

## Ultra Rapid Semiconductor Protection Fuse

### BS 88 Round Body Fuses – 250V

**British Standard  
Voltage Rating 250V  
Current Ratings from 5A to 180A  
aR Characteristics  
Sizes 10x28 and 17x27**



#### **Key Features:**

- ❖ Extremely high interrupting rating fuses for the protection of power semiconductors as per IEC Standard 60269.1 and 4.
- ❖ 250V voltage rating complying with IEC 33
- ❖ Non Magnetic construction
- ❖ gR Characteristics for ratings 5A to 32A (LCW range) comply with VDE 636-23 and IEC 60269.4
- ❖ 17 x 27 models are UL recognised
- ❖ aR Characteristics with current ratings from 5A to 180A (LEW or LEWI range) comply with VDE 636-23 and IEC 60269.4
- ❖ Available with or without separate trip indicator BS88-4
- ❖ Microswitch reference: MC 6.3 GR 2-5 N

**Main Characteristics:**

**LCW : 10x28 without trip indicator**

Voltage U <sub>N</sub> (V)	Size	Ref:	Micro Switch	UL	Current rating I <sub>N</sub> (A)	Pre-arcing I <sup>2</sup> t @ 1 ms I <sup>2</sup> t <sub>p</sub> (A <sup>2</sup> s)	Total Clearing I <sup>2</sup> t @ U <sub>N</sub> (A <sup>2</sup> s)		Power Losses @		Tested Interrupting rating
							I <sub>p</sub> ≤ 30I <sub>N</sub>	I <sub>p</sub> > 30I <sub>N</sub>	0.8 I <sub>N</sub>	I <sub>N</sub>	
250	10x28	5LCW	N	N	5	1.3	10	11	0.6	1.0	160kA @ 250V
		6LCW	N	N	6	1.8	13	15	0.7	1.2	
		10LCW	N	N	10	2.4	18	20	1.2	2.1	
		12LCW	N	N	12	4.3	28	33	1.6	2.8	
		16LCW	N	N	15	6.7	41	48	2.0	3.5	
		20LCW	N	N	20	15.0	85	100	2.2	4.0	
		25LCW	N	N	25	27.0	135	160	2.6	4.7	
		32LCW	N	N	32	53.0	240	280	3.0	5.4	

**LEW : 17x27 without trip indicator**

Voltage U <sub>N</sub> (V)	Size	Ref:	Micro Switch	UL	Current rating I <sub>N</sub> (A)	Pre-arcing I <sup>2</sup> t @ 1 ms I <sup>2</sup> t <sub>p</sub> (A <sup>2</sup> s)	Total Clearing I <sup>2</sup> t @ U <sub>N</sub> (A <sup>2</sup> s)		Power Losses @		Tested Interrupting rating
							I <sub>p</sub> ≤ 30I <sub>N</sub>	I <sub>p</sub> > 30I <sub>N</sub>	0.56 I <sub>N</sub>	I <sub>N</sub>	
250	17x27	7LEW	N	<b>RU</b>	7	1.3	8.5	9.8	0.56	1.0	160 kA @ 250V
		10LEW	N	<b>RU</b>	10	4.5	21	23.8	0.84	1.5	
		12LEW	N	<b>RU</b>	12	5.9	27	31	1.1	2.0	
		16LEW	N	<b>RU</b>	16	11.2	50	59	1.7	3.0	
		20LEW	N	<b>RU</b>	20	15.6	80	100	2.2	3.9	
		25LEW	N	<b>RU</b>	25	30.0	130	160	2.7	4.8	
		32LEW	N	<b>RU</b>	30	45.0	195	235	3.2	5.6	
		35LEW	N	<b>RU</b>	35	63.0	270	330	3.7	6.5	
		40LEW	N	<b>RU</b>	50	180.0	790	940	4.9	8.8	
		50LEW	N	<b>RU</b>	60	250.0	1100	1310	5.8	10.4	
		63LEW	N	<b>RU</b>	75	380.0	1670	1990	7.2	13.6	
		80LEW	N	<b>RU</b>	80	480.0	2100	2530	7.25	13.7	
		100LEW	N	<b>RU</b>	100	730.0	3350	4060	6.5	11.5	
		125LEW	N	<b>RU</b>	125	850.0	5720	6920	6.7	12.3	
		150LEW	N	<b>RU</b>	150	1250.0	7930	9590	7.4	13.6	
		160LEW	N	<b>RU</b>	160	1730.0	9600	11700	8.8	15.6	
180LEW	N	<b>RU</b>	180	2090.0	14500	17500	9.5	17.0			

**LEWI : 17x27 with separate trip indicator**

Voltage U <sub>N</sub> (V)	Size	Ref:	Micro Switch	UL	Current rating I <sub>N</sub> (A)	Pre-arcing I <sup>2</sup> t @ 1 ms I <sup>2</sup> t <sub>a</sub> (A <sup>2</sup> s)	Total Clearing I <sup>2</sup> t @ U <sub>N</sub> (A <sup>2</sup> s)		Power Losses @		Tested Interrupting rating
250	17x27	7LEWI	Y		7	1.3	8.5	9.8	0.56	1.0	160 kA @ 250V
		10LEWI	Y		10	4.5	21	23.8	0.84	1.5	
		12LEWI	Y		12	5.9	27	31	1.1	2.0	
		16LEWI	Y		16	11.2	50	59	1.7	3.0	
		20LEWI	Y		20	15.6	80	100	2.2	3.9	
		25LEWI	Y		25	30.0	130	160	2.7	4.8	
		32LEWI	Y		30	45.0	195	235	3.2	5.6	
		35LEWI	Y		35	63.0	270	330	3.7	6.5	
		40LEWI	Y		50	180.0	790	940	4.9	8.8	
		50LEWI	Y		60	250.0	1100	1310	5.8	10.4	
		63LEWI	Y		75	380.0	1670	1990	7.2	13.6	
		80LEWI	Y		80	480.0	2100	2530	7.25	13.7	
		100LEWI	Y		100	730.0	3350	4060	6.5	11.5	
		125LEWI	Y		125	850.0	5720	6920	6.7	12.3	
		150LEWI	Y		150	1250.0	7930	9590	7.4	13.6	
		160LEWI	Y		160	1730.0	9600	11700	8.8	15.6	
180LEWI	Y		180	2090.0	14500	17500	9.5	17.0			

Notes: Minimum operating voltage for integrated trip indicator = 20V  
 Microswitch reference: MC 6.3 GR 2-5 N

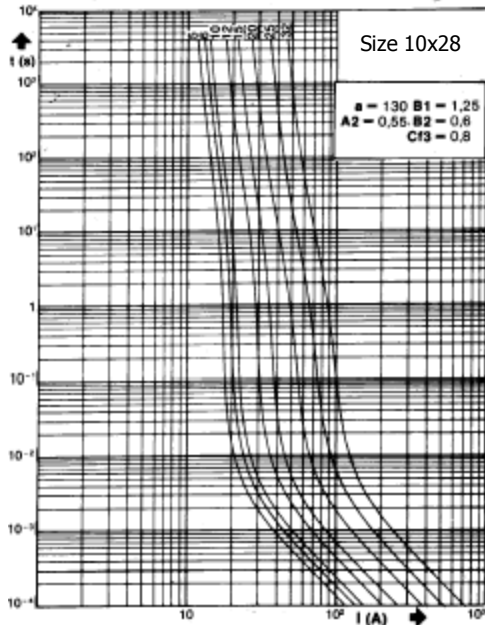
**Electrical Characteristics:**

**Times vs current characteristics**

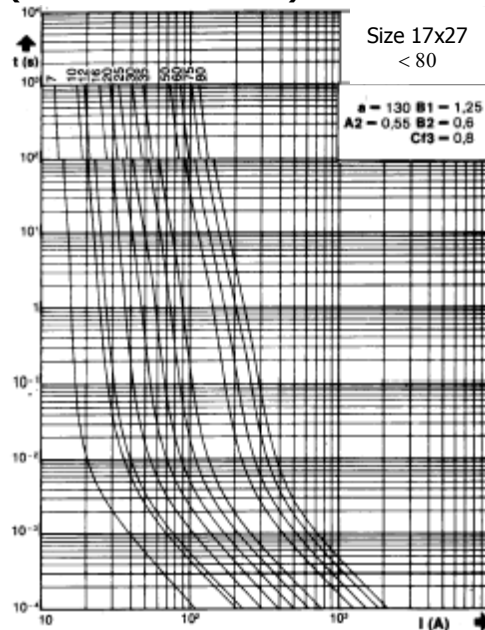
These curves indicate, for each rated current, the pre-arcing

Tolerance for the mean pre-arcing current  $\pm 10\%$

**LCW : Size 10x28**

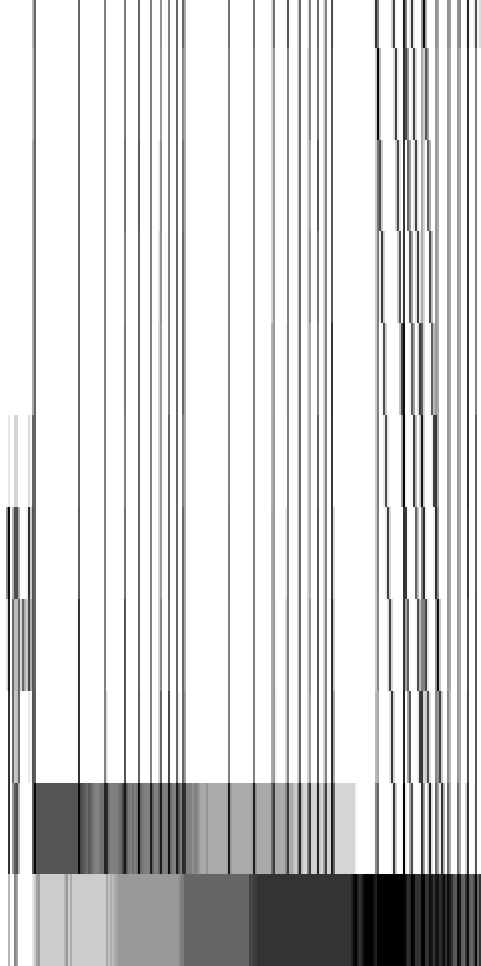


**LEW (LEWI with indicator) : Size 17x27 I ≤ 80 LEW (I**



These curves indicate, for each rated current, the pre-arcing time vs the RMS pre-arcing current.

Tolerance for the mean pre-arcing current  $\pm 10\%$

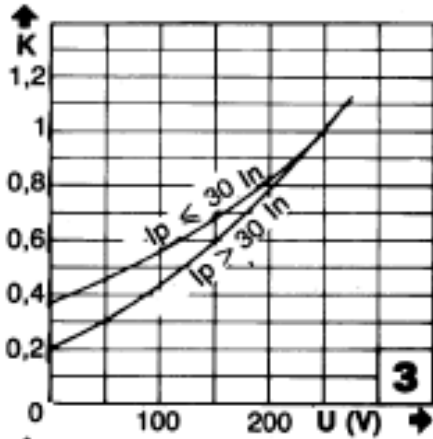


**100**

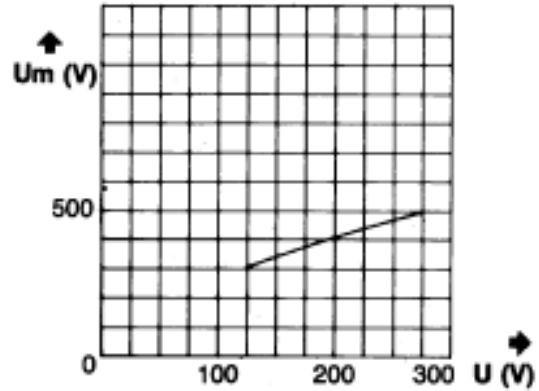
Size 17x27  
>100

**Corrective Factor**

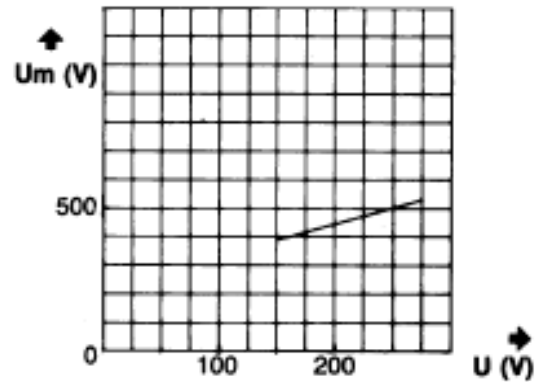
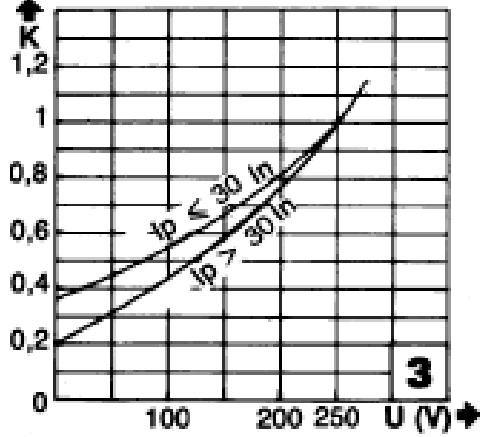
LCW : Size 10x28



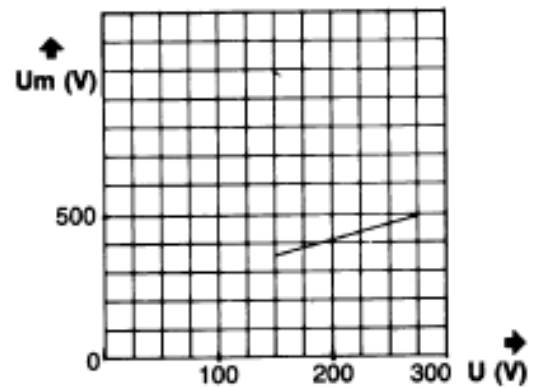
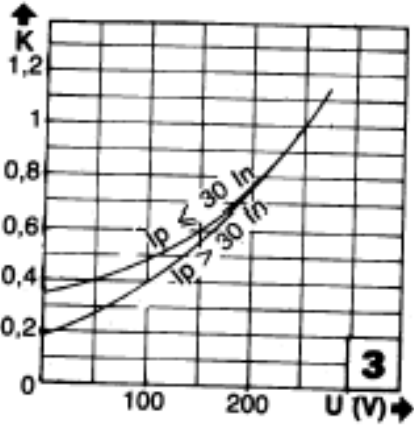
**Peak Arc Voltage:**



LEW & LEWI : Size 17x27 I ≤ 80



LEW & LEWI : Size 17x27 I ≥ 100



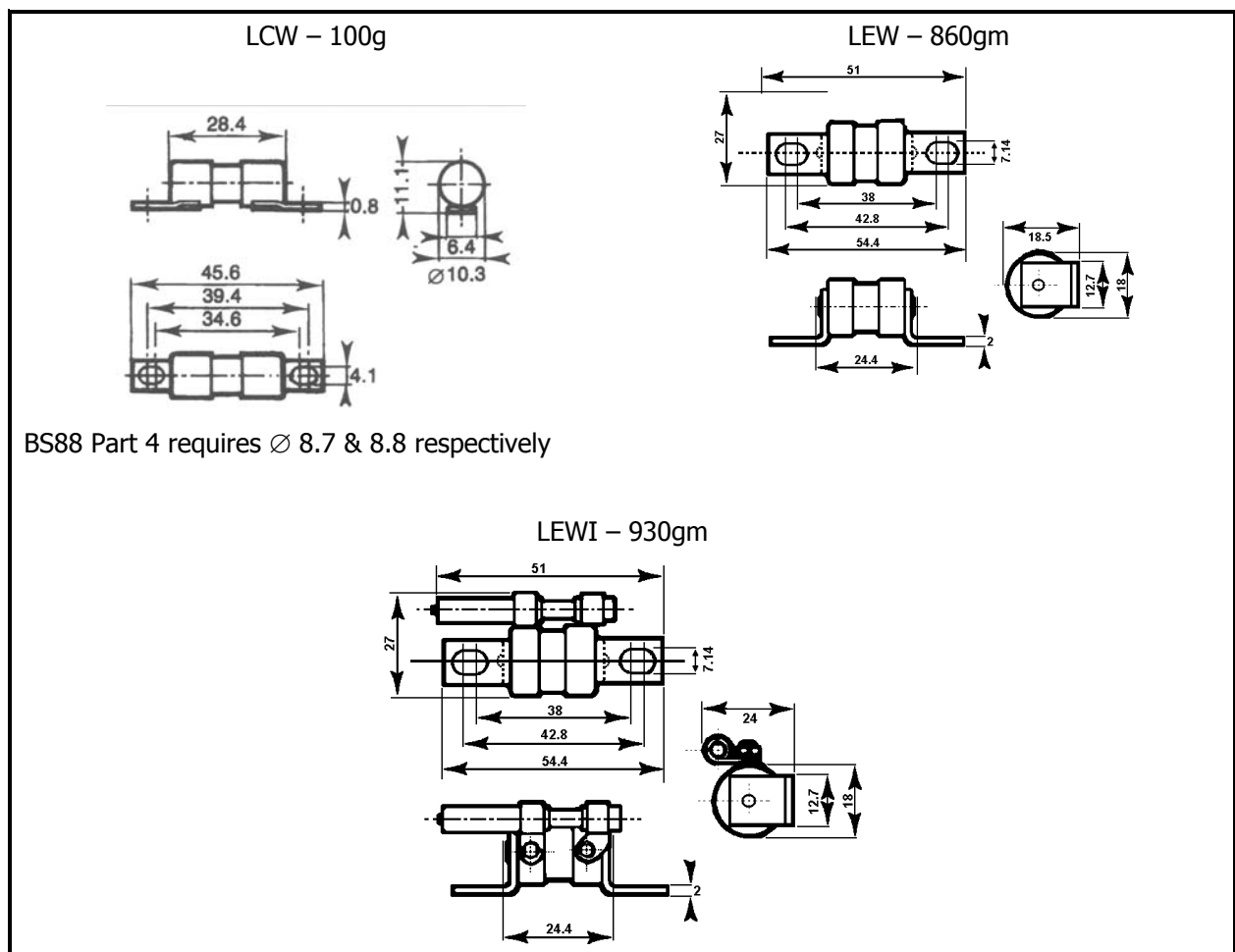
**Corrective factor :**

The mean curves show the variance of the total clearing time ( $I^2t$ ) and the total clearing duration  $t_t$  as a function of operating voltage  $U$ .

**Peak arc voltage :**

This curve shows the peak value  $U_m$  of the arc voltage which appears across the fuse link as a function of the operating voltage  $U$  @  $\cos \varphi = 0.15$ .

**Outline Drawing & Ordering Information:**



BS88 Part 4 requires  $\varnothing$  8.7 & 8.8 respectively

ORDERING INFORMATION <span style="float: right;">(Please quote code as below)</span>				
Voltage	Size	Current Rating (A)	Ref.	Trip Indicator
250V	10x28 or 17x27	5 to 180	LCW or LEW	I

Order code: e.g. **180LEWI** = 250V size 17x27, 180amp fuse with trip indicator

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