HRC cartridge fuses


133 08


153 96


120 04


130 08


140 12


151 50

Technical data and dimensions (p. 135 to 137)

Cylindrical type gG

Conform to EN 60269-1, IEC 60269-1, and 2 Veritas approved

8 x 32 (previously 8.5 x 31.5)

Pack	Cat.Nos Without indicator	Cat.Nos With indicator	Rating (Amps)	Voltage ∿ (Volts)	Rupture capacity (Amps)
10	123 01		1		
10	123 02	124 02	2		
10	123 04	124 04	4		
10	123 06	124 06	6	400	20000
10/**100**	123 10		10		
10		124 10	10		
10/**100**	123 16	124 16	16		
	Without indicator	With indicator	**10 x 38 HRC**		
10	133 94		0.5		
10	133 01		1		
10	133 02	134 02	2		
10	133 04	134 04	4		
10	133 06	134 06	6	500	100000
10	133 08	134 08	8		
10	133 10	134 10	10		
10	133 16	134 16	16		
10	133 20	134 20	20		
10	133 25	134 25	25		
	Without striker	With striker	**14 x 51 HRC**		
10	143 06		6		
10	143 10		10		
10	143 16	145 16	16		
10	143 20	145 20	20	500	100000
10	143 25	145 25	2		
10	143 32	145 32	32		
10	143 40	145 40	40		
10	143 50(1)	145 50(1)	50		
	Without striker	With striker	**22 x 58 HRC**		
10	153 16		16		
10	153 20		20		
10	153 25		25		
10	153 32		32		
10	153 40		40	500	100000
10	153 50	155 50	50		
10	153 63	155 63	63		
10	153 80	155 80	80		
10	153 96	155 96	100		
10	153 97(1)	155 97(1)	125	400	

Cylindrical type aM (motor rated)

Conform to EN 60269-1, IEC 60269-1 and 2 Veritas approved

8 x 32 (previously 8.5 x 31.5)

Pack	Cat.Nos Without indicator	Cat.Nos	Rating (Amps)	Voltage ∿ (Volts)	Rupture capacity (Amps)
10	120 04		4		
10	120 06		6	400	20000
10	120 08		8		
10	120 10		10		
	Without indicator		**10 x 38 HRC**		
10	130 95		0.50		
10	130 01		1		
10	130 02		2		
10	130 04		4		
10	130 06		6	500	
10	130 08		8		100000
10	130 10		10		
10	130 12		12		
10	130 16		16		
10	130 20(2)		20	400	
10	130 25(2)		25	400	
	Without striker	With striker	**14 x 51 HRC**		
10		141 02	2		
10		141 04	4		
10		141 06	6		
10		141 08	8		
10	140 10	141 10	10		
10	140 12	141 12	12	500	100000
10	140 16	141 16	16		
10	140 20	141 20	20		
10	140 25	141 25	25		
10	140 32	141 32	32		
10	140 40	141 40	40		
10	140 50(1)	141 50(1)	50	400	
	Without striker	With striker	**22 x 58 HRC**		
10	150 25	151 25	25		
10	150 32	151 32	32		
10	150 40	151 40	40		
10	150 50	151 50	50	500	100000
10	150 63	151 63	63		
10	150 80	151 80	80		
10	150 96	151 95	100		
10	150 97	151 97	125	400	

Neutral links

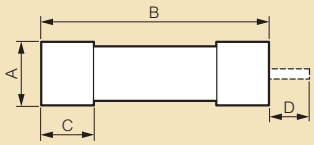
Pack	Cat.Nos	
10	123 00	8 x 32 (previously 8.5 x 31.5)
10	133 00	10 x 38
10	143 00	14 x 51
10	153 00	22 x 58

Isolating fuse carriers 8.5 x 32 and 10 x 38 (p. 167)

(1) Overrating described by standards
(2) Overrating not described by standards

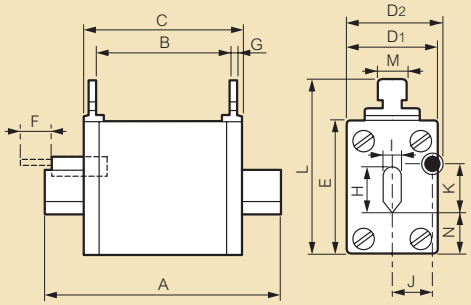
Bold pack quantities: Minimum quantities to be ordered

■ HRC cylindrical (p. 132)



Size (mm)	A	B	C	D
8 x 32	8.5	31.5	6.3	-
10 x 38	10.3	38	10	-
14 x 51	14.3	51	13	7.5
22 x 58	22.2	58	16	7.5

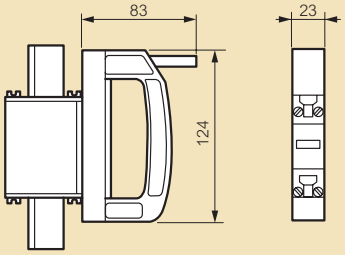
■ Blade type (p. 134)



Size (mm)	00	0	1	2	3	4
A	78	125	135	150	150	200
B	44	62	64	64	61	61
C	52	67	74	74	75	78
D1	30	36	47	50	70	90
D2	-	39	47	50	64	77
E	46	46	52	60	75	107
F	-	14	14	14	14	14
G	2.5	2.5	3	3	2.5	2.5
H	15	15	21	28	36	60
I	6	6	6	6	6	8
J	-	14.5	16	19	23	27
K	-	14.5	14.5	14.5	14.5	14.5
L	59	59	64	72	88	119
M	10	10	10	10	10	10
N	14.5	14.5	14.5	14.5	18	23

Note: Force of striker at the beginning of stroke 1.9 kg and 1 kg at the end according to NF C 63-213

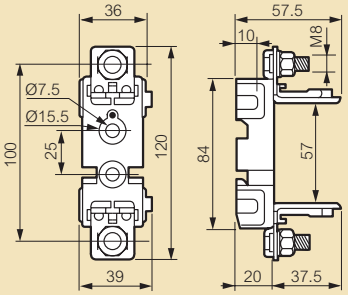
■ Removable handle (p. 133)



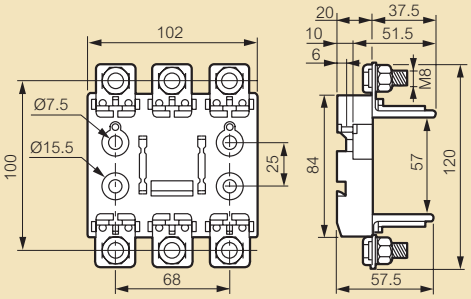
■ Bases for blade type (p. 133)

Size 00

Single pole Cat.Nos 160 01 - 162 00

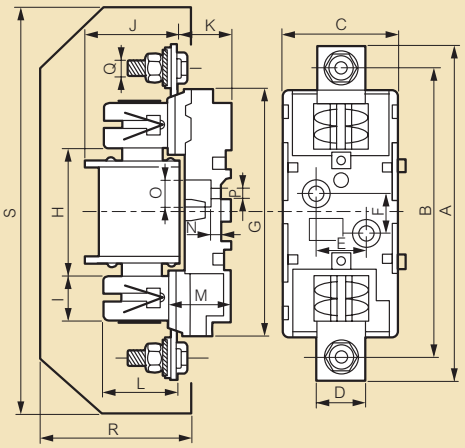


Triple pole Cat.Nos 160 05 - 162 04



Sizes 0 to 4

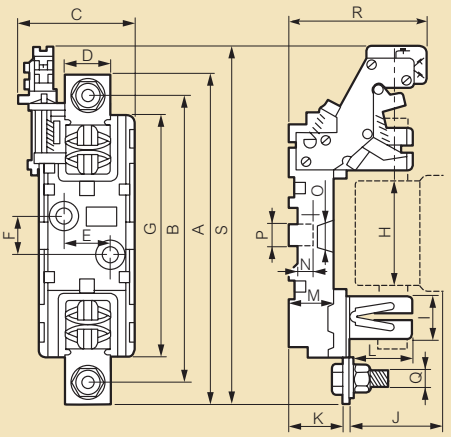
Single pole without micro-switch



Size (mm)	0	1	2	3	4
A	171	200	225	250	320
B	150	175	200	210	270
C	47	59	67	82	114
D	20	25	30	41	51
E	-	30	30	30	45
F	25	25	25	25	30
G	125	150	170	158	220
H	75	80	80	83	98
I	23	28	32	35	50
J	68	68	83	92	125
K	24	35	35	35	40
L	43	46	58	68	93
M	28	38	39	40	40
N	11.5	13.5	13.5	14	14
O	14	20	20	20	28
P	7.5	10.5	10.5	10.5	13
Q	8	10	10	12	16
R	96	107	121	110	138
S	180	224	240	266	336

Size 0 to 4 (continued)

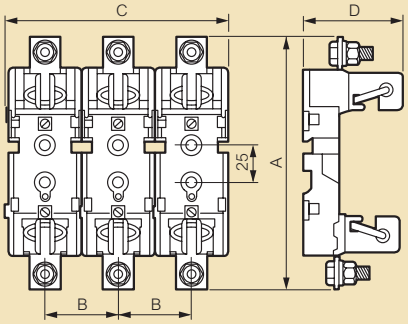
Single pole with micro-switch



Size (mm)	0	1	2	3	4
A	171	200	225	250	320
B	150	175	200	210	270
C	63	72	78	91	114
D	20	25	30	41	51
E	-	30	30	30	45
F	25	25	25	25	30
G	125	150	170	158	220
H	75	80	80	83	98
I	23	28	32	35	50
J	68	68	83	92	125
K	24	35	35	35	40
L	43	46	58	68	93
M	28	38	39	40	40
N	11.5	13.5	13.5	14	14
O	14	20	20	20	28
P	7.5	10.5	10.5	10.5	13
Q	8	10	10	12	16
R	75	85	90	94	105.5
S	198	215	229	242	280

Size 0 - 1 - 2

Triple pole



Size (mm)	0	1	2
A	171	200	225
B	48	62.5	68
C	144	180	204
D	67	81	93

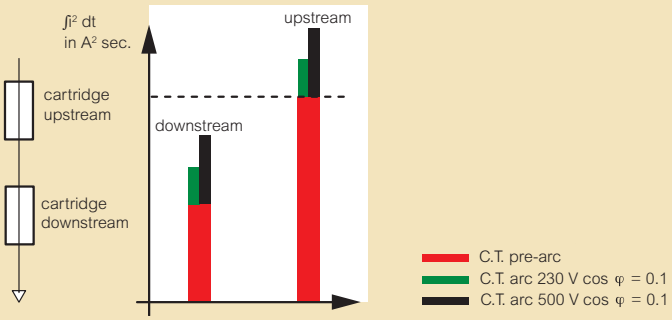
■ How to select a protection system ?

Depending on the type of failure, overload or short-circuit, use 2 series of data

① Overloads: use the operating zone curves of the different protection devices. On the same row, the operating zones should not overlap

② Short-circuits: use the $\int i^2t$ tables. The total $\int i^2t$ of the protection system the furthest downstream must be less than the upstream protection pre-arc $\int i^2t$

■ Example of good selection



■ Selection between cartridge fuses (according to IEC 60269-2-1)

Upstream rating gG cartridge fuse (A)	Downstream maximum rating determined according to class and voltage to obtain selection	
	aM	gG
2		
4	1	1
6	2	2
8	2	2
10	2	4
12	2	4
16	4	6
20	6	10
25	8	16
32	10	20
35	12	20
40	12	25
50	16	32
63	20	40
80	25	50
100	36	63
125	40	80
160	63	100
200	80	125
250	125	160
315	125	200
400	160	250
500	200	315
630	250	400
800	315	500
1000	400	630
1250	500	800

Upstream rating aM cartridge fuse (A)	Downstream maximum rating determined according to class and voltage to obtain selection	
	aM	gG
2	1	1
4	2	4
6	2	6
8	4	8
10	6	10
12	6	12
16	10	16
20	12	20
25	12	25
32	20	32
36	20	32
40	25	32
50	25	40
63	40	50
80	50	63
100	63	80
125	80	100
160	100	125
200	125	160
250	160	160
315	200	200
400	250	250
500	315	315
630	400	400
800	500	500
1000	630	500
1250	800	630

■ Motor protection

Motor three-phase									Cartridges													
230 V			400 V			500 V			10 x 38 ratings		14 x 51 ratings		22 x 58 ratings		S. 00 ratings		S. 0 ratings		S. 1 ratings		S. 2 ratings		S. 3 ratings		S. 4 ratings	
kW	Hp	In A	kW	Hp	In A	kW	Hp	In A	gG	aM	gG	aM	gG	aM	gG	aM	gG	aM	gG	aM	gG	aM	gG	aM	gG	aM
			0.37	0.5	1.03	**0.75**	1	1.5	4	**2**	4	**2**														
0.37	0.5	1.8	**0.75**	1	2	**1.5**	2	2.6	6	**4**	6	**4**														
0.75	1	3.5	**1.5**	2	3.5	**2.2**	3	3.8	8	**4**	8	**4**														
1.1	1.5	4.4	**2.2**	3	5	**3.7**	5	5.9	12	**6**	12	**6**														
1.8	2.5	7	**3**	4	6.6	**4**	5.5	6.5	16	**8**	16	**8**	16													
2.2	3	8.7	**4**	5.5	8.5	**5.5**	7.5	9	20	**10**	20	**10**	20													
3	4	11.5	**5.5**	7.5	11.5	**7.5**	10	12	25	**12**	25	**12**	25		25											
4	5.5	14.3	**7.5**	10	15.5	**11**	15	18.4		**20**(1)	32	**20**	32	**20**	32	**20**										
5.5	7.5	20	**11**	15	22	**15**	20	23		**20**(1)	50	**25**	50	**25**	50	**25**										
7.5	10	27	**15**	20	30	**18.5**	25	28.5				**32**	50	**32**	50	**32**										
10	13.5	35	**18.5**	25	37	**25**	34	39.4				**40**	63	**40**	63	**40**	63									
11	15	39	**22**	30	44	**30**	40	45				**50**(1)	80	**50**	80	**50**	80									
15	20	52	**25**	34	51	**40**	54	60					100	**63**	100	**63**	100	**63**								
18.5	25	64	**30**	40	60	**45**	60	65						**80**	125	**80**	125	**80**	125							
22	30	75	**37**	50	72	**51**	70	75						**80**	125	**80**	125	**80**	125							
25	35	85	**45**	60	85	**63**	109	89						**100**	160	**100**	160	**100**	160							
30	40	103	**55**	75	105	**80**	110	112						**125**(1)		**125**	200	**125**	200	**125**	200					
45	60	147	**75**	100	138	**110**	150	156										**160**	250	**160**	250					
55	75	182	**90**	125	170	**132**	180	187												**200**	315	**200**				
75	100	239	**110**	150	205	**160**	220	220												**250**	400	**250**				
80	160	260	**132**	180	245	**220**	300	310														**315**				
90	125	295	**160**	218	300																	**315**				
110	150	356	**200**	270	370	**250**	340	360														**400**				
132	180	425	**250**	340	475	**335**	450	472																**500**		
160	218	520	**315**	430	584	**450**	610	608																**630**		
220	300	710	**400**	550	750	**500**	680	680																		**800**

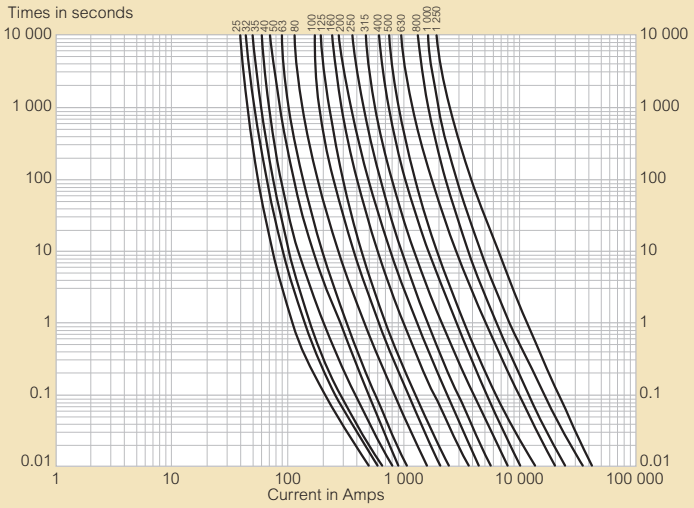
(1) 400 V max.

blade cartridge fuses gG and aM types

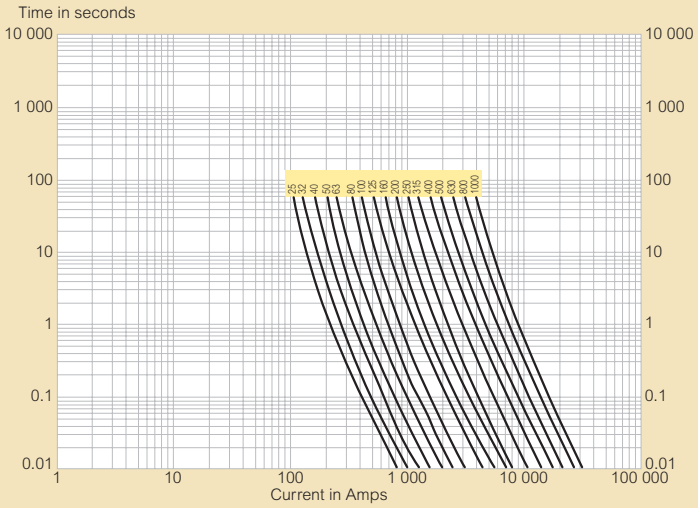
The gG or aM types protect the conductors of electrical circuits in the event of overbad or short-circuit
gG cartridge fuses:
The selectivity ratio is 1.6 instead of 2
The breaking capacity of 120000 A provides full protection in the most critical situations
aM cartridge fuses:
These cartridge fuses must be combined with a low-overload thermal protection device
The breaking capacity of 100000 A from size 10 x 38 upwards provides full protection in the most critical situations
Cylindrical industrial cartridge fuses can be used to protect DC circuits supplied at up to 48 V max.

■ Rupture capacity curves

gG type

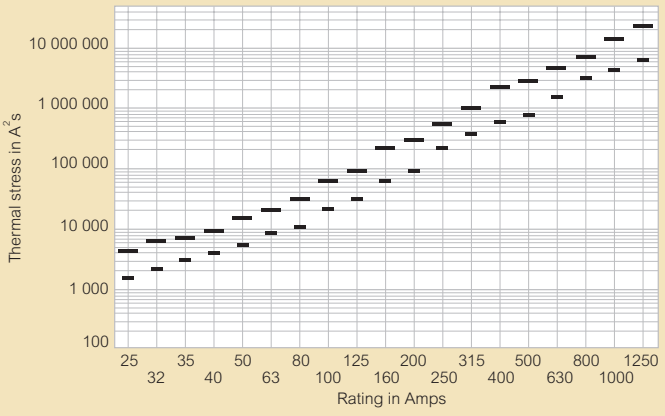


aM type



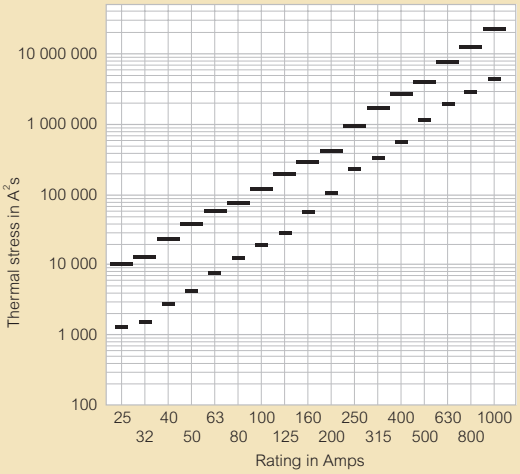
■ Thermal stresses ($\int I^2dt$)

gG type (for 500 V~)

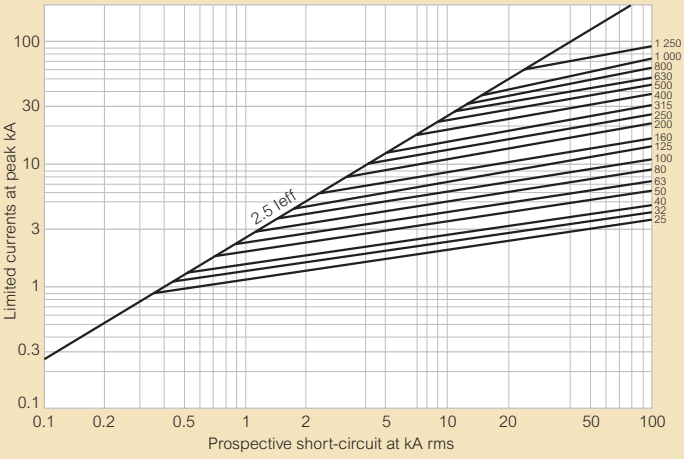


Total maximum thermal stress for critical current
Pre-arc thermal stress for critical current

aM type for 500 V~ - except 1250 A for 400 V



■ gG(1) type limitation curve



(1) For aM cartridge fuses, see technical data sheets in the Legrand e-catalogue

■ Consumption in watts when hot, at rated current

Fuse ratings (A)	Cartridge fuses			
	gG		aM	
	Size 00	Size 0 to 4	Size 00	Size 0 to 4
25	2.1		1.3	
32	3		1.8	
35	3			
40	3.3	4.2	2.5	
50	4.5	5.5	3	
63	6	6.5	3.6	3.9
80	7	8.5	5.2	5.5
100	7.5	9.5	6	6.5
125	13	12	7	8.5
160	15	15		11.5
200		19		13.5
250		23		17
315		24		24
400		33		28
500		36		34
630		45		41
800		51		49
1000		77		70
1250		80		75