British BS 88 Fuses



Introduction

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British BS 88 Fuse Ranges

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

General Information

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

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

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

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

Voltage Rating

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

Accessories

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

British BS 88 — 240V: 6-900A

LCT, LET, LMT, LMMT



Specifications

Description: BS 88 style stud-mount fuses.

Dimensions: See dimensions illustrations.

Ratings:

Volts: — 240Vac/150Vdc

Amps: — 6-900A

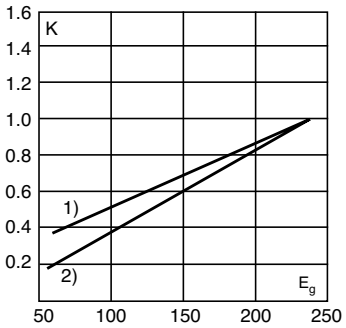
IR: — 200kA RMS Sym.

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

Electrical Characteristics

Total Clearing I^2t

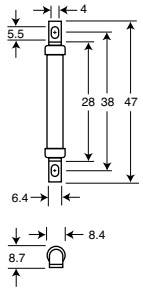
The total clearing I^2t at rated voltage and at power factor of 15% are given in the electrical characteristics. For other voltages, the clearing I^2t is found by multiplying by correction factor, K, given as a function of applied working voltage, E_g, (rms).



1) LCT
2) LET, LMT, LMMT

Dimensions (mm)

Fig. 1: LCT



1mm = 0.0394" / 1" = 25.4mm

Fig. 2: LET

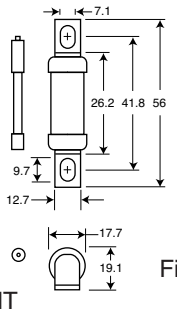
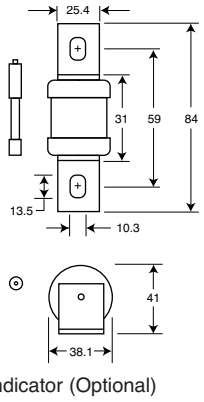
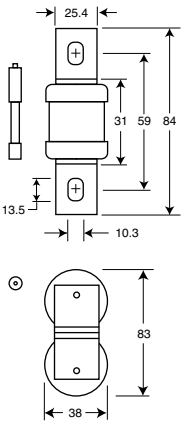


Fig. 3: LMT



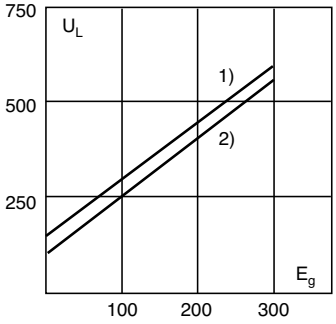
Indicator (Optional)

Fig. 4: LMMT



Arc Voltage

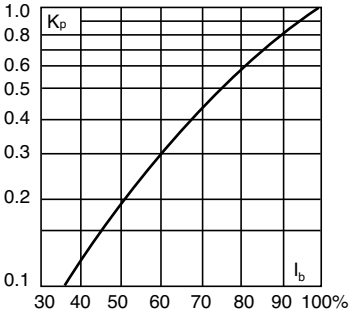
This curve gives the peak arc voltage, U_L, which may appear across the fuse during its operation as a function of the applied working voltage, E_g, (rms) at a power factor of 15%.



1) LCT
2) LET, LMT, LMMT

Power Losses

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



Catalog Numbers

Electrical Characteristics

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

• Watts loss provided at rated current.
• Note: 7LET, 10LET, 12LET and 16LET are available for replacement purposes on existing equipment.
• See accessories on page 195.

Features and Benefits

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

Typical Applications

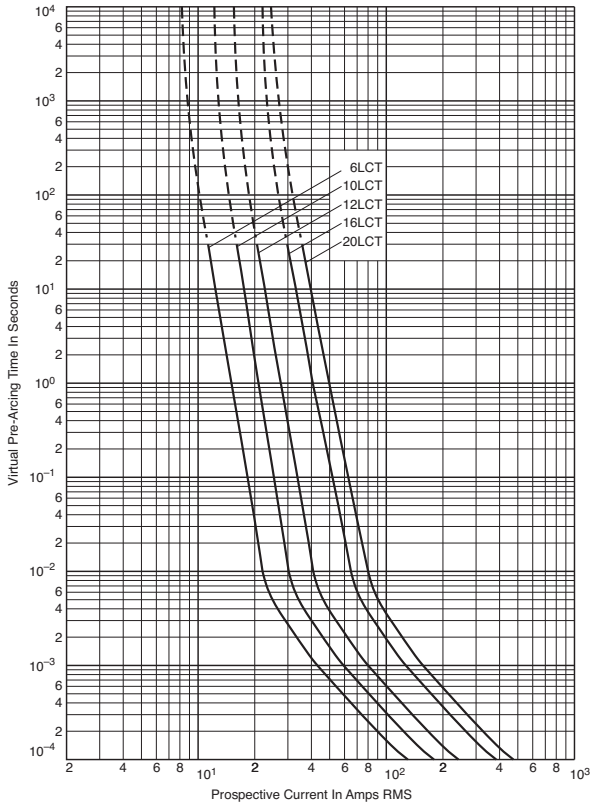
- DC common bus
- AC and DC drives
- Power converters/rectifiers
- Reduced voltage starters

Data Sheet: 720004

British BS 88 — 240V: 6-900A

LCT 6-20A: 240V

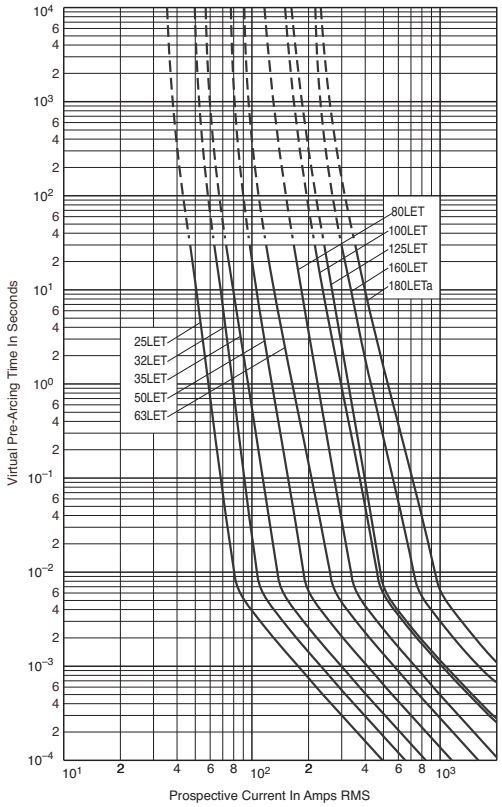
Time-Current Curve



Data Sheet: 35785296

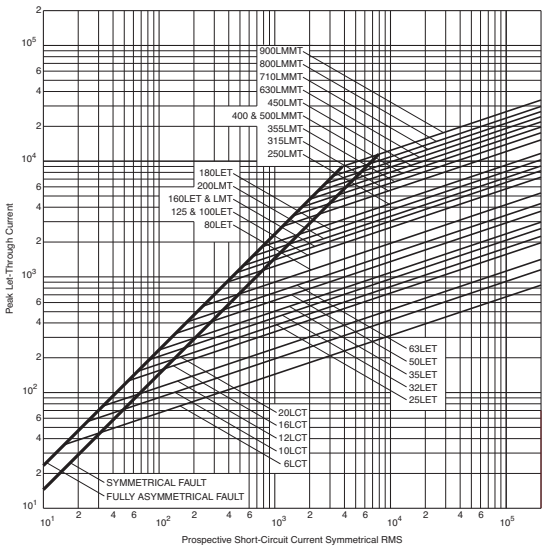
LET 25-180A: 240V

Time-Current Curve



Data Sheet: 35785293

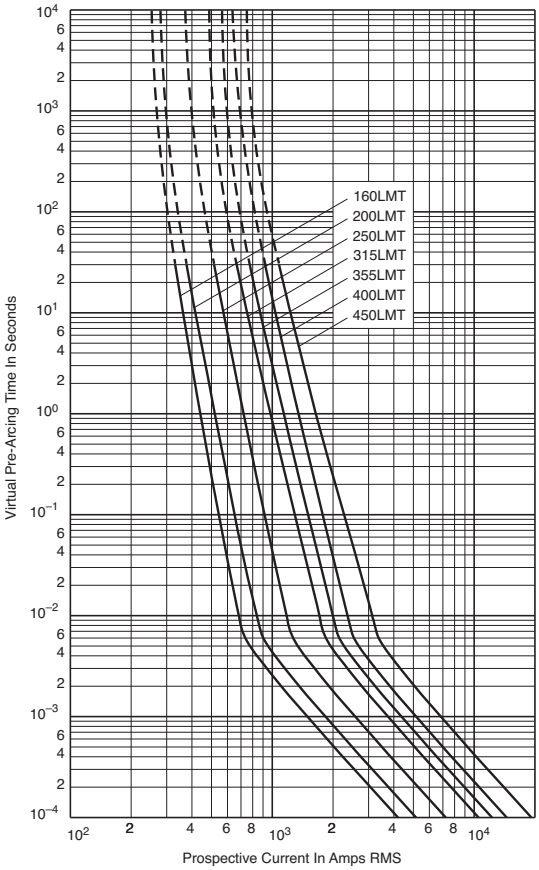
Peak Let-Through Curve



British BS 88 — 240V: 6-900A

LMT 160-450A: 240V

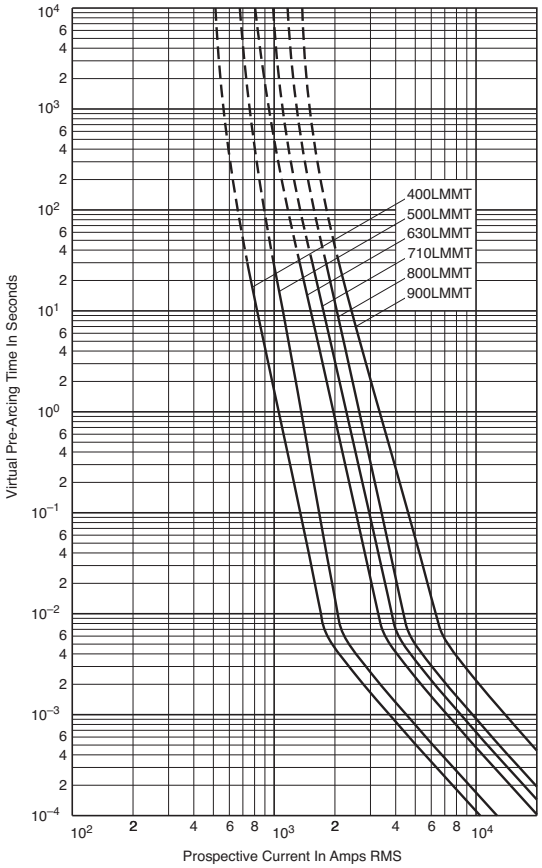
Time-Current Curve



Data Sheet: 35785294

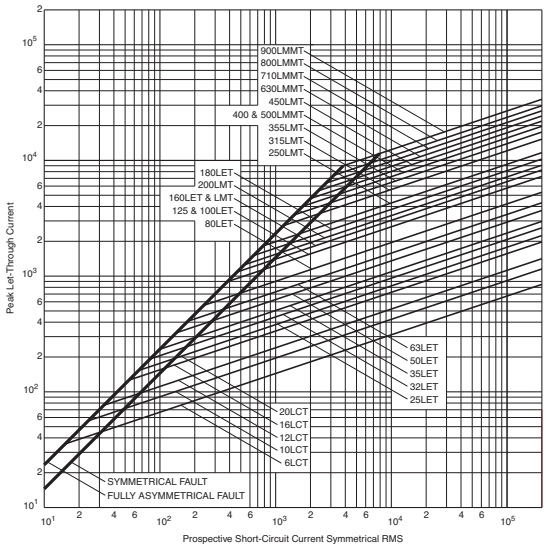
LMMT 400-900A: 240V

Time-Current Curve



Data Sheet: 35785295

Peak Let-Through Curve



British BS 88 — 690V: 6-710A

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

Specifications
Description: BS 88 style stud-mount fuses.

Dimensions: See dimensions illustrations.

Ratings:

Volts: — 690Vac/500Vdc

Amps: — 6-710A

IR: — 200kA RMS Sym.

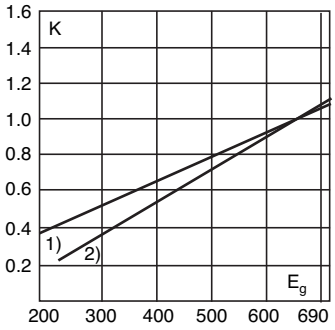


Agency Information: CE, Designed and tested to: BS 88 Part 4, IEC 269 Part 4, UL Recognized. MT and MMT — 350Vdc (IEC) rating. Consult Cooper Bussmann for UL Recognition status.

Electrical Characteristics

Total Clearing I²t

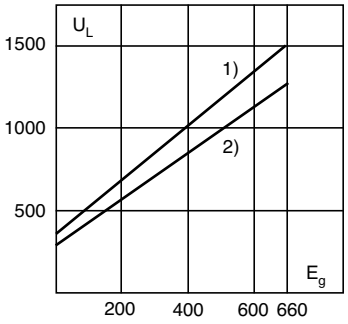
The total clearing I²t at rated voltage and at power factor of 15% are given in the electrical characteristics. For other voltages, the clearing I²t is found by multiplying by correction factor, K, given as a function of applied working voltage, E_g, (rms).



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

Arc Voltage

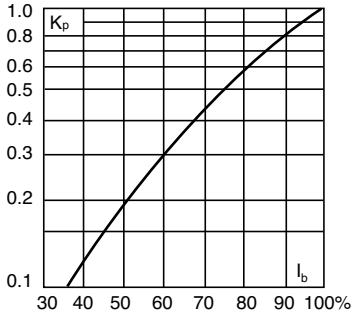
This curve gives the peak arc voltage, U_L, which may appear across the fuse during its operation as a function of the applied working voltage, E_g, (rms) at a power factor of 15%.



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

Power Losses

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



Features and Benefits

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

Typical Applications

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

Dimensions (mm)

Fig. 1: CT

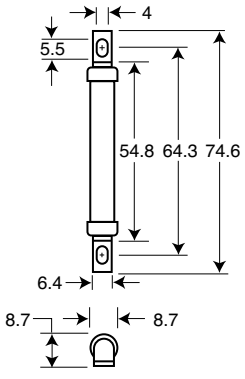


Fig. 2: ET, FE

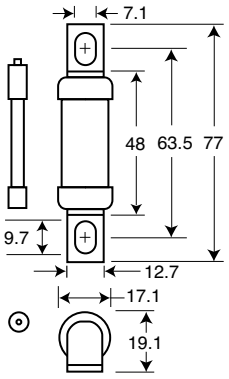


Fig. 3: EET, FEE

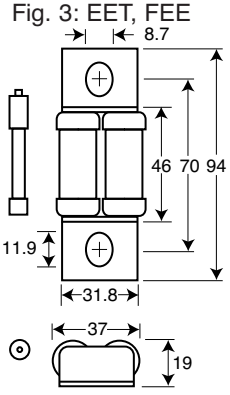


Fig. 4: FM, MT

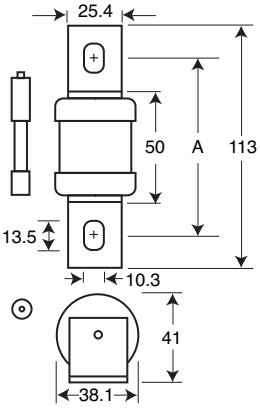
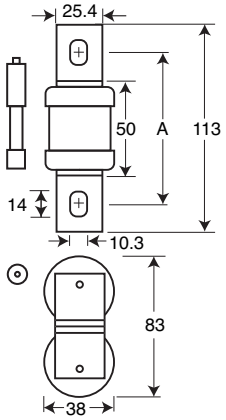


Fig. 5: FMM, MMT



1mm = 0.0394" / 1" = 25.4mm

Figs. 4 & 5 "A" Dimensions

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

Data Sheet: 720024

British BS 88 — 690V: 6-710A

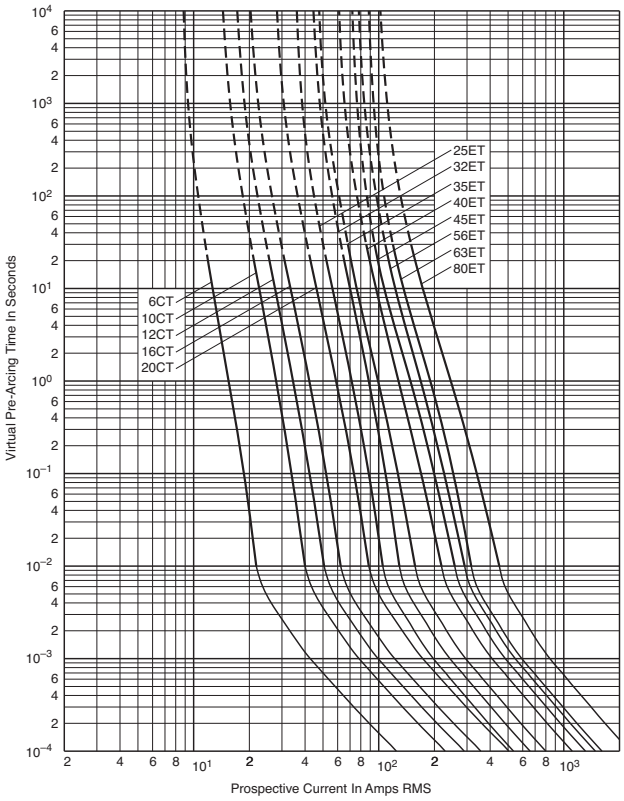
Catalog Numbers

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

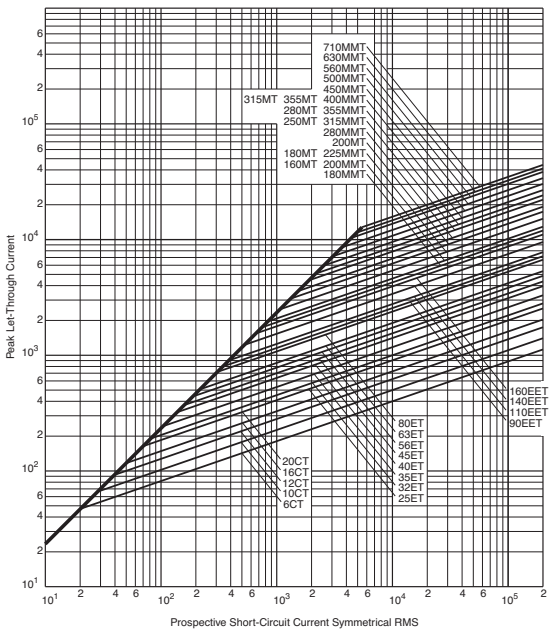
• Watts loss provided at rated current.
• Note: FC, 8ET, 12ET, 15ET, 20ET, 65EET and 75EET are available for replacement purposes on existing equipment.
• See accessories on page 195.

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

Time-Current Curve



Peak Let-Through Curve

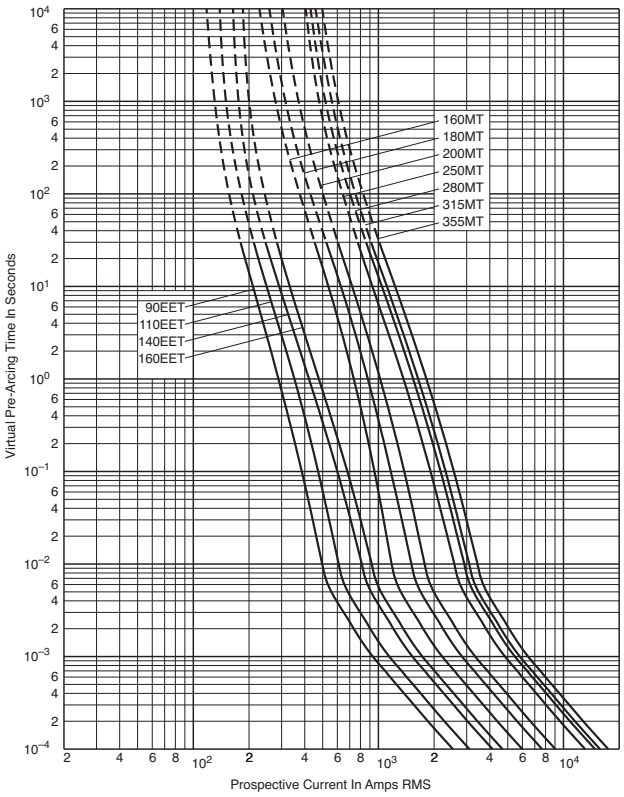


Data Sheet: 35785312

British BS 88 — 690V: 6-710A

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

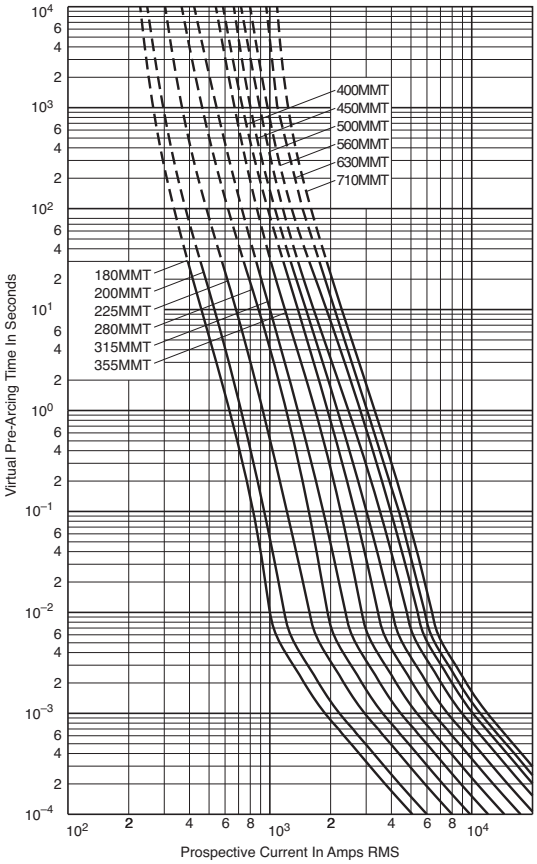
Time-Current Curve



Data Sheet: 35785313

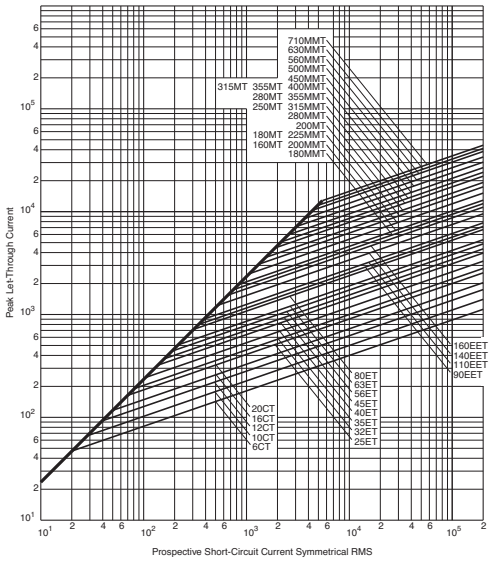
MMT 180-710A: 690V

Time-Current Curve



Data Sheet: 35785311

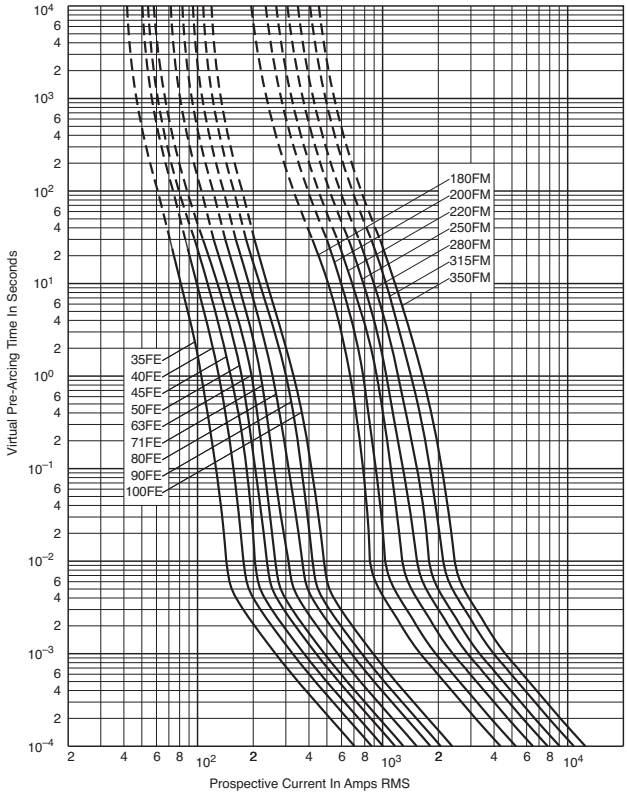
Peak Let-Through Curve



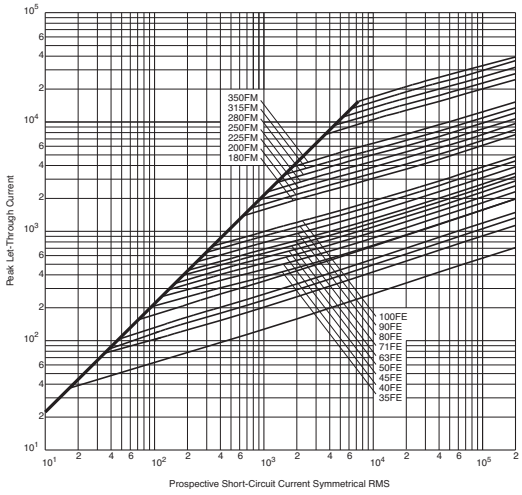
British BS 88 — 690V: 6-710A

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

Time-Current Curve



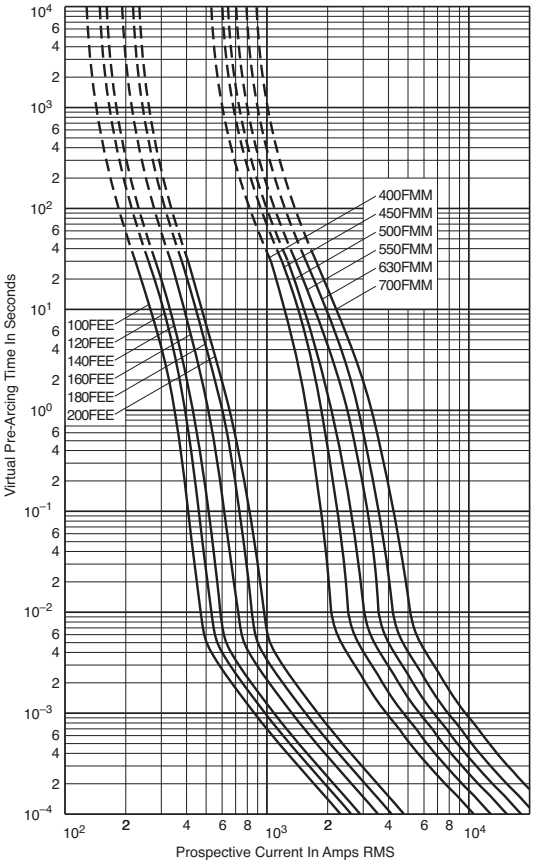
Peak Let-Through Curve



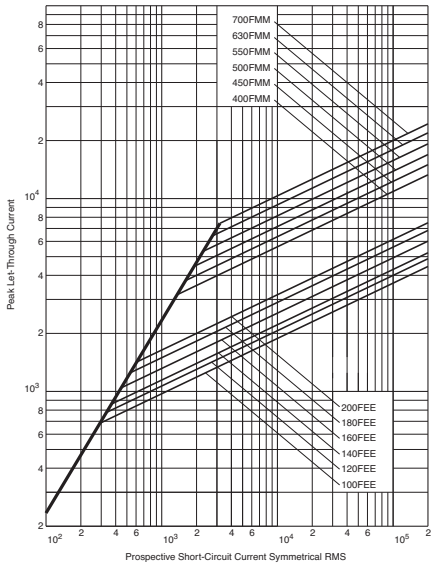
Data Sheet: 35785314

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

Time-Current Curve



Peak Let-Through Curve



Data Sheet: 35785292

British BS 88 Fuse Accessories

Indicator System

Trip-Indicators

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

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

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

Electrical Specifications

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

Fuse Indicator Kits

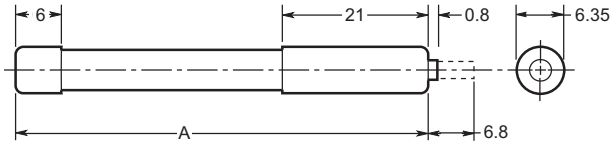
Kit. Ref.	Details	RMS Volts	For use with Fuse Ref.
EC-250	Fuse Mount	250	LET
MC250	Indicator Kits	250	LMT & LMMT
EC-600	(Includes one	660	FE, FEE & ET
MC600	indicator	660	FM & FMM
MC700	and two clips)	700	MT & MMT

CL1 Panel Mount Clips

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

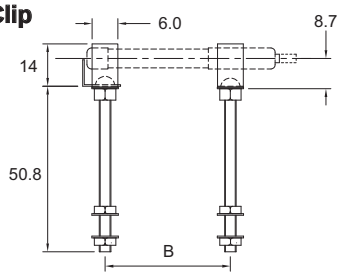


Trip-Indicator Dimensions - mm



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

CL1 Panel Mount Clip Dimensions - mm



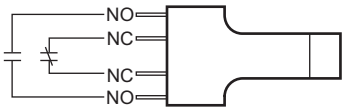
Microswitch Adapter – MAI

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

Microswitch and Adapter Type MAI

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

Terminal Arrangement



Dimensions in mm

