

### Function

Residual current circuit-breakers ensure:

- The control and isolation of electrical circuits
- The protection of persons against direct and indirect contacts
- The protection of installations against insulation faults

They conform to both the residual current device standard BS EN 61008 and to switch standards BS EN 60947-1 and BS EN 60947-3. Residual current circuit-breakers are used in the housing, commercial and industrial sectors.

### AC class

Tripping is ensured for sinusoidal, alternating currents, whether they be quickly applied or slowly increase.

### A class

Tripping is ensured for sinusoidal, alternating residual currents as well as for pulsed DC residual currents, whether they be quickly applied or slowly increase.

Application: loads with electronics, rectifiers, instruments.

### “si” type

Reinforced continuity of supply on disturbed networks with:

- A high risk of nuisance tripping:
  - Successive lightning strokes
  - IT earthing system
  - Variable speed controllers, frequency converters
  - Presence of electronic ballasts
  - Presence of switchgear that incorporates interference filters i.e. lighting, microcomputing, etc
- Sources of blinding:
  - Presence of harmonics or high frequency rejection
  - Presence of DC components: diodes, thyristors, triacs
  - Low temperature

### “SiE” type

The RCCB “SiE” types are particularly suitable for use in humid environments and/or environments polluted by aggressive agents, for example swimming pools, marinas, the food-processing industry, water treatment plants, industrial sites. They also incorporate RCCB “si” functions.

### Instantaneous

It ensures instantaneous tripping (no time-delay).

### Selective <sup>Ⓢ</sup>

Total discrimination can be achieved using a non-selective residual current device placed downstream.

### Description

The residual current trip unit is electromechanical. It functions without an auxiliary source.

### Technical data

|  |  |
|--|--|
| Voltage rating                             | 230...400 V AC, -15...+10 %  |
| Frequency rating                           | AC and A classes: 50/60 Hz<br>“si” and “SiE” types: 50 Hz  |
| Current rating (I <sub>th</sub> ) at 40 °C | 16...100 A   |
| As in IEC 61008                            | Breaking and making capacity<br>Rated residual (I <sub>Δm</sub> ): 2.5 kA<br>Rated (I <sub>m</sub> ): 1.5 kA   |
| As in IEC 60947-3:                         | Isolation with positive break indication, opening is indicated by a green strip on the device operating handle. This indicator shows that all poles are open.<br>Rated impulse withstand<br>Voltage (U <sub>imp</sub> ): 6 kV<br>Insulation voltage (U <sub>i</sub> ): 440 V<br>Utilization category:<br>AC 23A rating ≤ 63 A<br>AC 22B ratings 80 and 100 A |

### Description cont..

- Padlocking in the “tripped” position is possible using the padlocking device (not supplied)
- Protected against nuisance tripping due to transient overvoltages (lightning, switchgear operation on the network, etc.)
- Impulse withstand level 8/20  $\mu$ s:
- AC and A classes:
  - 250 A for instantaneous
  - 3 kA for s
- “si” and “SiE” type:
  - 3 kA for instantaneous
  - 5 kA for s
- Short-circuit current withstand ( $I_{\Delta c} = I_{nc}$ ): 10 kA with 100 A fuse upstream
- Number of operations (O-C): 20 000
- Trip units with fixed sensitivities for all ratings:
- Instantaneous trip unit
- Selective trip unit with 50-70ms delay: total vertical selectivity can be achieved using 30 mA residual current devices placed downstream
- Indication:
- Mechanical: earth fault indication on front panel by means of a mechanical indicator
- Electrical: using auxiliaries
- Remote tripping: using auxiliaries
- Environment:
- Tropicalisation: treatment 2 (relative humidity 95 % at 55°C)
- Operating temperature:
  - AC class: -5...+40°C
  - A class, “si” and “SiE” type: -25...+40°C
- Storage temperature: -40...+60°C

| Weight (g) | 2P  | 3P  |
|------------|-----|-----|
|            | 230 | 450 |

- Terminal size 35mm<sup>2</sup> up to 63amp. 50mm<sup>2</sup> up to 80 and 100 amps
- Connection using tunnel terminals for flexible 35mm<sup>2</sup> cable or rigid 50mm<sup>2</sup> cable
- Can be directly connected using comb busbars
- Conform with standards:
  - BS EN 61008
  - BS EN 60947-1
  - BS EN 60947-3

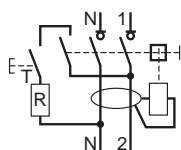


# Protection earth leakage

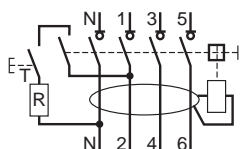
## AC class RCCB

10mA, 30mA, 100mA, 300mA and 500mA

instantaneous 100mA $\square$ , 300mA $\square$ , 500mA $\square$



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| AC class RCCB residual current circuit breakers |                |               |                  |               |                       |               |       |            |   |
|---|----------------|---------------|------------------|---------------|-----------------------|---------------|-------|------------|---|
| Type  | Voltage (V CA) | Rating (A)    | Sensitivity (mA) | Part number   | Width in 18mm SP ways |               |       |            |   |
| 2P  | 230            | 16            | 10               | RMG 160102    | 2                     |               |       |            |   |
|   |                |               | 25               | 10            | RMG 250102            | 2             |       |            |   |
|   |                |               | 30               | RMG 250302    | 2                     |               |       |            |   |
|   |                |               | 300              | 23011         | 2                     |               |       |            |   |
|   |                |               | 500              | 23012         | 2                     |               |       |            |   |
|   |                |               | 40               | 30            | RMG 400302            | 2             |       |            |   |
|   |                | 100           | 23015            | 2             |                       |               |       |            |   |
|   |                | 300           | RMG 403002       | 2             |                       |               |       |            |   |
|   |                | 500           | 23017            | 2             |                       |               |       |            |   |
|   |                | 63            | 30               | RMG 630302    | 2                     |               |       |            |   |
|   |                |               |                  |               | 100                   | RMG 631002    | 2     |            |   |
|   |                |               |                  |               | 300                   | RMG 633002    | 2     |            |   |
|   |                |               |                  | 300 $\square$ | 23028                 | 2             |       |            |   |
|   |                |               |                  | 500           | 23022                 | 2             |       |            |   |
|   |                |               |                  | 500 $\square$ | 23029                 | 2             |       |            |   |
|   |                |               |                  | 80            | 30                    | RMG 800302    | 2     |            |   |
|   |                |               |                  |               |                       |               | 100   | RMG 801002 | 2 |
|   |                |               |                  |               |                       |               | 300   | RMG 803002 | 2 |
|   |                |               |                  |               |                       | 100 $\square$ | 23111 | 2          |   |
|   |                |               |                  |               |                       | 500           | 23026 | 2          |   |
|   |                |               |                  |               |                       | 500 $\square$ | 23033 | 2          |   |
|   |                | 100           | 30               | RMG 100032    | 2                     |               |       |            |   |
|   |                |               |                  |               | 100                   | RMG 1001002   | 2     |            |   |
|   |                |               |                  |               | 100                   | RMG 1001002s  | 2     |            |   |
| 300   | RMG 1003002    |               |                  | 2             |                       |               |       |            |   |
| 300 $\square$                                   | 23116          |               |                  | 2             |                       |               |       |            |   |
| 4P  | 230/400        |               |                  | 25            | 30                    | RMG 250304    | 4     |            |   |
|   |                | 300           | RMG 253004       |               | 4                     |               |       |            |   |
|   |                | 500           | 23041            |               | 4                     |               |       |            |   |
|   |                | 40            | 30               |               | RMG 400304            | 4             |       |            |   |
|   |                | 100           | 23536            |               | 4                     |               |       |            |   |
|   |                | 300           | RMG 403004       |               | 4                     |               |       |            |   |
|   |                | 300 $\square$ | 23062            | 4             |                       |               |       |            |   |
|   |                | 500           | 23046            | 4             |                       |               |       |            |   |
|   |                | 500 $\square$ | 23063            | 4             |                       |               |       |            |   |
|   |                | 63            | 30               | RMG 630304    | 4                     |               |       |            |   |
|   |                |               |                  |               | 100                   | RMG 631004    | 4     |            |   |
|   |                |               |                  |               | 300                   | RMG 633004    | 4     |            |   |
|   |                |               |                  | 300 $\square$ | 23146                 | 4             |       |            |   |
|   |                |               |                  | 500           | 23051                 | 4             |       |            |   |
|   |                |               |                  | 500 $\square$ | 23067                 | 4             |       |            |   |
|   |                | 80            | 30               | 23061         | 4                     |               |       |            |   |
|   |                |               |                  |               | 300                   | 23054         | 4     |            |   |
|   |                |               |                  |               | 300 $\square$         | 23069         | 4     |            |   |
|   |                |               |                  | 500           | 23055                 | 4             |       |            |   |
|   |                |               |                  | 500 $\square$ | 23070                 | 4             |       |            |   |
|   |                |               |                  | 100           | 300                   | 23213         | 4     |            |   |
|   |                | 300 $\square$ | 23227            |               |                       | 4             |       |            |   |