

Bussmann®

BRITISH STANDARD LOW VOLTAGE FUSE LINKS



 **COOPER** Bussmann

Bussmann®

WORLD-WIDE CIRCUIT PROTECTION SOLUTIONS

Bussmann manufacture a wide range of products for the protection of electrical and electronic circuits....Fuse Links, Fuse Holders, and Fusegear, all readily available from manufacturing sites in the United Kingdom, Denmark, United States, Brazil, India and Mexico.

Bussmann is a division of Cooper Industries Inc.,

a diversified world-wide manufacturer of electrical products and power equipment.

Bussmann has grown through both organic growth and acquisition.

Acquisitions have included the fusegear division of Lauritz Knudsen (LK-NES), Beswick which added UK Domestic fuses as well as IEC and UL Electronic fuses, Hawker Fusegear (*formerly Brush Fusegear Ltd*) which strengthened our range of power fuses and Fusegear.

Bussmann circuit protection solutions comply with major international standards: BS, IEC, DIN, UL, CSA.....Our manufacturing operations have earned ISO 9000 certification, ensuring the utmost quality across every product.

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Please contact Bussmann for a faxed copy of our internal telephone list to enable you to direct dial the person you wish to speak to


Offset Bolted Tag


	Part No.	Current Rating	Rated Voltage (ac)	Rated Voltage (dc)	Fixing Centres (mm)	Interrupting Rating	Box Quantity
	SMD2	2	415	-	-	80 kA @ 415 Vac	20 pcs
	SMD4	4					
	SMD6	6					
	SMD8	8					
	SMD10	10					
	SMD16	16					
	SMD20	20					
	SMD25	25					
	SMD32	32					
	STD2	2	240	-	35	33 kA @ 240 Vac	20 pcs
	STD4	4					
	STD6	6					
	STD10	10					
	STD16	16					
	STD20	20					
	STD25	25					
	STD32	32					
	BS Ref A1 	NITD2					
NITD4		4					
NITD6		6					
NITD10		10					
NITD16		16					
NITD20		20					
NITD25		25					
NITD32		32					
NITD20M25		20M25					
NITD20M32		20M32					
NITD32M40		32M40					
NITD32M50		32M50					
NITD32M63		32M63					
BS Ref A2 	AAO2	2	550	-	73	80 kA @ 550 Vac	20 pcs
	AAO4	4					
	AAO6	6					
	AAO10	10					
	AAO16	16					
	AAO20	20					
	AAO25	25					
	AAO32	32					
	AAO32M40	32M40					
	AAO32M50	32M50					
	AAO32M63	32M63					


SEE PAGE 30 FOR FUSE HOLDERS


SEE PAGE 30 FOR FUSE HOLDERS

Offset Bolted Tag

	Part No.	Current Rating	Rated Voltage (ac)	Rated Voltage (dc)	Fixing Centres (mm)	Interrupting Rating	Box Quantity
BS Ref A3 	BAO35	35	550	-	73	80 kA @ 550 Vac	20 pcs
	BAO40	40					
	BAO50	50					
	BAO63	63					
	BAO63M80	63M80					
	BAO63M100	63M100					
SEE PAGE 30 FOR FUSE HOLDERS							

BS Ref A4 	CEO32	32	550	-	94	80 kA @ 550 Vac	10 pcs
	CEO40	40					
	CEO50	50					
	CEO63	63					
	CEO80	80					
	CEO100	100					
	CEO100M125	100M125	415	-			
	CEO100M160	100M160					
CEO100M200	100M200						






	OSD80	80	550	-	73	80 kA @ 550 Vac	20 pcs
	OSD100	100	415	-			
	OSD100M125	100M125					
	OSD100M160	100M160					
SEE PAGE 30 FOR FUSE HOLDERS							

	DEO125	125	415	-	94	80 kA @ 415 Vac	5 pcs
	DEO160	160					
	DEO200	200					
	DEO200M250	200M250					
	DEO200M315	200M315					


Centre Bolted Tag


	Part No.	Current Rating	Rated Voltage (ac)	Rated Voltage (dc)	Fixing Centres (mm)	Interrupting Rating	Box Quantity
	AC2	2	550	250	97.5	80 kA @ 550 Vac 40 kA @ 250 Vdc	20 pcs
	AC4	4					
	AC6	6					
	AC10	10					
	AC16	16					
	AC20	20					
	AC25	25					
	AC32	32					
	AD2	2	550	250	111	80 kA @ 550 Vac 40 kA @ 250 Vdc	20 pcs
	AD4	4					
	AD6	6					
	AD10	10					
	AD16	16					
	AD20	20					
	AD25	25					
	AD32	32					
	BC40	40	550	250	97.5	80 kA @ 550 Vac 40 kA @ 250 Vdc	20 pcs
	BC50	50					
	BC63	63					
	BC63M80	63M80					
	BC63M100	63M100					
	BD40	40	550	250	111	80 kA @ 550 Vac 40 kA @ 250 Vdc	20 pcs
	BD50	50					
	BD63	63					
BS Ref B1 	CD80	80	415	-	111	80 kA @ 550 Vac	10 pcs
	CD100	100					
	CD100M125	100M125					
	CD100M160	100M160					
	CD100M200	100M200					
BS Ref B2 	DD125	125	415	-	111	80 kA @ 550 Vac	5 pcs
	DD160	160					
	DD200	200					
	DD200M250	200M250					
	DD200M315	200M315					


Centre Bolted Tag

	Part No.	Current Rating	Rated Voltage (ac)	Rated Voltage (dc)	Fixing Centres (mm)	Interrupting Rating	Box Quantity
	ED250	250	415	-	111	80 kA @ 415 Vac	1 pc
	ED315	315					
	ED355	355					
	ED400	400					
	ED315M400	315M400					
	ED400M500	400M500	550				
	EFS125	125	415	-	133	80 kA @ 415 Vac	1 pc
	EFS160	160			133 / 184		
	EFS200	200					
	EFS250	250					
	EFS315	315					
	EF355	355	415	-	133 / 184	80 kA @ 415 Vac	1 pc
	EF400	400					
	EF400M500	400M500	550				
	FF450	450	550	400	134 / 184	80 kA @ 550 Vac 40 kA @ 400 Vdc	1 pc
	FF500	500					
	FF560	560					
	FF630	630					
	FG450	450	550	400	167 / 231	80 kA @ 550 Vac 40 kA @ 400 Vdc	1 pc
	FG500	500					
	FG560	560					
	FG630	630					


Centre Bolted Tag


	Part No.	Current Rating	Rated Voltage (ac)	Rated Voltage (dc)	Fixing Centres (mm)	Interrupting Rating	Box Quantity
	GG710	710	550	250	165 / 231.0	80 kA @ 550 Vac 40 kA @ 250 Vdc	1 pc
	GG800	800					
	GG1000	1000		-	165 / 228.5		
	GG1250	1250					


BS Ref C3 	GF710	710	550	250	133 / 184	80 kA @ 550 Vac 40 kA @ 250 Vdc	1 pc
	GF800	800					

	GH710	710	550	-	149	80 kA @ 550 Vac	1 pc
	GH800	800					
	GH1000	1000					
	GH1250	1250					





Offset Bladed Tag

	Part No.	Current Rating	Rated Voltage (ac)	Rated Voltage (dc)	Fixing Centres (mm)	Interrupting Rating	Box Quantity
BS Ref E1 	SSD2	2	240	-	-	33 kA @ 240 Vac	20 pcs
	SSD4	4					
	SSD6	6					
	SSD10	10					
	SSD16	16					
	SSD20	20					
	SSD25	25					
	SSD32	32					

BS Ref F1 	NSD2	2	550	-	-	80 kA @ 550 Vac	20 pcs
	NSD4	4					
	NSD6	6					
	NSD10	10					
	NSD16	16					
	NSD20	20					
	NSD25	25					
	NSD32	32					
	NSD20M25	20M25	415				
	NSD20M32	20M32					
	NSD20M36	20M36					
	NSD32M36	32M36					
	NSD32M40	32M40					
	NSD32M50	32M50					
	NSD32M63	32M63					
SEE PAGE 31 FOR FUSE HOLDERS							

BS Ref F2 	ESD2	2	550	-	-	80 kA @ 550 Vac	20 pcs
	ESD4	4					
	ESD6	6					
	ESD10	10					
	ESD16	16					
	ESD20	20					
	ESD25	25					
	ESD32	32					
	ESD40	40					
	ESD50	50					
	ESD63	63					
	ESD63M80	63M80	415				
	ESD63M100	63M100					
	SEE PAGE 31 FOR FUSE HOLDERS						


660/690V Offset Bolted Tag


	Part No.	Current Rating	Rated Voltage (ac)	Rated Voltage (dc)	Fixing Centres (mm)	Interrupting Rating	Box Quantity
BS Ref A2 	2H07-660	2	660 / 690	250	73	80 kA @ 660 Vac 40 kA @ 250 Vdc	20 pcs
	4H07-660	4					
	6H07-660	6					
	10H07-660	10					
	16H07-660	16					
	20H07-660	20					
	25H07-660	25					
	32H07-660	32					
BS Ref A3 	40K07-660	40	660 / 690	250	73	80 kA @ 660 Vac 40 kA @ 250 Vdc	20 pcs
	50K07-660	50					
	63K07-660	63					
BS Ref A4 	80L14-660	80	660 / 690	400	94	80 kA @ 660 Vac 40 kA @ 250 Vdc	10 pcs
	100L14-660	100					
	125M14-660	125	660 / 690	400	94	80 kA @ 660 Vac 40 kA @ 250 Vdc	5 pcs
	160M14-660	160					
	200M14-660	200					


660/690V Centre Bolted Tag


	Part No.	Current Rating	Rated Voltage (ac)	Rated Voltage (dc)	Fixing Centres (mm)	Interrupting Rating	Box Quantity
	2K08-660	2	660 / 690	250	93	80 kA @ 660 Vac 40 kA @ 250 Vdc	20 pcs
	4K08-660	4					
	6K08-660	6					
	10K08-660	10					
	16K08-660	16					
	20K08-660	20					
	32K08-660	32					
	40K08-660	40					
	50K08-660	50					
	63K08-660	63					
	2K09-660	2	660 / 690	250	111	80 kA @ 660 Vac 40 kA @ 250 Vdc	20 pcs
	4K09-660	4					
	6K09-660	6					
	10K09-660	10					
	16K09-660	16					
	20K09-660	20					
	32K09-660	32					
	40K09-660	40					
	50K09-660	50					
	63K09-660	63					
BS Ref B1 	80L09-660	80	660 / 690	400	111	80 kA @ 660 Vac 40 kA @ 400 Vdc	10 pcs
	100L09-660	100					
BS Ref B2 	125M09-660	125	660 / 690	400	111	80 kA @ 660 Vac 40 kA @ 400 Vdc	5 pcs
	160M09-660	160					
	200M09-660	200					
BS Ref B3 	250N09-660	250	660 / 690	400	111	80 kA @ 660 Vac 40 kA @ 400 Vdc	1 pc
	315N09-660	315					


660/690V Centre Bolted Tag

	Part No.	Current Rating	Rated Voltage (ac)	Rated Voltage (dc)	Fixing Centres (mm)	Interrupting Rating	Box Quantity
BS Ref B4 	355P09-660	355	660 / 690	400	111	80 kA @ 660 Vac 40 kA @ 400 Vdc	1 pc
	400P09-660	400					







	125N11-660	125	660 / 690	400	133	80 kA @ 660 Vac 40 kA @ 400 Vdc	1 pc
	160N11-660	160					
	200N11-660	200					
	250N11-660	250					
	315N11-660	315					

BS Ref C1 	355P11-660	355	660 / 690	400	133 / 184	80 kA @ 660 Vac 40 kA @ 400 Vdc	1 pc
	400P11-660	400					

BS Ref C2 	450R11-660	450	660 / 690	400	133 / 184	80 kA @ 660 Vac 40 kA @ 400 Vdc	1 pc
	500R11-660	500					
	560R11-660	560					
	630R11-660	630					

	450R12-660	450	660 / 690	400	167 / 231	80 kA @ 660 Vac 40 kA @ 400 Vdc	1 pc
	500R12-660	500					
	560R12-660	560					
	630R12-660	630					


660/690V Special Tag Arrangement


	Part No.	Current Rating	Rated Voltage (ac)	Rated Voltage (dc)	Fixing Centres (mm)	Interrupting Rating	Box Quantity
	125M13	125	660 / 690	400	99	80 kA @ 660 Vac 40 kA @ 400 Vdc	5 pcs
	160M13	160					
	200M13	200					
	125M23	125	660 / 690	400	231	80 kA @ 660 Vac 40 kA @ 400 Vdc	1 pc
	160M23	160					
	200M23	200					
	250N15	250	660 / 690	400	100	80 kA @ 660 Vac 40 kA @ 400 Vdc	1 pc
	315N15	315					
	250N34	250	660 / 690	400	113	80 kA @ 660 Vac 40 kA @ 400 Vdc	1 pc
	315N34	315					
	355P35	355	660 / 690	400	133 / 184	80 kA @ 660 Vac 40 kA @ 400 Vdc	1 pc
	400P35	400					
	450R40	450	660 / 690	400	133 / 184	80 kA @ 660 Vac 40 kA @ 400 Vdc	1 pc
	500R40	500					


660/690V Special Offset Tag


	Part No.	Current Rating	Rated Voltage (ac)	Rated Voltage (dc)	Fixing Centres (mm)	Interrupting Rating	Box Quantity
	125N20	125	660 / 690	400	92.5	80 kA @ 660 Vac 40 kA @ 400 Vdc	20 pcs
	160N20	160					
	200N20	200					
	250N20	250					
	315N20	315					
	355P20	355	660 / 690	400	92.5	80 kA @ 660 Vac 40 kA @ 400 Vdc	1 pc
	400P20	400					
	450R20	450	660 / 690	400	94.0	80 kA @ 660 Vac 40 kA @ 400 Vdc	20 pcs
	500R20	500					
	560R20	560					
	630R20	630					
	710S20	710	550	-	94.0	80 kA @ 660 Vac	1 pc
	800S20	800					

Special 500V dc Range

	Part No.	Current Rating	Rated Voltage (dc)	Fixing Centres (mm)	Interrupting Rating	Box Quantity
	10HS07	10	500	73	40 kA @ 500 Vdc	20 pcs
	16HS07	16				
	20HS07	20				
	25HS07	25				
	32HS07	32				

	40KS07	40	500	73	40 kA @ 500 Vdc	20 pcs
	50KS07	50				
	63KS07	63				

	40KS08	40	500	98	40 kA @ 500 Vdc	20 pcs
	50KS08	50				
	63KS08	63				


	10KS09	10	500	111	40 kA @ 500 Vdc	20 pcs
	16KS09	16				
	20KS09	20				
	25KS09	25				
	32KS09	32				
	40KS09	40				
	50KS09	50				
	63KS09	63				

Fuse Links to BS1361

	Part No.	Current Rating	Rated Voltage (ac)	Interrupting Rating	Box Quantity
	5KR85	5	415	33 kA @ 415 Vac	20 pcs
	10KR85	10			
	15KR85	15			
	20KR85	20			
	25KR85	25			
	30KR85	30			
	40KR85	40			
	45KR85	45			
	50KR85	50			
	60KR85	60			
	70KR85	70			
	80KR85	80			
	*90KR85	90			
*100KR85	100				
	30LR85	30	415	33 kA @ 415 Vac	20 pcs
	40LR85	40			
	50LR85	50			
	60LR85	60			
	70LR85	70			
	80LR85	80			
	100LR85	100			

* Check suitability of fuse holders before inserting these fuse links. Not for UK Applications.

J Type Fuse Links to BS88: Part 5

	Part No.	Current Rating	Rated Voltage (ac)	Interrupting Rating	Box Quantity
	20MJ25-6	20	415	80 kA @ 415 Vac	10 pcs
	32MJ25-6	32			
	40MJ25-6	40			
	63MJ25-6	63			
	80MJ25-6	80			
	100MJ25-6	100			
	125MJ25-6	125			
	160MJ25-6	160			
	200MJ25-6	200			
	250MJ25-6	250			

Fuse Links to BS88: Part 5 'J' Type

	Part No.	Current Rating	Rated Voltage (ac)	Fixing Centres (mm)	Interrupting Rating	Box Quantity
	32MJ30-8	32	415	82	80 kA @ 415 Vdc	10 pcs
	40MJ30-8	40				
	50MJ30-8	50				
	63MJ30-8	63				
	80MJ30-7	80	415	82	80 kA @ 415 Vac	10 pcs
	100MJ30-7	100				
	125MJ30-7	125				
	160MJ30-7	160				
	200MJ30-7	200				
	250MJ30-7	250				
315MJ30-7	315					
	20MJ31-7	20	415	92	80 kA @ 415 Vac	10 pcs
	25MJ31-7	25				
	32MJ31-7	32				
	40MJ31-7	40				
	50MJ31-7	50				
	63MJ31-7	63				
	80MJ31-7	80				
	100MJ31-7	100				
	125MJ31-7	125				
	160MJ31-7	160				
	200MJ31-7	200				
	250PJ31-7	250				
315PJ31-7	315					
	355PJ30-7	355	415	82	80 kA @ 415 Vac	10 pcs
	400PJ30-7	400				

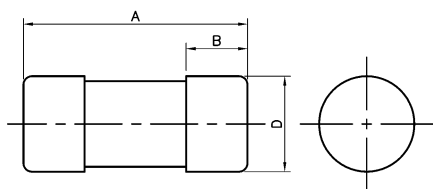
Fuse Links to BS88: Part 5

	Part No.	Current Rating	Rated Voltage (ac)	Fixing Centres (mm)	Interrupting Rating	Box Quantity
	450RJ31-7 500RJ31-7	450 500	415	92	80 kA @ 415 Vac	10 pcs
	800SJ28	800	415	92	80 kA @ 415 Vac	10 pcs
	560SJ31-6 630SJ31-6	560 630	415	92	80 kA @ 415 Vac	10 pcs

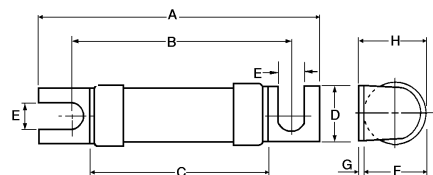
DEF Standard 59-96 (NATO Reference System)

	Part No.	Current Rating	Body Size	Rated Voltage (ac)	Fixing Centres (mm)	Interrupting Rating	Box Quantity
	059-0107	0.25	0	440	-	33 kA @ 440 Vac	10 pcs
	059-0108	0.5					
	059-0109	1					
	059-0110	2					
	059-0111	3					
	059-0112	5					
	059-0113	7					
	011-9925	10					
	011-9926	15					
	059-0140	0.5	1	440	-	33 kA @ 440 Vac	25 pcs
	059-0141	1					
	059-0142	2					
	059-0143	3					
	059-0144	5					
	059-0145	7					
	059-0146	10					
	059-0147	15					
	011-9483	20					
	059-0114	0.5	1	440	44.65	33 kA @ 440 Vac	25 pcs
	059-0115	1					
	059-0116	2					
	059-0117	3					
	059-0118	5					
	059-0119	7					
	059-0120	10					
	059-0121	15					
	011-9679	20					
	012-0140	30	2	440	-	33 kA @ 440 Vac	25 pcs
	059-0148	10					
	059-0149	15					
	059-0150	20					
	059-0122	10	2	440	55.84	33 kA @ 440 Vac	25 pcs
	059-0123	15					
	059-0124	20					
	059-0125	30					
	012-0067	40					
	011-9127	50					
	012-0141	60					
	059-0152	40	3	440	-	33 kA @ 440 Vac	25 pcs
	059-0153	60					
	059-0154	80					
	059-0155	100					
	059-0126	40	3	440	69.77	33 kA @ 440 Vac	25 pcs
	059-0127	60					
	059-0128	80					
	059-0129	100					
	011-9128	125					
	011-9129	150					

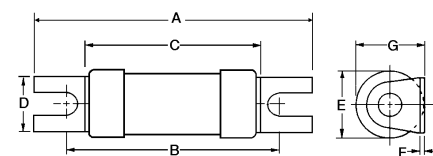
Dimensional Data - Offset Bolted Tag



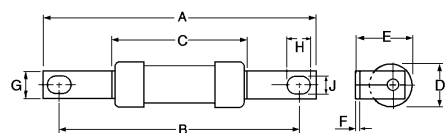
Part No.	Dimensions (mm)			
	A	B	C	D
SMD	29.0	-	-	12.7



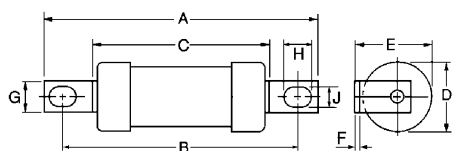
Part No.	Dimensions (mm)							
	A	B	C	D	E	F	G	H
STD	47.0	35	24.0	11.0	4.7	12.0	0.8	13.0



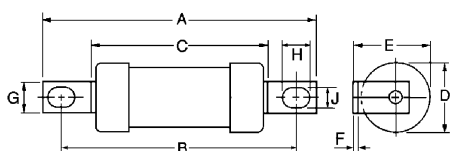
Part No.	Dimensions (mm)						
	A	B	C	D	E	F	G
NITD	55.0	44	34.6	11.2	13.8	0.8	14.0
NITD32M			35.6		17.5	1.2	18.5



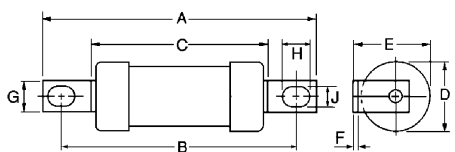
Part No.	Dimensions (mm)								
	A	B	C	D	E	F	G	H	J
AAO	85	73	35.5	13.7	14	1.2	8.7	8.0	5.5
AAO32M			54.5	21	22.3				



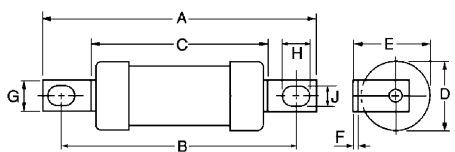
Part No.	Dimensions (mm)								
	A	B	C	D	E	F	G	H	J
BAO	87	73	54.5	21	22.5	1.2	12.7	8.0	5.5
BAO63M									



Part No.	Dimensions (mm)								
	A	B	C	D	E	F	G	H	J
CEO	110	94	58.5	21.0	24.5	3.2	14.3	11.0	8.7
CEO100M125 & 160				25.8	26.8				
CEO100M200				47.0	31				

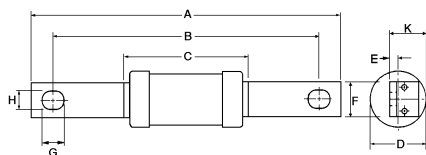


Part No.	Dimensions (mm)								
	A	B	C	D	E	F	G	H	J
OSD	95.0	73	54.5	21.0	22.5	1.2	12.7	8.0	5.5
OSD100M				26.0	25.7				



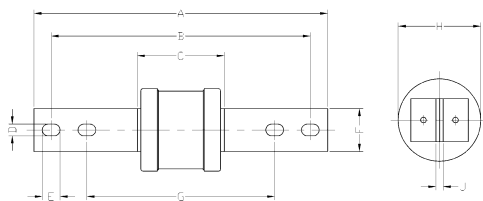
Part No.	Dimensions (mm)								
	A	B	C	D	E	F	G	H	J
DEO	110	94	47.0	31.0	29.5	3.2	19.0	10.0	9.0
DEO200M									

Dimensional Data - Centre Bolted Tag

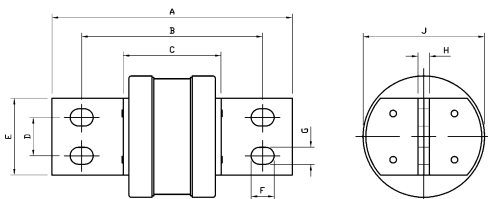


Part No.	Dimensions (mm)								
	A	B	C	D	E	F	G	H	K
AC	113.5	97.5	55.5	21.0	1.6	12.7	13.5	7.0	11.2
AD	128.5	111	55.0	21.0	1.4	14.2	11.8	8.7	11.2
BC	113.5	97.5	55.0	21.0	1.6	7.0	13.5	12.7	11.2
BC63M									
BD	128.5	111	55.0	21.0	1.4	14.2	11.8	8.7	11.2
CD	126	111	58.5	21.0	3.2	14.3	11.1	8.7	19.5
CD100M125 & CD100M160				26.0					22.0
CD100M200			47.0	31.0					19.0
DD	136	111	47.0	31.0	3.2	19.0	12.5	9.0	22.5
DD200M									
ED250	136	111	47.0	31.0	4.7	19.0	12.5	9.0	22.5
ED315			50.0	38.0		25.4			31.0
ED315M400			75.0	59.0		22.5			
ED400M500			75.0	59.0					
EFS*	158	133	47.0	31.0	3.2	19.0	12.5	10.5	22.5

* Except 315A

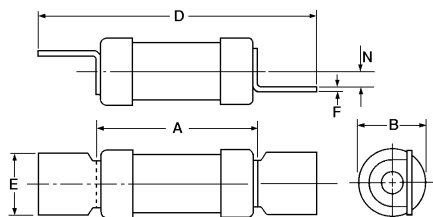


Part No.	Dimensions (mm)								
	A	B	C	D	E	F	G	H	J
EFS315	209	184	50.0	10.5	12.5	25.4	133	38.0	4.7
EF355 & 400					15.5				
EF400M500	210	184	75.0	10.5	15.5	25.4	133	59.0	6.4
FF	210	184	77.5					74.0	
FG	262	231	77.5	10.5	15.5	38.0	167	74	6.4
GF	210	184	80.5	10.5	15.5	25.4	133	83.0	9.5
GG710 & 800	262	231	77.5	10.5	15.5	38.0	165	83.0	6.4
GG1000 & 1250		228.5	84.0					100	12.7

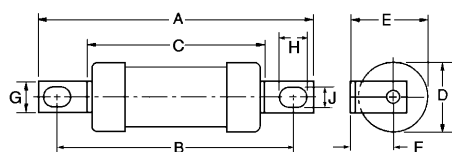


Part No.	Dimensions (mm)								
	A	B	C	D	E	F	G	H	J
GH710 & 800	198	149	81.0	32.0	63.5	19.0	14.0	9.5	83.0
GH1000 & 1250									100

Dimensional Data - 660V Offset Bladed Tag

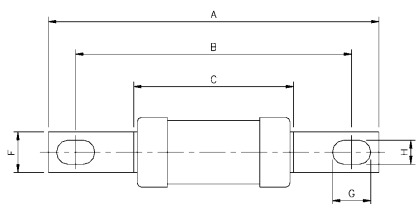


Part No.	Dimensions (mm)					
	A	B	D	E	F	N
SSD	23.0	12.0	47.0	13.0	0.8	3.2
NSD & NSD20M	34.5	13.8	58.5	12.7	0.8	3.5
NSD20M36 & NSD32M		17.5				
ESD - 32A	35.5	13.8	68.0	15.0	1.2	3.5
ESD40 - 63A		17.5				
ESD63M		21.0				

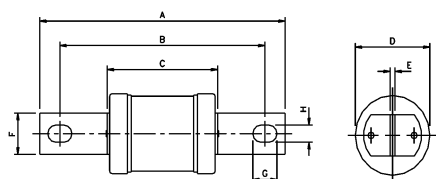


Part No.	Dimensions (mm)								
	A	B	C	D	E	F	G	H	J
H07-660	82.3	73	52.0	22.0	22.4	11.5	8.7	7.7	5.4
K07-660	86.0	73	54.2	25.8	26.9	14.0	12.7	10.5	5.5
L14-660	111.0	94	67.0	35.5	37.0	19.2	19.0	10.3	8.7
M14-660	112.0	94	66.0	38.0	38.0	19.0	19.0	10.0	8.5

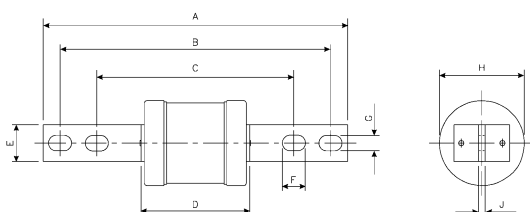
Dimensional Data - 660V Centre Bolted Tag



Part No.	Dimensions (mm)							
	A	B	C	D	E	F	G	H
K08-660 2-32A	111.0	92.5	53.7	22.0	2.4	12.7	13.0	7.5
K08-660 40-63A	111.5	93.0	54.2	25.0				
K09-660 2-32A	127.0	111	53.7	22.0	2.4	14.0	15.2	8.7
K09-660 40-63A	128.0	111	54.2	25.0				

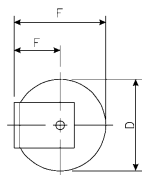
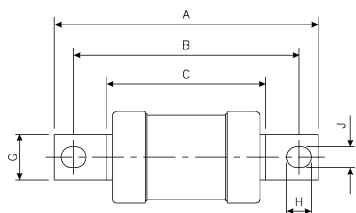


Part No.	Dimensions (mm)							
	A	B	C	D	E	F	G	H
L09-660	136.0	111	65.5	35.5	3.2	19.0	15.1	8.7
M09-660	135.0	111	65.0	37.0	3.2	19.0	15.0	8.7
N09-660	135.0	111	73.0	49.0	3.2	25.4	12.7	9.5
P09-660	135.5	111	75.0	58.5	4.7	25.4	12.7	9.5
N11-660	162.0	133	73.0	49.0	3.2	25.4	15.8	10.5

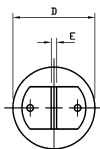
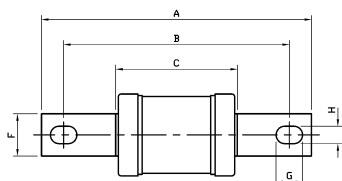


Part No.	Dimensions (mm)								
	A	B	C	D	E	F	G	H	J
P11-660	212.0	184	133	75.0	25.4	16.0	10.0	59.0	5.0
P12-660	262.0	231	167						
R11-660	210.0	184	133	76.0	26.0	16.0	10.0	74.0	6.5
R12-660	262.0	231	167						

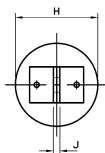
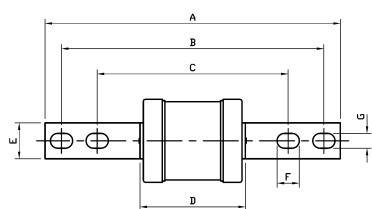
Dimensional Data - 660V Special Tag Range



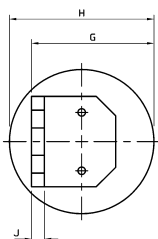
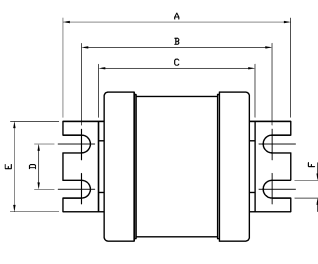
Part No.	Dimensions (mm)								
	A	B	C	D	E	F	G	H	J
M13	120.0	99.0	70.0	38.0	27.0	8.0	26.0	12.0	8.7
M23	262.0	231.0	167.0		38.5	19.0			
N15	120.0	100.0	79.0	49.0	41.0	16.5		15.0	



Part No.	Dimensions (mm)							
	A	B	C	D	E	F	G	H
N34	135.0	111	74.5	66.5	5.0	25.4	12.5	9.5

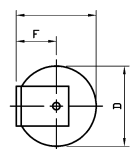
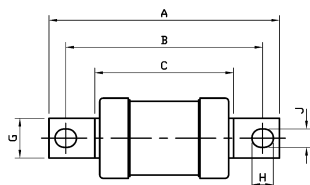


Part No.	Dimensions (mm)								
	A	B	C	D	E	F	G	H	J
P35	210.0	184	133	75.0	19.0	16.0	10.0	59.0	5.0
R40				81.0				74.0	9.5

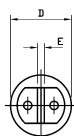
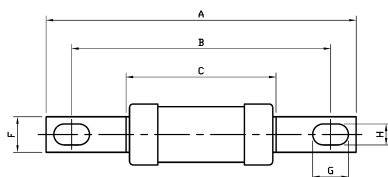


Part No.	Dimensions (mm)								
	A	B	C	D	E	F	G	H	J
N20	110.0	92.5	75.0	22.0	44.5	8.8	49.0	49.0	6.4
P20	111.0		76.0				47.0	59.0	
R20	112.0	94.0	77.0				62.0	74.0	
S20	112.0		77.0				66.0	83.0	

Dimensional Data - Special 500V DC Range



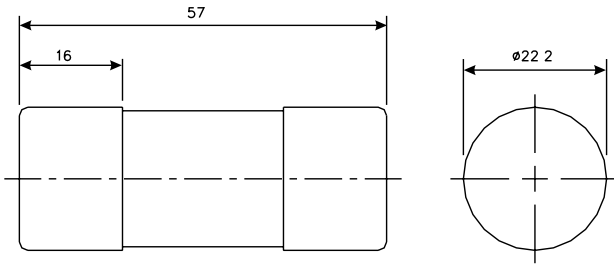
Part No.	Dimensions (mm)							
	A	B	C	D	F	G	H	J
HS07	86.0	73	54.0	22.0	0.8	9.2	8.0	5.0
KS07	91.0			27.0	1.2	13.0	10.5	



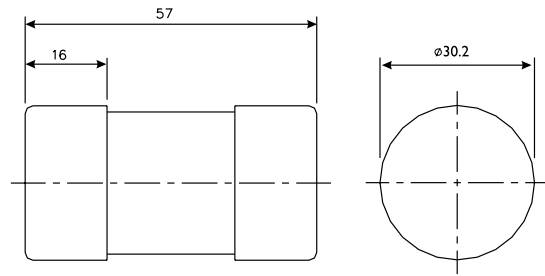
Part No.	Dimensions (mm)							
	A	B	C	D	E	F	G	H
KS08	113.0	98	56.0	27.0	2.5	13.0	13.0	5.0
KS09	138.0	111				14.5	15.0	8.0

Dimensional Data - House Service & Feeder Piller Fuse Links

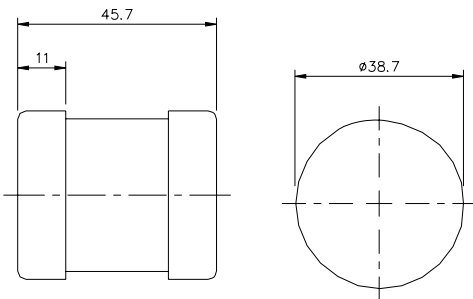
Dimensions for KR85



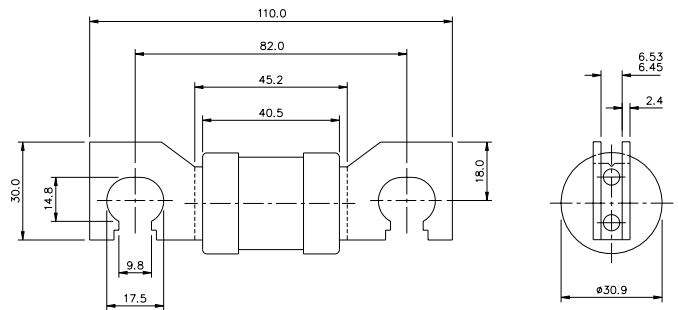
Dimensions for LR85



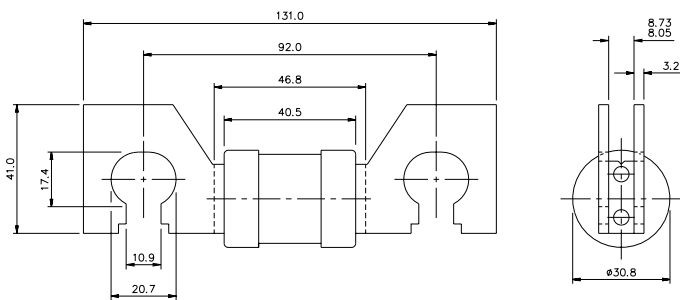
Dimensions for MJ25-6



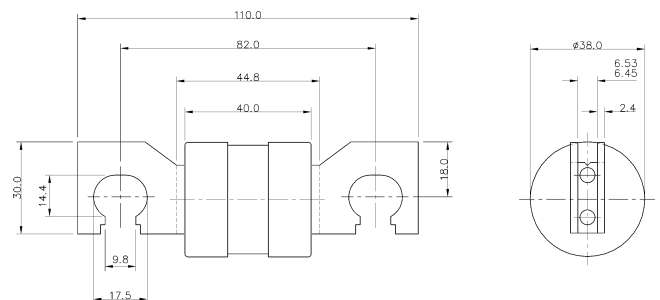
Dimensions for MJ30-7&-8 up to 200A



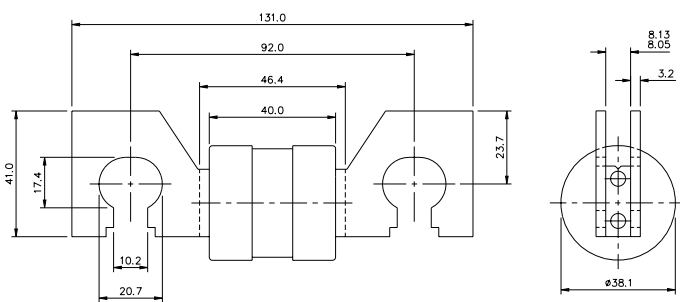
Dimensions for MJ31-7 up to 200A



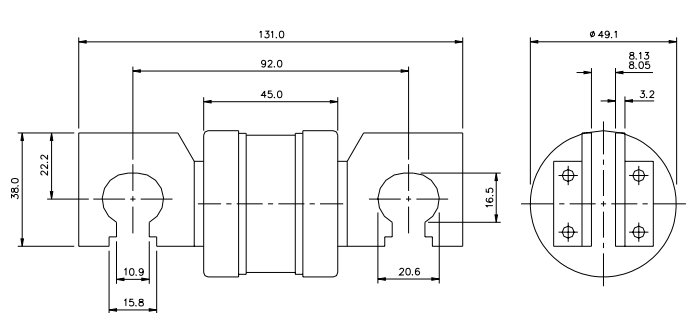
Dimensions for PJ30-7 & MJ30-7 (250 & 315A)



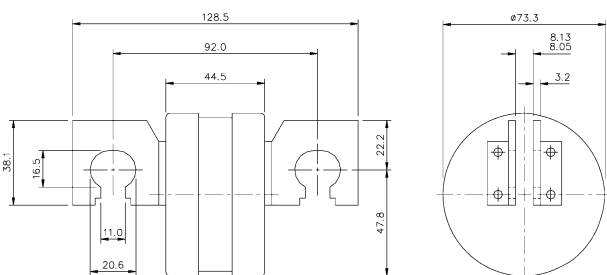
Dimensions for PJ31-7 & MJ31-7 (250 & 315A)



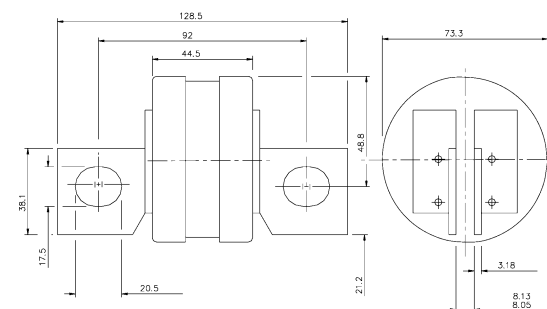
Dimensions for RJ31-7



Dimensions for SJ31-6

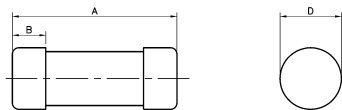


Dimensions for SJ28

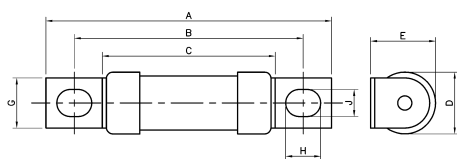


Dimensional Data for Joint Service Fuse Links

Cylindrical (Cyl)



Offset Bolted Tag (O.B.T.)



Part No	Current Rating	Body Size	Tag Type	A	B	C	D	E
059-0107	0.25	0	Cyl.	32.05	-	-	6.37	5.55
059-0108	0.5							
059-0109	1							
059-0110	2							
059-0111	3							
059-0112	5							
059-0113	7	1	Cyl.	33.6	-	-	11.86	7.14
011-9925	10							
011-9926	15							
059-0140	0.5							
059-0141	1							
059-0142	2							
059-0143	3							
059-0144	5							
059-0145	7							
059-0146	10							
059-0147	15							
011-9483	20	1	Offset Bolted Tag	56.03	44.65	33.9	11.96	-
059-0114	0.5							
059-0115	1							
059-0116	2							
059-0117	3							
059-0118	5							
059-0119	7							
059-0120	10							
059-0121	15							
011-9679	20							
012-0140	30	2	Cyl.	37.6	-	-	16.7	8.71
059-0148	10							
059-0149	15							
059-0150	20							
059-0151	30	2	Offset Bolted Tag	70.7	55.84	37.4	16.7	-
059-0122	10							
059-0123	15							
059-0124	20							
059-0125	30							
012-0067	40							
011-9127	50							
012-0141	60	3	Cyl.	47.9	-	-	33.3	11.9
059-0152	40							
059-0153	60							
059-0154	80							
059-0155	100	3	Offset Bolted Tag	88.6	69.77	47.4	33.3	-
059-0126	40							
059-0127	60							
059-0128	80							
059-0129	100							
011-9128	125							
011-9129	150							

APPLICATION INFORMATION

The Bussmann standard range of high breaking capacity fuse links for low voltage industrial and general purpose applications meet the requirements of BS88 and IEC60269. By using advanced fuse technology the current ratings up to 400A have compact dimensions but still within the standardised dimensional and performance requirements. These designs have been optimised for 415/240V systems. The standard range of fuse links are available from 2-1250A in the following tag forms: OFFSET BLADED - OFFSET BOLTED - CENTRE BOLTED.

Supplementary ranges cover applications up to 690V a.c. and 500V d.c. including those with non-standard tag fixings.

Bussmann fuse links are manufactured under Quality Systems independently assessed to ISO 9001 and appropriate ratings carry the ASTA 20 endorsement.

APPLICATION DATA

One of the long standing advantages of fuse protection is that fuse selection is relatively simple and effective.

The following notes cover the majority of applications. For further information contact Bussmann technical services on 01509 882699.

Reference should also be made to the appropriate Wiring Installation rules, in the UK the 16th Edition of the IEE Wiring Regulations for Electrical Installations which aligns with IEC 60364.

CIRCUIT LOADING

The current rating of the fuse link should not be less than the full load current of the circuit. The circuit should be so designed that small overloads of long duration will not be of frequent occurrence.

CABLE RATINGS

There is an increasing move away from 70°C P.V.C. insulation to materials which are more environmentally friendly, for example 90°C XLPE. The ratings of fusegear, switches, accessories etc. are generally based upon the equipment being connected to conductors intended to be operated at a temperature not exceeding 70°C in normal service.

In view of the above it is recommended that the practice of designs based upon conductor temperatures of 70°C be regarded as the norm. In accordance with clause 512-02-01 of the Wiring Regulations the equipment manufacturer should be consulted to ascertain the reduction of nominal current rating of the equipment if conductor temperatures exceeding 70°C are used. In addition an overriding factor is often voltage drop consideration.

CABLE PROTECTION

Bussmann fuse links with gG characteristics protect associated cables against both overload and short circuit current, provided that the current rating of the fuse link I_n is equal or less than the current carrying capacity of the cable I_z .

In motor circuits, the motor starter will provide the overload protection and the fuse links will provide the short circuit protection. The maximum size of fuse link that can be used depends upon the type of cable used and is determined in accordance with the Wiring Regulations using the appropriate K factor. The following table gives maximum sizes of fuse links that are recommended for two popular cables with copper conductors, 70°C P.V.C. (K=115) and 90°C thermosetting (K=143).

Cable Size mm ²	Max. Fuse Rating	
	K = 115 A	K = 143 A
1	16	16
1.5	20	25*
2.5	32*	32*
4	50*	50*
6	63*	63*
10	100*	125*
16	125*	160*
25	200*	250*
35	315*	355*
50	400*	500
70	560	630
95	710	800
120	800	1000

*Extended motor circuit dual ratings can be used

Zs OHMS IMPEDANCE VALUES

The rules for protection against indirect contact are given in Chapter 413 of the Wiring Regulations.

For a TN System a disconnecting time not exceeding 5s is permitted for a distribution circuit. The maximum values of earth fault loop impedance (Zs) corresponding to a disconnecting time of 5s for nominal voltage to earth (Uo) of 240V for Bussmann gG fuse links.

Rating (A)	Zs Ohms Ω	Rating (A)	Zs Ohms Ω
2	60		
4	27		
6	14	100	0.44
10	7.7	125	0.35
16	4.3	160	0.27
20	3.0	200	0.20
25	2.4	250	0.16
32	1.9	315	0.13
40	1.4	400	0.096
50	1.1	500	0.073
63	0.86	630	0.054
80	0.60	800	0.044

AMBIENT TEMPERATURE

A de-rating in terms of current of 0.5% per °C above an ambient of 35°C is recommended.

BREAKING CAPACITY

The standardised values of Breaking Capacity are 80kA for voltages of 415V a.c. and above, and 40kA for d.c. applications.

DISCRIMINATION

All fuse links will give a discrimination ratio of 2:1 and for most practical situations a ratio of 1.6:1 (two steps in the R10 series). Example: an upstream fuse rated at 160A will discriminate with a downstream fuse rated at 100A.

CURRENT AND ENERGY LIMITATION

The Bussmann range of fuse links have pre-arcing I²t values towards the bottom limits of the standards. This ensures excellent current and energy limitation. They also have lower power losses at rated current. This assists in the appropriate interchangeability with other makes of fuse links.

TRANSFORMERS

When fuse links are used on the primary side of transformers the normal current rating of the fuse links should be at least twice the nominal transformer primary current.

FLOUORESCENT LIGHTING

The normal current rating of the fuse link should be at least twice the normal full load current of the maximum number of lights to be switched simultaneously.

CAPACITOR CIRCUITS

In capacitor circuits, for example power factor correction, the fuse link should be chosen with a current rating greater than 1.5 times the rated capacitor current. This takes account of the high transient inrush current, circuit harmonics and capacitor tolerances.

MOTOR CIRCUITS

In motor circuits the fuse link has to withstand the starting current of the motor and often requires a higher rating than the full load current of the motor.

Co-ordination recommendations are made by the manufacturers of motor starters in accordance with IEC 60947-4-1. To give the desirable type 2 co-ordination with fuse links, tests are performed with the latest gG or gM fuse links, to BS88 or IEC60269 which have pre-arcing I²t values toward the bottom specified limits. This means that Bussmann fuse links are suitable to give type 2 co-ordination.

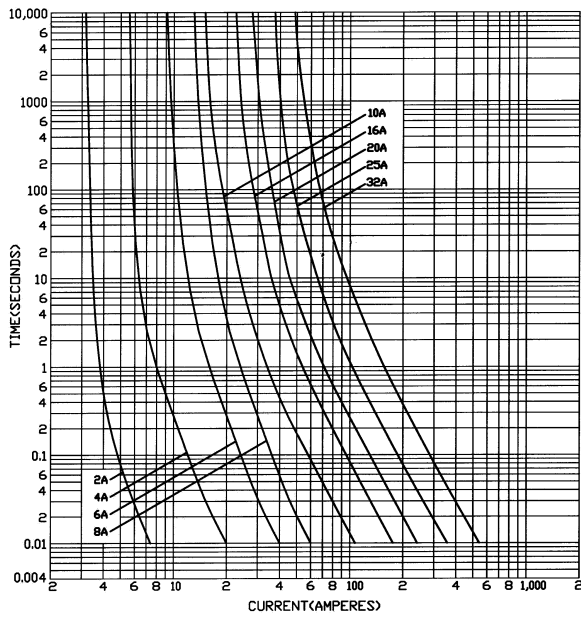
Extended dual ratings of motor circuit protection fuse links with gM characteristics are available in most popular sizes of fuse links to extend the use of associated equipment with appropriate economies. In the majority of applications, gG fuse links are used. It is not essential for gM fuse links to be used for motor circuit protection, they simply extend the utilisation of standard equipment.

The attached table shows the recommended fuse links at 415V. In most applications the run-up time is less than five seconds and duty is infrequent - no more than twice per hour. The next larger rating should be used for more arduous conditions.

Motor Rating		DirectOn-line		Asst Start Standard (gG)
		Standard (gG)	Motor Circuit (gM)	
kW	A	A	A	A
0.25	0.8	4	-	2
0.37	1.1	4	-	2
0.55	1.5	6	-	4
0.75	2.0	6	-	4
1.1	3.0	10	-	6
1.5	3.6	16	-	10
2.2	5.0	16	-	10
3.0	6.5	20	-	16
4.0	8.4	20	-	16
5.5	11	25	20M25	20
7.5	15	40	32M40	25
11.0	20	50	32M50	32
15.0	27	63	32M63	40
18.5	33	80	63M80	50
22.0	38	80	63M80	50
30.0	54	100	63M100	80
37.0	66	125	100M125	80
45.0	79	160	100M160	100
55.0	98	160	100M160	100
75.0	135	250	200M250	160
90.0	155	250	200M250	160
110.0	185	315	200M315	200
132.0	220	355	315M400	250
150.0	250	355	315M400	315
185.0	310	450	400M500	355
200.0	335	500	400M500	400
225.0	375	560	-	400
250.0	415	560	-	450
280.0	460	630	-	500
335.0	562	710	-	630
355.0	596	800	-	710

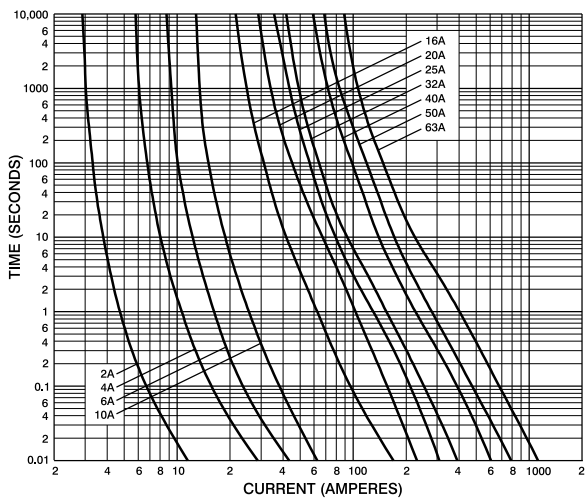
Technical Data

Time Current Curves for SMD Fuse Links



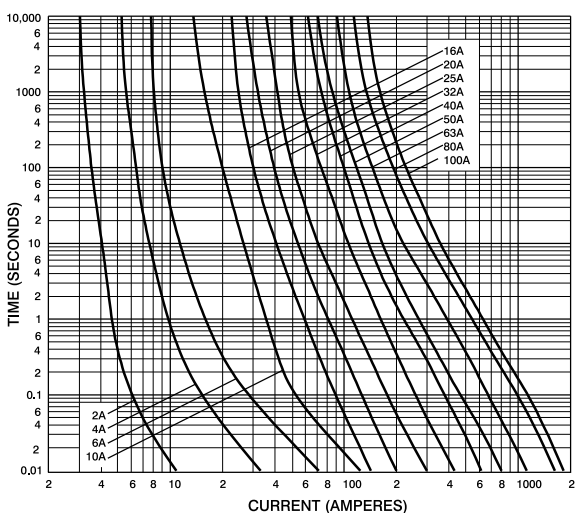
Part No.	I ² t (Amps ² Seconds)			Nom. Watts Loss
	Amp Ratings	Pre-Arcing	Total at 415V	
SMD2	2	0.6	2.5	1.0
SMD4	4	4.5	12.5	1.5
SMD6	6	16.5	45	1.9
SMD8	8	40	105	2.1
SMD10	10	67	180	1.2
SMD16	16	185	500	1.8
SMD20	20	370	1000	2.0
SMD25	25	750	2000	2.2
SMD32	32	1700	4500	2.4

Time Current Curves for AAO, BAO, BC and BD Fuse Links



Part No.			I ² t (Amps ² Seconds)			Nom. Watts Loss
			Amp Ratings	Pre-Arcing	Total at 415V	
-	-	AAO	2	1.4	4.7	0.9
-	-	AAO	4	7.8	26	1.4
-	-	AAO	6	28	100	1.8
-	-	AAO	10	125	400	2.1
-	-	AAO	16	120	470	1.8
-	-	AAO	20	260	1000	1.8
-	-	AAO	25	570	2300	2.0
-	-	AAO	32	710	3000	2.9
BAO	BC	BD	40	1400	3600	4.7
BAO	BC	BD	50	3000	8000	4.9
BAO	BC	BD	63	6700	18000	5.6

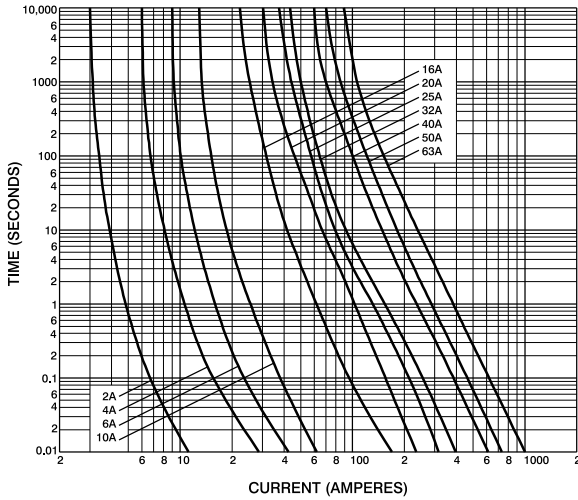
Time Current Curves for AC, AD, CD, CEO and OSD Fuse Links



Part No.			I ² t (Amps ² Seconds)			Nom. Watts Loss
			Amp Ratings	Pre-Arcing	Total at 415V	
-	AC	AD	2	1.2	3.1	1.2
-	AC	AD	4	11	31	1.4
-	AC	AD	6	32	90	1.8
-	AC	AD	10	20	60	2.4
-	AC	AD	16	85	240	2.9
-	AC	AD	20	220	580	3.1
-	AC	AD	25	500	1400	3.2
CEO	AC	AD	32	1000	2760	3.5
CEO	-	-	40	1400	3750	4.7
CEO	-	-	50	3000	8350	4.9
CEO	-	-	63	7000	18800	5.6
CEO	CD	OSD	80	13000	35200	7.2
CEO	CD	OSD	100	25000	765000	8.5

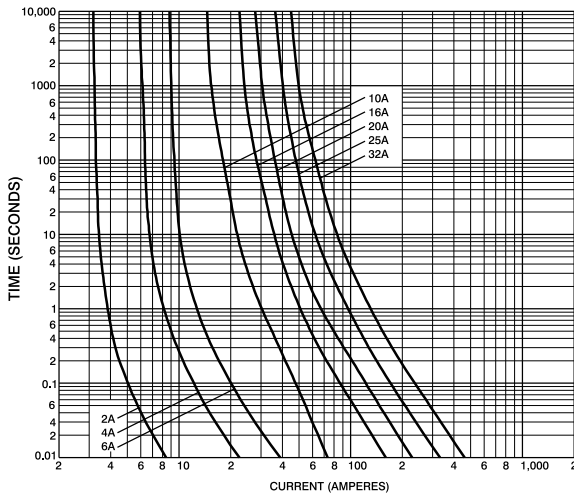
Technical Data

Time Current Curves for NSD, NITD and ESD Fuse Links



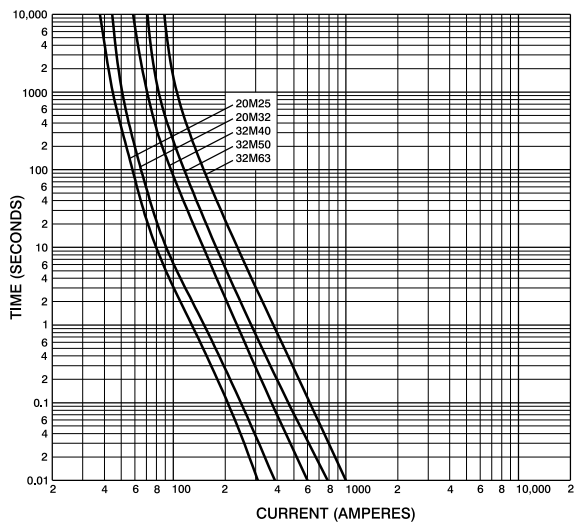
Part No.			I ² t (Amps ² Seconds)			Nom. Watts Loss
			Amp Ratings	Pre-Arcing	Total at 415V	
NSD	NITD	ESD	2	1.3	4.6	0.9
NSD	NITD	ESD	4	8	27	1.4
NSD	NITD	ESD	6	29	100	1.8
NSD	NITD	ESD	10	120	400	2.1
NSD	NITD	ESD	16	120	470	1.8
NSD	NITD	ESD	20	260	1070	1.8
NSD	NITD	ESD	25	560	2300	2.0
NSD	NITD	ESD	32	710	3000	2.9
-	-	ESD	40	1500	6000	3.2
-	-	ESD	50	2700	8000	3.9
-	-	ESD	63	5000	13300	4.6

Time Current Curves for SSD and STD Fuse Links



Part No.		I ² t (Amps ² Seconds)			Nom. Watts Loss
		Amp Ratings	Pre-Arcing	Total at 415V	
SSD	STD	2	0.8	1	0.5
SSD	STD	4	5.5	8	1.0
SSD	STD	6	15	22	1.6
SSD	STD	10	28	42	1.2
SSD	STD	16	160	250	1.5
SSD	STD	20	290	450	1.7
SSD	STD	25	800	1300	1.8
SSD	STD	32	1600	2500	2.4

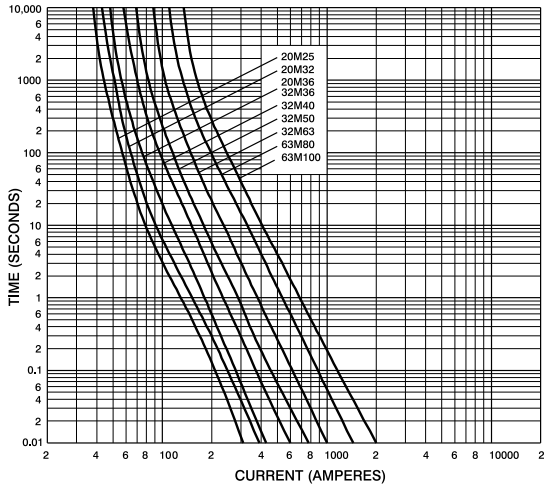
Time Current Curves for NITD Motor Rated Fuse Links



Part No.	I ² t (Amps ² Seconds)			Nom. Watts Loss
	Amp Ratings	Pre-Arcing	Total at 415V	
NITD	20M25	575	2300	1.6
NITD	20M32	720	3000	1.1
NITD	32M40	1500	6000	1.9
NITD	32M50	2700	8600	1.4
NITD	32M63	5000	13400	1.0

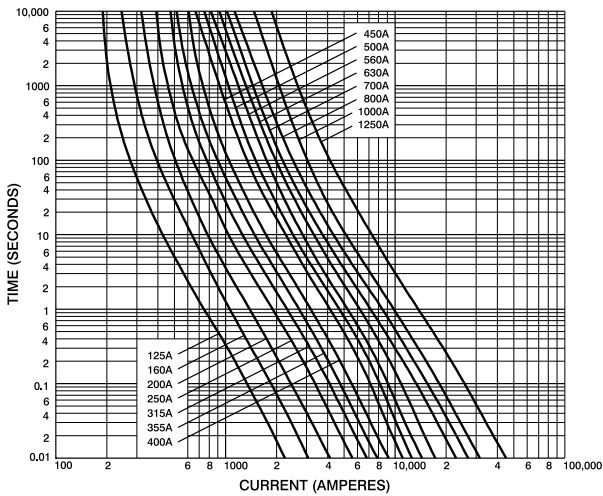
Technical Data

Time Current Curves for NSD, AAO and BAO Motor Fuse Links



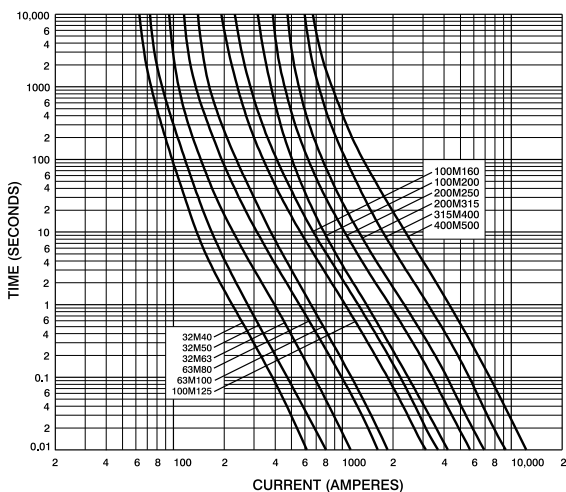
Part No.	I ² t (Amps ² Seconds)			Nom. Watts Loss
	Amp Ratings	Pre-Arcing	Total at 415V	
NSD	20M25	570	2350	1.2
NSD	20M32	770	3000	0.95
NSD	20M36	1150	5000	0.88
NSD	32M36	1150	5000	2.4
NSD	32M40	1500	6000	1.9
NSD	32M50	2700	8700	1.4
NSD	32M63	5000	13550	1.0
AAO	32M40	1400	3800	3.0
AAO	32M50	3000	8500	2.0
AAO	32M63	7000	18000	1.4
BAO	63M80	12600	12600	4.4
BAO	63M100	24000	24000	3.4

Time Current Curves for DD, DEO, ED, EFS, EF, FF, FG, GF, GG and GH Fuse Links



Part No.	I ² t (Amps ² Seconds) x 10 ³			Nom. Watts Loss		
	Amp Ratings	Pre-Arcing	Total at 415V			
DD	DEO	EFS	125	29.5	71	11
DD	DEO	EFS	160	57	135	13
DD	DEO	EFS	200	120	290	14
ED	-	EFS	250	200	480	18
ED	-	EFS	315	265	635	22
ED	EF	-	355	360	865	24
ED	EF	-	400	475	1150	29
-	FF	FG	450	880	1600	32
-	FF	FG	500	1100	2000	38
-	FF	FG	560	1400	2400	43
-	FF	FG	630	2000	3500	50
GF	GG	GH	710	3500	8100	53
GF	GG	GH	800	5000	11500	64
-	GG	GH	1000	6800	16000	69
-	GG	GH	1250	14000	30000	85

Time Current Curves for DD, DEO, ED and EF Motor Fuse Links



Part No.	I ² t (Amps ² Seconds) x 10 ³			Nom. Watts Loss	
	Amp Ratings	Pre-Arcing	Total at 415V		
DD	DEO	200M250	200	480	11
DD	DEO	200M315	265	635	9
ED	-	315M400	475	1150	15
ED	EF	400M500	1200	2700	27

Comparison Chart

Competitor	Bussmann	Competitor	Bussmann	Competitor	Bussmann
100MFB	CM100F	LCF32FC/BCBK	32NNSFBS	(80-100A)SD5	CEO
100MF	CM100F	LCF32FC/BCWH	32NNSFBS/W	(125-200A)SD6	DEO
100MFC	CM100F+63/100BS	LCF32FC/FCBK	32NNSF	(2-32A)SE3	AC
200MFB	200DF	LCF32FC/FCWH	32NNSF/W	(40-63A)SE4	BC
200MFC	200DBS	LCF63BC/BCBK	63ENBSBS	(2-32A)SF3	AD
200MFD	200DFBS	LCF63BC/BCWH	63ENBSBS/W	(40-63A)SF4	BD
20MFB	CM32FC	LCF63FC/BBCBK	-	(80-100A)SF5	CD
20MFC	CM32FC+32BSC	LCF63FC/BBCWH	-	(125-200A)SF6	DD
20MFD	CM32FC+32BSC	LCF63FC/BCBK	63ENSFBS	(250-315A)SF7	ED
32MFB	CM32F	LCF63FC/BCWH	63ENSFBS/W	(355-400A)SF8	ED
32MFC	CM32F+32BS	LCF63FC/FCBK	32ENSF	(250-315A)SG7	EFS
32MFD	CM32F+32BS	LCF63FC/FCWH	63ENSF/W	(710-800A)SH10	GF
63MFB	CM63F	LS(2-32A)	STD	(355-400A)SH8	EF
63MFC	CM63F+63/100BS	LST(2-32A)	STD	(450-630A)SH9	FF
63MFD	CM63F+63/100BS	MD(2-32A)	SMD	(2-32A)SN2	NSD
84TF(160-200A)	M13	ME(5-100)	KR85	(80-100A)SO	OSD
84TK(250-315)	N15	MES(10-63A)	ESD	(16-63A)SP	ESD
85TM(355-400)	P20	MF(30-100)	LR85	SS(AMP)	SSD
86TT(450-500)	R20	NIT(2-32A)	NITD	SW6	M13
86TZ	S20	NS(2-32A)	NSD	SW7	N15
ES(40-63A)	ESD	OS(80-100)	OSD	SX8	P20
GTIA(2-32A)	AAO	RS100H	CM100F	SX9	R20
JHU(20-250)	MJ29-6	RS100P	CM100F+63/100BS	SY10	GG
JPU(80-315)	MJ30-7	RS100PH	CM100F+63/100BS	SY9	FG
JPU(32-63)	MJ30-8	RS200H	200DF	TB(2-32A)	AC
JPU(355-400)	PJ30-7	RS200P	200DBS	TB(40-63A)	BC
JSU(20-315)	MJ31-7	RS200PH	200DFBS	TBC(2-32A)	AD
JSU(355-400)	PJ31-7	RS20H	CM32FC	TBC(40-63A)	BD
JSU(450-500)	RJ31-7	RS20P	CM32FC+32BSC	TC(80-100A)	CD
JSU(560-630)	SJ31-6	RS20PH	CM32FC+32BSC	TCP(80-100)	CEO
JSU(800)	SJ28	RS32H	CM32F	TF(125-200A)	DD
JSU(80-315)	MJ31-7	RS32P	CM32F+32BS	TFP(125-200A)	DEO
LBI100BC/BCBK	CM100F+63/100BS	RS32PH	CM32F+32BS	TIA(2-32A)	AAO
LBI100FC/BCBK	CM100F+63/100BS	RS63H	CM63F	TIS(35-63A)	BAO
LBI100FC/FCBK	CM100F	RS63P	CM63F+63/100BS	TKF(200-315A)	ED
LB1200BC/BCBK	200DBS	RS63PH	CM63F+63/100BS	TKM(250-315A)	EFS
LBI200FC/BCBK	200DFBS	(2-20A)SA2	NITD	TLM(670-800A)	GF
LBI200FC/FCBK	200DF	(2-32A)SB2	AAO	TLT(670-800A)	GG
LBI20BC/BCBK	CM32+32BSC	(2-32A)SB3	AAO	TM(355-400A)	EF
LBI20FC/BCBK	CM32FC+32BSC	(40-63A)SB4	BAO	TMF(355-400A)	ED
LBI20FC/FCBK	CM32FC	SC32BH	-	TMT(355-400A)	P12
LBI32BC/BCBK	CM32F+32BS	SC32H-D	32NNSF	TT(450-630A)	FG
LBI32FC/BCBK	CM32F+32BS	SC32H-D WHITE	32NNSF/W	TTM(450-630A)	FF
LBI32FC/FCBK	CM32F	SC32P	32NNSBSBS	V32FB	32NNSFBS
LBI63BC/BCBK	CM63F+63/100BS	SC32P WHITE	32NNSBSBS/W	V32FBW	32NNSFBS/W
LBI63FC/BCBK	CM63F+63/100BS	SC63BH	-	V32FF	32NNSF
LBI63FC/FCBK	CM63F	SC63H-D	63ENSF	V32FFW	32NNSF/W
LCF32BC/BCBK	32NNBSBS	SC63H-D WHITE	63ENSF/W	V63FB	63ENSFBS
LCF32BC/BCWH	32NNBSBS/W	SC63P	63ENBSBS	V63FBW	63ENSFBS/W
LCF32FC/BBCBK				V63FF	63ENSF
LCF32FC/BBCWH				V63FFW	63ENSF/W

Introduction



A patented range of fully shrouded HRC Fuse Holders designed to accommodate offset bolted tag HRC fuse links to BS88: Parts 1 & 2; IEC 60269-1 & 2. All Camasters are rated at 690Vac.

The compact dimensioned 32A Fuse Holder, type CM32FC and CM20F accept the A1 size fuse link NITD 2 to 32 Amps. The standard 32A Fuse Holder, type CM32F and CM20F accept the A2 size fuse link AAO 2 to 32 Amp. The 63A unit, type CM63F accepts the A3 size fuse link BAO 40 to 63 Amp and the 100 Amp unit, type CM100F accepts fuse link type OSD 80 to 100 Amps, which has compact A3 fixing centres.

The Fuse Holders are supplied as front connecting as standard but can be readily converted to front/back stud or double back stud connection types at the point of installation, using the appropriate size back stud accessories.

CAM^{ASTER} Fuse Holders are offered with the following features:

Advanced patented design incorporating a high level of innovation with enhanced performance characteristics.

Camaster Fuse Holders fully comply with the requirements of BS88 section 2.2 (IEC60269-2-1, section 2) and the 16th edition of the IEE Wiring Regulations (BS7671).

The fuse carriers are fitted with a 'cam' action for ease of removal from the fuse base. The design ensures high contact pressure between the fuse carrier contacts and the base contacts, with a corresponding enhanced electrical performance level.

Camaster Fuse Holders have a unique channel and guide arrangement which prevents any tilting of the fuse carrier when it is being inserted or removed, eliminating any likelihood of inadvertent contact with live metal.

Fixing screws to the fuse carrier are held in captive hinges, providing ease of fixing and preventing loss during installation. The hinges also act as pressure plates thereby reducing the contact resistance between the fuse link tags and the carrier contact.

Cable terminations fully meet the requirements of sub-clause 7.1.7 terminals of IEC60947: Part 1 Low Voltage Switchgear and Controlgear.

Camaster Fuse Holders, as standard, provide both bolted panel and DIN rail mounting features. When DIN rail mounted all ratings of fuse holder give equal height and depth above and below the DIN rail.

Non removable full shrouding of live parts within the fuse base provided by the use on hinged shields which cannot be omitted during installation and are designed so that insertion of the fuse carrier can only be made with them correctly positioned.

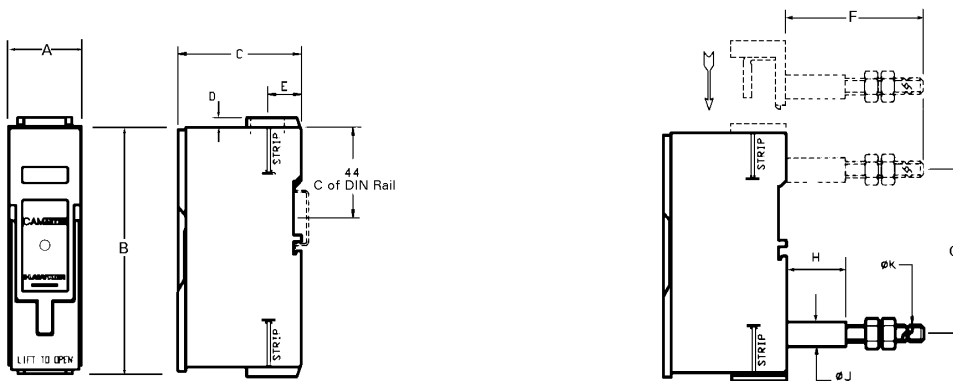
Neon clip-in indicator accessories are available, the neon being lit when the fuse link has operated. (Minimum system operation 90V).

The fuse carrier has a marking label for ease of circuit identification.

Ganging can be readily achieved by the use of standard accessories, providing improved safety related to isolation and protection of 2 and 3 pole electrical circuits.



Ratings, Catalogue Numbers & Dimensions



Standard front connected unit. Suitable for either bolted panel or DIN rail mounting.

Front/Back stud and double back stud connected units. These allow easy customer conversion (illustrated below right) to either Front/Back or double back configuration, by use of Back stud assembly packs, using only a screwdriver.

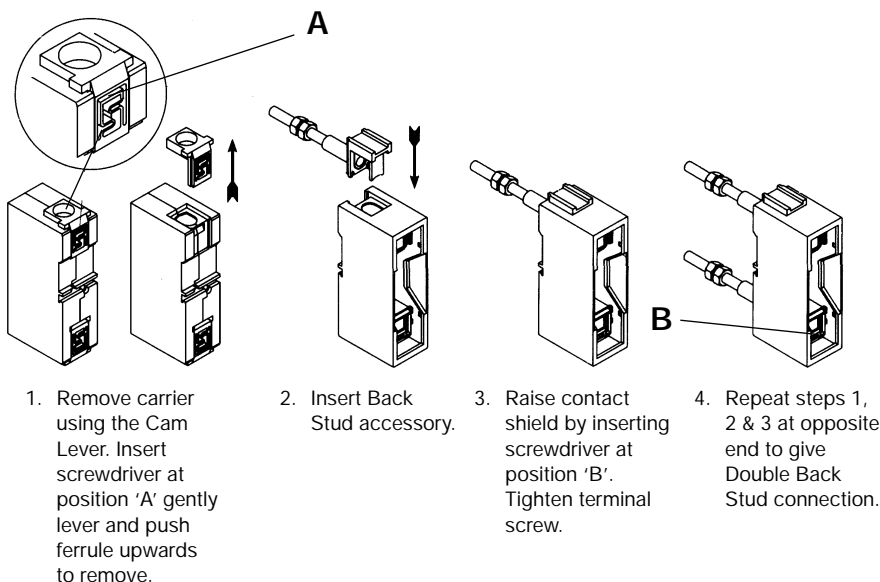
Rating (A)	Part No.	Max Cable mm ²	Rec. Fuse Link	Dimensions (mm)									
				A	B	C	D	E	F	G	H	J	K
20	CM20F	16	NITD	25.4	93.7	60	3.2	17.5	66.0	58.0	28.6	11.9	M6
32	CM32FC	16	NITD	25.4	93.7	60	3.2	17.5	66.0	58.0	28.6	11.9	M6
32	CM32F	16	AAO	31.8	117.5	60	3.2	17.5	66.0	74.0	28.6	11.9	M6
63	CM63F	70	BAO	35.6	125	60	4.75	16.4	86.5	81	28.6	11.9	M8
100	CM100F	70	OSD	35.6	125	60	4.75	16.4	86.5	81	28.6	11.9	M8



Notes.

1. Type CM32FC is also available rated at 20A, catalogue number CM20F
2. For colours other than Black (standard) add the appropriate letter code: W = White; G = Green; GY = Grey
3. Care must be taken when fitting solid single or stranded cables of small cross-sectional area to ensure correct clamping. Multi-stranded cables must be terminated with bootlace ferrules to ensure correct clamping.

Conversion Sequence



Accessory	Rating (A)	Part no.	Carton Qty.
Back stud	32 32 63/100	32BSC 32BS 63/100BS	10 10 5
Ganging Links	-	GLP	1 Set
Neon Indicator	90-660 V ac	NI	3
Lockable Safety Carriers	-	32LSCC 32LSC 63/100LS	3 3 3
Security Clip	-	CMSC	20
Neutral Links	32 32 63 / 100	32CMLC 32CML 63/100CML	1

Introduction



The patented Safeloc fuse holders provide a simple, safe range, designed to accommodate the compact range of offset blade tag fuse links to BS88 part 6 and IEC 60269-2-1 section IV. The combination offers significant savings in volume and cost as well as a reduction in fitting time and power loss. They provide a safe and easy method of protecting a wide range of electrical equipment such as lighting, heating, motor and control equipment circuits.

The NNS fuse holder accommodates the NSD 2-32A range of compact HRC fuse links whilst the slightly larger ENS fuse holder accommodates the ESD 2-63A range of compact HRC fuse links. Both holders are available in front connection or back stud arrangements or combinations of these.



SAFELOC Fuse Holders are offered with the following features:

Compact fuse link and fuse holder dimensions.

Fuse holders employ a unique slide/snap carrier action for positive and secure insertion and removal of the fuse link. This provides positive, stress free fitting of fuse links and locks the fuse link in position ensuring safe insertion and withdrawal from the base.

The direct contact between fuse link blades and the plated base contacts provides low watts loss with increased reliability.

The compact range of fuse links (i.e. NSD & ESD) fitted into the Safeloc fuse holders, have an excellent ability to protect induction motor circuits.

Complete internal personal protection against direct contact electric shock is obtained by fully insulated and shrouded fuse holder base contacts.

The fuse base utilises glass filled, high impact resistant, thermoplastic polyester and incorporates a 35mm DIN rail mounting facility as well as a single screw fixing.

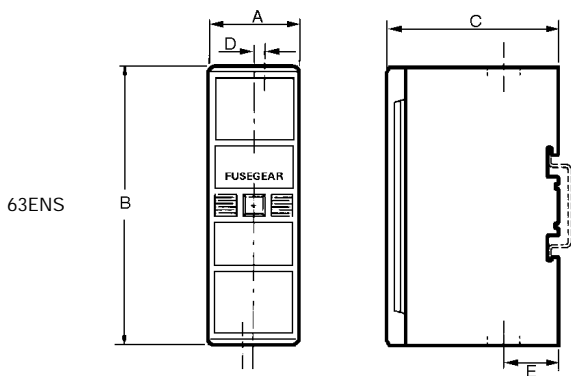
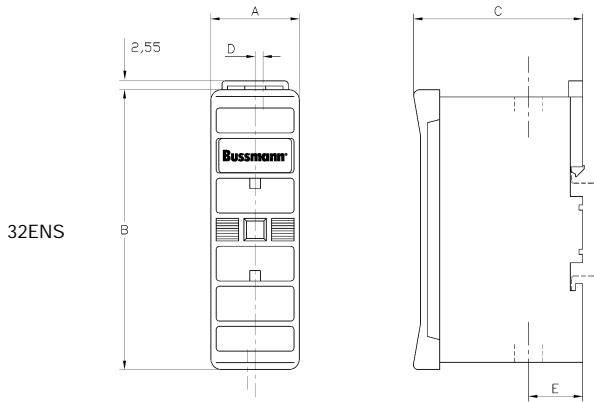
Safeloc Type	Fuse Link Ratings		Safeloc Type	Motor Fuse Link Ratings	
	NNS	ENS		NNS	ENS
Fuse Link Type	NSD	ESD	Fuse Link Type	NSD	ESD
550 Vac	2	2	NSD 415 Vac ESD 415 Vac	20M25	63M80
	4	4		20M32	63M100
	6	6		20M36	-
	10	10		32M36	-
	16	16		32M40	-
	20	20		32M50	-
	25	25		32M63	-
	32	32		-	-
415 Vac	-	40	-	-	
	-	50	-	-	
	-	63	-	-	

Notes on Motor Circuits

All of the compact range of fuse links have an excellent ability to protect induction motor circuits. The unique design of the Safeloc Fuse Holders has enabled the design of dual rated fuse links which offer protection for motor ratings up to 30kW.

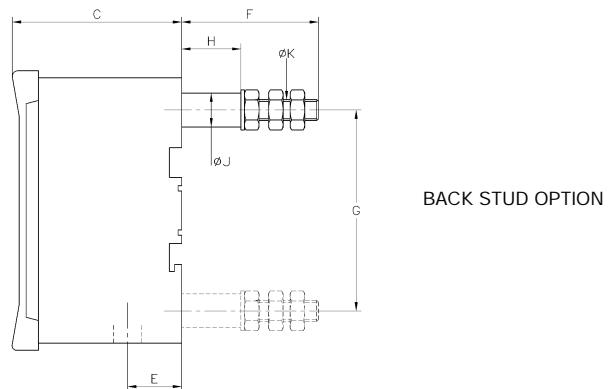
Type gM fuse links for the protection of motor circuits have dual rated characteristics. For example, an ESD63M100 has a continuous current carrying capability of 63A, coupled with the time current characteristic and the capabilities of a 100A fuse link.

Ratings, Catalogue Numbers & Dimensions



Available Variants	Catalogue Reference	
	NNS	NNS
Front Connected/Front Connected	32NNSF	63ENSF
Back Stud/Back/Stud	32NNSBS	63ENSBS
Front Connected/Back Stud	32NNSFBS	63ENSFBS
Neutral Links	32NNL	63ENL

Suitable for either Bolted Panel or DIN rail mounting.



BACK STUD OPTION

For colours other than Black (standard), add the appropriate letter code: W = White; G = Green; GY = Grey, at the end of the catalogue reference.

Security seal (ref. 32551) available for 32A Safeloc.

Rating (A)	Part No.	Max Cable mm ²	Rec. Fuse Link	Dimensions (mm)									
				A	B	C	D	E	F	G	H	J	K
32	NNS	16	NSD	25.4	80.3	48.5	2.3	16.0	39.2	57.7	17.0	9.7	M6
63	ENS	35	ESD	29.1	90.0	55.0	3.3	17.7	75.0	67.9	39.2	11.0	M8

Care must be taken when fitting solid single or stranded cables of small cross-sectional area to ensure correct clamping. Multi-stranded cables must be terminated with bootlace ferrules to ensure correct clamping.

Code	Page No.	Code	Page No.	Code	Page No.	Code	Page No.	Code	Page No.
011-9127	16	160NO9-660	8	40KSO9	12	AC2	3	ESD63	6
011-9128	16	16HO7-660	7	40LR85	13	AC20	3	ESD63M100	6
011-9129	16	16HSO7	12	40MJ25-6	13	AC25	3	ESD63M80	6
011-9483	16	16KO8-660	8	40MJ30-8	14	AC32	3	FF450	4
011-9679	16	16KO9-660	8	40MJ31-7	14	AC4	3	FF500	4
011-9925	16	16KSO9	12	450R11-660	9	AC6	3	FF560	4
011-9926	16	200M13	10	450R12-660	9	AD10	3	FF630	4
012-0067	16	200M14-660	7	450R20	11	AD16	3	FG450	4
012-0140	16	200M23	10	450R40	10	AD2	3	FG500	4
012-0141	16	200MJ25-6	13	450RJ31-7	15	AD20	3	FG560	4
059-0107	16	200MJ30-7	14	45KR85	13	AD25	3	FG630	4
059-0108	16	200MJ31-7	14	4HO7-660	7	AD32	3	GF800	5
059-0109	16	200MO9-660	8	4KO8-660	8	AD4	3	GG1000	5
059-0110	16	200N11-660	9	4KO9-660	8	AD6	3	GG1250	5
059-0111	16	200N20	11	500R11-660	9	BAO35	2	GG710	5
059-0112	16	200NO9-660	8	500R12-660	9	BAO40	2	GG710	5
059-0113	16	20HO7-660	7	500R20	11	BAO50	2	GG800	5
059-0114	16	20HSO7	12	500R40	10	BAO63	2	GH1000	5
059-0115	16	20KO8-660	8	500RJ31-7	15	BAO63M100	2	GH1250	5
059-0116	16	20KO9-660	8	50K07-660	7	BAO63M80	2	GH710	5
059-0117	16	20KR85	13	50KO8-660	8	BC40	3	GH800	5
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059-0119	16	20MJ25-6	13	50KR85	13	BC63	3	NI	30
059-0120	16	20MJ31-7	14	50KSO7	12	BC63M100	3	NITD10	1
059-0121	16	250MJ25-6	13	50KSO8	12	BC63M80	3	NITD16	1
059-0122	16	250MJ30-7	14	50KSO9	12	BD40	3	NITD2	1
059-0123	16	250N11-660	9	50LR85	13	BD50	3	NITD20	1
059-0124	16	250N15	10	50MJ30-8	14	BD63	3	NITD20M25	1
059-0125	16	250N20	11	50MJ31-7	14	CD100	3	NITD20M32	1
059-0126	16	250N34	10	560R11-660	9	CD100M125	3	NITD25	1
059-0127	16	250PJ31-7	14	560R12-660	9	CD100M160	3	NITD32	1
059-0128	16	25HO7-660	7	560R20	11	CD100M200	3	NITD32M40	1
059-0129	16	25HSO7	12	560SJ31-6	15	CD80	3	NITD32M50	1
059-0140	16	25KR85	13	5KR85	13	CEO100	2	NITD32M63	1
059-0141	16	25KSO9	12	60KR85	13	CEO100M125	2	NITD4	1
059-0142	16	25MJ31-7	14	60LR85	13	CEO100M160	2	NITD6	1
059-0143	16	2HO7-660	7	63ENL	31	CEO100M200	2	NSD10	6
059-0144	16	2KO8-660	8	63/100BS	30	CEO32	2	NSD2	6
059-0145	16	2KO9-660	8	63/100CML	30	CEO40	2	NSD20	6
059-0146	16	30KR85	13	63/100LS	30	CEO50	2	NSD20M25	6
059-0147	16	30LR85	13	63ENSBS	13	CEO63	2	NSD20M32	6
059-0148	16	30MJ25-6	13	63ENSF	31	CEO80	2	NSD20M36	6
059-0149	16	315MJ30-7	14	63ENSFBS	31	CM20F	30	NSD25	6
059-0150	16	315N11-660	9	63OR11-660	9	CM32F	30	NSD32	6
059-0151	16	315N15	10	63OR12-660	9	CM32FC	30	NSD32M36	6
059-0152	16	315N20	11	63OR20	11	CM63F	30	NSD32M40	6
059-0153	16	315N34	10	630SJ31-6	15	CM100F	30	NSD32M50	6
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059-0155	16	32BS	30	63KO8-660	8	DD125	3	NSD4	6
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100L14-660	7	32CML	30	63KSO7	12	DD200	3	OSD100	2
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10KSO9	12	32MJ31-7	14	70LR85	13	ED315M400	4	SMD4	1
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125N11-660	9	355PJ30-7	14	80MJ25-6	13	EFS200	4	SSD32	6
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125NO9-660	8	400P11-660	9	80MJ31-7	14	EFS315	4	SSD6	6
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160M14-660	7	400PJ30-7	14	AAO32	1	ESD2	6	STD2	1
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160MJ31-7	14	40KO9-660	8	AAO4	1	ESD4	6	STD32	1
160MO9-660	8	40KR85	13	AAO6	1	ESD40	6	STD4	1
160N11-660	9	40KSO7	12	AC10	3	ESD50	6	STD6	1
160N20	11	40KSO8	12	AC16	3	ESD6	6		

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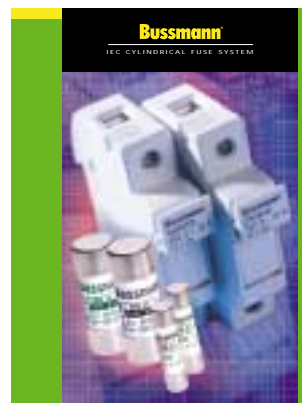
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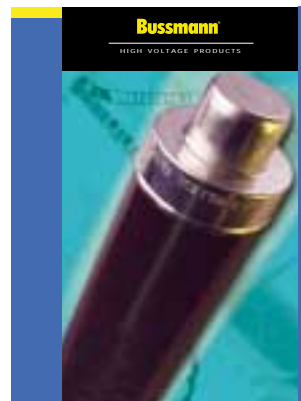
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