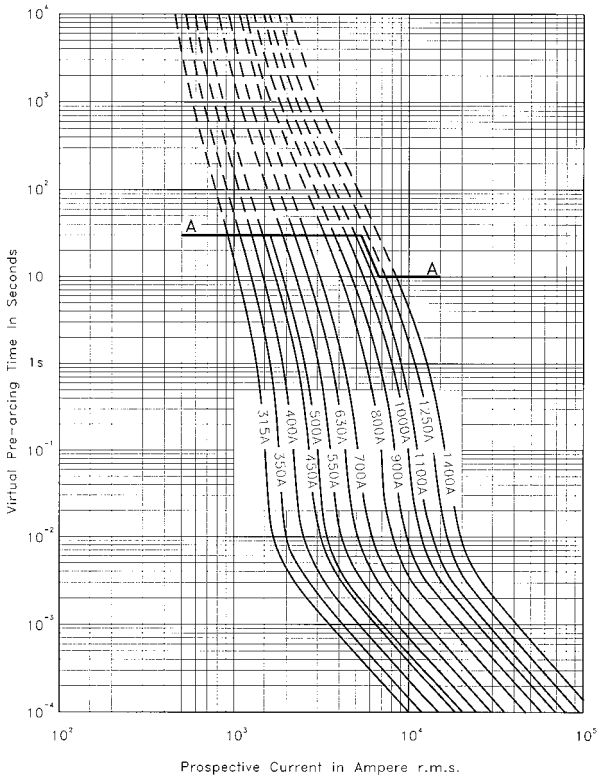


900-1000A fuses are derated to 1100V (IEC).

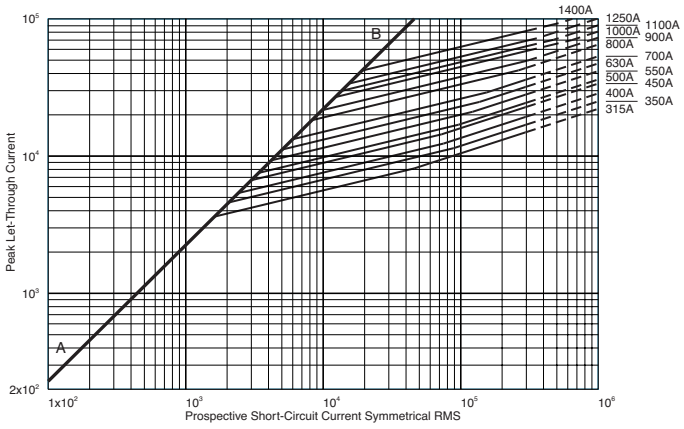
Data Sheet: 17056634

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 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:

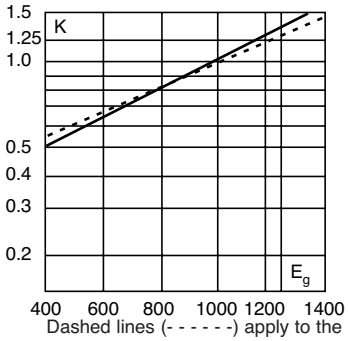
Volts: — 1250Vac (IEC)
— 1300Vac (UL)
Amps: — 50-1400A
IR: — 100kA RMS Sym.

Agency Information: CE, Designed and tested to IEC 60269: Part 4, UL Recognized. Consult Cooper Bussmann for UL Recognition/CSA Component Acceptance status.

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:.

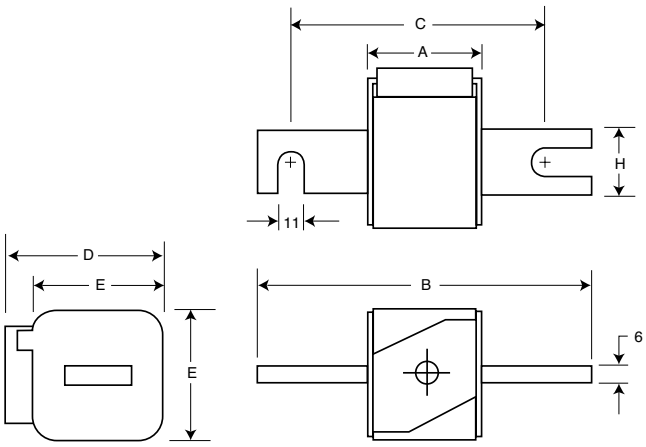
Size	Amps.
1*	400A
1	500-630A
2	630-1000A
3	800-1400A

Dimensions (mm)

Type -KN/110.

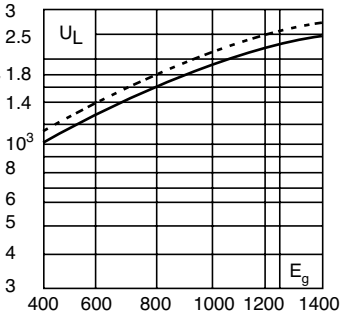
Size	A	B	D	E	H
1*	80	138	58	45	20
1	80	138	66	53	25
2	80	138	75	61	25
3	81	139	90	76	30

1mm = 0.0394" / 1" = 25.4mm



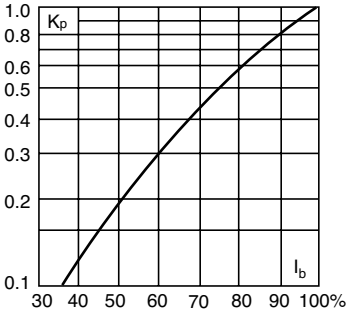
Arc Voltage

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

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

Catalog Numbers

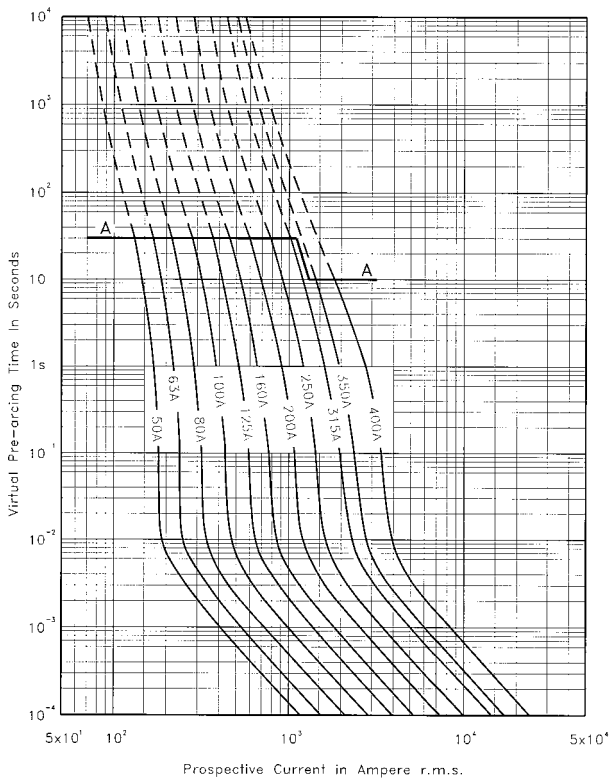
Catalog Numbers -KN/110 Type K Visual Indicator for Micro	Size	Electrical Characteristics				
		Rated Current RMS-Amps	I2t (A2 Sec)			Watts Loss
			Pre-arc	Clearing at 1000V	Clearing at 1250V	
170M3238	1*	50	135	815	1100	15
170M3239		63	215	1300	1750	20
170M3240		80	420	2500	3350	25
170M3241		100	750	4450	5950	30
170M3242		125	1450	9000	11500	35
170M3243		160	2600	16000	21000	40
170M3244		200	5150	31000	41000	45
170M3245		250	9200	54500	73000	55
170M3246		315	18500	115000	150000	60
170M3247		350	27000	165000	220000	65
170M3248		400	53000	265000	335000	70
170M4238	1	160	1900	11500	15500	45
170M4239		200	3800	22500	30000	50
170M4240		250	7750	46000	61500	60
170M4241		315	15000	90000	120000	65
170M4242		350	20000	125000	165000	70
170M4243		400	29500	175000	235000	75
170M4244		450	42000	250000	335000	80
170M4245		500	69500	340000	435000	85
170M4246		550	95000	465000	590000	95
170M4247		†630	130000	660000		100
170M5238	2	250	6500	38500	51500	65
170M5239		280	9350	55500	74500	70
170M5240		315	13000	77500	105000	75
170M5241		350	16500	97500	135000	80
170M5242		400	23000	140000	180000	85
170M5243		450	34000	205000	270000	90
170M5244		500	48000	285000	380000	95
170M5245		550	62000	370000	495000	100
170M5246		630	115000	575000	730000	110
170M5247		700	160000	795000	1050000	115
170M5248		800	245000	1200000	1550000	120
170M5249		†900	360000	1750000		125
170M5250		†1000	480000	2350000		135
170M6238	3	315	9500	58000	77500	85
170M6239		350	13500	81500	110000	90
170M6240		400	19500	120000	160000	95
170M6241		450	31000	185000	245000	100
170M6242		500	39000	235000	310000	105
170M6243		550	55000	325000	435000	110
170M6244		630	83500	495000	665000	115
170M6245		700	115000	705000	940000	120
170M6246		‡800	205000	995000	1300000	125
170M6247		‡900	305000	1500000	1900000	130
170M6248		‡1000	450000	2150000	2750000	135
170M6249		‡1100	575000	2800000	3600000	140
170M6250		†1250	810000	3950000		145
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 179-180.

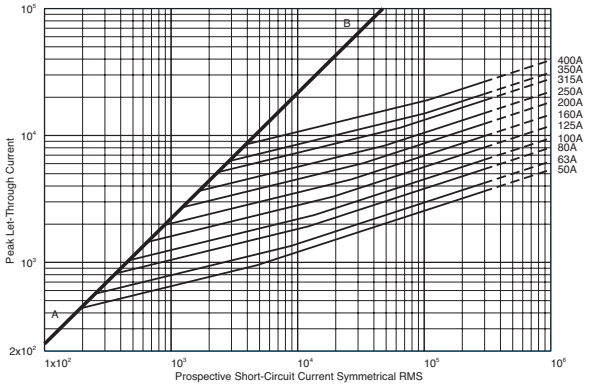
Square body DIN 43 653 — 1250V/1300V (IEC/UL): 50-1400A

Size 1* — 50-400A:1250V

Time-Current Curve



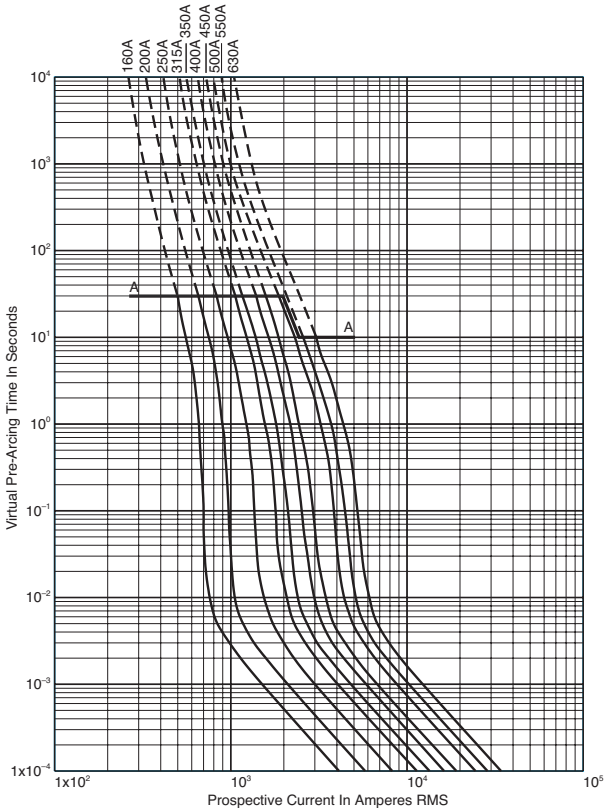
Peak Let-Through Curve



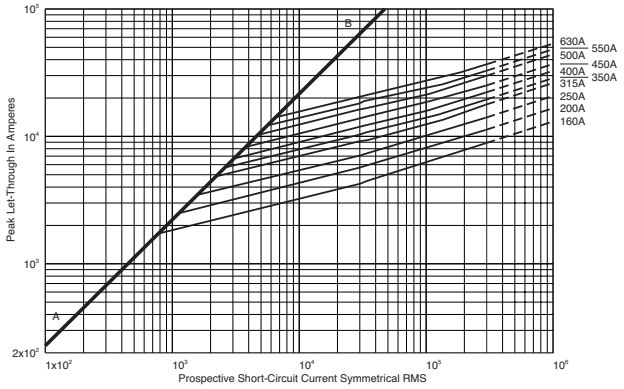
Data Sheet: 17056630

Size 1 — 160-630A: 1250V

Time-Current Curve



Peak Let-Through Curve



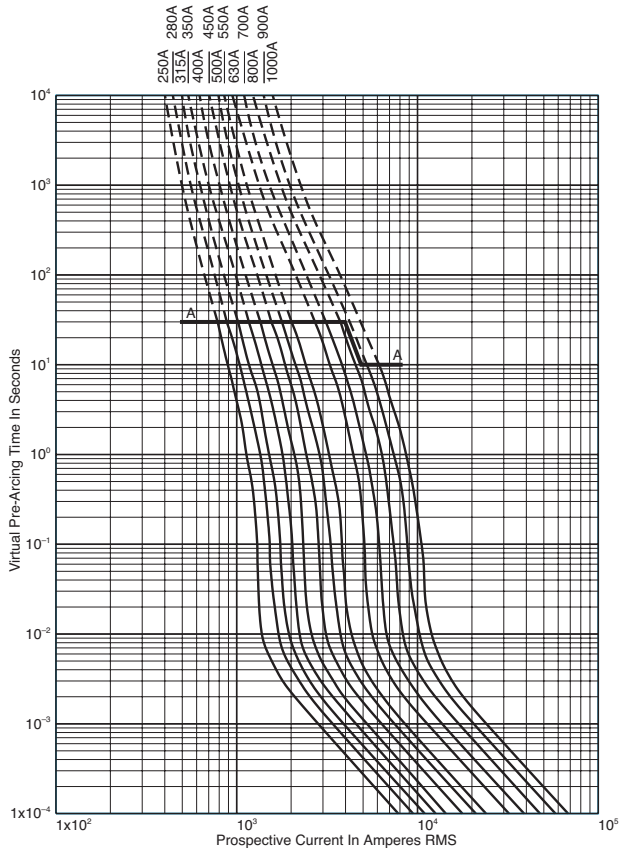
630A fuse is derated to 1100V (IEC).

Data Sheet: 17056632

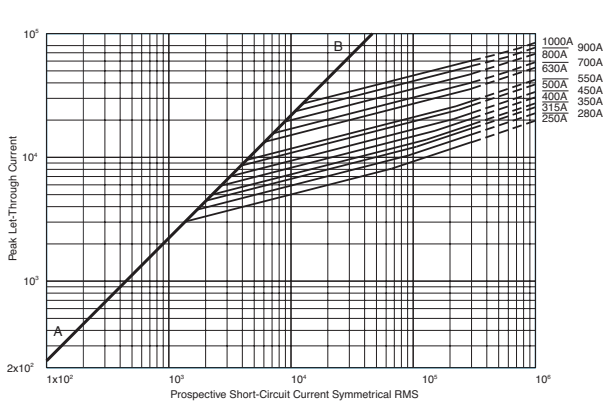
Square body DIN 43 653 — 1250V/1300V (IEC/UL): 50-1400A

Size 2 — 250-1000A: 1250V

Time-Current Curve



Peak Let-Through Curve

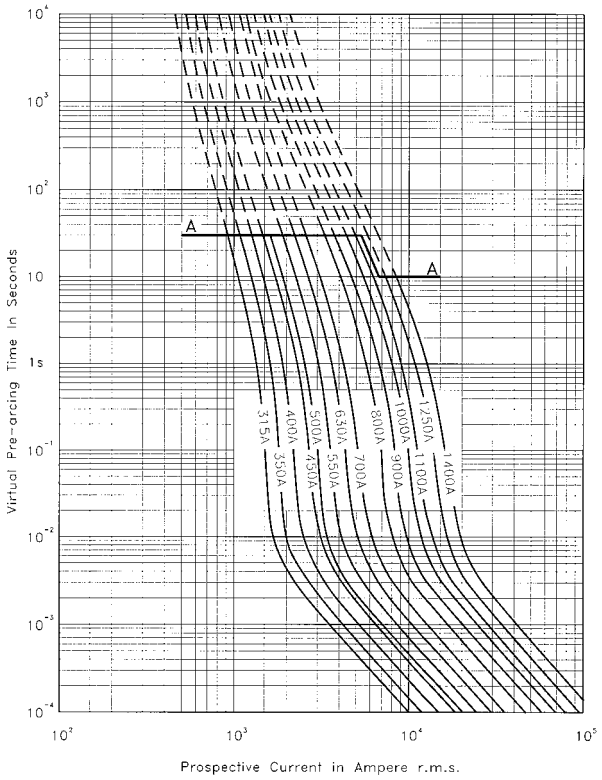


900-1000A fuses are derated to 1100V (IEC).

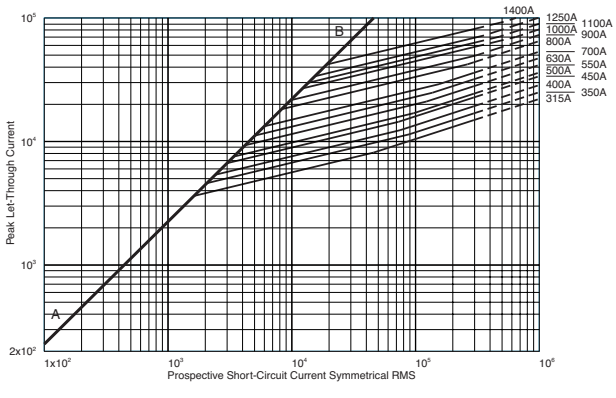
Data Sheet: 17056634

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 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

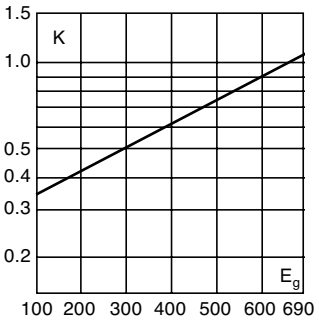
IR: — 200kA RMS Sym.

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

Electrical Characteristics

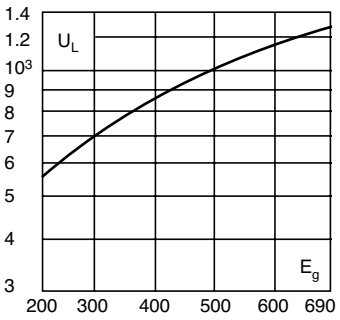
Total Clearing I^2t

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).



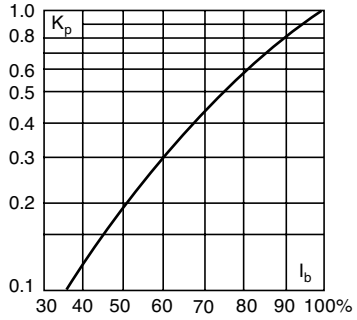
Arc Voltage

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

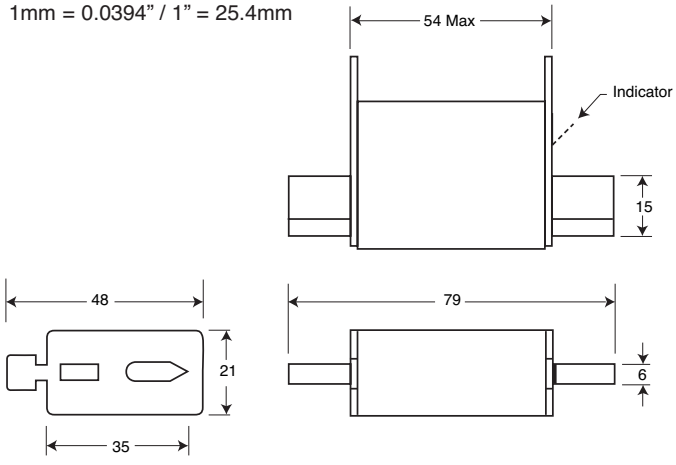
Typical Applications

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

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 000 Type T Indicator for Micro	Size	Electrical Characteristics			
		Rated Current RMS-Amps	I²t (A² Sec) Pre-arc	I²t (A² Sec) Clearing at 660V	Watts Loss
170M1558	000	10	3.8	25.5	3.0
170M1559		16	7.2	48	5.5
170M1560		20	11.5	78	7
170M1561		25	19	130	9
170M1562		32	40	270	10
170M1563		40	69	460	12
170M1564		50	115	770	15
170M1565		63	215	1450	16
170M1566		80	380	2550	19
170M1567		100	695	4650	24
170M1568		125	1200	8500	28
170M1569		160	2300	16000	32
170M1570		200	4200	28000	37
170M1571		250	7750	51500	42
170M1572		315	12000	80500	52

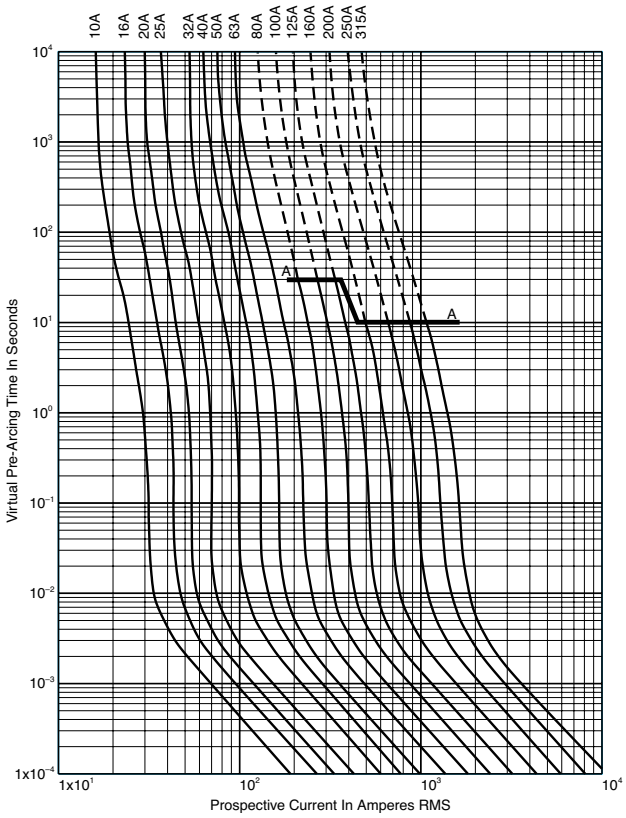
- Watts loss provided at rated current.
- Microswitch indicator ordered separately. See accessories on pages 179-180.

Rated Current

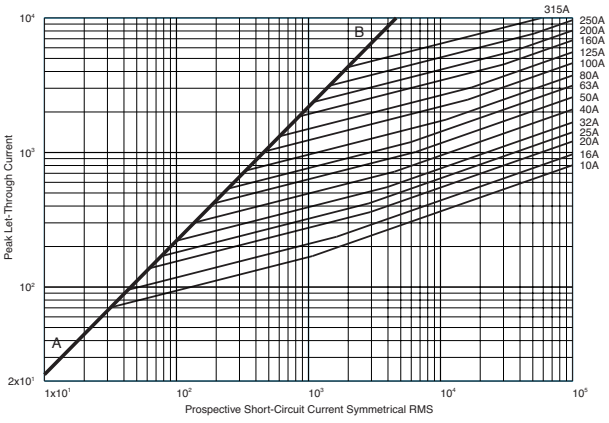
The rated current of this fuse range has been given with copper conductors that have a current density of 1.3 A/mm² (IEC 60269-4). For conductor cross section according to IEC 60269-1, the fuses with a rated current higher than 125A must be derated. Please contact Cooper Bussmann for application assistance.

Size 000 — 10-315A: 690V

Time-Current Curve



Peak Let-Through Curve



Data Sheet: 72056310

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

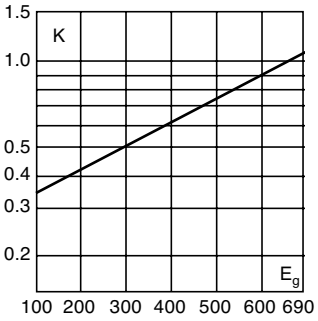
IR: — 200kA RMS Sym.

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

Electrical Characteristics

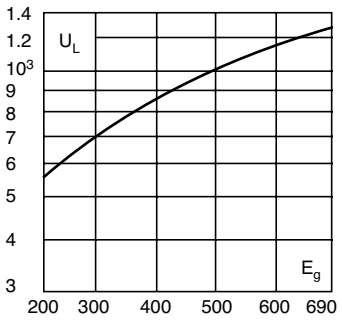
Total Clearing I^2t

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).



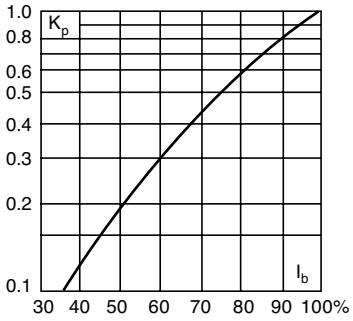
Arc Voltage

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

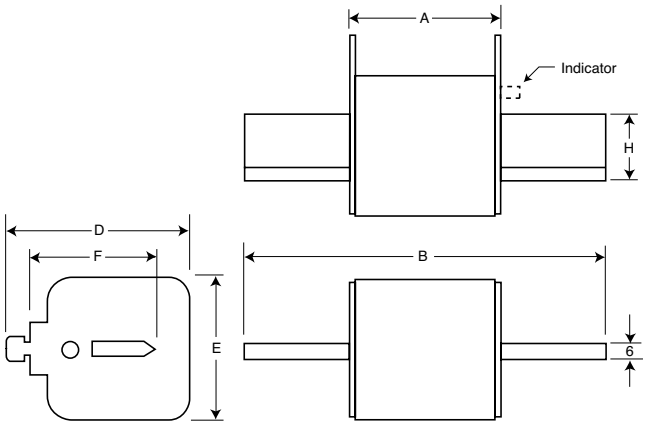
- DC common bus
- DC drives
- Power converters/rectifiers
- Reduced voltage starters

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): 40-1000A

Catalog Numbers

Catalog Numbers		Electrical Characteristics			
DIN Type T Indicator for Micro	Size	Rated Current RMS-Amps	I²t (A²Sec) Pre-arc	I²t (A²Sec) Clearing at 660V	Watts Loss
170M3808	1*	40	40	270	9
170M3809		50	77	515	11
170M3810		63	115	770	14
170M3811		80	185	1250	18
170M3812		100	360	2450	21
170M3813		125	550	3700	26
170M3814		160	1100	7500	30
170M3815		200	2200	15000	35
170M3816		250	4200	28500	40
170M3817		315	7000	46500	50
170M3818		350	10000	68500	55
170M3819		400	15000	105000	60
170M5808	2	400	11000	74000	65
170M5809		450	15500	105000	70
170M5810		500	21500	145000	75
170M5811		550	28000	190000	80
170M5812		630	41000	275000	90
170M5813		700	60500	405000	95
170M6808	3	500	14000	95000	95
170M6809		550	19500	135000	100
170M6810		630	31000	210000	105
170M6811		700	44500	300000	110
170M6812		800	69500	465000	115
170M6813		900	100000	670000	120
170M6814		1000	140000	945000	125

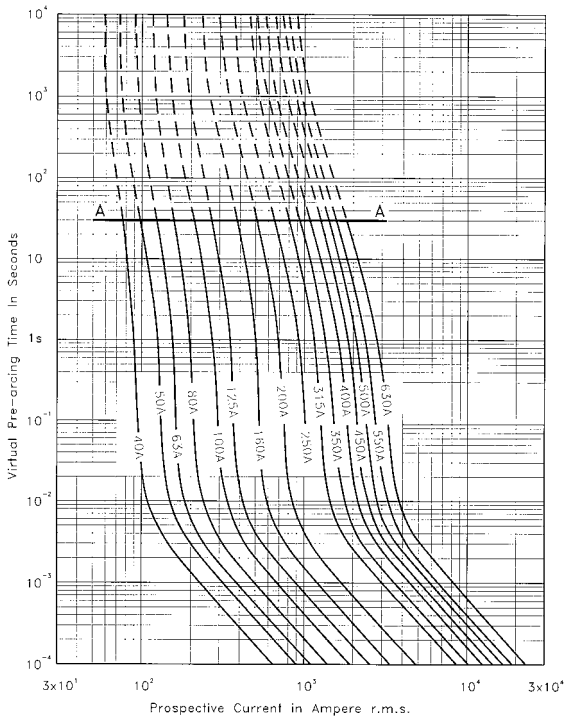
• Watts loss provided at rated current.
• Microswitch indicator ordered separately. See accessories on pages 179-180.

Rated Current

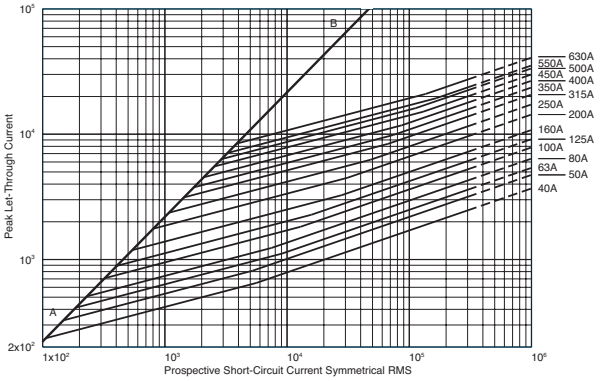
The rated current of this fuse range has been given with copper conductors that have a current density of 1.3 A/mm² (IEC 60269-4). For conductor cross section according to IEC 60269-1, the fuses must be derated. Please contact Cooper Bussmann for application assistance.

Size 1* — 40-630A: 690V

Time-Current Curve



Peak Let-Through Curve

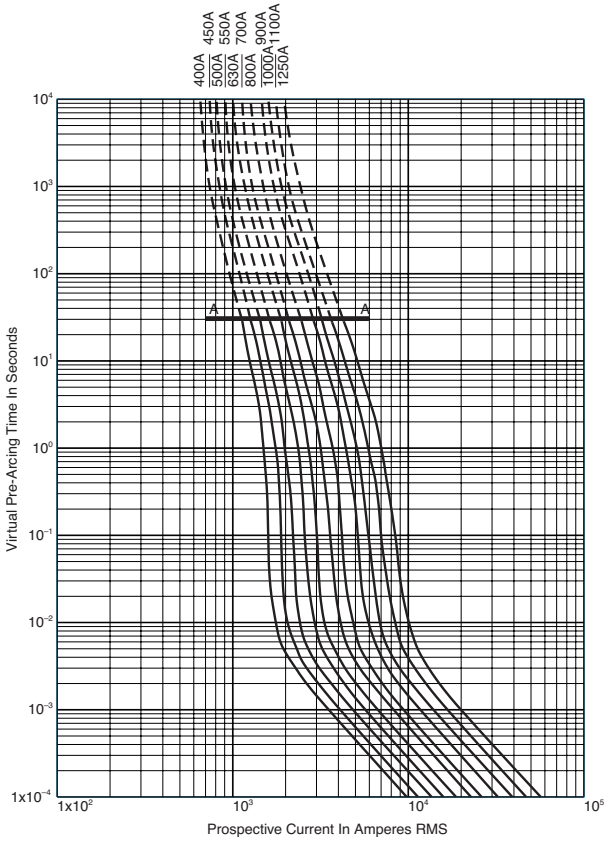


Data Sheet: 17056314

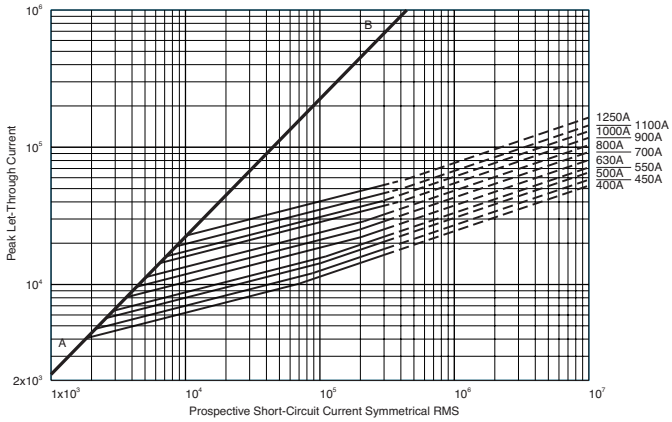
Square body DIN 43 620 — 690V/700V (IEC/UL): 40-1000A

Size 2 — 400-1250A: 690V

Time-Current Curve



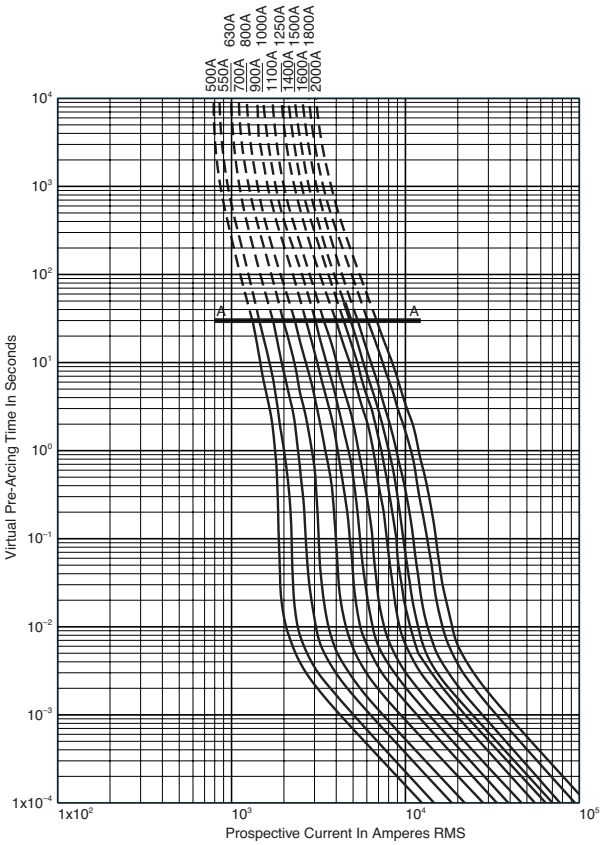
Peak Let-Through Curve



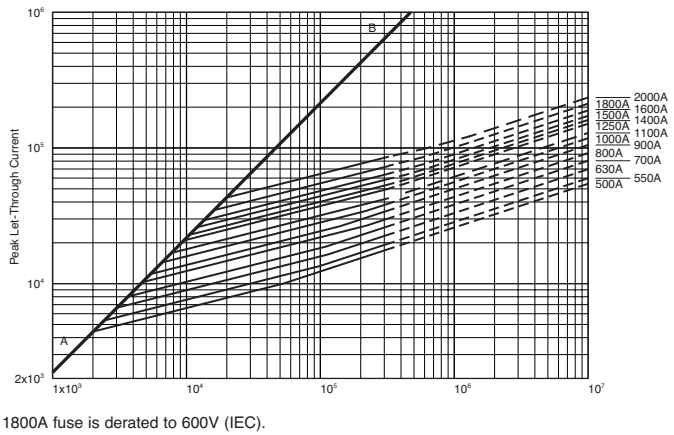
Data Sheet: 17056318

Size 3 — 500-2000A: 690V

Time-Current Curve



Peak Let-Through Curve



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

Data Sheet: 17056320

Square body DIN 43 620 — 690V (IEC): 10-800A

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

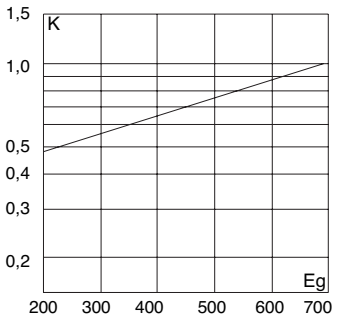
IR: — 300kA RMS Sym.

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

Electrical Characteristics

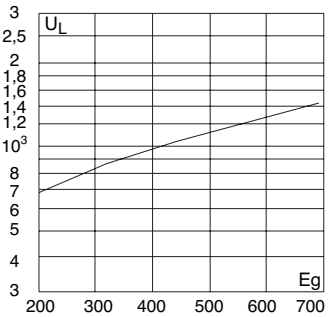
Total clearing I²t

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).



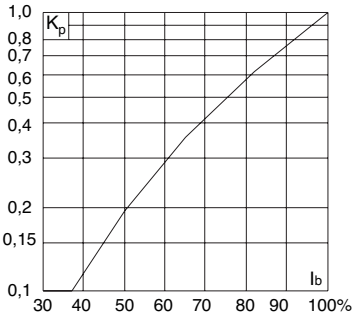
Arc Voltage

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

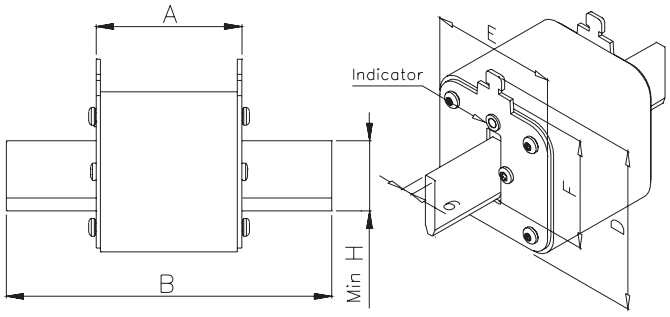
- DC common bus
- DC drives
- Power converters/rectifiers
- Reduced voltage starters

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

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	00	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		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	1	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		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	2	200	5650	29000	33
170M5882		250	10000	52500	40
170M5883		315	19500	105000	46
170M5884		350	26000	135000	50
170M5885		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	3	350	23000	120000	55
170M6081		400	34000	175000	59
170M6082		450	48500	250000	62
170M6083		500	64000	330000	67
170M6084		550	84500	435000	70
170M6085		630	125000	645000	85
170M6086		700	160000	840000	93
170M6087		800	245000	1300000	99

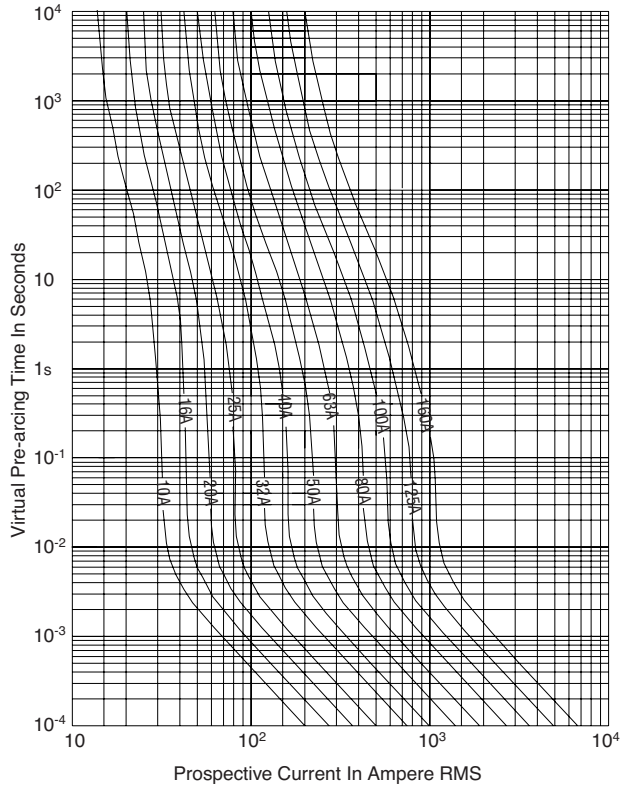
*The RMS amp rating of this fuse range is given with open fuse bases connected to copper conductors according to IEC 60269, Part 1, table 10. When used in enclosed fuse bases/disconnects, derating factors have to be observed.
Please contact Cooper Bussmann for application assistance.

- Watts loss provided at rated current.
- Microswitch ordered separately. See accessories on page 179-180.

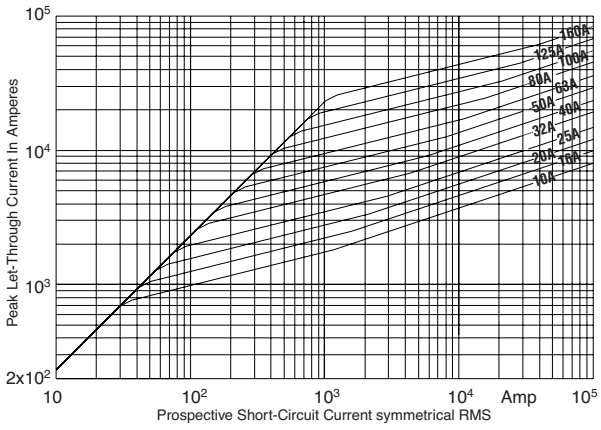
Square body DIN 43 620 — 690V (IEC): 10-800A

Size 00 — 10-160A: 690V

Time-Current Curve

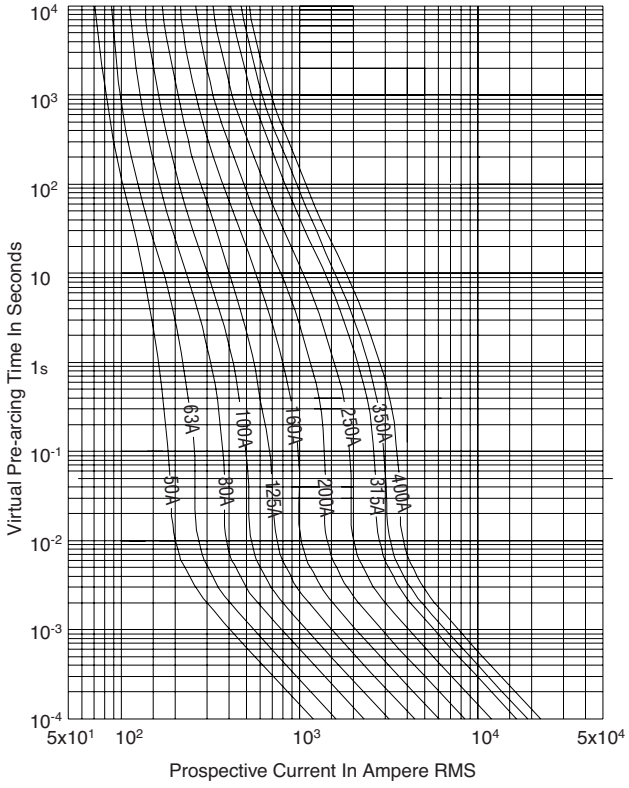


Peak Let-Through Curve

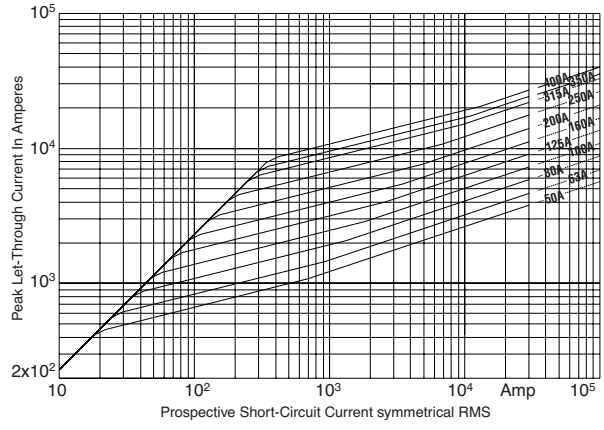


Size 1 — 50-400A: 690V

Time-Current Curve



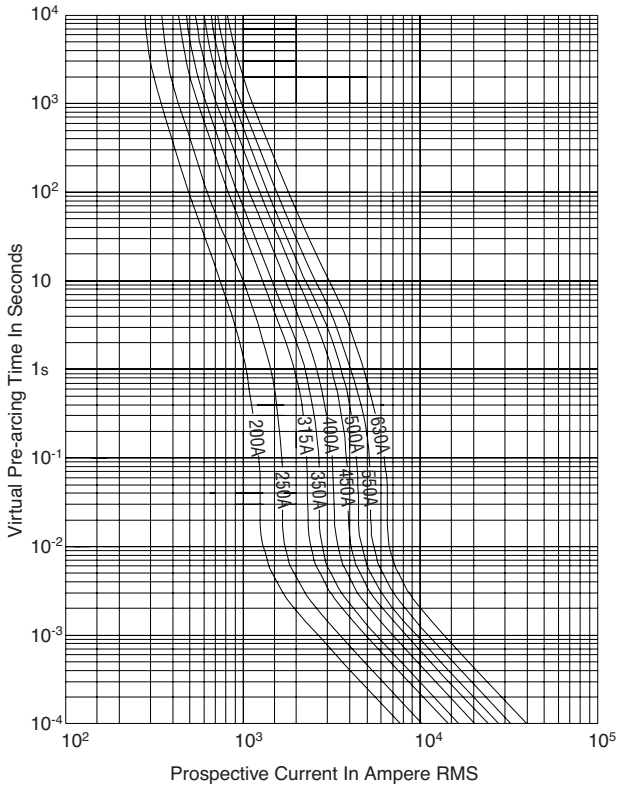
Peak Let-Through Curve



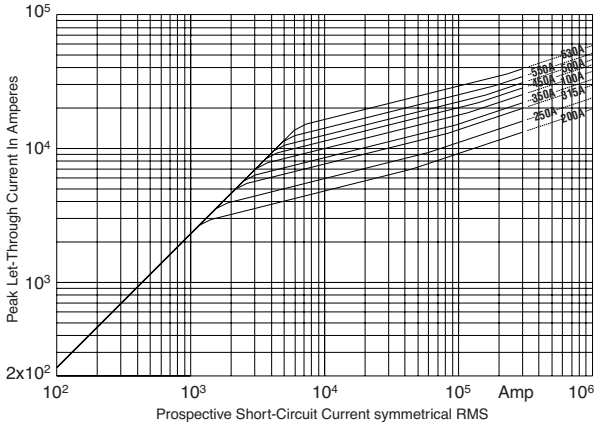
Square body DIN 43 620 — 690V (IEC): 10-800A

Size 2 — 200-630A: 690V

Time-Current Curve

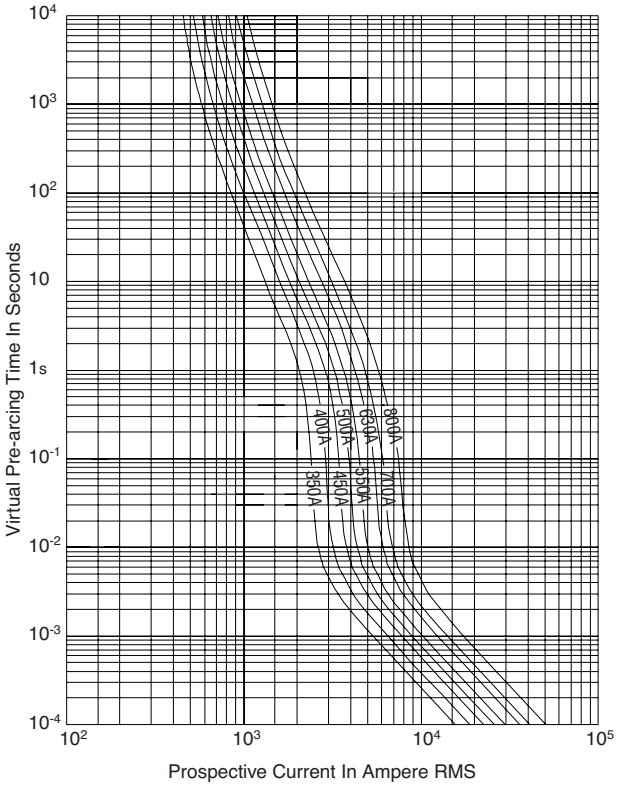


Peak Let-Through Curve

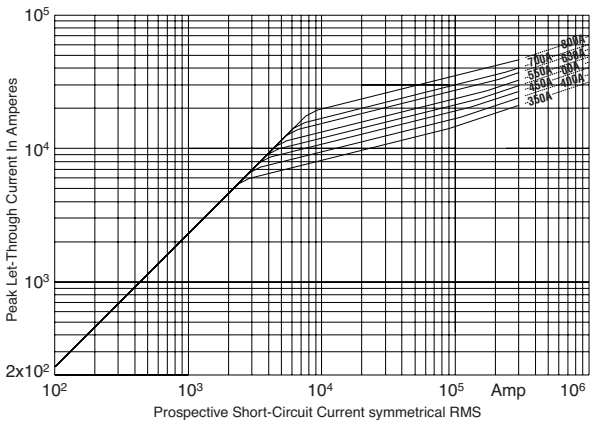


Size 3 — 350-800A: 690V

Time-Current Curve



Peak Let-Through Curve



Square body DIN 43 620 — 1000V (IEC): 20–225A

1000V (IEC) 20–225A

Specifications

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

Dimensions: See dimensions illustration.

Ratings:

Volts: — 1000Vac

Amps: — 20-225A

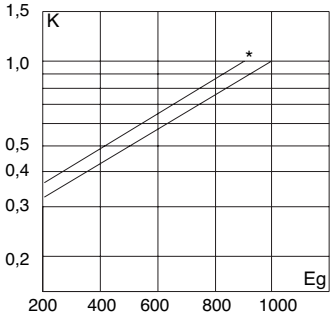
IR: — 150kA RMS Sym.

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

Electrical Characteristics

Total clearing I²t

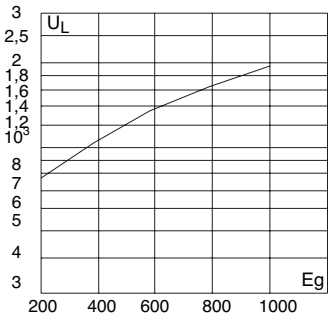
The total clearing I²t at rated voltage and at power factor of 15% are given in the electrical characteristics. For other voltages, the clearing I²t is found by multiplying by correction factor, K, given as a function of applied working voltage, E_g, (rms).



*Rated voltage 900V

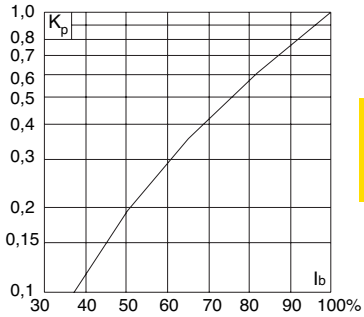
Arc Voltage

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

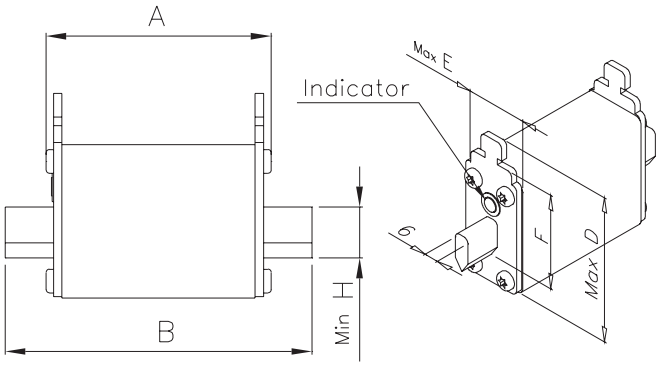
- DC common bus
- DC drives
- Power converters/rectifiers
- Reduced voltage starters

Dimensions (mm)

Type T

Size	A	B	Max D	Max E	F	G	Min H
DIN 00	49	78.5	60	30	35	6	15

1mm = 0.0394" / 1" = 25.4mm



Square body DIN 43 620 — 1000V (IEC): 20–225A

Catalog Numbers

Catalog Numbers		Electrical Characteristics				
			Rated	I²t (A² Sec)		
Type T Indicator for Micro	Size	Rated Voltage	Current RMS Amps	Pre-arc	Clearing at Rated Voltage	Watts Loss
170M2673	00	1000	20	15	110	8.5
170M2674		1000	25	28.5	210	9.5
170M2675		1000	32	53	390	11
170M2676		1000	35	69	500	12
170M2677		1000	40	105	760	13
170M2678		1000	50	215	1550	14
170M2679		1000	63	380	2750	16
170M2680		1000	80	815	5900	18
170M2681		1000	100	1550	11500	21
170M2682		1000	125	3000	22000	23
170M2683		1000	160	6250	45000	26
170M2684		900	200	12000	86500	31
170M2685		900	225	18000	115000	33

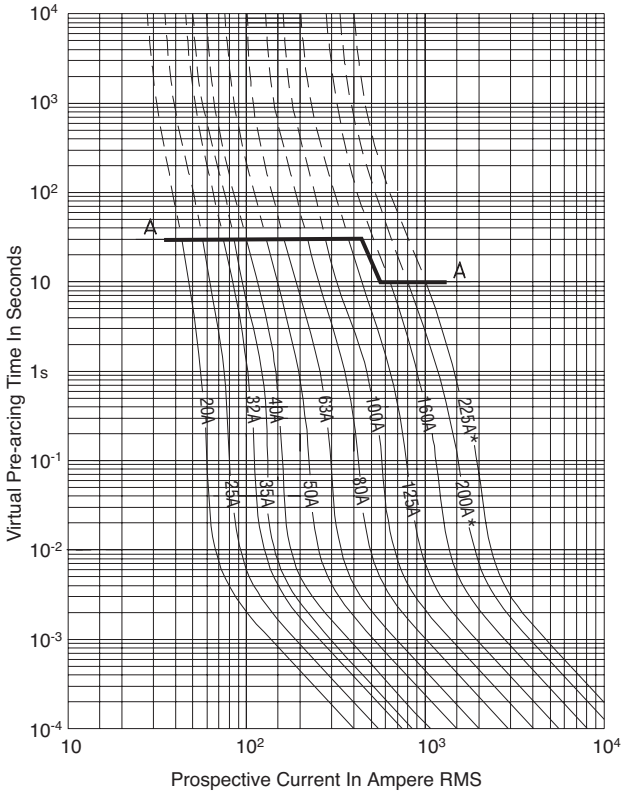
• Watts loss provided at rated current.
• Microswitch indicator ordered separately. See accessories on page 179-180.

Rated Current

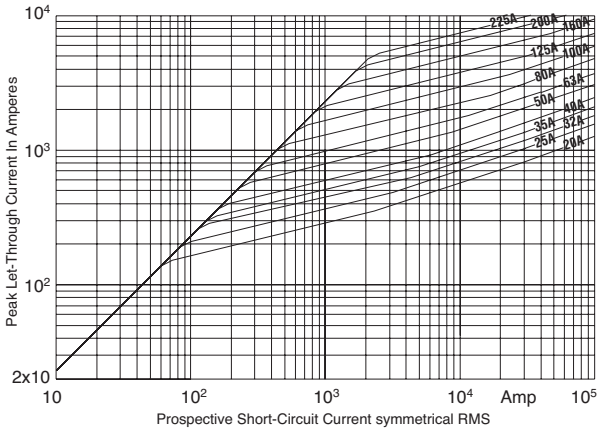
The rated current of this fuse range is given with open fuse bases connected to copper conductors according to IEC 60269 Part 1, table 10. When used in enclosed fuse bases/disconnects, derating factors have to be observed. Please contact Cooper Bussmann for application assistance.

Size 00 — 20-225A: 1000V

Time-Current Curve



Peak Let-Through Curve



* 200-225A fuses are derated to 900V

Did You Know?

Cooper Bussmann Helps Ford Motor Company Implement Electrical Safety Program

All of the Ford Motor Company facilities in the U.S., Canada and Mexico recently completed a safety upgrade to their electrical systems using Cooper Bussmann current limiting fuses. The automaker initiated a proactive program to enhance worker safety when working on electrical equipment.

The program not only included the fuse change out, but also a short circuit current study, arc flash hazard analysis, affixing safety labels to equipment, and providing safety training and personal protective equipment (PPE) to workers, as needed. By using Cooper Bussmann® current-limiting fuses in potential arc-flash situations the amount of electrical energy released is considerably less, thereby helping to reduce the risk of potential injury.

Data Sheet: 17058506

Square body flush end contact — 690V (IEC): 25-400A

690V (IEC) 25-400A

Specifications

Description: Square body flush end contact high speed fuses.

Dimensions: See dimensions illustration.

Ratings:

Volts: — 690Vac.

Amps: — 25-400A

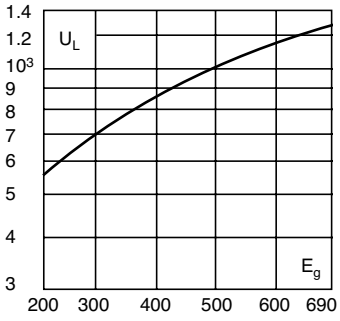
IR: — 200kA RMS Sym.

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

Electrical Characteristics

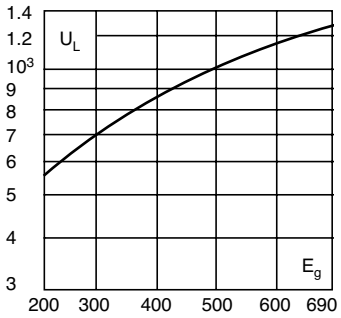
Total Clearing I²t

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).



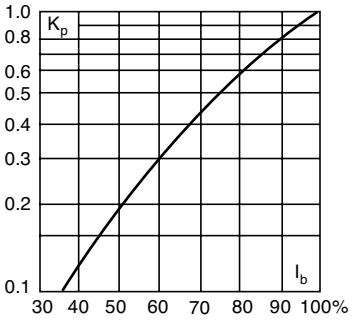
Arc Voltage

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_gg, (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

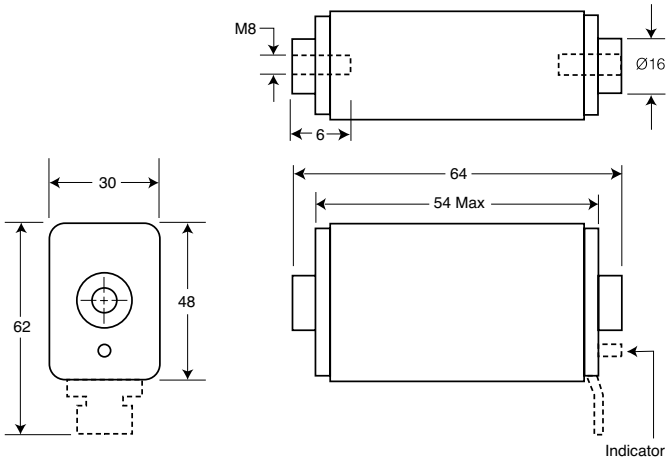
Typical Applications

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

Dimensions (mm)

Type 00B/60, 00BTN/60

1mm = 0.0394" / 1" = 25.4mm



Did You Know?

The world's largest hydroelectric station at Itaipu on the borderline between Brazil & Paraguay is protected by Cooper Bussmann® high speed fuses, 3000V, 400A.

Square body flush end contact — 690V (IEC): 25-400A

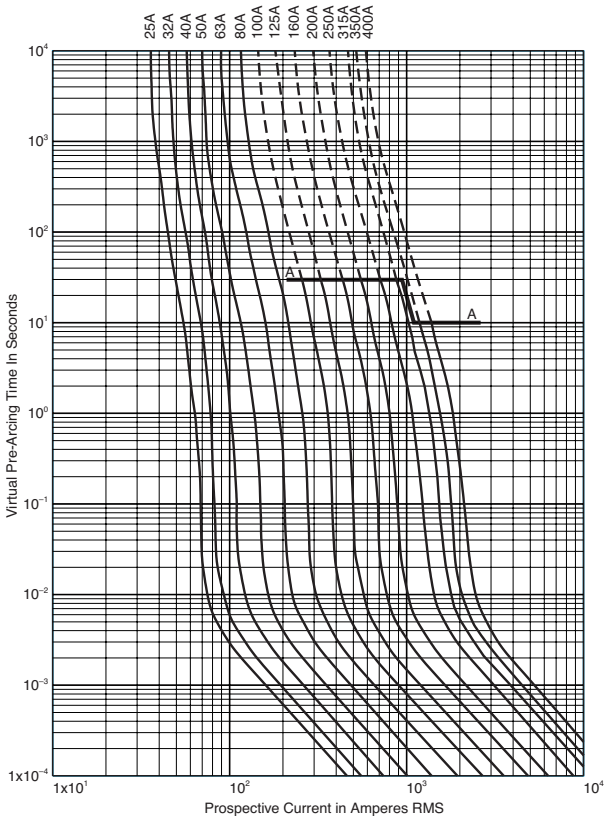
Catalog Numbers

Catalog Numbers			Electrical Characteristics			
				I^2t (A^2 Sec)		
00B/60 Visual Indicator	00BTN/60 Type T Indicator for Micro	Size	Rated Current RMS-Amps	Pre-arc	Clearing at 660V	Watts Loss
170M2708	170M2758	00	25	19	130	6
170M2709	170M2759		32	28.5	195	7
170M2710	170M2760		40	50	360	9
170M2711	170M2761		50	95	640	10
170M2712	170M2762		63	170	1200	12
170M2713	170M2763		80	310	2100	15
170M2714	170M2764		100	620	4150	20
170M2715	170M2765		125	1000	6950	25
170M2716	170M2766		160	1900	13000	30
170M2717	170M2767		200	3400	23000	35
170M2718	170M2768		250	6250	42000	45
170M2719	170M2769		315	10000	68500	55
170M2720	170M2770		350	13500	91500	60
170M2721	170M2771		400	18000	125000	70

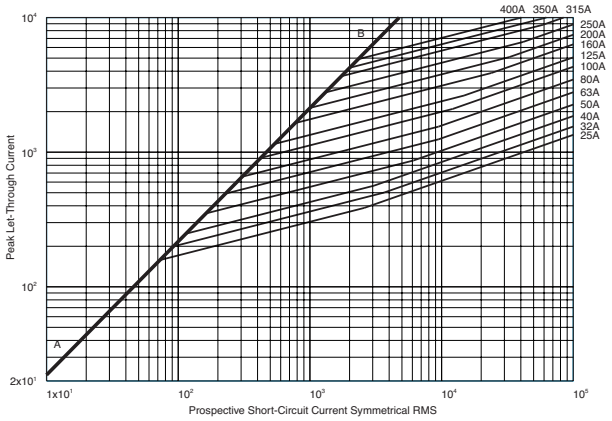
• Watts loss provided at rated current.
• Microswitch indicator ordered separately. See accessories on pages 179-180.

Size 00 — 25-400A: 690V

Time-Current Curve



Peak Let-Through Curve



Did You Know?

Easy Internet Access to Product and Technical Information

All of the following functions are available on-line at www.cooperbussmann.com:

- Product cross-reference
- Product catalogs
- Technical specification sheets
- Current events/news releases
- Training seminar schedule
- Training modules
- Technical software solutions

Data Sheet: 72056312

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:

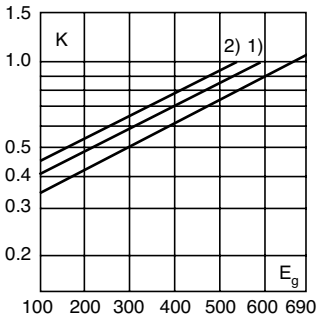
Volts: — 690Vac (IEC)
— 700Vac (UL)
Amps: — 40-2000A
IR: — 200kA RMS Sym.

Agency Information: CE, Designed and tested to IEC 60269: Part 4, UL Recognized. Consult Cooper Bussmann for UL Recognition / CSA Component Acceptance Status.

Electrical Characteristics

Total Clearing I^2t

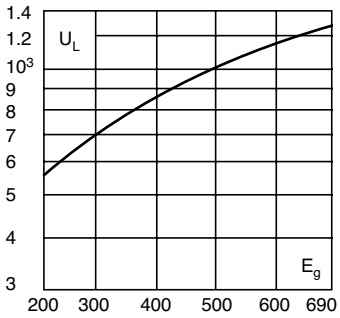
The total clearing I^2t at rated voltage and at power factor of 15% are given in the electrical characteristics. For other voltages, the clearing I^2t is found by multiplying by correction factor, K, given as a function of applied working voltage, E_g, (rms).



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

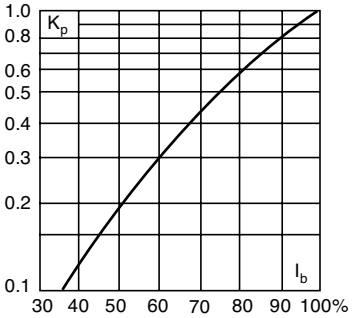
Arc Voltage

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

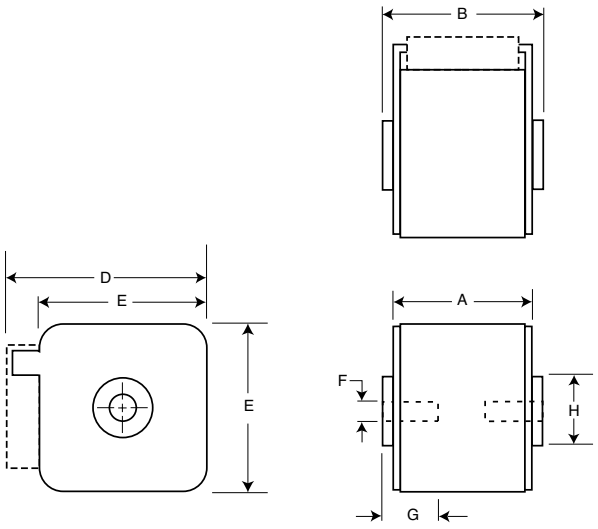
- DC common bus
- DC drives
- Power converters/rectifiers
- Reduced voltage starters

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

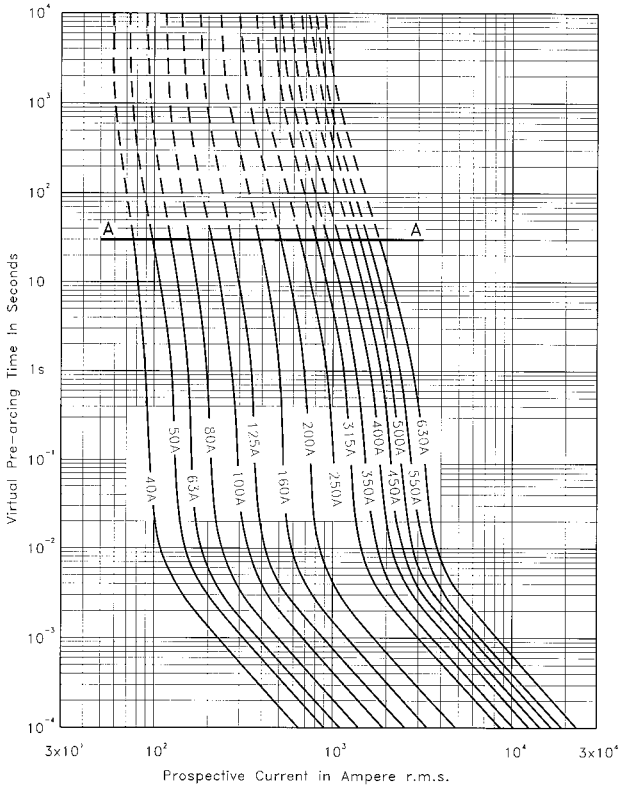
Catalog Numbers					Electrical Characteristics			
						I^2t (A^2 Sec)		
-B/- Visual Indicator	-BKN/- Type K Indicator for Micro	-G/- Visual Indicator	-GKN/- Type K Indicator for Micro	Size	Rated Current RMS-Amps	Pre-arc	Clearing at 660V	Watts Loss
170M3408	170M3458	170M3508	170M3558	1*	40	40	270	9
170M3409	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		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	1	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		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	2	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		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	3	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		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 179-180.

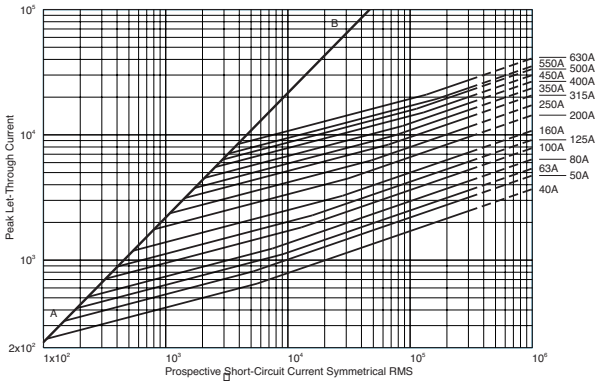
Square body flush end contact — 690V/700V (IEC/UL): 40-2000A

Size 1* — 40-630A: 690V

Time-Current Curve



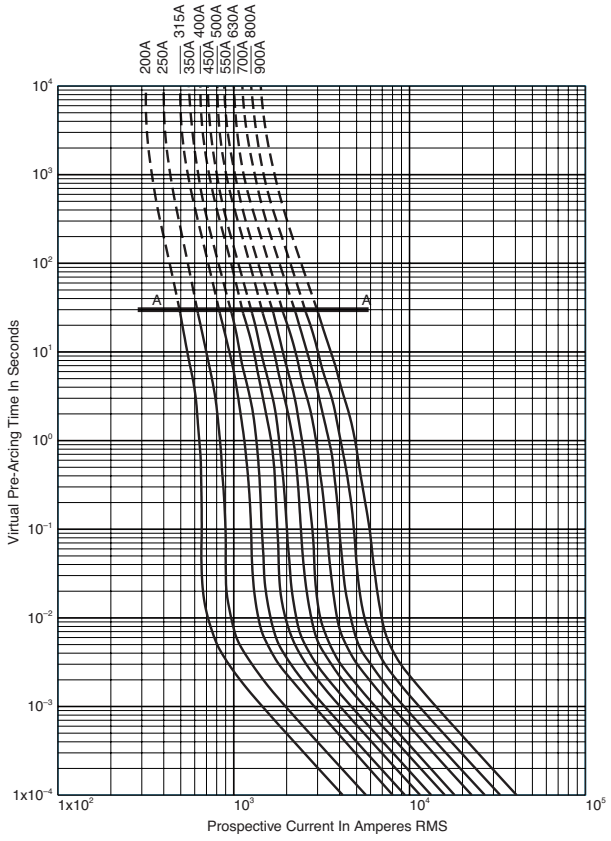
Peak Let-Through Curve



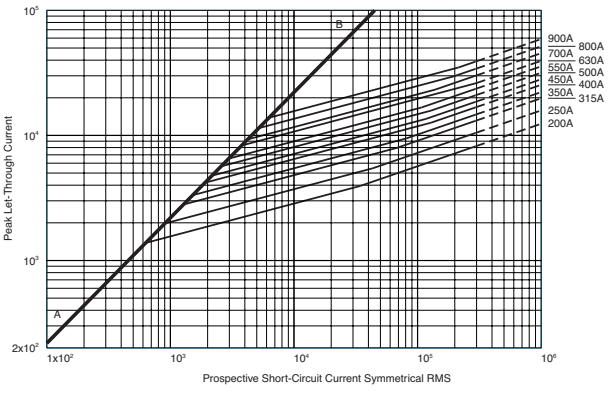
Data Sheet: 17056314

Size 1 — 200-900A: 690V

Time-Current Curve



Peak Let-Through Curve



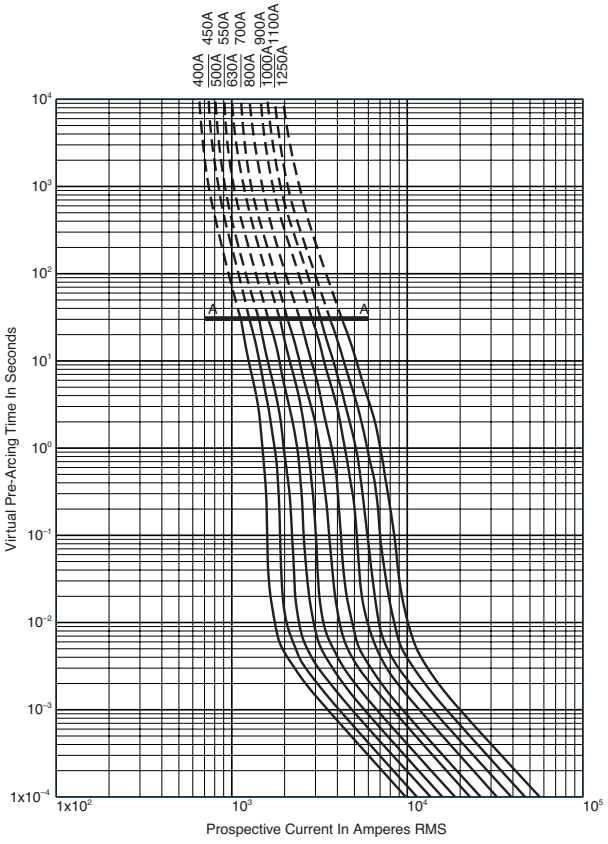
900 amp fuse is derated to 550V (IEC).

Data Sheet: 17056316

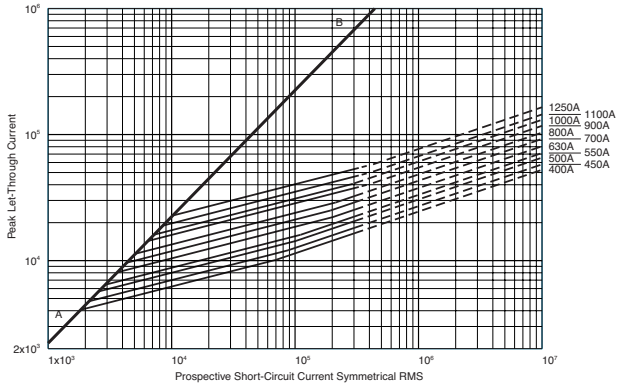
Square body flush end contact — 690V/700V (IEC/UL): 40-2000A

Size 2 — 400-1250A: 690V

Time-Current Curve



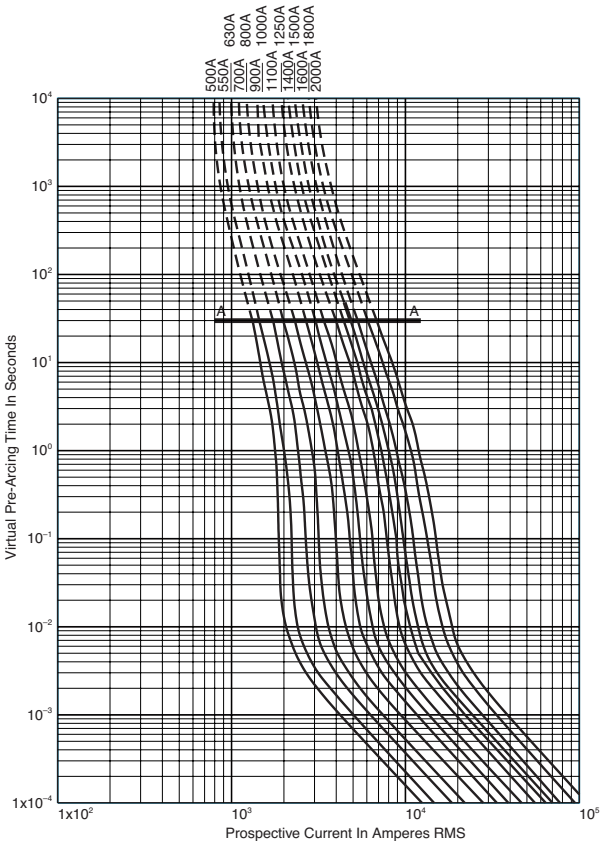
Peak Let-Through Curve



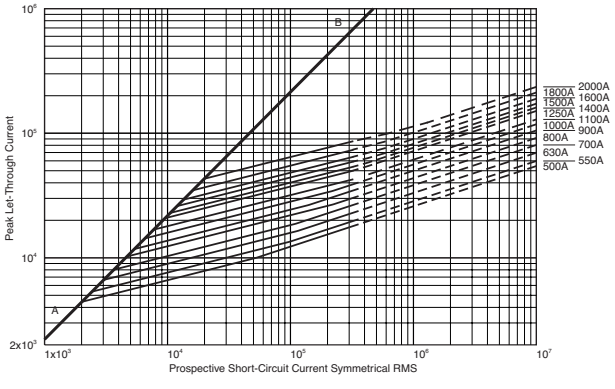
Data Sheet: 17056318

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 flush end contact — 690V (IEC): 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

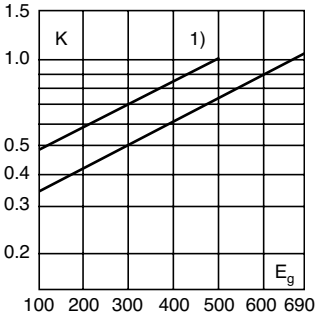
IR: — 200kA RMS Sym.

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

Electrical Characteristics

Total Clearing I²t

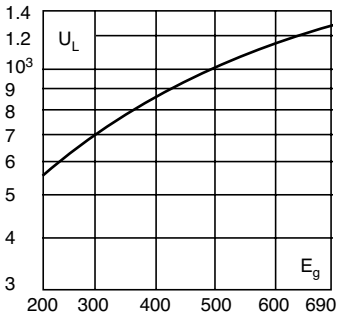
The total clearing I²t at rated voltage and at power factor of 15% are given in the electrical characteristics. For other voltages, the clearing I²t is found by multiplying by correction factor, K, given as a function of applied working voltage, E_g, (rms).



1) Rated voltage 500V

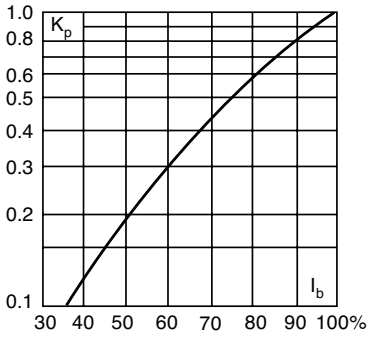
Arc Voltage

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

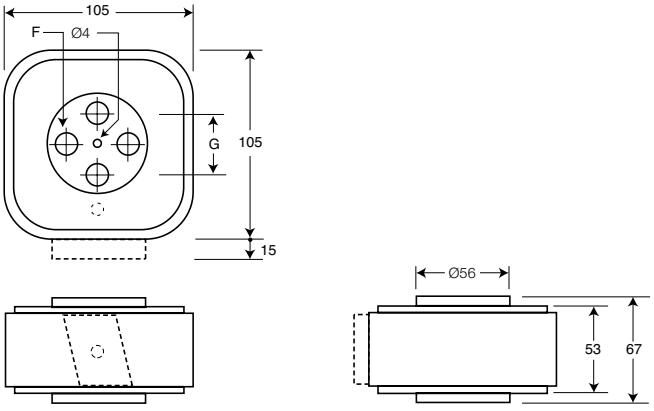
- DC common bus
- DC drives
- Power converters/rectifiers
- Reduced voltage starters

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



Square body flush end contact — 690V (IEC): 1000-4000A

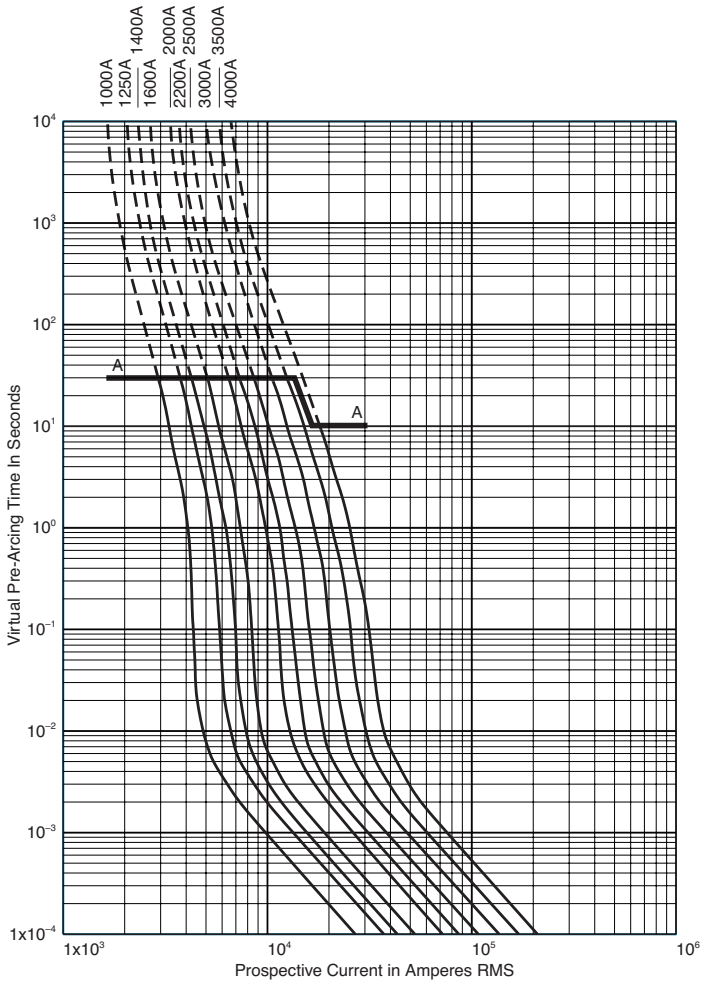
Catalog Numbers

Catalog Numbers					Electrical Characteristics					
					Rated Current RMS		I2t (A2 Sec)		Watts Loss	
-B/- Visual Indicator	-BKN/- Type K Indicator for Micro	-G/- Visual Indicator	-GKN/- Type K Indicator for Micro	Size	Norm. Cool.	Liquid Cool.	Pre-arc	Clearing at 660V	Norm. Cool.	Liquid Cool.
170M7058	170M7078	170M7098	170M7118	4	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		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

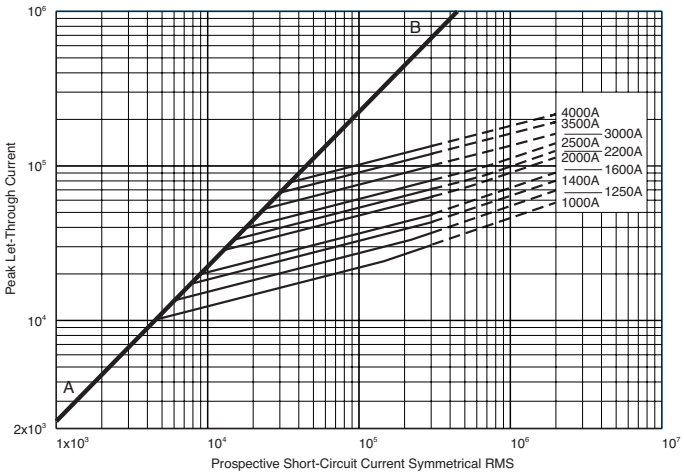
†Rated voltage (IEC) 500V.
• Watts loss provided at rated current.
• Liquid Cool. = Liquid cooling. Temperature on the terminals not to exceed 60°C.
• Microswitch indicator ordered separately. See accessories on pages 179-180.

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 — 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

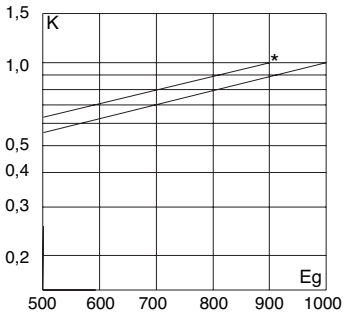
IR: — 150kA (Est.300kA) RMS Sym.

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

Electrical Characteristics

Total clearing I²t

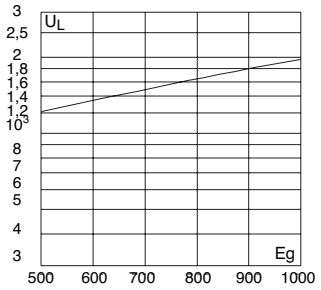
The total clearing I²t at rated voltage and at power factor of 15% are given in the electrical characteristics. For other voltages, the clearing I²t is found by multiplying by correction factor, K, given as a function of applied working voltage, E_g, (rms).



*Rated voltage 900V

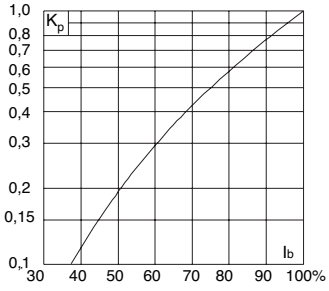
Arc Voltage

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

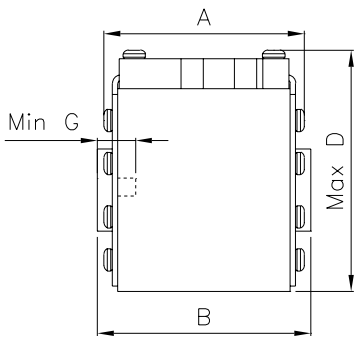
Dimensions (mm)

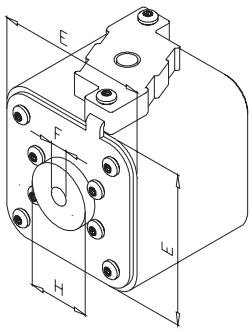
Type –BKN/- and –GKN/-

Size	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
1	BKN/75+GKN/75	73.2	74	69	52	M8	5/16" – 18 UNC-2B	8	ø20
2	BKN/75+GKN/75	73.2	74.4	77	59	M10	3/8" – 16 UNC-2B	10	ø24
3	BKN/75+GKN/75	73.3	75.4	92	74	M12	1/2" – 13 UNC-2B	10	ø30
3	BKN/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				
					I²t (A² 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	1*	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		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	1	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		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	2	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		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	3	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		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.

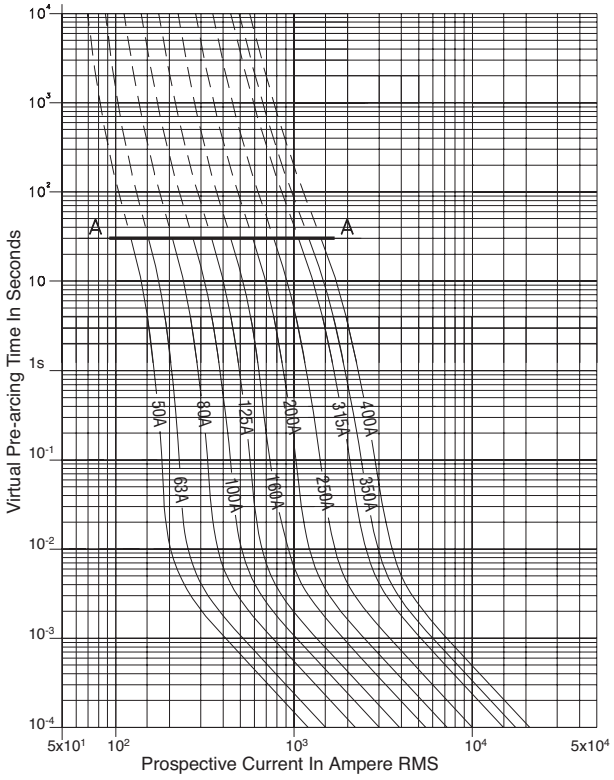
• Watts loss provided at rated current.

• Microswitch ordered separately. See accessories on page 179-180.

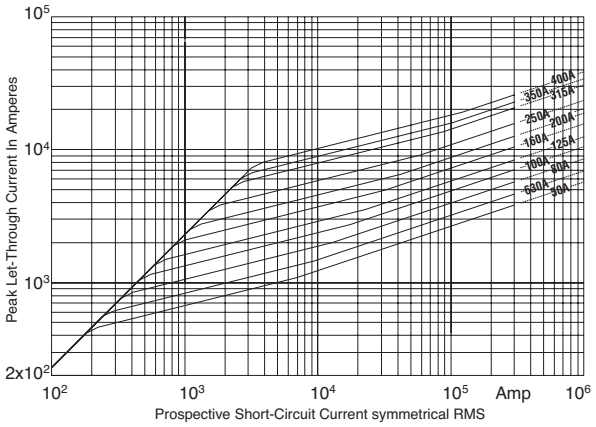
Square body flush end contact — 1000V (IEC): 50–1400A

Size 1* — 50-400A: 1000V

Time-Current Curve



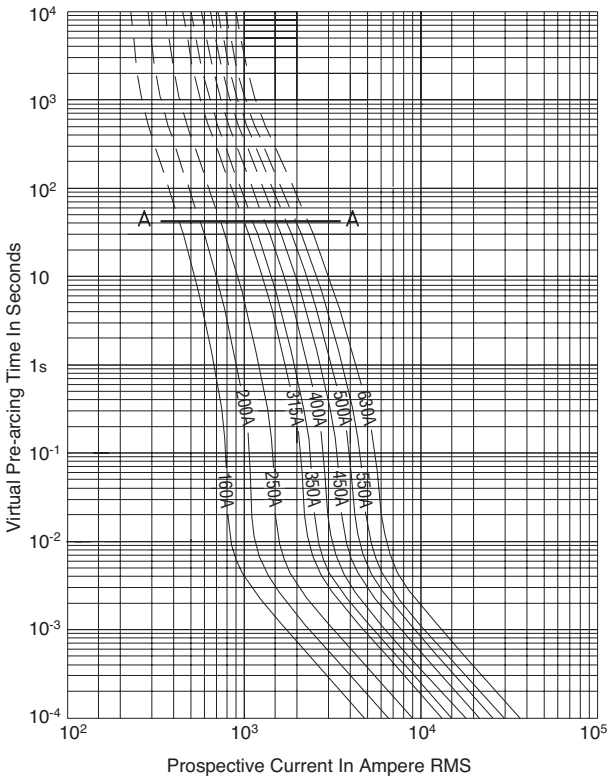
Peak Let-Through Curve



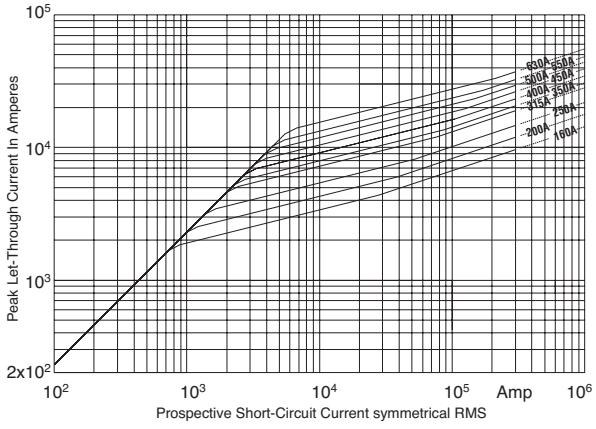
Data Sheet: 17058564

Size 1 — 160-630A: 1000V

Time-Current Curve



Peak Let-Through Curve

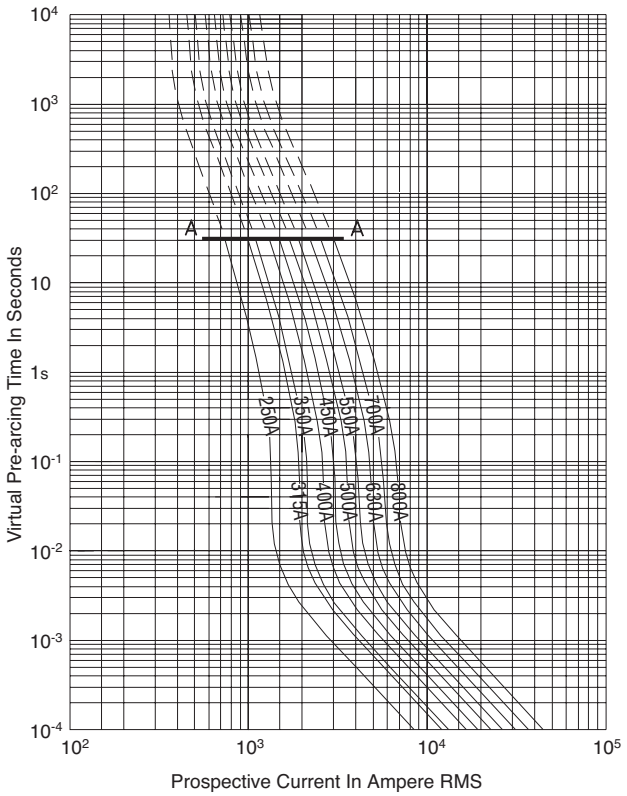


Data Sheet: 17058566

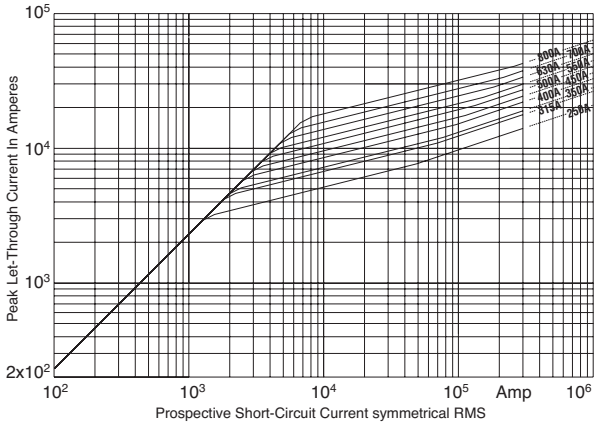
Square body flush end contact — 1000V (IEC): 50–1400A

Size 2 — 250-800A: 1000V

Time-Current Curve



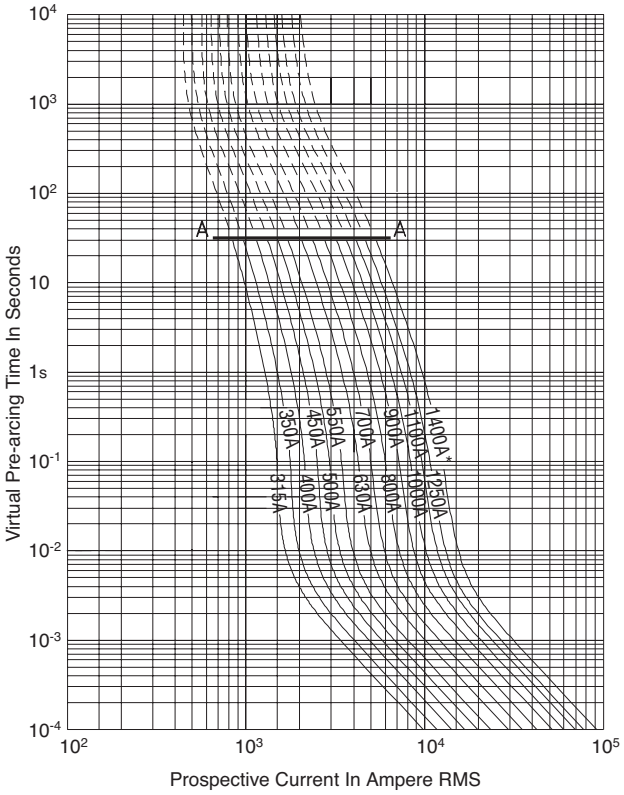
Peak Let-Through Curve



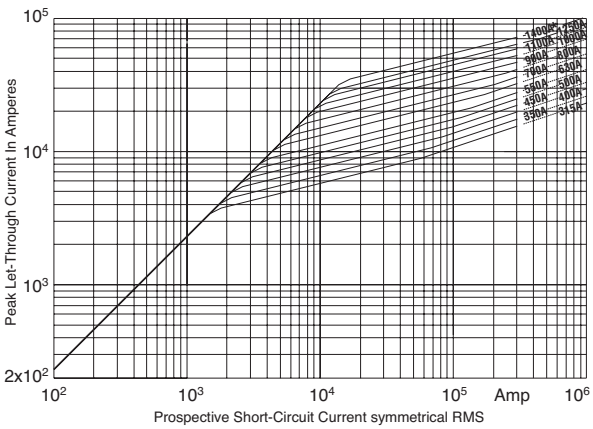
Data Sheet: 17058568

Size 3 — 315-1400A: 1000V

Time-Current Curve



Peak Let-Through Curve



* 1400A fuses are derated to 900V

Data Sheet: 17058570

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:

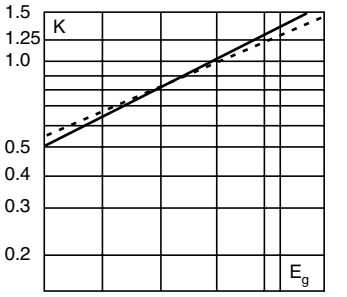
Volts: — 1250Vac (IEC)
— 1300Vac (UL)
Amps: — 50-1400A
IR: — 100kA RMS Sym.

Agency Information: CE, Designed and tested to IEC 60269: Part 4, UL Recognized. Consult Cooper Bussmann for UL Recognition/CSA Component Acceptance status.

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).

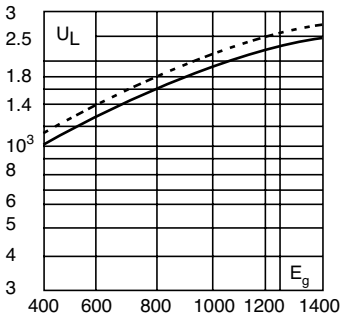


Dashed lines (- - - - - -) apply to the following amperages:.

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

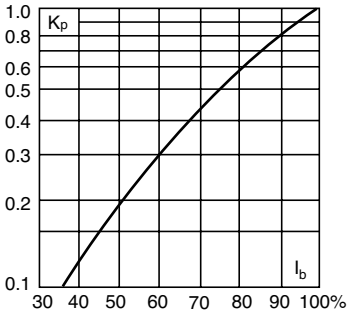
Arc Voltage

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

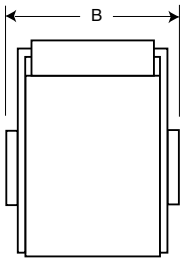
- DC common bus
- DC drives
- Power converters/rectifiers
- Reduced voltage starters

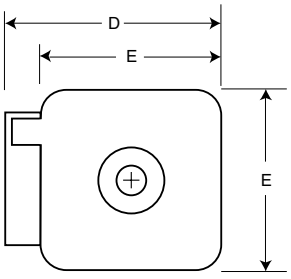
Dimensions (mm)

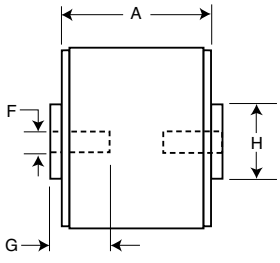
Type -BKN/-, -GKN/-

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

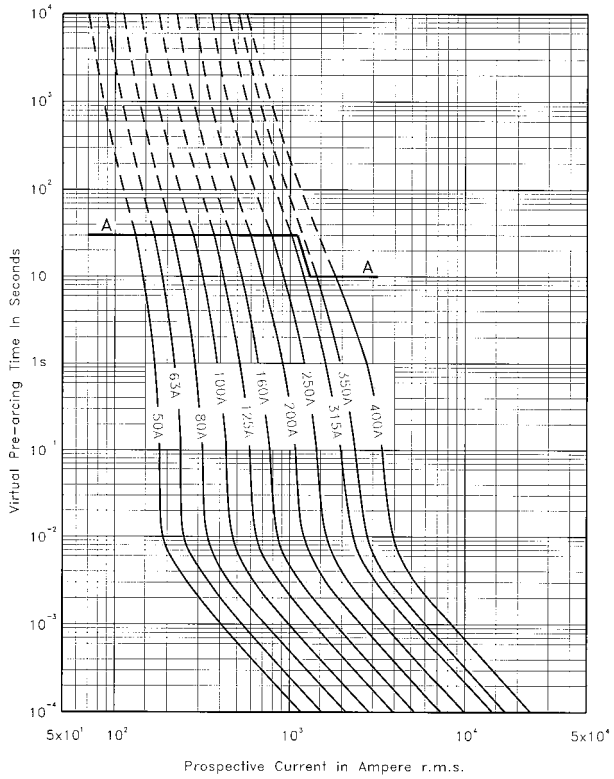
Catalog Numbers						Electrical Characteristics				
-BKN/75 Type K Indicator for Micro	-BKN/80 Type K Indicator for Micro	-BKN/90 Type K Indicator for Micro	-GKN/75 Type K Indicator for Micro	-GKN/90 Type K Indicator for Micro	Size	Rated Current RMS-Amps	I2t (A2 Sec) Pre-arc	I2t (A2 Sec) Clearing at 1000V	I2t (A2 Sec) Clearing at 1250V	Watts Loss
170M3388	170M3438		170M3488		1*	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			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		1	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			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		2	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		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		3	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		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 179-180.

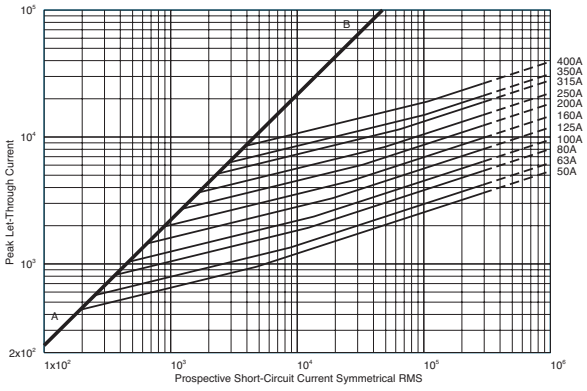
Square body flush end contact — 1250V/1300V (IEC/UL): 50-1400A

Size 1* — 50-400A:1250V

Time-Current Curve



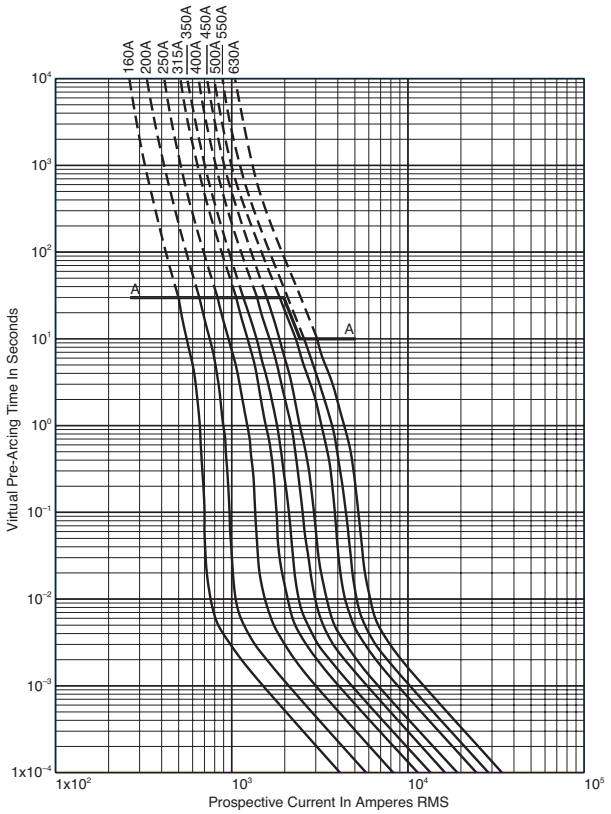
Peak Let-Through Curve



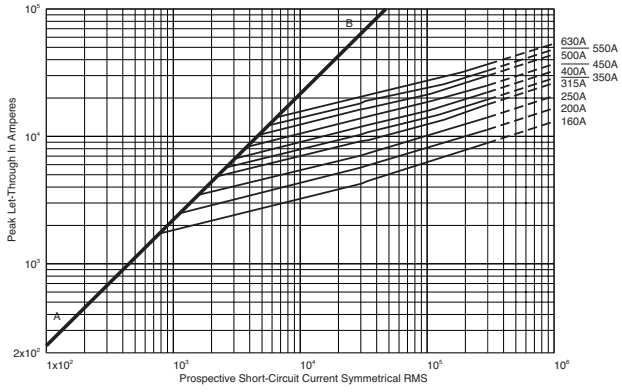
Data Sheet: 17056630

Size 1 — 160-630A: 1250V

Time-Current Curve



Peak Let-Through Curve



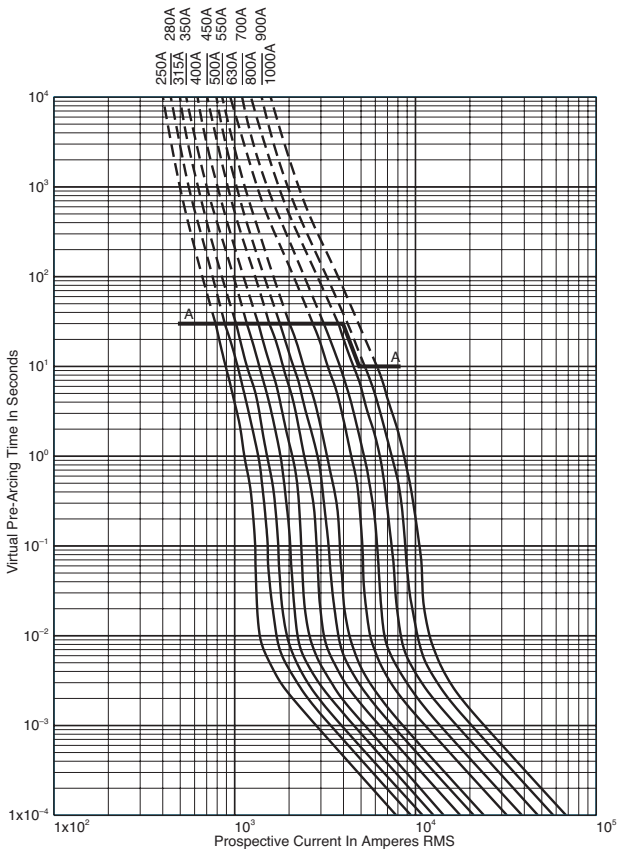
630A fuse is derated to 1100V (IEC).

Data Sheet: 17056632

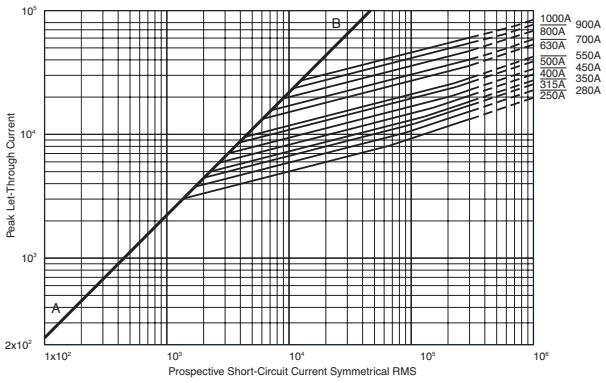
Square body flush end contact — 1250V/1300V (IEC/UL): 50-1400A

Size 2 — 250-1000A: 1250V

Time-Current Curve



Peak Let-Through Curve

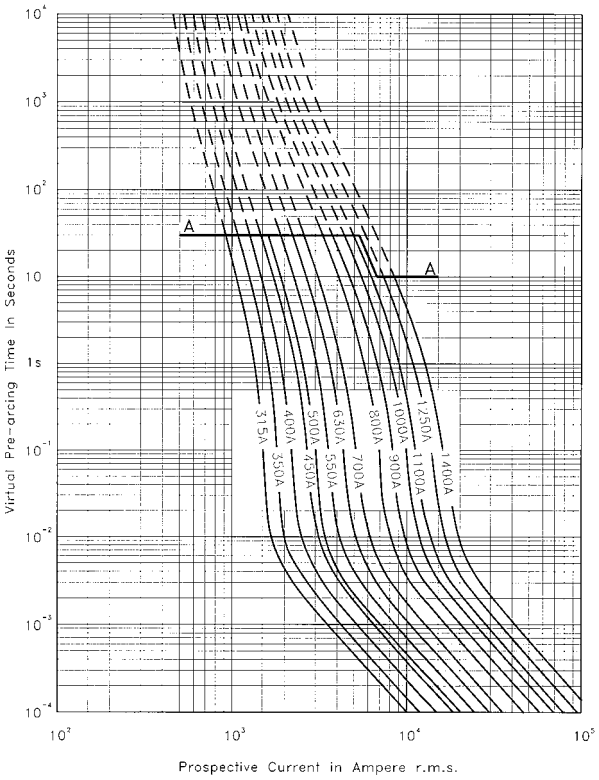


900-1000A fuses are derated to 1100V (IEC).

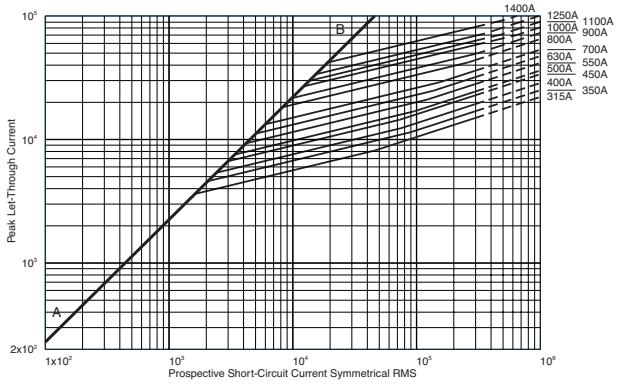
Data Sheet: 17056634

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 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

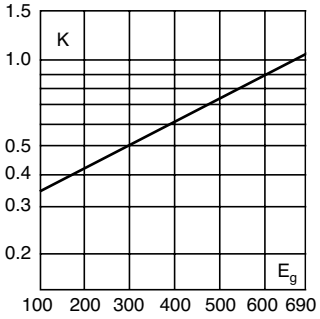
IR: — 200kA RMS Sym.

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

Electrical Characteristics

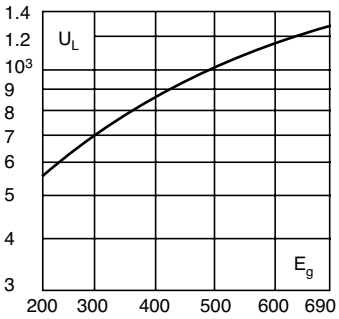
Total Clearing I^2t

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).



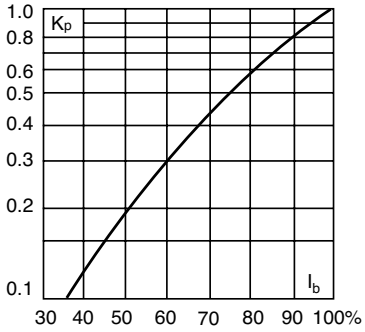
Arc Voltage

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

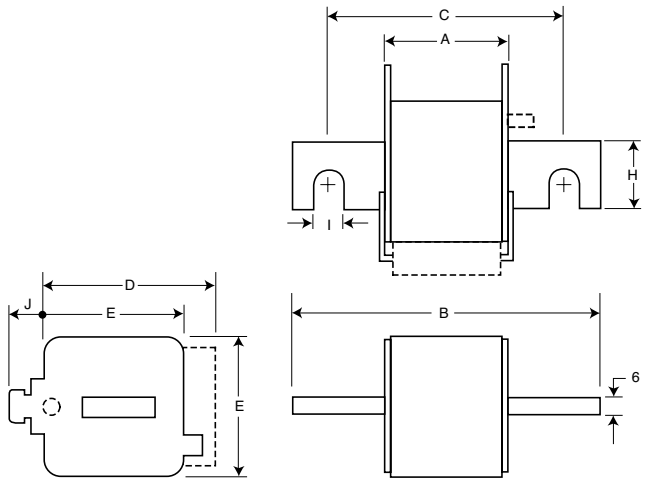
- DC common bus
- DC drives
- Power converters/rectifiers
- Reduced voltage starters

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

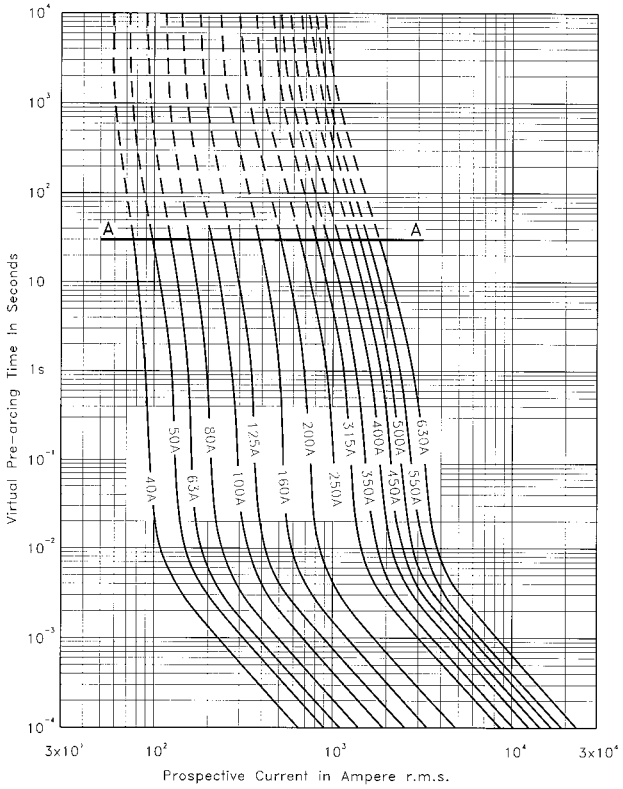
Catalog Numbers			Electrical Characteristics			
-E/ Type T Indicator For Micro	-EKN/- Type K Indicator for Micro	Size	Rated Current RMS-Amps	I2t (A2 Sec) Pre-arc	I2t (A2 Sec) Clearing at 660V	Watts Loss
170M3308	170M3358	1*	40	40	270	9
170M3309	170M3359		50	77	515	11
170M3310	170M3360		63	115	770	14
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		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	1	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		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	2	400	11000	74000	65
170M5309	170M5359		450	15500	105000	70
170M5310	170M5360		500	21500	145000	75
170M5311	170M5361		550	28000	190000	80
170M5312	170M5362		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	3	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		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 179-180.

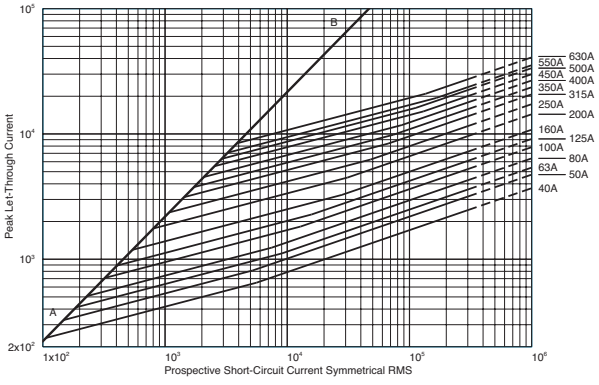
Square Body French Style — 690V/700V (IEC/UL): 40-1500A

Size 1* — 40-630A: 690V

Time-Current Curve



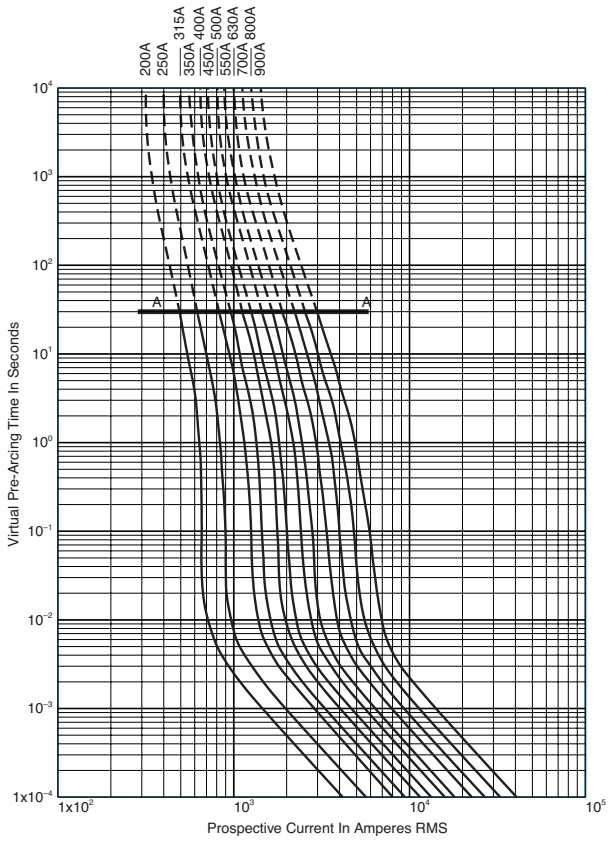
Peak Let-Through Curve



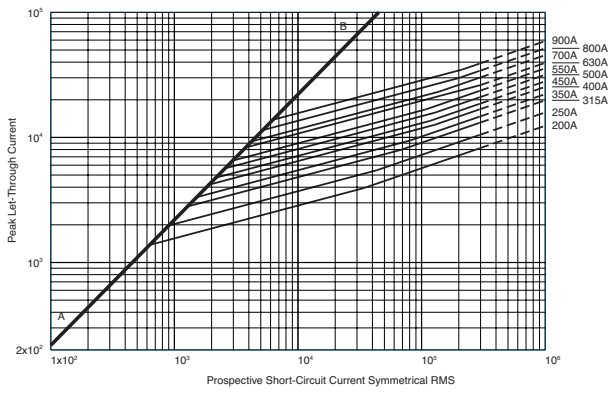
Data Sheet: 17056314

Size 1 — 200-900A: 690V

Time-Current Curve



Peak Let-Through Curve

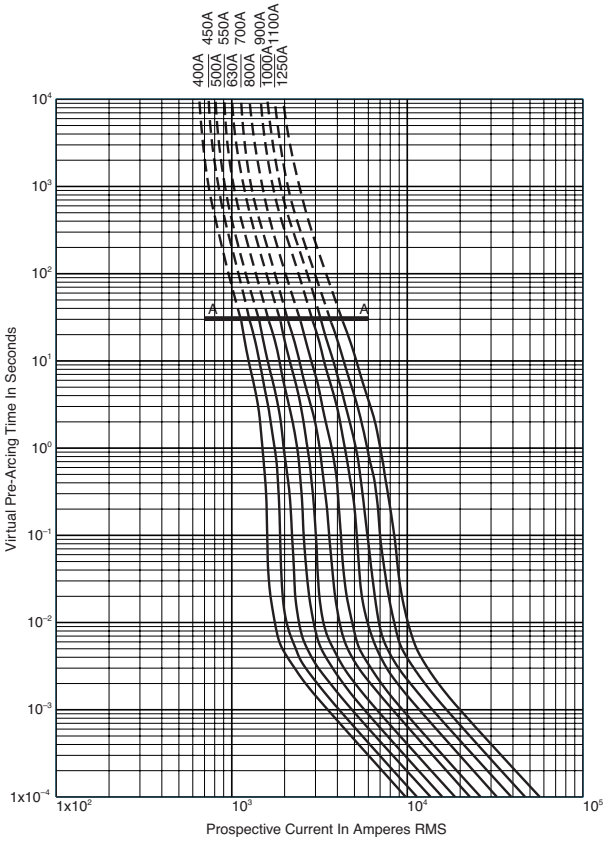


Data Sheet: 17056316

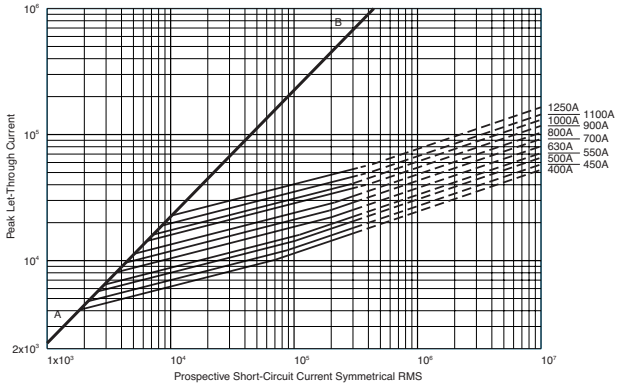
Square Body French Style — 690V/700V (IEC/UL): 40-1500A

Size 2 — 400-1250A: 690V

Time-Current Curve



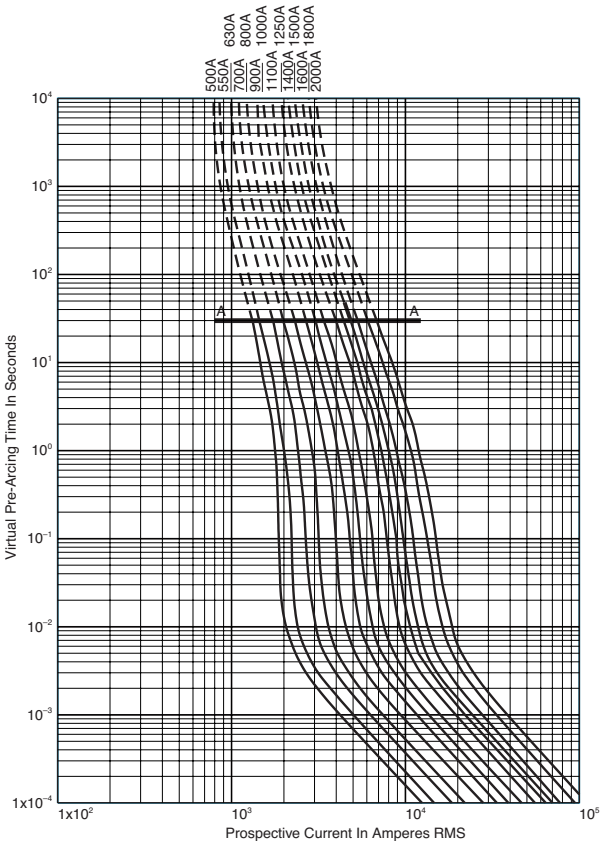
Peak Let-Through Curve



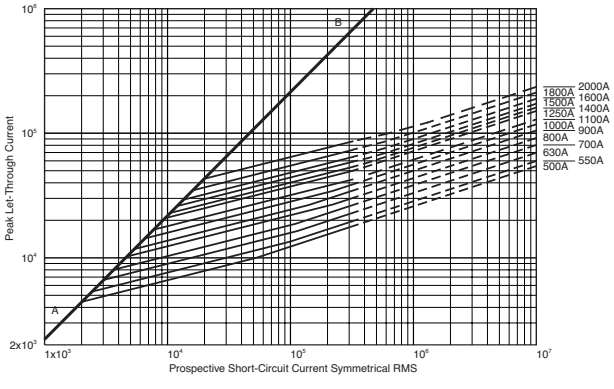
Data Sheet: 17056318

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

COOPER Bussmann

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:

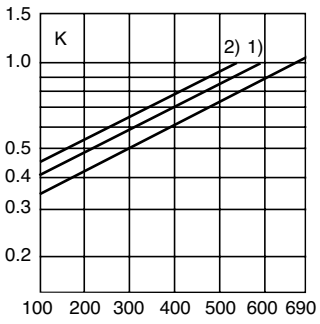
Volts: — 690Vac (IEC)
— 700Vac (UL)
Amps: — 40-200A
IR: — 200kA RMS Sym.

Agency Information: CE, Designed and tested to IEC 60269: Part 4, UL Recognized. Consult Cooper Bussmann for UL Recognition/ CSA Component Acceptance status.

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).



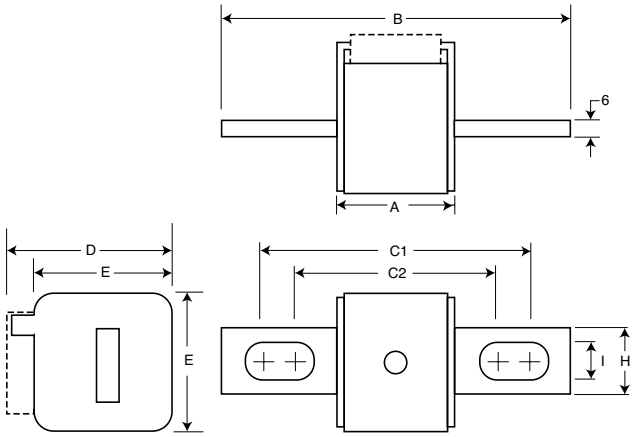
1) Rated voltage 600V.
2) Rated voltage 550V

Dimensions (mm)

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

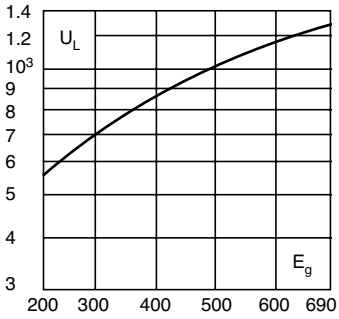
Size	A	B	B**	C1	C1**	C2	C2**	D	E	H	I
1*	50	110	148	85	123	72	110	59	45	20	10
1	50	136	157	104	126	78	100	69	53	25	14
2	50	135	159	105	125	78	99	77	61	25	14
3	51	135	155	106	125	77	97	92	76	36	16

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



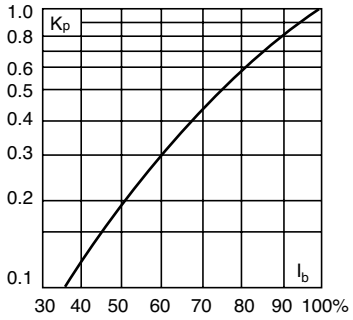
Arc Voltage

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

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

Catalog Numbers

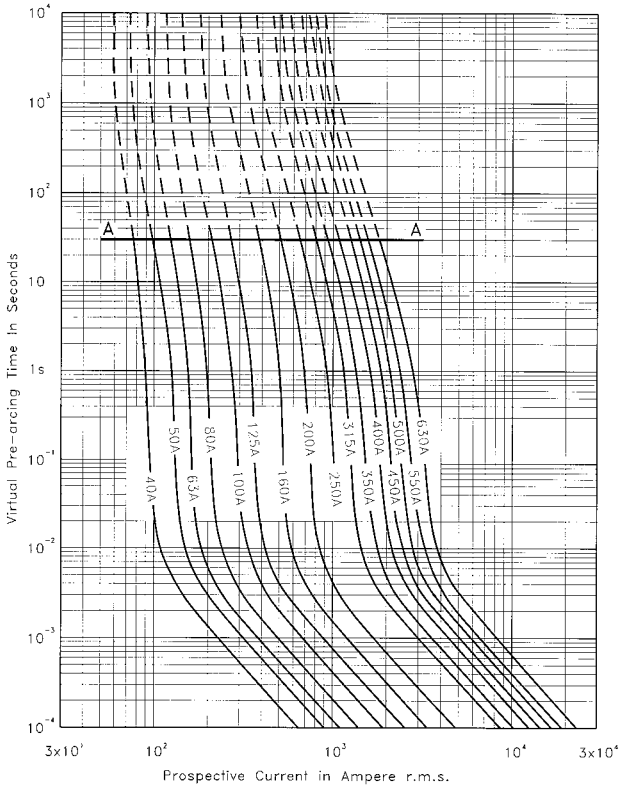
Catalog Numbers					Electrical Characteristics			
						I^2t (A^2 Sec)		
-FU/- Without Indicator	-FKE/- Type K Indicator for Micro	-FU/115 Without Indicator	-FKE/115 Type K Indicator for Micro	Size	Rated Current RMS-Amps	Pre-arc	Clearing at 660V	Watts Loss
170M3608	170M3658	170M3708	170M3758	1*	40	40	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		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	1	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		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	2	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		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	3	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		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 179-180.

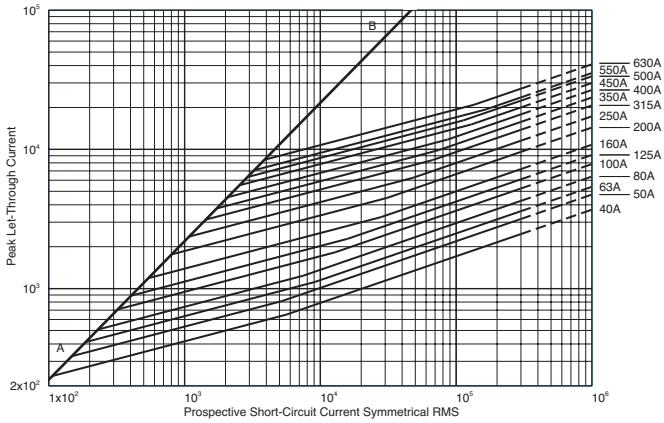
Square body US style — 690V/700V (IEC): 40-2000A

Size 1* — 40-630A: 690V

Time-Current Curve



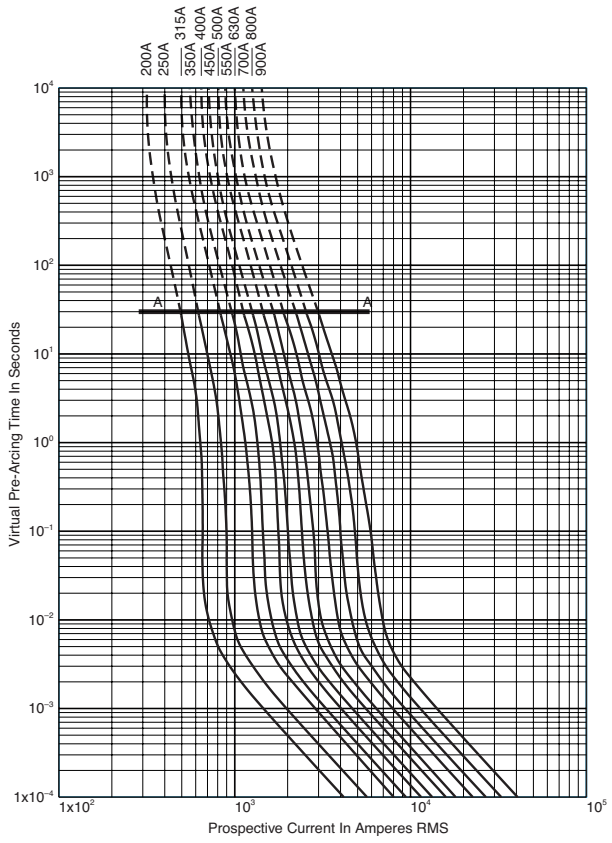
Peak Let-Through Curve



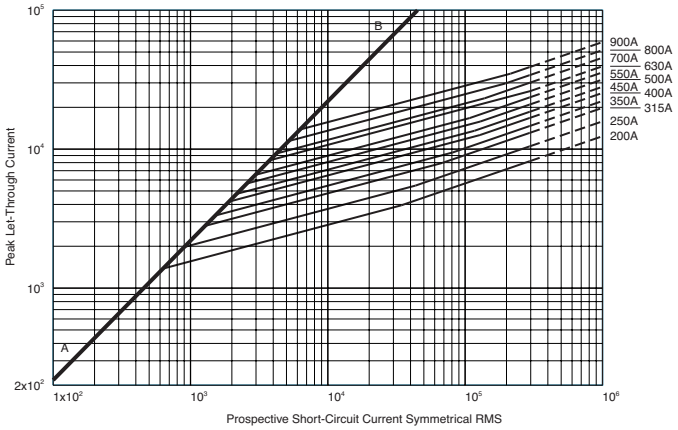
Data Sheet: 17056314

Size 1 — 200-900A: 690V

Time-Current Curve



Peak Let-Through Curve

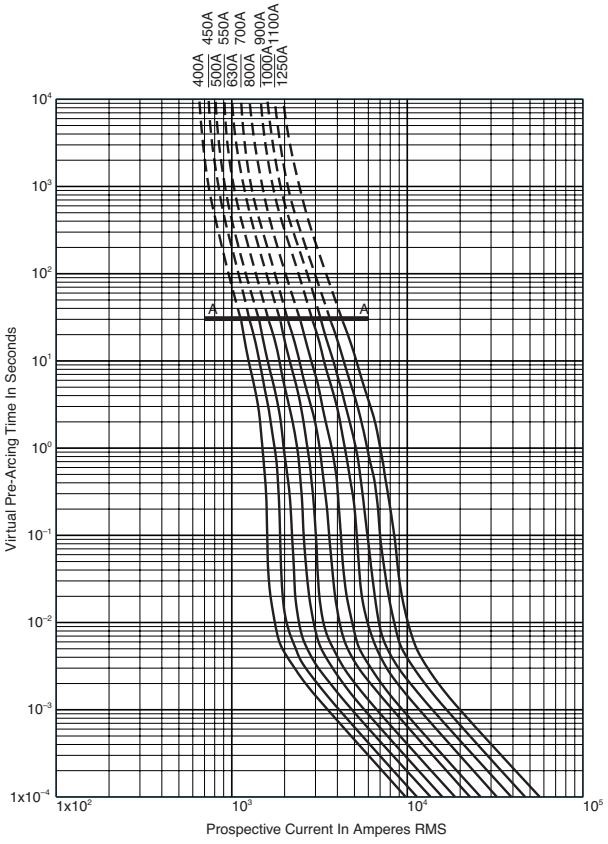


Data Sheet: 17056316

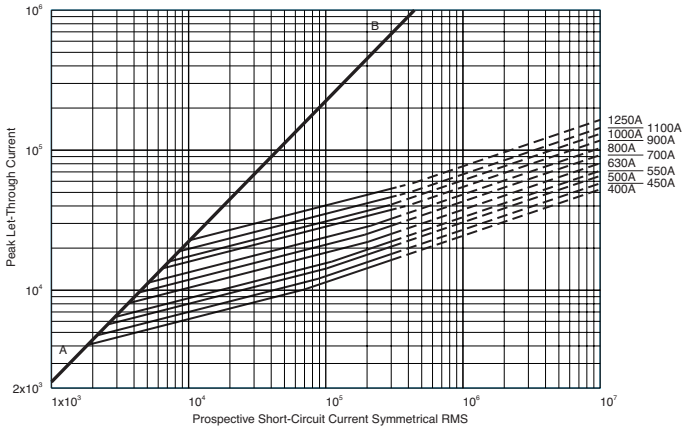
Square body US style — 690V/700V (IEC): 40-2000A

Size 2 — 400-1250A: 690V

Time-Current Curve



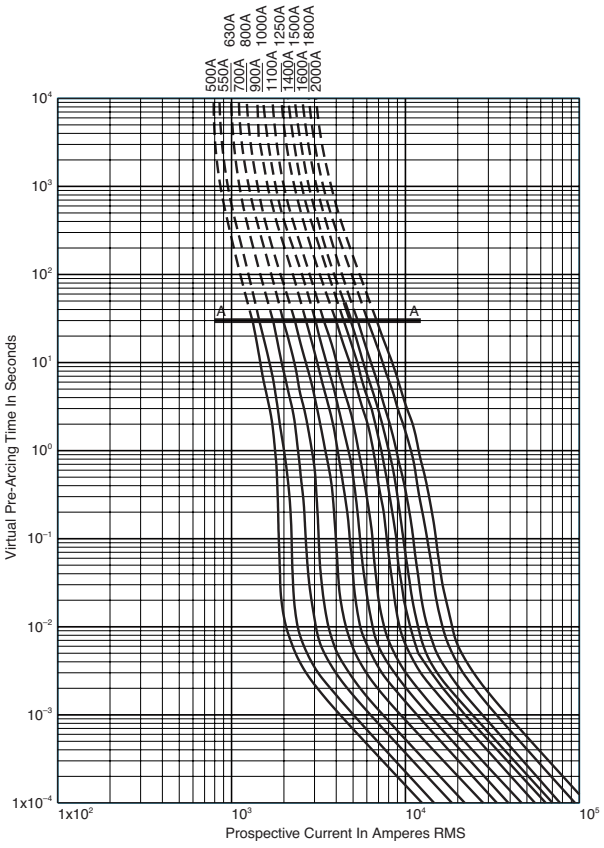
Peak Let-Through Curve



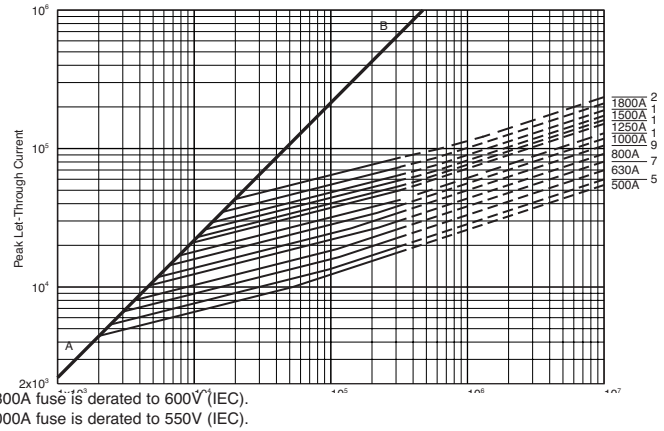
Data Sheet: 17056318

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 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

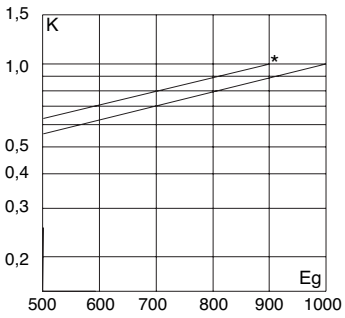
IR: — 150kA RMS Sym.

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

Electrical Characteristics

Total clearing I²t

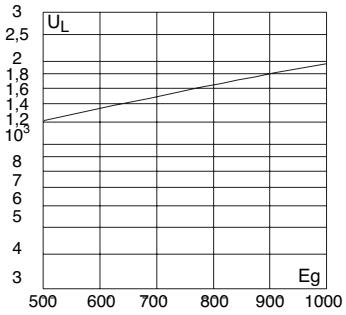
The total clearing I²t at rated voltage and at power factor of 15% are given in the electrical characteristics. For other voltages, the clearing I²t is found by multiplying by correction factor, K, given as a function of applied working voltage, E_g, (rms).



*Rated voltage 900V

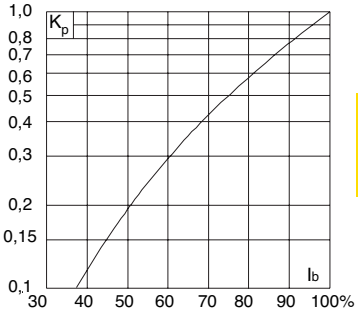
Arc Voltage

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

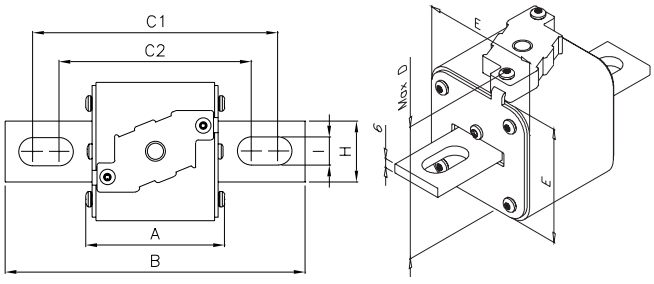
- DC common bus
- DC drives
- Power converters/rectifiers
- Reduced voltage starters

Dimensions (mm)

Type –FKE/115

Size	Type	B	C1	C2	D	E	H	I
1*	FKE/115	156	130	101	59	45	20	10
1	FKE/115	160	127	102	69	53	25	14
2	FKE/115	160	127	102	77	61	25	14
3	FKE/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	I²t (A² Sec) Pre-arc	I²t (A² Sec) Clearing at 1000V	Watts Loss
170M3531	1*	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		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	1	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		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	2	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		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	3	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		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 page 179-180.

Did You Know?

Cooper Bussmann® Fuse Installation Enables Food Processor To Meet Manufacturing Demand

When one of America's largest retailers requested a special packaging size from Beech-Nut baby foods, the company developed a new packaging system with motors and drives having state-of-the-art overcurrent protection.

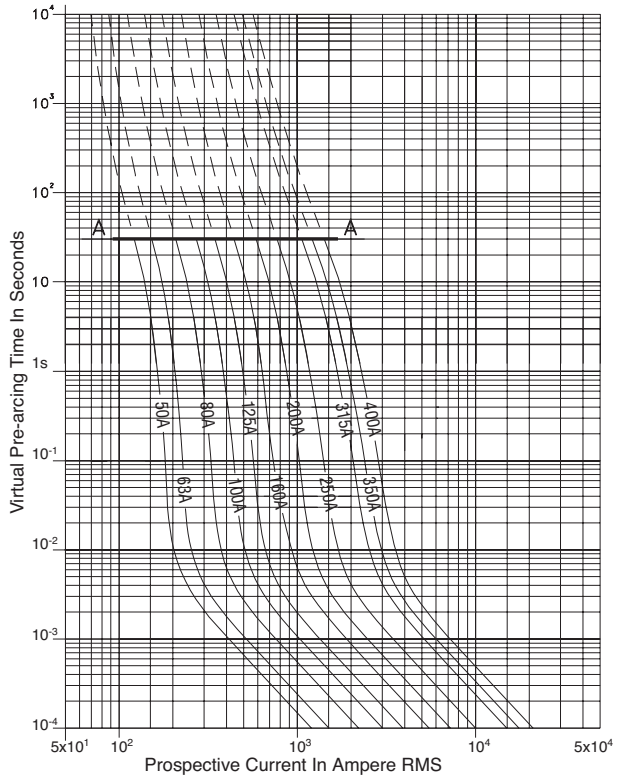
The maintenance staff required a fuse system that was DIN-rail mountable for ease of installation with open fuse indication and a finger-safe design. And, the most important need was to use current-limiting overcurrent protection to minimize the arc-flash hazard to plant personnel in accordance with NFPA 70E guidance. The plant's associate electrical engineer chose the Cooper Bussmann® CUBEFuse® compact design because it would save time laying out and building the sub panel. He was looking for components that were easy to wire and would be part of a sub panel system that would be easy to maintain over time.

The fuse panel utilizes 39 three-pole, 10A CUBEFuse sets. The fuse holders snap onto an easy to install 35mm DIN rail versus time-consuming drilling and tapping mounting holes for all the fuse holders. The panel has a total of 117 fuse installations with expansion room up to 147 units.

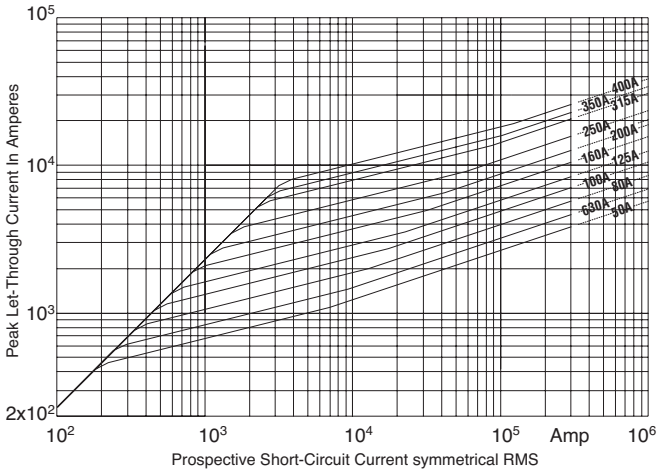
Square body US style — 1000V (IEC): 50-1400A

Size 1* — 50-400A: 1000V

Time-Current Curve



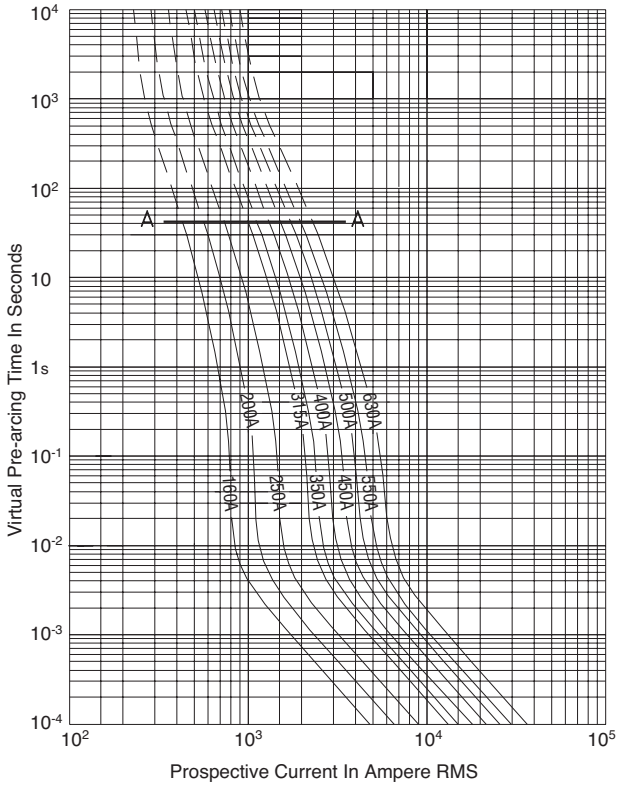
Peak Let-Through Curve



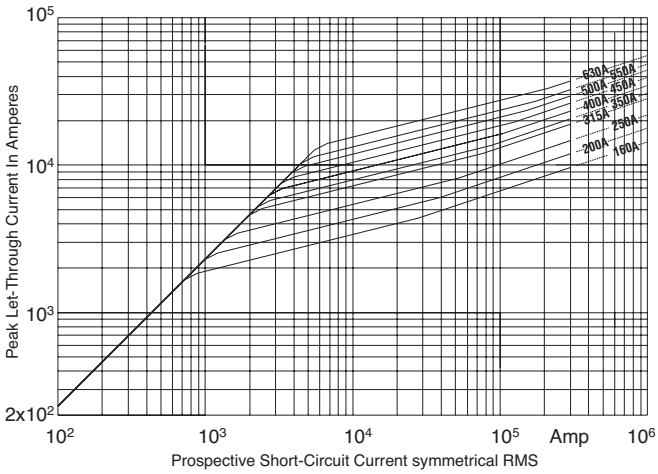
Data Sheet: 17058564

Size 1 — 160-630A: 1000V

Time-Current Curve



Peak Let-Through Curve

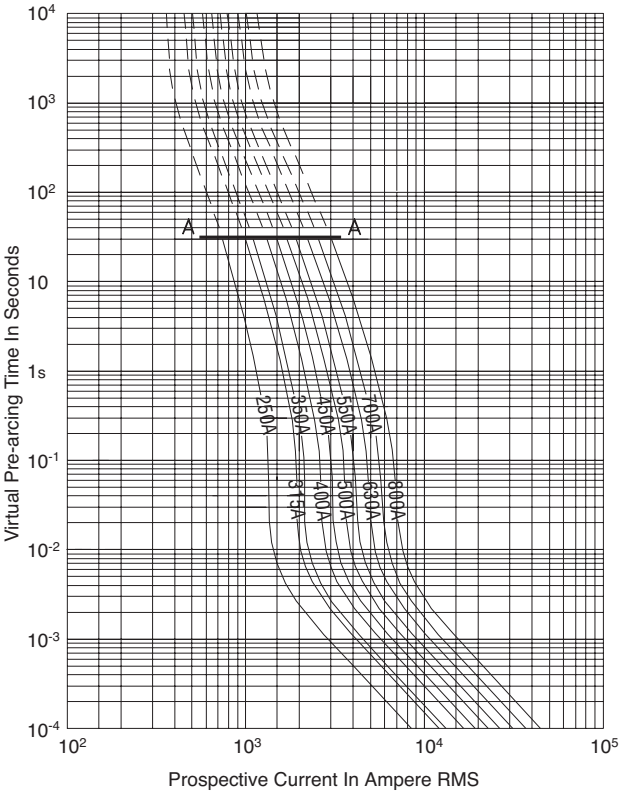


Data Sheet: 17058566

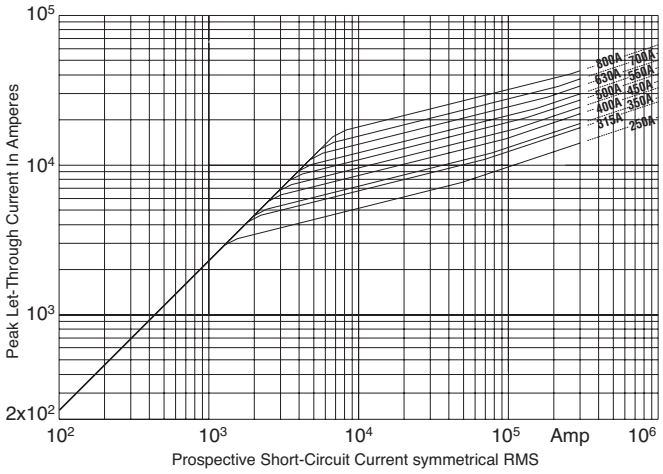
Square body US style — 1000V (IEC): 50-1400A

Size 2 — 250-800A: 1000V

Time-Current Curve



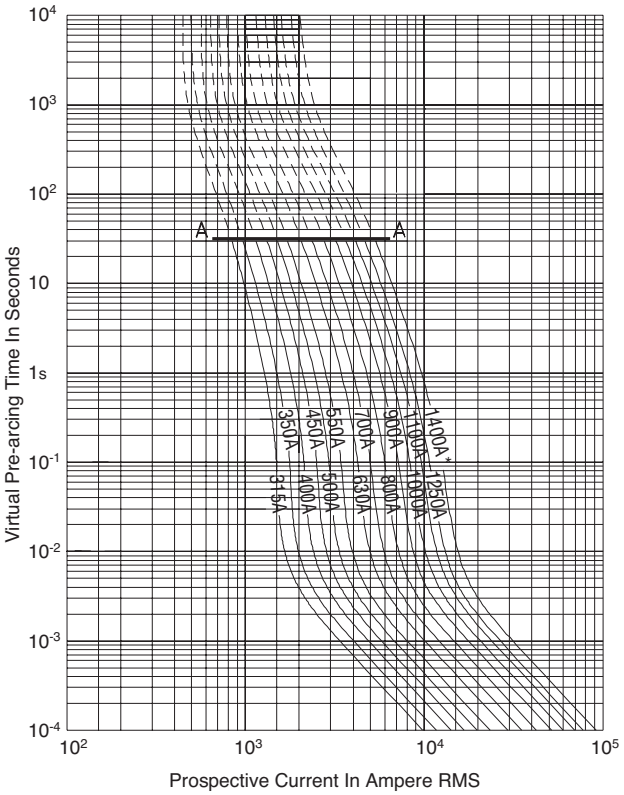
Peak Let-Through Curve



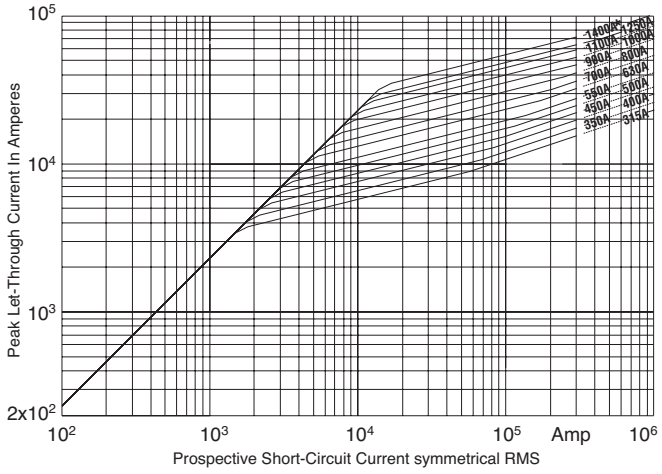
Data Sheet: 17058568

Size 3 — 315-1400A: 1000V

Time-Current Curve



Peak Let-Through Curve



* 1400A fuses are derated to 900V

Data Sheet: 17058570

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

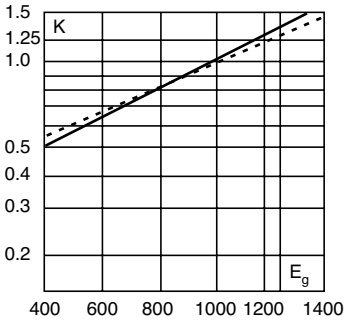
IR: — 100kA RMS Sym.

Agency Information: CE, Designed and tested to IEC 60269: Part 4, UL Recognized. Consult Cooper Bussmann for UL Recognition/CSA Component Acceptance 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).



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

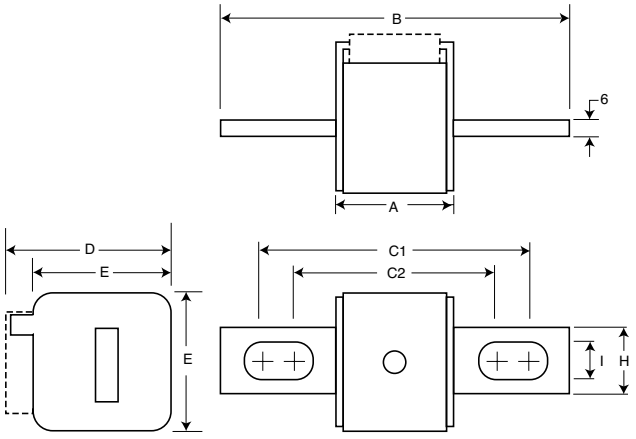
Size	Amps.
1*	400A
1	500-630A
2	630-1000A
3	800-1400A

Dimensions (mm)

Type -FU/115, -FKE/115

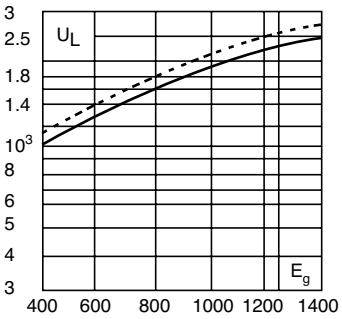
Size	B	C1	C2	D	E	H	I
1*	156	130	101	59	45	20	10
1	160	127	102	69	53	25	14
2	160	127	102	77	61	25	14
3	159	128	101	92	76	36	16

1mm = 0.0394" / 1" = 25.4mm



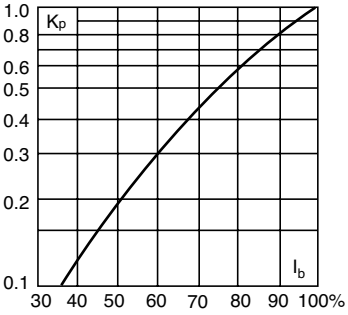
Arc Voltage

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

Square body US style — 1250V/1300V (IEC/UL): 50-1400A

Catalog Numbers

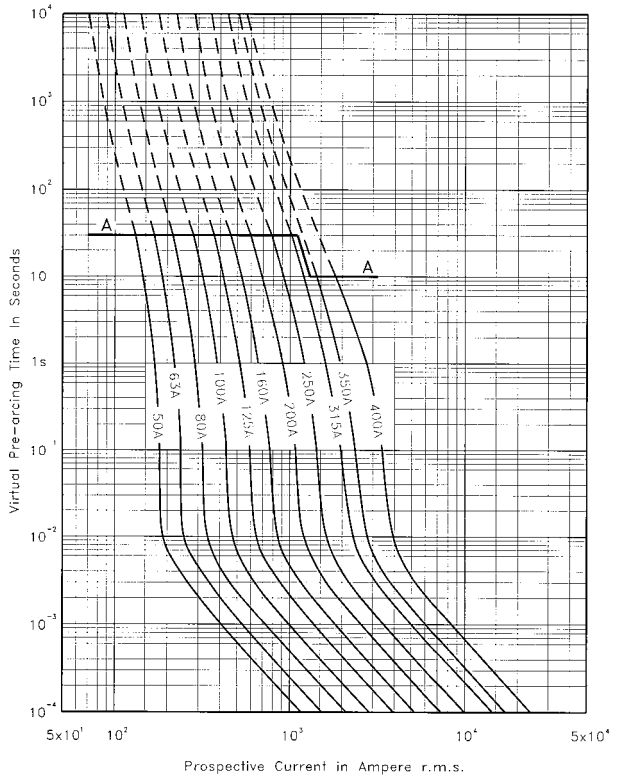
Catalog Numbers			Electrical Characteristics				
				I^2t (A^2 Sec)			
-FU/115 Without Indicator	-FKE/115 Type K Indicator for Micro	Size	Rated Current RMS-Amps	Pre-arc	Clearing at 1000V	Clearing at 1250V	Watts Loss
170M3688	170M3738	1*	50	135	815	1100	15
170M3689	170M3739		63	215	1300	1750	20
170M3690	170M3740		80	420	2500	3350	25
170M3691	170M3741		100	750	4450	5950	30
170M3692	170M3742		125	1450	9000	11500	35
170M3693	170M3743		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	1	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		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	2	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		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	3	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		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 179-180.

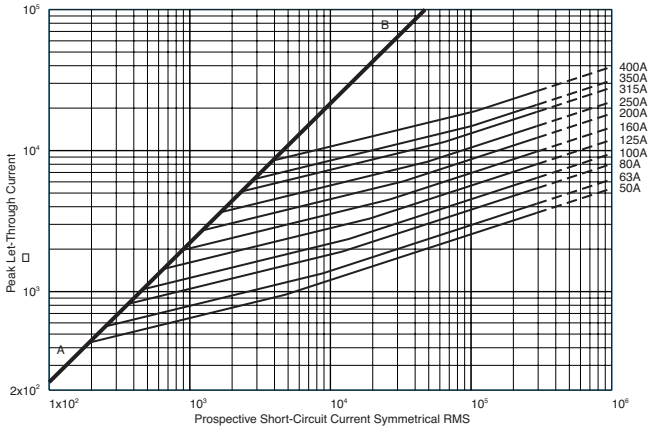
Square body US style — 1250V/1300V (IEC/UL): 0-1400A

Size 1* — 50-400A:1250V

Time-Current Curve



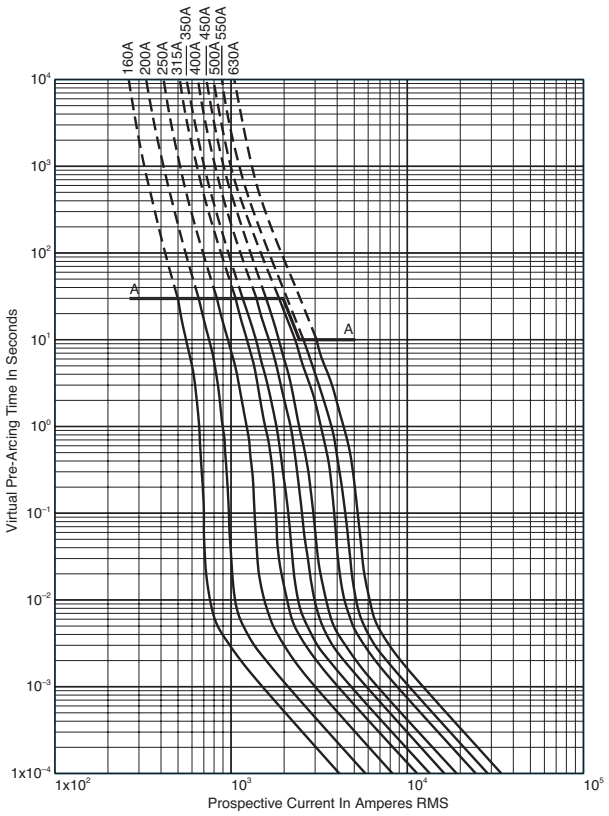
Peak Let-Through Curve



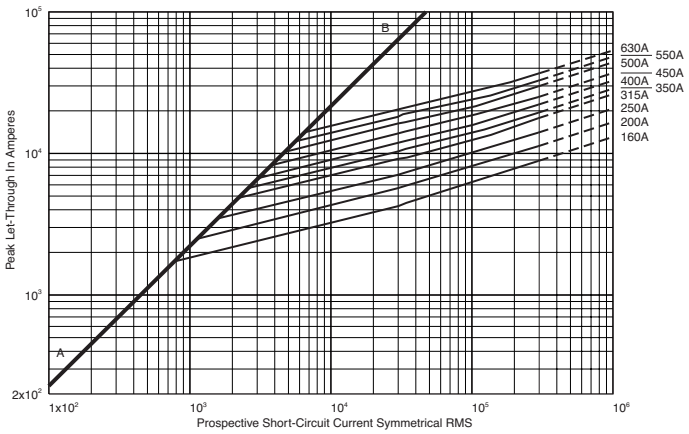
Data Sheet: 17056630

Size 1 — 160-630A: 1250V

Time-Current Curve



Peak Let-Through Curve



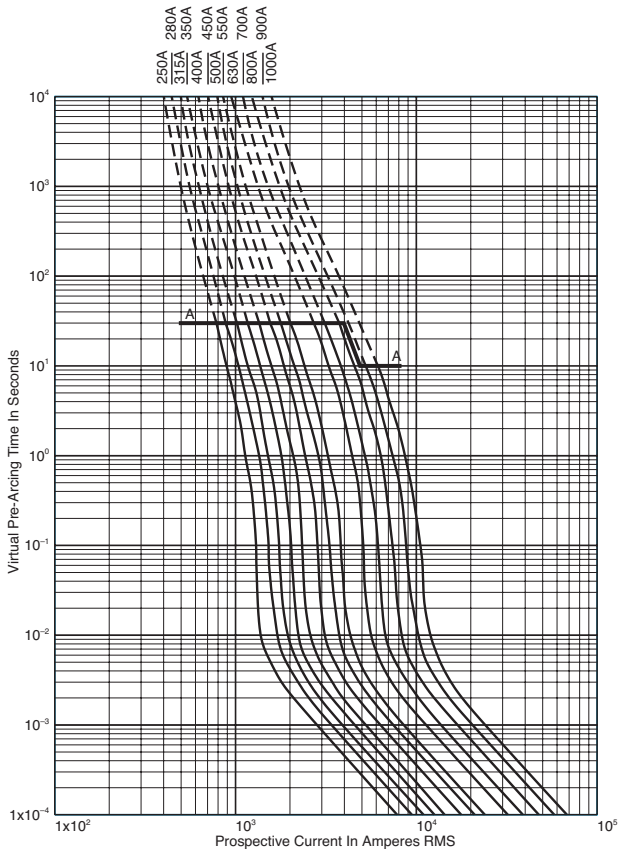
630A fuse is derated to 1100V (IEC).

Data Sheet: 17056632

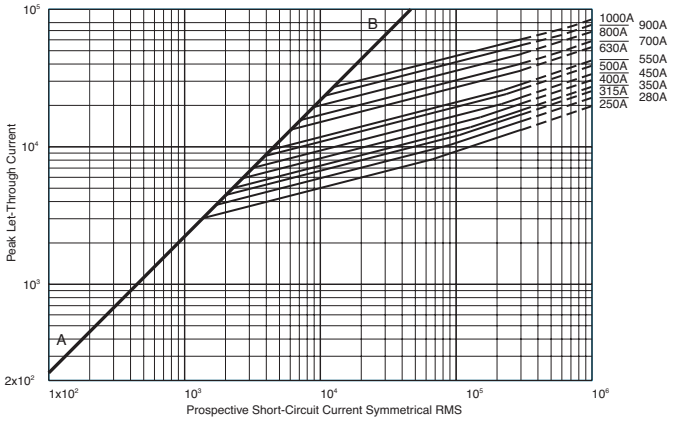
Square body US style — 1250V/1300V (IEC/UL): 0-1400A

Size 2 — 250-1000A: 1250V

Time-Current Curve



Peak Let-Through Curve

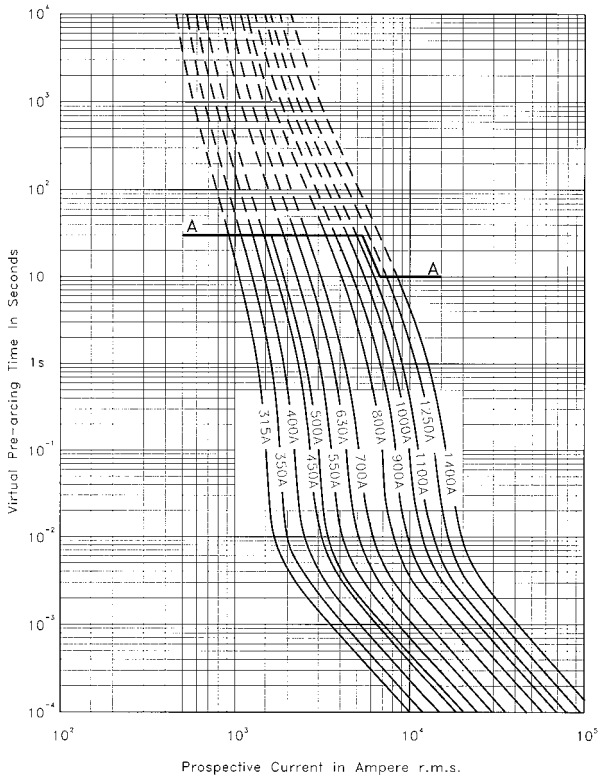


900-1000A fuses are derated to 1100V (IEC).

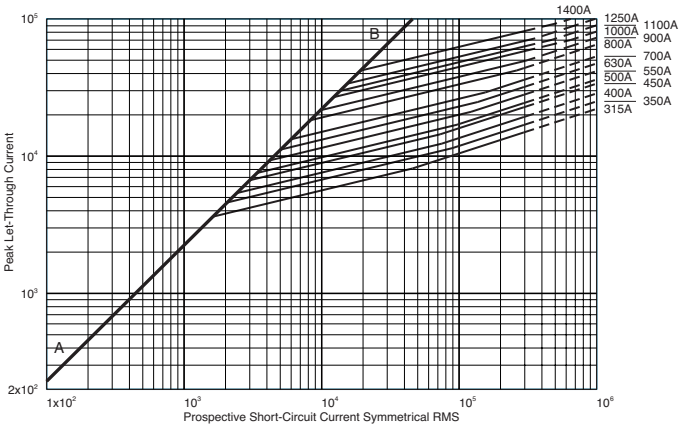
Data Sheet: 17056634

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 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

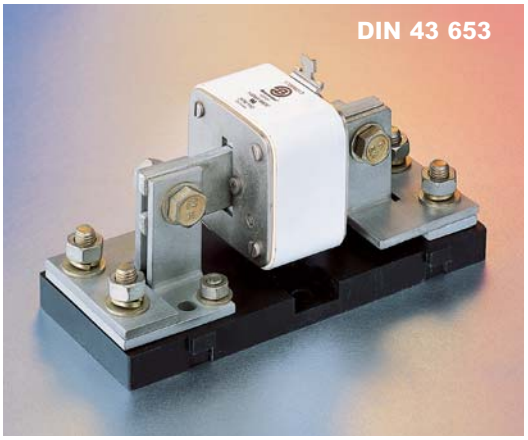
The Typower ZILOX fuses with either type T indicator or type K indicator can be equipped with a microswitch for remote electrical indication of fuse operations. All micro-switches have one normally open and one normally closed contact. Ratings are 2A, 250Vac.

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:

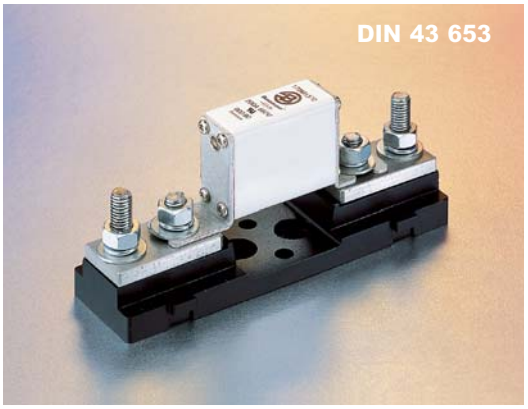
Catalog Number	Max Volts	Amp Rating	Center Distance
170H3003	1000	630	80mm
170H3004	1000	1250	80mm
170H3005	1400	630	110mm
170H3006	1400	1250	110mm

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.

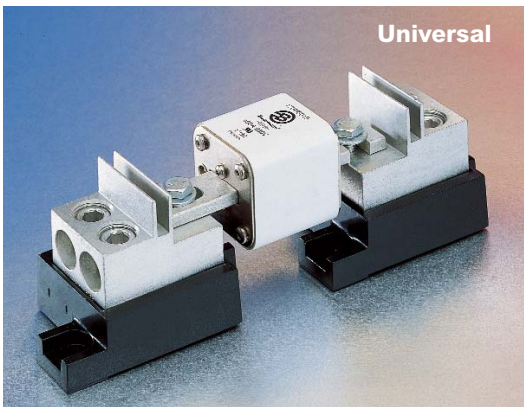


Universal Fuse Bases

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	100	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 Cooper Bussmann® sales representative for more complete ordering information.



DIN 43 620 Fuse Bases

For fuse bases used with Typower ZILOX fuses according to DIN 43 620, please contact your local Cooper Bussmann sales representative.