

## Industrial blade-type cartridge fuses aM type

Catalogue number(s) : 0 160 25/30/35/40/45/50 ; 0 165 35/40/45/50/55 0 166 35/40/45/50/55 ; 0 170 50/55/60/65 ; 0 171 50/55/60/65 0 175 60/65/70/75 ; 0 176 60/65/70/75 ; 0 180 75/80 ; 0 184 80/85/90 ; 0 163 04 ; 0 168 04 ; 0 173 04 ; 0 178 04 0 181 04 ; 0 185 04

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### 1. DESCRIPTION AND USAGE

Protection of conductors of electrical circuits in the event of overload or short circuit.

The 120,000 A breaking capacity enables complete protection in the most critical situations.

It is mandatory to associate them with a low-overload thermal protection device.

Can be used to protect DC circuits supplied with a voltage of 48 V maximum.

Ceramic housing

### 2. RANGE AND CHARACTERISTICS

#### ■ 2.1 Rated currents

| Current (A) | Size 000       | Size 00        | Size 0         |              |
|-------------|----------------|----------------|----------------|--------------|
|             | With indicator | With indicator | With indicator | With striker |
| 40          | 0 160 25       | -              | -              | -            |
| 50          | -              | 0 16 030       | -              | -            |
| 63          | -              | 0 160 35       | 0 165 35       | 0 166 35     |
| 80          | -              | 0 160 40       | 0 165 40       | 0 166 40     |
| 100         | -              | 0 160 45       | 0 165 45       | 0 166 45     |
| 125         | -              | 0 160 50       | 0 165 50       | 0 166 50     |
| 160         | -              | -              | 0 165 55       | 0 166 55     |

| Current (A) | Size 1         |              | Size 2         |              |
|-------------|----------------|--------------|----------------|--------------|
|             | With indicator | With striker | With indicator | With striker |
| 125         | 0 170 50       | 0 171 50     | -              | -            |
| 160         | 0 170 55       | 0 171 55     | -              | -            |
| 200         | 0 170 60       | 0 171 60     | 0 175 60       | 0 176 60     |
| 250         | 0 170 65       | 0 171 65     | 0 175 65       | 0 176 65     |
| 315         | -              | -            | 0 175 70       | 0 176 70     |
| 400         | -              | -            | 0 175 75       | 0 176 75     |
| 500         | -              | -            | -              | -            |

| Current (A) | Size 3       | Size 4       |
|-------------|--------------|--------------|
|             | With striker | With striker |
| 500         | 0 180 75     | -            |
| 630         | 0 180 80     | 0 184 80     |
| 800         | -            | 0 184 85     |
| 1000        | -            | 0 184 90     |

#### ■ 2.2 Rated voltage

Up to 500 VAC and 48 VDC

#### ■ 2.3 Thermal dissipation of cartridge fuses

Dissipation in watts of heat at rated current

| Cat. No. | Consumption (W) | Cat. No. | Consumption (W) |
|----------|-----------------|----------|-----------------|
| 0 160 25 | 1.8             | 0 171 50 | 9.9             |
| 0 160 30 | 2.3             | 0 171 55 | 12.7            |
| 0 160 35 | 2.9             | 0 171 60 | 16.4            |
| 0 160 40 | 3.6             | 0 171 65 | 21.5            |
| 0 160 45 | 5.2             | 0 175 60 | 11.3            |
| 0 160 50 | 6.4             | 0 175 65 | 16.8            |
| 0 165 35 | 3.4             | 0 175 70 | 23.1            |
| 0 165 40 | 4.9             | 0 175 75 | 29.7            |
| 0 165 45 | 6               | 0 176 60 | 16.4            |
| 0 165 50 | 7.9             | 0 176 65 | 21.5            |
| 0 165 55 | 10.5            | 0 176 70 | 29              |
| 0 166 35 | 4.6             | 0 176 75 | 34              |
| 0 166 40 | 6               | 0 180 75 | 45              |
| 0 166 45 | 7.5             | 0 180 80 | 60              |
| 0 166 50 | 9.5             | 0 184 80 | 50              |
| 0 166 55 | 12              | 0 184 85 | 65              |
| 0 170 50 | 7.5             | 0 184 90 | 80              |
| 0 170 55 | 10.4            | -        | -               |
| 0 170 60 | 14.2            | -        | -               |
| 0 170 65 | 17.5            | -        | -               |

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0 166 35/40/45/50/55 ; 0 170 50/55/60/65 ; 0 171 50/55/60/65 0 175  
60/65/70/75 ; 0 176 60/65/70/75 ; 0 180 75/80 ; 0 184 80/85/90 ; 0 163  
04 ; 0 168 04 ; 0 173 04 ; 0 178 04  
0 181 04 ; 0 185 04

## 2. RANGE AND CHARACTERISTICS (suite)

### ■ 2.4 How to choose a protection system

- Overload : use the performance data for the various protection devices. The curves must not cross one another in the same circuit.
- Short-circuit : use the integral ( $I^2dt$ ) of the thermal stresses. The total integral for the downstream protection device must be lower than the pre-arc integral for the upstream device.

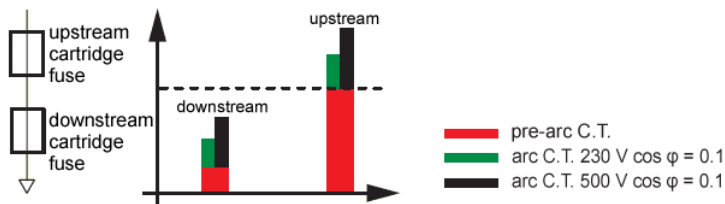
### ■ 2.5 Selectivity check

Selectivity between cartridge fuses

| Upstream<br>gG cartridge fuse<br>rating (A) | Downstream<br>Maximum rating (A) as a function of the usage category<br>and the voltage to obtain selectivity |     |
|---------------------------------------------|---------------------------------------------------------------------------------------------------------------|-----|
|                                             | 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<br>aM cartridge fuse<br>rating (A) | Downstream<br>Maximum rating (A) as a function of the usage category<br>and the voltage to obtain selectivity |     |
|---------------------------------------------|---------------------------------------------------------------------------------------------------------------|-----|
|                                             | 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 |

### ■ 2.6 Example of good protection



### ■ 2.7 Protection of motors

| Motors        |      |      |               |     |      |               |     |      | Cartridge fuses |            |                |            |                |            |                |    |                |    |                |            |
|---------------|------|------|---------------|-----|------|---------------|-----|------|-----------------|------------|----------------|------------|----------------|------------|----------------|----|----------------|----|----------------|------------|
| 230 V 3-phase |      |      | 400 V 3-phase |     |      | 500 V 3-phase |     |      | Size 00 ratings |            | Size 0 ratings |            | Size 1 ratings |            | Size 2 ratings |    | Size 3 ratings |    | Size 4 ratings |            |
| kW            | ch   | In A | kW            | ch  | In A | kW            | ch  | In A | gG              | aM         | gG             | aM         | gG             | aM         | gG             | aM | gG             | aM | gG             | aM         |
|               |      |      | <b>0,37</b>   | 0,5 | 1,03 | <b>0,75</b>   | 1   | 1,5  |                 |            |                |            |                |            |                |    |                |    |                |            |
| <b>0,37</b>   | 0,5  | 1,8  | <b>0,75</b>   | 1   | 2    | <b>1,5</b>    | 2   | 2,6  |                 |            |                |            |                |            |                |    |                |    |                |            |
| <b>0,75</b>   | 1    | 3,5  | <b>1,5</b>    | 2   | 3,5  | <b>2,2</b>    | 3   | 3,8  |                 |            |                |            |                |            |                |    |                |    |                |            |
| <b>1,1</b>    | 1,5  | 4,4  | <b>2,2</b>    | 3   | 5    | <b>3,7</b>    | 5   | 5,9  |                 |            |                |            |                |            |                |    |                |    |                |            |
| <b>1,8</b>    | 2,5  | 7    | <b>3</b>      | 4   | 6,6  | <b>4</b>      | 5,5 | 6,5  |                 |            |                |            |                |            |                |    |                |    |                |            |
| <b>2,2</b>    | 3    | 8,7  | <b>4</b>      | 5,5 | 8,5  | <b>5,5</b>    | 7,5 | 9    |                 |            |                |            |                |            |                |    |                |    |                |            |
| <b>3</b>      | 4    | 11,5 | <b>5,5</b>    | 7,5 | 11,5 | <b>7,5</b>    | 10  | 12   | 25              |            |                |            |                |            |                |    |                |    |                |            |
| <b>4</b>      | 5,5  | 14,3 | <b>7,5</b>    | 10  | 15,5 | <b>11</b>     | 15  | 18,4 | 32              | <b>20</b>  |                |            |                |            |                |    |                |    |                |            |
| <b>5,5</b>    | 7,5  | 20   | <b>11</b>     | 15  | 22   | <b>15</b>     | 20  | 23   | 50              | <b>25</b>  |                |            |                |            |                |    |                |    |                |            |
| <b>7,5</b>    | 10   | 27   | <b>15</b>     | 20  | 30   | <b>18,5</b>   | 25  | 28,5 | 50              | <b>32</b>  |                |            |                |            |                |    |                |    |                |            |
| <b>10</b>     | 13,5 | 35   | <b>18,5</b>   | 25  | 37   | <b>25</b>     | 34  | 39,4 | 63              | <b>40</b>  | 63             |            |                |            |                |    |                |    |                |            |
| <b>11</b>     | 15   | 39   | <b>22</b>     | 30  | 44   | <b>30</b>     | 40  | 45   | 80              | <b>50</b>  | 80             |            |                |            |                |    |                |    |                |            |
| <b>15</b>     | 20   | 52   | <b>25</b>     | 34  | 51   | <b>40</b>     | 54  | 60   | 100             | <b>63</b>  | 100            | <b>63</b>  |                |            |                |    |                |    |                |            |
| <b>18,5</b>   | 25   | 64   | <b>30</b>     | 40  | 60   | <b>45</b>     | 60  | 65   | 125             | <b>80</b>  | 125            | <b>80</b>  | 125            |            |                |    |                |    |                |            |
| <b>22</b>     | 30   | 75   | <b>37</b>     | 50  | 72   | <b>51</b>     | 70  | 75   | 125             | <b>80</b>  | 125            | <b>80</b>  | 125            |            |                |    |                |    |                |            |
| <b>25</b>     | 35   | 85   | <b>45</b>     | 60  | 85   | <b>63</b>     | 109 | 89   | 160             | <b>100</b> | 160            | 100        | 160            |            |                |    |                |    |                |            |
| <b>30</b>     | 40   | 103  | <b>55</b>     | 75  | 105  | <b>80</b>     | 110 | 112  | 125             | 125        | 200            | <b>125</b> | 200            | <b>125</b> | 200            |    |                |    |                |            |
| <b>45</b>     | 60   | 147  | <b>75</b>     | 100 | 138  | <b>110</b>    | 150 | 156  |                 |            | <b>160</b>     | 250        | <b>160</b>     | 250        |                |    |                |    |                |            |
| <b>55</b>     | 75   | 182  | <b>90</b>     | 125 | 170  | <b>132</b>    | 180 | 187  |                 |            |                |            | 200            | <b>315</b> | <b>200</b>     |    |                |    |                |            |
| <b>75</b>     | 100  | 239  | <b>110</b>    | 150 | 205  | <b>160</b>    | 220 | 220  |                 |            |                |            | <b>250</b>     | <b>400</b> | <b>250</b>     |    |                |    |                |            |
| <b>80</b>     | 160  | 260  | <b>132</b>    | 180 | 245  | <b>220</b>    | 300 | 310  |                 |            |                |            |                |            | <b>315</b>     |    |                |    |                |            |
| <b>90</b>     | 125  | 295  | <b>160</b>    | 218 | 300  |               |     |      |                 |            |                |            |                |            | <b>315</b>     |    |                |    |                |            |
| <b>110</b>    | 150  | 356  | <b>200</b>    | 270 | 370  | <b>250</b>    | 340 | 360  |                 |            |                |            |                |            | <b>400</b>     |    |                |    |                |            |
| <b>132</b>    | 180  | 425  | <b>250</b>    | 340 | 475  | <b>335</b>    | 450 | 472  |                 |            |                |            |                |            |                |    |                |    |                |            |
| <b>160</b>    | 218  | 520  | <b>315</b>    | 430 | 584  | <b>450</b>    | 610 | 608  |                 |            |                |            |                |            |                |    |                |    | <b>500</b>     |            |
|               |      |      |               |     |      |               |     |      |                 |            |                |            |                |            |                |    |                |    | <b>630</b>     |            |
| <b>220</b>    | 300  | 710  | <b>400</b>    | 550 | 750  | <b>500</b>    | 680 | 680  |                 |            |                |            |                |            |                |    |                |    |                | <b>800</b> |

(1) 400 V maximum

(1) 400 V maximum

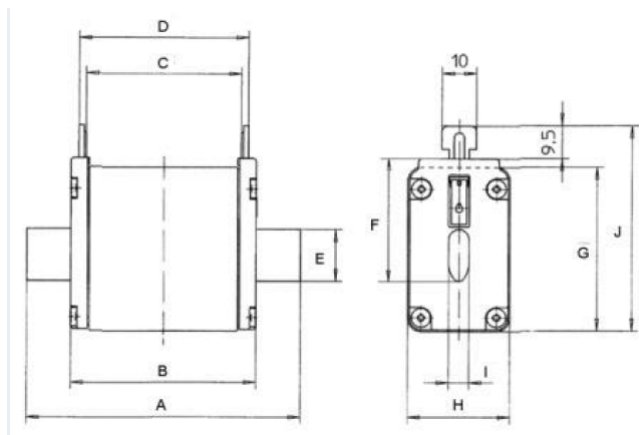
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0 168 04 ; 0 173 04 ; 0 178 04  
0 181 04 ; 0 185 04

## 2. RANGE AND CHARACTERISTICS (suite)

### 2.8 Dimensions

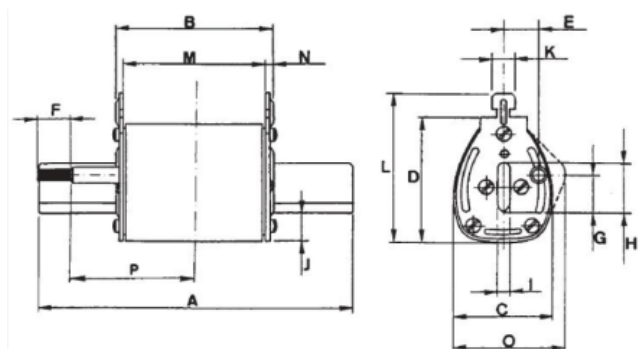
#### 2.8.1 Cartridge fuses with indicator (without striker)



| Size | A            | B          | C            | D            | E (min) |
|------|--------------|------------|--------------|--------------|---------|
| 000  | 78.5 (± 1,5) | 54 (0;-6)  | 45 (± 1,5)   | 49 (± 1,5)   | 15      |
| 00   | 78.5 (± 1,5) | 54 (0;-6)  | 45 (± 1,5)   | 49 (± 1,5)   | 15      |
| 0    | 125 (± 2,5)  | 68 (0;-8)  | 62 (+3;-1,5) | 68 (+1,5;-3) | 15      |
| 1    | 135 (± 2,5)  | 75 (0;-10) | 62 (± 2,5)   | 68 (± 2,5)   | 20      |
| 2    | 150 (± 2,5)  | 75 (0;-10) | 62 (± 2,5)   | 68 (± 2,5)   | 25      |
| 3    | 150 (± 2,5)  | 75 (0;-10) | 62 (± 2,5)   | 68 (± 2,5)   | 32      |

| Size | F          | G (max) | H (max) | I         | J (max) |
|------|------------|---------|---------|-----------|---------|
| 000  | 35 (± 0,8) | 41      | 21      | 6 (± 0,2) | 53      |
| 00   | 35 (± 0,8) | 48      | 30      | 6 (± 0,2) | 60      |
| 0    | 35 (± 0,8) | 48      | 40      | 6 (± 0,2) | 61      |
| 1    | 40 (± 0,8) | 53      | 52      | 6 (± 0,2) | 66      |
| 2    | 48 (± 0,8) | 61      | 60      | 6 (± 0,2) | 74      |
| 3    | 60 (± 0,8) | 76      | 75      | 6 (± 0,2) | 89      |

#### 2.8.2 Cartridge fuses with striker



| Size | A           | B            | C (max) | D (max) | E    |
|------|-------------|--------------|---------|---------|------|
| 0    | 125 (± 2,5) | 68 (+1,5;-3) | 45      | 48      | 14,5 |
| 1    | 135 (± 2,5) | 68 (± 2,5)   | 52      | 53      | 16   |
| 2    | 150 (± 2,5) | 68 (± 2,5)   | 60      | 61      | 19   |
| 3    | 150 (± 2,5) | 68 (± 2,5)   | 75      | 76      | 24   |
| 4    | 200 (± 3)   | 68 (± 2,5)   | 105     | 110     | 27,5 |

| Size | F    | G    | H  | I (± 2) | J (max) | K (0;-0,3) | L (max) |
|------|------|------|----|---------|---------|------------|---------|
| 0    | 15,5 | 14   | 15 | 6       | 14      | 10         | 61      |
| 1    | 15,5 | 14,5 | 20 | 6       | 14      | 10         | 66      |
| 2    | 15,5 | 14,5 | 26 | 6       | 15      | 10         | 74      |
| 3    | 15,5 | 14,5 | 32 | 6       | 16      | 10         | 89      |
| 4    | 16,5 | 14,5 | 49 | 8       | 20      | 10         | 123     |

| Size | M            | N               | O    | P  |
|------|--------------|-----------------|------|----|
| 0    | 62 (+3;-1,5) | 2 (+1,5;-0,5)   | 41,5 | 47 |
| 1    | 62 (± 2,5)   | 2,5 (+1,5;-0,5) | 45   | 52 |
| 2    | 62 (± 2,5)   | 2,5 (+1,5;-0,5) | NA   | 60 |
| 3    | 62 (± 2,5)   | 2,5 (+1,5;-0,5) | NA   | 60 |
| 4    | 62 (± 2,5)   | 2,5 (+1,5;-0,5) | NA   | 72 |

## 3. COMPLIANCE

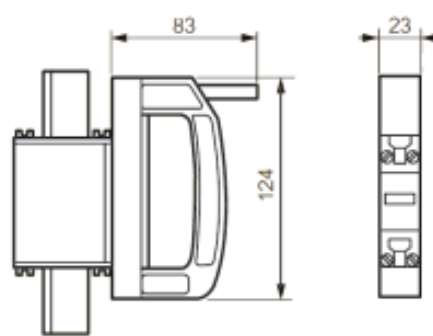
Comply with IEC 60269-1, 2 and 2-1 and VDE 0636-21

## 4. ACCESSORIES

### 4.1 Bases

| Size   | Current (A)  | 1 pole               |                 | 3 poles (bare)                          |
|--------|--------------|----------------------|-----------------|-----------------------------------------|
|        |              | Bare                 | With miniswitch |                                         |
| 000/00 | 100A<br>160A | 0 199 42<br>0 199 44 | -               | 0 199 43<br>0 199 45                    |
| 0      | 160          | 0 199 46             | 0 199 47        | To be made up with 1 Pole + accessories |
| 1      | 250          | 0 199 48             | 0 199 49        |                                         |
| 2      | 400          | 0 199 50             | 0 199 51        |                                         |
| 3      | 630          |                      | 0 199 52        |                                         |
| 4      | 1250         |                      | 0 199 53        |                                         |

### 4.2 Handle cat. no.: 0 199 02

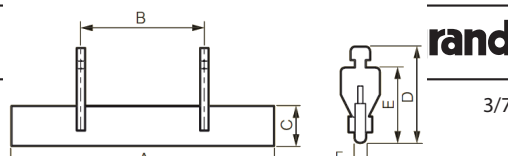
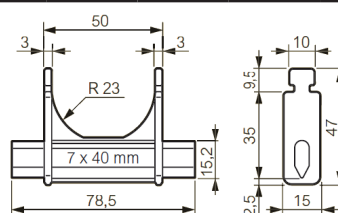


### 4.3 Neutrals

#### - Rated current

| Cat. No. | 0 163 04 | 0 168 04 | 0 173 04 | 0 178 04 | 0 181 04 | 0 185 04 |
|----------|----------|----------|----------|----------|----------|----------|
| Size     | 00       | 0        | 1        | 2        | 3        | 4        |
| In (A)   | 125      | 160      | 250      | 400      | 630      | 1000     |

#### - Size 00



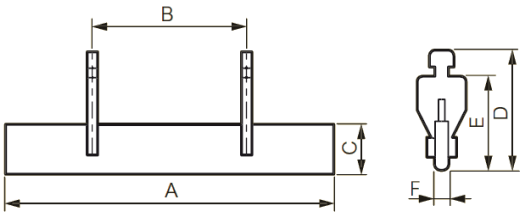
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0 181 04 ; 0 185 04

4. ACCESSORIES (suite)

- Size 0 à 4

| Cat. No. | 0 168 04 | 0 173 04 | 0 178 04 | 0 181 04 | 0 185 04 |
|----------|----------|----------|----------|----------|----------|
| Size     | 0        | 1        | 2        | 3        | 4        |
| A        | 125      | 135      | 150      | 150      | 200      |
| B        | 65       | 65       | 65       | 65       | 65       |
| C        | 15       | 20       | 26       | 38       | 50       |
| D        | 45       | 50       | 58       | 66,5     | 78       |
| E        | 35       | 40       | 48       | 56,5     | 68       |
| F        | 6        | 6        | 6        | 6        | 6        |



4.4 Kits of insulating partition and joining

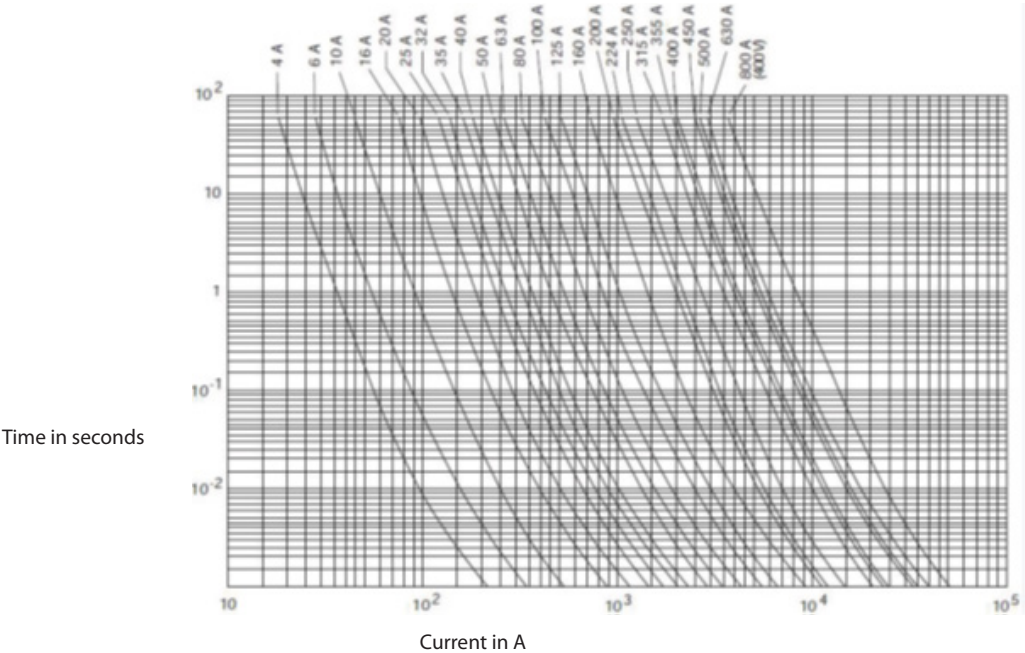
| Base   | Cat. No. |
|--------|----------|
| 000/00 | 0 199 30 |
| 0      | 0 199 31 |
| 1/2    | 0 199 32 |
| 3      | 0 199 33 |
| 4      | 0 199 19 |

4.5 Kits of protection

| Base   | Cat. No. 1P | Cat. No. 3P |
|--------|-------------|-------------|
| 000/00 | 0 199 35    | 0 199 39    |
| 0      | 0 199 36    | -           |
| 1      | 0 199 37    | -           |
| 2      | 0 199 38    | -           |

5. CURVES

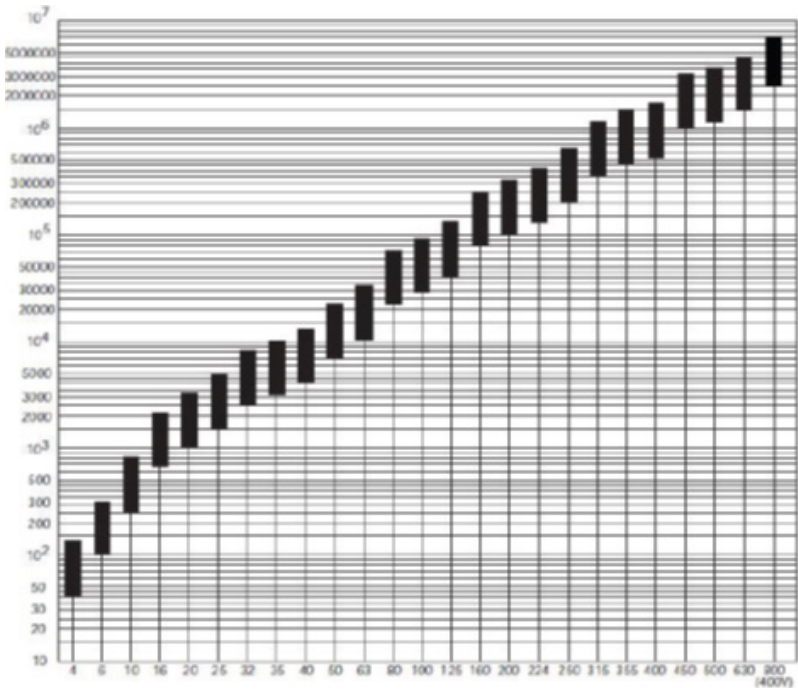
5.1 Cartridge fuses with indicator (without striker)  
Fusion curve



5. CURVES (suite)

Thermal stresses

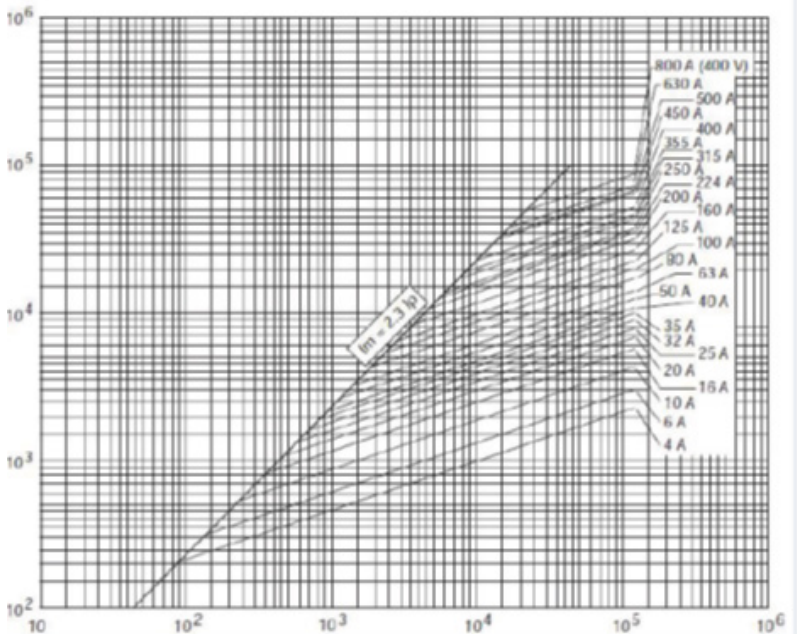
Thermal stresses  
in A<sup>2</sup>s



Rating in A

Limitation curve

Limited currents in A

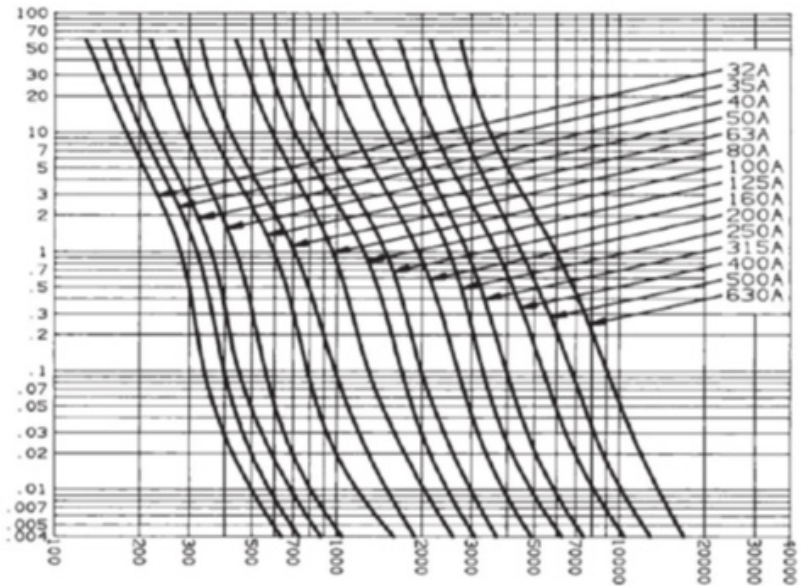


Presumed short circuit in A

5. CURVES (suite)

■ 5.2 Cartridge fuses with striker  
Fusion curve

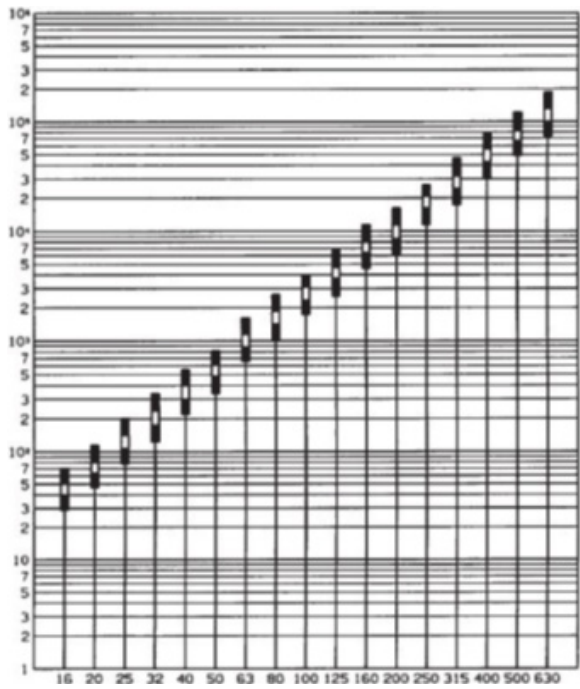
Time in seconds



Current in A

Thermal stresses

Thermal stresses in A²s



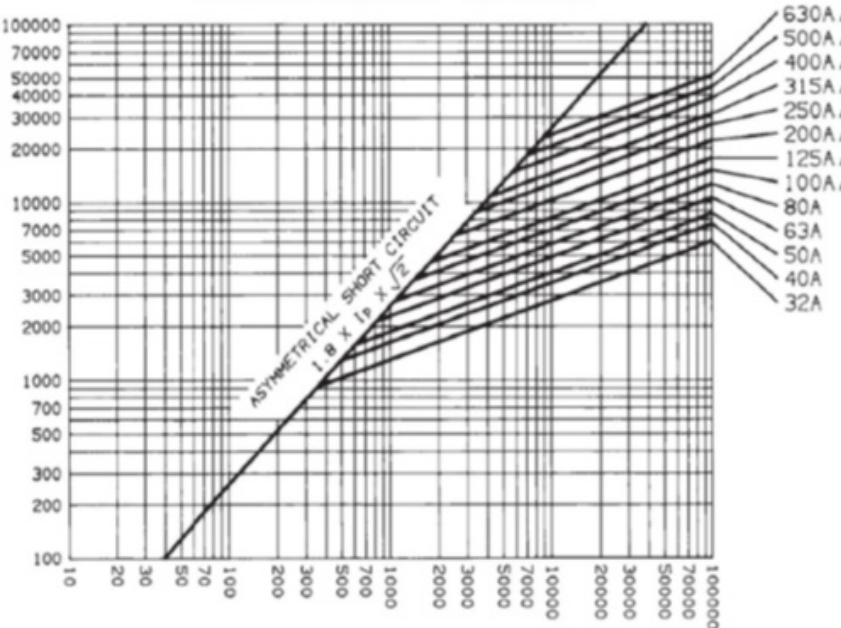
Rating in A



5. CURVES (suite)

Limitation curve

Limited currents in A



Presumed short circuit in A

# Industrial blade-type cartridge fuses gG type

## Catalogue number(s):

0 163 04/12/18/20/22/25/30/35/40/45/50/55, 0 168 04/35/40/45/50/55/60,  
0 169 35/40/45/50/55, 0 173 04/50/55/60/65, 0 174 50/55/60/65, 0 175 60/65/70/75,  
0 178 04, 0 179 60/65/70/75, 0 181 04/75/80, 0 185 04/80/85/90/95

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| 2. Range and characteristics..... | 1 |
| 3. Compliance .....               | 3 |
| 4. Accessories.....               | 3 |
| 5. Curves.....                    | 4 |

## 1. DESCRIPTION AND USAGE

Protection of conductors of electrical circuits in the event of overload or short circuit.

The discrimination ratio is 1.6 instead of 2.

The 120,000 A breaking capacity enables complete protection in the most critical situations.

Can be used to protect DC circuits supplied with a voltage of 48 V maximum.

Ceramic housing.

## 2. RANGE AND CHARACTERISTICS

### 2.1 Rated currents:

| Current<br>(Amps) | Size 00           |                 | Size 0            |                 | Size 1            |                 |
|-------------------|-------------------|-----------------|-------------------|-----------------|-------------------|-----------------|
|                   | With<br>indicator | With<br>striker | With<br>indicator | With<br>striker | With<br>indicator | With<br>striker |
| 16                | 0 163 12          |                 |                   |                 |                   |                 |
| 25                | 0 163 18          |                 |                   |                 |                   |                 |
| 32                | 0 163 20          |                 |                   |                 |                   |                 |
| 35                | 0 163 22          |                 |                   |                 |                   |                 |
| 40                | 0 163 25          |                 |                   |                 |                   |                 |
| 50                | 0 163 30          |                 |                   |                 |                   |                 |
| 63                | 0 163 35          |                 | 0 168 35          | 0 169 35        |                   |                 |
| 80                | 0 163 40          |                 | 0 168 40          | 0 169 40        |                   |                 |
| 100               | 0 163 45          |                 | 0 168 45          | 0 169 45        |                   |                 |
| 125               | 0 163 50          |                 | 0 168 50          | 0 169 50        | 0 173 50          | 0 174 50        |
| 160               | 0 163 55          |                 | 0 168 55          | 0 169 55        | 0 173 55          | 0 174 55        |
| 200               |                   |                 | 0 168 60<br>(1)   |                 | 0 173 60          | 0 174 60        |
| 250               |                   |                 |                   |                 | 0 173 65          | 0 174 65        |

| Current<br>(Amps) | Size 2            |                 | Size 3            |                 | Size 4            |                 |
|-------------------|-------------------|-----------------|-------------------|-----------------|-------------------|-----------------|
|                   | With<br>indicator | With<br>striker | With<br>indicator | With<br>striker | With<br>indicator | With<br>striker |
| 200               | 0 178 60          | 0 179 60        |                   |                 |                   |                 |
| 250               | 0 178 65          | 0 179 65        |                   |                 |                   |                 |
| 315               | 0 178 70          | 0 179 70        |                   |                 |                   |                 |
| 400               | 0 178 75          | 0 179 75        |                   |                 |                   |                 |
| 500               |                   |                 |                   | 0 181 75        |                   |                 |
| 630               |                   |                 |                   | 0 181 80        |                   | 0 185 80        |
| 800               |                   |                 |                   |                 |                   | 0 185 85        |
| 1000              |                   |                 |                   |                 |                   | 0 185 90        |
| 1250              |                   |                 |                   |                 |                   | 0 185 95<br>(1) |

(1) non-standardised over-calibration

### 2.2 Rated voltage :

Up to 500 VAC and 48 VDC

## 2.3 Thermal dissipation of the cartridge fuses

Dissipation in watts of heat at rated current

| Cat. No. | Consumption in W |
|----------|------------------|
| 0 163 12 | 1.8              |
| 0 163 18 | 2.4              |
| 0 163 20 | 3.1              |
| 0 163 22 | 3                |
| 0 163 25 | 3.7              |
| 0 163 30 | 4.1              |
| 0 163 35 | 5.4              |
| 0 163 40 | 6.5              |
| 0 163 45 | 7.5              |
| 0 163 50 | 10               |
| 0 163 55 | 12.3             |
| 0 168 35 | 6.6              |
| 0 168 40 | 8                |
| 0 168 45 | 9.4              |
| 0 168 50 | 11.8             |
| 0 168 55 | 14.6             |
| 0 168 60 | 18.1             |
| 0 169 35 | 6.2              |
| 0 169 40 | 7.5              |
| 0 169 45 | 8.5              |
| 0 169 50 | 10.7             |
| 0 169 55 | 13.5             |
| 0 173 50 | 11.8             |
| 0 173 55 | 14.6             |
| 0 173 60 | 18               |
| 0 173 65 | 20               |
| 0 174 50 | 9.6              |
| 0 174 55 | 11.9             |
| 0 174 60 | 14.9             |
| 0 174 65 | 18.7             |
| 0 178 60 | 18.5             |
| 0 178 65 | 20.6             |
| 0 178 70 | 25               |
| 0 178 75 | 28.5             |
| 0 179 60 | 14.5             |
| 0 179 65 | 17.5             |
| 0 179 70 | 23               |
| 0 179 75 | 29               |
| 0 181 75 | 39               |
| 0 181 80 | 47               |
| 0 185 80 | 46.6             |
| 0 185 85 | 70               |
| 0 185 90 | 83.3             |
| 0 185 95 | 110              |



# Industrial blade-type cartridge fuses gG type

Catalogue number(s):

0 163 04/12/18/20/22/25/30/35/40/45/50/55, 0 168 04/35/40/45/50/55/60,  
0 169 35/40/45/50/55, 0 173 04/50/55/60/65, 0 174 50/55/60/65, 0 175 60/65/70/75,  
0 178 04, 0 179 60/65/70/75, 0 181 04/75/80, 0 185 04/80/85/90/95

## How to choose a protection system

- Overload: use the performance data for the various protection devices. The curves must not cross one another in the same circuit.

- Short-circuit: use the integral ( $\int I^2 dt$ ) of the thermal stresses. The total integral for the downstream protection device must be lower than the pre-arc integral for the upstream device.

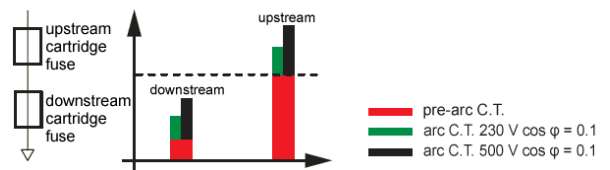
## Selectivity check

Selectivity between cartridge fuses

| Upstream<br>gG cartridge fuse<br>rating (A) | Downstream<br>Maximum rating (A) as a function of the usage category<br>and the voltage to obtain selectivity |     |
|---------------------------------------------|---------------------------------------------------------------------------------------------------------------|-----|
|                                             | 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<br>aM cartridge fuse<br>rating (A) | Downstream<br>Maximum rating (A) as a function of the usage category<br>and the voltage to obtain selectivity |     |
|---------------------------------------------|---------------------------------------------------------------------------------------------------------------|-----|
|                                             | 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 |

## Example of good protection



## Protection of motors

| Motors        |      |      |               |     |      |               |     |      | Cartridge fuses |     |                |     |                |     |                |     |                |     |                |     |
|---------------|------|------|---------------|-----|------|---------------|-----|------|-----------------|-----|----------------|-----|----------------|-----|----------------|-----|----------------|-----|----------------|-----|
| 230 V 3-phase |      |      | 400 V 3-phase |     |      | 500 V 3-phase |     |      | Size 00 ratings |     | Size 0 ratings |     | Size 1 ratings |     | Size 2 ratings |     | Size 3 ratings |     | Size 4 ratings |     |
| kW            | ch   | In A | kW            | ch  | In A | kW            | ch  | In A | gG              | aM  | gG             | aM  | gG             | aM  | gG             | aM  | gG             | aM  | gG             | aM  |
| 0,37          | 0,5  | 1,8  | 0,75          | 1   | 2    | 1,5           | 2   | 2,6  |                 |     |                |     |                |     |                |     |                |     |                |     |
| 0,75          | 1    | 3,5  | 1,5           | 2   | 3,5  | 2,2           | 3   | 3,8  |                 |     |                |     |                |     |                |     |                |     |                |     |
| 1,1           | 1,5  | 4,4  | 2,2           | 3   | 5    | 3,7           | 5   | 5,9  |                 |     |                |     |                |     |                |     |                |     |                |     |
| 1,8           | 2,5  | 7    | 3             | 4   | 6,6  | 4             | 5,5 | 6,5  |                 |     |                |     |                |     |                |     |                |     |                |     |
| 2,2           | 3    | 8,7  | 4             | 5,5 | 8,5  | 5,5           | 7,5 | 9    |                 |     |                |     |                |     |                |     |                |     |                |     |
| 3             | 4    | 11,5 | 5,5           | 7,5 | 11,5 | 7,5           | 10  | 12   | 25              |     |                |     |                |     |                |     |                |     |                |     |
| 4             | 5,5  | 14,3 | 7,5           | 10  | 15,5 | 11            | 15  | 18,4 | 32              | 20  |                |     |                |     |                |     |                |     |                |     |
| 5,5           | 7,5  | 20   | 11            | 15  | 22   | 15            | 20  | 23   | 50              | 25  |                |     |                |     |                |     |                |     |                |     |
| 7,5           | 10   | 27   | 15            | 20  | 30   | 18,5          | 25  | 28,5 | 50              | 32  |                |     |                |     |                |     |                |     |                |     |
| 10            | 13,5 | 35   | 18,5          | 25  | 37   | 25            | 34  | 39,4 | 63              | 40  | 63             |     |                |     |                |     |                |     |                |     |
| 11            | 15   | 39   | 22            | 30  | 44   | 30            | 40  | 45   | 80              | 50  | 80             |     |                |     |                |     |                |     |                |     |
| 15            | 20   | 52   | 25            | 34  | 51   | 40            | 54  | 60   | 100             | 63  | 100            | 63  |                |     |                |     |                |     |                |     |
| 18,5          | 25   | 64   | 30            | 40  | 60   | 45            | 60  | 65   | 125             | 80  | 125            | 80  | 125            |     |                |     |                |     |                |     |
| 22            | 30   | 75   | 37            | 50  | 72   | 51            | 70  | 75   | 125             | 80  | 125            | 80  | 125            |     |                |     |                |     |                |     |
| 25            | 35   | 85   | 45            | 60  | 85   | 63            | 109 | 89   | 160             | 100 | 160            | 100 | 160            |     |                |     |                |     |                |     |
| 30            | 40   | 103  | 55            | 75  | 105  | 80            | 110 | 112  |                 | 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 maximum

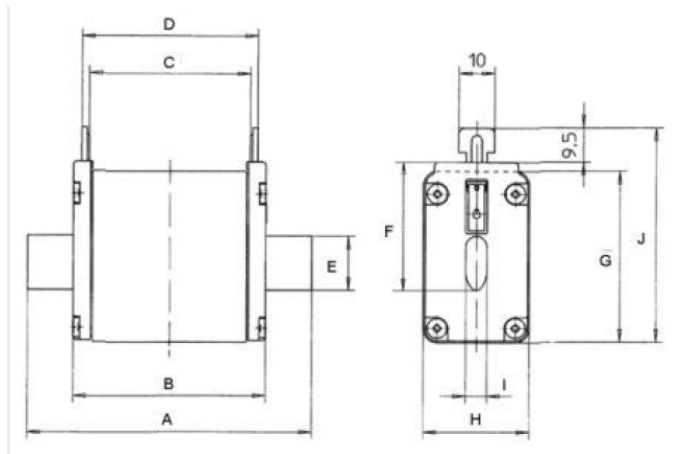
# Industrial blade-type cartridge fuses gG type

Catalogue number(s):

0 163 04/12/18/20/22/25/30/35/40/45/50/55, 0 168 04/35/40/45/50/55/60,  
0 169 35/40/45/50/55, 0 173 04/50/55/60/65, 0 174 50/55/60/65, 0 175 60/65/70/75,  
0 178 04, 0 179 60/65/70/75, 0 181 04/75/80, 0 185 04/80/85/90/95

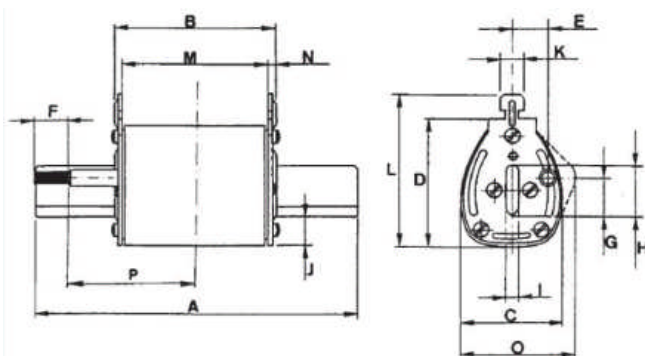
## 2.4. Dimensions

### 2.4.1 Cartridge fuses with indicator (without striker):



| Size | A   | B    | C  | D  | E  | F    | G    | H  | I | J    |
|------|-----|------|----|----|----|------|------|----|---|------|
| 00   | 79  | 53.8 | 45 | 49 | 15 | 35.8 | 40.5 | 21 | 6 | 47.8 |
| 0    | 125 | 68   | 64 | 68 | 15 | 35.8 | 44   | 30 | 6 | 47.8 |
| 1    | 135 | 75   | 64 | 68 | 20 | 40   | 47   | 39 | 6 | 52   |
| 2    | 150 | 75   | 64 | 68 | 26 | 48   | 47   | 39 | 6 | 60   |

### 2.4.2 Cartridge fuses with striker:



| Size | A     | B  | C  | D    | E    | F    | G    | H  |
|------|-------|----|----|------|------|------|------|----|
| 0    | 124,5 | 66 | 39 | 49   | 14,5 | 15,5 | 14   | 15 |
| 1    | 134,5 | 67 | 40 | 55   | 16   | 15,5 | 14,5 | 20 |
| 2    | 150   | 67 | 56 | 62,5 | 19   | 15,5 | 14,5 | 26 |
| 3    | 150   | 67 | 69 | 76   | 24   | 15,5 | 14,5 | 32 |
| 4    | 200   | 68 | 90 | 108  | 27   | 16,5 | 14,5 | 49 |

| Size | I | J  | K  | L    | M  | N | O    | P  |
|------|---|----|----|------|----|---|------|----|
| 0    | 6 | 14 | 10 | 59   | 60 | 3 | 41,5 | 47 |
| 1    | 6 | 14 | 10 | 65   | 61 | 3 | 45   | 52 |
| 2    | 6 | 15 | 10 | 72,5 | 61 | 3 | -    | 60 |
| 3    | 6 | 16 | 10 | 86   | 61 | 3 | -    | 60 |
| 4    | 8 | 20 | 10 | 118  | 62 | 3 | -    | 72 |

## 3. COMPLIANCE

Comply with IEC 60269-1,2 and 2-1 and VDE 0636-21

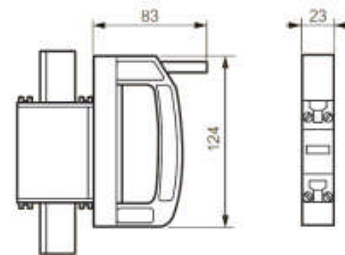
## 4. ACCESSORIES

### • Bases

| Size | Current (A)   | 1 pole               |                 | 3 poles                                       |
|------|---------------|----------------------|-----------------|-----------------------------------------------|
|      |               | Bare                 | With miniswitch | Bare                                          |
| 00   | 100A<br>160 A | 0 199 42<br>0 199 44 | -               | 0 199 43<br>0 199 45                          |
| 0    | 160           | 0 199 46             | 0 199 47        | To be made up<br>with 1 Pole +<br>accessories |
| 1    | 250           | 0 199 48             | 0 199 49        |                                               |
| 2    | 400           | 0 199 50             | 0 199 51        |                                               |
| 3    | 630           | -                    | 0 199 52        |                                               |
| 4    | 1250          | -                    | 0 199 53        |                                               |

### • Handle cat. no.: 0 199 02

(in mm)

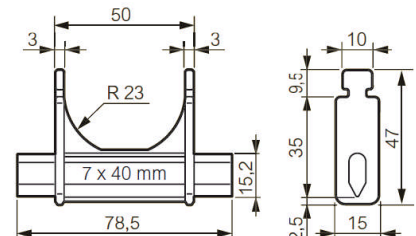


### • Neutrals

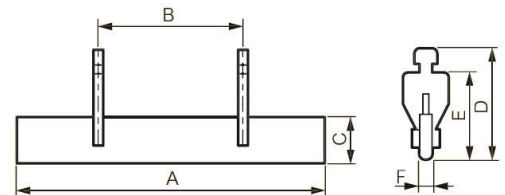
Rated current:

| Cat. No. | 0 163 04 | 0 168 04 | 0 173 04 | 0 178 04 | 0 181 04 | 0 185 04 |
|----------|----------|----------|----------|----------|----------|----------|
| Size     | 00       | 0        | 1        | 2        | 3        | 4        |
| In (A)   | 125      | 160      | 250      | 400      | 630      | 1000     |

Size 00 cat. no.: 0 163 04



Sizes 0 to 4:



Dimensions in mm:

| Cat. No. | 0 168 04 | 0 173 04 | 0 178 04 | 0 181 04 | 0 185 04 |
|----------|----------|----------|----------|----------|----------|
| Size     | 0        | 1        | 2        | 3        | 4        |
| A        | 125      | 135      | 150      | 150      | 200      |
| B        | 65       | 65       | 65       | 65       | 65       |
| C        | 15       | 20       | 26       | 38       | 50       |
| D        | 45       | 50       | 58       | 66.5     | 78       |
| E        | 35       | 40       | 48       | 56.5     | 68       |
| F        | 6        | 6        | 6        | 6        | 6        |

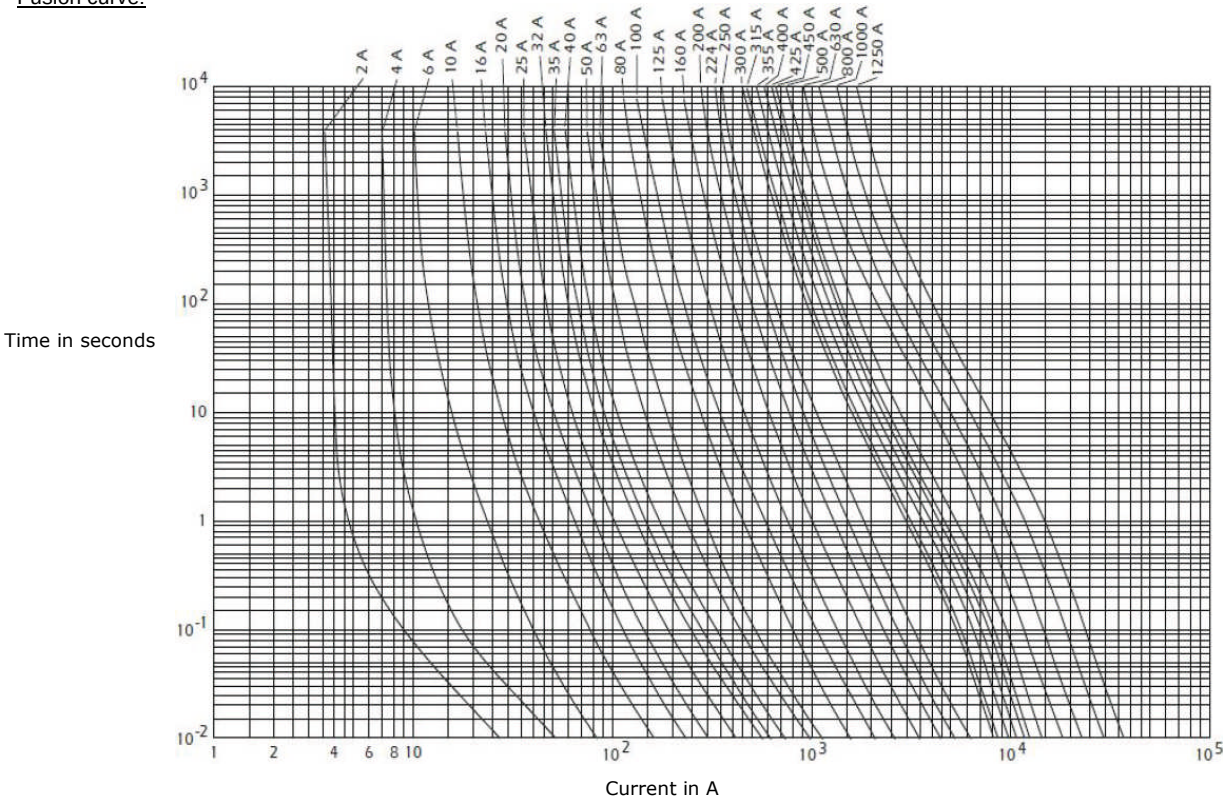
# Industrial blade-type cartridge fuses gG type

Catalogue number(s):  
0 163 04/12/18/20/22/25/30/35/40/45/50/55, 0 168 04/35/40/45/50/55/60,  
0 169 35/40/45/50/55, 0 173 04/50/55/60/65, 0 174 50/55/60/65,  
0 175 60/65/70/75, 0 178 04, 0 179 60/65/70/75, 0 181 04/75/80,  
0 185 04/80/85/90/95

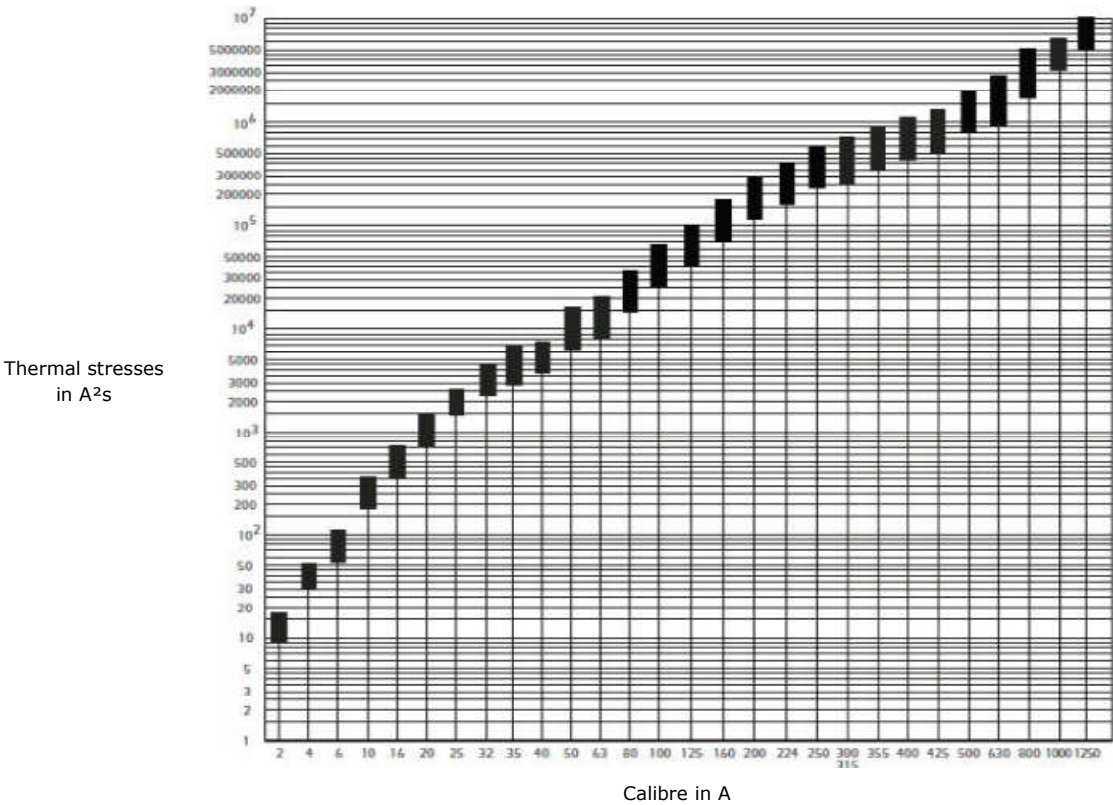
## 5. CURVES

### 5.1: Cartridge fuses with indicator (without striker):

Fusion curve:



Thermal stresses:





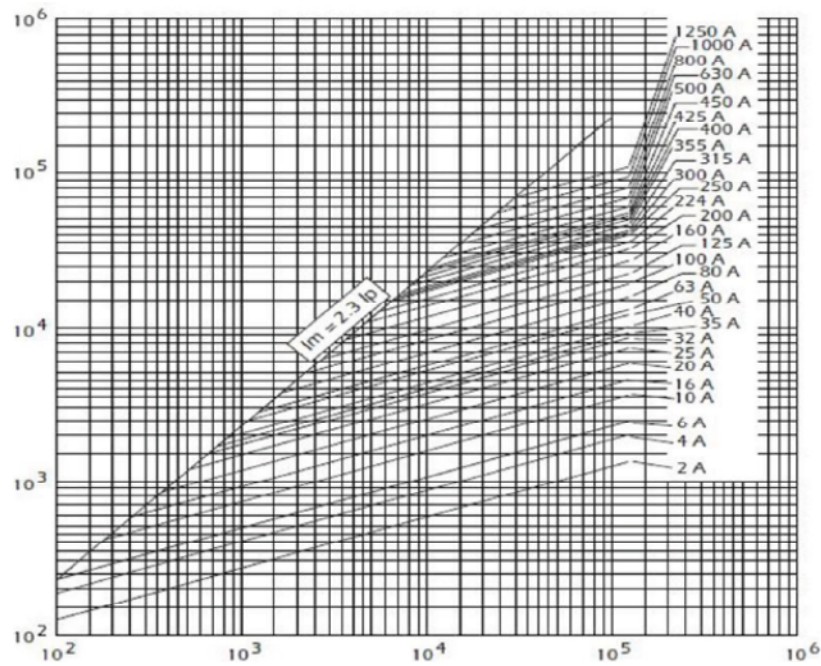
# Industrial blade-type cartridge fuses gG type

Catalogue number(s):

0 163 04/12/18/20/22/25/30/35/40/45/50/55, 0 168 04/35/40/45/50/55/60,  
0 169 35/40/45/50/55, 0 173 04/50/55/60/65, 0 174 50/55/60/65,  
0 175 60/65/70/75, 0 178 04, 0 179 60/65/70/75, 0 181 04/75/80,  
0 185 04/80/85/90/95

Limitation curve:

Limited currents in A

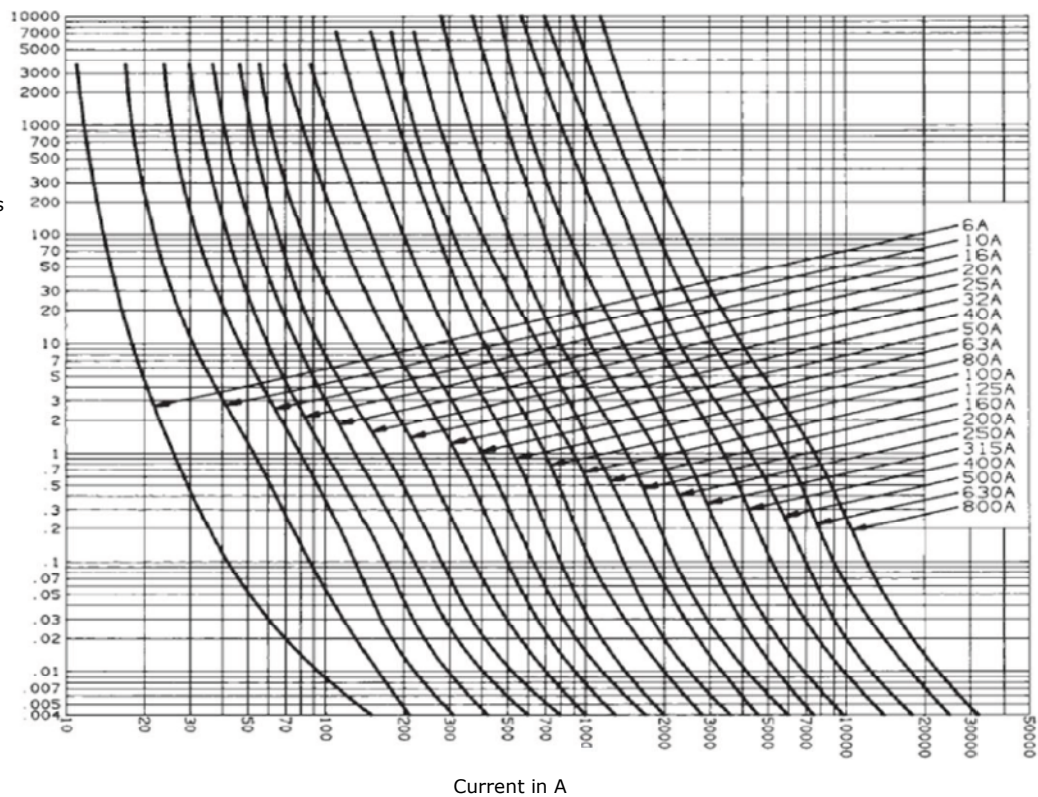


Presumed short circuit in A

## 5.2: Cartridge fuses with striker:

Fusion curve:

Time in seconds



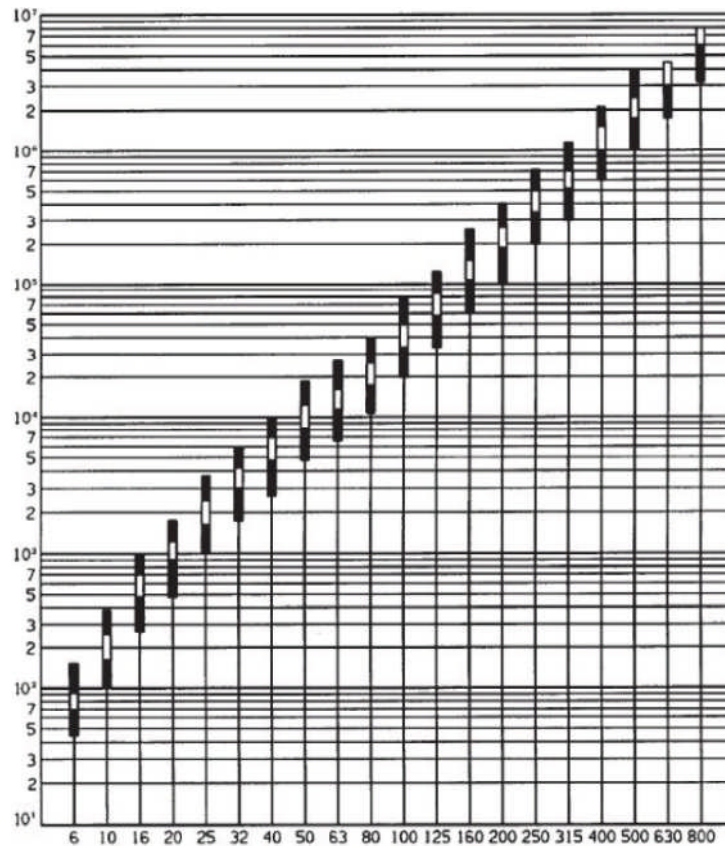
Current in A

# Industrial blade-type cartridge fuses gG type

Catalogue number(s):  
0 163 04/12/18/20/22/25/30/35/40/45/50/55, 0 168 04/35/40/45/50/55/60,  
0 169 35/40/45/50/55, 0 173 04/50/55/60/65, 0 174 50/55/60/65,  
0 175 60/65/70/75, 0 178 04, 0 179 60/65/70/75, 0 181 04/75/80,  
0 185 04/80/85/90/95

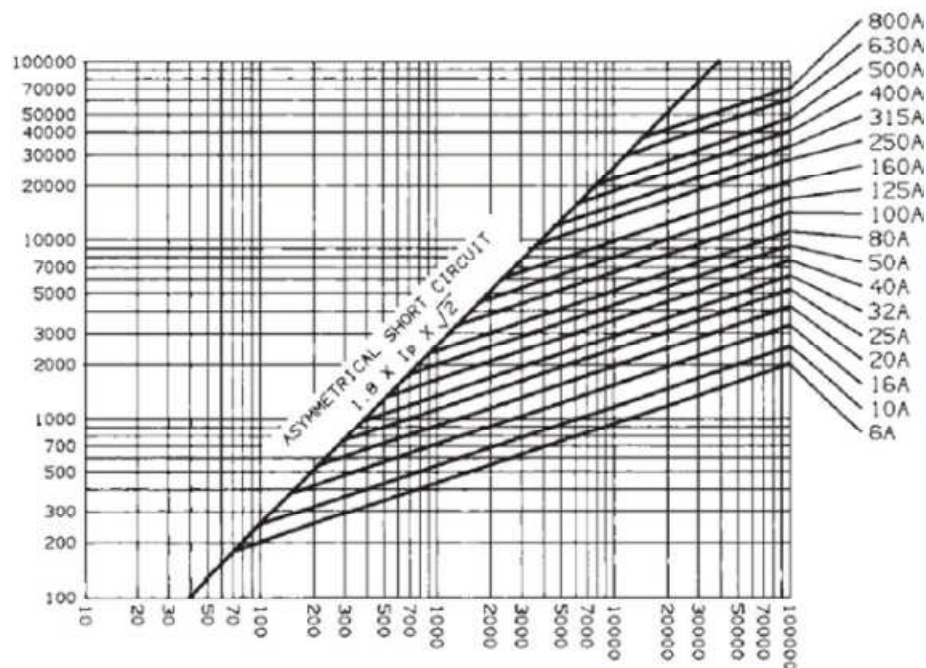
## Thermal stresses:

Thermal stresses in A<sup>2</sup>s



Calibre in A

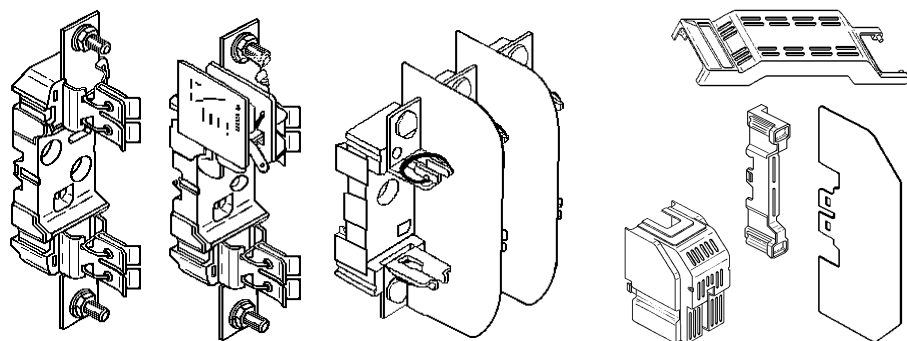
## Limitation curve:



Presumed short circuit in A

## Bases for industrial blade-type cartridge fuses

Catalogue number(s):  
0 199 02/19/30/31/32/33/35/36/37/38/39/42/43/44/45/46/48/50,  
0 199 47/49/51/52/53



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### 1. DESCRIPTION AND USAGE

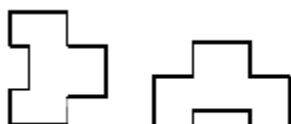
NH bases for blade-type cartridge fuses  
Material: Polyamide for sizes 00 to 3  
Bakelite for size 4

Contact springs in silver-plated copper.  
Conductor connection is done by bolting according to the table below:

| Size of base | Bolting |
|--------------|---------|
| 000/00/0     | M8      |
| 1/2          | M10     |
| 3/4          | M12     |

Bases sizes 00 to 3 can be mounted on DIN Rail or by screws.  
Base size 4 can only be mounted by screws.

Base positioning: horizontal or vertical



### 2. COMPLIANCE

Comply with IEC 60269 and VDE 0636-21

### 3. RANGE AND CHARACTERISTICS

#### 3.1 Rated currents:

| Size   | Current (A)   | 1 pole                             |                 | 3 poles                                |
|--------|---------------|------------------------------------|-----------------|----------------------------------------|
|        |               | Without miniswitch                 | With miniswitch | Without miniswitch                     |
| 000/00 | 100A<br>160 A | 0 199 42<br>(1)<br>0 199 44<br>(1) | -               | 0 199 43<br>0 199 45                   |
| 0      | 160           | 0 199 46                           | 0 199 47        | To be made up with joining accessories |
| 1      | 250           | 0 199 48                           | 0 199 49        |                                        |
| 2      | 400           | 0 199 50                           | 0 199 51        |                                        |
| 3      | 630           | -                                  | 0 199 52        |                                        |
| 4      | 1250          | -                                  | 0 199 53        |                                        |

(1) Supplied with 2 insulating shields

#### 3.2 Rated voltage:

Cartridge fuses accepted up to 690 VAC and 440 VDC

#### 3.3 Rated insulation voltage:

690VAC

#### 3.4 Other characteristics:

| Size   | Operating frequency | Power dissipation |
|--------|---------------------|-------------------|
| 000/00 | 45 to 62 Hz         | 12 W              |
| 0      | 45 to 62 Hz         | 25 W              |
| 1      | 45 to 62 Hz         | 32 W              |
| 2      | 45 to 62 Hz         | 45 W              |
| 3      | 45 to 62 Hz         | 60 W              |
| 4      | 45 to 62 Hz         | 110 W             |

Pollution degree : 3

Dielectric strength: 2,5 Kv-1 min

Storage temperature min/max :-25°C/+80°C



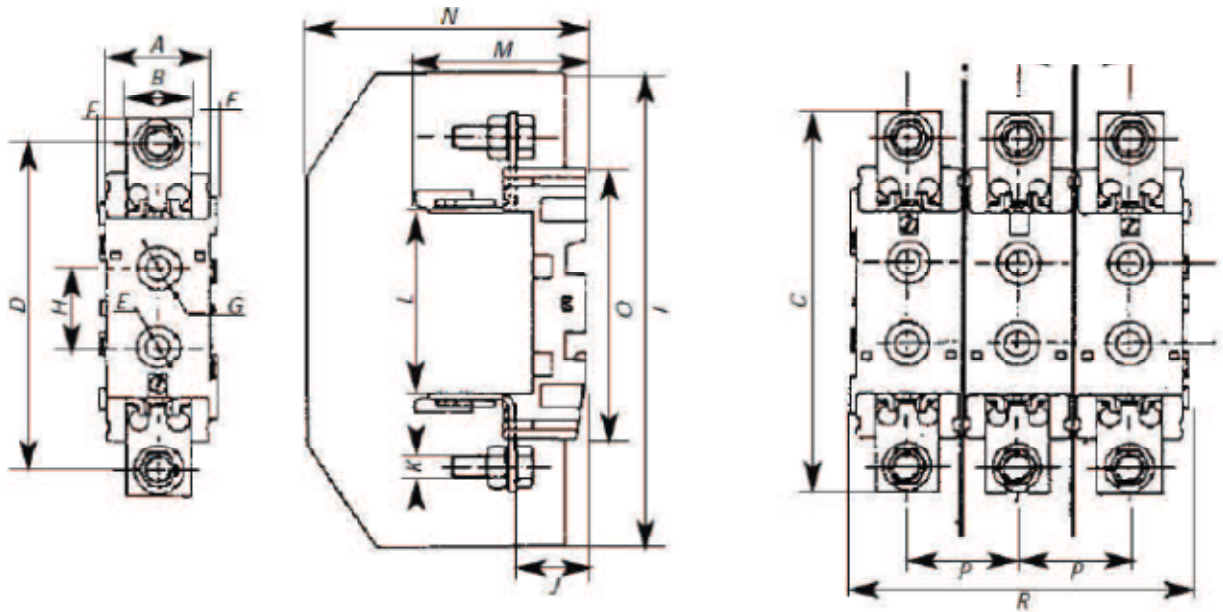
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3.5 DIMENSIONS (in mm)

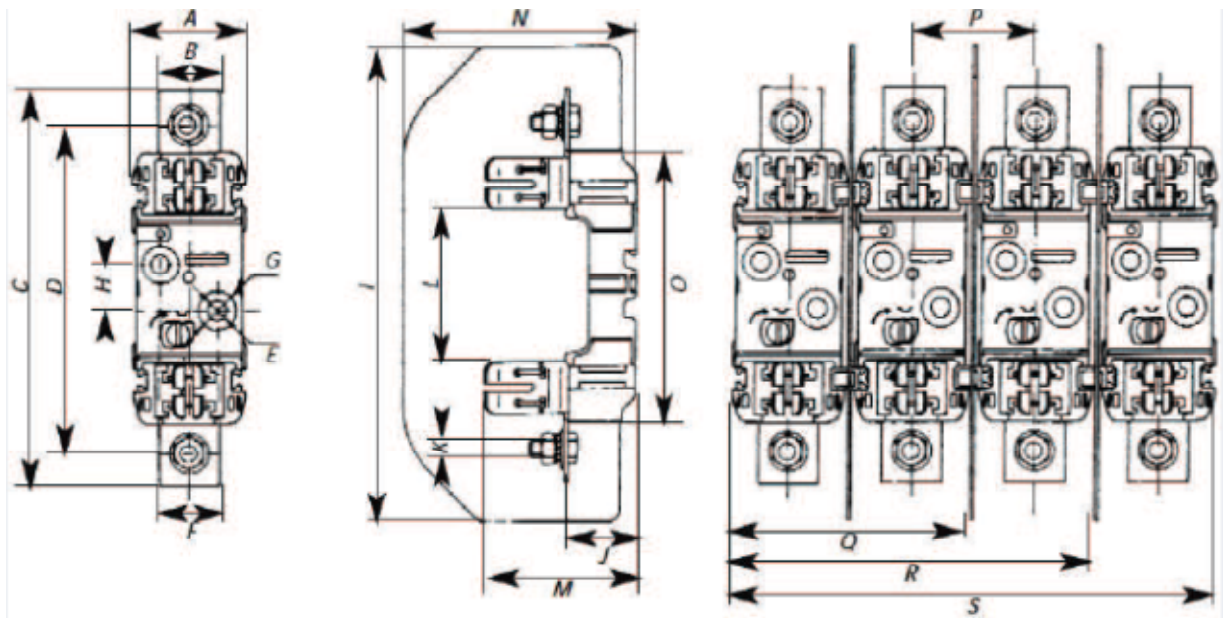
3.5.1 Bases without Miniswitch:

Size 000/00:



| A  | B  | C   | D   | E | F | G  | H  | I   | J    | K | L  | M  | N  | O  | P  | R   |
|----|----|-----|-----|---|---|----|----|-----|------|---|----|----|----|----|----|-----|
| 32 | 20 | 117 | 100 | 8 | 2 | 14 | 25 | 145 | 21.5 | 8 | 56 | 52 | 85 | 84 | 34 | 104 |

Sizes 0 to 2:



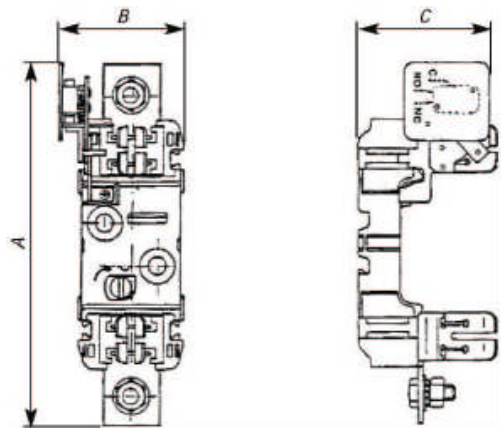
| Size | A  | B  | C   | D     | E    | F  | G    | H  | I   | J  | K   | L  | M  | N     | O   | P    | Q     | R   | S     |
|------|----|----|-----|-------|------|----|------|----|-----|----|-----|----|----|-------|-----|------|-------|-----|-------|
| 0    | 46 | 20 | 168 | 150.5 | 7.5  | Na | 14.5 | 25 | 185 | 29 | M8  | 74 | 59 | 95    | 122 | 48.5 | 94    | 142 | 190   |
| 1    | 60 | 32 | 209 | 176   | 10.5 | 30 | 20.5 | 25 | 250 | 35 | M10 | 81 | 71 | 122.5 | 146 | 65.5 | 125.5 | 191 | 256.5 |
| 2    | 60 | 35 | 225 | 201   | 10.5 | 30 | 20.5 | 25 | 250 | 35 | M10 | 81 | 89 | 122.5 | 146 | 65.5 | 125.5 | 191 | 256.5 |

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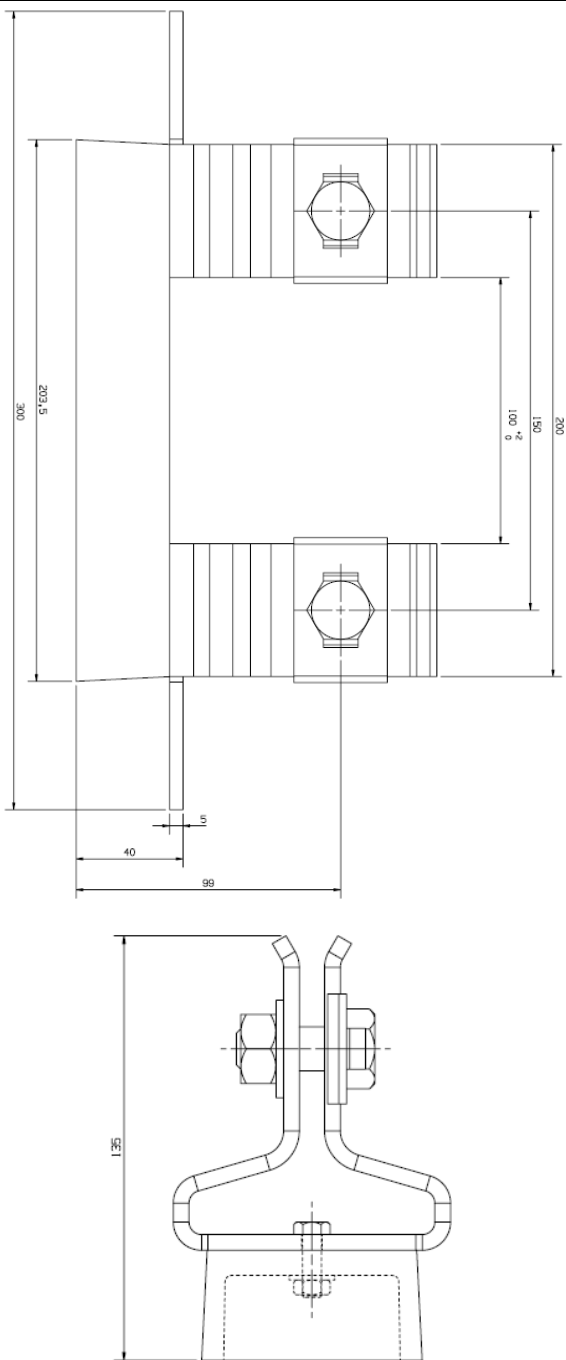
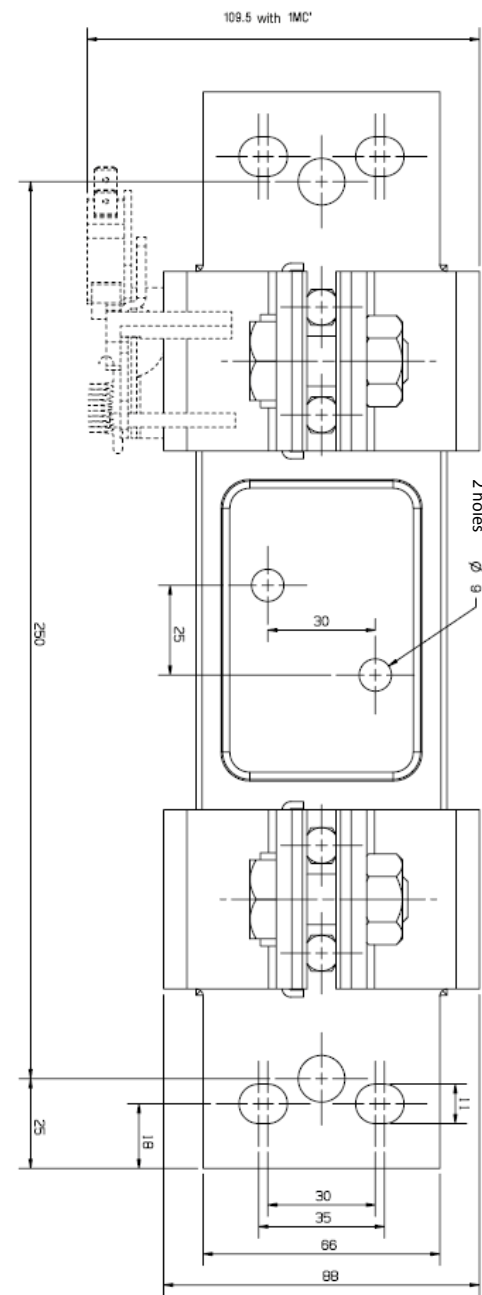
## 3.5.2 Bases with Miniswitch:

Sizes 0 to 3:



| Size | A   | B  | C  |
|------|-----|----|----|
| 0    | 192 | 64 | 66 |
| 1    | 213 | 93 | 77 |
| 2    | 222 | 73 | 82 |
| 3    | 233 | 80 | 83 |

Size 4:

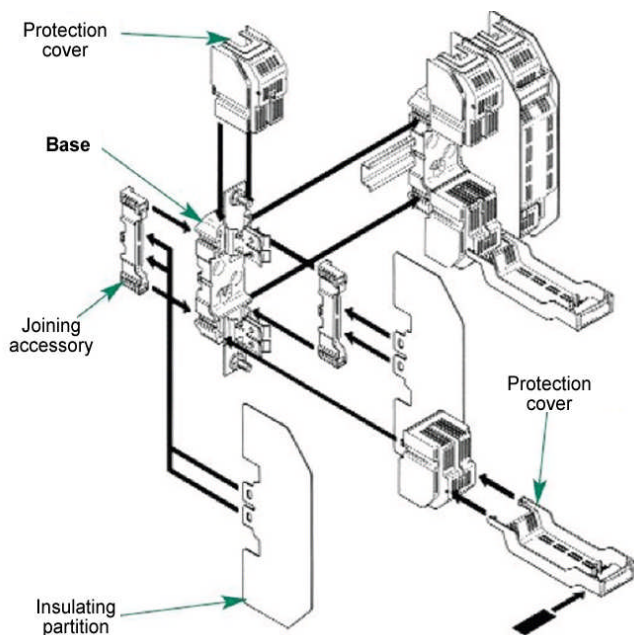


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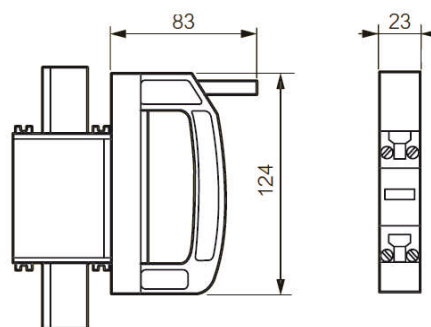
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## 4. ACCESSORIES



- Handle cat. no.: 0 199 02

(in mm)



Materials :

- Partitions : Phenolic composite
- Cover : Polycarbonate
- Joining accessories : PA6GF
- Covers for terminals : PA6GF

### - Partition kit and joining accessories

Enables joining of 1P bases together and/or making electrical separation between poles.

| Cat. No.     | For base size | No. of partitions | No. of joining accessories |
|--------------|---------------|-------------------|----------------------------|
| 0 199 30 (2) | 000/00        | 2                 | 0                          |
| 0 199 31     | 0             | 2                 | 2                          |
| 0 199 32     | 1/2           | 2                 | 2                          |
| 0 199 33     | 3             | 2                 | 2                          |
| 0 199 19 (2) | 4             | 1                 | 0                          |

(2) Without joining accessories: Direct mounting of partitions on the base for size 00 and mounting at the bottom of the enclosure for size 4

### - Protection kit:

Protection against accidental contact. Kits comprising partitions, joining accessories and protection covers for terminals and fuses.

For 1 pole bases:

| Cat. No.     | For base size | No. of partitions | No. of joining accessories | No. of terminal protection covers | No. of fuse protection covers |
|--------------|---------------|-------------------|----------------------------|-----------------------------------|-------------------------------|
| 0 199 35 (2) | 000/00        | 2                 | 0                          | 1                                 | 2                             |
| 0 199 36     | 0             | 2                 | 2                          | 1                                 | 2                             |
| 0 199 37     | 1             | 2                 | 2                          | 1                                 | 2                             |
| 0 199 38     | 2             | 2                 | 2                          | 1                                 | 2                             |

For 3 pole bases:

| Cat. No.     | For base size | No. of partitions | No. of joining accessories | No. of terminal protection covers | No. of fuse protection covers |
|--------------|---------------|-------------------|----------------------------|-----------------------------------|-------------------------------|
| 0 199 39 (2) | 000/00        | 2                 | 0                          | 6                                 | 3                             |