

## PSC Square body fuses – Size 3X 500-700VAC Blade Terminals

October 2013 – Issue 1

The IXYS UK range of 700V/690V protistor fuse links provides maximum flexibility in equipment design and ultimate protection for today's power conversion equipment. These square body fuse links are available in different body sizes, each size having multiple worldwide acceptable mounting styles.

These protistors have been designed to provide state-of-the-art protection for all IXYS UK high power semiconductors; diodes, thyristors, GTO's and IGBT devices. These fuses are assembled with pure silver, die-cut elements embedded in solidified sand, which helps control arcing characteristics for a lower  $I^2t$  and high interrupting rate level. All contact surfaces are silver plated and all hardware is non-magnetic

Each fuse link is equipped with a low voltage trip indicator which can operate a field mountable microswitch.



### Features and Benefits

- Ultra-fast acting
- Current limiting
- Very low  $I^2t$  for improved semiconductor protection
- Superior cycling capability
- Multiple body sizes and blade combinations
- aR class according to VDE 636-23 and IEC 60269-4

### Applications

Protection of inverters, UPS systems, motor drives and similar equipment rated at 700V/690V or less

### Approvals

- UL/CSA recognised component
- AC: UL guide no. E76491
- IEC 60269-4 compliance
- RoHS compliant



**Nomenclature**

The IXYS UK range of 700V/690V protistor fuse links with blade terminals consists of five different body styles and the following nomenclature details the breakdown of each type

1	2	3	4	5	6
<b>069</b>	<b>UR</b>	<b>3</b>	<b>D</b>	<b>0800</b>	<b>B</b>
Rated voltage ÷ 10	Type and standard	Size	Fixing dimension	RMS current rating	Indicator type

**Type and Standard Information**

US – DIN 43 653 US dimensions, large square body

UF – French standard blades

UR – DIN 43 653, German/French dimensions, large square body

**Body Size**

0 – 30

1 – 31

2 – 32

3 - 33

**Fixing Dimension**

A – 80mm (DIN80)

B – 90mm

D – 110mm (DIN110)

**Indicator Type**

B – Button type

**Example**

069UR3D0800B is – 700V/690VAC (RMS), DIN 43-635 German/French dimensions, large square body, size 33, 110mm fixing, 800A nominal RMS current with button indicator

**Size 30 fuses – Part numbers**

Weight – 290g Max.

US0B fuses – US dimensions

Rated Voltage (UL/IEC) V	Nominal Current A	Class	Part Number (90mm fixing)	Part Number (110mm fixing)
700/690	50	aR	070US0B0050B	070US0D0050B
700/690	63	aR	070US0B0063B	070US0D0063B
700/690	80	aR	070US0B0080B	070US0D0080B
700/690	100	aR	070US0B0100B	070US0D0100B
700/690	125	aR	070US0B0125B	070US0D0125B
700/690	160	aR	070US0B0160B	070US0D0160B
700/690	200	aR	070US0B0200B	070US0D0200B
700/690	250	aR	070US0B0250B	070US0D0250B
700/690	315	aR	070US0B0315B	070US0D0315B
700/690	350	aR	070US0B0350B	070US0D0350B
700/690	400	aR	070US0B0400B	070US0D0400B
700/690	450	aR	070US0B0450B	070US0D0450B
700/690	500	aR	070US0B0500B	070US0D0500B
700/690	550	aR	070US0B0550B	070US0D0550B
650/600	630	aR	-	065US0D0630B*

UFOA fuses – UF dimensions, 80mm fixing centres

Rated Voltage (UL/IEC) V	Nominal Current A	Class	Part Number
700/690	50	aR	069UF0A0050B
700/690	63	aR	069UF0A0063B
700/690	80	aR	069UF0A0080B
700/690	100	aR	069UF0A0100B
700/690	125	aR	069UF0A0125B
700/690	160	aR	069UF0A0160B
700/690	200	aR	069UF0A0200B
700/690	250	aR	069UF0A0250B
700/690	315	aR	069UF0A0315B
700/690	350	aR	069UF0A0350B
700/690	400	aR	069UF0A0400B

UROA/UROD fuses – UR dimensions

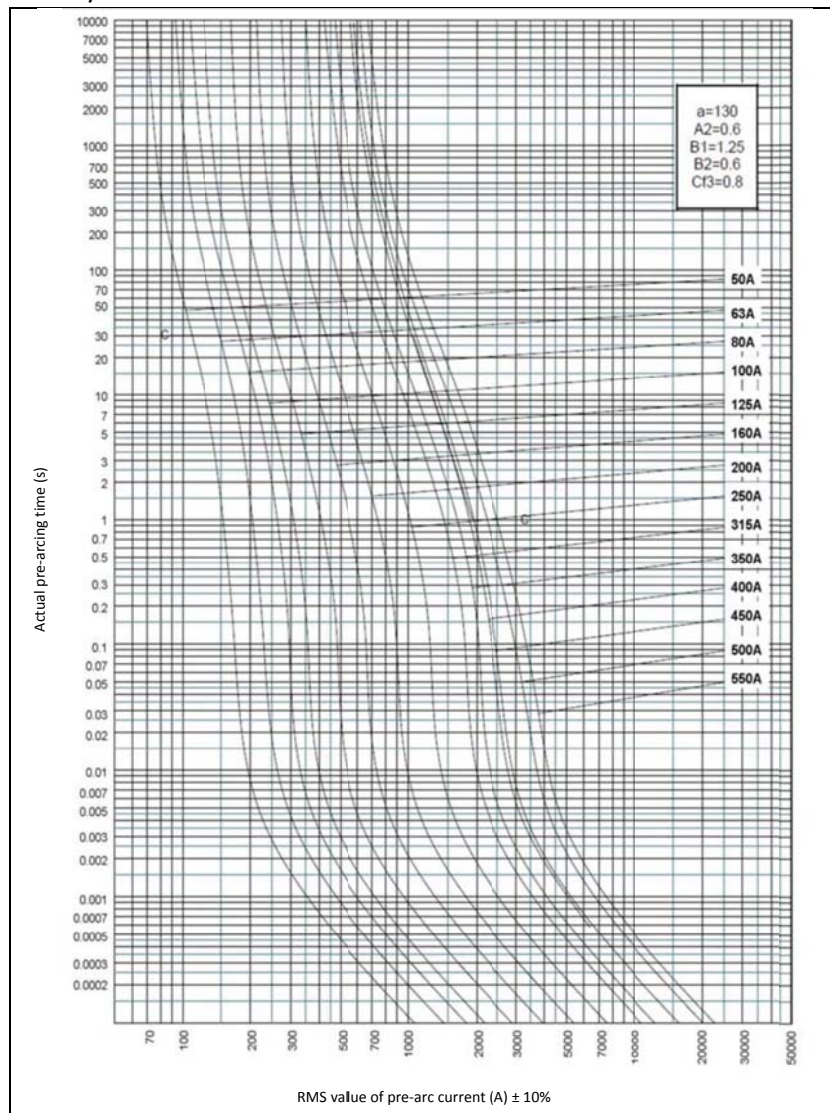
Rated Voltage (UL/IEC) V	Nominal Current A	Class	Part Number (80mm fixing)	Part Number (110mm fixing)
700/690	50	aR	069UROA0050B	069UROD0050B
700/690	63	aR	069UROA0063B	069UROD0063B
700/690	80	aR	069UROA0080B	069UROD0080B
700/690	100	aR	069UROA0100B	069UROD0100B
700/690	125	aR	069UROA0125B	069UROD0125B
700/690	160	aR	069UROA0160B	069UROD0160B
700/690	200	aR	069UROA0200B	069UROD0200B
700/690	250	aR	069UROA0250B	069UROD0250B
700/690	315	aR	069UROA0315B	069UROD0315B
700/690	350	aR	069UROA0350B	069UROD0350B
700/690	400	aR	069UROA0400B	069UROD0400B
700/690	450	aR	069UROA0450B	069UROD0450B
700/690	500	aR	069UROA0500B	069UROD0500B
700/690	550	aR	069UROA0550B	069UROD0550B

\* - Non UL recognised rating

**Size 30 fuses – Rating and curves**

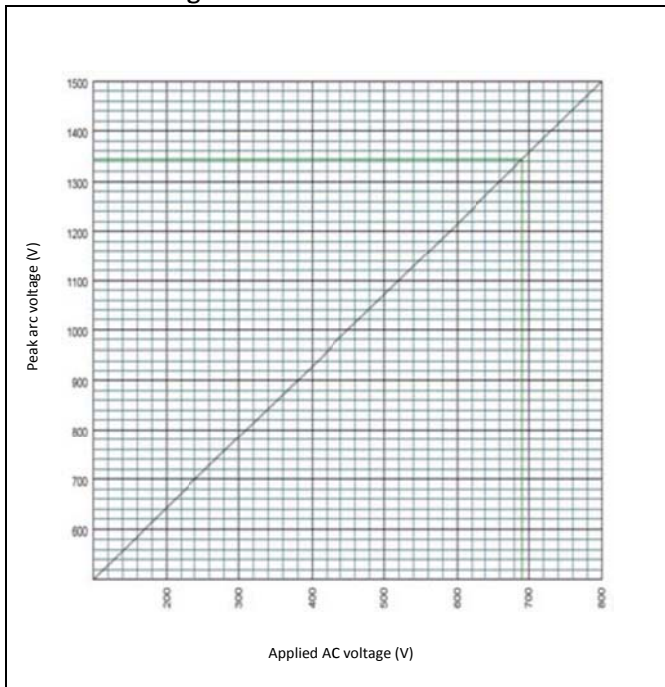
Rated Voltage (UL/IEC) V	Nominal Current A	Class	Pre-arcing I <sup>2</sup> t kA <sup>2</sup> s	Clearing I <sup>2</sup> t @ rated voltage kA <sup>2</sup> s	Watts loss @ 100% In W	Breaking capacity @ rated voltage kA
700/690	50	aR	0.116	0.62	9	200
700/690	63	aR	0.2	1.1	14	200
700/690	80	aR	0.33	1.8	19	200
700/690	100	aR	0.47	2.5	26	200
700/690	125	aR	0.85	4.5	30	200
700/690	160	aR	1.6	8.5	37	200
700/690	200	aR	3	15.5	43	200
700/690	250	aR	5.8	30	50	200
700/690	315	aR	12	62	55	200
700/690	350	aR	15.5	80	60	200
700/690	400	aR	23	120	65	200
700/690	450	aR	26	150	88	200
700/690	500	aR	41	240	88	200
700/690	550	aR	52	300	90	200
650/600	630	aR	84	450	95	200

Time/Current characteristics

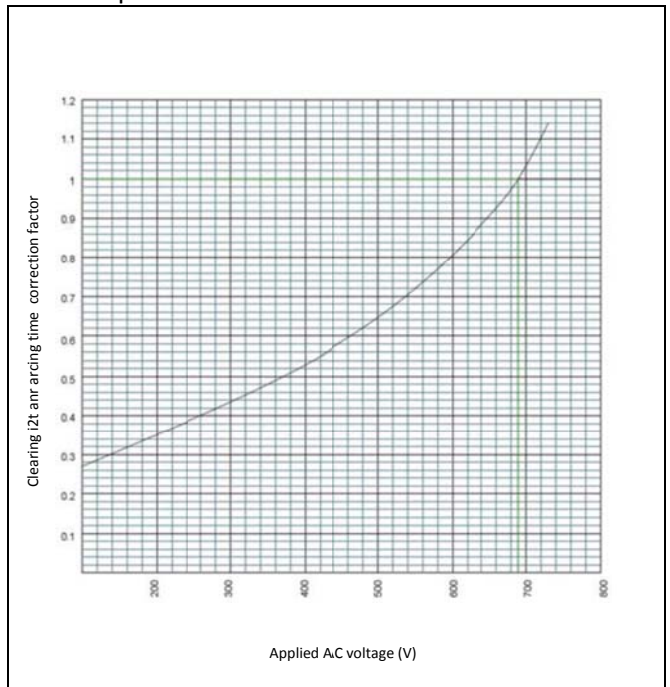




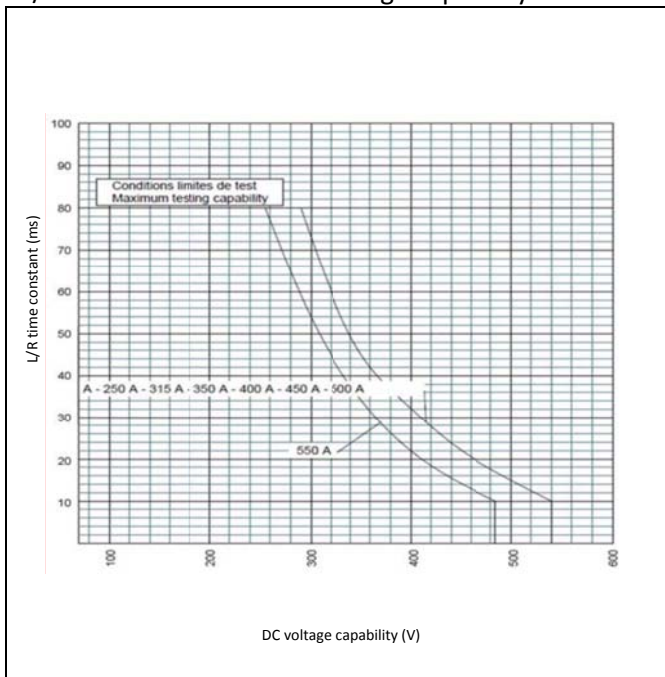
Peak arc voltage



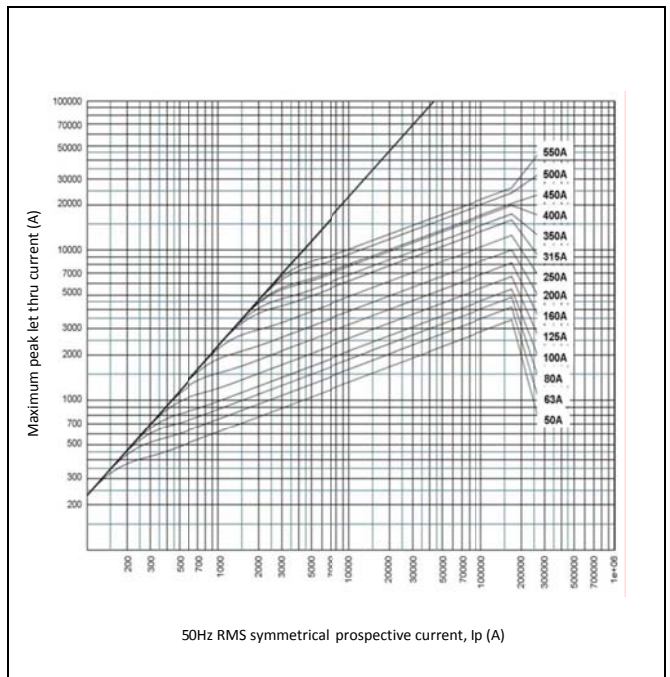
$I^2t$  multiplier coefficient



L/R time constant Vs. DC voltage capability



Peak let thru characteristics



### Size 31 fuses – Part numbers

Weight – 430g Max.

### US1B fuses – US dimensions

Rated Voltage (UL/IEC) V	Nominal Current A	Class	Part Number (90mm fixing)	Part Number (110mm fixing)
700/690	160	aR	070US1B0160B*	070US1D0160B*
700/690	200	aR	070US1B0200B	070US1D0200B
700/690	250	aR	070US1B0250B	070US1D0250B
700/690	315	aR	070US1B0315B	070US1D0315B
700/690	350	aR	070US1B0350B	070US1D0350B
700/690	400	aR	070US1B0400B	070US1D0400B
700/690	450	aR	070US1B0450B	070US1D0450B
700/690	500	aR	070US1B0500B	070US1D0500B
700/690	550	aR	070US1B0550B	070US1D0550B
700/690	630	aR	070US1B0630B	070US1D0630B
700/690	700	aR	070US1B0700B	070US1D0700B
700/690	800	aR	070US1B0800B	070US1D0800B

### UF1A fuses – UF dimensions, 80mm fixing centres

Rated Voltage (UL/IEC) V	Nominal Current A	Class	Part Number
700/690	160	aR	069UF1A0160B*
700/690	200	aR	069UF1A0200B
700/690	250	aR	069UF1A0250B
700/690	315	aR	069UF1A0315B
700/690	350	aR	069UF1A0350B
700/690	400	aR	069UF1A0400B
700/690	450	aR	069UF1A0400B
700/690	500	aR	069UF1A0500B
700/690	550	aR	069UF1A0550B
700/690	630	aR	069UF1A0630B
700/690	700	aR	069UF1A0700B
700/690	800	aR	069UF1A0800B

### UR1A/UR1D fuses – UR dimensions

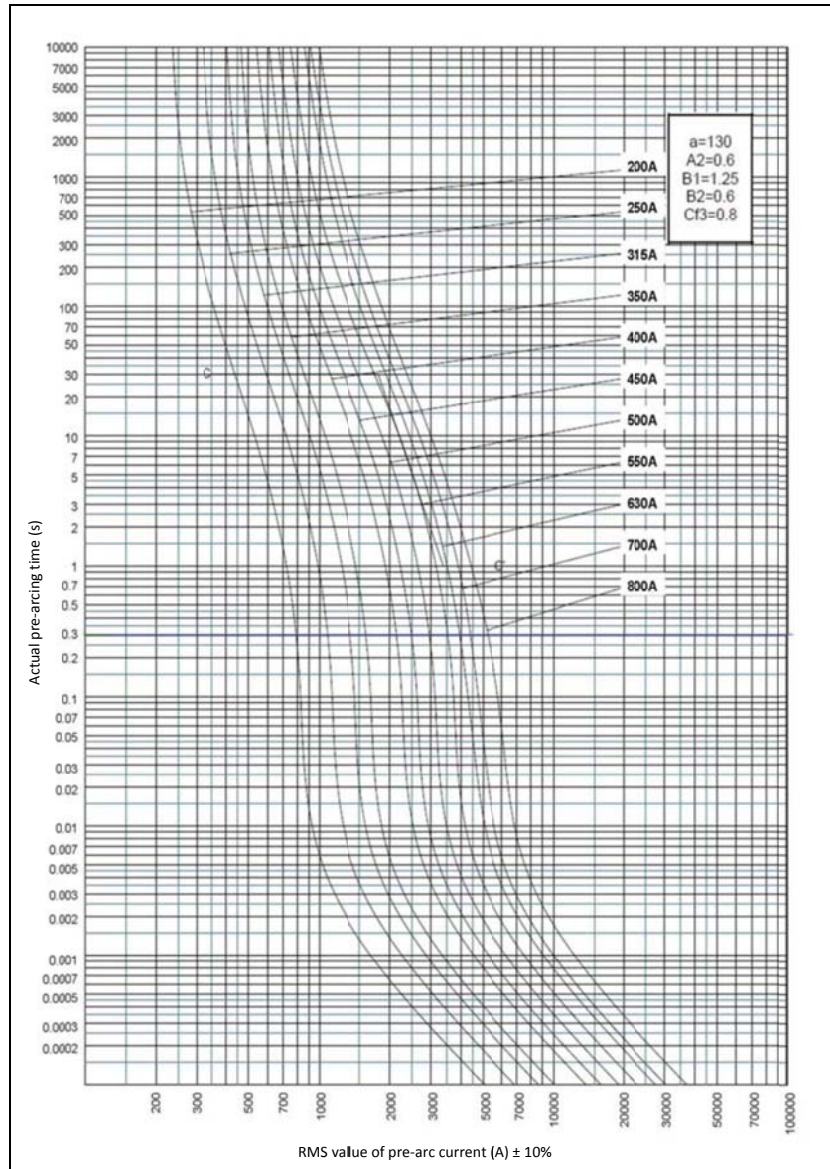
Rated Voltage (UL/IEC) V	Nominal Current A	Class	Part Number (80mm fixing)	Part Number (110mm fixing)
700/690	160	aR	069UR1A0160B*	-
700/690	200	aR	069UR1A0200B	-
700/690	250	aR	069UR1A0250B	069UR1D0250B
700/690	315	aR	069UR1A0315B	069UR1D0315B
700/690	350	aR	069UR1A0350B	069UR1D0350B
700/690	400	aR	069UR1A0400B	069UR1D0400B
700/690	450	aR	069UR1A0450B	069UR1D0450B
700/690	500	aR	069UR1A0500B	069UR1D0500B
700/690	550	aR	069UR1A0550B	069UR1D0550B
700/690	630	aR	069UR1A0630B	069UR1D0630B
700/690	700	aR	069UR1A0700B	069UR1D0700B
700/690	800	aR	069UR1A0800B	069UR1D0800B

\* - Non UL recognised rating

**Size 31 fuses – Rating and curves**

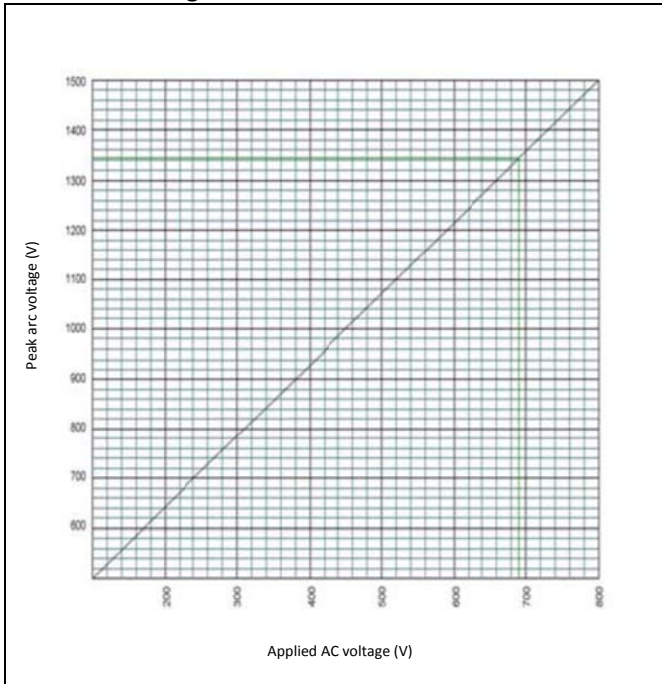
Rated Voltage (UL/IEC) V	Nominal Current A	Class	Pre-arcing I <sup>2</sup> t kA <sup>2</sup> s	Clearing I <sup>2</sup> t @ rated voltage kA <sup>2</sup> s	Watts loss @ 100% In W	Breaking capacity @ rated voltage kA
700/690	160	aR	1.3	7	35	200
700/690	200	aR	2.6	13.5	45	200
700/690	250	aR	4.7	25	52	200
700/690	315	aR	7.5	40	65	200
700/690	350	aR	10.5	55	67	200
700/690	400	aR	19	100	68	200
700/690	450	aR	26.5	140	70	200
700/690	500	aR	37	195	72	200
700/690	550	aR	52	280	75	200
700/690	630	aR	75	390	85	200
700/690	700	aR	95	490	95	200
700/690	800	aR	140	800	120	200

Time/Current characteristics

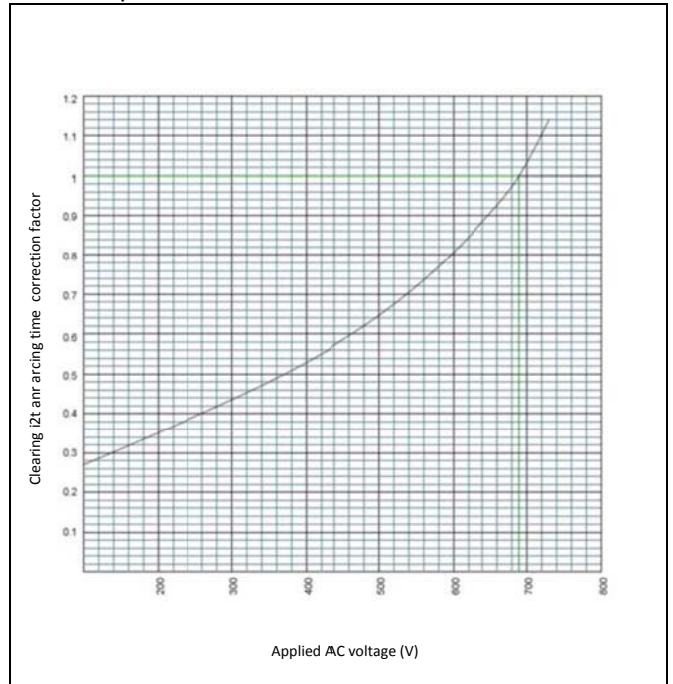




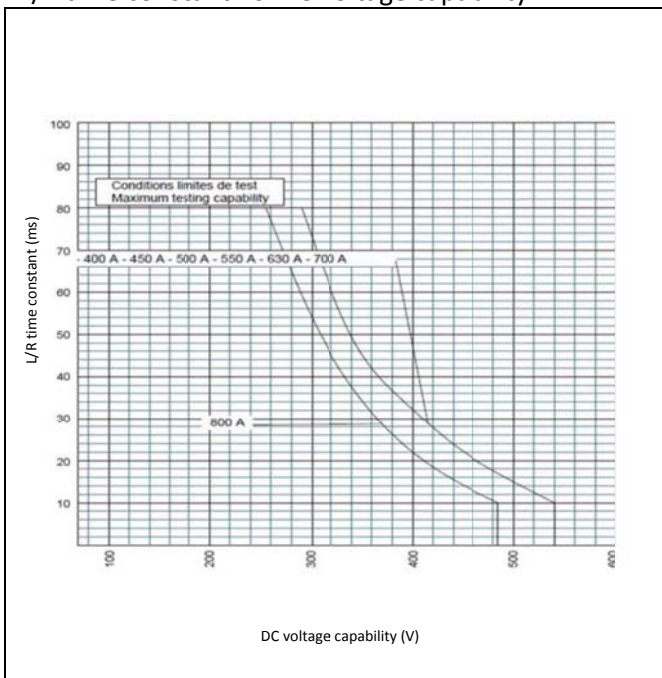
Peak arc voltage



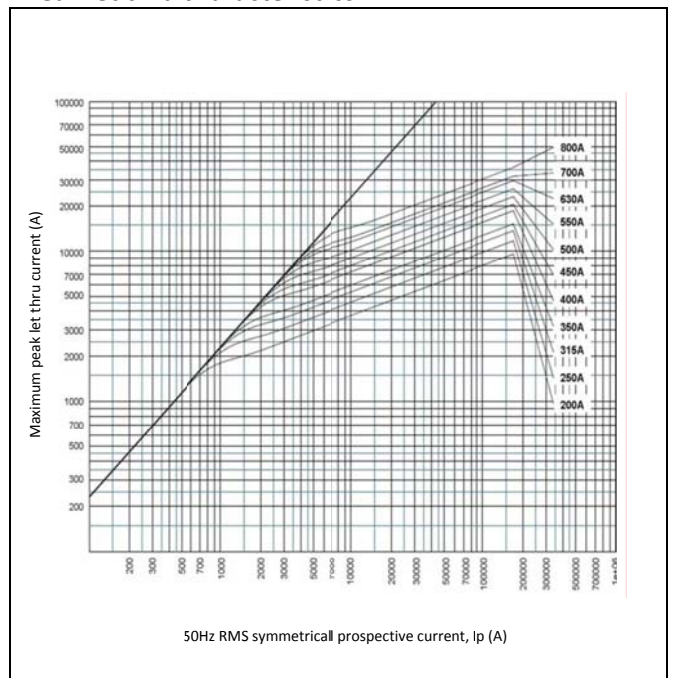
$I^2t$  multiplier coefficient



L/R time constant Vs. DC voltage capability



Peak let thru characteristics





### Size 32 fuses – Part numbers

Weight – 750g Max.

### US2B fuses – US dimensions

Rated Voltage (UL/IEC) V	Nominal Current A	Class	Part Number (90mm fixing)	Part Number (110mm fixing)
700/690	400	aR	070US2B0400B	070US2D0400B
700/690	450	aR	070US2B0450B	070US2D0450B
700/690	500	aR	070US2B0500B	070US2D0500B
700/690	550	aR	070US2B0550B	070US2D0550B
700/690	630	aR	070US2B0630B	070US2D0630B
700/690	700	aR	070US2B0700B	070US2D0700B
700/690	800	aR	070US2B0800B	070US2D0800B
700/690	900	aR	070US2B0900B	070US2D0900B
700/690	1000	aR	070US2B1000B	070US2D1000B
700/690	1100	aR	-	065US2D1100B
700/690	1250	aR	-	060US2D1250B
650/600	1400	aR	-	055US2D1400B*
600/550	1600	aR	-	055US2D1600B*
550/500	1800	aR	-	050US2D1800B*

### UF2A fuses – UF dimensions, 80mm fixing centres

Rated Voltage (UL/IEC) V	Nominal Current A	Class	Part Number
700/690	400	aR	069UF2A0400B
700/690	450	aR	069UF2A0450B
700/690	500	aR	069UF2A0500B
700/690	550	aR	069UF2A0550B
700/690	630	aR	069UF2A0630B
700/690	700	aR	069UF2A0700B
700/690	800	aR	069UF2A0800B
700/690	900	aR	069UF2A0900B
700/690	1000	aR	069UF2A1000B

### UR2A/UR2D fuses – UR dimensions

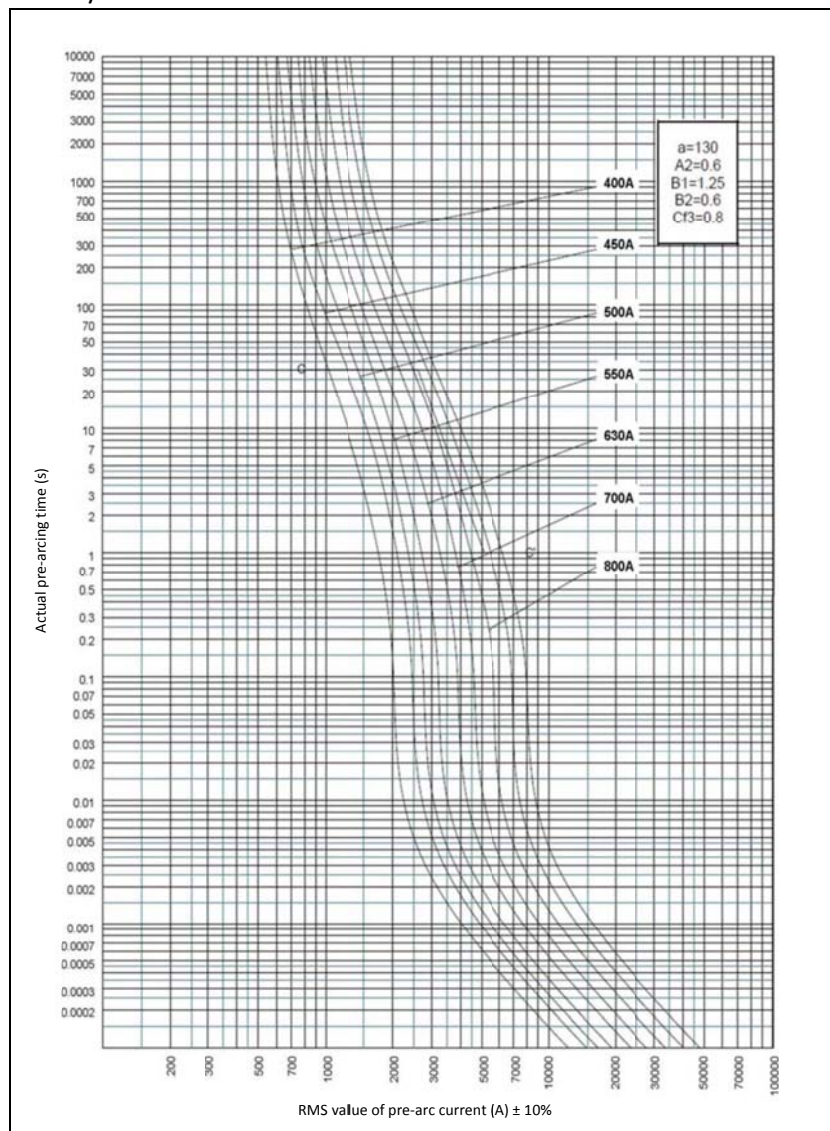
Rated Voltage (UL/IEC) V	Nominal Current A	Class	Part Number (80mm fixing)	Part Number (110mm fixing)
700/690	315	aR	069UR2A0315B*	069UR2D0315B*
700/690	350	aR	069UR2A0350B*	069UR2D0350B*
700/690	400	aR	069UR2A0400B	069UR2D0400B
700/690	450	aR	069UR2A0450B	069UR2D0450B
700/690	500	aR	069UR2A0500B	069UR2D0500B
700/690	550	aR	069UR2A0550B	069UR2D0550B
700/690	630	aR	069UR2A0630B	069UR2D0630B
700/690	700	aR	069UR2A0700B	069UR2D0700B
700/690	800	aR	069UR2A0800B	069UR2D0800B
700/690	900	aR	069UR2A0900B	069UR2D0900B
700/690	1000	aR	069UR2A1000B	069UR2D1000B
650/600	1100	aR	060UR2A1100B	-
600/550	1250	aR	055UR2A1250B	-

\* - Non UL recognised rating

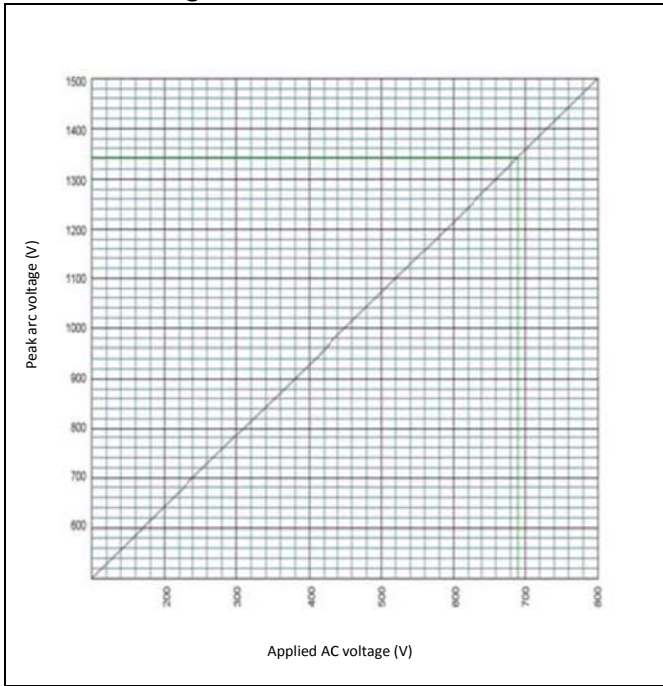
**Size 32 fuses – Rating and curves**

Rated Voltage (UL/IEC) V	Nominal Current A	Class	Pre-arcing I <sup>2</sup> t kA <sup>2</sup> s	Clearing I <sup>2</sup> t @ rated voltage kA <sup>2</sup> s	Watts loss @ 100% In W	Breaking capacity @ rated voltage kA
700/690	315	aR	5.2	28.9	71	200
700/690	350	aR	8.9	48.8	74	200
700/690	400	aR	15	80	75	200
700/690	450	aR	22	115	80	200
700/690	500	aR	28	145	90	200
700/690	550	aR	37	195	95	200
700/690	630	aR	54	280	105	200
700/690	700	aR	76	400	110	200
700/690	800	aR	115	600	120	200
700/690	900	aR	170	900	125	200
700/690	1000	aR	240	1250	135	200
650/600	1100	aR	270	1450	165	160
600/550	1250	aR	410	1950	180	150
550/500	1400	aR	555	2300	200	130
550/500	1600	aR	870	3600	205	130
500/450	1800	aR	1050	3700	230	110

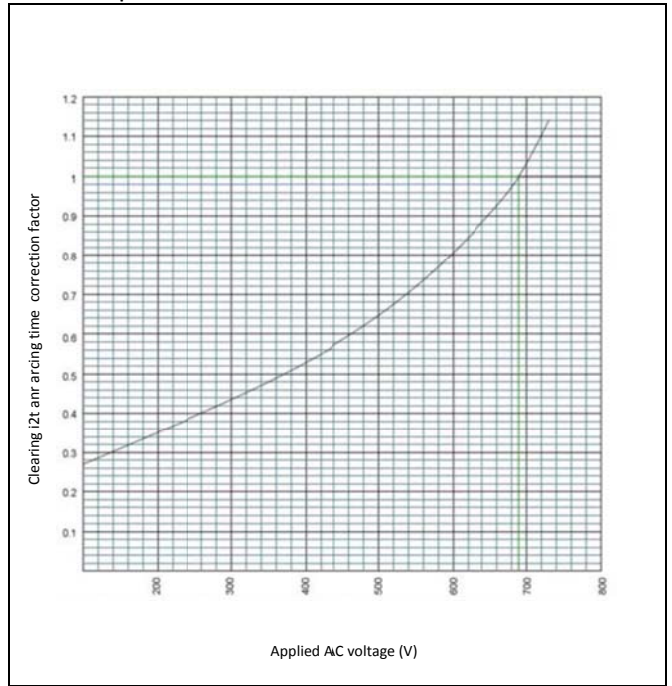
Time/Current characteristics



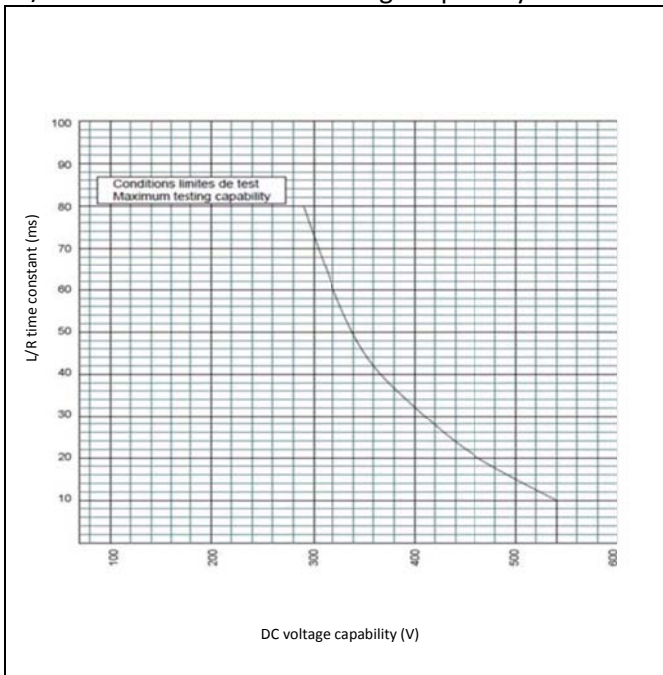
Peak arc voltage



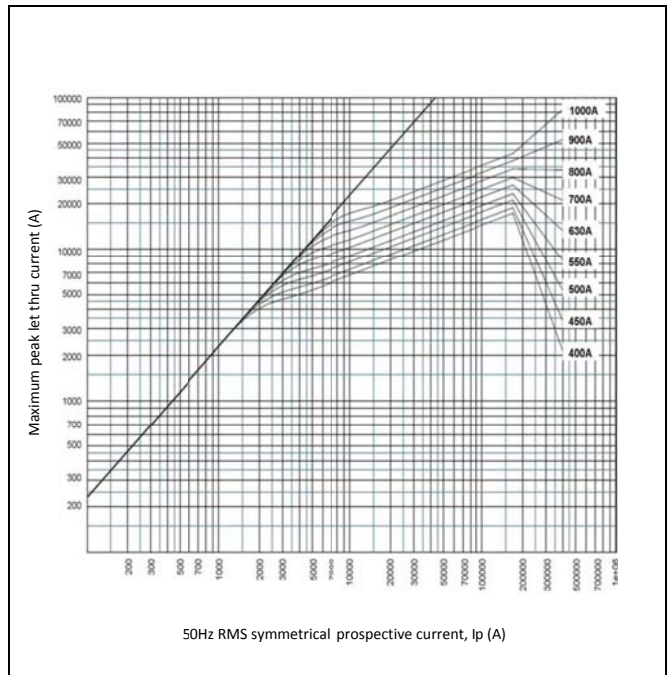
$I^2t$  multiplier coefficient



L/R time constant Vs. DC voltage capability



Peak let thru characteristics



**Size 33 fuses – Part numbers**

Weight – 1070g Max.

US3B fuses – US dimensions

Rated Voltage (UL/IEC) V	Nominal Current A	Class	Part Number (90mm fixing)	Part Number (110mm fixing)
700/690	500	aR	070US3B0500B	070US3D0500B
700/690	550	aR	070US3B0550B	070US3D0550B
700/690	630	aR	070US3B0630B	070US3D0630B
700/690	700	aR	070US3B0700B	070US3D0700B
700/690	800	aR	070US3B0800B	070US3D0800B
700/690	900	aR	070US3B0900B	070US3D0900B
700/690	1000	aR	070US3B1000B	070US3D1000B
700/690	1100	aR	070US3B1100B	070US3D1100B
700/690	1250	aR	070US3B1250B	070US3D1250B
700/690	1400	aR	070US3B1400B	070US3D1400B
650/600	1600	aR	065US3B1600B	065US3D1600B
650/600	1800	aR	-	065US3D1800B
600/550	2000	aR	-	060US3D2000B
550/500	2250	aR	-	055US3D2250B
500/450	2500	aR	-	050US3D2500B

UF3A fuses – UF dimensions, 80mmfixing centres

Rated Voltage (UL/IEC) V	Nominal Current A	Class	Part Number
700/690	500	aR	069UF3A0500B
700/690	550	aR	069UF3A0550B
700/690	630	aR	069UF3A0630B
700/690	700	aR	069UF3A0700B
700/690	800	aR	069UF3A0800B
700/690	900	aR	069UF3A0900B
700/690	1000	aR	069UF3A1000B
700/690	1100	aR	069UF3A1100B
700/690	1250	aR	069UF3A1250B
700/690	1400	aR	069UF3A1400B

UR3A/UR3D fuses – UR dimensions

Rated Voltage (UL/IEC) V	Nominal Current A	Class	Part Number (80mm fixing)	Part Number (110mm fixing)
700/690	450	aR	069UR3A0450B*	069UR3D0450B*
700/690	500	aR	069UR3A0500B	069UR3D0500B
700/690	550	aR	069UR3A0550B	069UR3D0550B
700/690	630	aR	069UR3A0630B	069UR3D0630B
700/690	700	aR	069UR3A0700B	069UR3D0700B
700/690	800	aR	069UR3A0800B	069UR3D0800B
700/690	900	aR	069UR3A0900B	069UR3D0900B
700/690	1000	aR	069UR3A1000B	069UR3D1000B
700/690	1100	aR	069UR3A1100B	069UR3D1100B
700/690	1250	aR	069UR3A1250B	069UR3D1250B
700/690	1400	aR	069UR3A1400B	069UR3D1400B
650/600	1600	aR	060UR3A1600B	060UR3D1600B

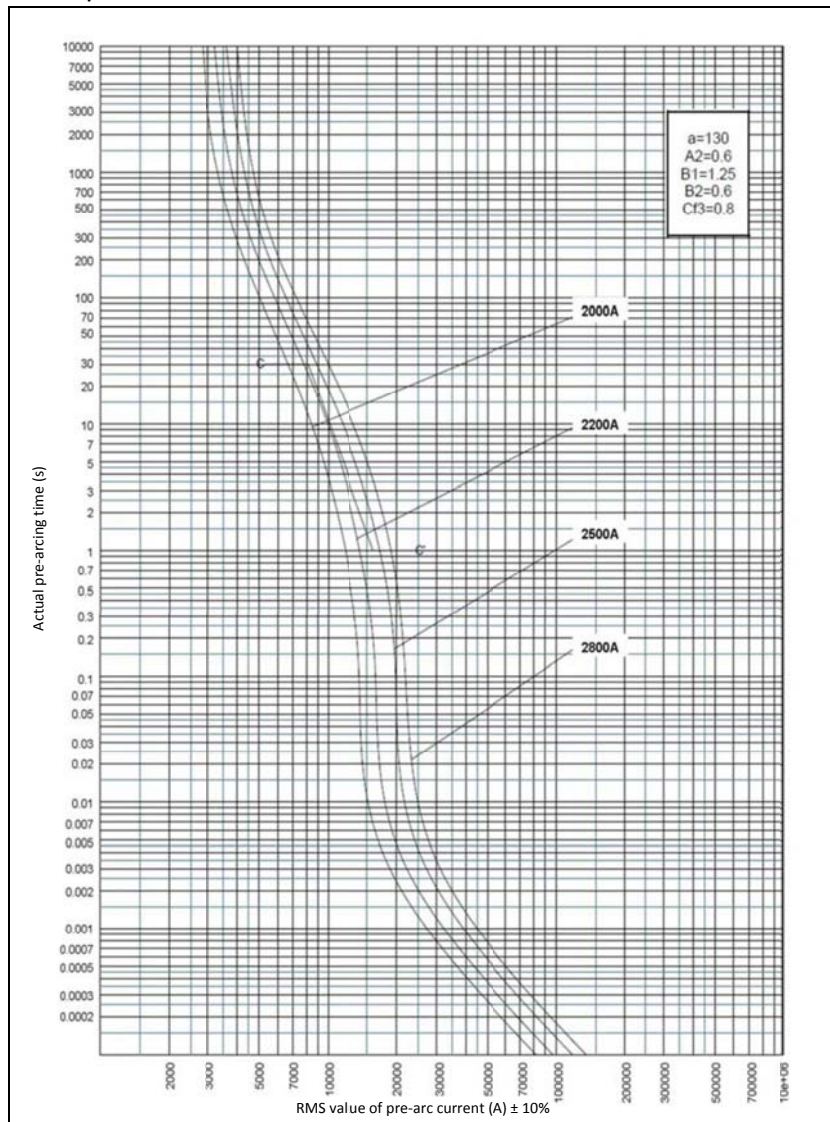
\* - Non UL recognised rating



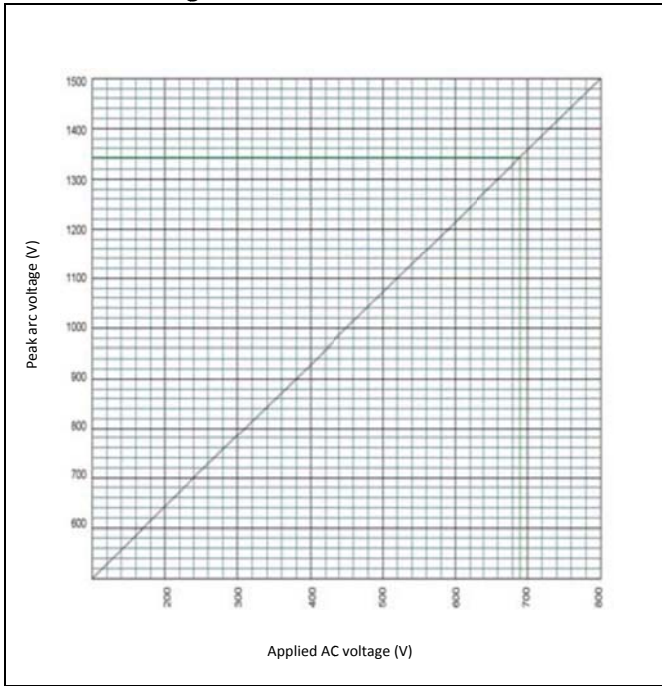
**Size 33 fuses – Rating and curves**

Rated Voltage (UL/IEC)	Nominal Current	Class	Pre-arcing I <sup>2</sup> t	Clearing I <sup>2</sup> t @ rated voltage	Watts loss @ 100% In	Breaking capacity @ rated voltage
V	A		kA <sup>2</sup> s	kA <sup>2</sup> s	W	kA
700/690	450	aR	13.45	74.1	88	200
700/690	500	aR	19	100	105	200
700/690	550	aR	27	140	110	200
700/690	630	aR	40	210	120	200
700/690	700	aR	55	300	125	200
700/690	800	aR	95	490	130	200
700/690	900	aR	135	700	135	200
700/690	1000	aR	170	900	155	200
700/690	1100	aR	240	1260	160	200
700/690	1250	aR	350	1850	180	200
700/690	1400	aR	480	2500	200	200
650/600	1600	aR	555	2900	240	160
600/600	1800	aR	720	3870	260	160
600/550	2000	aR	950	4500	290	150
550/500	2250	aR	1250	5160	320	130
500/450	2500	aR	1870	6540	330	110

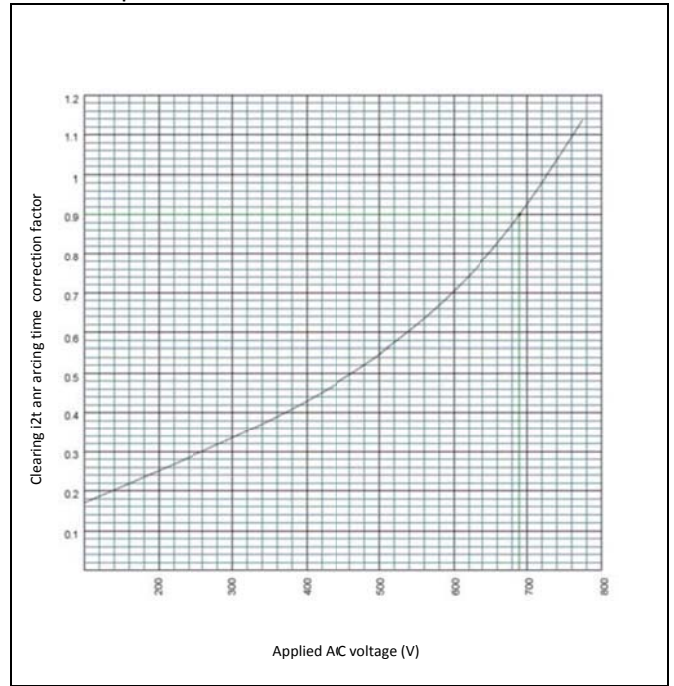
Time/Current characteristics



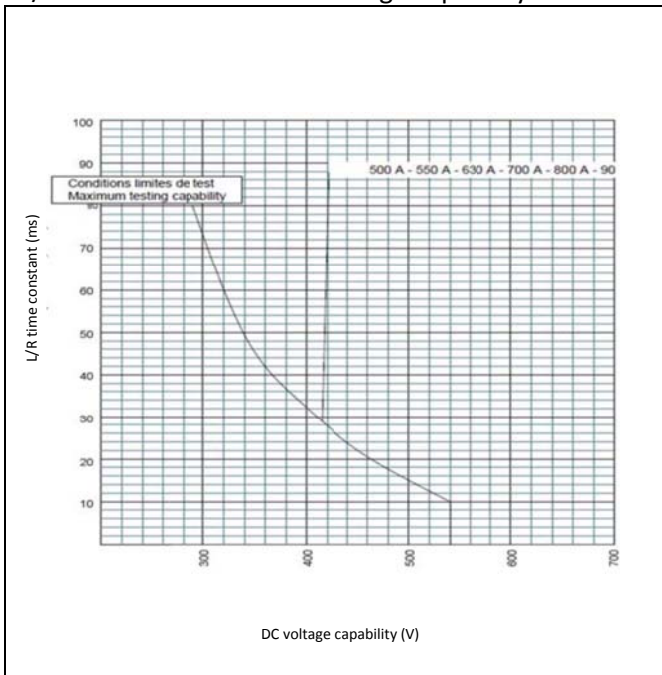
Peak arc voltage



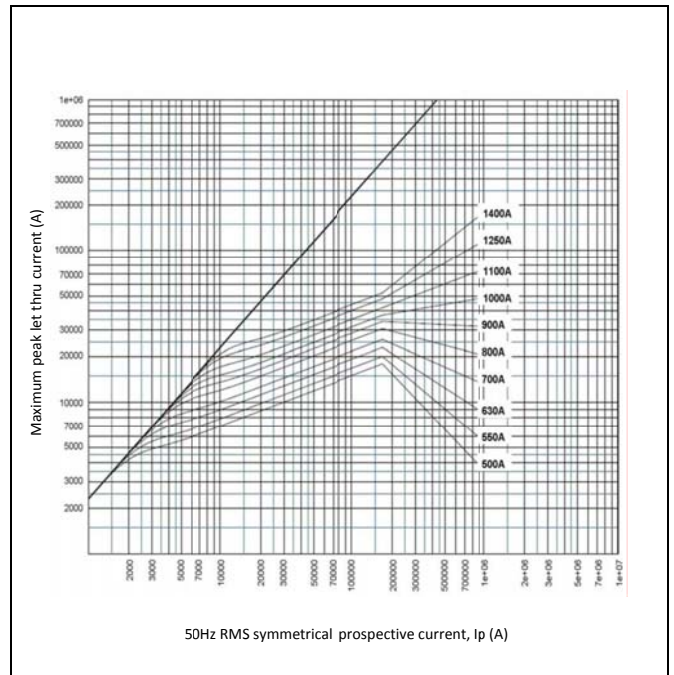
$I^2t$  multiplier coefficient



L/R time constant Vs. DC voltage capability



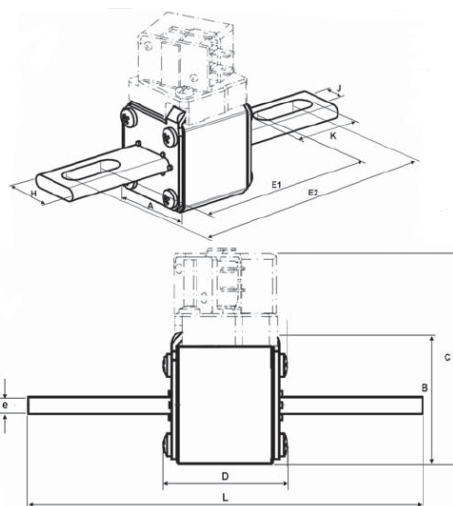
Peak let thru characteristics



**Drawings and Dimensions**

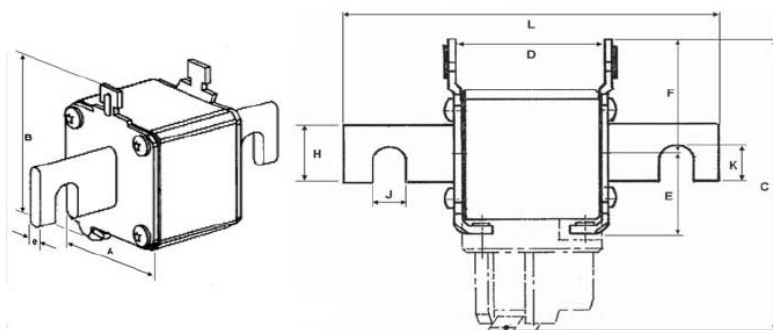
USxB/USxD fuses

Size	A	B	C	D	E1	E2	H	J	K	L	e
US0B	40	46.5	82	47.5	68	107	25.5	10.5	30	129	6
US1B	51	56.5	91	47.5	68	107	25.5	10.5	30	129	6
US2B	60	65.5	100	47.5	74.5	109	32	14.6	32	134	6
US3B	74	79.5	114	48.5	75.4	107.6	40	15.9	32	134	6
US0D	40	46.5	82	47.5	87.6	126.6	25.5	10.5	30	148.6	6
US1D	51	56.5	91	47.5	91.6	122.4	25.5	14.6	30	148.6	6
US2D	60	65.5	100	47.5	94.2	129	32	14.6	32	153	6
US3D	74	79.5	114	48.5	94.2	126.6	40	15.9	32	153	6



UFxA fuses

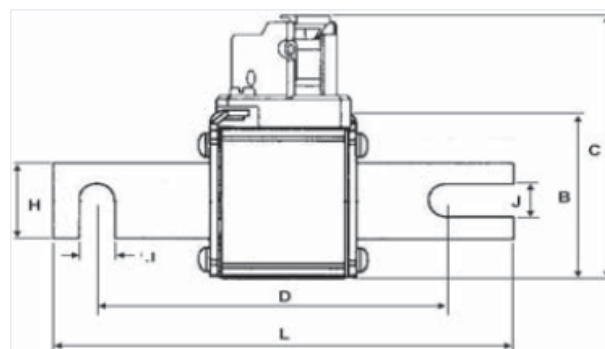
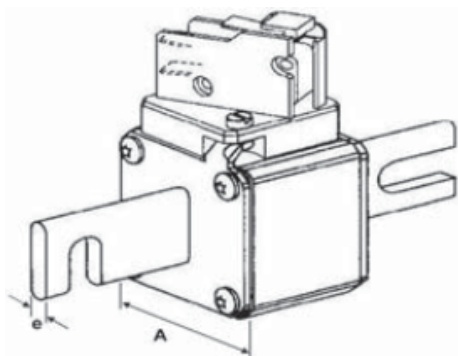
Size	A	B	C	D	E	F	H	J	K	L	e
UF0A	40	62	96	44.6	76.6	38	18	9	11	110	6
UF1A	51	69	103	44.6	86.6	39	25	10.5	16	110	6
UF2A	60	78	112	44.6	91	43	32	13	21.2	126	6
UF3A	74.5	92.5	127	44.6	91	57	40	13	19.5	126	6



URxA/URxD fuses

Size	A	B	C	D	H	J	L	e
UR0A	40	46.5	82	77	25	10.5	110	6
UR1A	51	56.5	91	77	25	10.5	110	6
UR2A	60	65.5	100	77	32	10.5	110	6
UR3A	74.5	79.5	114	77	40	10.5	110	6

Size	A	B	C	D	H	J	L	e
UR0D	40	46.5	82	101.6	25	11.1	134.6	6
UR1D	51	56.5	91	101.6	25	11.1	134.6	6
UR2D	60	65.5	100	101.6	32	11.1	134.6	6
UR3D	74.5	79.5	114	101.6	40	11.1	134.6	6



All dimensions in mm

### Microswitches

IXYS UK can offer a range of microswitches to suit our PSC square-bodied fuse ranges

- System: MS 3V 1  
 Fuse sizes: 30, 31, 32, 33  
 Indication style: MS 3V 1-5 = Standard NO-NC  
 MS 3V 1-5 BS = Low Level NO-NC  
 MS 3V 1-5 ET = Low Level NO-NC IP 50 (9)  
 MS 3V 1-9 BS = Low Level NO-NC

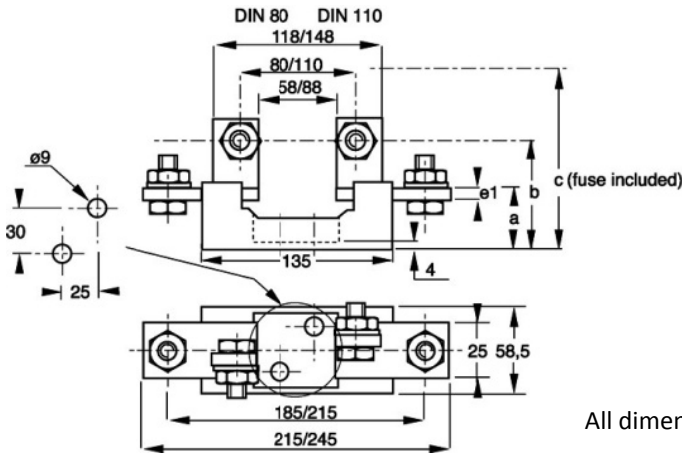


Part number	AC Insulation Voltage Rating *** (V)	Positive Operating Voltage/Current (V/mA)	Current Rating (A)	Interrupting Rating (A)						AC Voltage Withstand * (kV)	Impulse Voltage test Vimp 1.2/50µs ** (kV)	Fire Class according to UL 94	
				Current (A)	Non inductive circuit			Inductive Circuit: L/R = 25ms					
					30V	110V	250V	30V	110V				250V
MS 3V 1-5	1000	20/50	10	AC 50/60Hz	10	10	10	10	10	10	8.5	14	H.B.
				DC	8	0.4	0.2	4	0.2	0.1	12	20	
MS 3V 1-5 BS		10/10	3	AC 50/60Hz	3	3	3	2	1	1	8.5	14	
				DC	3	0.5	0.25	3	0.2	0.1	12	20	
MS 3V 1-5 ET		10/10	3	AC 50/60Hz	3	3	3	2	1	1	8.5	14	
				DC	3	0.5	-	2	0.2	-	12	20	
MS 3V 1-9 BS		10/10	3	AC 50/60Hz	3	3	3	2	1	1	8.5	14	
				DC	3	0.5	0.25	2	0.2	0.1	12	20	

### Fuse Holder

Part Number	Fuse size	Fuse Type	Insulation Voltage (V) AC, 50/60Hz & DC	Rated Current (A)	Connection
SI DIN80 630A	30-33	DIN80	1500	2500	Blade
SI DIN80 1250A					
SI DIN110 630A		DIN110			
SI DIN110 1250A					

Part Number	a	e1	b	c
SI DIN80 630A	40	5	68	93.5
				99.0
				103.5
				110.3
SI DIN110 630A	40	5	68	93.5
				99.0
				103.5
				110.3
SI DIN80 1250A	45	10	73	98.5
				104.0
				108.5
				115.3
SI DIN110 1250A	45	10	73	98.5
				104.0
				108.5
				115.3



All dimensions in mm



Certificate FM26085

IXYS UK Westcode Ltd's BS EN ISO9001 quality system is registered by BSI



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