

# PROTISTOR FUSE MICROSWITCHES ACCESSORIES



## PROTISTOR® FUSES

MICROSWITCH SYSTEMS FOR ROUND AND SQUARE-BODY FUSES (not for PSC Fuses)

### Features/Benefits

- Remote signaling systems for fitting on Ferraz Shawmut fuses equipped with microswitch support
- Indication of fuse status
- Manual Reset
- Standard and low current models with different insulation ratings
- Watertight types for use in corrosive atmospheres

## CHARACTERISTICS

| TYPE                | CATALOG NUMBER | AC or DC<br>Insulation<br>voltage<br>rating<br>Ui (V) | AC voltage<br>withstand test<br>(.) | Impulse<br>voltage test<br>Uimp 1,2/50 hs<br>(.) | Positive<br>operating<br>min.voltage<br>/min.current | Current<br>rating |          |                       |       |        |                                 |       |       |
|---------------------|----------------|-------------------------------------------------------|-------------------------------------|--------------------------------------------------|------------------------------------------------------|-------------------|----------|-----------------------|-------|--------|---------------------------------|-------|-------|
|                     |                |                                                       |                                     |                                                  |                                                      |                   | Current  | Non-inductive circuit |       |        | inductive circuit<br>L/R = 25ms |       |       |
|                     |                |                                                       |                                     |                                                  |                                                      |                   |          | 30 V                  | 110 V | 250 V  | 30 V                            | 110 V | 250 V |
| Standard            | MC3E 1-5N      | 1250V                                                 | 15 kV                               | 20 kV                                            | 20 V                                                 | 5 A               | 50/60 Hz | 10 A                  | 10 A  | 7 A    |                                 |       | 6 A   |
|                     | MCR3E 1-5N     | 2200V                                                 | 20 kV                               | 30 kV                                            | 50 mA                                                |                   | DC       | 5 A                   | 0.5 A |        | 1.6 A                           | 0.3A  |       |
| Low level           | MC3E 1-5NBS    | 1250V                                                 | 15 kV                               | 20 kV                                            | 10 V<br>10 mA                                        | 3 A               | 50/60 Hz | 3 A                   | 3 A   | 3 A    | 2 A                             | 1 A   | 1 A   |
|                     | MC3E 1-9NBS    |                                                       |                                     |                                                  |                                                      |                   |          |                       |       |        |                                 |       |       |
|                     | MCR3E 1-5NBS   | 2200V                                                 | 20 kV (1)<br>23 kV (2)              | 30 kV                                            |                                                      |                   | DC       | 3 A                   | 0.5 A | 0.25 A | 3 A                             | 0.2 A | 0.1 A |
|                     | MCR3E 1-9NBS   |                                                       |                                     |                                                  |                                                      |                   |          |                       |       |        |                                 |       |       |
|                     | MC2R3E 1-5BS   | 6000V                                                 | 24 kV (1)<br>26 kV (2)<br>32 kV (3) | 40 kV                                            |                                                      |                   |          |                       |       |        |                                 |       |       |
|                     | MC2R3E 1-9NBS  |                                                       |                                     |                                                  |                                                      |                   |          |                       |       |        |                                 |       |       |
| Watertight<br>IP 50 | MC3E 1-5NET    | 1250V                                                 | 11 kV                               | 16 kV                                            | 10 V<br>10 mA                                        | 3 A               | 50 Hz    |                       | 3 A   | 3 A    |                                 | 1 A   | 1 A   |
|                     | MCR3E 1-5NET   | 2200V                                                 | 20 kV (1)                           | 30 kV                                            |                                                      |                   | DC       |                       | 0.5A  |        |                                 | 0.2 A |       |
|                     | MC2R3E 1-5NET  | 6000V                                                 | 24 kV (2)                           | 40 kV                                            |                                                      |                   |          |                       |       |        |                                 |       |       |

Catalog Numbering system: MC3E 1-5 single pole microswitch - MC3E 1-9 double pole microswitch - MCR, MC2R reinforced insulation microswitch

\* Between power circuit and microswitch terminals as per IEC 60 and 694 and NFC 64010 (50/60 Hz 1 min. duration in dry air)

\*\* Between power circuit and microswitch terminals Uimp: impulse voltage according to IEC 947-1

\*\*\*Between power circuit and microswitch terminals

EACH MICROSWITCH WEIGHS LESS THAN 100g, THEREFORE NO FUME AND SMOKE GRADE IS REQUIRED BY NF F16-102 STANDARD

(1) for short body fuses (sizes 30 - 31 - 32 - 33 - 70 - 71 - 72 - 73 - 83 - 84) Except PSC

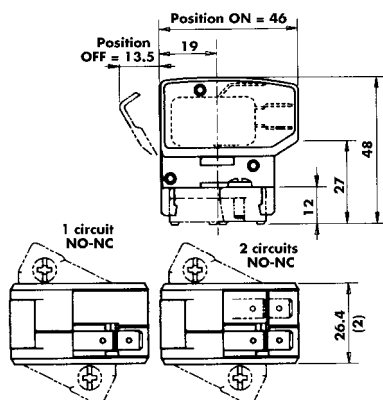
(2) for sizes 100 - 91 - 92 - 93 - 94 - 123 - 124 fuses and longer

(3) for sizes 171 - 172 - 173 - 174 fuses and longer

# PROTISTOR FUSE MICROSWITCHES

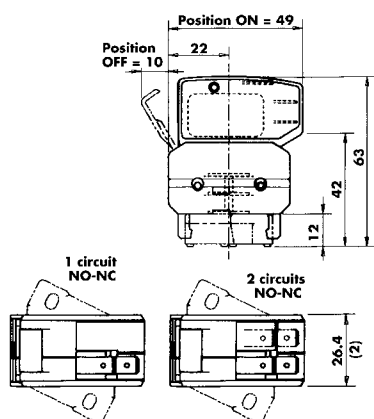
## ACCESSORIES

### Remote Signalling with 1250 V AC/DC Insulation Voltage



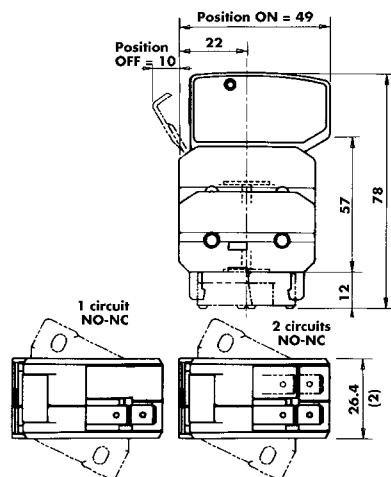
| Quantity of NO-NC separated circuits | Contact    | Catalog Number | Ref. Number | Weight (g) | Pack. (1) |
|--------------------------------------|------------|----------------|-------------|------------|-----------|
| 1                                    | standard   | MC3E 1-5N      | D310020     | 39.5       | 3         |
| 1                                    | low level  | MC3E 1-5NBS    | E310021     | 39.5       | 3         |
| 2                                    | low level  | MC3E 1-9NBS    | F310022     | 45.7       | 3         |
| 1                                    | watertight | MC3E 1-5NET    | L310027     | 40.2       | 3         |

### Remote Signalling with Insulation Voltage up to 2200 V AC/DC



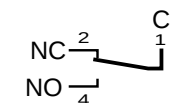
| Quantity of NO-NC separated circuits | Contact    | Catalog Number | Ref. Number | Weight (g) | Pack. (1) |
|--------------------------------------|------------|----------------|-------------|------------|-----------|
| 1                                    | standard   | MCR3E 1-5N     | G310023     | 51.7       | 1         |
| 1                                    | low level  | MC3RE 1-5NBS   | P310030     | 51.7       | 1         |
| 2                                    | low level  | MCR3E 1-9NBS   | H310024     | 58.0       | 1         |
| 1                                    | watertight | MCR3E 1-5NET   | Q310031     | 52.5       | 1         |

### Remote Signalling with Insulation Voltage up to 6000 V AC/DC

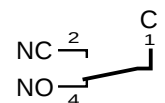


| Quantity of NO-NC separated circuits | Contact    | Catalog Number | Ref. Number | Weight (g) | Pack. (1) |
|--------------------------------------|------------|----------------|-------------|------------|-----------|
| 1                                    | low level  | MC2R3E 1-5NBS  | J310025     | 64.0       | 1         |
| 1                                    | watertight | MC2R3E 1-5NET  | N310029     | 64.8       | 1         |
| 2                                    | low level  | MC2R3E 1-9NBS  | K310026     | 70.3       | 1         |

### Electrical diagram of each microswitch circuit



Non-blown fuse  
Microswitch ON



Blown fuse  
Microswitch OFF

All of these signalling systems are had resettable and fitted with silver-plated 3-terminal microswitch C, NO and NC. The C terminal is on the top and connection is made via 6.35 mm clips except for watertight models whose clips are 4.8 mm wide

NOTE (2): The 26.4 dimension is the same with 1 or 2 separated circuits NO-NC.

Tests with sine vibrations carried out at ambient with scanning of the three main holder axes.

Spectrum: 1<sup>st</sup> segment (2 to 16 Hz) constant trip  
2<sup>nd</sup> segment (16 to 250 Hz) constant acceleration

X = 5 mm peak.  
γ = 5 g peak

Exponential scanning speed: 1 octave per minute.  
Duration: 2 hours per axis.