

HRC cartridge fuses



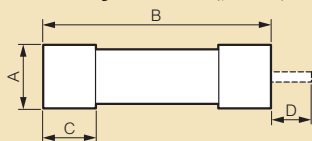
Technical data and dimensions (p. 135 to 137)

Pack		Cat.Nos		Cylindrical type gG			Pack		Cat.Nos		Cylindrical type aM (motor rated)		
				Conform to EN 60269-1, IEC 60269-1, and 2 Veritas approved					Conform to EN 60269-1, IEC 60269-1 and 2 Veritas approved				
				8 x 32 (previously 8.5 x 31.5)					8 x 32 (previously 8.5 x 31.5)				
		Without indicator	With indicator	Rating (Amps)	Voltage ~ (Volts)	Rupture capacity (Amps)			Without indicator	Rating (Amps)	Voltage ~ (Volts)	Rupture capacity (Amps)	
10		123 01		1	400	20000	10		120 04	4	400	20000	
10		123 02	124 02	2				10		120 06			6
10		123 04	124 04	4				10		120 08			8
10		123 06	124 06	6				10		120 10			10
10/100		123 10		10									
10			124 10	10					Without indicator	10 x 38 HRC			
10/100		123 16	124 16	16			10		130 95	0.50			
		Without indicator	With indicator	10 x 38 HRC			10		130 01	1			
10		133 94		0.5	500	100000	10		130 02	2	500	100000	
10		133 01		1				10		130 04			4
10		133 02	134 02	2				10		130 06			6
10		133 04	134 04	4				10		130 08			8
10		133 06	134 06	6				10		130 10			10
10		133 08	134 08	8				10		130 12			12
10		133 10	134 10	10				10		130 16			16
10		133 16	134 16	16				10		130 20 ⁽²⁾			20
10		133 20	134 20	20				10		130 25 ⁽²⁾			25
10		133 25	134 25	25						Without striker			With striker
		Without striker	With striker	14 x 51 HRC			10		141 02	2	500	100000	
10		143 06		6	500	100000	10		141 04	4			
10		143 10		10				10		141 06			6
10		143 16	145 16	16				10		141 08			8
10		143 20	145 20	20				10	140 10	141 10			10
10		143 25	145 25	2				10	140 12	141 12			12
10		143 32	145 32	32				10	140 16	141 16			16
10		143 32	145 32	32				10	140 20	141 20			20
10		143 40	145 40	40				10	140 25	141 25			25
10		143 50 ⁽¹⁾	145 50 ⁽¹⁾	50				10	140 32	141 32			32
		Without striker	With striker	22 x 58 HRC			10		140 40	141 40	40		
10		153 16		16	500	100000	10		140 50 ⁽¹⁾	141 50 ⁽¹⁾	50	400	
10		153 20		20						Without striker	With striker	22 x 58 HRC	
10		153 25		25				10		150 25	151 25	25	
10		153 32		32				10		150 32	151 32	32	
10		153 40		40				10		150 40	151 40	40	
10		153 50	155 50	50				10		150 50	151 50	50	
10		153 63	155 63	63				10		150 63	151 63	63	
10		153 80	155 80	80				10		150 80	151 80	80	
10		153 96	155 96	100				10		150 96	151 95	100	
10		153 97 ⁽¹⁾	155 97 ⁽¹⁾	125			400		10	150 97	151 97	125	400
Neutral links													
							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			

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

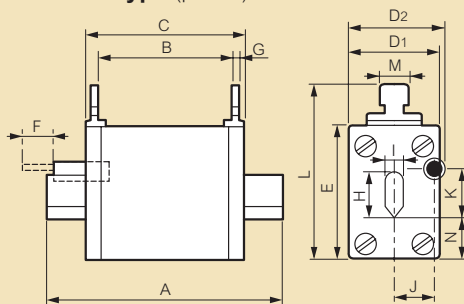
cartridge fuses

■ 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

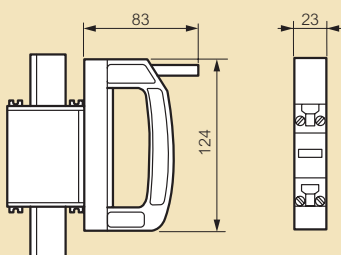
■ Blade type (p. 134)



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

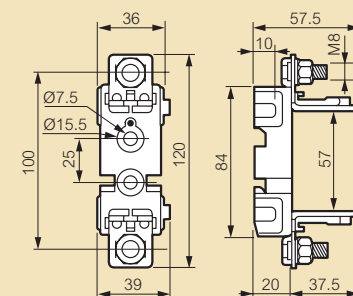
■ Removable handle (p. 133)



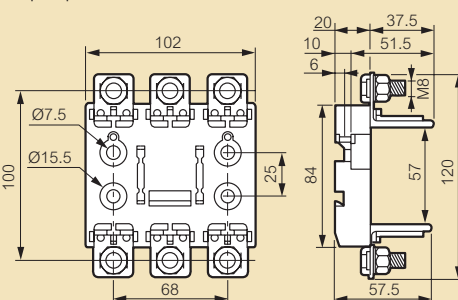
■ Bases for blade type (p. 133)

Size 00

Single pole Cat.Nos 160 01 - 162 00

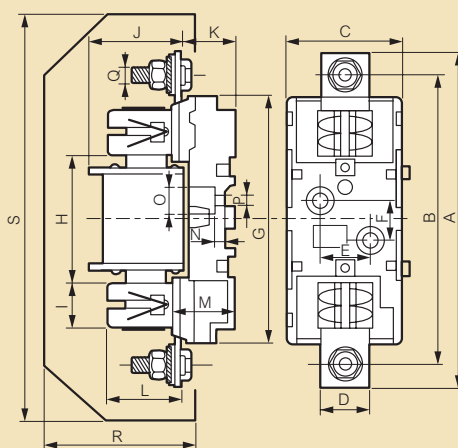


Triple pole Cat.Nos 160 05 - 162 04



Sizes 0 to 4

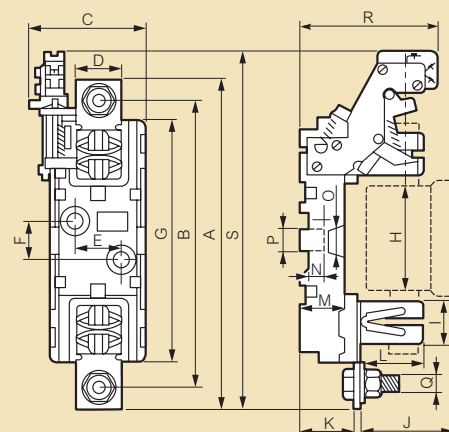
Single pole without micro-switch



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)

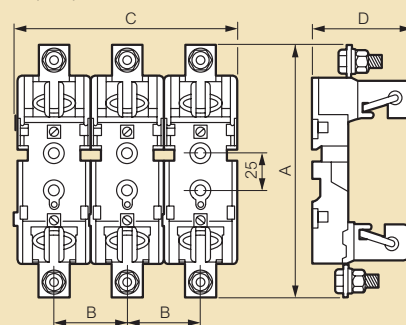
Single pole with micro-switch



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

selection charts

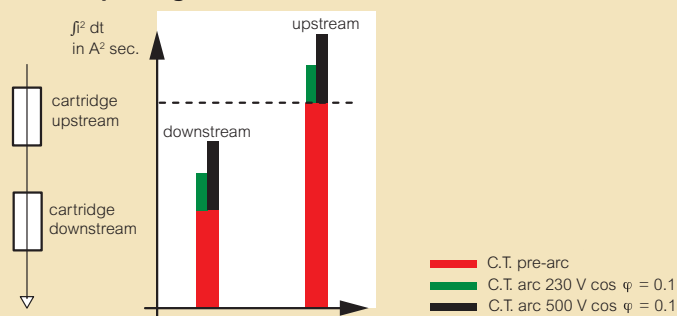
■ How to select a protection system ?

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 I^2t tables. The total I^2t of the protection system the furthest downstream must be less than the upstream protection pre-arc 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	63									
11	15	39	22	30	44	30	40	45			50 ⁽¹⁾	80	50	80	50	80	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																		
160	218	520	315	430	584	450	610	608																		
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

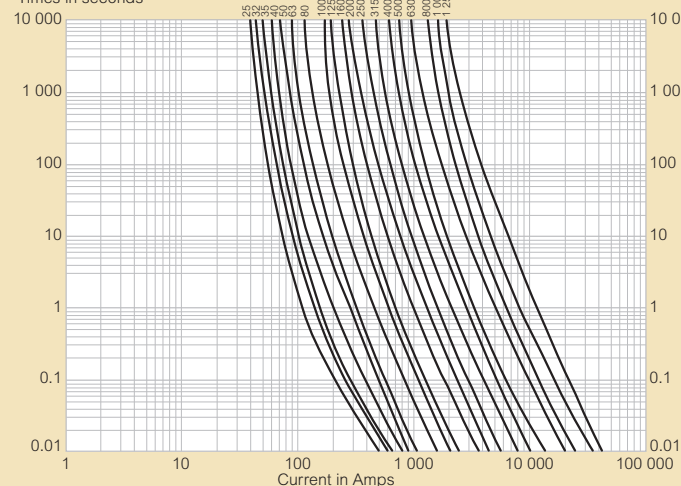
The breaking capacity of 100000 A from size 10 x 38 upwards provides full protection in the most critical situations

Cylindrical industrial cartridge fuses can be used to protect DC circuits supplied at up to 48 V max.

■ Rupture capacity curves

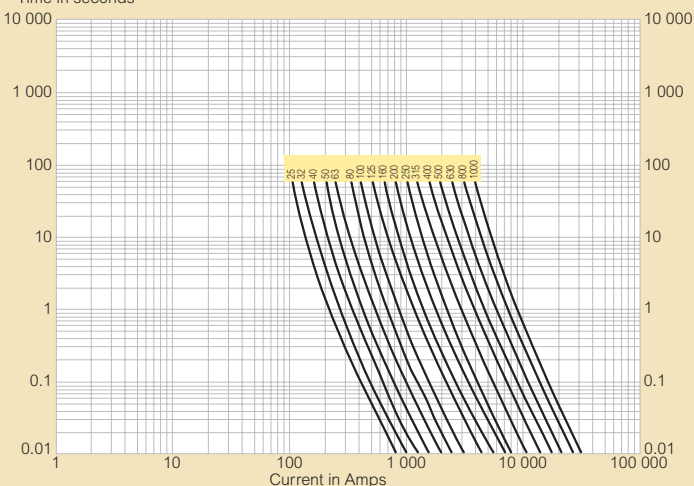
gG type

Times in seconds



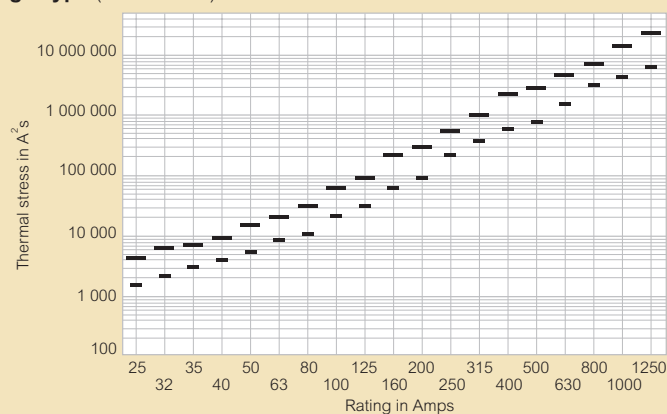
aM type

Time in seconds



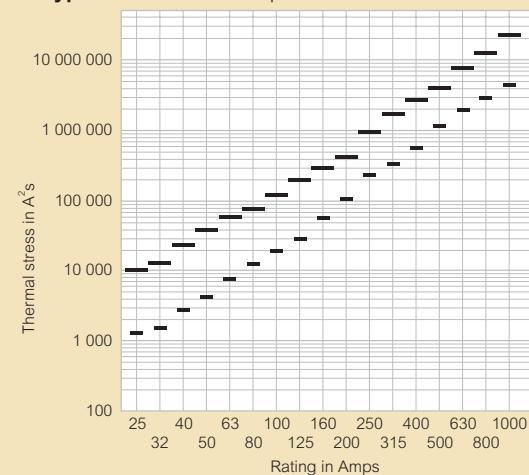
■ Thermal stresses ($\int I^2 dt$)

gG type (for 500 V $\sim$)

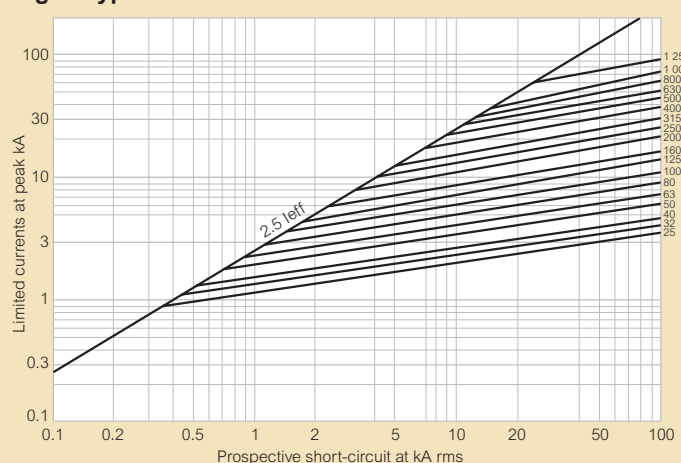


- Total maximum thermal stress for critical current
- Pre-arc thermal stress for critical current

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