

# General Purpose Fuses IEC

## BS88-2 Fuses gG/gM Sizes A,B,C



- The fuse complies with standard EN 60269-2 section II and standard BS 88 part 2.
- These fuses are designed for :
  - "General purpose use" protection (gG type)
  - motor protection (gM type)
- This fuse range insures an excellent current limitation for all overloads on a large range of applications. Their size cannot allow exchange by other fuses of higher rating in their range. They are screwed into fuseholders or bolted directly onto busbars, or in fuse interruptors disconnectors.

### A, B and C types - gG curve

#### Features/Benefits

- Fast gG curve
- Very current limiting
- Tested in DC
- Voltage 415VAC and 250VDC
- High breaking capacity : 80kA @ 415VAC and 40kA @ 250VDC tested
- A type: bracket connection,
- B type: blade with single central fixing hole connection
- C type: blade with two central fixing hole connection.

#### Ratings

##### ▪ A type

A1 : from 2A to 32A  
A2 : from 2A to 32A  
A3 : from 40A to 100A  
A4 : from 32A to 100A  
Overrating till 200A

##### ▪ B type

B1 : from 32A to 100A  
B2 : from 125A to 200A  
B3 : from 250A to 315A  
B4 : from 355A to 400A

##### ▪ C type

C1 : from 355A to 400A  
C2 : from 450A to 630A  
C3 : from 670A to 800A

### A and B types - gM curve

#### Features/Benefits

- Fast curve gM
- Very current limiting
- Voltage 415VAC
- High breaking capacity : 80kA @ 415VAC tested
- A type : bracket connection,
- B type : blade with single central fixing hole connection

#### Ratings

##### ▪ A type

A1: 20A  
A2: 30A  
A3: 63A  
A4: 100A and 200A

##### ▪ B type

B1: 100A  
B2: 200A  
B3: 315A

### Applications

- Power cable protection
- Distribution panel protection
- Control Panel
- Main circuit
- Distribution panel
- Lighting, heating and electrical equipments
- Capacitor, Circuit breakers, batteries  
DC circuit protection.

### Approvals

- Asta<sup>20</sup>Certified

### Applications

- Motor protection
- Inductive load protections
- Transient overloads
- Electrical equipment using motors protection  
Capacitor

### Approvals

- Asta<sup>20</sup>Certified

# General Purpose Fuses IEC

## BS88-2 Fuses gG/gM Sizes A,B,C

### Standard fuse ampere rating

### A, B and C types - gG curve

#### A type

Type	Rating	Ref. no	Designation	Pack.	Catalog Number
A1	2	N226263	2A1	10	
A1	4	P226264	4A1	10	
A1	6	O226265	6A1	10	
A1	10	R226266	10A1	10	
A1	16	S226267	16A1	10	
A1	20	T226268	20A1	10	
A1	25	V226269	25A1	10	
A1	32	W226270	32A1	10	
A2	2	Z226273	2A2	10	
A2	4	A226274	4A2	10	
A2	6	B226275	6A2	10	
A2	10	C226276	10A2	10	
A2	16	D226277	16A2	10	
A2	20	V227833	20A2	10	
A2	25	E226278	25A2	10	
A2	32	F226279	32A2	10	
A3	40	L226284	40A3	10	
A3	50	M226285	50A3	10	
A3	63	N226286	63A3	10	
A3	80	P226287	80A3	10	
A3	100	O226288	100A3	10	
A4	32	T226291	32A4	5	
A4	40	V226292	40A4	5	
A4	50	W226293	50A4	5	
A4	63	X226294	63A4	5	
A4	80	Y226295	80A4	5	
A4	100	Z226296	100A4	5	
A4X*	125	D226300	125A4X	5	
A4X*	160	E226301	160A4X	5	
A4X*	200	F226302	200A4X	5	

#### C type

Type	Rating	Ref. no	Designation	Pack.	Catalog Number
C1	355	G226326	355C1	1	
C1	400	H226327	400C1	1	
C2	450	J226328	450C2	1	
C2	500	K226329	500C2	1	
C2	560	L226330	560C2	1	
C2	630	M226331	630C2	1	
C3	670	N226332	670C3	1	
C3	710	P226333	710C3	1	
C3	750	O226334	750C3	1	
C3	800	R226335	800C3	1	

\* Current ratings additional to BS88.

#### B type

Type	Rating	Ref. no	Designation	Pack.	Catalog Number
B1X*	32	J226305	32B1X	10	
B1X*	40	K226306	40B1X	10	
B1X*	50	L226307	50B1X	10	
B1X*	63	M226308	63B1X	10	
B1	80	N226309	80B1	5	
B1	100	P226310	100B1	5	
B2	125	T226314	125B2	5	
B2	160	V226315	160B2	5	
B2	200	W226316	200B2	5	
B3	250	Z226319	250B3	1	
B3	315	A226320	315B3	1	
B3X*	250	C226322	250B3X	1	
B3X*	315	D226323	315B3X	1	
B4	355	E226324	355B4	1	
B4	400	F226325	400B4	1	

### A and B types - gM curve

#### A type

Type	Rating	Ref. no	Designation	Pack.	Catalog Number
A1	20M25	X226271	20M25A1	10	
A1	20M32	Y226272	20M32A1	10	
A2	32M40	G226280	32M40A2	10	
A2	32M50	H226281	32M50A2	10	
A2	32M63	K226283	32M63A2	10	
A3	63M80	R226289	63M80A3	10	
A3	63M100	S226290	63M100A3	10	
A4	100M125	A226297	100M125A4	5	
A4	100M160	B226298	100M160A4	5	
A4	100M200	C226299	100M200A4	5	
A4X	200M250	G226303	200M250A4X	1	
A4X	200M315	H226304	200M315A4X	1	

#### B type

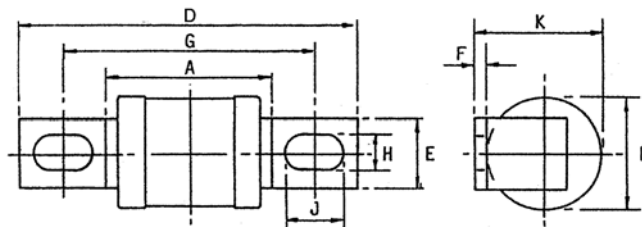
Type	Rating	Ref. no	Designation	Pack.	Catalog Number
B1	100M125	Q226311	100M125B1	5	
B1	100M160	R226312	100M160B1	5	
B1	100M200	S226313	100M200B1	5	
B2	200M250	X226317	200M250B2	1	
B2	200M315	Y226318	200M315B2	1	
B3	315M400	B226321	315M400B3	1	

## Dimensions

#### A type

Ref. BS 88	Current ratings (A)	Dimensions (mm & In)									
		A max	B max	D max	E max	F nom	G nom	H nom	J nom	K max	
A1	2, 4, 6, 10, 16, 20, 25*, 32*, 20M25, 20M32	mm In	33 1-1/4	12,7 1/2	56 2-3/16	9,5 3/8	0,8 1/32	44,25 1-3/4	4,8 3/16	open hole	14,3 9/16
A2	2, 4, 6, 10, 16, 20, 25, 32, 32M40, 32M50, 32M63	mm In	49 1-15/16	22 7/8	86 3-3/8	9 11/32	1,2 3/64	73 2-7/8	5,5 7/32	8 5/16	24 15/16
A3	40, 50, 63	mm In	49 1-15/16	22 7/8	89 3-1/2	13 1/2	1,2 3/64	73 2-7/8	5,5 7/32	open hole	24 15/16
A3	80*, 100*, 63M80, 63M100	mm In	49 1-15/16	26 1-1/32	89 3-1/2	13 1/2	1,2 3/64	73 2-7/8	5,5 7/32	open hole	28 1-3/32
A4	32, 40, 50, 63	mm In	51 2	22 7/8	110 4-5/16	20 3/4	2,4 3/32	94 3-11/16	8,7 11/32	11 7/16	25,4 1
A4	80, 100	mm In	51 2	26 1-1/32	110 4-5/16	20 3/4	2,4 3/32	94 3-11/16	8,7 11/32	11 7/16	29 1-1/8
A4X	125, 160, 200, 100M125, 100M160, 100M200	mm In	51 2	35 1-3/8	110 4-5/16	20 3/4	2,4 3/32	94 3-11/16	8,7 11/32	11 7/16	38 1-1/2
A4X	200M250*, 200M315*	mm In	51 2	41 1-5/8	110 4-5/16	20 3/4	2,4 3/32	94 3-11/16	8,7 11/32	11 7/16	45 1-3/4

\* Current ratings additional to BS88.



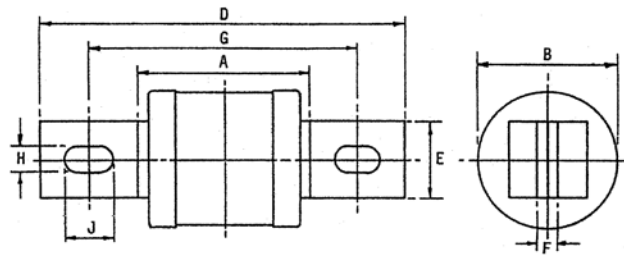
# General Purpose Fuses IEC

## BS88-2 Fuses gG/gM Sizes A,B,C

### Dimensions

#### B type

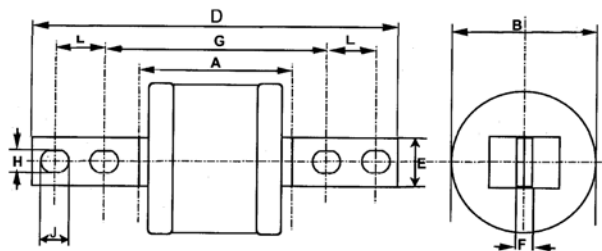
Ref. BS 88	Current ratings (A)	Dimensions (mm & In)								
			A max	B max	D max	E max	F nom	G nom	H nom	I nom
B1X	32, 40, 50, 63	mm in	45 1-3/4	22 7/8	137 5-3/8	15 9/16	1,4 3/64	111 4-3/8	8,7 11/32	14 9/16
B1	80, 100	mm in	45 1-3/4	26 1/32	137 5-3/8	20 3/4	3,2 1/8	111 4-3/8	8,7 11/32	14 9/16
B1	100M125, 100M160, 100M200	mm in	45 1-3/4	35 1-3/8	137 5-3/8	20 3/4	3,2 1/8	111 4-3/8	8,7 11/32	14 9/16
B2	125, 160, 200	mm in	45 1-3/4	35 1-3/8	137 5-3/8	20 3/4	3,2 1/8	111 4-3/8	8,7 11/32	14 9/16
B2	200M250, 200M315	mm in	45 1-3/4	41 1-5/8	137 5-3/8	26 1-1/32	3,2 1/8	111 4-3/8	8,7 11/32	14 9/16
B3	250, 315	mm in	45 1-3/4	41 1-5/8	137 5-3/8	26 1-1/32	3,2 1/8	111 4-3/8	8,7 11/32	14 9/16
B3	315M400	mm in	45 1-3/4	51 2	137 5-3/8	26 1-1/32	6,4 1/4	111 4-3/8	8,7 11/32	14 9/16
B3X	250, 315	mm in	45 1-3/4	41 1-5/8	159 6-1/4	26 1-1/32	3,2 1/8	133 5-1/4	10,3 13/32	14 9/16
B4	355, 400	mm in	52 2-1/16	51 2	137 5-3/8	26 1-1/32	6,4 1/4	111 4-3/8	8,7 11/32	16 5/8



#### C type

Ref. BS 88	Current ratings (A)	Dimensions (mm & In)									
			A max	B max	D max	E max	F nom	G nom	H nom	J nom	L nom
C1	355*, 400	mm in	52 2-1/16	51 2	210 8-1/4	26 1-1/32	6,3 1/4	133 5-1/4	10,3 13/32	16 5/8	25,4 1
C2	450*, 500, 560*, 630	mm in	54 2-1/8	61 2-3/8	210 8-1/4	26 1-1/32	7,8 5/16	133 5-1/4	10,3 13/32	16 5/8	25,4 1
C3	670*, 710, 750*, 800	mm in	56 2-1/16	73 2	210 8-1/4	26 1-1/32	9,5 3/8	133 5-1/4	10,3 13/32	16 5/8	25,4 1

\* Current ratings additional to BS88.



# General Purpose Fuses IEC

## BS88-2 Fuses gG/gM Sizes A,B,C

### gG and gM fuse-link selection

#### Fuse-link selection for 3 phase 415 V AC induction motor circuit

kW	Motor rating HP	In	Direct-on-line start (7 x FLC for 10 sec) Fuse-link rating (amperes)		Assisted start (3,5 x FLC for 20 sec) Fuse-link rating (amperes)	
			gG	gM	gG	gM
0,75	1	2	6	-	4	-
1,1	1,5	2,5	10	-	6	-
1,5	2	3,5	10	-	6	-
2,2	3	5	16	-	10	-
3	4	6,5	20	-	16	-
4	5	8	25	20M25	16	-
5,5	7,5	11	32	20M32	20	-
7,5	10	14	40	32M40	25	20M25
10	13,5	19	50	32M50	32	20M32
11	15	21	50	32M50	32	-
15	20	28	63	32M63	40	32M40
18,5	25	35	80	63M80	50	-
22	30	41	100	63M100	50	-
26	35	48	100	63M100	63	-
30	40	55	125	100M125	80	63M80
33	45	62	160	100M160	80	63M80
37	50	69	160	100M160	100	-
45	60	83	200	100M200	100	-
53	70	97	200	100M200	125	100M125
55	75	100	200	100M200	125	100M125
60	80	110	250	200M250	160	-
67	90	120	250	200M250	160	-
75	100	135	250	200M250	160	-
90	120	160	315	200M315	200	-
93	125	170	355*	315M400*	200	-
110	150	200	400	315M400*	250	200M250
130	175	230	400	315M400*	315	-
150	200	260	450*	400M500*	315	-
160	215	280	500	400M500*	355*	315M400*
170	225	290	500	400M500*	355*	315M400*
180	250	320	560*	-	400	-
200	270	350	630	-	400	-
220	300	380	670*	-	450	400M500*
250	335	420	710*	-	500	-
260	350	450	750*	-	560*	-
300	400	500	800	-	630	-

\* Current ratings additional to BS88.

#### Maximum full load current starting capability

Direct-on-line start (7 x FLC for 10 sec)			Assisted start (3,5 x FLC for 20 sec)		
Fuse-link rating (amperes)		Maximum motor	Fuse-link rating (amperes)		Maximum motor
gG	gM	In	gG	gM	In
2	-	0,6	2	-	1,3
4	-	1,3	4	-	2,4
6	-	2,3	6	-	4,3
10	-	4,1	10	-	6,4
16	-	6,0	16	-	11
20	-	7,9	20	-	14
25	20M25	10	25	20M25	19
32	20M32	13	32	-	24
40	32M40	18	40	32M40	31
50	32M50	26	50	-	46
63	32M63	30	63	-	51
80	63M80	40	80	-	69
100	63M100	54	100	-	94
125	100M125	61	125	-	110
160	100M160	82	160	-	150
200	-	110	200	-	180
250	200M250	150	250	-	220
315	200M315	170	315	-	250
355*	315M400*	200	355*	-	310
400	315M400*	240	400	-	340
450*	400M500*	280	450*	400M500*	380
500	400M500*	310	500	-	430
560*	-	350	560*	-	460
630	-	380	630	-	500
670*	-	420	670*	-	530
710*	-	450	710*	-	550
750*	-	480	750*	-	570
800	-	510	800	-	600

\* Current ratings additional to BS88.

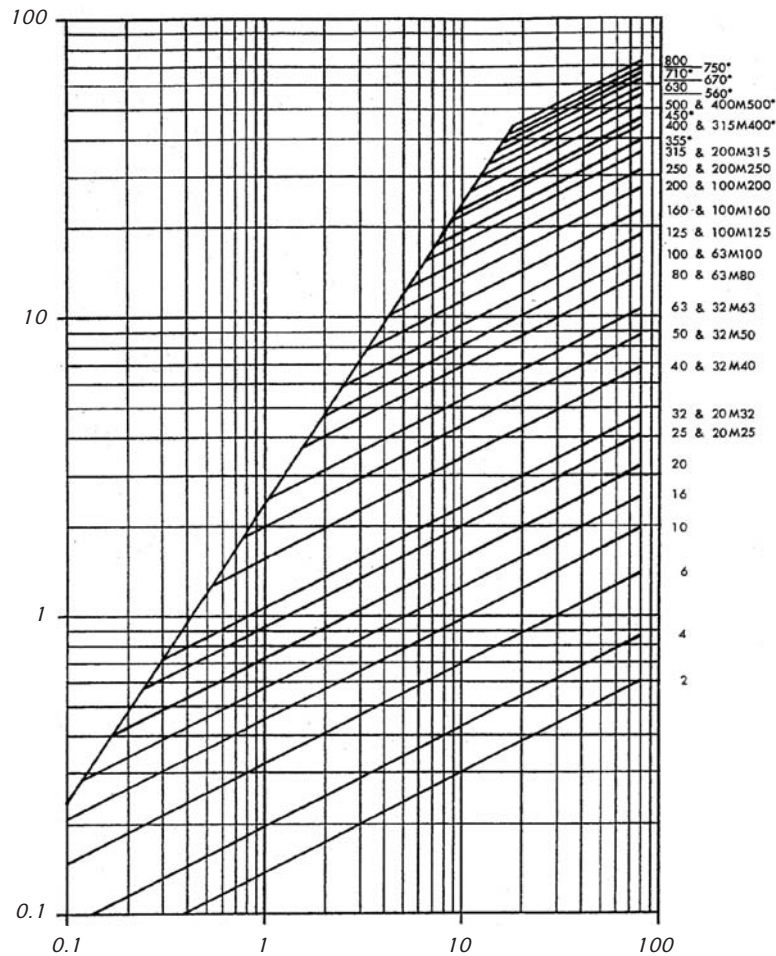
This data is based upon normal starting conditions and usual efficiency and power factor.

Conditions such as long run-up times, large numbers of start in succession, high ambient temperature or abnormal transients during start/delta switching may necessitate adjustments to fuse-link selection.

# General Purpose Fuses IEC

## BS88-2 Fuses gG/gM Sizes A,B,C

### Peak let-through current



\* Current ratings additional to BS88

### Nominal current derating by temperature

Fuse-link rating (A)	Current carrying capability (in amperes) at elevated temperatures									
	40°C	45°C	50°C	55°C	60°C	65°C	70°C	75°C	80°C	
2, 4, 6, 10										
16										15
20									18	16
25								23	21	19
32								31	30	29
40								39	38	37
50								49	48	47
63								61	59	57
80								79	78	76
100								98	96	94
125								122	119	116
160										
200										
250										
315										
355*										
400										
450*										
500										
560*										
630										
670*										
710*										
750*										
800										

FUSE-LINKS FULLY RATED

- When the fuse-link is mounted in the open, the elevated temperature is the ambient air temperature ( $T_a$ ).
- When the fuse-link is mounted in an enclosure, the elevated temperature is the internal "fluid environment temperature" ( $T_e$ ) within the enclosure.
- When it is not known, it should be assumed to be 15°C higher than the ambient air temperature external to the enclosure, i.e.  $T_e = T_a + 15^\circ\text{C}$ .

#### Examples:

- 100A fuse-link mounted in the open at an ambient air temperature of 65°C.  
Current carrying capability = 100A.
- 200A fuse-link mounted in the open at an ambient air temperature of 60°C.  
Current carrying capability = 195A.
- 400A fuse-link mounted in an enclosure having an internal temperature of 65°C.  
Current carrying capability = 370A.
- 800A fuse-link mounted in an enclosure with an unknown internal temperature and an external ambient air temperature of 40°C. Assume the internal temperature is 55°C (40°C + 15°C). Current carrying temperature = 740A.

Curves and derating comply with BS88 standard part 1 and 2 sections 2.1 and 2.2 of 1988.

\* Derating also applies, to additional current ratings.

# General Purpose Fuses IEC

## BS88-2 Fuses gG/gM Sizes F1,F2



- The fuse comply with standard EN 60269-2 section II and standard BS88 part 2.
- This fuses are designed for :
  - "general purpose use" protection, (gG type)
  - motor protection (gM type)
- This fuse range insures an excellent current limitation for all overloads on a large range of applications. Their size cannot allow exchange by other fuses of higher rating in the F type range. They are compact and can be connected with clips.

### F1,F2 types - gG curve

#### Features/Benefits

- Compact design
- Curve gG and gM
- Very current limiting
- Tested in DC
- Voltage 415VAC
- High breaking capacity : 80kA @ 415VAC
- Connection by clips or appropriate fuse holders.

#### Ratings

##### ▪ F1 type

from 2A to 32A

##### ▪ F2type

from 10A to 63A

#### Applications

- Power cable protection
- Distribution panel protection
- Control panel
- Main circuit
- Lighting, heating and electrical equipments
- Capacitor, batteries
- Can be used with circuit breakers.

#### Approvals

- Asta  Certified

### Fuses designations and ratings

#### F1 type

Type	Rating	Ref. no	Designation	Pack.	Catalog Number
F1	2	S226336	2F1	10	
F1	4	T226337	4F1	10	
F1	6	V226338	6F1	10	
F1	10	W226339	10F1	10	
F1	16	X226340	16F1	10	
F1	20	Y226341	20F1	10	
F1	25	Z226342	25F1	10	
F1	32	A226343	32F1	10	
F1*	20M25	B226344	20M25F1	10	
F1*	20M32	C226345	20M32F1	10	

#### F2 type

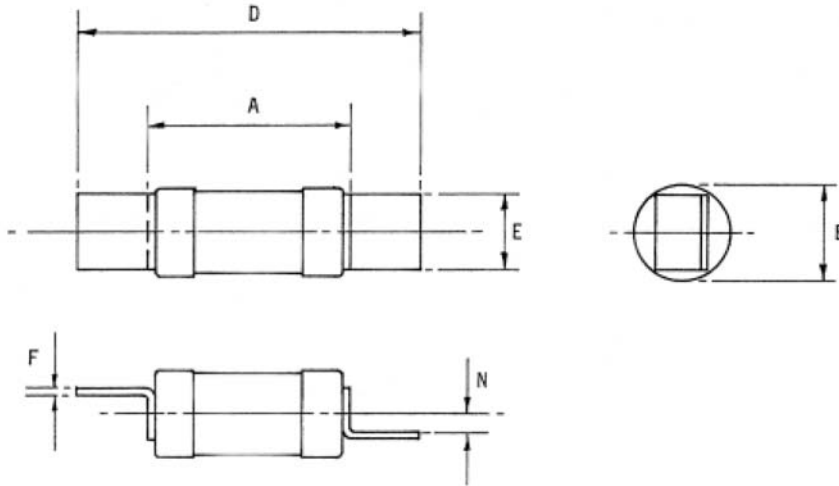
Type	Rating	Ref. no	Designation	Pack.	Catalog Number
F2	10	D226346	10F2	10	
F2	16	E226347	16F2	10	
F2	20	F226348	20F2	10	
F2	25	G226349	25F2	10	
F2	32	H226350	32F2	10	
F2	40	J226351	40F2	10	
F2	50	K226352	50F2	10	
F2	63	L226353	63F2	10	

\* Selection table for gM fuses : refer to A, B and C types

# General Purpose Fuses IEC

## BS88-2 Fuses gG/gM Sizes F1,F2

### Dimensions



Ref. BS 88	Voltage (Vac)	Current ratings (A)	Dimensions (mm)						
			A max	B max	D max	E max	F nom	N nom	
F1	415V	2, 4, 6, 10, 16, 20, 25, 32, 20M25*, 20M32*	mm	35,5	14,3	62	11,5	0,8	3,5
			in	1-2/5	9/16	2-7/16	9/20	1/32	1/8
F2	415V	10, 16, 20, 25, 32, 40, 50, 63	mm	39	17,5	69	15	1,4	3,5
			In	1-7/13	11/16	2-13/8	9/16	1/18	1/8

\* Current ratings additional to BS88 also comply to the BS 88 standard part 6 of 1988.

### Time/current data

