



Bussmann®

# High Speed Fuses

For the Protection of Power Semiconductors



February 1998

**COOPER**  
Bussmann



# North American

## Introduction



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Voltage	AC	DC	Ampere Range
130	X	X	1000-4000
150	X	X	70-1000
250	X	X	35-2500
500	X	X	35-1600
600	X	—	1-1000
700	X	X	5-1200
800	—	X	40-600
1000	X	—	35-2000

### General Information

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

- Low energy let-through (I<sup>2</sup>t)
- Low watts loss
- Superior cycling capability
- Low arc voltage
- Excellent DC performance

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

#### Voltage Rating

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

#### Accessories

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





# North American FWA 130V 1000-4000A



Type	Rated Current RMS-Amps	Electrical Characteristics			Ordering Information			Dimensions	Curves
		I <sup>2</sup> t (A <sup>2</sup> Sec)		Watts Loss	Part Number	Carton Qty.	Carton Weight (lbs)	Figure Number	See Page or (BIF #)
		Pre-arc	Clearing at 130V						
FWA 130V	1000	170000	460000	60	FWA-1000AH	1	3.3	Fig. 1	page 21 (35785301)
	1200	270000	730000	70	FWA-1200AH				
	1500	520000	1400000	78	FWA-1500AH				
	2000	860000	2400000	108	FWA-2000AH				
	2500	1500000	4100000	130	FWA-2500AH				
	3000	2100000	5700000	150	FWA-3000AH				
	4000	3400000	9200000	257	FWA-4000AH			Fig. 2	

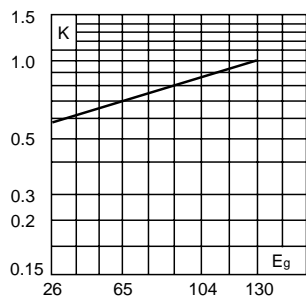
- Interrupting rating 200kA RMS Symmetrical.
- Watts loss provided at rated current.
- 130 Vdc U.L. Recognition on 1000 through 2000 amperes only.
- See accessories on page 20.

1 kg = 2.2 lbs 1 lb = 0.45 kg

## Electrical Characteristics

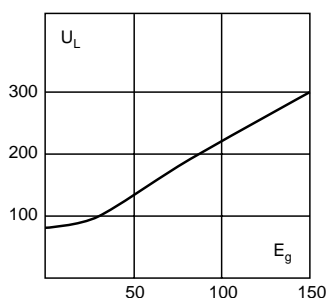
### Total Clearing I<sup>2</sup>t

The total clearing I<sup>2</sup>t at rated voltage and at power factor of 15% are given in the electrical characteristics. For other voltages, the clearing I<sup>2</sup>t is found by multiplying by correction factor, K, given as a function of applied working voltage, E<sub>g</sub>, (RMS).



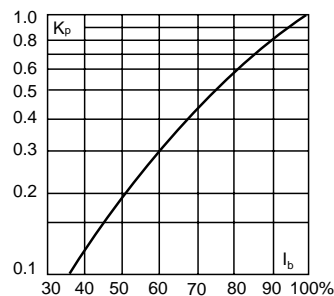
### Arc Voltage

This curve gives the peak arc voltage, U<sub>L</sub>, which may appear across the fuse during its operation as a function of the applied working voltage, E<sub>g</sub>, (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<sub>p</sub>, is given as a function of the RMS load current, I<sub>b</sub>, in % of the rated current.





North American  
**FWA 130V** 1000-4000A



**Dimensions**

Fig. 1: 1000-3000 Amp Range

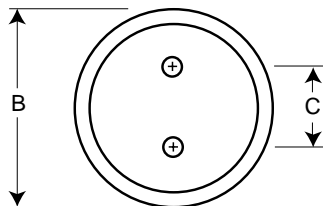
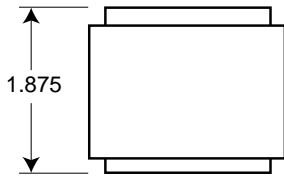
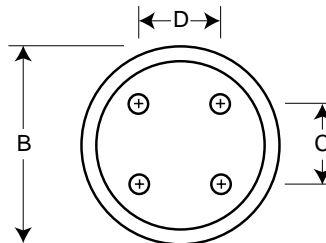
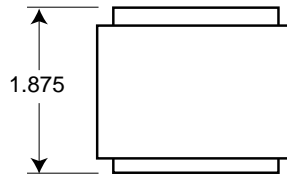


Fig. 2: 4000 Amp Range



Order #	Fig.	B	C	D	Thread Depth
FWA-1000AH-2000AH	1	2.0	1.0	—	Tapped 3/8"-24 x 1/2"
FWA-3000AH	1	3.0	1.5	—	Tapped 1/2"-20 x 1/2"
FWA-4000AH	2	3.5	1.5	1.5	Tapped 1/2"-20 x 1/2"

Dimension in inches.  
 1mm = 0.0394" 1" = 25.4mm





# North American FWA 150V 70-1000A



Type	Rated Current RMS-Amps	Electrical Characteristics			Ordering Information			Dimensions	Curves			
		I <sup>2</sup> t (A <sup>2</sup> Sec)		Watts Loss	Part Number	Carton Qty.	Carton Weight (lbs)	Figure Number	See Page or (BIF #)			
		Pre-arc	Clearing at 150V									
FWA 150V	70	470	4000	6.9	FWA-70A	1	0.18	Fig. 1	page 21 (35785310)			
	80	670	6000	7.7	FWA-80A							
	100	1200	12000	9.0	FWA-100A							
	125	1870	18000	11.2	FWA-125A							
	150	2700	26000	13.5	FWA-150A							
	200	4780	45000	17.6	FWA-200A							
	250	7470	70000	22.5	FWA-250A							
	300	10760	100000	27.0	FWA-300A							
	350	15700	140000	30.6	FWA-350A							
	400	20300	180000	35.2	FWA-400A							
	500	39000	120000	35.0	FWA-500A					5	2.42	Fig. 2
	600	46000	140000	47.0	FWA-600A							
	700	75000	220000	49.0	FWA-700A							
	800	92000	280000	58.0	FWA-800A							
1000	170000	510000	60.0	FWA-1000A								

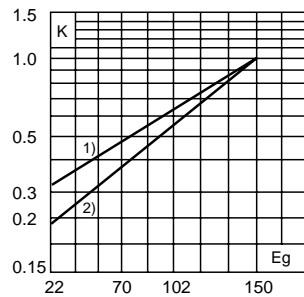
- Interrupting rating 100kA RMS Symmetrical.
- Watts loss provided at rated current.
- 150 Vdc U.L. Recognition on 70 through 800 amperes only. Consult Bussmann for additional ratings.
- See accessories on page 20.

1 kg = 2.2 lbs 1 lb = 0.45 kg

## Electrical Characteristics

### Total Clearing I<sup>2</sup>t

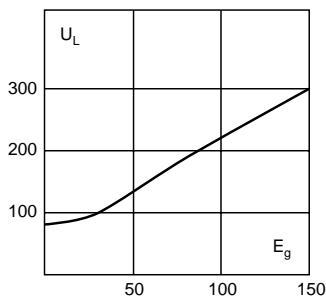
The total clearing I<sup>2</sup>t at rated voltage and at power factor of 15% are given in the electrical characteristics. For other voltages, the clearing I<sup>2</sup>t is found by multiplying by correction factor, K, given as a function of applied working voltage, E<sub>g</sub>, (RMS).



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

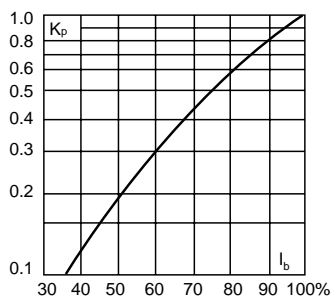
### Arc Voltage

This curve gives the peak arc voltage, U<sub>L</sub>, which may appear across the fuse during its operation as a function of the applied working voltage, E<sub>g</sub>, (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<sub>p</sub>, is given as a function of the RMS load current, I<sub>b</sub>, in % of the rated current.





North American  
**FWA 150V 70-1000A**

**Dimensions**

Fig. 1: 70-400 Amp Range

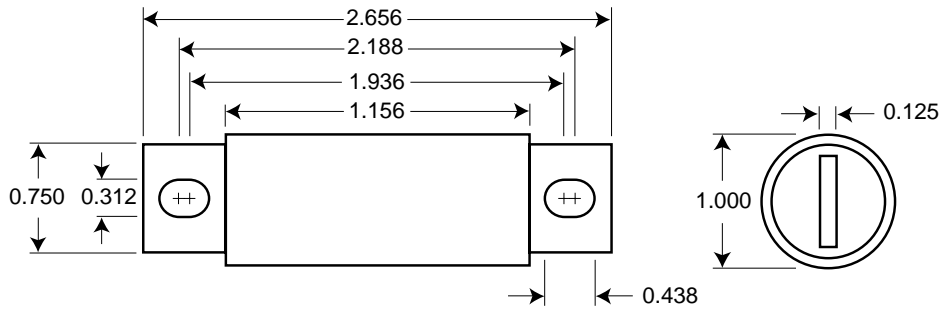
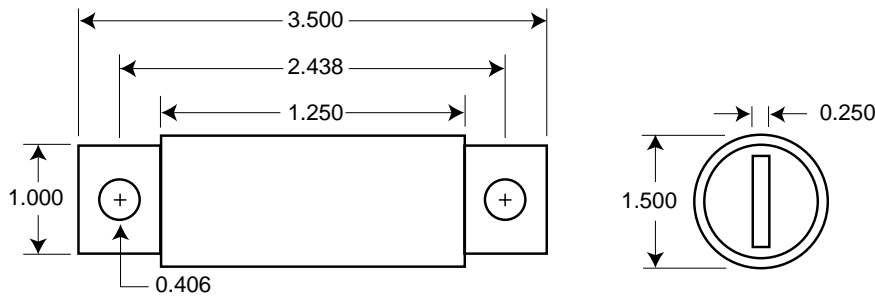


Fig. 2: 500-1000 Amp Range



Dimension in inches.  
 1mm = 0.0394" 1" = 25.4mm





North American  
**FWX 250V 35-2500A**



Type	Electrical Characteristics				Ordering Information			Dimensions	Curves
	Rated Current RMS-Amps	I <sup>2</sup> t (A <sup>2</sup> Sec)		Watts Loss	Part Number	Carton Qty.	Carton Weight (lbs)	Figure Number	See Page or (BIF #)
		Pre-arc	Clearing at 250V						
FWX 250V	35	50	230	4.2	FWX-35A	5	1.40	Fig. 1	page 22 (359)
	40	60	310	5.2	FWX-40A				
	45	80	390	5.7	FWX-45A				
	50	100	520	6.0	FWX-50A				
	60	140	740	8.1	FWX-60A				
	70	330	1400	7.2	FWX-70A	1	0.32		
	80	430	1850	8.1	FWX-80A				
	90	570	2450	9.0	FWX-90A				
	100	740	3150	10.0	FWX-100A				
	125	1130	4850	12.5	FWX-125A				
	150	1620	6950	15.7	FWX-150A				
	175	2170	9300	18.5	FWX-175A				
	200	2790	12000	22	FWX-200A				
	225	3210	14700	24	FWX-225A				
	250	3960	18100	27	FWX-250A				
	275	4720	21600	31	FWX-275A	1	0.52		
	300	6000	27300	32	FWX-300A				
	350	10600	48600	39	FWX-350A				
	400	14500	66100	44	FWX-400A				
	450	22100	101000	49	FWX-450A				
	500	28000	128000	54	FWX-500A				
	600	41100	188000	62	FWX-600A				
	700	48800	190000	72	FWX-700A				
	800	59000	230000	84	FWX-800A				
	1000	44000	360000	100	FWX-1000AH				
1200	92000	750000	103	FWX-1200AH					
1500	120000	880000	140	FWX-1500AH					
1600	160000	1200000	140	FWX-1600AH					
2000	320000	2300000	151	FWX-2000AH					
2500	670000	4700000	163	FWX-2500AH	1	2.86			

- Interrupting rating 200kA RMS Symmetrical.
- Watts loss provided at rated current.
- 250 Vdc U.L. Recognition on 35 through 800 amperes only.
- See accessories on page 20.

1 kg = 2.2 lbs 1 lb = 0.45 kg



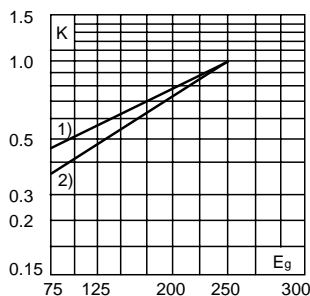


# North American FWX 250V 35-2500A

## Electrical Characteristics

### Total Clearing I<sup>2</sup>t

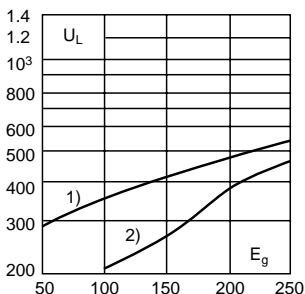
The total clearing I<sup>2</sup>t at rated voltage and at power factor of 15% are given in the electrical characteristics. For other voltages, the clearing I<sup>2</sup>t is found by multiplying by correction factor, K, given as a function of applied working voltage, E<sub>g</sub>, (RMS).



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

### Arc Voltage

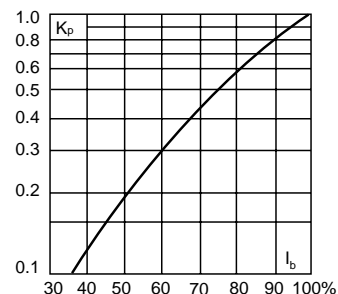
This curve gives the peak arc voltage, U<sub>L</sub>, which may appear across the fuse during its operation as a function of the applied working voltage, E<sub>g</sub>, (RMS) at a power factor of 15%.



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

### Power Losses

Watts loss at rated current is given in the electrical characteristics. The curve allows the calculation of the power losses at load currents lower than the rated current. The correction factor, K<sub>p</sub>, is given as a function of the RMS load current, I<sub>b</sub>, in % of the rated current.



## Dimensions

Fig. 1: 35-800 Amp Range

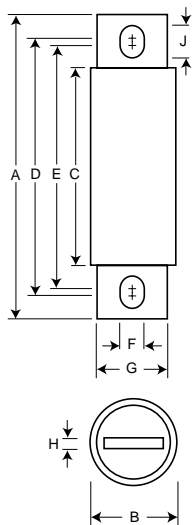


Fig. 2: 1000-1200 Amp Range

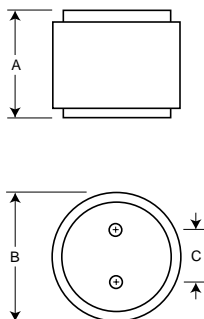
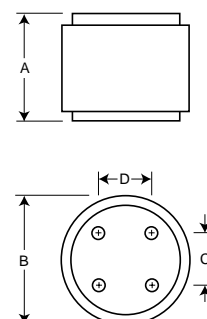


Fig. 3: 1500-2500 Amp Range



Order #	Fig.	A	B	C	D	E	F	G	H	J	Thread Depth
FWX-35A-60A	1	3.19	0.81	1.59	2.59	2.25	0.34	0.63	0.13	0.52	—
FWX-70A-200A	1	3.13	1.22	1.59	2.44	2.19	0.34	1.00	0.19	0.47	—
FWX-225A-600A	1	3.84	1.50	1.59	2.94	2.25	0.41	1.00	0.25	0.75	—
FWX-700A-800A	1	3.84	2.00	1.59	3.03	2.28	0.41	1.50	0.25	0.78	—
FWX-1000AH-1200AH	2	2.59	3.00	1.50	—	—	—	—	—	—	Tapped 3/8"-24 x 1/2"
FWX-1500AH-2500AH	3	2.59	3.50	1.50	1.50	—	—	—	—	—	Tapped 3/8"-24 x 1/2"

Dimension in inches.  
1mm = 0.0394" 1" = 25.4mm

BIF document: 720005



For complete specification data, visit our Web site at [www.bussmann.com](http://www.bussmann.com)  
or call Bussmann Information Fax ~ 314.527.1450



North American  
**FWH 500V 35-1600A**



Type	Electrical Characteristics				Ordering Information			Dimensions	Curves
	Rated Current RMS-Amperes	I <sup>2</sup> t (A <sup>2</sup> Sec)		Watts Loss	Part Number	Carton Qty.	Carton Weight (lbs)	Figure Number	See Page or (BIF #)
		Pre-arc	Clearing at 500V						
FWH 500V	35	34	150	8	FWH-35B	5	0.71	Fig. 1	page 23 (35785304)
	40	76	320	7.5	FWH-40B				
	45	105	450	7.5	FWH-45B				
	50	135	670	7.5	FWH-50B				
	60	210	900	9.9	FWH-60B				
	70	210	900	10.6	FWH-70B	1	0.21		
	80	305	1400	12.7	FWH-80B				
	90	360	1600	15	FWH-90B				
	100	475	2000	17	FWH-100B				
	125	800	3500	25	FWH-125B				
	150	1100	4600	30	FWH-150B				0.33
	175	1450	6200	35	FWH-175B				
	200	1900	8500	40	FWH-200B				
	225	4600	23300	39	FWH-225A				
	250	6300	32200	41	FWH-250A				
	275	7900	40300	46	FWH-275A				
	300	9800	49800	51	FWH-300A				
	325	13700	63800	53	FWH-325A				
	350	14500	72900	58	FWH-350A	1.00			
	400	19200	96700	65	FWH-400A				
450	24700	127000	74	FWH-450A					
500	29200	149000	84	FWH-500A					
600	41300	206000	108	FWH-600A	2.14				
700	55000	298000	120	FWH-700A					
800	76200	409000	129	FWH-800A					
1000	92000	450000	145	FWH-1000A					
1200	122000	600000	180	FWH-1200A		4.62			
1400	200000	1000000	210	FWH-1400A					
1600	290000	1400000	230	FWH-1600A					
					11.66		Fig. 2	page 23 (35785304)	

- Interrupting rating 200kA RMS Symmetrical.
  - Watts loss provided at rated current.
  - 500 Vdc rating applies to 35 through 800 amperes only.
  - See accessories on page 20.
- †U.L. Recognition on 35 through 1200 amperes only.

1 kg = 2.2 lbs 1 lb = 0.45 kg





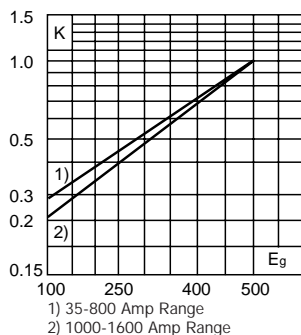
# North American FWH 500V 35-1600A



## Electrical Characteristics

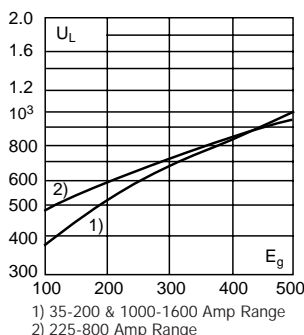
### Total Clearing I<sup>2</sup>t

The total clearing I<sup>2</sup>t at rated voltage and at power factor of 15% are given in the electrical characteristics. For other voltages, the clearing I<sup>2</sup>t is found by multiplying by correction factor, K, given as a function of applied working voltage, E<sub>g</sub>, (RMS).



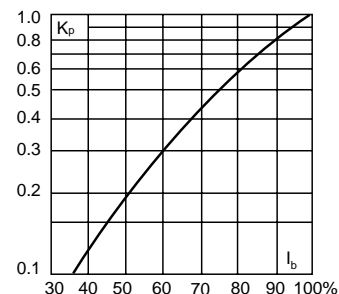
### Arc Voltage

This curve gives the peak arc voltage, U<sub>L</sub>, which may appear across the fuse during its operation as a function of the applied working voltage, E<sub>g</sub>, (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<sub>p</sub>, is given as a function of the RMS load current, I<sub>b</sub>, in % of the rated current.



## Dimensions

Fig. 1: 35-1200 Amp Range

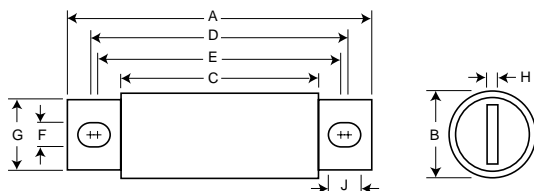
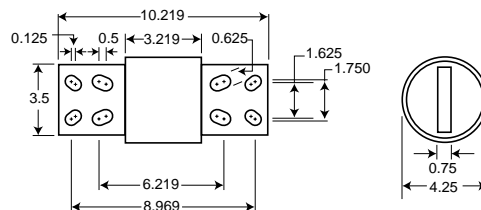


Fig. 2: 1400-1600 Amp Range



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

Dimension in inches.  
1mm = 0.0394" 1" = 25.4mm





# North American KAC 600V 1-1000A



For new installations, Bussmann recommends the 700 volt FWP series fuse. The 600V fuses are supplied as replacements only.

Type	Ordering Information			Carton Qty.	Carton Weight (lbs)	Figure Number
	Part Number					
KAC 600V	KAC-1	KAC-7	KAC-17.5	10	0.50	Fig. 1
	KAC-2	KAC-8	KAC-20			
	KAC-3	KAC-9	KAC-25			
	KAC-4	KAC-10	KAC-30			
	KAC-5	KAC-12				
	KAC-6	KAC-15				
	KAC-35	KAC-45	KAC-60	5	1.40	Fig. 2
	KAC-40	KAC-50				
	KAC-70	KAC-90		5	1.56	
	KAC-80	KAC-100				
KAC-110	KAC-150	KAC-200	1	0.78		
KAC-125	KAC-175					
KAC-225	KAC-300	KAC-400				
KAC-250	KAC-350					
KAC-450	KAC-600	KAC-800				
KAC-500	KAC-700					
KAC-1000				1	3.16	Fig. 1
					6.24	

- Interrupting rating 200kA RMS Symmetrical. 1 kg = 2.2 lbs 1 lb = 0.45 kg
- Consult Bussmann for DC ratings.
- See accessories on page 20.

## Dimensions

Fig. 1: 1-30 & 450-1000 Amp Range

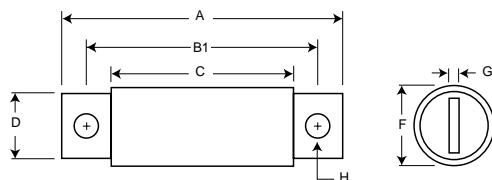
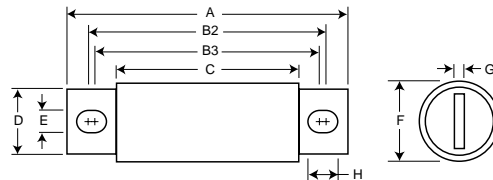


Fig. 2: 35-400 Amp Range



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

Dimension in inches.  
1mm = 0.0394" 1" = 25.4mm





# North American KBC 600V 35-800A



For new installations, Bussmann recommends the 700 Volt FWP series fuse. The 600V fuses are supplied as replacements only.

Type	Ordering Information				Dimensions	
	Part Number			Carton Qty.	Carton Weight (lbs)	Figure Number
KBC 600V	KBC-35	KBC-45	KBC-60	10	1.40	Fig. 1
	KBC-40	KBC-50				
	KBC-70	KBC-90		5	1.44	Fig. 2
	KBC-80	KBC-100				
	KBC-110	KBC-150	KBC-200	1	0.48	Fig. 1
	KBC-125	KBC-175			0.77	
	KBC-225	KBC-300	KBC-400		1.32	
	KBC-250	KBC-350			4.50	
	KBC-450	KBC-500	KBC-600			
	KBC-800					
					Fig. 3	

- Interrupting rating 200kA RMS Symmetrical. 1 kg = 2.2 lbs 1 lb = 0.45 kg
  - Consult Bussmann for DC ratings.
  - See accessories on page 20.
- †U.L. Recognition on 35 through 600 amperes only.

## Dimensions

Fig. 1: 35-60 and 110-600 Amp Range

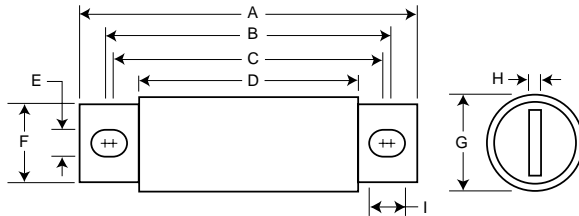


Fig. 2: 70-100 Amp Range

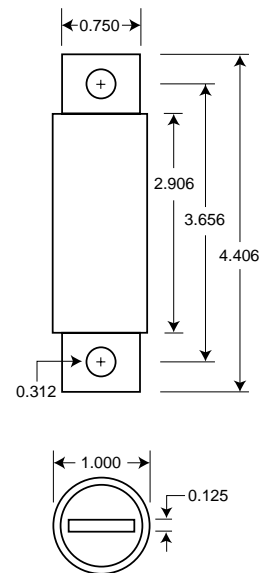
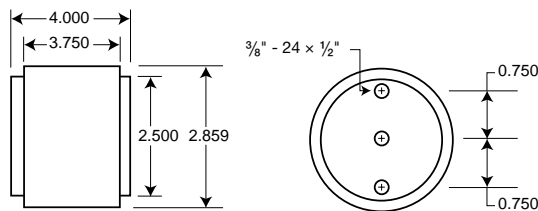


Fig. 3: 800 Amp Range



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

Dimension in inches.  
1mm = 0.0394" 1" = 25.4mm





North American

# FWP 700V 5-1200A



Type	Electrical Characteristics				Ordering Information			Dimensions	Curves		
	Rated Current RMS-Amps	I <sup>2</sup> t (A <sup>2</sup> Sec)		Watts Loss	Part Number	Carton Qty.	Carton Weight (lbs)	Figure Number	See Page or (BIF #)		
		Pre-arc	Clearing at 700V								
FWP 700V	5	1.6	10	1.5	FWP-5B	10	2.25	Fig. 1	page 24 (35785316)		
	10	3.6	20	4	FWP-10B						
	15	10	75	5.5	FWP-15B						
	20	26	180	6	FWP-20B						
	25	44	340	7	FWP-25B						
	30	58	450	9	FWP-30B						
	35	34	160	12	FWP-35B	5	1.21		page 24 (35785308)		
	40	76	320	12	FWP-40B						
	50	135	600	12	FWP-50B						
	60	210	950	15.5	FWP-60B						
	70	305	2000	18	FWP-70B						
	80	360	2400	21	FWP-80B						
	90	415	2700	25	FWP-90B	1	0.24		page 25 (361)		
	100	540	3500	27	FWP-100B						
	125	1800	7300	28	FWP-125A						
	150	2900	11700	32	FWP-150A		1.17			0.65	
	175	4200	16700	35	FWP-175A						
	200	5500	22000	43	FWP-200A						
	225	7700	31300	45	FWP-225A					2.39	
	250	10500	42500	48	FWP-250A						
	300	17600	71200	58	FWP-300A						
	350	23700	95600	65	FWP-350A		1.21			6.60	page 24 (35785308)
	400	31000	125000	78	FWP-400A						
	450	36400	137000	94	FWP-450A						
500	45200	170000	107	FWP-500A							
600	66700	250000	122	FWP-600A							
700	54000	300000	125	FWP-700A							
800	78000	450000	140	FWP-800A	Fig. 2						
900	91500	530000	150	FWP-900A							
1000	120000	600000	170	FWP-1000A							
1200	195000	1100000	190	FWP-1200A		Fig. 3					

- Interrupting rating 200kA RMS Symmetrical.
- Watts loss provided at rated current.
- 700 Vdc U.L. Recognition on 5 through 800 amperes only.
- See accessories on page 20.

1 kg = 2.2 lbs 1 lb = 0.45 kg





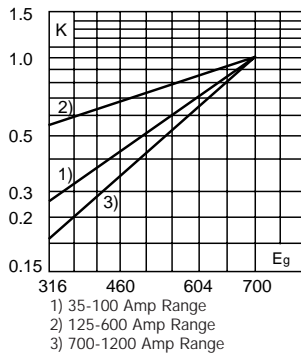
# North American FWP 700V 5-1200A



## Electrical Characteristics

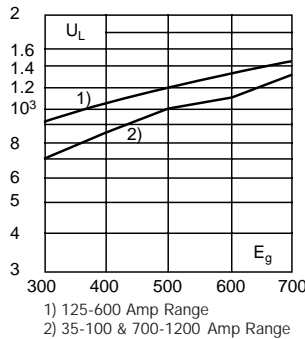
### Total Clearing I<sup>2</sup>t

The total clearing I<sup>2</sup>t at rated voltage and at power factor of 15% are given in the electrical characteristics. For other voltages, the clearing I<sup>2</sup>t is found by multiplying by correction factor, K, given as a function of applied working voltage, E<sub>g</sub>, (RMS).



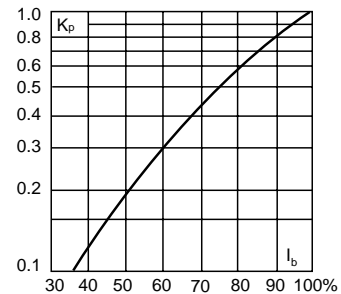
### Arc Voltage

This curve gives the peak arc voltage, U<sub>L</sub>, which may appear across the fuse during its operation as a function of the applied working voltage, E<sub>g</sub>, (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<sub>p</sub>, is given as a function of the RMS load current, I<sub>b</sub>, in % of the rated current.



## Dimensions

Fig. 1: 5-800 Amp Range

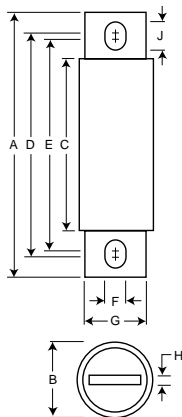


Fig. 2: 900-1000 Amp Range

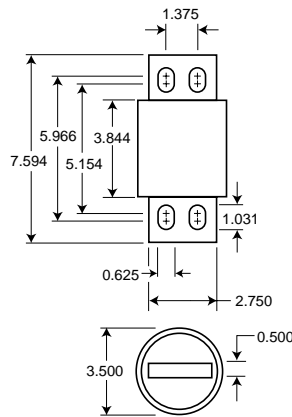
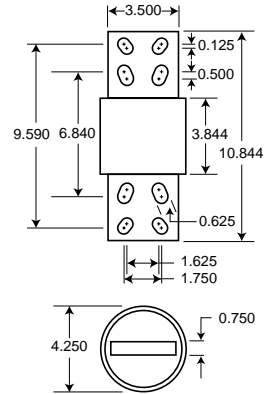


Fig. 3: 1200 Amp Range



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

Dimension in inches.  
1mm = 0.0394" 1" = 25.4mm

BIF document: 720012



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North American

# FWJ 1000V 35-2000A



Type	Electrical Characteristics				Ordering Information			Dimensions	Curves			
	Rated Current RMS-Amps	I <sup>2</sup> t (A <sup>2</sup> Sec)		Watts Loss	Part Number	Carton Qty.	Carton Weight (lbs)	Figure Number	See Page or (BIF #)			
		Pre-arc	Clearing at 1000V									
FWJ 1000V	35	210	2000	7	FWJ-35A	10	4.18	Fig. 1	page 25 (35785303)			
	40	300	2500	8	FWJ-40A							
	50	470	3500	10	FWJ-50A							
	60	670	5000	11	FWJ-60A							
	70	1100	6900	12	FWJ-70A							
	80	1550	9700	13	FWJ-80A							
	90	1900	12000	14	FWJ-90A							
	100	2800	17500	15	FWJ-100A							
	125	4800	35000	16	FWJ-125A					1	4.40	page 26 (35785309)
	150	6300	45000	25	FWJ-150A							
	175	7500	65000	30	FWJ-175A							
	200	11700	80000	32	FWJ-200A							
	250	16000	112000	50	FWJ-250A							
	300	23500	164000	56	FWJ-300A							
	350	33000	231000	62	FWJ-350A							
	400	47000	330000	67	FWJ-400A							
	500	39500	329000	95	FWJ-500A							
	600	61000	520000	105	FWJ-600A							
	800	87000	500000	182	FWJ-800A							
	1000	190000	1100000	206	FWJ-1000A							
1200	370000	2100000	240	FWJ-1200A								
1400	470000	2700000	248	FWJ-1400A								
1600	700000	4000000	267	FWJ-1600A								
1800	925000	5300000	239	FWJ-1800A								
2000	1330000	7600000	244	FWJ-2000A								

- Interrupting rating 200kA.
- Watts loss provided at rated current.
- 800 Vdc U.L. Recognition on 40-200 and 500-600 amperes.
- See accessories on page 20.

1 kg = 2.2 lbs 1 lb = 0.45 kg





North American

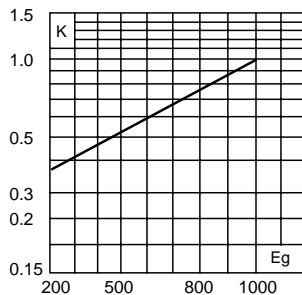
# FWJ 1000V 35-2000A



## Electrical Characteristics

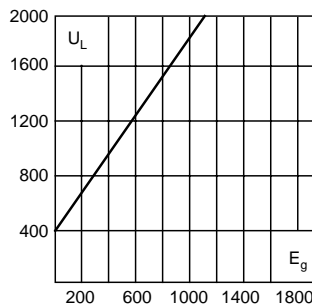
### Total Clearing I<sup>2</sup>t

The total clearing I<sup>2</sup>t at rated voltage and at power factor of 15% are given in the electrical characteristics. For other voltages, the clearing I<sup>2</sup>t is found by multiplying by correction factor, K, given as a function of applied working voltage, E<sub>g</sub>, (RMS).



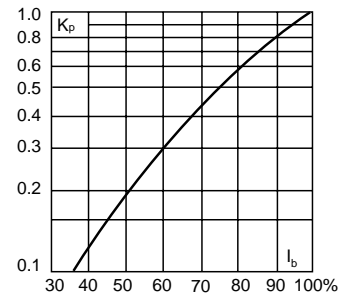
### Arc Voltage

This curve gives the peak arc voltage, U<sub>L</sub>, which may appear across the fuse during its operation as a function of the applied working voltage, E<sub>g</sub>, (RMS) at a power factor of 15%.



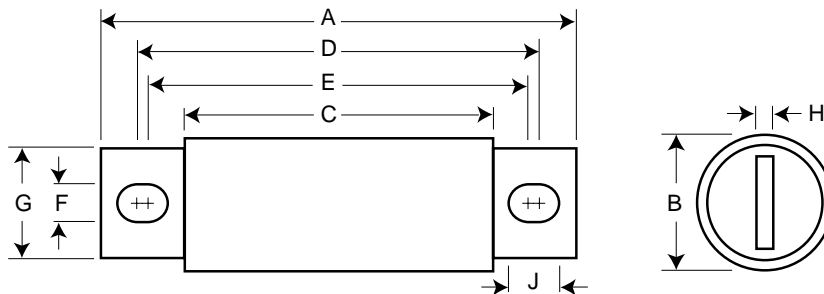
### Power Losses

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<sub>p</sub>, is given as a function of the RMS load current, I<sub>b</sub>, in % of the rated current.



## Dimensions

Fig. 1: 35-2000 Amp Range



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

Dimension in inches.  
1mm = 0.0394" 1" = 25.4mm

BIF document: 720027



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North American – Accessories

## Fuse Bases (Blocks)

### Modular Style

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

### Stud Type

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

Part No.	Max. Fuse Current Rating	Stud Heights	Stud Dia. & Threads
C5268-1	200A	1.00"	5/16"-18
C5268-2	200A	1.75"	5/16"-18
C5268-3	200A	0.75"	5/16"-18
C5268-4	100A	1.00"	1/4"-20
C5268-5	100A	1.75"	1/4"-20

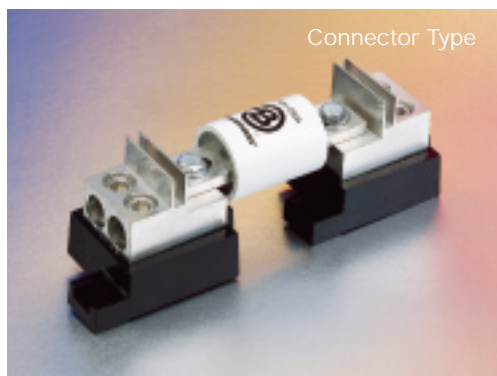
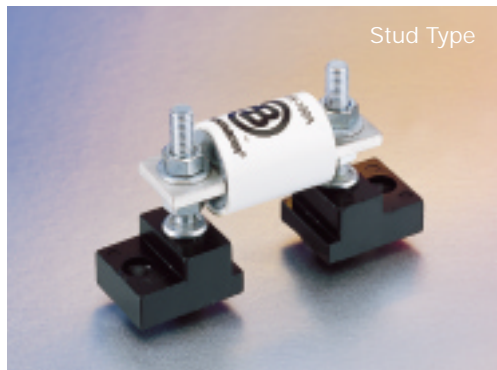
### Connector Type

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

Modular Base Style	Max. Voltage	Max. Fuse Current Rating	BIF Document
1BS101	600V	100A	1206
1BS102	600V	400A	1207
1BS103	600V	400A	1208
1BS104	600V	600A	1209
BH-0	700V	100A	1200
BH-1	2500V	400A	1201
BH-2	5000V	500A	1202
BH-3	1250V	700A	1203

### Fixed Center Base Style

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



BIF document: 720033



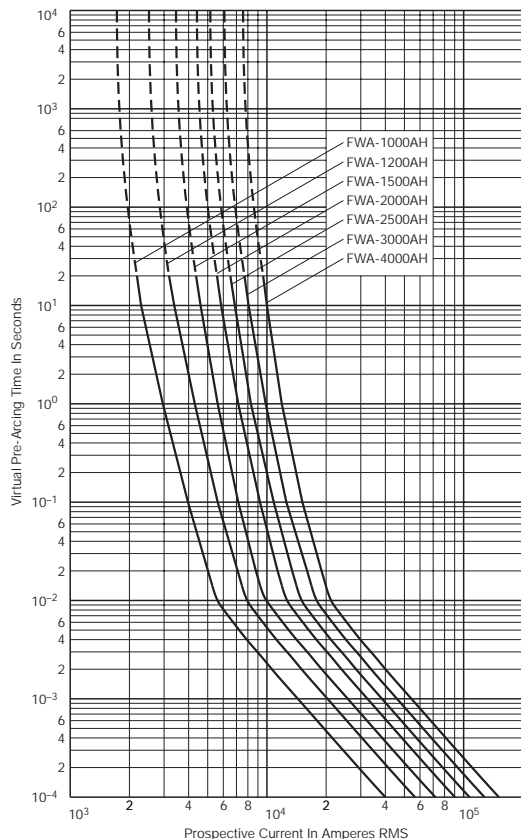


North American

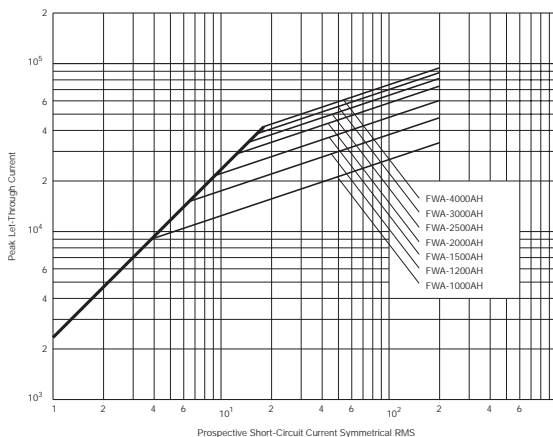
# Curves

## FWA-130V (1000-4000)AH

Time-Current Curve

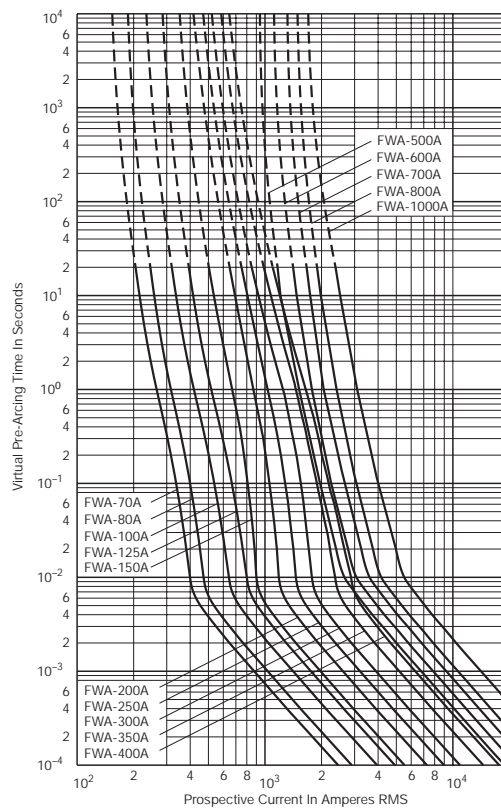


Peak Let-Through Curve

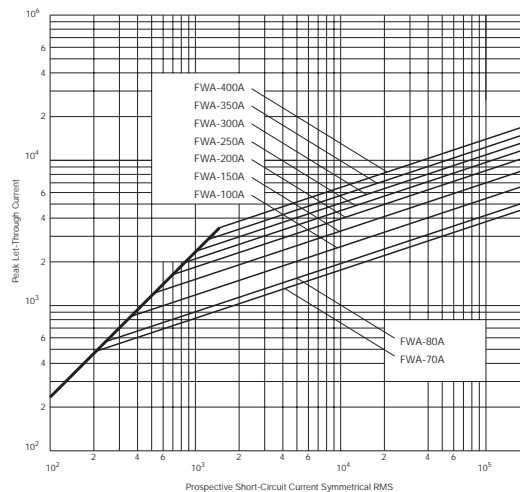


## FWA-150V (70-1000)A

Time-Current Curve



Peak Let-Through Curve



BIF document: 35785301

BIF document: 35785310

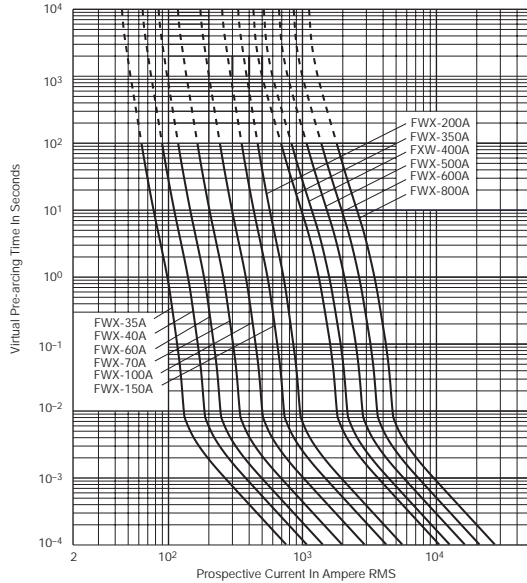


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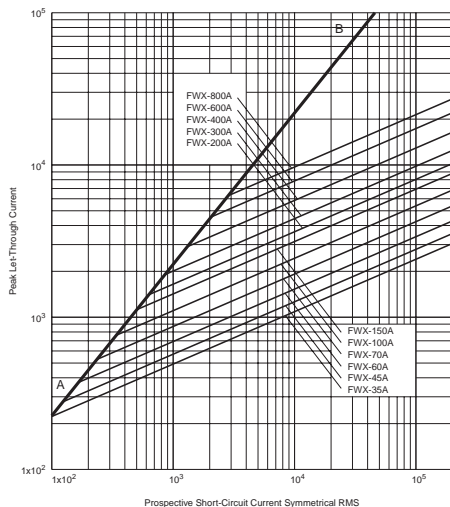


# North American Curves

## FWX 250V (35-800)A Time-Current Curve

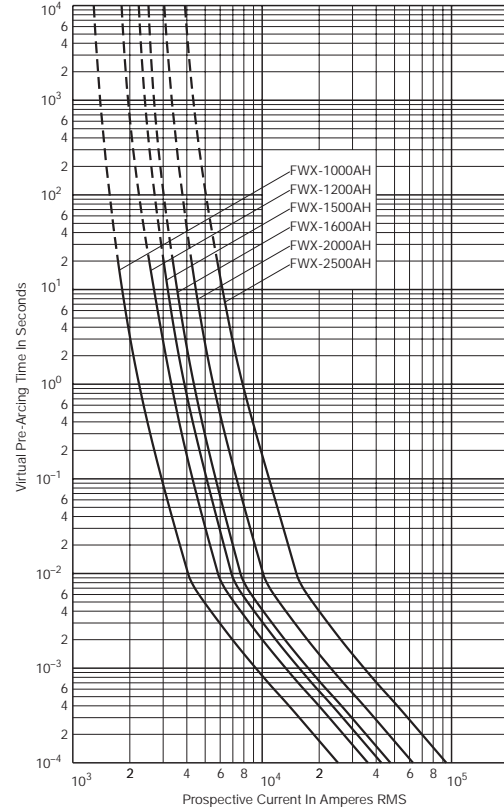


## Peak Let-Through Curve

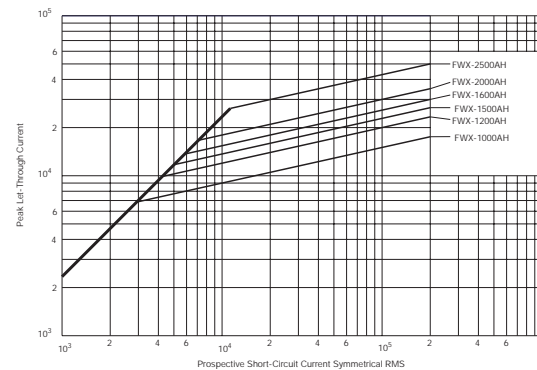


BIF document: 359

## FWX 250V (1000-2500)AH Time-Current Curve



## Peak Let-Through Curve



BIF document: 35785299

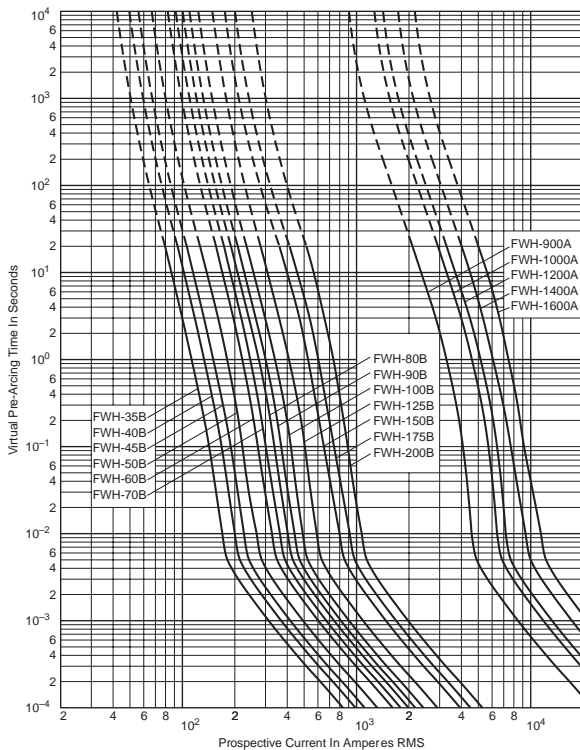




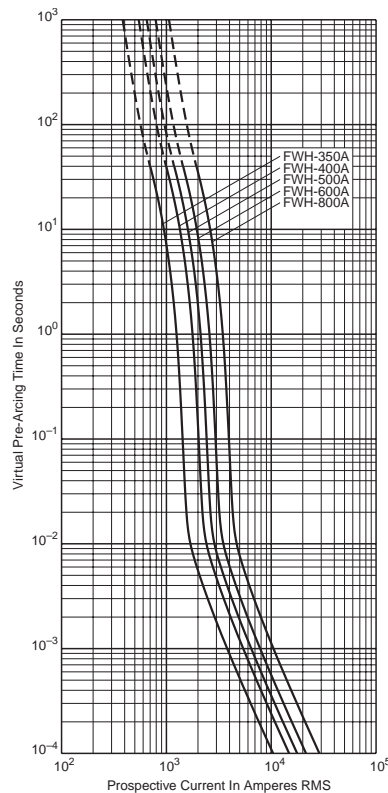
North American

# Curves

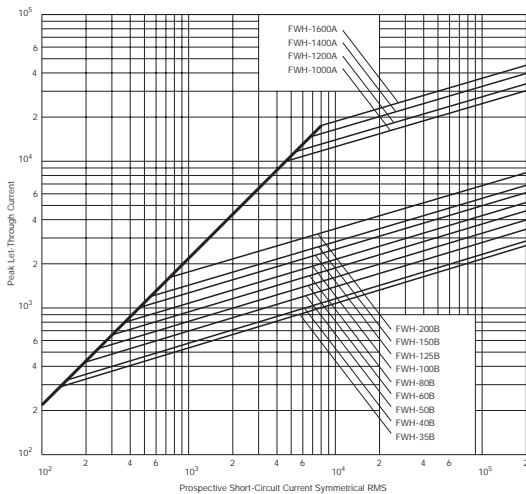
**FWH 500V (35-200)B & (900-1600)A**  
Time-Current Curve



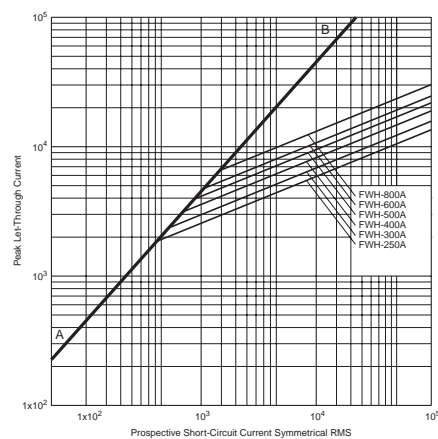
**FWH 500V (225-800)A**  
Time-Current Curve



Peak Let-Through Curve



Peak Let-Through Curve



BIF document: 35785304

BIF document: 360

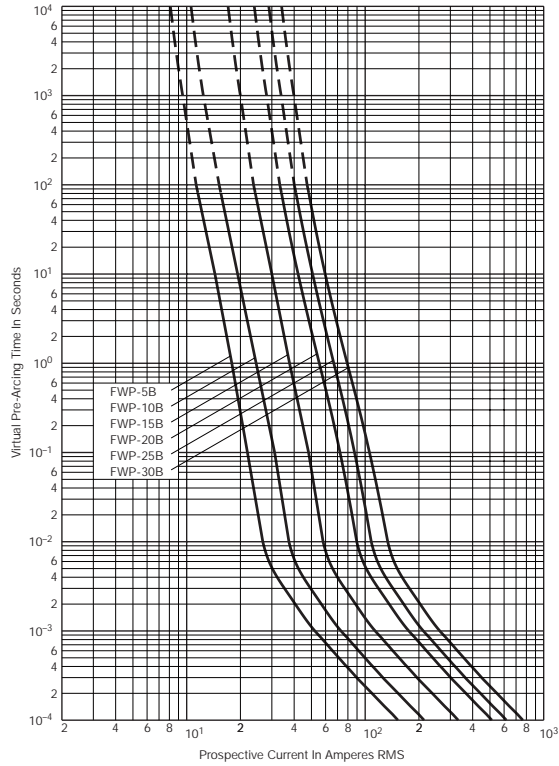


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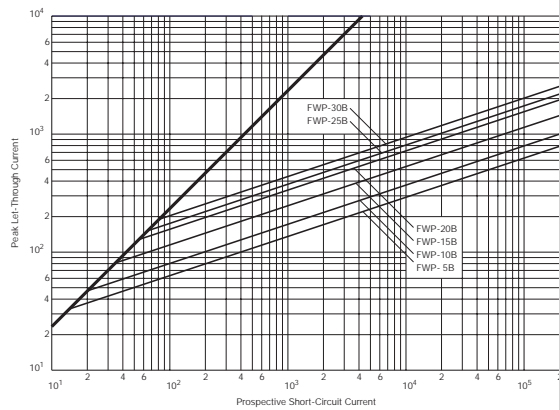


# North American Curves

FWP 700V (5-30)B  
Time-Current Curve

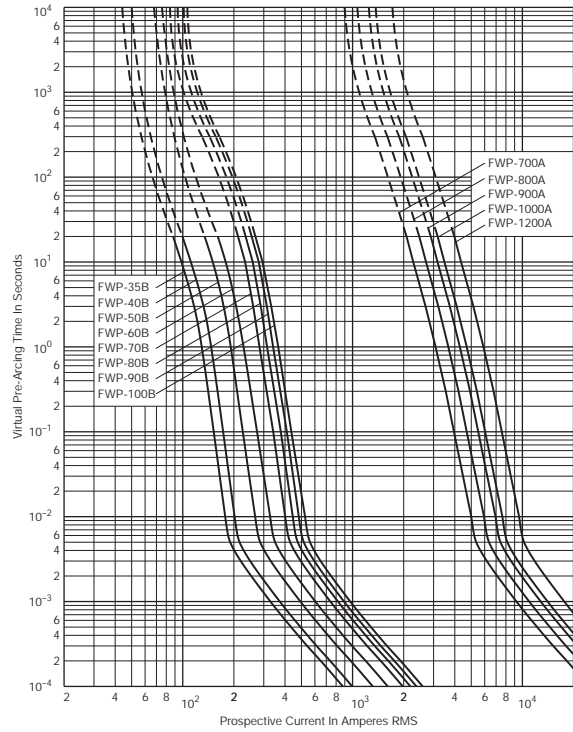


Peak Let-Through Curve

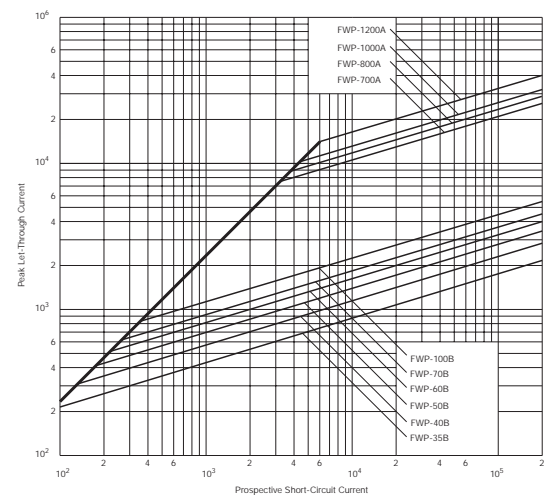


BIF document: 35785316

FWP 700V (35-100)B & (700-1200)A  
Time-Current Curve



Peak Let-Through Curve



BIF document: 35785308



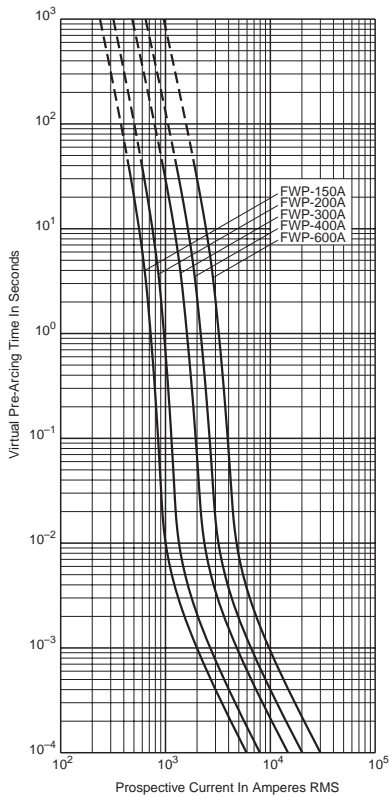


North American

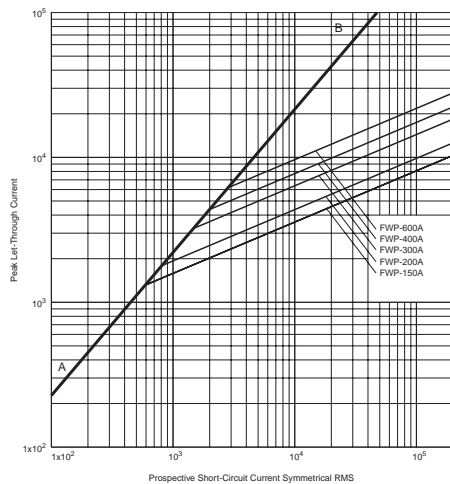
# Curves

## FWP 700V (125-600)A

Time-Current Curve

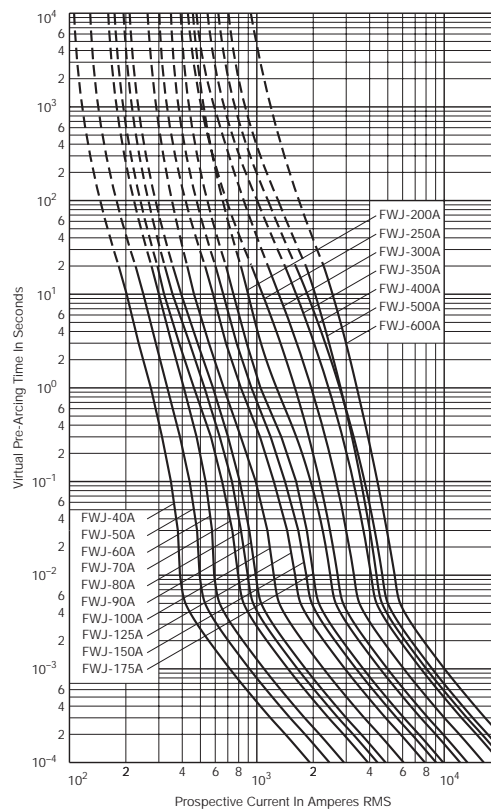


### Peak Let-Through Curve

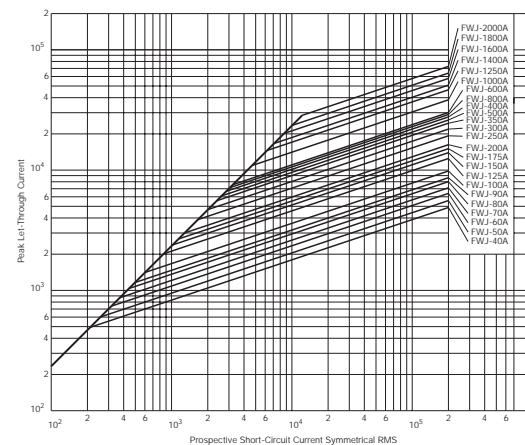


## FWJ 1000V (35-600)A

Time-Current Curve



### Peak Let-Through Curve



BIF document: 361

BIF document: 35785303

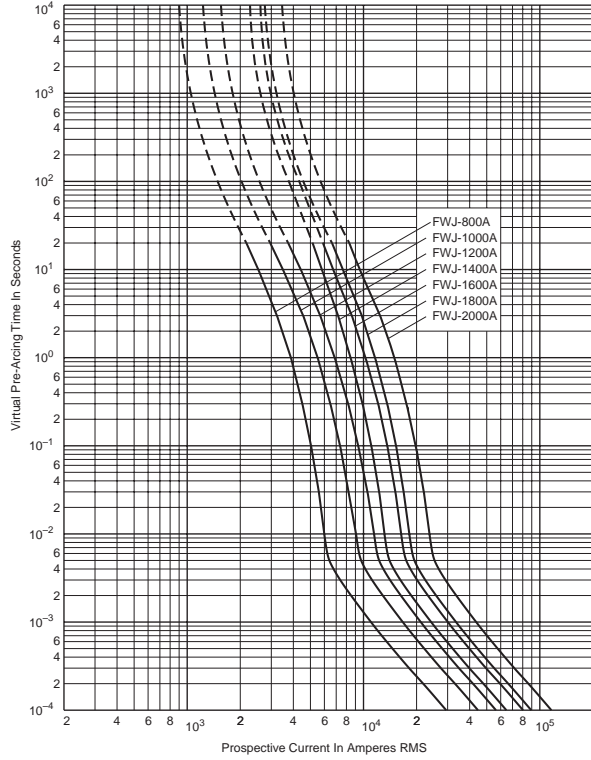


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or call Bussmann Information Fax ~ 314.527.1450

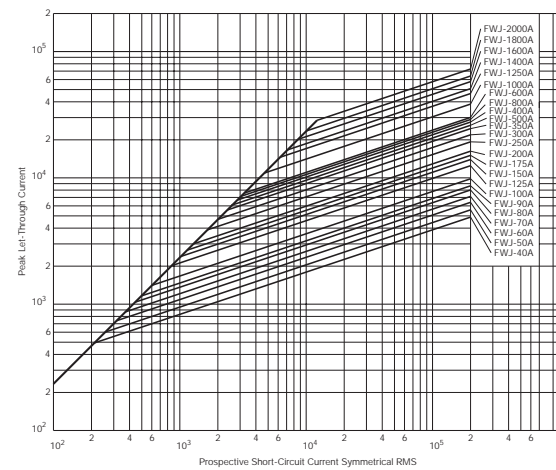


# North American Curves

## FWJ 1000V (800-2000)A Time-Current Curve



## Peak Let-Through Curve



BIF document: 35785309





# Square Body

## Introduction



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### General Information

Designed and tested to:

- IEC 269: Part 4
- U.L. Recognized

Bussmann offers a complete range of Square Body style fuses and accessories. Their unique design and construction provide:

- Minimal energy let-through ( $I^2t$ )
- Low operating temperature
- Low watts loss

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

Each Square Body style fuse is available with a number of different end fittings. Options include:

- DIN 43 653
- DIN 43 620
- Flush End (Metric/U.S.)
- French Style
- US Style

#### Voltage Rating

All Bussmann Square Body style fuses are tested to IEC 269: Part 4. This standard requires a test voltage which is 10% 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. Fuseblocks are also available for most applications.

Voltage	AC	DC	Ampere Range
660	X	—	10-7500
1250	X	—	50-1400





Square Body

## Applications

### Maximum Permissible Load Current

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

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

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

The maximum permissible continuous load current  $I_b$  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  $I_b$  value:

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

where

$E_1$  = Voltage drop across fuse after 5 seconds

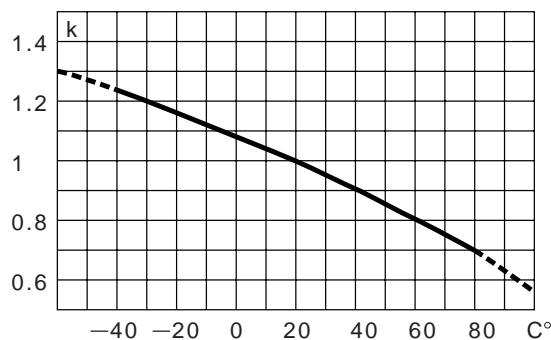
$E_2$  = Voltage drop across fuse after 2 hours

$t$  = Air temperature at start of test (°C)

$N$  = Constant

Fuse Rated Voltage (IEC)	N
660	1.5
1250	1.6

Temperature Correction Curve



### 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/adaptor 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	Amperes
(1) Normal	Continuous	—	300A
(2) Overload	60 Seconds	Once Per Hour	500A
(3a) Overload	10 Seconds	2-3 Times Per Week	700A
(3b)	20 Seconds (max.)	Once Per Month	
(4) Impulse	0.5 Seconds	Less Than Once Per Month	1100A

Voltage Data	
(5) Voltage Applied to Fuse During Fault Conditions	400V (+10%)

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 <sup>2</sup> t Withstand at 10 Milliseconds*	90,000A <sup>2</sup> s

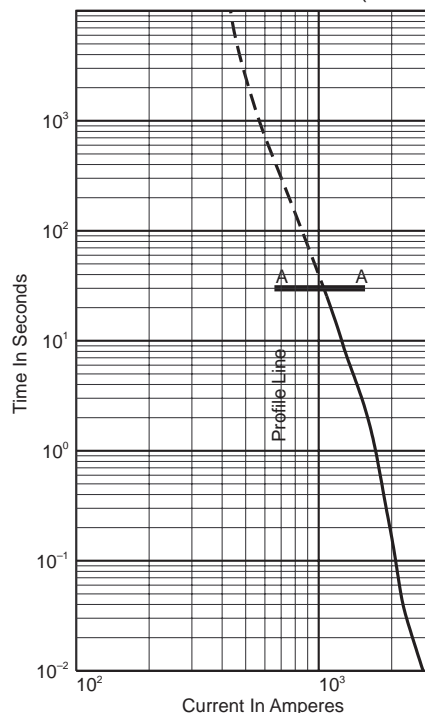
\*Note: The I<sup>2</sup>t withstand of the thyrister may be given for other impulse durations (i.e., 1.5 ms, 3.5 ms, or 8.3 ms); however, the stated fuse I<sup>2</sup>t is valid for all impulse durations of 10 ms or less.

### 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 54 tentatively select fuse 170M3669 (400A, 660V).	—
(2) Determine I <sup>2</sup> t (total clearing) at 440V.	2.1 See Table, page 54. Note I <sup>2</sup> t is 105,000A <sup>2</sup> s at rated voltage of 660V. 2.2 From the figure on page 55, note that correction factor K = 0.65. 2.3 I <sup>2</sup> t <sub>660V</sub> × K = I <sup>2</sup> t <sub>440V</sub> 105,000 × 0.65 = 68,250	OK
(3) Determine maximum arc voltage at 440V	3.1 From the figure on page 55, note that maximum voltage at 440V is 925V	OK
(4) Determine maximum permissible continuous load current I <sub>b</sub> .	4.1 Per page 28 data, I <sub>b</sub> = I <sub>n</sub> × k × (1 + 0.05V) × K <sub>p</sub> I <sub>b</sub> = 400A × 0.8 × (1 + 0) × 1 I <sub>b</sub> = 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 <sub>max</sub> per Table, page 4, for each overload and impulse load.	—
(Item 2)	5.1 I <sub>max</sub> < 60% × I <sub>t</sub> 500A < 60% × 950A 500A < 570A	OK
(Item 3a)	5.2 I <sub>max</sub> < 60% × I <sub>t</sub> 700A < 60% × 1360A 700A < 780A	OK
(Item 3b)	5.3 I <sub>max</sub> < 70% × I <sub>t</sub> 700A < 70% × 1150A 700A < 805A	OK
(Item 4)	5.4 I <sub>max</sub> < 70% × I <sub>t</sub> 1100A < 70% × 1800A 1100A < 1260A	OK

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

170M3669 (400A)



### Calculation of Watt Loss

From the Table on page 54, watt loss at 400 amperes is 60 watts. The continuous load current of 300 amperes is 75% of rated current (400 amperes). From page 55, the correction factor K<sub>p</sub> = 0.5.

$$\begin{aligned} \text{Watt Loss } 75\% &= \text{Watt Loss } 100\% \times K_p \\ &= 60W \times 0.5 \\ &= 30 \text{ watts} \end{aligned}$$

### Special Fuses

Other high speed fuses are available from Bussmann with voltage ratings of 380 to 10,000 volts and current ratings up to 10,000 Amp in a single unit configuration. Fuses can be supplied with open fuse, "pin" indicators. Various types of microswitches are also available (see page 58).





Square Body – DIN 43 653

# 660V (IEC/U.L.) 10-400A



Electrical Characteristics						Ordering Information				Curves	
Size	Rated Current RMS-Amps	I <sup>2</sup> t (A <sup>2</sup> Sec)		Watts Loss	Protection Class	-U/80 Without Indicator	-/80 Visual Indicator	-T/80 Type T Indicator for Micro	Carton Qty.	Carton Weight (kg)	See Page or (BIF #)
		Pre-arc	Clearing at 660V								
000	10	3.8	25.5	3.0	gR	170M1308	170M1358	170M1408	10	1.34	page 60 (17056310)
	16	7.2	48	5.5	gR	170M1309	170M1359	170M1409			
	20	11.5	78	7	gR	170M1310	170M1360	170M1410			
	25	19	130	9	gR	170M1311	170M1361	170M1411			
	32	40	270	10	gR	170M1312	170M1362	170M1412			
	40	69	460	12	gR	170M1313	170M1363	170M1413			
	50	115	770	15	gR	170M1314	170M1364	170M1414			
	63	215	1450	16	gR	170M1315	170M1365	170M1415			
	80	380	2550	19	aR	170M1316	170M1366	170M1416			
	100	695	4650	24	aR	170M1317	170M1367	170M1417			
	125	1200	8500	28	aR	170M1318	170M1368	170M1418			
	160	2300	16000	32	aR	170M1319	170M1369	170M1419			
	200	4200	28000	37	aR	170M1320	170M1370	170M1420			
	250	7750	51500	42	aR	170M1321	170M1371	170M1421			
	315	12000	80500	52	aR	170M1322	170M1372	170M1422			
00	25	19	130	6	gR		170M2608	170M2658	5	1.05	page 60 (17056312)
	32	28.5	195	7	gR		170M2609	170M2659			
	40	50	360	9	gR		170M2610	170M2660			
	50	95	640	10	gR		170M2611	170M2661			
	63	170	1200	12	gR		170M2612	170M2662			
	80	310	2100	15	gR		170M2613	170M2663			
	100	620	4150	20	aR		170M2614	170M2664			
	125	1000	6950	25	aR		170M2615	170M2665			
	160	1900	13000	30	aR		170M2616	170M2666			
	200	3400	23000	35	aR		170M2617	170M2667			
	250	6250	42000	45	aR		170M2618	170M2668			
	315	10000	68500	55	aR		170M2619	170M2669			
	350	13500	91500	60	aR		170M2620	170M2670			
	400	18000	125000	70	aR		170M2621	170M2671			

- Interrupting rating 300kA RMS Symmetrical.
- Watts loss provided at rated current.
- Microswitch indicator ordered separately. See accessories on pages 58-59.
- U.L. Recognition on Size 000.

1 kg = 2.2 lbs. 1 lb = 0.45 kg





Square Body – DIN 43 653

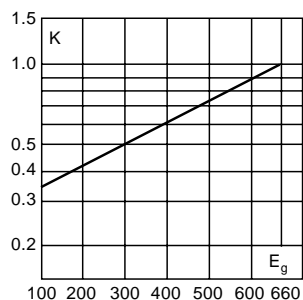
**660V (IEC/U.L.)** 10-400A



### Electrical Characteristics

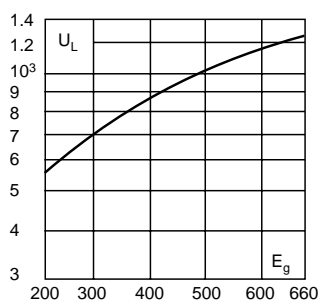
#### Total Clearing I<sup>2</sup>t

The total clearing I<sup>2</sup>t at rated voltage and at power factor of 15% are given in the electrical characteristics. For other voltages, the clearing I<sup>2</sup>t is found by multiplying by correction factor, K, given as a function of applied working voltage, E<sub>g</sub>, (RMS).



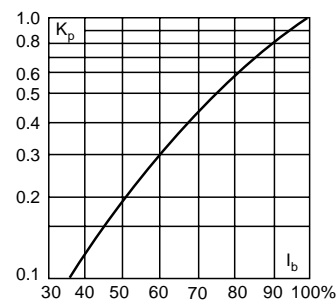
#### Arc Voltage

This curve gives the peak arc voltage, U<sub>L</sub>, which may appear across the fuse during its operation as a function of the applied working voltage, E<sub>g</sub>, (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<sub>p</sub>, is given as a function of the RMS load current, I<sub>b</sub>, in % of the rated current.

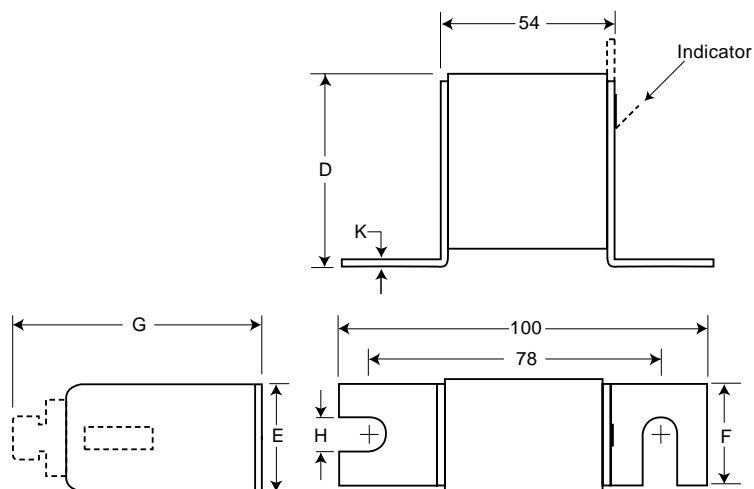


### Dimensions

DIN 43 653: Type -U/80, -/80, -T/80

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

Dimension in mm.  
1mm = 0.0394" 1" = 25.4mm





Square Body - DIN 43 653

# 660V/700V (IEC/U.L.) 40-2000A



Electrical Characteristics					Ordering Information				Curves			
Size	Rated Current RMS-Amps	I <sup>2</sup> t (A <sup>2</sup> S)		Watts Loss	-/80 Visual Indicator	-TN/80 Type T Indicator for Micro	-/110 Visual Indicator	-TN/110 Type T Indicator for Micro	Carton Qty.	Carton Weight (kg)	See Page or (BIF #)	
		Pre-arc	Clearing at 660V									
1*	40	40	270	9	170M3008	170M3058	170M3158	170M3208	5	1.50	page 61 (17056314)	
	50	77	515	11	170M3009	170M3059	170M3159	170M3209				
	63	115	770	14	170M3010	170M3060	170M3160	170M3210				
	80	185	1250	18	170M3011	170M3061	170M3161	170M3211				
	100	360	2450	21	170M3012	170M3062	170M3162	170M3212				
	125	550	3700	26	170M3013	170M3063	170M3163	170M3213				
	160	1100	7500	30	170M3014	170M3064	170M3164	170M3214				
	200	2200	15000	35	170M3015	170M3065	170M3165	170M3215				
	250	4200	28500	40	170M3016	170M3066	170M3166	170M3216				
	315	7000	46500	50	170M3017	170M3067	170M3167	170M3217				
	350	10000	68500	55	170M3018	170M3068	170M3168	170M3218				
	400	15000	105000	60	170M3019	170M3069	170M3169	170M3219				
	450	21000	140000	65	170M3020	170M3070	170M3170	170M3220				
	500	27000	180000	70	170M3021	170M3071	170M3171	170M3221				
	550	34000	230000	75	170M3022	170M3072	170M3172	170M3222				
630	48500	325000	80	170M3023	170M3073	170M3173	170M3223					
1	200	1650	11500	45	170M4008	170M4058	170M4158	170M4208	3 (-/80)	1.29	page 61 (17056316)	
	250	3100	21000	55	170M4009	170M4059	170M4159	170M4209				
	315	6200	42000	58	170M4010	170M4060	170M4160	170M4210				
	1	350	8500	59000	60	170M4011	170M4061	170M4161	170M4211	2 (-/110)		0.94
		400	13500	91500	65	170M4012	170M4062	170M4162	170M4212			
		450	17000	120000	70	170M4013	170M4063	170M4163	170M4213			
		500	25000	170000	72	170M4014	170M4064	170M4164	170M4214			
		550	34000	230000	75	170M4015	170M4065	170M4165	170M4215			
		630	52000	350000	80	170M4016	170M4066	170M4166	170M4216			
		700	69500	465000	85	170M4017	170M4067	170M4167	170M4217			
		800	105000	725000	95	170M4018	170M4068	170M4168	170M4218			
†900	155000	†850000	100	170M4019	170M4069	170M4169	170M4219					
2	400	11000	74000	65	170M5008	170M5058	170M5158	170M5208	2	1.20	page 62 (17056318)	
	450	15500	105000	70	170M5009	170M5059	170M5159	170M5209				
	500	21500	145000	75	170M5010	170M5060	170M5160	170M5210				
	550	28000	190000	80	170M5011	170M5061	170M5161	170M5211				
	630	41000	275000	90	170M5012	170M5062	170M5162	170M5212				
	700	60500	405000	95	170M5013	170M5063	170M5163	170M5213				
	800	86000	575000	105	170M5014	170M5064	170M5164	170M5214				
	900	125000	840000	110	170M5015	170M5065	170M5165	170M5215				
	1000	180000	1250000	115	170M5016	170M5066	170M5166	170M5216				
	1100	245000	1600000	120	170M5017	170M5067	170M5167	170M5217				
1250	365000	2400000	130	170M5018	170M5068	170M5168	170M5218					
3	500	14000	95000	95	170M6008	170M6058	170M6158	170M6208	2 (-/80)	1.66	page 62 (17056320)	
	550	19500	135000	100	170M6009	170M6059	170M6159	170M6209				
	630	31000	210000	105	170M6010	170M6060	170M6160	170M6210				
	3	700	44500	300000	110	170M6011	170M6061	170M6161	170M6211	1 (-/110)		0.89
		800	69500	465000	115	170M6012	170M6062	170M6162	170M6212			
		900	100000	670000	120	170M6013	170M6063	170M6163	170M6213			
		1000	140000	945000	125	170M6014	170M6064	170M6164	170M6214			
		1100	190000	1300000	130	170M6015	170M6065	170M6165	170M6215			
		1250	290000	1950000	140	170M6016	170M6066	170M6166	170M6216			
		1400	370000	2450000	155	170M6017	170M6067	170M6167	170M6217			
		1500	460000	3100000	160	170M6018	170M6068	170M6168	170M6218			
		1600	580000	3900000	160	170M6019	170M6069	170M6169	170M6219			
		†1800	880000	†5250000	165	170M6020	170M6070	170M6170	170M6220			
		‡2000	1150000	†6350000	175	170M6021	170M6071	170M6171	170M6221			

- Interrupting rating 300kA RMS Symmetrical.
- Watts loss provided at rated current.
- Rated voltage (IEC) †600V ‡550V (Consult Bussmann for U.L. Recognition status.)
- Microswitch indicator ordered separately. See accessories on pages 58-59.

1 kg = 2.2 lbs. 1 lb = 0.45 kg

BIF document: 720014





Square Body – DIN 43 653

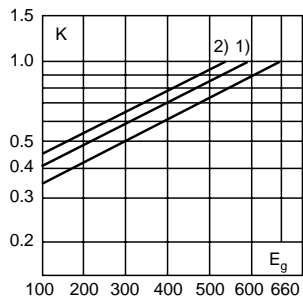
# 660V/700V (IEC/U.L.) 40-2000A



## Electrical Characteristics

### Total Clearing I<sup>2</sup>t

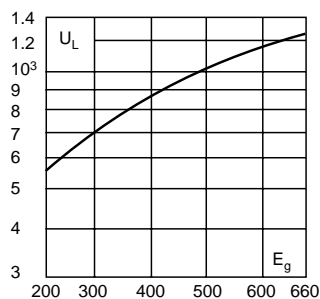
The total clearing I<sup>2</sup>t at rated voltage and at power factor of 15% are given in the electrical characteristics. For other voltages, the clearing I<sup>2</sup>t is found by multiplying by correction factor, K, given as a function of applied working voltage, E<sub>g</sub>, (RMS).



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

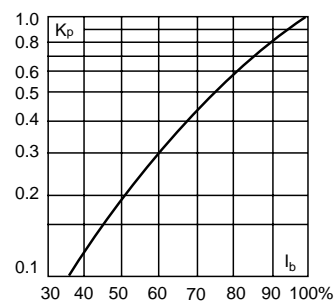
### Arc Voltage

This curve gives the peak arc voltage, U<sub>L</sub>, which may appear across the fuse during its operation as a function of the applied working voltage, E<sub>g</sub>, (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<sub>p</sub>, is given as a function of the RMS load current, I<sub>b</sub>, in % of the rated current.



## Dimensions

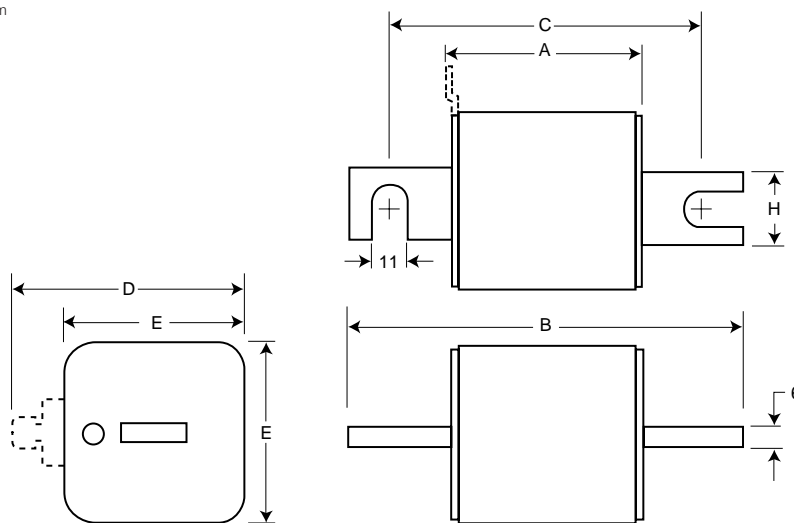
DIN 43 653: Type -/80, -TN/80, -/110, -TN/110

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

Dimension in mm.

1mm = 0.0394" 1" = 25.4mm





Square Body – DIN 43 653

**660V/700V (IEC/U.L.) 40-2000A**

Electrical Characteristics					Ordering Information				Curves
Size	Rated Current RMS-Amps	I <sup>2</sup> t (A <sup>2</sup> S)		Watts Loss	-KN/80 Type K Indicator for Micro	-KN/110 Type K Indicator for Micro	Carton Qty.	Carton Weight (kg)	See Page or (BIF #)
		Pre-arc	Clearing at 660V						
1*	40	40	270	9	170M3108	170M3258	5	1.60	page 61 (17056314)
	50	77	515	11	170M3109	170M3259			
	63	115	770	14	170M3110	170M3260			
	80	185	1250	18	170M3111	170M3261			
	100	360	2450	21	170M3112	170M3262			
	125	550	3700	26	170M3113	170M3263			
	160	1100	7500	30	170M3114	170M3264			
	200	2200	15000	35	170M3115	170M3265			
	250	4200	28500	40	170M3116	170M3266			
	315	7000	46500	50	170M3117	170M3267			
	350	10000	68500	55	170M3118	170M3268			
	400	15000	105000	60	170M3119	170M3269			
	450	21000	140000	65	170M3120	170M3270			
	500	27000	180000	70	170M3121	170M3271			
	550	34000	230000	75	170M3122	170M3272			
	630	48500	325000	80	170M3123	170M3273			
	1	200	1650	11500	45	170M4108			
250		3100	21000	55	170M4109	170M4259			
315		6200	42000	58	170M4110	170M4260			
350		8500	59000	60	170M4111	170M4261			
400		13500	91500	65	170M4112	170M4262			
450		17000	120000	70	170M4113	170M4263			
500		25000	170000	72	170M4114	170M4264			
550		34000	230000	75	170M4115	170M4265			
630		52000	350000	80	170M4116	170M4266			
700		69500	465000	85	170M4117	170M4267			
800		105000	725000	95	170M4118	170M4268			
†900	155000	†850000	100	170M4119	170M4269				
2	400	11000	74000	65	170M5108	170M5258	2	1.26	page 62 (17056318)
	450	15500	105000	70	170M5109	170M5259			
	500	21500	145000	75	170M5110	170M5260			
	550	28000	190000	80	170M5111	170M5261			
	630	41000	275000	90	170M5112	170M5262			
	700	60500	405000	95	170M5113	170M5263			
	800	86000	575000	105	170M5114	170M5264			
	900	125000	840000	110	170M5115	170M5265			
	1000	180000	1250000	115	170M5116	170M5266			
	1100	245000	1600000	120	170M5117	170M5267			
	1250	365000	2400000	130	170M5118	170M5268			
3	500	14000	95000	95	170M6108	170M6258	1	0.92	page 62 (17056320)
	550	19500	135000	100	170M6109	170M6259			
	630	31000	210000	105	170M6110	170M6260			
	700	44500	300000	110	170M6111	170M6261			
	800	69500	465000	115	170M6112	170M6262			
	900	100000	670000	120	170M6113	170M6263			
	1000	140000	945000	125	170M6114	170M6264			
	1100	190000	1300000	130	170M6115	170M6265			
	1250	290000	1950000	140	170M6116	170M6266			
	1400	370000	2450000	155	170M6117	170M6267			
	1500	460000	3100000	160	170M6118	170M6268			
	1600	580000	3900000	160	170M6119	170M6269			
	†1800	880000	†5250000	165	170M6120	170M6270			
	‡2000	1150000	‡6350000	175	170M6121	170M6271			

- Interrupting rating 300kA RMS Symmetrical.
- Watts loss provided at rated current.
- Rated voltage (IEC) †600V ‡550V (Consult Bussmann for U.L. Recognition status.)
- Microswitch indicator ordered separately. See accessories on pages 58-59.

1 kg = 2.2 lbs. 1 lb = 0.45 kg





Square Body – DIN 43 653

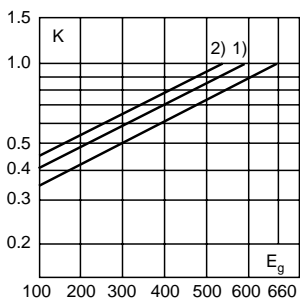
# 660V/700V (IEC/U.L.) 40-2000A



## Electrical Characteristics

### Total Clearing I<sup>2</sup>t

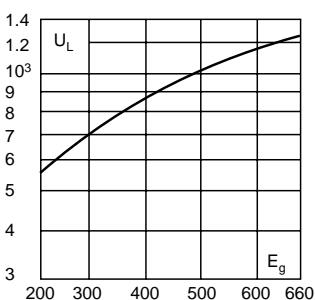
The total clearing I<sup>2</sup>t at rated voltage and at power factor of 15% are given in the electrical characteristics. For other voltages, the clearing I<sup>2</sup>t is found by multiplying by correction factor, K, given as a function of applied working voltage, E<sub>g</sub>, (RMS).



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

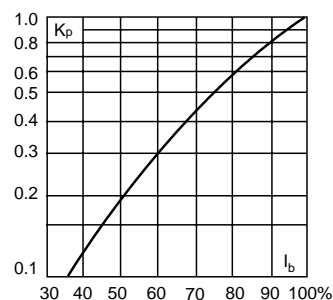
### Arc Voltage

This curve gives the peak arc voltage, U<sub>L</sub>, which may appear across the fuse during its operation as a function of the applied working voltage, E<sub>g</sub>, (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<sub>p</sub>, is given as a function of the RMS load current, I<sub>b</sub>, in % of the rated current.



## Dimensions

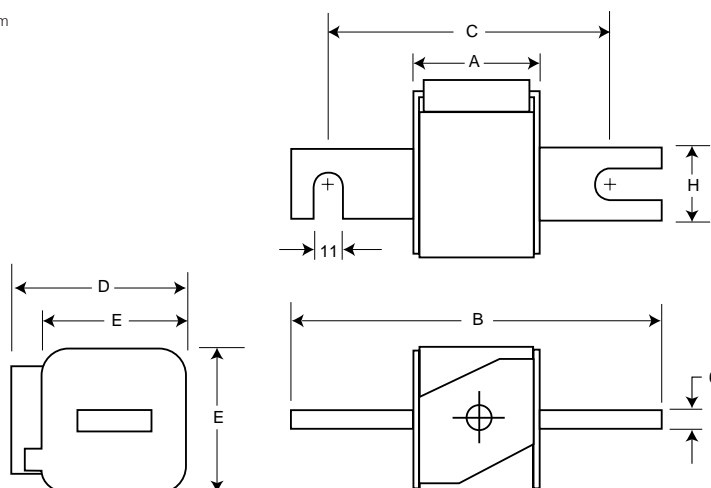
DIN 43 653: Type -KN/80, -KN/110

Size	A	B	B <sup>§</sup>	C	C <sup>§</sup>	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.

Dimension in mm.

1mm = 0.0394" 1" = 25.4mm





Square Body – DIN 43 653

**1250V/1300V (IEC/U.L.) 50-1400A**

Size	Rated Current RMS-Amps	Electrical Characteristics				Ordering Information				Curves
		I <sup>2</sup> t (A <sup>2</sup> S)			Watts Loss	-/110 Visual Indicator	-T/110 Type T Indicator for Micro	Carton Qty.	Carton Weight (kg)	See Page or (BIF #)
		Pre-arc	Clearing at 1000V	Clearing at 1250V						
1*	50	135	815	1100	15	170M3138	170M3188	5	1.90	page 63 (17056630)
	63	215	1300	1750	20	170M3139	170M3189			
	80	420	2500	3350	25	170M3140	170M3190			
	100	750	4450	5950	30	170M3141	170M3191			
	125	1450	9000	11500	35	170M3142	170M3192			
	160	2600	16000	21000	40	170M3143	170M3193			
	200	5150	31000	41000	45	170M3144	170M3194			
	250	9200	54500	73000	55	170M3145	170M3195			
	315	18500	115000	150000	60	170M3146	170M3196			
	350	27000	165000	220000	65	170M3147	170M3197			
400	53000	265000	335000	70	170M3148	170M3198				
1	160	1900	11500	15500	45	170M4138	170M4188	2	1.18	page 64 (17056632)
	200	3800	22500	30000	50	170M4139	170M4189			
	250	7750	46000	61500	60	170M4140	170M4190			
	315	15000	90000	120000	65	170M4141	170M4191			
	350	20000	125000	165000	70	170M4142	170M4192			
	400	29500	175000	235000	75	170M4143	170M4193			
	450	42000	250000	335000	80	170M4144	170M4194			
	500	69500	340000	435000	85	170M4145	170M4195			
	550	95000	465000	590000	95	170M4146	170M4196			
	†630	130000	660000		100	170M4147	170M4197			
2	250	6500	38500	51500	65	170M5138	170M5188	2	1.58	page 64 (17056634)
	280	9350	55500	74500	70	170M5139	170M5189			
	315	13000	77500	105000	75	170M5140	170M5190			
	350	16500	97500	135000	80	170M5141	170M5191			
	400	23000	140000	180000	85	170M5142	170M5192			
	450	34000	205000	270000	90	170M5143	170M5193			
	500	48000	285000	380000	95	170M5144	170M5194			
	550	62000	370000	495000	100	170M5145	170M5195			
	630	115000	575000	730000	110	170M5146	170M5196			
	700	160000	795000	1050000	115	170M5147	170M5197			
	800	245000	1200000	1550000	120	170M5148	170M5198			
	†900	360000	1750000		125	170M5149	170M5199			
	†1000	480000	2350000		135	170M5150	170M5200			
3	315	9500	58000	77500	85	170M6138	170M6188	1	1.23	page 65 (17056636)
	350	13500	81500	110000	90	170M6139	170M6189			
	400	19500	120000	160000	95	170M6140	170M6190			
	450	31000	185000	245000	100	170M6141	170M6191			
	500	39000	235000	310000	105	170M6142	170M6192			
	550	55000	325000	435000	110	170M6143	170M6193			
	630	83500	495000	665000	115	170M6144	170M6194			
	700	115000	705000	940000	120	170M6145	170M6195			
	†800	205000	995000	1300000	125	170M6146	170M6196			
	†900	305000	1500000	1900000	130	170M6147	170M6197			
	†1000	450000	2150000	2750000	135	170M6148	170M6198			
	†1100	575000	2800000	3600000	140	170M6149	170M6199			
	†1250	810000	3950000		145	170M6150	170M6200			
	†1400	1250000	6000000		150	170M6151	170M6201			

- Interrupting rating 300kA RMS Symmetrical.
- Watts loss provided at rated current.
- Rated voltage (IEC) †1100V †1250V (Consult Bussmann for U.L. Recognition status.)
- Microswitch indicator ordered separately. See accessories on pages 58-59.

1 kg = 2.2 lbs. 1 lb = 0.45 kg





Square Body – DIN 43 653

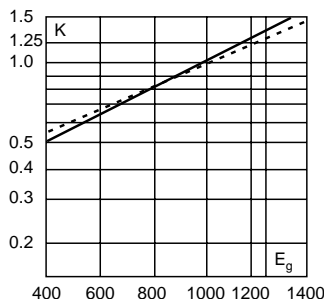
# 1250V/1300V (IEC/U.L.) 50-1400A



## Electrical Characteristics

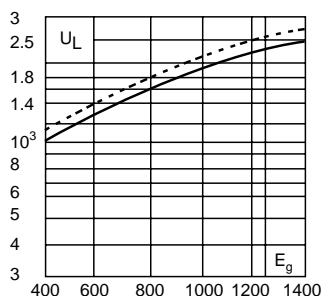
### Total Clearing I<sup>2</sup>t

The total clearing I<sup>2</sup>t at rated voltage and at power factor of 15% are given in the electrical characteristics. For other voltages, the clearing I<sup>2</sup>t is found by multiplying by correction factor, K, given as a function of applied working voltage, E<sub>g</sub>, (RMS).



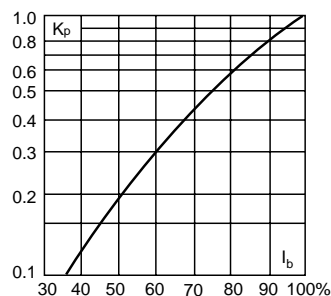
### Arc Voltage

This curve gives the peak arc voltage, U<sub>L</sub>, which may appear across the fuse during its operation as a function of the applied working voltage, E<sub>g</sub>, (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<sub>p</sub>, is given as a function of the RMS load current, I<sub>b</sub>, in % of the rated current.



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Dashed lines apply to the following amperages:

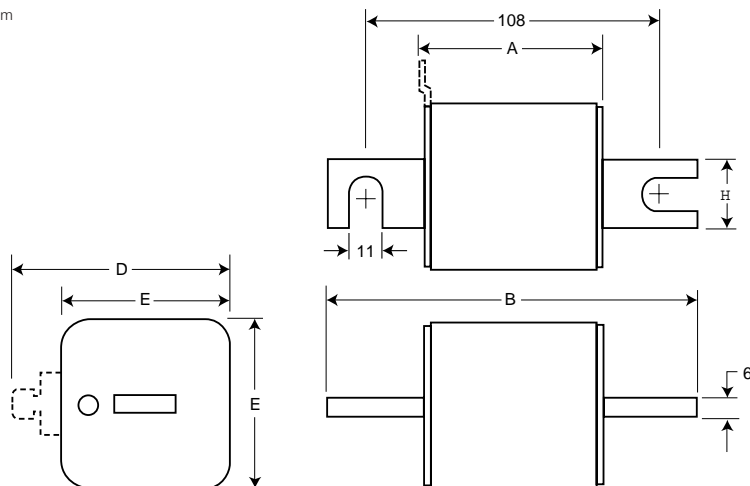
Size	1*	1	2	3
Amp	400	500-630	630-1000	800-1400

## Dimensions

DIN 43 653: Type -/110, -T/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

Dimension in mm.  
1mm = 0.0394" 1" = 25.4mm





Square Body – DIN 43 653

**1250V/1300V (IEC/U.L.) 50-1400A**

Electrical Characteristics						Ordering Information			Curves
Size	Rated Current RMS-Amps	I <sup>2</sup> t (A <sup>2</sup> S)			Watts Loss	-K/110 Type K Visual Indicator for Micro	Carton Qty.	Carton Weight (kg)	See Page or (BIF #)
		Pre-arc	Clearing at 1000V	Clearing at 1250V					
1*	50	135	815	1100	15	170M3238	2	0.84	page 63 (17056630)
	63	215	1300	1750	20	170M3239			
	80	420	2500	3350	25	170M3240			
	100	750	4450	5950	30	170M3241			
	125	1450	9000	11500	35	170M3242			
	160	2600	16000	21000	40	170M3243			
	200	5150	31000	41000	45	170M3244			
	250	9200	54500	73000	55	170M3245			
	315	18500	115000	150000	60	170M3246			
	350	27000	165000	220000	65	170M3247			
400	53000	265000	335000	70	170M3248				
1	160	1900	11500	15500	45	170M4238	2	1.26	page 64 (17056632)
	200	3800	22500	30000	50	170M4239			
	250	7750	46000	61500	60	170M4240			
	315	15000	90000	120000	65	170M4241			
	350	20000	125000	165000	70	170M4242			
	400	29500	175000	235000	75	170M4243			
	450	42000	250000	335000	80	170M4244			
	500	69500	340000	435000	85	170M4245			
	550	95000	465000	590000	95	170M4246			
	†630	130000	660000		100	170M4247			
2	250	6500	38500	51500	65	170M5238	2	1.66	page 64 (17056634)
	280	9350	55500	74500	70	170M5239			
	315	13000	77500	105000	75	170M5240			
	350	16500	97500	135000	80	170M5241			
	400	23000	140000	180000	85	170M5242			
	450	34000	205000	270000	90	170M5243			
	500	48000	285000	380000	95	170M5244			
	550	62000	370000	495000	100	170M5245			
	630	115000	575000	730000	110	170M5246			
	700	160000	795000	1050000	115	170M5247			
	800	245000	1200000	1550000	120	170M5248			
	†900	360000	1750000		125	170M5249			
†1000	480000	2350000		135	170M5250				
3	315	9500	58000	77500	85	170M6238	1	1.27	page 65 (17056636)
	350	13500	81500	110000	90	170M6239			
	400	19500	120000	160000	95	170M6240			
	450	31000	185000	245000	100	170M6241			
	500	39000	235000	310000	105	170M6242			
	550	55000	325000	435000	110	170M6243			
	630	83500	495000	665000	115	170M6244			
	700	115000	705000	940000	120	170M6245			
	†800	205000	995000	1300000	125	170M6246			
	†900	305000	1500000	1900000	130	170M6247			
	†1000	450000	2150000	2750000	135	170M6248			
	†1100	575000	2800000	3600000	140	170M6249			
†1250	810000	3950000		145	170M6250				
†1400	1250000	6000000		150	170M6251				

- Interrupting rating 300kA RMS Symmetrical.
- Watts loss provided at rated current.
- Rated voltage (IEC) †1100V †1250V (Consult Bussmann for U.L. Recognition status.)
- Microswitch indicator ordered separately. See accessories on pages 58-59.

1 kg = 2.2 lbs. 1 lb = 0.45 kg





Square Body - DIN 43 653

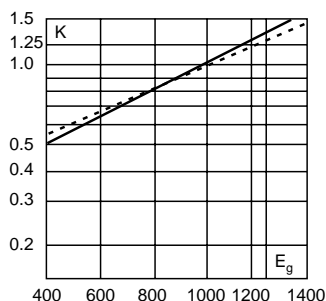
**1250V/1300V (IEC/U.L.) 50-1400A**



### Electrical Characteristics

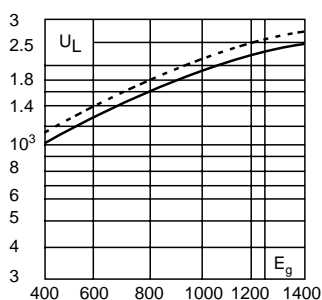
#### Total Clearing I<sup>2</sup>t

The total clearing I<sup>2</sup>t at rated voltage and at power factor of 15% are given in the electrical characteristics. For other voltages, the clearing I<sup>2</sup>t is found by multiplying by correction factor, K, given as a function of applied working voltage, E<sub>g</sub>, (RMS).



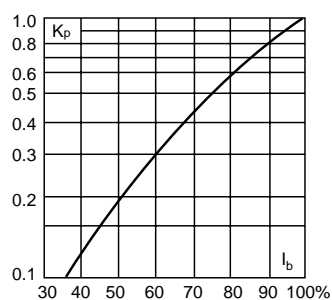
#### Arc Voltage

This curve gives the peak arc voltage, U<sub>L</sub>, which may appear across the fuse during its operation as a function of the applied working voltage, E<sub>g</sub>, (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<sub>p</sub>, is given as a function of the RMS load current, I<sub>b</sub>, in % of the rated current.



-----  
Dashed lines apply to the following amperages:

Size	1*	1	2	3
Amp	400	500-630	630-1000	800-1400

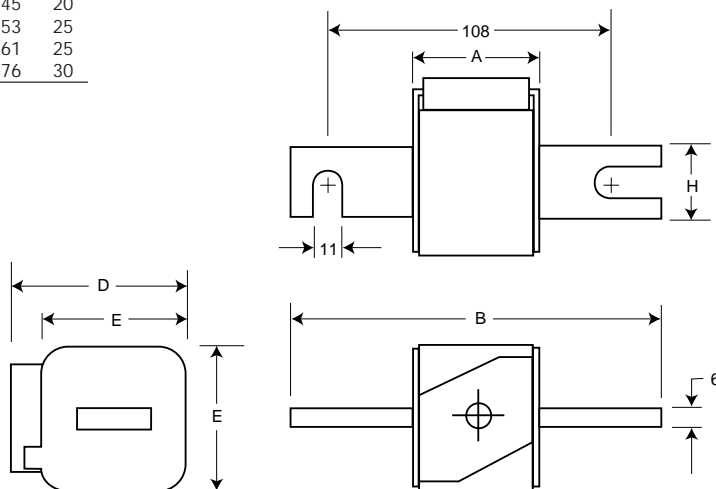
### Dimensions

DIN 43 653: Type -K/110

Size	A	B	D	E	H
1*	80	138	59	45	20
1	80	138	69	53	25
2	80	138	77	61	25
3	81	139	92	76	30

Dimension in mm.

1mm = 0.0394" 1" = 25.4mm





Square Body – DIN 43 620

**660V (IEC/U.L.)** 10-315A



Size	Rated Current RMS-Amps	Electrical Characteristics				Ordering Information			Curves
		I <sup>2</sup> t (A <sup>2</sup> S)		Watts Loss	Protection Class	DIN 000 Type T Indicator for Micro	Carton Qty.	Carton Weight (kg)	See Page or (BIF #)
		Pre-arc	Clearing at 660V						
000	10	3.8	25.5	3.0	gR	170M1558	10	1.30	page 60 (17056310)
	16	7.2	48	5.5	gR	170M1559			
	20	11.5	78	7	gR	170M1560			
	25	19	130	9	gR	170M1561			
	32	40	270	10	gR	170M1562			
	40	69	460	12	gR	170M1563			
	50	115	770	15	gR	170M1564			
	63	215	1450	16	gR	170M1565			
	80	380	2550	19	aR	170M1566			
	100	695	4650	24	aR	170M1567			
	125	1200	8500	28	aR	170M1568			
	160	2300	16000	32	aR	170M1569			
	200	4200	28000	37	aR	170M1570			
	250	7750	51500	42	aR	170M1571			
315	12000	80500	52	aR	170M1572				

- Interrupting rating 300kA RMS Symmetrical.
- Watts loss provided at rated current.
- Microswitch indicator ordered separately. See accessories on pages 58-59.

1 kg = 2.2 lbs. 1 lb = 0.45 kg

#### Rated Current

The rated current of this fuse range has been given with copper conductors that have a current density of 1.3 A/mm<sup>2</sup> (IEC 269-4). For conductor cross section according to IEC 269-1, the fuses with a rated current higher than 125A must be derated. Please contact Bussmann for application assistance.





Square Body - DIN 43 620

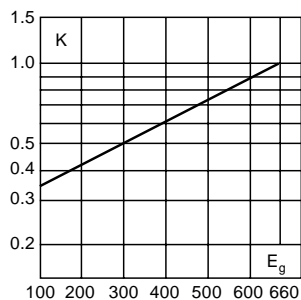
**660V (IEC/U.L.)** 10-315A



### Electrical Characteristics

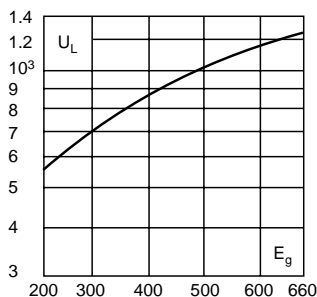
#### Total Clearing I<sup>2</sup>t

The total clearing I<sup>2</sup>t at rated voltage and at power factor of 15% are given in the electrical characteristics. For other voltages, the clearing I<sup>2</sup>t is found by multiplying by correction factor, K, given as a function of applied working voltage, E<sub>g</sub>, (RMS).



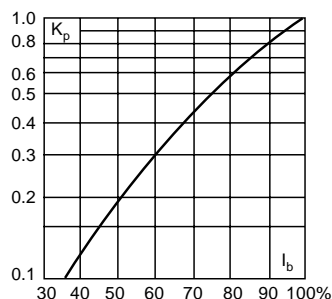
#### Arc Voltage

This curve gives the peak arc voltage, U<sub>L</sub>, which may appear across the fuse during its operation as a function of the applied working voltage, E<sub>g</sub>, (RMS) at a power factor of 15%.



#### Power Losses

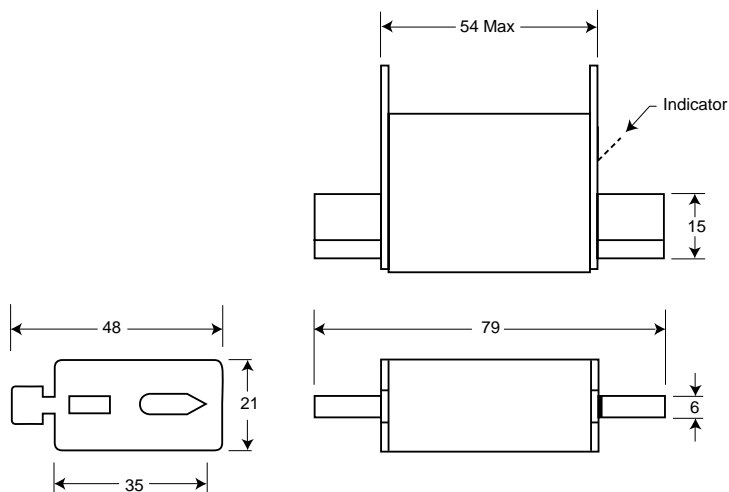
Watts loss at rated current is given in the electrical characteristics. The curve allows the calculation of the power losses at load currents lower than the rated current. The correction factor, K<sub>p</sub>, is given as a function of the RMS load current, I<sub>b</sub>, in % of the rated current.



### Dimensions

DIN 43 620: Type DIN 000

Dimension in mm.  
1mm = 0.0394" 1" = 25.4mm





Square Body – DIN 43 620

**660V/700V (IEC/U.L.) 40-1000A**

Size	Rated Current RMS-Amps	Electrical Characteristics			Ordering Information			Curves
		I <sup>2</sup> t (A <sup>2</sup> S)		Watts Loss	DIN Type T Indicator for Micro	Carton Qty.	Carton Weight (kg)	See Page or (BIF #)
		Pre-arc	Clearing at 660V					
1*	40	40	270	9	170M3808	5	1.85	page 61 (17056314)
	50	77	515	11	170M3809			
	63	115	770	14	170M3810			
	80	185	1250	18	170M3811			
	100	360	2450	21	170M3812			
	125	550	3700	26	170M3813			
	160	1100	7500	30	170M3814			
	200	2200	15000	35	170M3815			
	250	4200	28500	40	170M3816			
	315	7000	46500	50	170M3817			
	350	10000	68500	55	170M3818			
400	15000	105000	60	170M3819				
2	400	11000	74000	65	170M5808	5	3.00	page 62 (17056318)
	450	15500	105000	70	170M5809			
	500	21500	145000	75	170M5810			
	550	28000	190000	80	170M5811			
	630	41000	275000	90	170M5812			
	700	60500	405000	95	170M5813			
3	500	14000	95000	95	170M6808	1	1.15	page 62 (17056320)
	550	19500	135000	100	170M6809			
	630	31000	210000	105	170M6810			
	700	44500	300000	110	170M6811			
	800	69500	465000	115	170M6812			
	900	100000	670000	120	170M6813			
	1000	140000	945000	125	170M6814			

- Interrupting rating 300kA RMS Symmetrical.
- Watts loss provided at rated current.
- Microswitch indicator ordered separately. See accessories on pages 58-59.

1 kg = 2.2 lbs. 1 lb = 0.45 kg

### Rated Current

The rated current of this fuse range has been given with copper conductors that have a current density of 1.3 A/mm<sup>2</sup> (IEC 269-4). For conductor cross section according to IEC 269-1, the fuses must be derated. Please contact Bussmann for application assistance.





Square Body – DIN 43 620

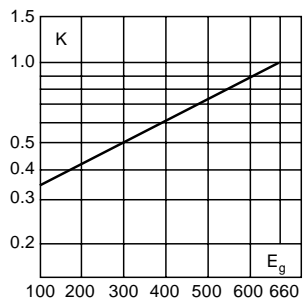
# 660V/700V (IEC/U.L.) 40-1000A



## Electrical Characteristics

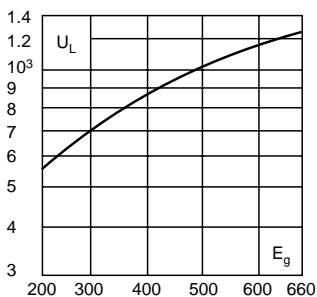
### Total Clearing I<sup>2</sup>t

The total clearing I<sup>2</sup>t at rated voltage and at power factor of 15% are given in the electrical characteristics. For other voltages, the clearing I<sup>2</sup>t is found by multiplying by correction factor, K, given as a function of applied working voltage, E<sub>g</sub>, (RMS).



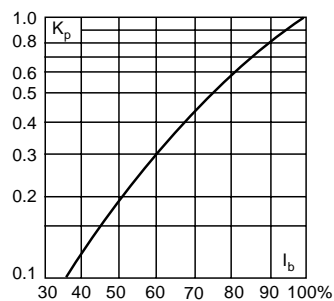
### Arc Voltage

This curve gives the peak arc voltage, U<sub>L</sub>, which may appear across the fuse during its operation as a function of the applied working voltage, E<sub>g</sub>, (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<sub>p</sub>, is given as a function of the RMS load current, I<sub>b</sub>, in % of the rated current.

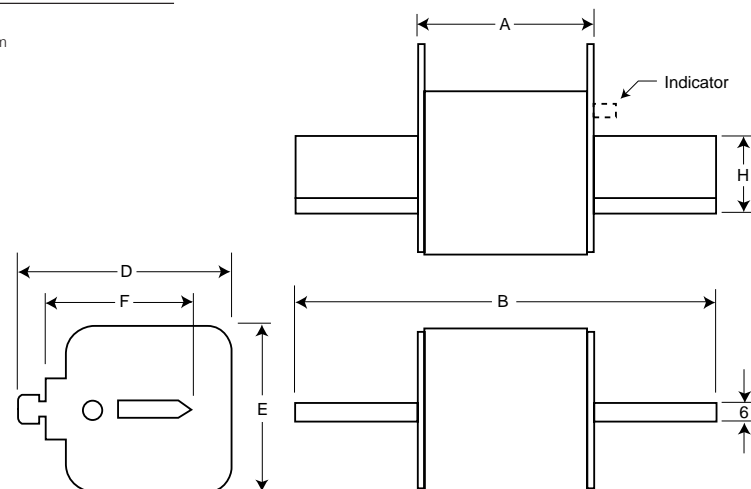


## Dimensions

DIN 43 620: 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

Dimension in mm.  
1mm = 0.0394" 1" = 25.4mm





Square Body - Flush End Contact

**660V (IEC) 25-400A**

Size	Electrical Characteristics					Ordering Information				Curves
	Rated Current RMS-Amps	I <sup>2</sup> t (A <sup>2</sup> S)		Watts Loss	Protection Class	00B/60 Visual Indicator	00BT/60 Type T Indicator for Micro	Carton Qty.	Carton Weight (kg)	See Page or (BIF #)
		Pre-arc	Clearing at 660V							
00	25	19	130	6	gR	170M2708	170M2758	5	1.35	page 60 (17056312)
	32	28.5	195	7	gR	170M2709	170M2759			
	40	50	360	9	gR	170M2710	170M2760			
	50	95	640	10	gR	170M2711	170M2761			
	63	170	1200	12	gR	170M2712	170M2762			
	80	310	2100	15	gR	170M2713	170M2763			
	100	620	4150	20	aR	170M2714	170M2764			
	125	1000	6950	25	aR	170M2715	170M2765			
	160	1900	13000	30	aR	170M2716	170M2766			
	200	3400	23000	35	aR	170M2717	170M2767			
	250	6250	42000	45	aR	170M2718	170M2768			
	315	10000	68500	55	aR	170M2719	170M2769			
	350	13500	91500	60	aR	170M2720	170M2770			
	400	18000	125000	70	aR	170M2721	170M2771			

- Interrupting rating 300kA RMS Symmetrical.

- Watts loss provided at rated current.

- Microswitch indicator ordered separately. See accessories on pages 58-59.

1 kg = 2.2 lbs. 1 lb = 0.45 kg





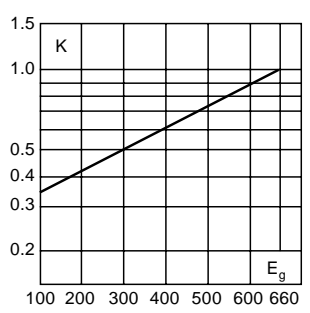
# Square Body - Flush End Contact

## 660V (IEC) 25-400A

### Electrical Characteristics

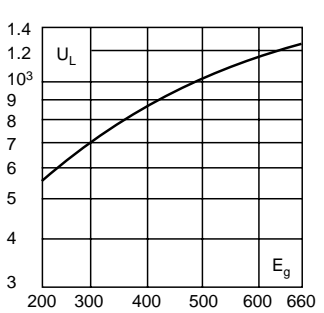
#### Total Clearing I<sup>2</sup>t

The total clearing I<sup>2</sup>t at rated voltage and at power factor of 15% are given in the electrical characteristics. For other voltages, the clearing I<sup>2</sup>t is found by multiplying by correction factor, K, given as a function of applied working voltage, E<sub>g</sub>, (RMS).



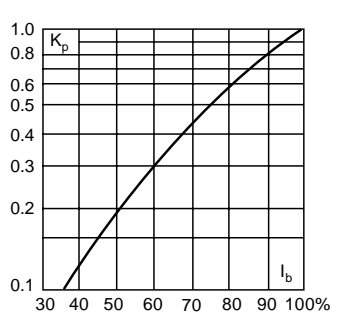
#### Arc Voltage

This curve gives the peak arc voltage, U<sub>L</sub>, which may appear across the fuse during its operation as a function of the applied working voltage, E<sub>g</sub>, (RMS) at a power factor of 15%.



#### Power Losses

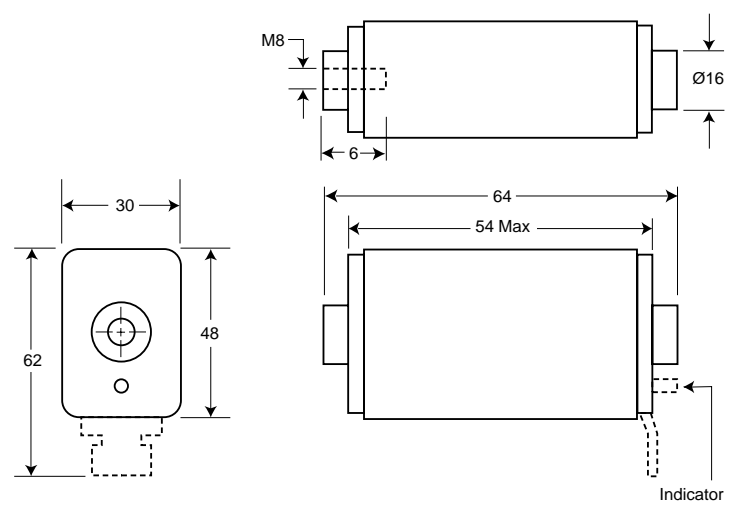
Watts loss at rated current is given in the electrical characteristics. The curve allows the calculation of the power losses at load currents lower than the rated current. The correction factor, K<sub>p</sub>, is given as a function of the RMS load current, I<sub>b</sub>, in % of the rated current.



### Dimensions

Flush End Contact: Type 00B/60, 00BT/60

Dimension in mm.  
1mm = 0.0394" 1" = 25.4mm





Square Body - Flush End Contact

**660V/700V (IEC/U.L.) 40-2000A**

Electrical Characteristics					Ordering Information				Curves		
Size	Rated Current RMS-Amps	I <sup>2</sup> t (A <sup>2</sup> S)		Losses at Rated Current	-B/- Visual Indicator	-BKN/- Type K Indicator for Micro	-G/- Visual Indicator	-GKN/- Type K Indicator for Micro	Carton Qty.	Carton Weight (kg)	See Page or (BIF #)
		Pre-arc	Clearing at 660V								
1*	40	40	270	9	170M3408	170M3458	170M3508	170M3558	10 (-B/-)	2.40	page 61 (17056314)
	50	77	515	11	170M3409	170M3459	170M3509	170M3559			
	63	115	770	14	170M3410	170M3460	170M3510	170M3560			
	80	185	1250	18	170M3411	170M3461	170M3511	170M3561	10 (-G/-)	2.40	
	100	360	2450	21	170M3412	170M3462	170M3512	170M3562			
	125	550	3700	26	170M3413	170M3463	170M3513	170M3563			
	160	1100	7500	30	170M3414	170M3464	170M3514	170M3564	6 (-BKN/-)	1.62	
	200	2200	15000	35	170M3415	170M3465	170M3515	170M3565			
	250	4200	28500	40	170M3416	170M3466	170M3516	170M3566			
	315	7000	46500	50	170M3417	170M3467	170M3517	170M3567	6 (-GKN/-)	1.62	
	350	10000	68500	55	170M3418	170M3468	170M3518	170M3568			
	400	15000	105000	60	170M3419	170M3469	170M3519	170M3569			
	450	21000	140000	65	170M3420	170M3470	170M3520	170M3570	6	2.40	
	500	27000	180000	70	170M3421	170M3471	170M3521	170M3571			
	550	34000	230000	75	170M3422	170M3472	170M3522	170M3572			
	630	48500	325000	80	170M3423	170M3473	170M3523	170M3573			
	200	1650	11500	45	170M4408	170M4458	170M4508	170M4558			
250	3100	21000	55	170M4409	170M4459	170M4509	170M4559				
315	6200	42000	58	170M4410	170M4460	170M4510	170M4560				
350	8500	59000	60	170M4411	170M4461	170M4511	170M4561				
400	13500	91500	65	170M4412	170M4462	170M4512	170M4562				
450	17000	120000	70	170M4413	170M4463	170M4513	170M4563				
500	25000	170000	72	170M4414	170M4464	170M4514	170M4564				
550	34000	230000	75	170M4415	170M4465	170M4515	170M4565				
630	52000	350000	80	170M4416	170M4466	170M4516	170M4566				
700	69500	465000	85	170M4417	170M4467	170M4517	170M4567				
800	105000	725000	95	170M4418	170M4468	170M4518	170M4568				
†900	155000	†850000	100	170M4419	170M4469	170M4519	170M4569				
2	400	11000	74000	65	170M5408	170M5458	170M5508	170M5558	6	3.30	page 62 (17056318)
	450	15500	105000	70	170M5409	170M5459	170M5509	170M5559			
	500	21500	145000	75	170M5410	170M5460	170M5510	170M5560			
	550	28000	190000	80	170M5411	170M5461	170M5511	170M5561			
	630	41000	275000	90	170M5412	170M5462	170M5512	170M5562			
	700	60500	405000	95	170M5413	170M5463	170M5513	170M5563			
	800	86000	575000	105	170M5414	170M5464	170M5514	170M5564			
	900	125000	840000	110	170M5415	170M5465	170M5515	170M5565			
	1000	180000	1250000	115	170M5416	170M5466	170M5516	170M5566			
	1100	245000	1600000	120	170M5417	170M5467	170M5517	170M5567			
	1250	365000	2400000	130	170M5418	170M5468	170M5518	170M5568			
3	500	14000	95000	95	170M6408	170M6458	170M6508	170M6558	3	2.52	page 62 (17056320)
	550	19500	135000	100	170M6409	170M6459	170M6509	170M6559			
	630	31000	210000	105	170M6410	170M6460	170M6510	170M6560			
	700	44500	300000	110	170M6411	170M6461	170M6511	170M6561			
	800	69500	465000	115	170M6412	170M6462	170M6512	170M6562			
	900	100000	670000	120	170M6413	170M6463	170M6513	170M6563			
	1000	140000	945000	125	170M6414	170M6464	170M6514	170M6564			
	1100	190000	1300000	130	170M6415	170M6465	170M6515	170M6565			
	1250	290000	1950000	140	170M6416	170M6466	170M6516	170M6566			
	1400	370000	2450000	155	170M6417	170M6467	170M6517	170M6567			
	1500	460000	3100000	160	170M6418	170M6468	170M6518	170M6568			
	1600	580000	3900000	160	170M6419	170M6469	170M6519	170M6569			
	†1800	880000	†5250000	165	170M6420	170M6470	170M6520	170M6570			
	†2000	1150000	†6350000	175	170M6421	170M6471	170M6521	170M6571			

- Interrupting rating 300kA RMS Symmetrical.
- Watts loss provided at rated current.
- Rated voltage (IEC) †600V †550V (Consult Bussmann for U.L. Recognition status.)
- Microswitch indicator ordered separately. See accessories on pages 58-59.

1 kg = 2.2 lbs. 1 lb = 0.45 kg





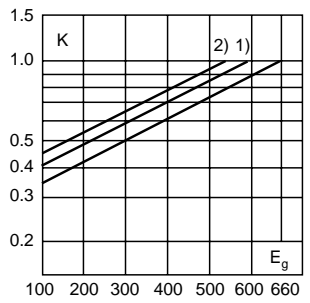
# Square Body – Flush End Contact

## 660V/700V (IEC/U.L.) 40-2000A

### Electrical Characteristics

#### Total Clearing I<sup>2</sup>t

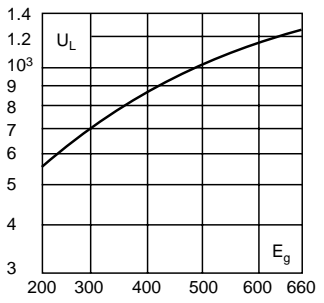
The total clearing I<sup>2</sup>t at rated voltage and at power factor of 15% are given in the electrical characteristics. For other voltages, the clearing I<sup>2</sup>t is found by multiplying by correction factor, K, given as a function of applied working voltage, E<sub>g</sub>, (RMS).



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

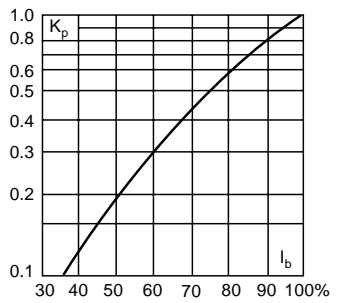
#### Arc Voltage

This curve gives the peak arc voltage, U<sub>L</sub>, which may appear across the fuse during its operation as a function of the applied working voltage, E<sub>g</sub>, (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<sub>p</sub>, is given as a function of the RMS load current, I<sub>b</sub>, in % of the rated current.



### Dimensions

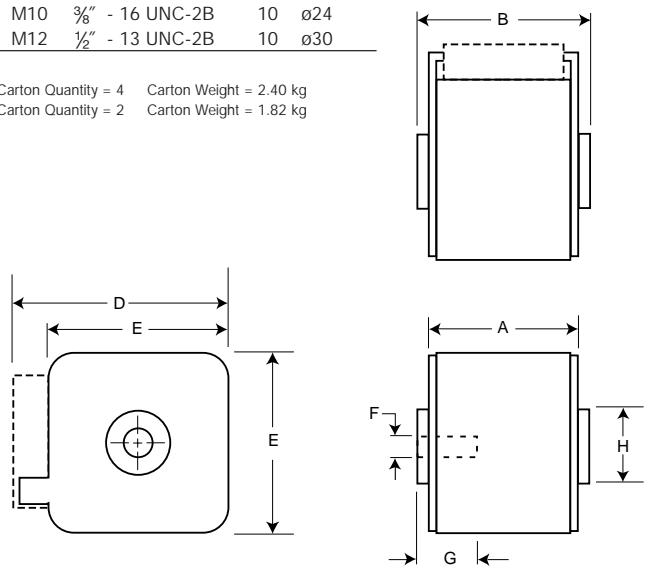
Flush End Contact: Type -B/-, -BKN/-, -G/-, -GKN/-

Size	A	B	D	E	F	F <sup>§</sup>	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

<sup>§</sup>Valid for fuses type -G/- & -GKN/-  
NB: B = 65 for Size 2, 1100-1250A  
Size 3, 1600-2000A

Carton Quantity = 4    Carton Weight = 2.40 kg  
Carton Quantity = 2    Carton Weight = 1.82 kg

Dimension in mm.  
1mm = 0.0394"    1" = 25.4mm





Square Body - Flush End Contact

**660V (IEC) 1000-4000A**

Electrical Characteristics							Ordering Information					Curves	
Size	Rated Current RMS-Norm. Cool.	Rated Current RMS-Liquid Cool.	I <sup>2</sup> t (A <sup>2</sup> S)		Watts Loss Norm. Cool.	Watts Loss Liquid Cool.	-B/- Visual Indicator	-BK/- Type K Indicator for Micro	-G/- Visual Indicator	-GK/- Type K Indicator for Micro	Carton Qty.	Carton Weight (kg)	See Page or (BIF #)
			Pre-arc	Clearing at 660V									
4	1000	1350	76000	505000	175	315	170M7058	170M7078	170M7098	170M7118	2	1.80	page 63 (17056328)
	1250	1700	145000	965000	195	355	170M7059	170M7079	170M7099	170M7119			
	1400	1900	205000	1400000	205	375	170M7060	170M7080	170M7100	170M7120			
	1600	2200	305000	2050000	220	405	170M7061	170M7081	170M7101	170M7121			
	2000	2700	600000	3950000	245	445	170M7062	170M7082	170M7102	170M7122			
	2500	3400	1200000	7800000	275	495	170M7063	170M7083	170M7103	170M7123			
	3000	4100	2000000	13500000	305	555	170M7064	170M7084	170M7104	170M7124			
	3500	4700	3250000	22000000	325	585	170M7065	170M7085	170M7105	170M7125			
	4000	5400	4700000	32300000	355	640	170M7066	170M7086	170M7106	170M7126			

- Interrupting rating 300kA RMS Symmetrical.
- Watts loss provided at rated current.
- Rated voltage (IEC) †500V
- Liquid Cool. = Liquid cooling. Temperature on the terminals not to exceed 60°C.
- Microswitch indicator ordered separately. See accessories on pages 58-59.

1 kg = 2.2 lbs. 1 lb = 0.45 kg





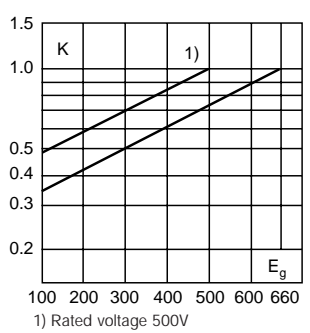
# Square Body – Flush End Contact

## 660V (IEC) 1000-4000A

### Electrical Characteristics

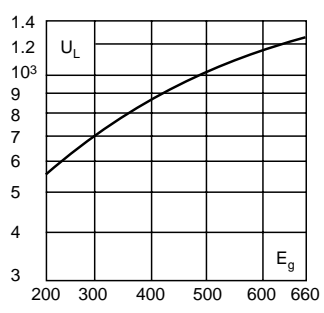
#### Total Clearing I<sup>2</sup>t

The total clearing I<sup>2</sup>t at rated voltage and at power factor of 15% are given in the electrical characteristics. For other voltages, the clearing I<sup>2</sup>t is found by multiplying by correction factor, K, given as a function of applied working voltage, E<sub>g</sub>, (RMS).



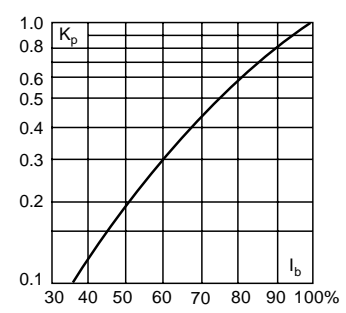
#### Arc Voltage

This curve gives the peak arc voltage, U<sub>L</sub>, which may appear across the fuse during its operation as a function of the applied working voltage, E<sub>g</sub>, (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<sub>p</sub>, is given as a function of the RMS load current, I<sub>b</sub>, in % of the rated current.

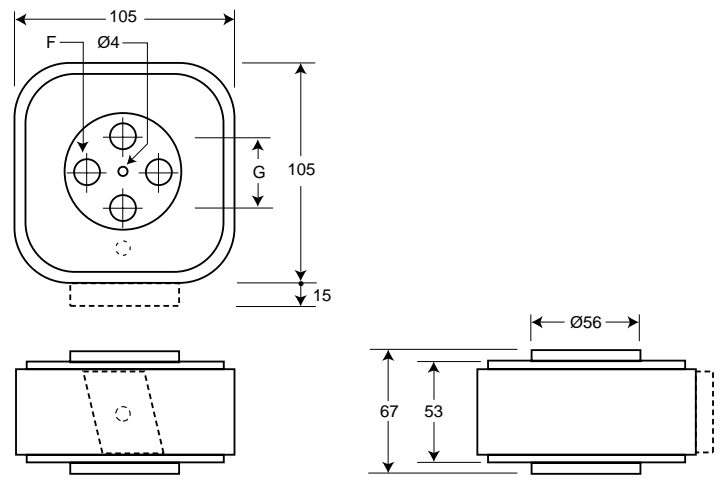


### Dimensions

Flush End Contact: Type 4B/-, 4BKN/-, 4G/-, 4GKN/-

Size	F	G
4B	M10 10 deep	33
4G	1/2" -13 UNC-2B 10 deep	38

Dimension in mm.  
1mm = 0.0394" 1" = 25.4mm





Square Body – Flush End Contact

**1250V/1300V (IEC/U.L.)****50-1400A**

Electrical Characteristics						Ordering Information					Curves
Size	Rated Current RMS-Amps	I <sup>2</sup> t (A <sup>2</sup> S)			Watts Loss	-BK/75 Type K Indicator for Micro	-BK/80 Type K Indicator for Micro	-BK/90 Type K Indicator for Micro	-GK/75 Type K Indicator for Micro	-GK/90 Type K Indicator for Micro	See Page or (BIF #)
		Pre-arc	Clearing at 1000V	Clearing at 1250V							
1*	50	135	815	1100	15	170M3388	170M3438		170M3488		page 63 (17056630)
	63	215	1300	1750	20	170M3389	170M3439		170M3489		
	80	420	2500	3350	25	170M3390	170M3440		170M3490		
	100	750	4450	5950	30	170M3391	170M3441		170M3491		
	125	1450	9000	11500	35	170M3392	170M3442		170M3492		
	160	2600	16000	21000	40	170M3393	170M3443		170M3493		
	200	5150	31000	41000	45	170M3394	170M3444		170M3494		
	250	9200	54500	73000	55	170M3395	170M3445		170M3495		
	315	18500	115000	150000	60	170M3396	170M3446		170M3496		
	350	27000	165000	220000	65	170M3397	170M3447		170M3497		
	400	53000	265000	335000	70		170M3448				
1	160	1900	11500	15500	45	170M4388	170M4438		170M4488		page 64 (17056632)
	200	3800	22500	30000	50	170M4389	170M4439		170M4489		
	250	7750	46000	61500	60	170M4390	170M4440		170M4490		
	315	15000	90000	120000	65	170M4391	170M4441		170M4491		
	350	20000	125000	165000	70	170M4392	170M4442		170M4492		
	400	29500	175000	235000	75	170M4393	170M4443		170M4493		
	450	42000	250000	335000	80	170M4394	170M4444		170M4494		
	500	69500	340000	435000	85	†170M4395	170M4445		†170M4495		
	550	95000	465000	590000	95	†170M4396	170M4446		†170M4496		
	630	130000	660000		100	†170M4397	†170M4447		†170M4497		
	2	250	6500	38500	51500	65	170M5388	170M5438		170M5588	
280		9350	55500	74500	70	170M5389	170M5439		170M5589		
315		13000	77500	105000	75	170M5390	170M5440		170M5590		
350		16500	97500	135000	80	170M5391	170M5441		170M5591		
400		23000	140000	180000	85	170M5392	170M5442		170M5592		
450		34000	205000	270000	90	170M5393	170M5443		170M5593		
500		48000	285000	380000	95	170M5394	170M5444	170M5494	170M5594	170M5644	
550		62000	370000	495000	100	170M5395	170M5445	170M5495	170M5595	170M5645	
630		115000	575000	730000	110	†170M5396	170M5446	170M5496	†170M5596	170M5646	
700		160000	795000	1050000	115	†170M5397	†170M5447	170M5497	†170M5597	170M5647	
800		245000	1200000	1550000	120	†170M5398	†170M5448	170M5498	†170M5598	170M5648	
†900		360000	1750000		125			170M5499		170M5649	
†1000		480000	2350000		135			170M5500		170M5650	
3	315	9500	58000	77500	85	170M6338	170M6538		170M6588		page 65 (17056636)
	350	13500	81500	110000	90	170M6339	170M6539		170M6589		
	400	19500	120000	160000	95	170M6340	170M6540		170M6590		
	450	31000	185000	245000	100	170M6341	170M6541		170M6591		
	500	39000	235000	310000	105	170M6342	170M6542		170M6592		
	550	55000	325000	435000	110	170M6343	170M6543		170M6593		
	630	83500	495000	665000	115	170M6344	170M6544	170M6494	170M6594	170M6644	
	700	115000	705000	940000	120	170M6345	170M6545	170M6495	170M6595	170M6645	
	800	205000	995000	1300000	125	†170M6346	170M6546	¥170M6496	†170M6596	¥170M6646	
	900	305000	1500000	1900000	130	†170M6347	†170M6547	¥170M6497	†170M6597	¥170M6647	
	1000	450000	2150000	2750000	135	†170M6348	†170M6548	¥170M6498	†170M6598	¥170M6648	
	1100	575000	2800000	3600000	140	†170M6349	†170M6549	¥170M6499	†170M6599	¥170M6649	
	†1250	810000	3950000		145			170M6500		170M6650	
	†1400	1250000	6000000		150			170M6501		170M6651	

- Interrupting rating 300kA RMS Symmetrical.
- Watts loss provided at rated current.
- Rated voltage (IEC) †1100V †1000V ¥1250V (Consult Bussmann for U.L. Recognition status.)
- Individual Fuse Weight: Size 1\* = 0.380 kg  
Size 1 = 0.580 kg  
Size 2 = 0.900 kg  
Size 3 = 1.250 kg
- Microswitch indicator ordered separately. See accessories on pages 58-59.

1 kg = 2.2 lbs. 1 lb = 0.45 kg





Square Body – Flush End Contact

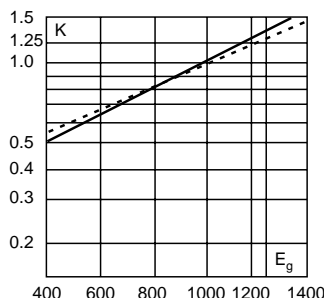
**1250V/1300V (IEC/U.L.) 50-1400A**



**Electrical Characteristics**

**Total Clearing I<sup>2</sup>t**

The total clearing I<sup>2</sup>t at rated voltage and at power factor of 15% are given in the electrical characteristics. For other voltages, the clearing I<sup>2</sup>t is found by multiplying by correction factor, K, given as a function of applied working voltage, E<sub>g</sub>, (RMS).

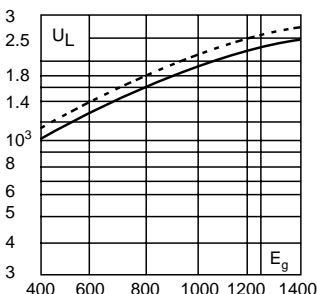


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Dashed lines apply to the following amperages:

Size	1*	1	2	3
Amp	400	500-630	630-1000	800-1400

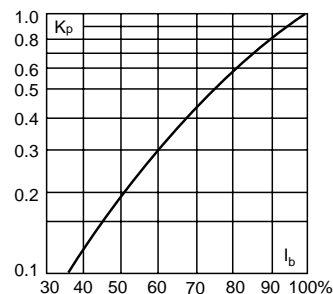
**Arc Voltage**

This curve gives the peak arc voltage, U<sub>L</sub>, which may appear across the fuse during its operation as a function of the applied working voltage, E<sub>g</sub>, (RMS) at a power factor of 15%.



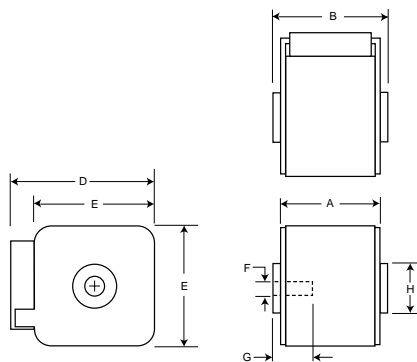
**Power Losses**

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<sub>p</sub>, is given as a function of the RMS load current, I<sub>b</sub>, in % of the rated current.



**Dimensions**

Flush End Contact: Type -BK/-, -GK/-



Size	Type	A	B	D	E	F	F <sup>§</sup>	G	H
1*	BK + GK/75	74	75	59	45	M8	5/16" - 18 UNC-2B	5	Ø17
1*	BK/80	80	81	59	45	M8		5	Ø17
1	BK + GK/75	74	75	69	53	M8	5/16" - 18 UNC-2B	8	Ø20
1	BK/80	80	81	69	53	M8		8	Ø20
2	BK + GK/75	74	75	77	61	M10	3/8" - 16 UNC-2B	10	Ø24
2	BK/80	80	81	77	61	M10		10	Ø24
2	BK + GK/90	80	91	77	61	M10	3/8" - 16 UNC-2B	10	Ø24
3	BK + GK/75	74	76	92	76	M12	1/2" - 13 UNC-2B	10	Ø30
3	BK/80	81	83	92	76	M12		10	Ø30
3	BK + GK/90	81	91	92	76	M12	1/2" - 13 UNC-2B	10	Ø30

<sup>§</sup>Valid for fuses type -GK/-  
Dimension in mm.  
1mm = 0.0394" 1" = 25.4mm





Square Body – French Style

**660V/700V (IEC/U.L.) 40-1500A**

Size	Electrical Characteristics				Ordering Information			Curves	
	Rated Current RMS-Amps	I <sup>2</sup> t (A <sup>2</sup> S)		Watts Loss	-E/ Type T Indicator For Micro	-EK/ Type K Indicator for Micro	Carton Qty.	Carton Weight (kg)	See Page or (BIF #)
		Pre-arc	Clearing at 660V						
1*	40	40	270	9	170M3308	170M3358	1	0.300	page 61 (17056314)
	50	77	515	11	170M3309	170M3359			
	63	115	770	14	170M3310	170M3360			
	80	185	1250	18	170M3311	170M3361			
	100	360	2450	21	170M3312	170M3362			
	125	550	3700	26	170M3313	170M3363			
	160	1100	7500	30	170M3314	170M3364			
	200	2200	15000	35	170M3315	170M3365			
	250	4200	28500	40	170M3316	170M3366			
	315	7000	46500	50	170M3317	170M3367			
	350	10000	68500	55	170M3318	170M3368			
	400	15000	105000	60	170M3319	170M3369			
	450	21000	140000	65	170M3320	170M3370			
500	27000	180000	70	170M3321	170M3371				
1	200	1650	11500	45	170M4308	170M4358	1	0.470	page 61 (17056316)
	250	3100	21000	55	170M4309	170M4359			
	315	6200	42000	58	170M4310	170M4360			
	350	8500	59000	60	170M4311	170M4361			
	400	13500	91500	65	170M4312	170M4362			
	450	17000	120000	70	170M4313	170M4363			
	500	25000	170000	72	170M4314	170M4364			
	550	34000	230000	75	170M4315	170M4365			
	630	52000	350000	80	170M4316	170M4366			
700	69500	465000	85	170M4317	170M4367				
800	105000	725000	95	170M4318	170M4368				
2	400	11000	74000	65	170M5308	170M5358	1	0.620	page 62 (17056318)
	450	15500	105000	70	170M5309	170M5359			
	500	21500	145000	75	170M5310	170M5360			
	550	28000	190000	80	170M5311	170M5361			
	630	41000	275000	90	170M5312	170M5362			
	700	60500	405000	95	170M5313	170M5363			
	800	86000	575000	105	170M5314	170M5364			
	900	125000	840000	110	170M5315	170M5365			
1000	180000	1250000	115	170M5316	170M5366				
3	500	14000	95000	95	170M6308	170M6358	1	0.930	page 62 (17056320)
	550	19500	135000	100	170M6309	170M6359			
	630	31000	210000	105	170M6310	170M6360			
	700	44500	300000	110	170M6311	170M6361			
	800	69500	465000	115	170M6312	170M6362			
	900	100000	670000	120	170M6313	170M6363			
	1000	140000	945000	125	170M6314	170M6364			
	1100	190000	1300000	130	170M6315	170M6365			
	1250	290000	1950000	140	170M6316	170M6366			
	1400	370000	2450000	155	170M6317	170M6367			
1500	460000	3100000	160	170M6318	170M6368				

- Interrupting rating 300kA RMS Symmetrical.
- Watts loss provided at rated current.
- Microswitch indicator ordered separately. See accessories on pages 58-59.

1 kg = 2.2 lbs. 1 lb = 0.45 kg





Square Body – French Style

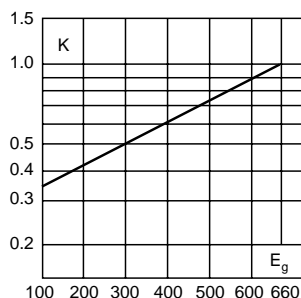
# 660V/700V (IEC/U.L.) 40-1500A



## Electrical Characteristics

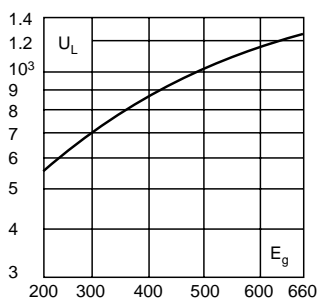
### Total Clearing I<sup>2</sup>t

The total clearing I<sup>2</sup>t at rated voltage and at power factor of 15% are given in the electrical characteristics. For other voltages, the clearing I<sup>2</sup>t is found by multiplying by correction factor, K, given as a function of applied working voltage, E<sub>g</sub>, (RMS).



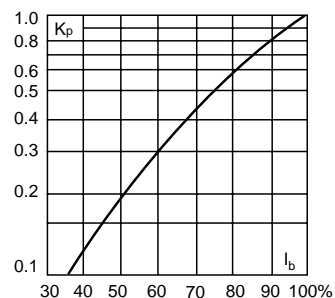
### Arc Voltage

This curve gives the peak arc voltage, U<sub>L</sub>, which may appear across the fuse during its operation as a function of the applied working voltage, E<sub>g</sub>, (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<sub>p</sub>, is given as a function of the RMS load current, I<sub>b</sub>, in % of the rated current.

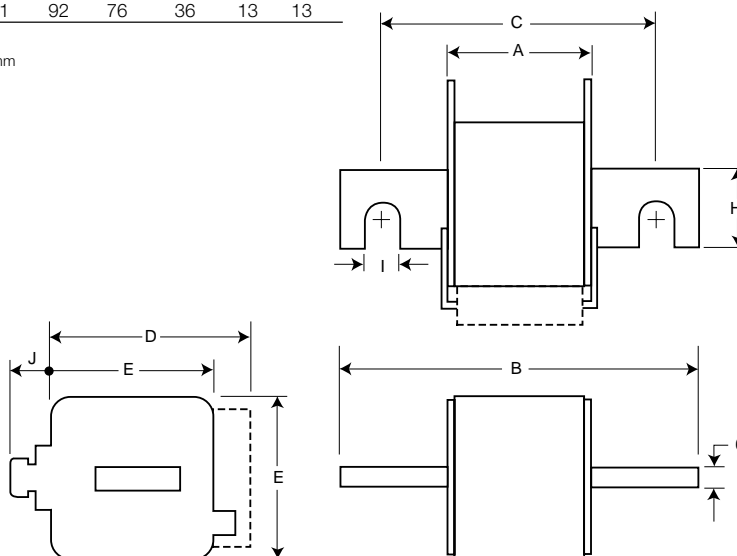


## Dimensions

French Style: Type -E/-, -EK/-

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

Dimension in mm.  
1mm = 0.0394" 1" = 25.4mm





Square Body - US Style

660V/700V (IEC) 40-2000A



Electrical Characteristics					Ordering Information				Curves		
Size	Rated Current RMS-Amps	I <sup>2</sup> t (A <sup>2</sup> S)		Watts Loss	-FU/- Without Indicator	-FKE/- Type K Indicator for Micro	-FU/115 Without Indicator	-FKE/115 Type K Indicator for Micro	Carton Qty.	Carton Weight (kg)	See Page or (BIF #)
		Pre-arc	Clearing at 660V								
1*	40	40	270	9	170M3608	170M3658	170M3708	170M3758	1	0.340	page 61 (17056314)
	50	77	515	11	170M3609	170M3659	170M3709	170M3759			
	63	115	770	14	170M3610	170M3660	170M3710	170M3760			
	80	185	1250	18	170M3611	170M3661	170M3711	170M3761			
	100	360	2450	21	170M3612	170M3662	170M3712	170M3762			
	125	550	3700	26	170M3613	170M3663	170M3713	170M3763			
	160	1100	7500	30	170M3614	170M3664	170M3714	170M3764			
	200	2200	15000	35	170M3615	170M3665	170M3715	170M3765			
	250	4200	28500	40	170M3616	170M3666	170M3716	170M3766			
	315	7000	46500	50	170M3617	170M3667	170M3717	170M3767			
	350	10000	68500	55	170M3618	170M3668	170M3718	170M3768			
	400	15000	105000	60	170M3619	170M3669	170M3719	170M3769			
	450	21000	140000	65	170M3620	170M3670	170M3720	170M3770			
	500	27000	180000	70	170M3621	170M3671	170M3721	170M3771			
	550	34000	230000	75	170M3622	170M3672	170M3722	170M3772			
630	48500	325000	80	170M3623	170M3673	170M3723	170M3773				
1	200	1650	11500	45	170M4608	170M4658	170M4708	170M4758	1	0.500	page 61 (17056316)
	250	3100	21000	55	170M4609	170M4659	170M4709	170M4759			
	315	6200	42000	58	170M4610	170M4660	170M4710	170M4760			
	350	8500	59000	60	170M4611	170M4661	170M4711	170M4761			
	400	13500	91500	65	170M4612	170M4662	170M4712	170M4762			
	450	17000	120000	70	170M4613	170M4663	170M4713	170M4763			
	500	25000	170000	72	170M4614	170M4664	170M4714	170M4764			
	550	34000	230000	75	170M4615	170M4665	170M4715	170M4765			
	630	52000	350000	80	170M4616	170M4666	170M4716	170M4766			
	700	69500	465000	85	170M4617	170M4667	170M4717	170M4767			
	800	105000	725000	95	170M4618	170M4668	170M4718	170M4768			
	†900	155000	†850000	100	170M4619	170M4669	170M4719	170M4769			
2	400	11000	74000	65	170M5608	170M5658	170M5708	170M5758	1	0.630	page 62 (17056318)
	450	15500	105000	70	170M5609	170M5659	170M5709	170M5759			
	500	21500	145000	75	170M5610	170M5660	170M5710	170M5760			
	550	28000	190000	80	170M5611	170M5661	170M5711	170M5761			
	630	41000	275000	90	170M5612	170M5662	170M5712	170M5762			
	700	60500	405000	95	170M5613	170M5663	170M5713	170M5763			
	800	86000	575000	105	170M5614	170M5664	170M5714	170M5764			
	900	125000	840000	110	170M5615	170M5665	170M5715	170M5765			
	1000	180000	1250000	115	170M5616	170M5666	170M5716	170M5766			
	1100	245000	1600000	120	170M5617	170M5667	170M5717	170M5767			
1250	365000	2400000	130	170M5618	170M5668	170M5718	170M5768				
3	500	14000	95000	95	170M6608	170M6658	170M6708	170M6758	1	0.950	page 62 (17056320)
	550	19500	135000	100	170M6609	170M6659	170M6709	170M6759			
	630	31000	210000	105	170M6610	170M6660	170M6710	170M6760			
	700	44500	300000	110	170M6611	170M6661	170M6711	170M6761			
	800	69500	465000	115	170M6612	170M6662	170M6712	170M6762			
	900	100000	670000	120	170M6613	170M6663	170M6713	170M6763			
	1000	140000	945000	125	170M6614	170M6664	170M6714	170M6764			
	1100	190000	1300000	130	170M6615	170M6665	170M6715	170M6765			
	1250	290000	1950000	140	170M6616	170M6666	170M6716	170M6766			
	1400	370000	2450000	155	170M6617	170M6667	170M6717	170M6767			
	1500	460000	3100000	160	170M6618	170M6668	170M6718	170M6768			
	1600	580000	3900000	160	170M6619	170M6669	170M6719	170M6769			
	†1800	880000	†5250000	165	170M6620	170M6670	170M6720	170M6770			
	‡2000	1150000	†6350000	175	170M6621	170M6671	170M6721	170M6771			

- Interrupting rating 300kA RMS Symmetrical.
- Watts loss provided at rated current.
- Rated voltage (IEC) †600V ‡550V (Consult Bussmann for U.L. Recognition status.)
- Microswitch indicator ordered separately. See accessories on pages 58-59.

1 kg = 2.2 lbs. 1 lb = 0.45 kg



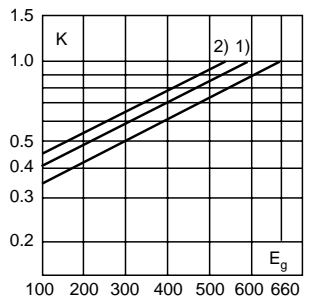


# Square Body - US Style 660V/700V (IEC) 40-2000A

## Electrical Characteristics

### Total Clearing I<sup>2</sup>t

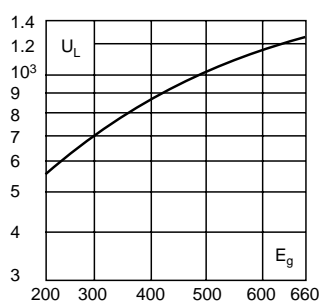
The total clearing I<sup>2</sup>t at rated voltage and at power factor of 15% are given in the electrical characteristics. For other voltages, the clearing I<sup>2</sup>t is found by multiplying by correction factor, K, given as a function of applied working voltage, E<sub>g</sub>, (RMS).



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

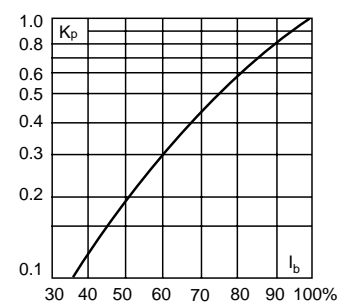
### Arc Voltage

This curve gives the peak arc voltage, U<sub>L</sub>, which may appear across the fuse during its operation as a function of the applied working voltage, E<sub>g</sub>, (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<sub>p</sub>, is given as a function of the RMS load current, I<sub>b</sub>, in % of the rated current.

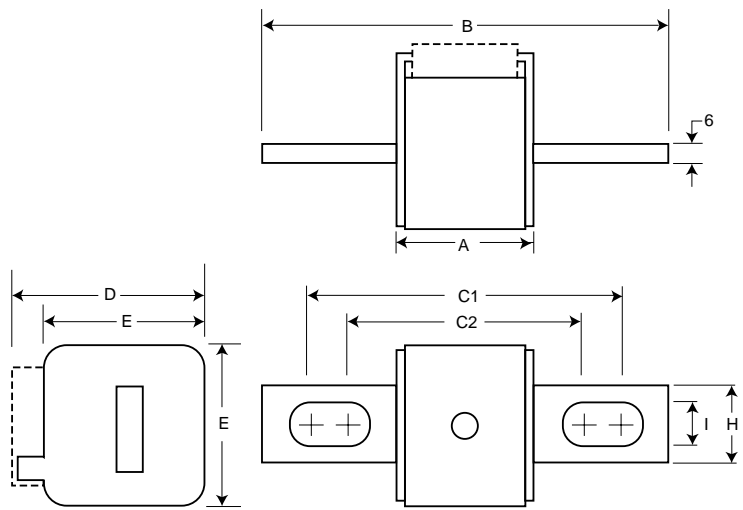


## Dimensions

US Style: Type -FU/-, -FKE/-, FU/115-, -FKE/115

Size	A	B	B <sup>§</sup>	C1	C1 <sup>§</sup>	C2	C2 <sup>§</sup>	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

<sup>§</sup>Valid for fuses type -FU/115 & -FKE/115  
Dimension in mm.  
1mm = 0.0394" 1" = 25.4mm





Square Body – US Style

# 1250V/1300V (IEC/U.L.) 50-1400A



Size	Electrical Characteristics					Ordering Information				Curves
	Rated Current RMS-Amps	I <sup>2</sup> t (A <sup>2</sup> S)			Watts Loss	-FU/115 Visual Indicator	-FKE/115 Type K Indicator for Micro	Carton Qty.	Carton Weight (kg)	See Page or (BIF #)
		Pre-arc	Clearing at 1000V	Clearing at 1250V						
1*	50	135	815	1100	15	170M3688	170M3738	1	0.425	page 63 (17056630)
	63	215	1300	1750	20	170M3689	170M3739			
	80	420	2500	3350	25	170M3690	170M3740			
	100	750	4450	5950	30	170M3691	170M3741			
	125	1450	9000	11500	35	170M3692	170M3742			
	160	2600	16000	21000	40	170M3693	170M3743			
	200	5150	31000	41000	45	170M3694	170M3744			
	250	9200	54500	73000	55	170M3695	170M3745			
	315	18500	115000	150000	60	170M3696	170M3746			
	350	27000	165000	220000	65	170M3697	170M3747			
1	160	1900	11500	15500	45	170M4688	170M4738	1	0.675	page 64 (17056632)
	200	3800	22500	30000	50	170M4689	170M4739			
	250	7750	46000	61500	60	170M4690	170M4740			
	315	15000	90000	120000	65	170M4691	170M4741			
	350	20000	125000	165000	70	170M4692	170M4742			
	400	29500	175000	235000	75	170M4693	170M4743			
	450	42000	250000	335000	80	170M4694	170M4744			
	†500	69500	340000		85	170M4695	170M4745			
	†550	95000	465000		95	170M4696	170M4746			
	†630	130000	660000		100	170M4697	170M4747			
2	250	6500	38500	51500	65	170M5688	170M5738	1	0.740	page 64 (17056634)
	280	9350	55500	74500	70	170M5689	170M5739			
	315	13000	77500	105000	75	170M5690	170M5740			
	350	16500	97500	135000	80	170M5691	170M5741			
	400	23000	140000	180000	85	170M5692	170M5742			
	450	34000	205000	270000	90	170M5693	170M5743			
	500	48000	285000	380000	95	170M5694	170M5744			
	550	62000	370000	495000	100	170M5695	170M5745			
	630	115000	575000	730000	110	170M5696	170M5746			
	†700	160000	795000		115	170M5697	170M5747			
	†800	245000	1200000		120	170M5698	170M5748			
	†900	360000	1750000		125	170M5699	170M5749			
	†1000	480000	2350000		135	170M5700	170M5750			
3	315	9500	58000	77500	185	170M6688	170M6738	1	1.250	page 65 (17056636)
	350	13500	81500	110000	90	170M6689	170M6739			
	400	19500	120000	160000	95	170M6690	170M6740			
	450	31000	185000	245000	100	170M6691	170M6741			
	500	39000	235000	310000	105	170M6692	170M6742			
	550	55000	325000	435000	110	170M6693	170M6743			
	630	83500	495000	665000	115	170M6694	170M6744			
	700	115000	705000	940000	120	170M6695	170M6745			
	800	205000	995000	1300000	125	170M6696	170M6746			
	900	305000	1500000	1900000	130	170M6697	170M6747			
	¥1000	450000	2150000		135	†170M6698	†170M6748			
	¥1100	575000	2800000		140	†170M6699	†170M6749			
	¥1250	810000	3950000		145	†170M6700	†170M6750			
¥1400	1250000	6000000		150	†170M6701	†170M6751				

- Interrupting rating 300kA RMS Symmetrical.
- Watts loss provided at rated current.
- Rated voltage (IEC) †1100 †1000V (Consult Bussmann for U.L. Recognition status.)
- Microswitch indicator ordered separately. See accessories on pages 58-59.
- ¥ U.L. Recognition at 1000V.

1 kg = 2.2 lbs. 1 lb = 0.45 kg





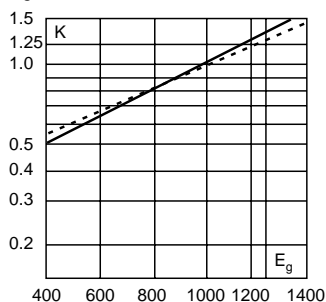
Square Body - US Style

# 1250V/1300V (IEC/U.L.) 50-1400A

## Electrical Characteristics

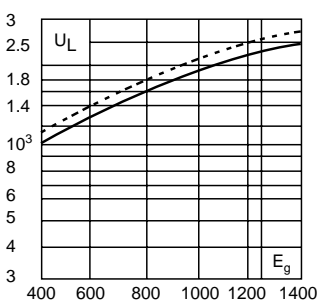
### Total Clearing I<sup>2</sup>t

The total clearing I<sup>2</sup>t at rated voltage and at power factor of 15% are given in the electrical characteristics. For other voltages, the clearing I<sup>2</sup>t is found by multiplying by correction factor, K, given as a function of applied working voltage, E<sub>g</sub>, (RMS).



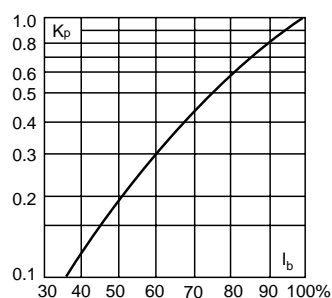
### Arc Voltage

This curve gives the peak arc voltage, U<sub>L</sub>, which may appear across the fuse during its operation as a function of the applied working voltage, E<sub>g</sub>, (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<sub>p</sub>, is given as a function of the RMS load current, I<sub>b</sub>, in % of the rated current.



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Dashed lines apply to the following amperages:

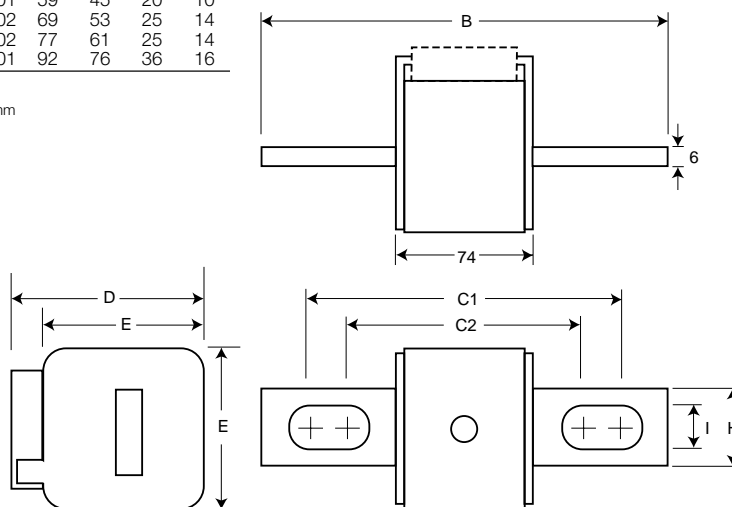
Size	1*	1	2	3
Amp	400	500-630	630-1000	800-1400

## Dimensions

US Style: 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

Dimension in mm.  
1mm = 0.0394" 1" = 25.4mm



BIF document: 720032



For complete specification data, visit our Web site at [www.bussmann.com](http://www.bussmann.com)  
or call Bussmann Information Fax ~ 314.527.1450



# Square Body – Accessories

## Indicator System



### Indicators

Typower ZILOX fuses are available with three different indicator systems.

#### 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.

#### 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.

#### Type K Indicator

This indicator is situated on the fuse body. It is covered by an adaptor 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 adaptor must not be removed from the fuse.

### Microswitch

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



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

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

BIF document: 720034





Square Body – 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:

Part Number	Max. Voltage	Rated Current	Center Distance
170H3003	1000V	630A	80mm
170H3004	1000V	1250A	80mm
170H3005	1400V	630A	110mm
170H3006	1400V	1250A	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 Rating	Max. Load Current In Fuse Base
1400A	1325A
1500A	1400A
1600A	1500A
1800A	1650A
2000A	1800A

Fixed Center Base Style	Max. Voltage	Max. Fuse Current Rating	Fuse Size
170H1007	1000V	400A	00, 000
170H1013	660V	200A	0000,000

U.L. Recognized to U.L. 512.

### Universal Fuse Bases

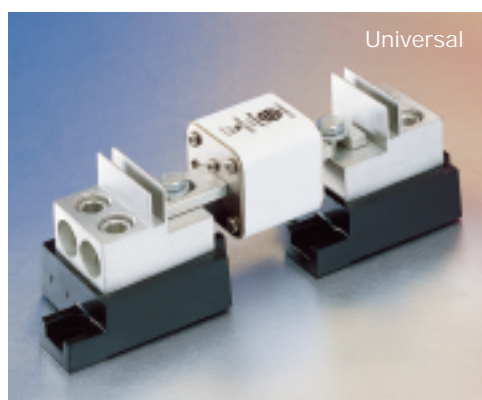
For the Typower ZILOX fuses according to DIN 43 653, French style and North American style, the following fuse bases are available:

Modular Base Style	Max. Voltage	Max. Fuse Current Rating	BIF Document
1BS101	600V	100A	1206
1BS102	600V	400A	1207
1BS103	600V	400A	1208
1BS104	600V	600A	1209
BH-0	700V	100A	1200
BH-1	2500V	400A	1201
BH-2	5000V	400A	1202
BH-3	1250V	700A	1203

Modular fuse bases are U.L. Recognized to U.L. 512 and meet the spacing requirements of U.L. 347. Contact 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 Bussmann sales representative.

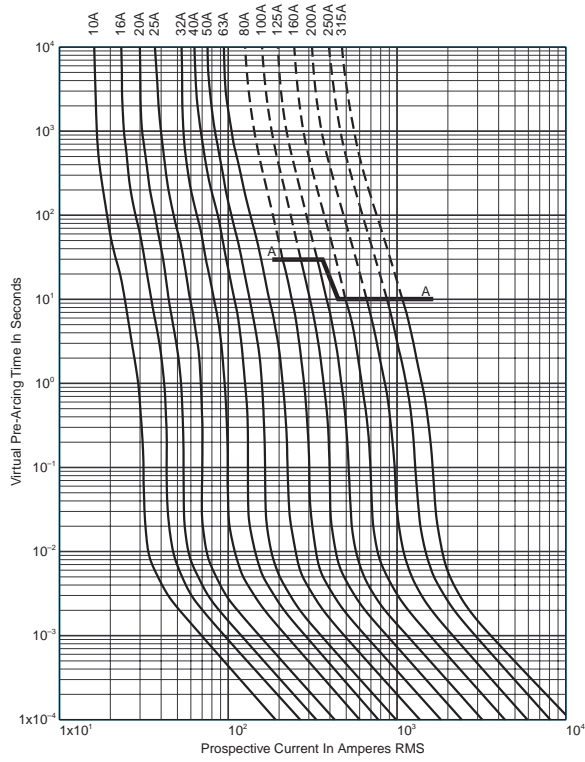




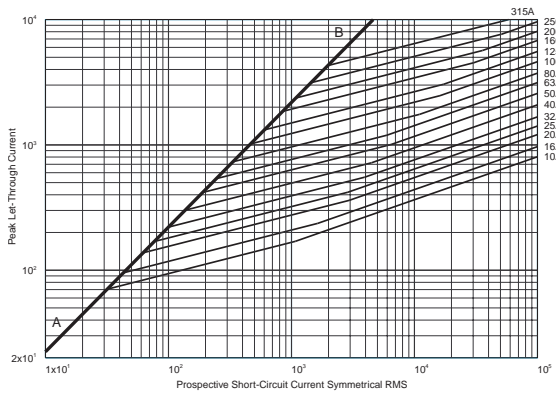
# Square Body Curves

## Size 000: 660V (10-315)A

Time-Current Curve



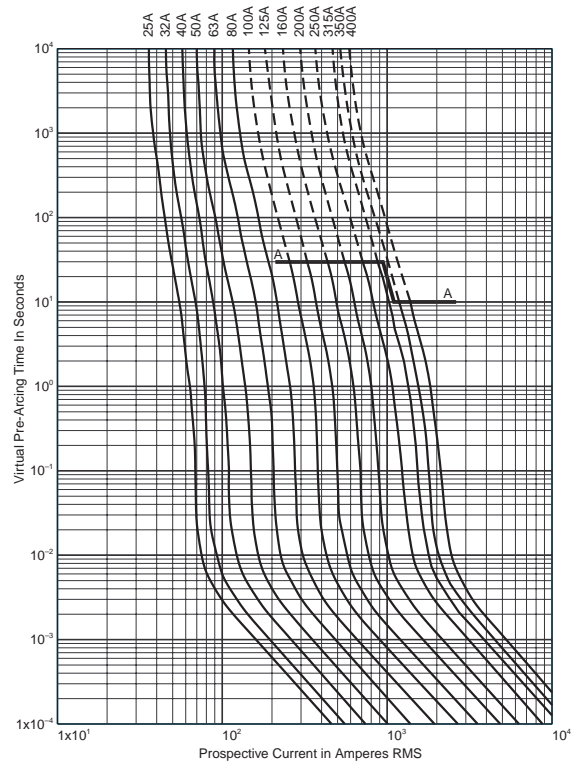
## Peak Let-Through Curve



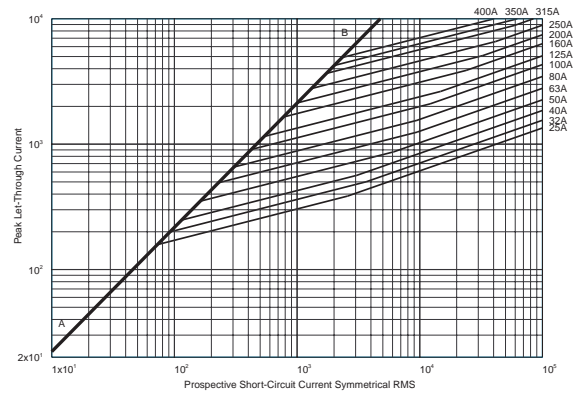
BIF document: 17056310

## Size 00: 660V (25-400)A

Time-Current Curve



## Peak Let-Through Curve



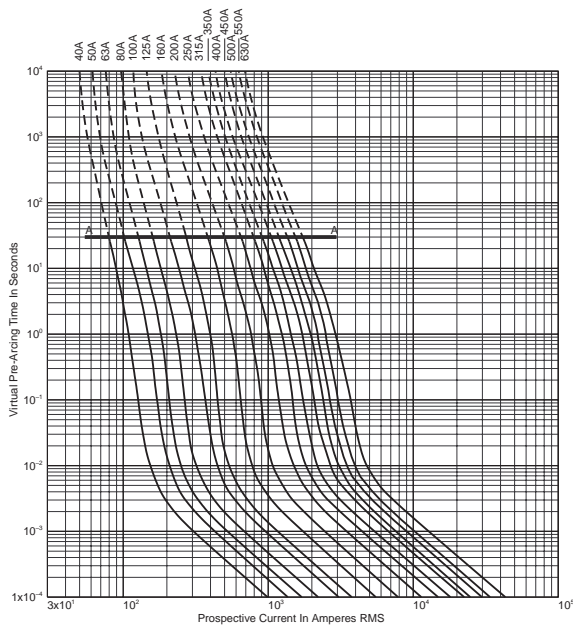
BIF document: 17056312



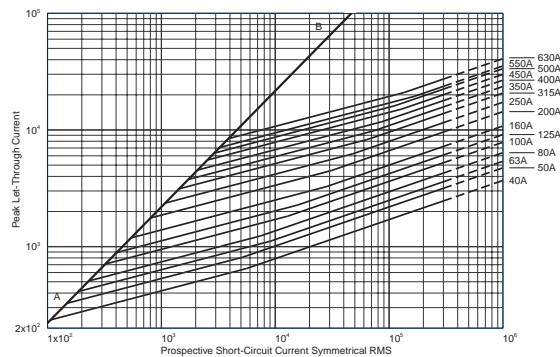


# Square Body Curves

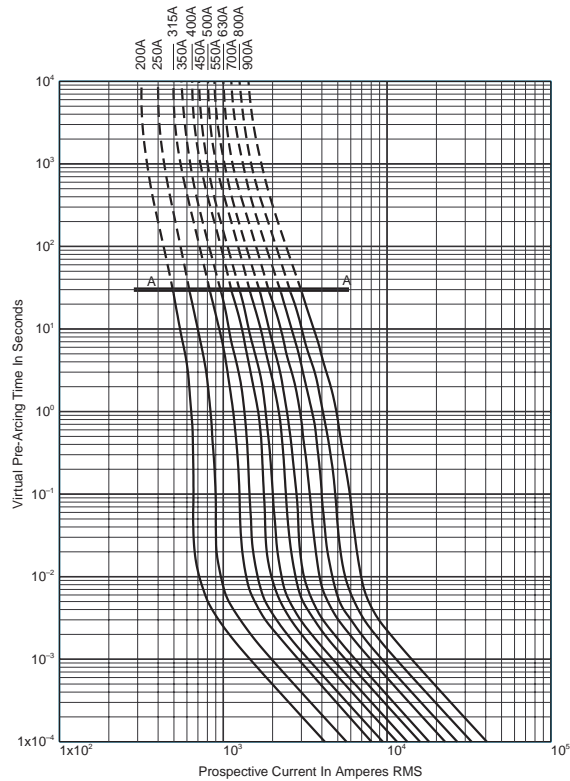
Size 1\*: 660V (40-630)A  
Time-Current Curve



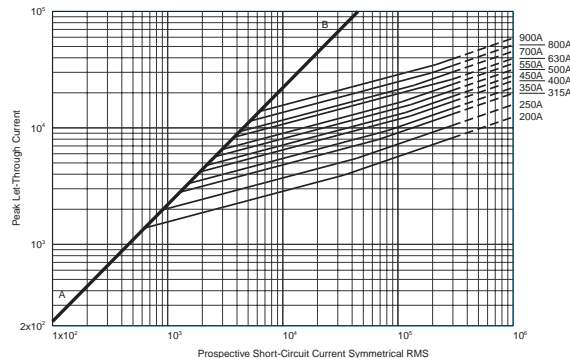
Peak Let-Through Curve



Size 1: 660V (200-900)A  
Time-Current Curve



Peak Let-Through Curve



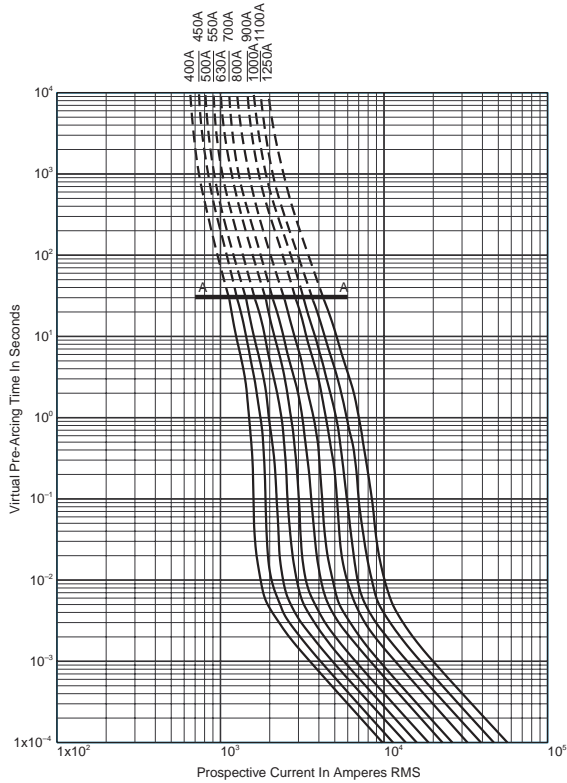
900 amp fuse is derated to 550V (IEC).



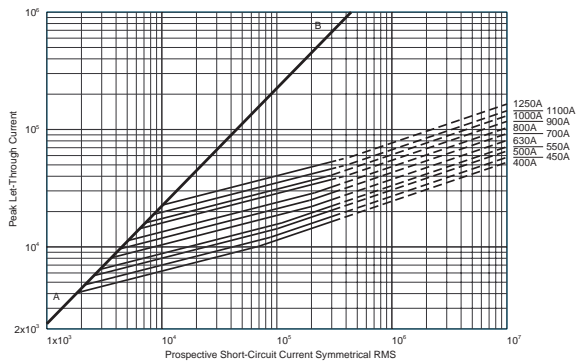


# Square Body Curves

Size 2: 660V (400-1250)A  
Time-Current Curve

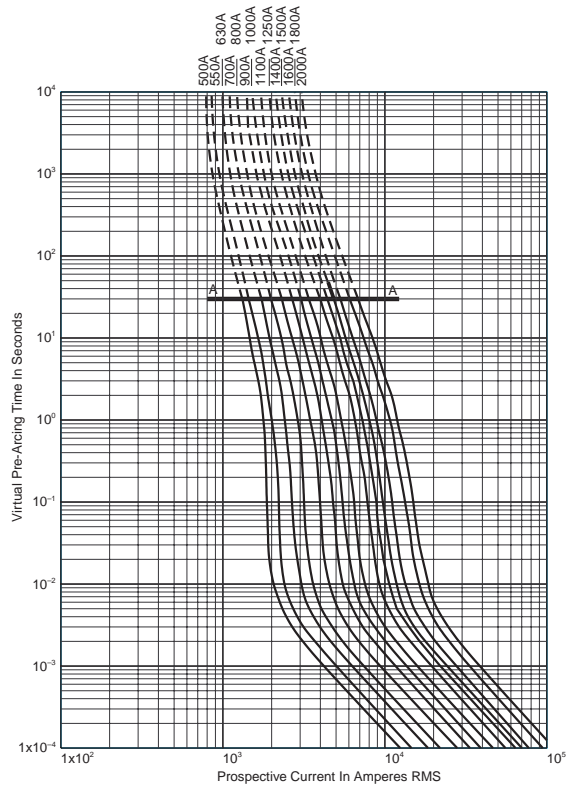


Peak Let-Through Curve

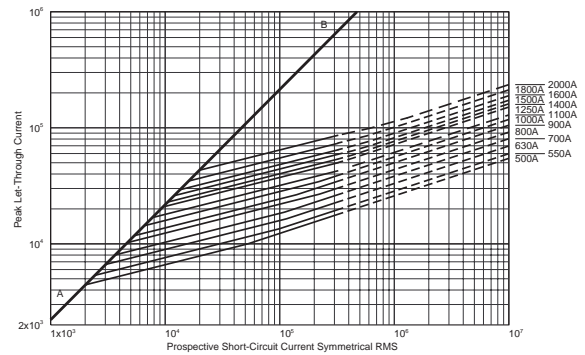


BIF document: 17056318

Size 3: 660V (500-2000)A  
Time-Current Curve



Peak Let-Through Curve



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

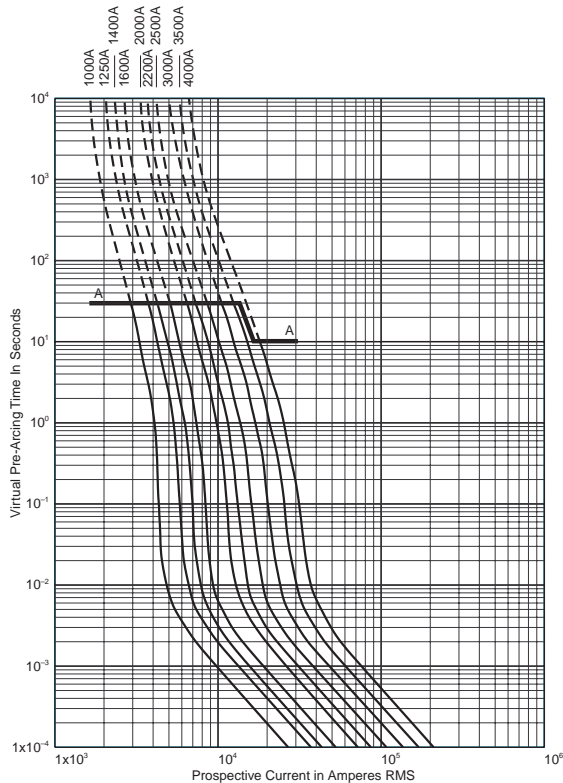
BIF document: 17056320



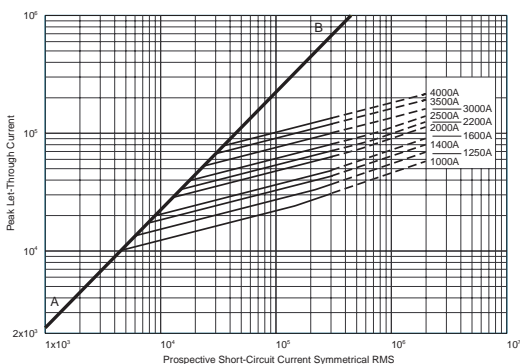


# Square Body Curves

Size 4: 660V (1000-4000)A  
Time-Current Curve

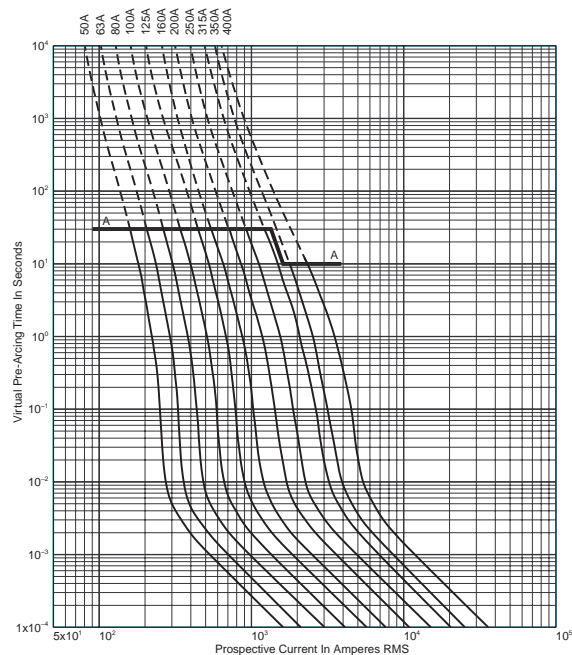


Peak Let-Through Curve

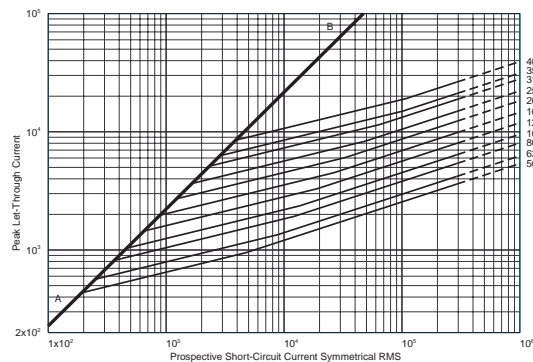


4000 amp fuse is derated to 500V (IEC).

Size 1\*: 1250V (50-400)A  
Time-Current Curve



Peak Let-Through Curve



BIF document: 17056328

BIF document: 17056630

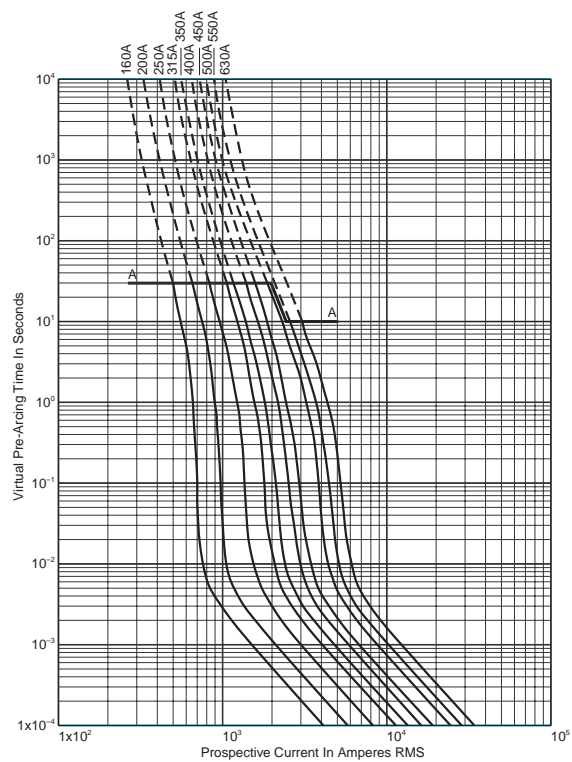




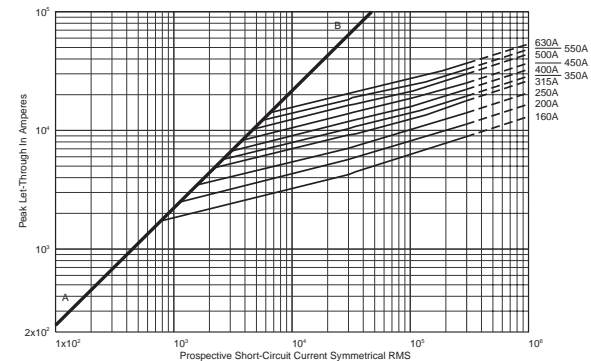
# Square Body Curves

## Size 1: 1250V (160-630)A

Time-Current Curve



### Peak Let-Through Curve

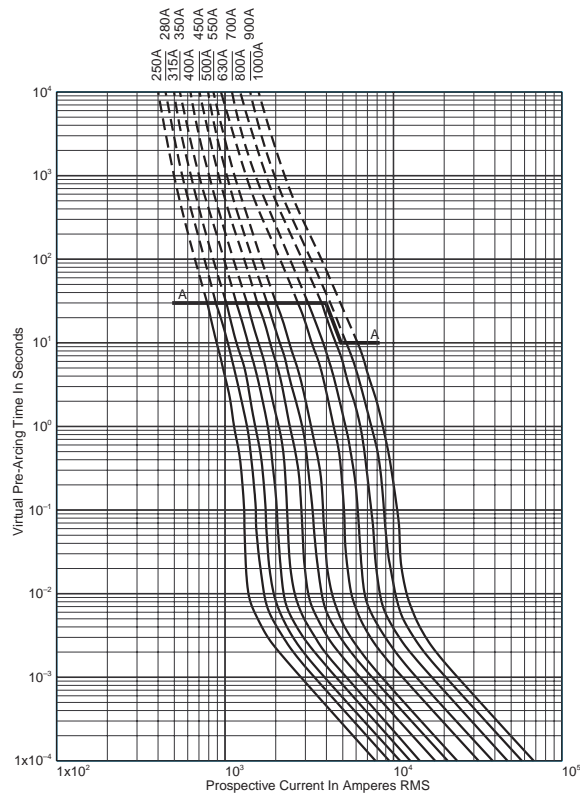


630 amp fuse is derated to 1100V (IEC).

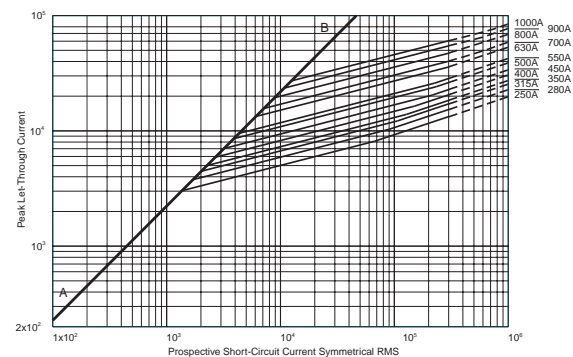
BIF document: 17056632

## Size 2: 1250V (250-1000)A

Time-Current Curve



### Peak Let-Through Curve



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

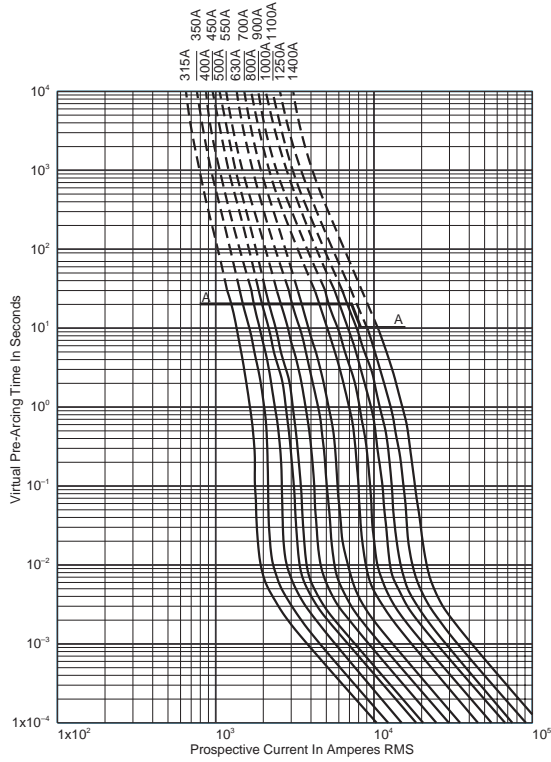
BIF document: 17056634



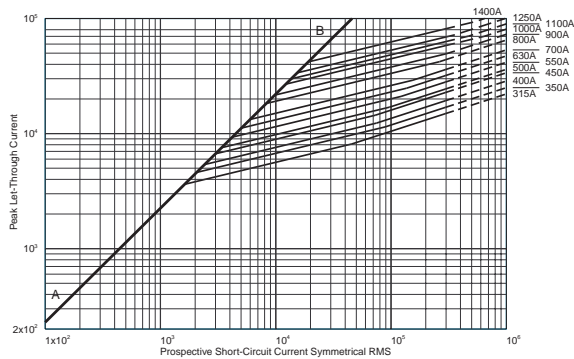


# Square Body Curves

Size 3: 1250V (315-1400)A  
Time-Current Curve



## Peak Let-Through Curve



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

BIF document: 17056636

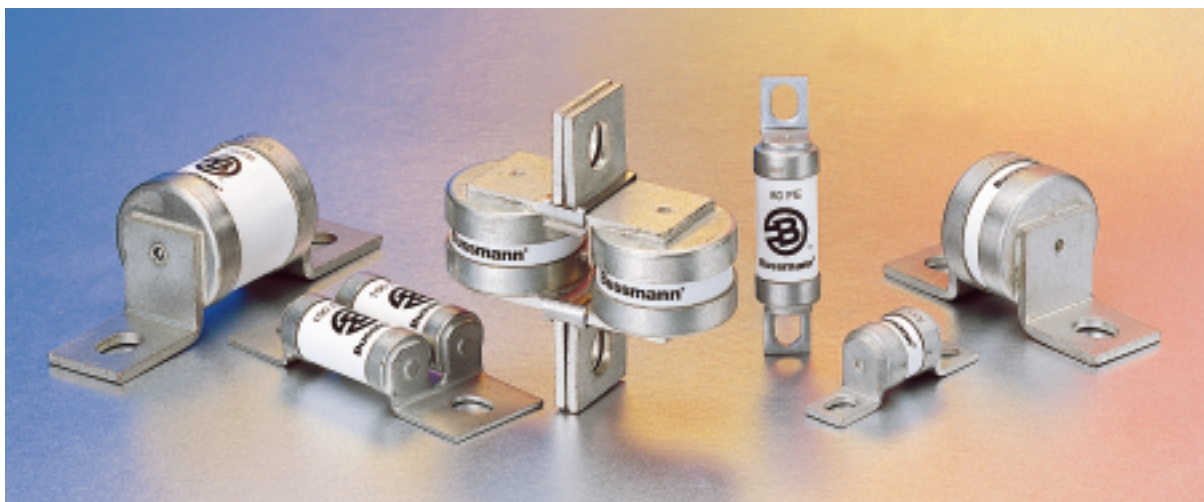


For complete specification data, visit our Web site at [www.bussmann.com](http://www.bussmann.com)  
or call Bussmann Information Fax ~ 314.527.1450



# British Style BS 88

## Introduction



### Table of Contents

Fuse Style	Ampere Range	Page
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690V	6-700A	70-71
Accessories		
Indicator System & Fuse Bases		72
Curves		
Time-Current & Peak Let-Through		73-77

### General Information

Designed and tested to:

- BS 88: Part 4
- IEC 269: Part 4
- U.L. Recognized

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

Bussmann British style products use innovative arc quenching techniques and high grade materials to provide:

- Minimal energy let-through ( $I^2t$ )
- Excellent DC performance
- Good surge withstand profile

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

#### Voltage Rating

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

#### Accessories

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

Voltage	AC	DC	Ampere Range
240	X	—	6-900
150	—	X	6-900
690	X	—	6-700
450	—	X	6-700





British Style BS 88  
**240V 6-900A**



Type	Rated Current RMS-Amps	Electrical Characteristics				Ordering Information			Dimensions	Curves
		I <sup>2</sup> t (A <sup>2</sup> S)			Watts Loss	Part Number	Carton Qty.	Carton Weight (kg)	Figure Number	See Page or (BIF #)
		Pre-arc	Clearing at 120V	Clearing at 240V						
LCT	6	2	6	9	1.0	6LCT	20	0.110	Fig. 1	page 73 (35785296)
	10	3.8	12	22	2.5	10LCT				
	12	7	22	32	2.5	12LCT				
	16	20	50	100	2.5	16LCT				
	20	25	80	160	4.0	20LCT				
LET	25	18	120	250	4.0	25LET	10	0.310	Fig. 2	page 73 (35785293)
	32	32	200	450	5.0	32LET				
	35	50	320	600	5.0	35LET				
	50	100	500	1400	7.0	50LET				
	63	180	1100	2200	9.0	63LET				
	80	300	1900	3800	10.0	80LET				
	100	600	3800	7500	10.0	100LET				
	125	600	3800	7500	16.0	125LET				
	160	1100	7000	16000	20.0	160LET				
180	1600	12000	29000	21.0	180LET					
LMT	160	1100	7000	16000	17.0	160LMT	1	0.180	Fig. 3	page 74 (35785294)
	200	1500	10000	20000	28.0	200LMT				
	250	3200	20000	40000	28.0	250LMT				
	315	6000	35000	75000	35.0	315LMT				
	355	8000	50000	100000	35.0	355LMT				
	400	14000	70000	160000	40.0	400LMT				
450	18000	100000	220000	42.0	450LMT					
LMMT	400	6000	35000	80000	60.0	400LMMT	1	0.370	Fig. 4	page 74 (35785295)
	500	14000	80000	170000	64.0	500LMMT				
	630	24000	150000	300000	75.0	630LMMT				
	710	32000	200000	460000	77.0	710LMMT				
	800	52000	300000	600000	82.0	800LMMT				
	900	75000	400000	800000	97.0	900LMMT				

- Interrupting rating 200kA RMS Symmetrical. ■ 150 Vdc rating
  - Watts loss provided at rated current.
  - Note: 7LET, 10LET, 12LET and 16LET are available for replacement purposes on existing equipment.
  - All fuses above have been tested at 318 Vac.
  - See accessories on page 72.
- 1 kg = 2.2 lbs 1 lb = 0.45 kg

## Dimensions

Fig. 1: LCT

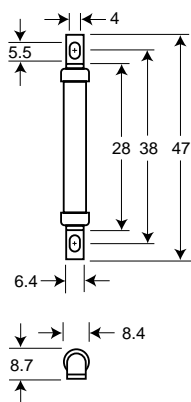
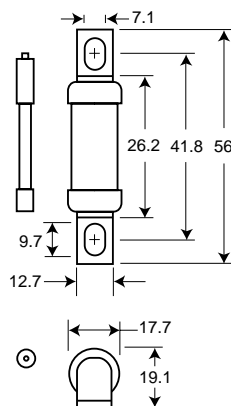


Fig. 2: LET



1mm = 0.0394" 1" = 25.4mm

BIF document: 720004





British Style BS 88

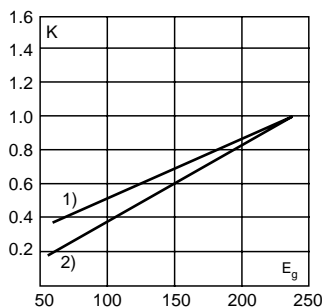
**240V 6-900A**



### Electrical Characteristics

#### Total Clearing I<sup>2</sup>t

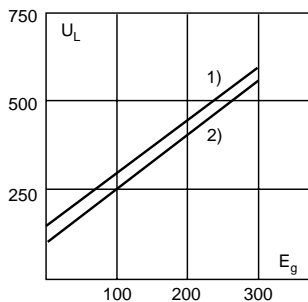
The total clearing I<sup>2</sup>t at rated voltage and at power factor of 15% are given in the electrical characteristics. For other voltages, the clearing I<sup>2</sup>t is found by multiplying by correction factor, K, given as a function of applied working voltage, E<sub>g</sub>, (RMS).



1) LCT  
2) LET, LMT, LMMT

#### Arc Voltage

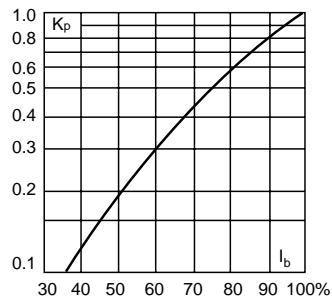
This curve gives the peak arc voltage, U<sub>L</sub>, which may appear across the fuse during its operation as a function of the applied working voltage, E<sub>g</sub>, (RMS) at a power factor of 15%.



1) LCT  
2) LET, LMT, LMMT

#### Power Losses

Watts loss at rated current is given in the electrical characteristics. The curve allows the calculation of the power losses at load currents lower than the rated current. The correction factor, K<sub>p</sub>, is given as a function of the RMS load current, I<sub>b</sub>, in % of the rated current.



### Dimensions

Fig. 3: LMT

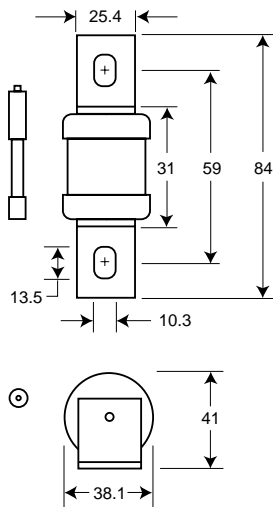
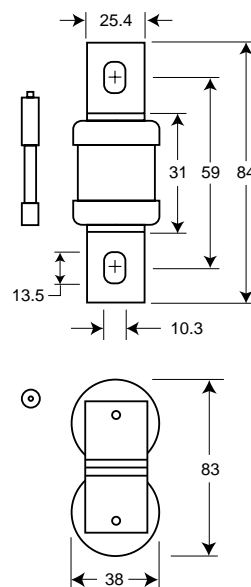


Fig. 4: LMMT



Indicator (Optional)

1mm = 0.0394" 1" = 25.4mm





British Style BS 88

**690V 6-700A**

Electrical Characteristics						Ordering Information			Dimensions	Curves
Type	Rated Current RMS-Amps	I <sup>2</sup> t (A <sup>2</sup> S)				Part Number	Carton Qty.	Carton Weight (kg)	Figure Number	See Page or (BIF #)
		Pre-arc	Clearing at 415V	Clearing at 660V	Watts Loss					
CT	6	1.8	8.5	12	2	6CT	20	0.160	Fig. 1	page 75 (35785312)
	10	7	30	48	3	10CT				
	12	10	40	65	3	12CT				
	16	16	66	110	7	16CT				
	20	32	150	220	7	20CT				
ET	25	25	150	250	7	25ET	10	0.420	Fig. 2	page 75 (35785312)
	32	32	190	350	11	32ET				
	35	52	310	500	11	35ET				
	40	103	600	900	9	40ET				
	45	103	680	1100	11	45ET				
	56	135	950	1500	14	56ET				
	63	171	1200	2000	16	63ET				
	80	360	2500	4000	18	80ET				
FE	35	33	130	200	9	35FE	10	0.420	Fig. 2	page 76 (35785314)
	40	52	180	300	9	40FE				
	45	76	270	450	11	45FE				
	50	103	380	600	11	50FE				
	63	135	480	750	12	63FE				
	71	210	600	950	17	71FE				
	80	250	900	1500	20	80FE				
	90	360	1300	2100	20	90FE				
	100	470	1800	2800	23	100FE				
EET	90	490	3000	4500	19	90EET	5	0.450	Fig. 3	page 75 (35785313)
	110	600	4000	6500	27	110EET				
	140	1050	7000	12000	35	140EET				
	160	1500	10000	17000	39	160EET				
FEE	100	400	1600	2400	24	100FEE	5	0.450	Fig. 3	page 77 (35785292)
	120	540	1900	3100	32	120FEE				
	140	850	2500	3800	36	140FEE				
	160	1000	3700	5700	46	160FEE				
	180	1400	5300	8400	46	180FEE				
	200	1900	7100	11400	52	200FEE				
FM	180	1400	7500	13500	40	180FM	1	0.240	Fig. 4	page 76 (35785314)
	200	2600	10500	18500	40	200FM				
	225	3700	14500	26500	44	225FM				
	250	5200	20500	37500	48	250FM				
	280	7000	30500	55000	48	280FM				
	315	10000	40000	77000	55	315FM				
	350	15000	60000	105000	55	350FM				
FMM	400	10000	40000	72500	85	400FMM	1	0.450	Fig. 5	page 77 (35785292)
	450	15000	60000	105000	90	450FMM				
	500	20000	82000	150000	100	500FMM				
	550	30000	120000	215000	100	550FMM				
	630	45000	180000	310000	100	630FMM				
	700	60000	245000	420000	120	700FMM				
MT†	160	2400	15000	25000	26	160MT	1	0.260	Fig. 4	page 75 (35785313)
	180	3800	25000	38000	26	180MT				
	200	6000	40000	58000	27	200MT				
	250	11500	80000	110000	32	250MT				
	280	16500	100000	150000	35	280MT				
	315	19000	125000	180000	42	315MT				
	355	22000	160000	200000	51	355MT				
	MMT†	180	1650	12000	18000	42				
200		2200	16000	23000	42	200MMT				
225		3700	26000	40000	42	225MMT				
280		6600	47000	70000	47	280MMT				
315		8600	62000	91000	51	315MMT				
355		13500	97000	140000	54	355MMT				
400		21000	150000	220000	60	400MMT				
450		30000	220000	320000	57	450MMT				
500		42000	300000	450000	64	500MMT				
560		60000	430000	640000	64	560MMT				
630		68500	500000	720000	86	630MMT				
710		78000	600000	850000	105	710MMT				

■ Interrupting rating 200kA RMS Symmetrical. ■ 450 Vdc rating

■ Watts loss provided at rated current.

■ Note: FC, 8ET, 12ET, 15ET, 20ET, 65EET and 75EET are available for replacement purposes on existing equipment.

■ See accessories on page 72.

†350 Vdc (IEC) rating. Consult Bussmann for U.L. Recognition status.

BIF document: 720024

1 kg = 2.2 lbs 1 lb = 0.45 kg





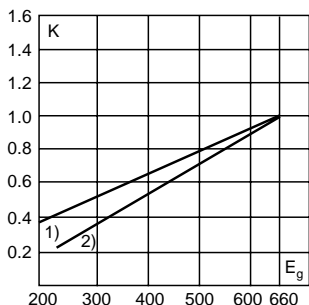
British Style BS 88

**690V 6-700A**

## Electrical Characteristics

### Total Clearing I<sup>2</sup>t

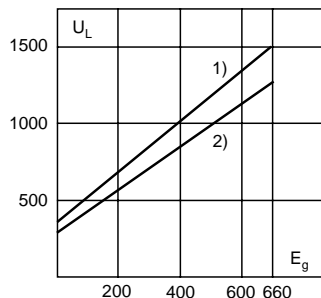
The total clearing I<sup>2</sup>t at rated voltage and at power factor of 15% are given in the electrical characteristics. For other voltages, the clearing I<sup>2</sup>t is found by multiplying by correction factor, K, given as a function of applied working voltage, E<sub>g</sub>, (RMS).



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

### Arc Voltage

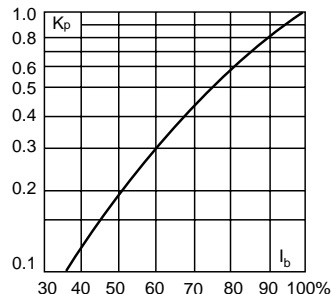
This curve gives the peak arc voltage, U<sub>L</sub>, which may appear across the fuse during its operation as a function of the applied working voltage, E<sub>g</sub>, (RMS) at a power factor of 15%.



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

### Power Losses

Watts loss at rated current is given in the electrical characteristics. The curve allows the calculation of the power losses at load currents lower than the rated current. The correction factor, K<sub>p</sub>, is given as a function of the RMS load current, I<sub>b</sub>, in % of the rated current.



## Dimensions

Fig. 1: CT

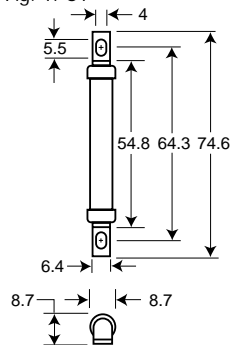


Fig. 2: ET, FE

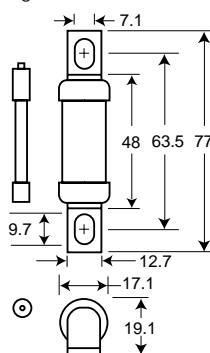


Fig. 3: EET, FEE

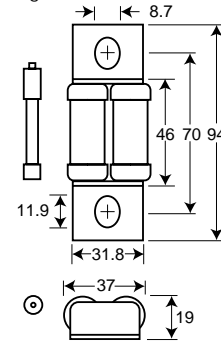


Fig. 4: FM, MT

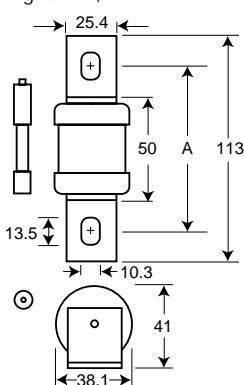
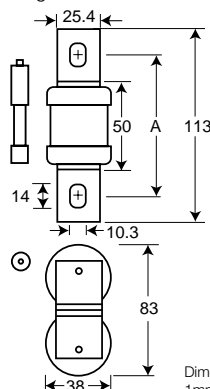


Fig. 5: FMM, MMT



Type	"A" Dimension
FM	80-85
FMM	80-85
MT	85
MMT	85

Dimensions in mm.  
1mm = 0.0394" 1" = 25.4mm

BIF document: 720024





British Style BS 88 – Accessories

## Indicator System and Fuse Bases (Blocks)



Trip Indicator

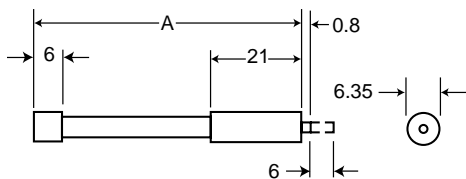
Trip-indicator fuselinks are available for use in parallel with the main fuselinks. They can either be attached to the associated fuselink or mounted separately in panel mounted fuse clips, Part No. CL1. A push-on adaptor and microswitch attachment is available for use with the trip indicator to give the facility of remote indication, reference MAI or MBI.

Fuse ratings of 20A and below cannot usually accommodate a trip fuselink in parallel.

Where trip indicator fuselinks are to be attached to the main fuselink, an accessory pack comprising a pair of mounting clips and an appropriate trip indicator fuselink will be required.

The ordering code references for these packs are listed below:

Fuse Type	Order Ref.	Fuse Type	Order Ref.
ET	EC-600	FM	MC-600
EET	EC-600	FMM	MC-600
FE	EC-600	LMT	MC-250
FEE	EC-600	LMMT	MC-250
LET	EC-250		



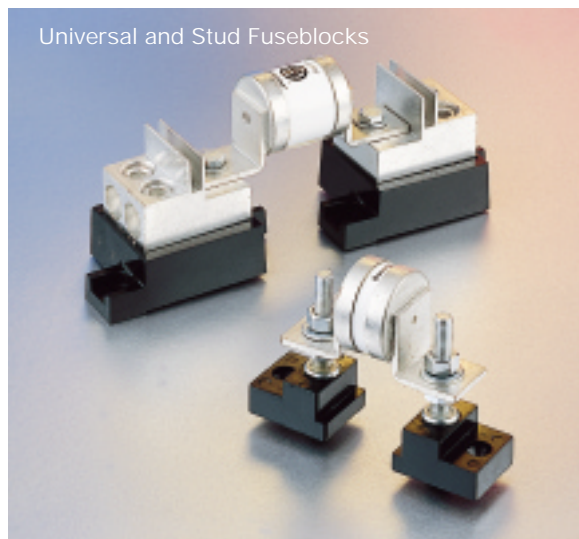
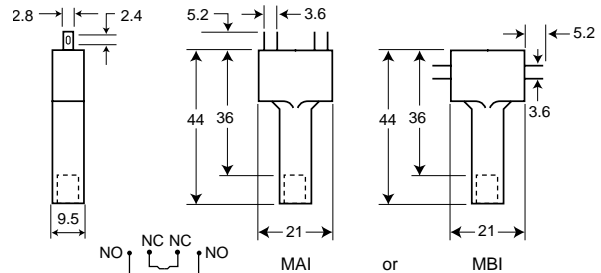
Dimensions in mm.  
1mm = 0.0394" 1" = 25.4mm

### Trip-indicator Fuselink Data

Type	Dim. 'A' Max.	Voltage Rating	Type	Dim. 'A' Max.	Voltage Rating
T1250	37.6	250	T1100	98.4	1100
T1500	47.5	500	T11500	120.8	1500
T1600	55.7	600	T12000	147.5	2000
T1700	61.8	700	T12500	198.3	2500

### Microswitch and Adaptor Type MAI

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



Universal and Stud Fuseblocks

### Stud Fuseblocks

Part No.	Stud Height	Stud Dia. & Threads
C5268-1	1.00"	5/16"-18
C5268-2	1.75"	5/16"-18
C5268-3	0.75"	5/16"-18
C5268-4	1.00"	1/4"-20
C5268-5	1.75"	1/4"-20

### Universal Fuseblocks

Modular Base	Max. Voltage	Max. Fuse Current Rating	BIF Document
1BS101	600V	100A	1206
1BS102	600V	400A	1207
1BS103	600V	400A	1208
1BS104	600V	600A	1209

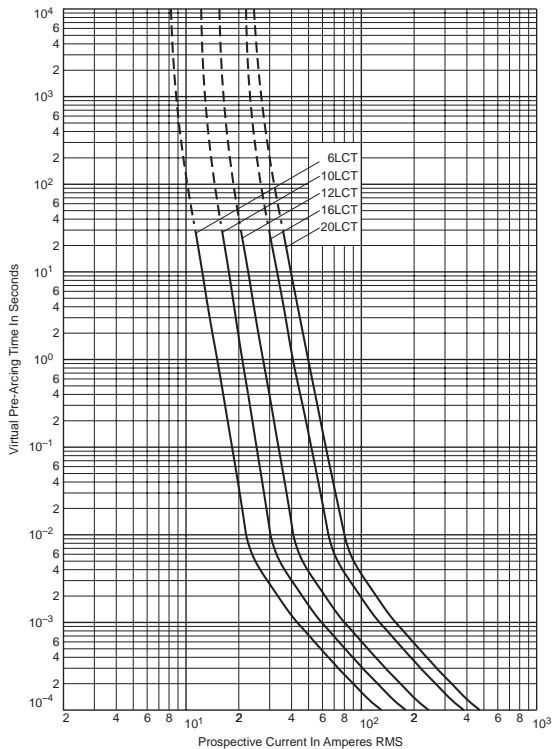
BIF document: 720037



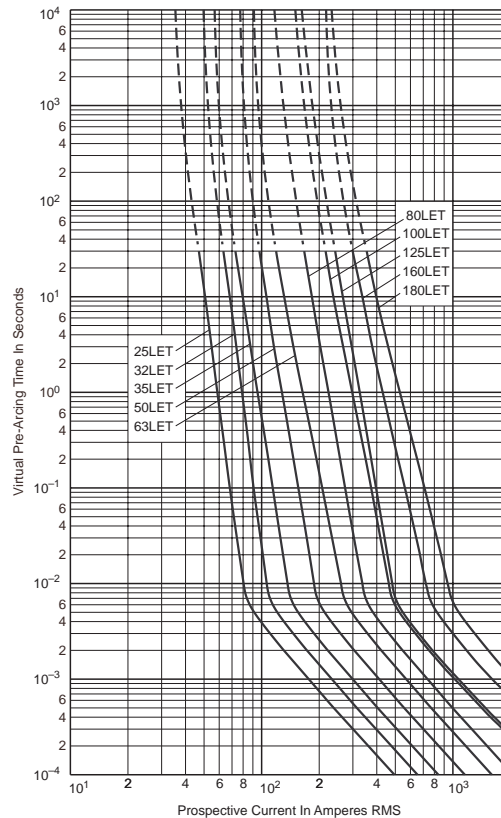
British Style BS 88

# Curves

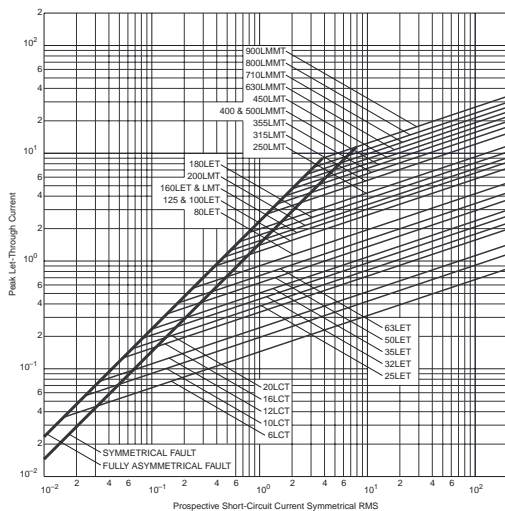
**LCT 6-20: 240V**  
Time-Current Curve



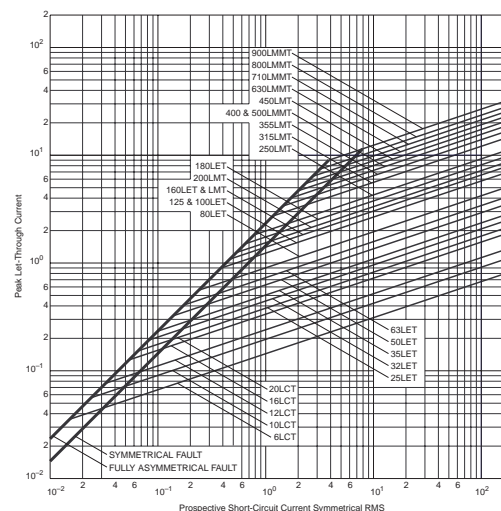
**LET 25-180: 240V**  
Time-Current Curve



**Peak Let-Through Curve**



**Peak Let-Through Curve**



BIF document: 35785296

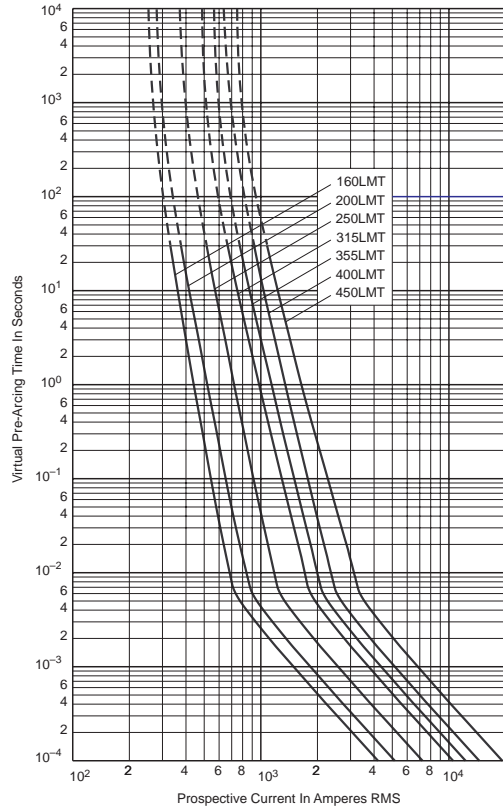
BIF document: 35785293



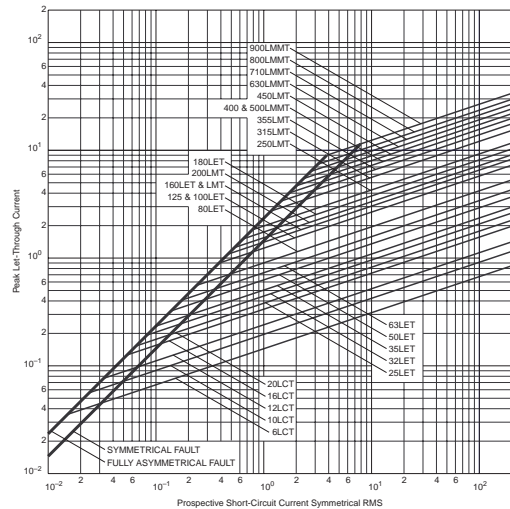


British Style BS 88  
**Curves**

LMT 160-450: 240V  
Time-Current Curve

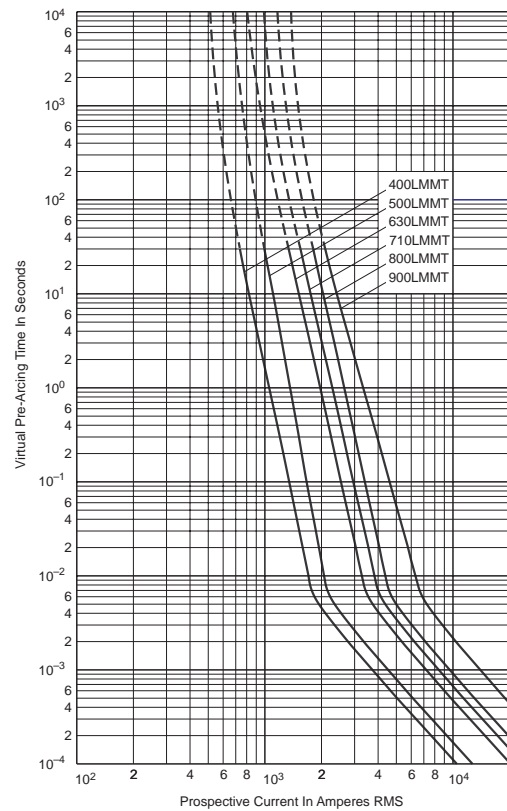


Peak Let-Through Curve

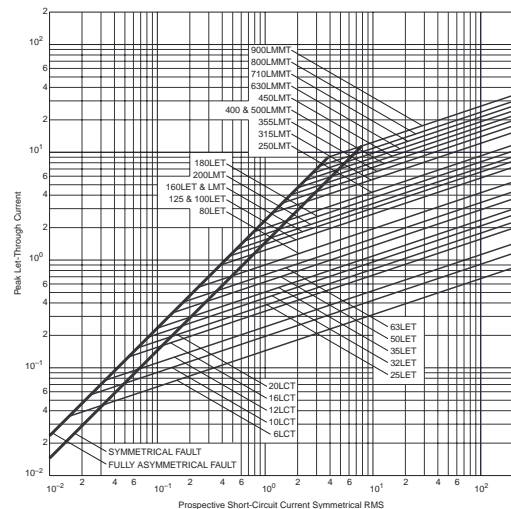


BIF document: 35785294

LMMT 400-900: 240V  
Time-Current Curve



Peak Let-Through Curve



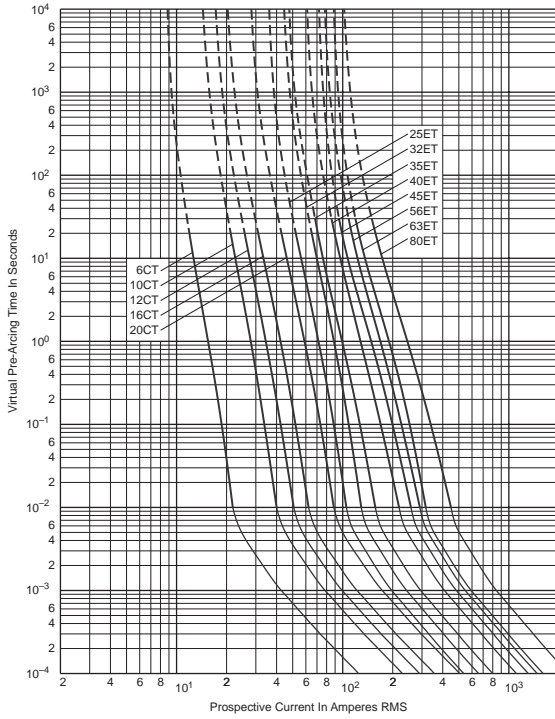
BIF document: 35785295



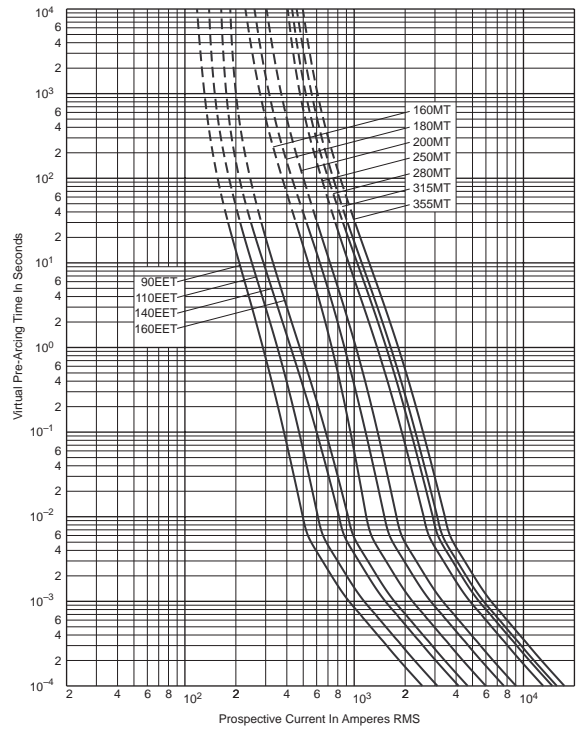


British Style BS 88  
**Curves**

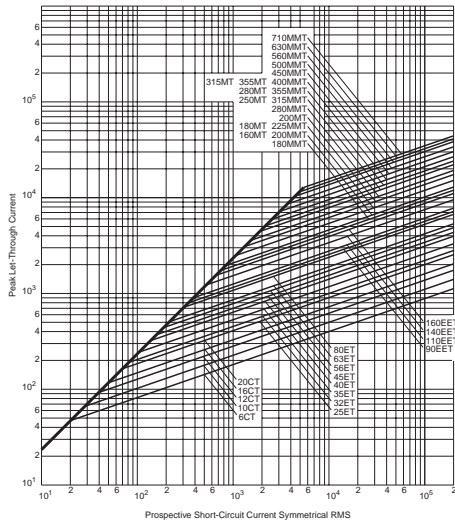
CT 6-20, ET 25-80: 690V  
Time-Current Curve



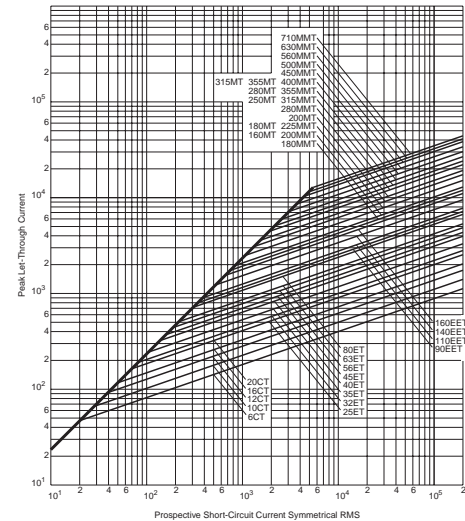
EET 90-160, MT 160-355: 690V  
Time-Current Curve



Peak Let-Through Curve



Peak Let-Through Curve



BIF document: 35785312

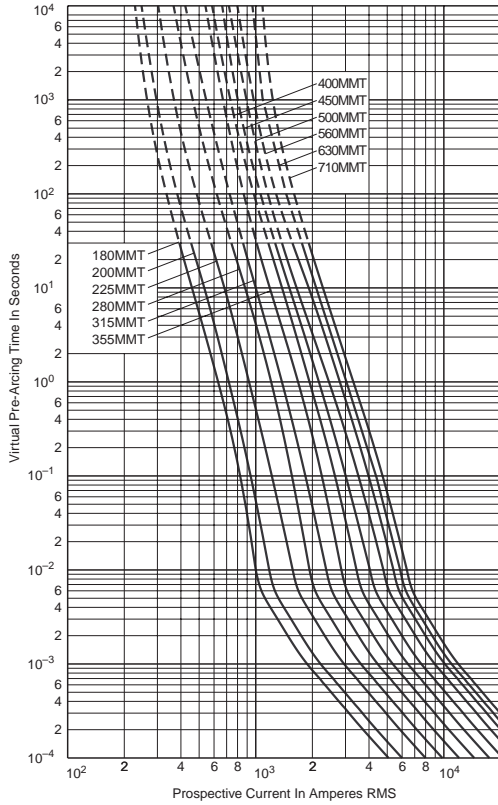
BIF document: 35785313



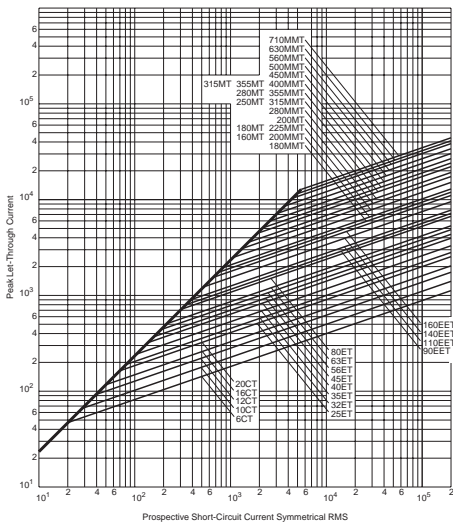


British Style BS 88  
**Curves**

MMT 180-710: 690V  
Time-Current Curve

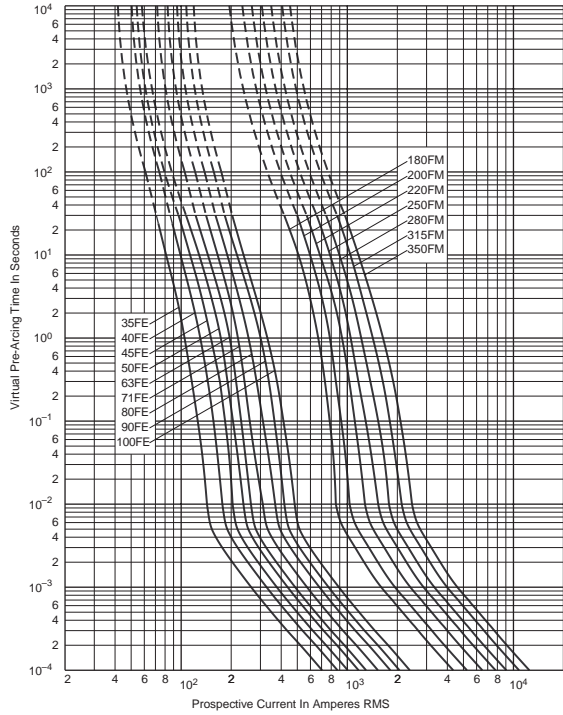


Peak Let-Through Curve

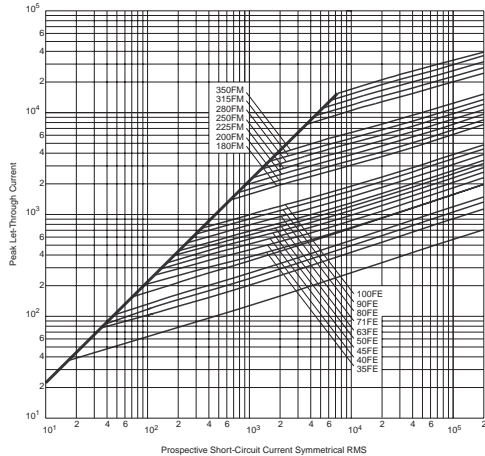


BIF document: 35785311

FE 35-100 & FM 180-350: 690V  
Time-Current Curve



Peak Let-Through Curve



BIF document: 35785314

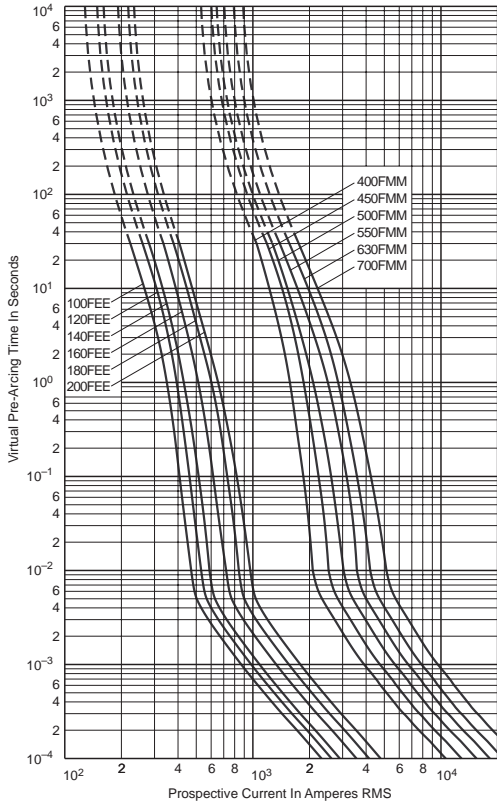




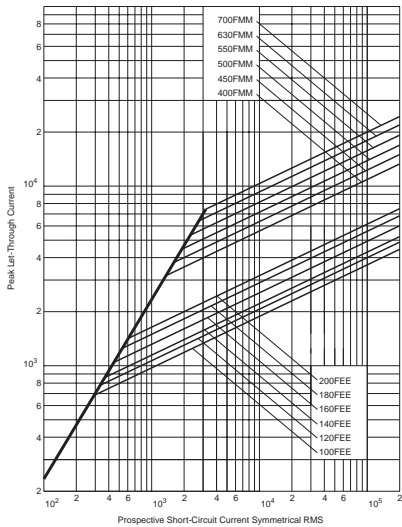
British Style BS 88

# Curves

FEE 100-200 & FMM 400-700: 690V  
Time-Current Curve



Peak Let-Through Curve



BIF document: 35785292



For complete specification data, visit our Web site at [www.bussmann.com](http://www.bussmann.com)  
or call Bussmann Information Fax ~ 314.527.1450



# Ferrule

## Introduction



### Table of Contents

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FWA 150V	5-60A	80
FWX 250V	1-30A	81
FWH 500V	0.25-30A	82-83
FWC 600V	6-32A	84
FWP 660V/700V	1-100A	85-86
FWK 750V	5-60A	87
FWJ 1000V	20-30A	88
FWL/FWS 1250V/1500V	2-30A	89
Accessories		
Fuseholders		90
Curves		
Time-Current & Peak Let-Through		91-96

Voltage	AC	DC	Ampere Range
150	X	—	5-60
250	X	X	1-30
500	X	X	0.25-30
600	X	—	6-32
700	X	—	1-100
700	—	X	1-30
750	—	X	5-60
800	—	X	20-30
1000	X	—	20-30
1000	—	X	2-30
1250	X	—	20-30
1500	X	—	2-15

### General Information

Select fuses designed and tested to:

- IEC 269: Part 4
- U.L. Recognized

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

- Superior cycling capability
- Low energy let-through (I<sup>2</sup>t)

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

#### Voltage Rating

All Bussmann ferrule fuses — except 660 volt — have been tested at their rated voltage. The 660 volt ferrule fuse has been tested to the IEC 269 standard, which requires clearing at the rated voltage +10%.

#### Accessories

Ferrule fuses may be mounted in fuseclips, fuseholders, fuseblocks or fused switches. A variety of products are available to suit most end-use requirements.





# Ferrule FWA 150V 5-60A



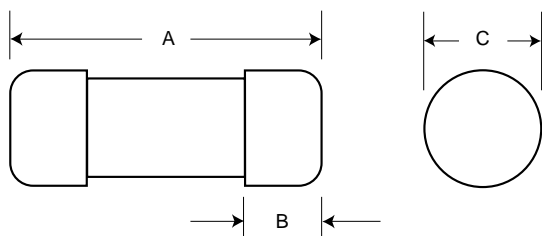
Electrical Characteristics					Ordering Information			Dimensions	Curves
Size	Rated Current RMS-Amps	I <sup>2</sup> t (A <sup>2</sup> S)		Watts Loss	Part Number	Carton Qty.	Carton Weight (kg)	Figure Number	See Page or (BIF #)
		Pre-arc	Clearing at 150V						
10 × 38mm ( <sup>13</sup> / <sub>32</sub> "	5	1.6	8	1	FWA-5A10F	10	0.100	Fig. 1	page 91 (35785317)
	10	3.6	16	2.7	FWA-10A10F				
	15	14	55	3.3	FWA-15A10F				
	20	33	130	3.8	FWA-20A10F				
	25	58	220	4.9	FWA-25A10F				
30	100	400	4.9	FWA-30A10F					
21 × 51mm ( <sup>13</sup> / <sub>16</sub> "	35	75	800	4.5	FWA-35A21F	10	0.600	Fig. 1	page 91 (35785305)
	40	100	1000	5.1	FWA-40A21F				
	45	130	1300	6	FWA-45A21F				
	50	170	1600	7.3	FWA-50A21F				
	60	250	2400	8.0	FWA-60A21F				

- Interrupting rating 100kA RMS Symmetrical.
- Watts loss provided at rated current.
- Consult Bussmann for DC ratings.
- See accessories on page 90.

1 kg = 2.2 lbs. 1 lb = 0.45 kg

## Dimensions

Fig. 1: 5-60 Amp Range



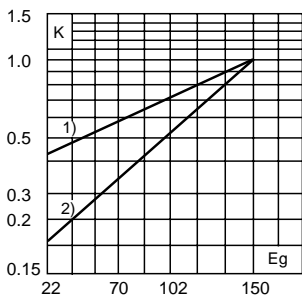
Part Number	Metric			Inches		
	A	B	C	A	B	C
FWA 5A10F-30A10F	38.1	9.5	10.3	1.5	0.375	0.406
FWA 35A21F-60A21F	50.8	15.9	20.6	2.0	0.625	0.811

Dimension in mm.  
1mm = 0.0394" 1" = 25.4mm

## Electrical Characteristics

### Total Clearing I<sup>2</sup>t

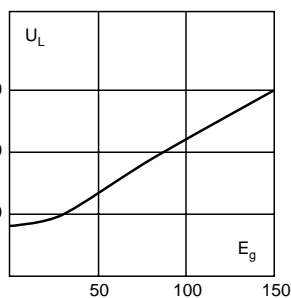
The total clearing I<sup>2</sup>t at rated voltage and at power factor of 15% are given in the electrical characteristics. For other voltages, the clearing I<sup>2</sup>t is found by multiplying by correction factor, K, given as a function of applied working voltage, E<sub>g</sub>, (RMS).



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

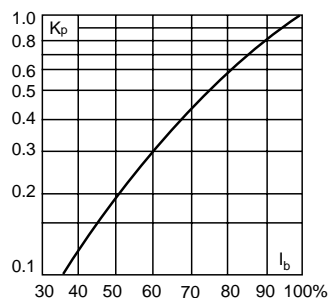
### Arc Voltage

This curve gives the peak arc voltage, U<sub>L</sub>, which may appear across the fuse during its operation as a function of the applied working voltage, E<sub>g</sub>, (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<sub>p</sub>, is given as a function of the RMS load current, I<sub>b</sub>, in % of the rated current.



BIF document: 720003





# Ferrule FWX 250V (U.L.) 1-30A



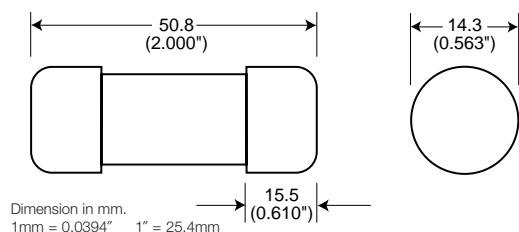
Electrical Characteristics				Ordering Information			Dimensions	Curves	
Size	Rated Current RMS-Amps	I <sup>2</sup> t (A <sup>2</sup> S)		Watts Loss	Part Number	Carton Qty.	Carton Weight (kg)	Figure Number	See Page or (BIF #)
		Pre-arc	Clearing at 250V						
14 x 51mm ( <sup>9</sup> / <sub>16</sub> "	1	—	—	—	FWX-1A14F	10	0.225	Fig. 1	page 92 (35785302)
	2	—	—	—	FWX-2A14F				
	3	—	—	—	FWX-3A14F				
	4	—	—	—	FWX-4A14F				
	5	1.6	13	1.3	FWX-5A14F				
	10	3.6	24	3.4	FWX-10A14F				
	15	14	83	3.8	FWX-15A14F				
	20	33	200	4.6	FWX-20A14F				
	25	58	300	5.3	FWX-25A14F				
30	100	500	5.9	FWX-30A14F					

- Interrupting rating 200kA RMS Symmetrical.
- Watts loss provided at rated current.
- 250 Vdc U.L. Recognition on 5 through 30 amperes only. Consult Bussmann for additional ratings.
- See accessories on page 90.

1 kg = 2.2 lbs. 1 lb = 0.45 kg

## Dimensions

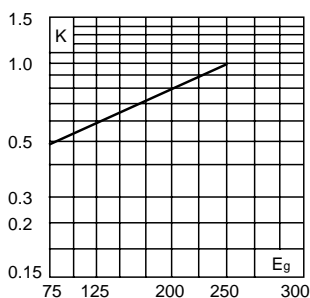
Fig. 1: 1-30 Amp Range



## Electrical Characteristics

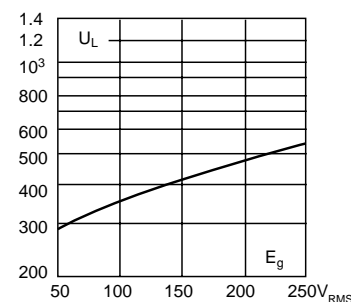
### Total Clearing I<sup>2</sup>t

The total clearing I<sup>2</sup>t at rated voltage and at power factor of 15% are given in the electrical characteristics. For other voltages, the clearing I<sup>2</sup>t is found by multiplying by correction factor, K, given as a function of applied working voltage, E<sub>g</sub>, (RMS).



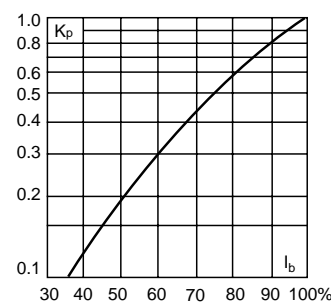
### Arc Voltage

This curve gives the peak arc voltage, U<sub>L</sub>, which may appear across the fuse during its operation as a function of the applied working voltage, E<sub>g</sub>, (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<sub>p</sub>, is given as a function of the RMS load current, I<sub>b</sub>, in % of the rated current.



BIF document: 720006



For complete specification data, visit our Web site at [www.bussmann.com](http://www.bussmann.com) or call Bussmann Information Fax ~ 314.527.1450



Ferrule

# FWH 500V 0.25-30A



Electrical Characteristics				Ordering Information				Dimensions	Curves
Size	Rated Current RMS-Amps	I <sup>2</sup> t (A <sup>2</sup> S)		Watts Loss	Part Number	Carton Qty.	Carton Weight (kg)	Figure Number	See Page or (BIF #)
		Pre-arc	Clearing at 500V						
6 × 32mm (¼" × 1¼")	0.25	0.01	0.05	2.7	FWH-.250A6F	10	0.03	Fig. 1	page 92 (35785256)
	0.5	0.05	0.25	1.2	FWH-.500A6F				
	1	0.4	2	1.7	FWH-001A6F				
	2	1.3	3.5	3.2	FWH-002A6F				
	3.15	3.1	7.7	2.9	FWH-3.15A6F				
	5	15	40	2.1	FWH-005A6F				
	6.3	36	90	2.3	FWH-6.30A6F				page 93 (50955)
	7	50	125	2.5	FWH-007A6F				
	10	—	—	—	FWH-010A6F				
	12.5	20	—	3.53	FWH-12.5A6F				
	15	44	146	3.08	FWH-015A6F				
	16	48	177	4.48	FWH-016A6F				
	20	75	259	4.26	FWH-020A6F				
25	—	—	—	FWH-025A6F					
30	—	—	—	FWH-030A6F					

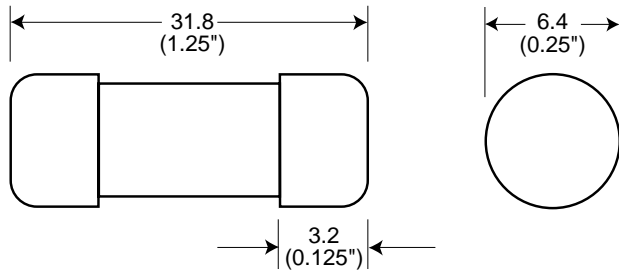
- 0.25-7A 300% minimum opening current at rated voltage.
  - 10-30A 200% minimum opening current at rated voltage.
  - Interrupting rating: 0.25-20A 50kA at ≥ 20% pf    25-30A 20kA at ≥ 20% pf.
  - Consult Bussmann for DC ratings.
  - See accessories on page 90.
- 1 kg = 2.2 lbs.    1 lb = 0.45 kg

**Blow Times**

Current Ratings	150%	200%	300%
0.25-7A	> 30 min.	< 30 min.	≤ 10 sec.
10-30A	< 30 min.	< 30 min.	≤ 10 sec.

## Dimensions

Fig. 1: 0.25-30 Amp Range



Dimension in mm.  
1mm = 0.0394"    1" = 25.4mm





# Ferrule FWH 500V 1-30A

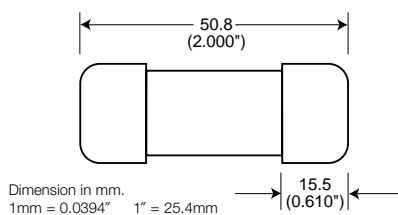


Electrical Characteristics				Ordering Information				Dimensions	Curves
Size	Rated Current RMS-Amps	I <sup>2</sup> t (A <sup>2</sup> S)		Watts Loss	Part Number	Carton Qty.	Carton Weight (kg)	Figure Number	See Page or (BIF #)
		Pre-arc	Clearing at 500V						
14 × 51mm ( <sup>9</sup> / <sub>16</sub> "	1	—	—	—	FWH-1A14F	10	0.250	Fig. 1	page 93 (35785298)
	2	—	—	—	FWH-2A14F				
	3	—	—	2.3	FWH-3A14F				
	4	—	—	—	FWH-4A14F				
	5	1.6	6.4	1.5	FWH-5A14F				
	6	1.6	6.4	1.5	FWH-6A14F				
	10	3.6	13	4	FWH-10A14F				
	12	—	—	—	FWH-12A14F				
	15	10	40	5.5	FWH-15A14F				
	20	26	96	6	FWH-20A14F				
25	49	191	7	FWH-25A14F					
30	58	232	9	FWH-30A14F					

- Interrupting rating 200kA RMS Symmetrical.
  - Watts loss provided at rated current.
  - 500 Vdc U.L. Recognition on 5 through 30 amperes only. Consult Bussmann for additional ratings.
  - See accessories on page 90.
- 1 kg = 2.2 lbs. 1 lb = 0.45 kg

## Dimensions

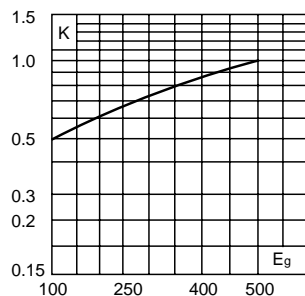
Fig. 1: 1-30 Amp Range



## Electrical Characteristics

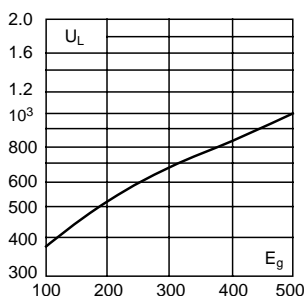
### Total Clearing I<sup>2</sup>t

The total clearing I<sup>2</sup>t at rated voltage and at power factor of 15% are given in the electrical characteristics. For other voltages, the clearing I<sup>2</sup>t is found by multiplying by correction factor, K, given as a function of applied working voltage, E<sub>g</sub>, (RMS).



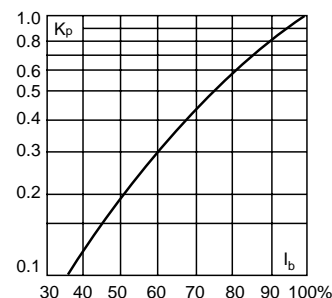
### Arc Voltage

This curve gives the peak arc voltage, U<sub>L</sub>, which may appear across the fuse during its operation as a function of the applied working voltage, E<sub>g</sub>, (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<sub>p</sub>, is given as a function of the RMS load current, I<sub>b</sub>, in % of the rated current.





# Ferrule FWC 600V 6-32A



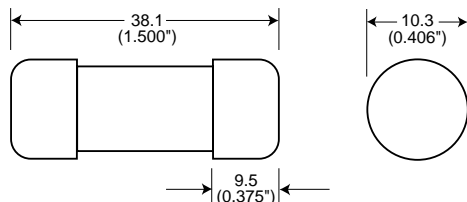
Electrical Characteristics				Ordering Information				Dimensions	Curves
Size	Rated Current RMS-Amps	I <sup>2</sup> t (A <sup>2</sup> S)		Watts Loss	Part Number	Carton Qty.	Carton Weight (kg)	Figure Number	See Page or (BIF #)
		Pre-arc	Clearing at 600V						
10 × 38mm (1 <sup>3</sup> / <sub>32</sub> "	6	4	30	1.5	FWC-6A10F	10	0.100	Fig. 1	page 94 (35785306)
	8	6	50	2.0	FWC-8A10F				
	10	9	70	2.5	FWC-10A10F				
	12	15	120	3.0	FWC-12A10F				
	16	25	150	3.5	FWC-16A10F				
	20	34	260	4.8	FWC-20A10F				
	25	60	390	6.0	FWC-25A10F				
	32	95	600	7.5	FWC-32A10F				

- Interrupting rating 200kA RMS Symmetrical.
- Watts loss provided at rated current.
- Consult Bussmann for DC ratings.
- See accessories on page 90.

1 kg = 2.2 lbs. 1 lb = 0.45 kg

## Dimensions

Fig. 1: 6-32 Amp Range

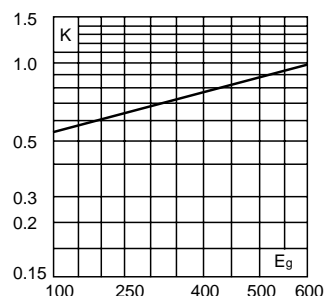


Dimension in mm.  
1mm = 0.0394" 1" = 25.4mm

## Electrical Characteristics

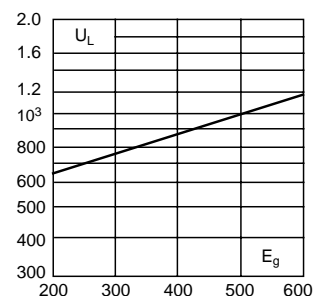
### Total Clearing I<sup>2</sup>t

The total clearing I<sup>2</sup>t at rated voltage and at power factor of 15% are given in the electrical characteristics. For other voltages, the clearing I<sup>2</sup>t is found by multiplying by correction factor, K, given as a function of applied working voltage, E<sub>g</sub>, (RMS).



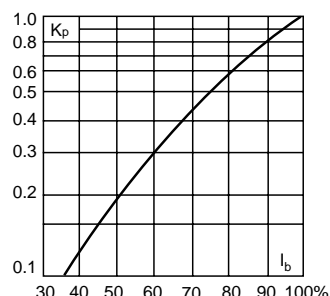
### Arc Voltage

This curve gives the peak arc voltage, U<sub>L</sub>, which may appear across the fuse during its operation as a function of the applied working voltage, E<sub>g</sub>, (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<sub>p</sub>, is given as a function of the RMS load current, I<sub>b</sub>, in % of the rated current.





Ferrule

# FWP 660V/700V (IEC/U.L.) 1-50A



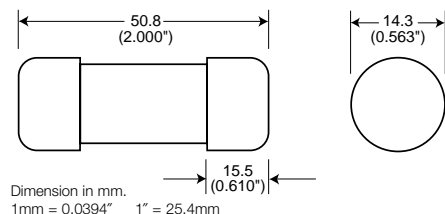
Electrical Characteristics				Ordering Information			Dimensions	Curves	
Size	Rated Current RMS-Amps	I <sup>2</sup> t (A <sup>2</sup> S)		Watts Loss	Part Number	Carton Qty.	Carton Weight (kg)	Figure Number	See Page or (BIF #)
		Pre-arc	Clearing at 660V						
14 x 51mm ( <sup>9</sup> / <sub>16</sub> "	1	—	—	—	FWP-1A14F	10	0.225	Fig. 1	page 94 (35785307)
	2	—	—	—	FWP-2A14F				
	3	—	—	—	FWP-3A14F				
	4	—	—	—	FWP-4A14F				
	5	1.6	11	1.5	FWP-5A14F				
	6	—	—	—	FWP-6A14F				
	10	3.6	22	4	FWP-10A14F				
	15	10	75	5.5	FWP-15A14F				
	20	26	180	6	FWP-20A14F				
	25	44	320	7	FWP-25A14F				
	30	58	450	9	FWP-30A14F				
32	68	600	7.6	FWP-32A14F					
40	84	750	8	FWP-40A14F					
50	200	1800	9	FWP-50A14F					

- Interrupting rating 200kA RMS Symmetrical.
- Watts loss provided at rated current.
- 700 Vdc ratings for 5 through 30 amperes only. Consult Bussmann for other ratings.
- See accessories on page 90.

1 kg = 2.2 lbs. 1 lb = 0.45 kg

## Dimensions

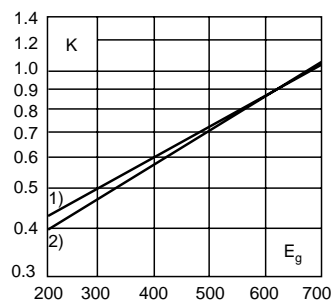
Fig. 1: 1-50 Amp Range



## Electrical Characteristics

### Total Clearing I<sup>2</sup>t

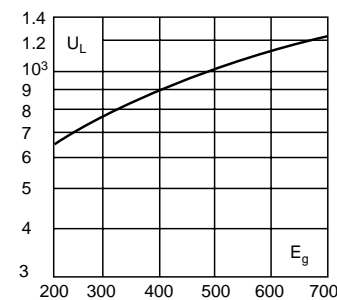
The total clearing I<sup>2</sup>t at rated voltage and at power factor of 15% are given in the electrical characteristics. For other voltages, the clearing I<sup>2</sup>t is found by multiplying by correction factor, K, given as a function of applied working voltage, E<sub>g</sub>, (RMS).



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

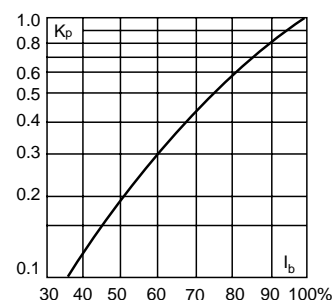
### Arc Voltage

This curve gives the peak arc voltage, U<sub>L</sub>, which may appear across the fuse during its operation as a function of the applied working voltage, E<sub>g</sub>, (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<sub>p</sub>, is given as a function of the RMS load current, I<sub>b</sub>, in % of the rated current.



BIF document: 720025



For complete specification data, visit our Web site at [www.bussmann.com](http://www.bussmann.com) or call Bussmann Information Fax ~ 314.527.1450



Ferrule

# FWP 660V/700V (IEC/U.L.) 20-100A



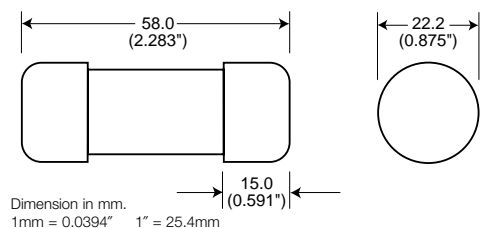
Electrical Characteristics				Ordering Information				Dimensions	Curves
Size	Rated Current RMS-Amps	I <sup>2</sup> t (A <sup>2</sup> S)		Watts Loss	Part Number	Carton Qty.	Carton Weight (kg)	Figure Number	See Page or (BIF #)
		Pre-arc	Clearing at 660V						
22 × 58mm (7/8")	20	23	260	4.6	FWP-20A22F	10	0.450	Fig. 1	page 95 (35785291)
	25	37	410	5.6	FWP-25A22F				
	32	55	605	7.0	FWP-32A22F				
	40	68	750	8.5	FWP-40A22F				
	50	155	1600	9.5	FWP-50A22F				
	63	280	3080	11	FWP-63A22F				
	80	600	6600	13.5	FWP-80A22F				
	100	1100	12500	16	FWP-100A22F				

- Interrupting rating 200kA RMS Symmetrical.
- Watts loss provided at rated current.
- Consult Bussmann for DC ratings.
- See accessories on page 90.

1 kg = 2.2 lbs. 1 lb = 0.45 kg

## Dimensions

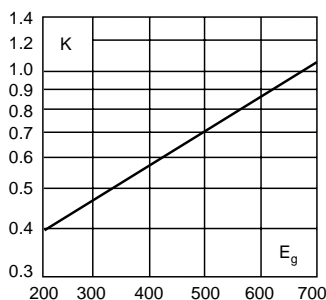
Fig. 1: 20-100 Amp Range



## Electrical Characteristics

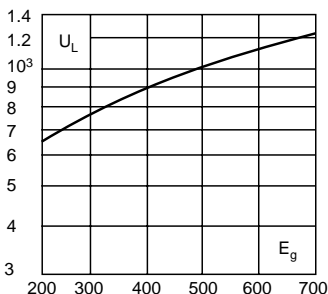
### Total Clearing I<sup>2</sup>t

The total clearing I<sup>2</sup>t at rated voltage and at power factor of 15% are given in the electrical characteristics. For other voltages, the clearing I<sup>2</sup>t is found by multiplying by correction factor, K, given as a function of applied working voltage, E<sub>g</sub>, (RMS).



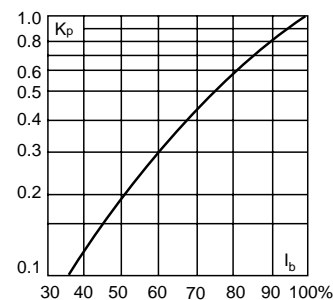
### Arc Voltage

This curve gives the peak arc voltage, U<sub>L</sub>, which may appear across the fuse during its operation as a function of the applied working voltage, E<sub>g</sub>, (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<sub>p</sub>, is given as a function of the RMS load current, I<sub>b</sub>, in % of the rated current.





Ferrule

# FWK 750V 5-60A

Electrical Characteristics				Ordering Information				Dimensions	Curves
Size	Rated Current RMS-Amps	I <sup>2</sup> t (A <sup>2</sup> S)		Watts Loss	Part Number	Carton Qty.	Carton Weight (kg)	Figure Number	See Page or (BIF #)
		Pre-arc	Clearing at 750 Vdc						
20 x 127mm (13/16")	5	8.5	16	—	FWK-5A20F	10	0.95	Fig. 1	page 95 (35785031)
	8	50	100	—	FWK-8A20F				
	10	95	200	—	FWK-10A20F				
	15	100	240	—	FWK-15A20F				
	20	125	315	—	FWK-20A20F				
	25	400	1100	—	FWK-25A20F				
25 x 146mm (1")	30	800	2600	—	FWK-30A20F	10	1.65	Fig. 2	page 95 (35785031)
	35	1300	4300	—	FWK-35A25F				
	40	1600	5300	—	FWK-40A25F				
	50	3100	12000	—	FWK-50A25F				
	60	5900	24000	—	FWK-60A25F				

■ Interrupting rating 45kA RMS symmetrical.

■ 750 Vdc rating for 5 through 60 amperes (Time constant = 10-15 mS).

1 kg = 2.2 lbs. 1 lb = 0.45 kg

## Dimensions

Fig. 1: 5-30 Amp Range

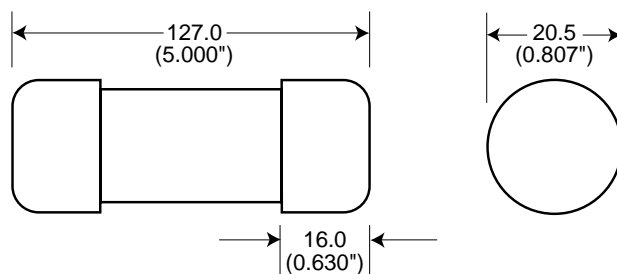
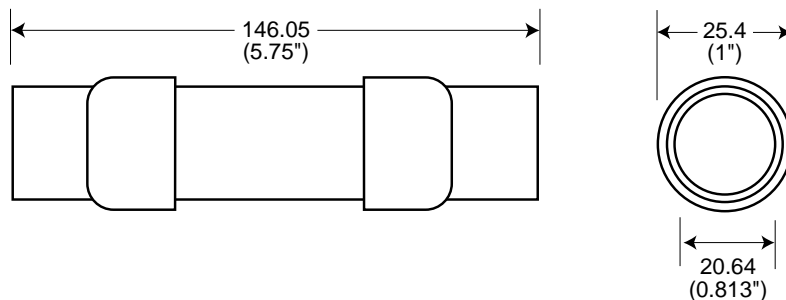


Fig. 2: 35-60 Amp Range



Dimension in mm.  
1mm = 0.0394" 1" = 25.4mm





Ferrule

# FWJ 1000V 20-30A



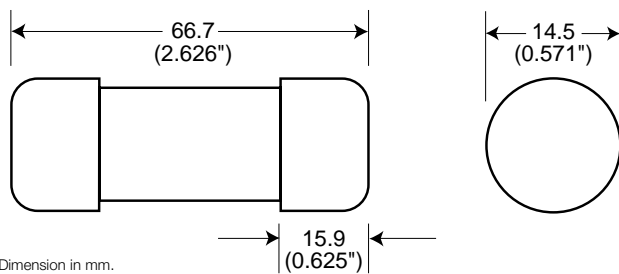
Electrical Characteristics				Ordering Information				Dimensions	Curves
Size	Rated Current RMS-Amps	I <sup>2</sup> t (A <sup>2</sup> S)		Watts Loss	Part Number	Carton Qty.	Carton Weight (kg)	Figure Number	See Page or (BIF #)
		Pre-arc	Clearing at 1000V						
14 × 67mm ( <sup>9</sup> / <sub>16</sub> "	20	25	220	9	FWJ-20A14F	10	0.300	Fig. 1	page 96 (35785315)
	25	33	350	11	FWJ-25A14F				
	30	52	450	14	FWJ-30A14F				

- Interrupting rating 200kA RMS Symmetrical.
- Watts loss provided at rated current.
- 800 Vdc U.L. Recognized.
- See accessories on page 90.

1 kg = 2.2 lbs. 1 lb = 0.45 kg

## Dimensions

Fig. 1: 20-30 Amp Range

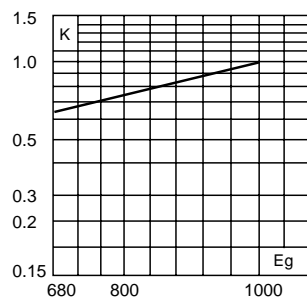


Dimension in mm.  
1mm = 0.0394" 1" = 25.4mm

## Electrical Characteristics

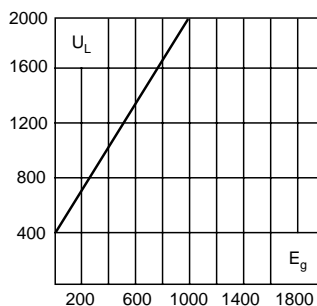
### Total Clearing I<sup>2</sup>t

The total clearing I<sup>2</sup>t at rated voltage and at power factor of 15% are given in the electrical characteristics. For other voltages, the clearing I<sup>2</sup>t is found by multiplying by correction factor, K, given as a function of applied working voltage, E<sub>g</sub>, (RMS).



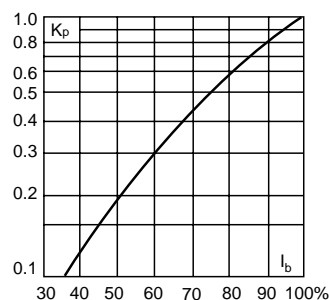
### Arc Voltage

This curve gives the peak arc voltage, U<sub>L</sub>, which may appear across the fuse during its operation as a function of the applied working voltage, E<sub>g</sub>, (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<sub>p</sub>, is given as a function of the RMS load current, I<sub>b</sub>, in % of the rated current.





Ferrule

# FWL/FWS 1250V/1500V 2-30A

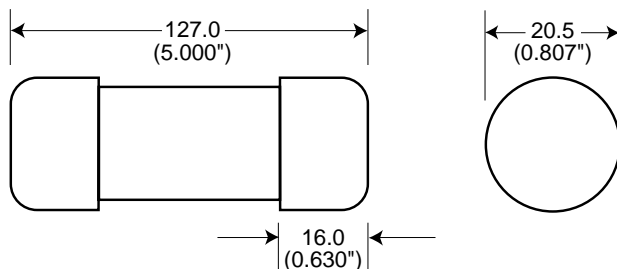
Size	Electrical Characteristics			Watts Loss	Ordering Information			Dimensions	Curves
	Rated Current RMS-Amps	I <sup>2</sup> t (A <sup>2</sup> S)			Part Number	Carton Qty.	Carton Weight (kg)	Figure Number	See Page or (BIF #)
		Pre-arc	Clearing at 1000 Vdc						
20 x 127mm ( <sup>9</sup> / <sub>16</sub> "	†2	0.8	2.4	4.4	FWS-2A20F	10	1.00	Fig. 1	page 96 (35785109)
	†6	27	81	6.7	FWS-6A20F				
	†15	300	700	5	FWS-15A20F				
	†20	675	1550	5.9	FWL-20A20F				
	†30	1850	4300	7.5	FWL-30A20F				

- Interrupting rating 45kA RMS Symmetrical.
- Rated voltage (IEC) †1500V †1250V
- 1000 Vdc rating.
- See accessories on page 90.

1 kg = 2.2 lbs. 1 lb = 0.45 kg

## Dimensions

Fig. 1: 2-30 Amp Range



Dimension in mm.  
1mm = 0.0394" 1" = 25.4mm





Ferrule – Accessories

# Fuseholders



Catalog Symbol: CH Series

Features:

- 10 × 38 Dovetail design provides maximum flexibility in assembling multiple poles
- Touchsafe design - No exposed contacts
- DIN rail mount (35mm)
- Optional open fuse indication lights
- Excellent for switchboard panel, control consoles, small motors, transformers, and similar applications
- Handle/fusepuller to install and remove fuses easily
- Available in single and multi-pole configurations
- Circuit marking system (P/N CH10CL and CH10CM)
- Wire ready: Saves time as terminals are ready to accept wires.
- CE marking

Standards:

### North American 10 × 38 Class CC

Listed U.L. 512, Guide IZLT, File E14853

Certified CSA Std. C22.2 No. 39, Class 6225 01, File 47235

### North American 10 × 38 Midget

Recognized U.L. 512, Guide IZLT2, File E14853

Certified CSA Std. C22.2 No. 39, Class 6225 01, File 47235



**European 10 × 38** IEC 269-2-1

**14 × 51** IEC 269-2

**22 × 58** IEC 269-2

Recommended Buss® Fuse Types:

10 × 38 North American Class CC Fuses - LP-CC, FNQ-R, KTK-R

10 × 38 North American Midget Fuses - FNQ, KTK, AGU, BAF, BAN, FNM, FWA, & FWC

14 × 51 Fuses - FWX, FWH, FWP & NON

22 × 58 Fuses - FWP

BIF document: 1151

Catalog Symbol: J70100

Ampere Rating: 100 Amperes

Voltage Rating: 700 Volts AC

Agency Approvals:

UL Recognized, Guide IZLT2, File E14853

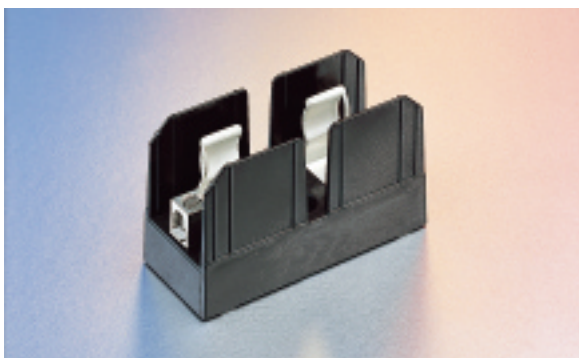
Withstand Rating: 200,000 RMS Sym. Amps

For use with 22 × 58mm fuses

(FWP-40A22F, FWP-100A22F, etc.)

Materials: Thermoplastic

UL Flammability: 94 VO



Amps	Poles	Catalog Numbers	
		Box Lug w/ Retaining Clip	Max. Wire Size
100	1	J70100-1CR	#2
	2	J70100-2CR	#2
	3	J70100-3CR	#2

BIF document: 1211

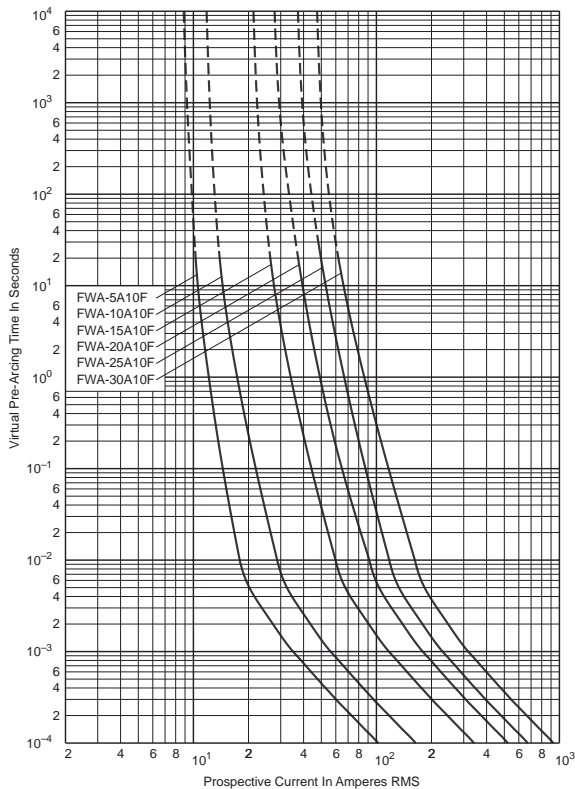




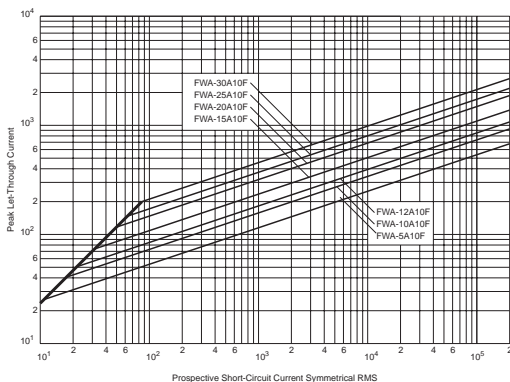
# Ferrule Curves

## FWA 150V 5-30A (10 × 38mm)

Time-Current Curve



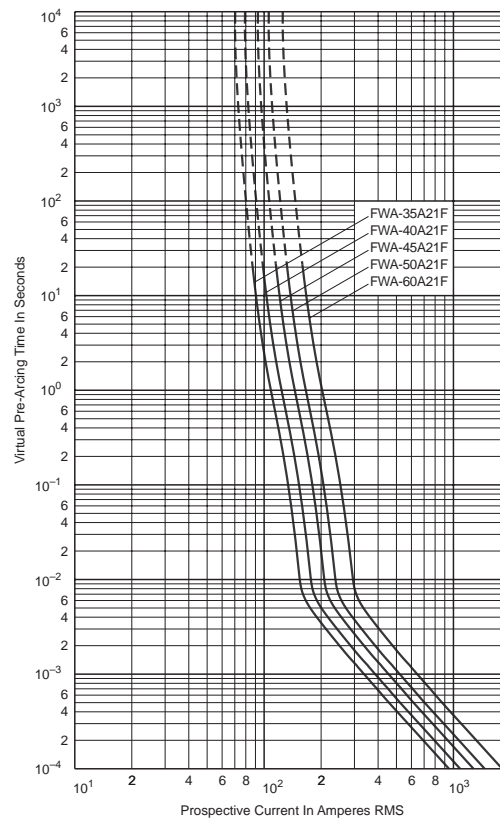
Peak Let-Through Curve



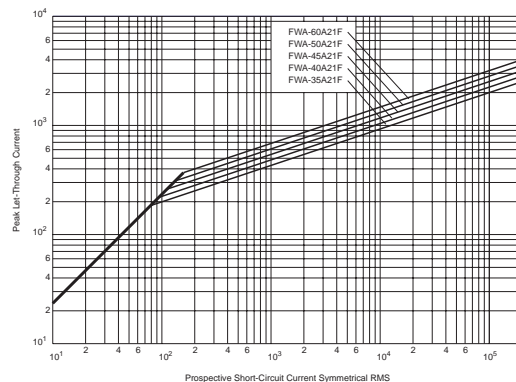
BIF document: 35785317

## FWA 150V 35-60A (21 × 51mm)

Time-Current Curve



Peak Let-Through Curve



BIF document: 35785305

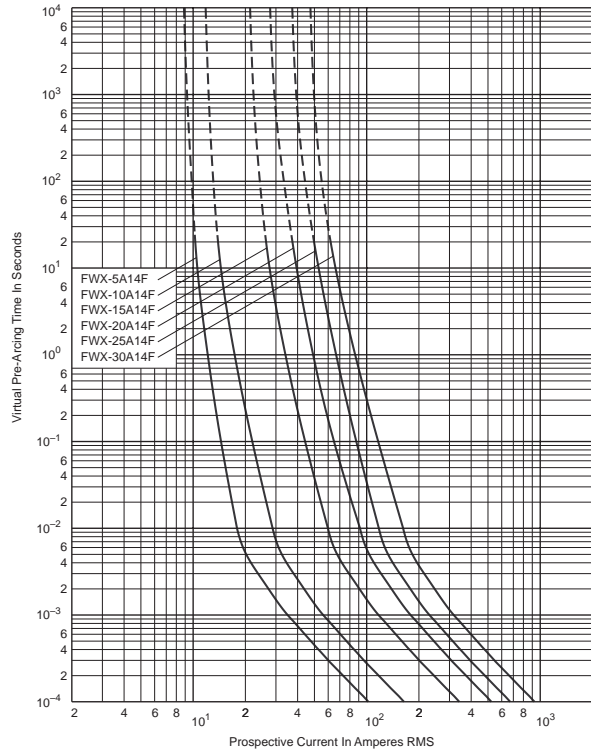




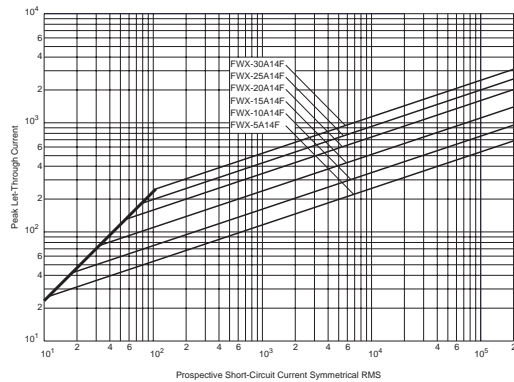
# Ferrule Curves

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

Time-Current Curve



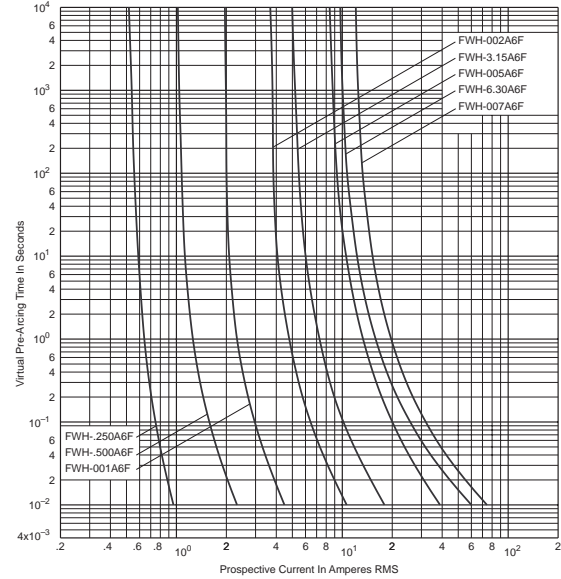
## Peak Let-Through Curve



BIF document: 35785302

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

Time-Current Curve



BIF document: 35785256

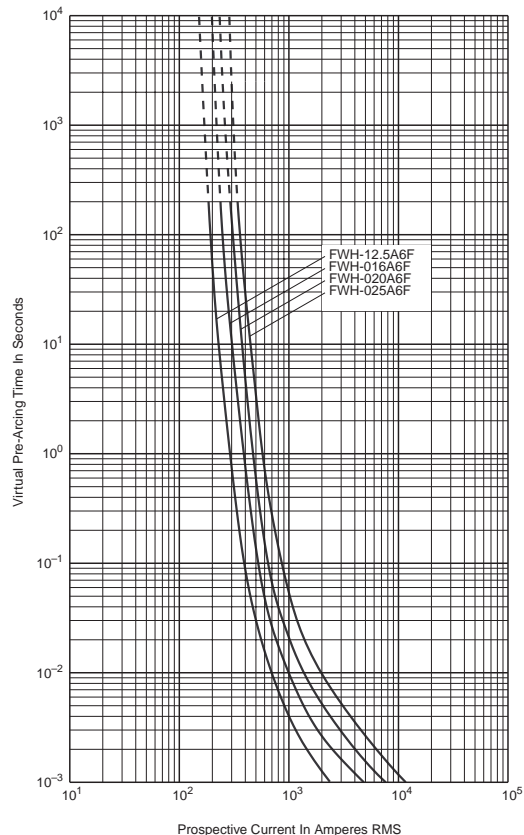




# Ferrule Curves

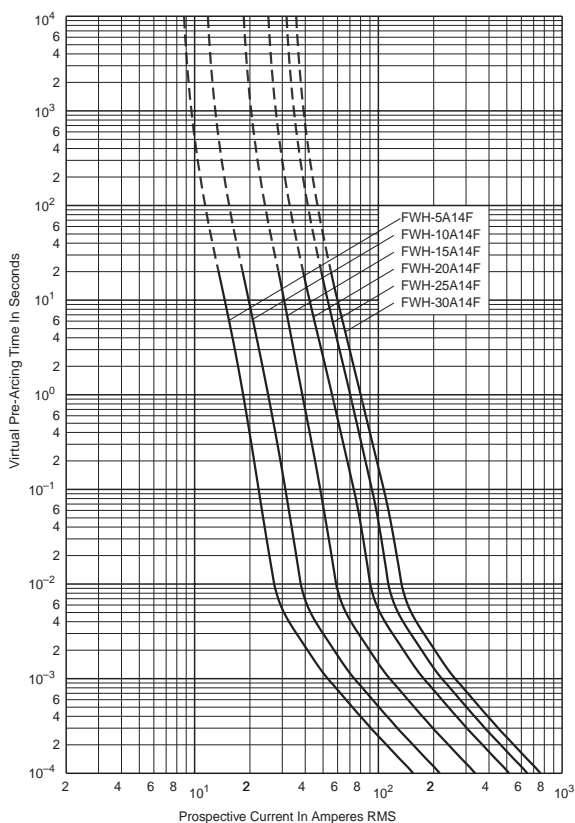
## FWH 500V 10-30A (6 × 32mm)

Time-Current Curve

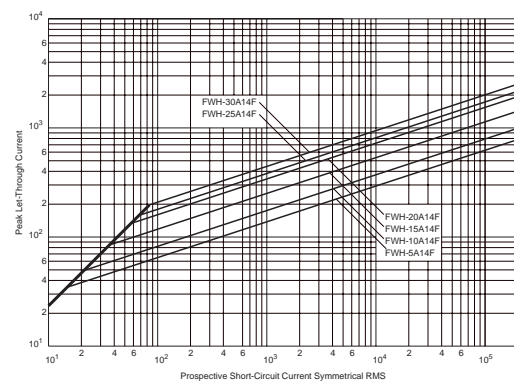


## FWH 500V 1-30A (14 × 51mm)

Time-Current Curve



## Peak Let-Through Curve



BIF document: 50955

BIF document: 35785298

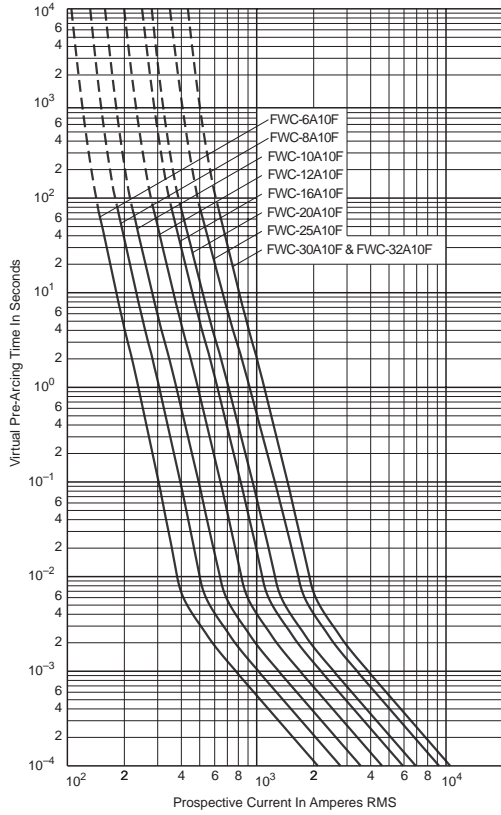




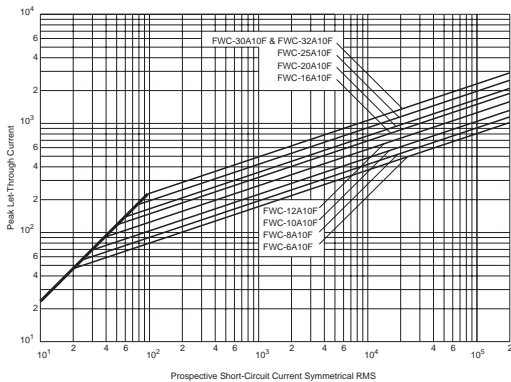
# Ferrule Curves

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

Time-Current Curve



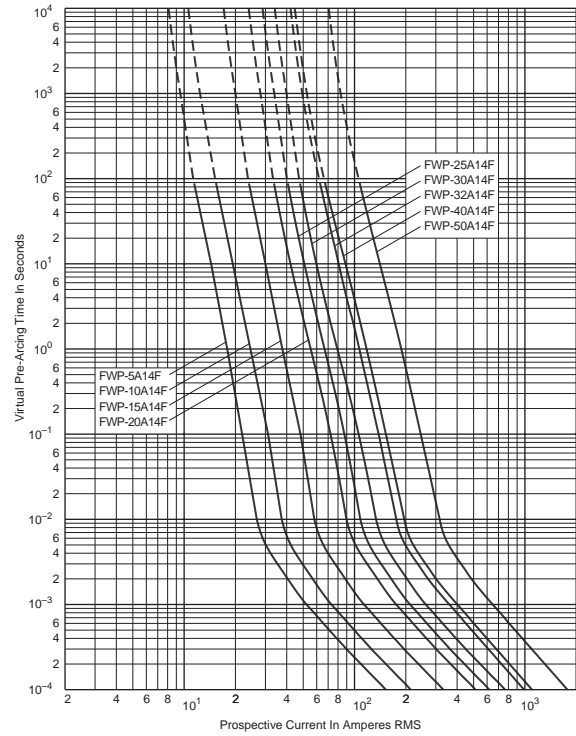
## Peak Let-Through Curve



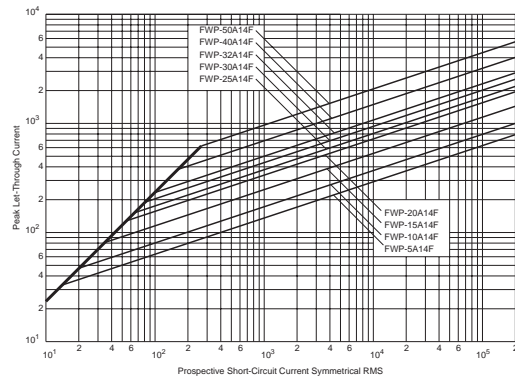
BIF document: 35785306

## FWP 660V/700V 1-50A (14 x 51mm)

Time-Current Curve



## Peak Let-Through Curve



BIF document: 35785307

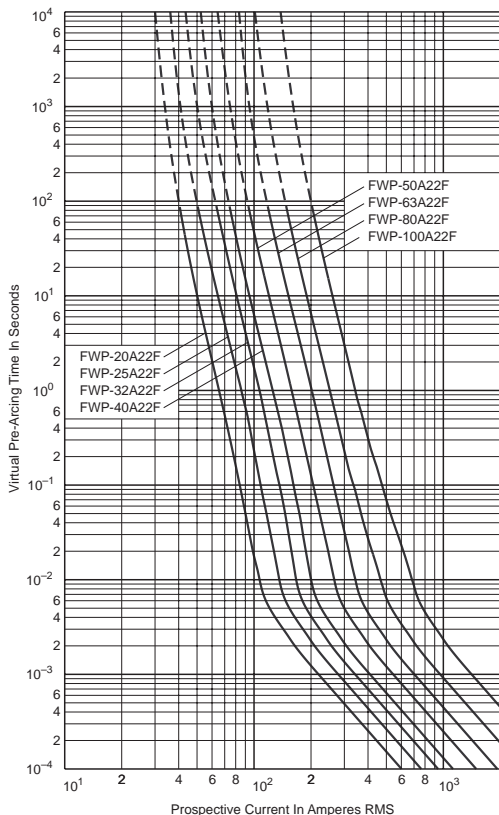




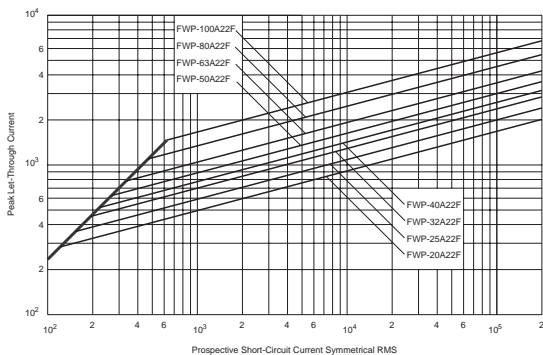
# Ferrule Curves

## FWP 660V/700V 20-100A (22 x 58mm)

Time-Current Curve



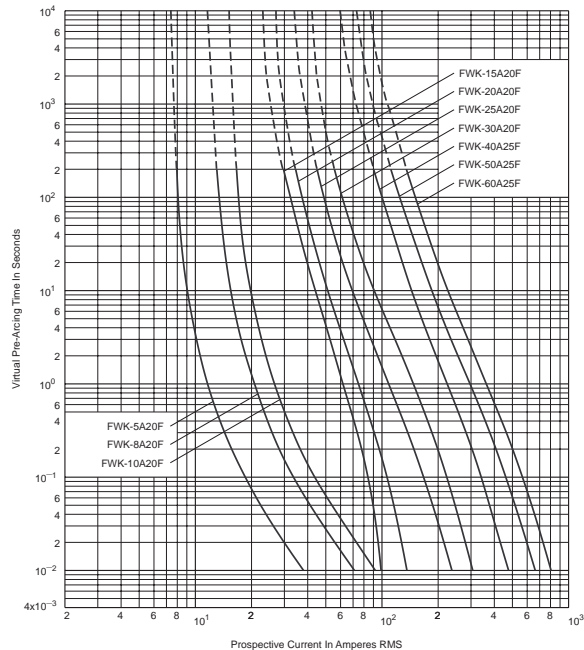
## Peak Let-Through Curve



## FWK 750V 5-30A (20 x 127mm)

## FWK 750V 35-60A (25 x 146mm)

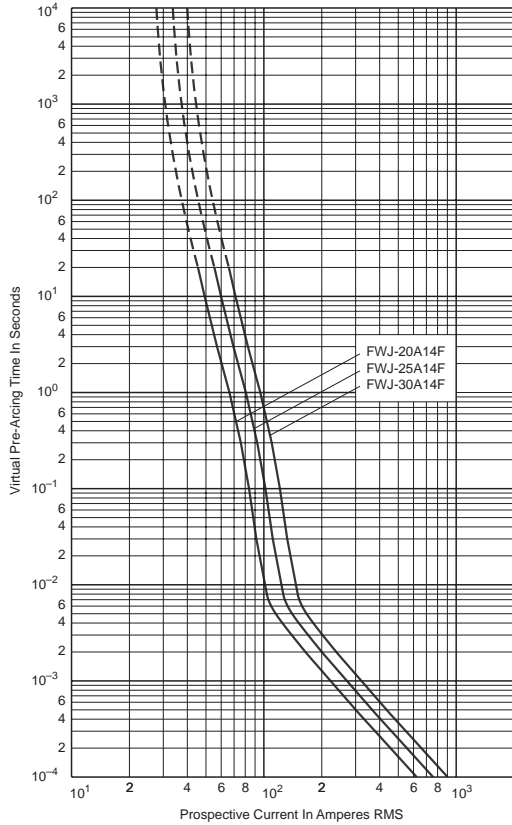
Time-Current Curve



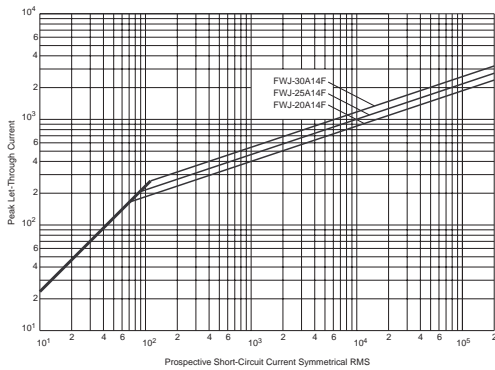


# Ferrule Curves

## FWJ 1000V 20-30A (14 × 67mm) Time-Current Curve

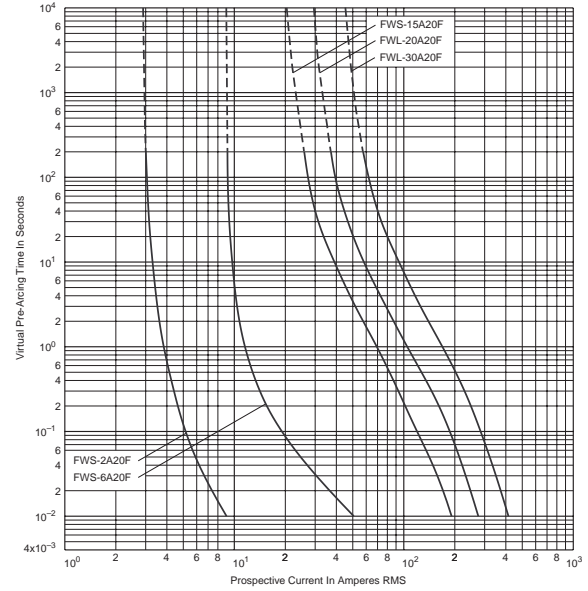


### Peak Let-Through Curve



BIF document: 35785315

## FWL/FWS 1250V/1500V 2-30A (20 × 127mm) Time-Current Curve



BIF document: 35785109



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