

## Residual current circuit breaker (RCCB), 125A, 2p, 300mA, type AC

Part no. **FRCMM-125/2/03**  
 Catalog No. **187812**

Similar to illustration

## Delivery program

|                              |                |      |                                                                |
|------------------------------|----------------|------|----------------------------------------------------------------|
| Basic function               |                |      | Residual current circuit-breakers                              |
| Number of poles              |                |      | 2 pole                                                         |
| Application                  |                |      | Switchgear for industrial and advanced commercial applications |
| Rated current                | $I_n$          | A    | 125                                                            |
| Rated short-circuit strength | $I_{cn}$       | kA   | 10 with back-up fuse                                           |
| Rated fault current          | $I_{\Delta N}$ | A    | 0.3                                                            |
| Type                         |                |      | Type AC                                                        |
| Tripping                     |                | s... | non-delayed                                                    |
| Product range                |                |      | FRCmM-125                                                      |
| Sensitivity                  |                |      | AC current sensitive                                           |
| Impulse withstand current    |                |      | Partly surge-proof 250 A                                       |

## Technical data

## Electrical

|                                                                                  |                      |      |                             |
|----------------------------------------------------------------------------------|----------------------|------|-----------------------------|
| Types conform to                                                                 |                      |      | IEC/EN 61008                |
| Standards                                                                        |                      |      | IEC/EN 61008                |
| Current test marks                                                               |                      |      | As per inscription          |
| Tripping                                                                         |                      | s... | non-delayed                 |
| Rated voltage according to IEC/EN 60947-2                                        | $U_n$                | V AC | 240                         |
| Rated frequency                                                                  | f                    | Hz   | 50                          |
| Limit values of the operating voltage                                            |                      |      |                             |
| Test circuit                                                                     |                      | V AC | 184 - 250                   |
| Rated fault current                                                              | $I_{\Delta n}$       | mA   | 300                         |
| Sensitivity                                                                      |                      |      | AC current sensitive        |
| Rated insulation voltage                                                         | $U_i$                | V    | 440                         |
| Rated impulse withstand voltage                                                  | $U_{imp}$            | kV   | 4 (1.2/50µs)                |
| Rated short-circuit strength                                                     | $I_{cn}$             | kA   | 10 with back-up fuse        |
| Impulse withstand current                                                        |                      |      | 250 A (8/20 µs) surge-proof |
| Max. admissible back-up fuse                                                     |                      |      |                             |
| Short-circuit                                                                    | gG/gL                | A    | 125                         |
| Overload                                                                         | gG/gL                | A    | 80                          |
| Rated making and breaking capacity / Rated residual making and breaking capacity | $I_m / I_{\Delta m}$ | A    | 1250                        |
| lifespan                                                                         |                      |      |                             |
| Electrical                                                                       | Operations           |      | ≥ 4000                      |
| Mechanical                                                                       | Operations           |      | ≥ 20000                     |

## Mechanical

|                          |  |    |                                                |
|--------------------------|--|----|------------------------------------------------|
| Standard front dimension |  | mm | 45                                             |
| Device height            |  | mm | 80                                             |
| Built-in width           |  | mm | 35 (2TE)                                       |
| Mounting                 |  |    | Quick attachment for DIN-rail EN 50022         |
| Degree of Protection     |  |    | IP20, IP40 with suitable enclosure             |
| Terminals top and bottom |  |    | Twin-purpose terminals                         |
| Terminal protection      |  |    | finger and hand touch safe, DGUV VS3, EN 50274 |
| Terminal cross-section   |  |    |                                                |

|                                      |  |                 |                                                           |
|--------------------------------------|--|-----------------|-----------------------------------------------------------|
| Solid                                |  | mm <sup>2</sup> | 1.5 - 50<br>2 x (1.5 - 16)                                |
| Stranded                             |  | mm <sup>2</sup> | 1.5 - 50<br>2 x (1.5 - 16)                                |
| Thickness of busbar material         |  | mm              | 0.8 - 2                                                   |
| Admissible ambient temperature range |  | °C              | -25 - +60                                                 |
| Climatic proofing                    |  |                 | 25-55°C/90-95% relative humidity according to IEC 60068-2 |
| Mounting position                    |  |                 | As required                                               |
| Contact position indicator           |  |                 | red / green                                               |
| Trip indication                      |  |                 | toggle-center position                                    |

## Design verification as per IEC/EN 61439

|                                                                                                                        |                   |    |                                                                                                                                  |
|------------------------------------------------------------------------------------------------------------------------|-------------------|----|----------------------------------------------------------------------------------------------------------------------------------|
| Technical data for design verification                                                                                 |                   |    |                                                                                                                                  |
| Rated operational current for specified heat dissipation                                                               | I <sub>n</sub>    | A  | 125                                                                                                                              |
| Heat dissipation per pole, current-dependent                                                                           | P <sub>vid</sub>  | W  | 0                                                                                                                                |
| Equipment heat dissipation, current-dependent                                                                          | P <sub>vid</sub>  | W  | 18                                                                                                                               |
| Static heat dissipation, non-current-dependent                                                                         | P <sub>vs</sub>   | W  | 0                                                                                                                                |
| Heat dissipation capacity                                                                                              | P <sub>diss</sub> | W  | 0                                                                                                                                |
| Operating ambient temperature min.                                                                                     |                   | °C | -25                                                                                                                              |
| Operating ambient temperature max.                                                                                     |                   | °C | 60                                                                                                                               |
|                                                                                                                        |                   |    | Starting at 40 °C, the max. permissible continuous current decreases by 2.2% for every 1 °C                                      |
| IEC/EN 61439 design verification                                                                                       |                   |    |                                                                                                                                  |
| 10.2 Strength of materials and parts                                                                                   |                   |    |                                                                                                                                  |
| 10.2.2 Corrosion resistance                                                                                            |                   |    | Meets the product standard's requirements.                                                                                       |
| 10.2.3.1 Verification of thermal stability of enclosures                                                               |                   |    | Meets the product standard's requirements.                                                                                       |
| 10.2.3.2 Verification of resistance of insulating materials to normal heat                                             |                   |    | Meets the product standard's requirements.                                                                                       |
| 10.2.3.3 Verification of resistance of insulating materials to abnormal heat and fire due to internal electric effects |                   |    | Meets the product standard's requirements.                                                                                       |
| 10.2.4 Resistance to ultra-violet (UV) radiation                                                                       |                   |    | Meets the product standard's requirements.                                                                                       |
| 10.2.5 Lifting                                                                                                         |                   |    | Does not apply, since the entire switchgear needs to be evaluated.                                                               |
| 10.2.6 Mechanical impact                                                                                               |                   |    | Does not apply, since the entire switchgear needs to be evaluated.                                                               |
| 10.2.7 Inscriptions                                                                                                    |                   |    | Meets the product standard's requirements.                                                                                       |
| 10.3 Degree of protection of ASSEMBLIES                                                                                |                   |    | Does not apply, since the entire switchgear needs to be evaluated.                                                               |
| 10.4 Clearances and creepage distances                                                                                 |                   |    | Meets the product standard's requirements.                                                                                       |
| 10.5 Protection against electric shock                                                                                 |                   |    | Does not apply, since the entire switchgear needs to be evaluated.                                                               |
| 10.6 Incorporation of switching devices and components                                                                 |                   |    | Does not apply, since the entire switchgear needs to be evaluated.                                                               |
| 10.7 Internal electrical circuits and connections                                                                      |                   |    | Is the panel builder's responsibility.                                                                                           |
| 10.8 Connections for external conductors                                                                               |                   |    | Is the panel builder's responsibility.                                                                                           |
| 10.9 Insulation properties                                                                                             |                   |    |                                                                                                                                  |
| 10.9.2 Power-frequency electric strength                                                                               |                   |    | Is the panel builder's responsibility.                                                                                           |
| 10.9.3 Impulse withstand voltage                                                                                       |                   |    | Is the panel builder's responsibility.                                                                                           |
| 10.9.4 Testing of enclosures made of insulating material                                                               |                   |    | Is the panel builder's responsibility.                                                                                           |
| 10.10 Temperature rise                                                                                                 |                   |    | The panel builder is responsible for the temperature rise calculation. Eaton will provide heat dissipation data for the devices. |
| 10.11 Short-circuit rating                                                                                             |                   |    | Is the panel builder's responsibility. The specifications for the switchgear must be observed.                                   |
| 10.12 Electromagnetic compatibility                                                                                    |                   |    | Is the panel builder's responsibility. The specifications for the switchgear must be observed.                                   |
| 10.13 Mechanical function                                                                                              |                   |    | The device meets the requirements, provided the information in the instruction leaflet (IL) is observed.                         |

## Technical data ETIM 8.0

|                                                                                                                                                                                                                       |  |   |     |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|---|-----|
| Circuit breakers and fuses (EG000020) / Residual current circuit breaker (RCCB) (EC000003)                                                                                                                            |  |   |     |
| Electric engineering, automation, process control engineering / Electrical installation, device / Residual current protection system / Residual current circuit breaker (RCCB) (ecI@ss10.0.1-27-14-22-01 [AAB906014]) |  |   |     |
| Number of poles                                                                                                                                                                                                       |  |   | 2   |
| Rated voltage                                                                                                                                                                                                         |  | V | 240 |

|                                                 |                 |          |
|-------------------------------------------------|-----------------|----------|
| Rated current                                   | A               | 125      |
| Rated fault current                             | A               | 0.3      |
| Rated insulation voltage Ui                     | V               | 440      |
| Rated impulse withstand voltage Uimp            | kV              | 4        |
| Mounting method                                 |                 | DIN rail |
| Leakage current type                            |                 | AC       |
| Selective protection                            |                 | No       |
| Short-time delayed tripping                     |                 | No       |
| Short-circuit breaking capacity (Icw)           | kA              | 10       |
| Surge current capacity                          | kA              | 0.25     |
| Voltage type                                    |                 | AC       |
| With interlocking device                        |                 | Yes      |
| Frequency                                       |                 | 50 Hz    |
| Additional equipment possible                   |                 | Yes      |
| Degree of protection (IP)                       |                 | IP20     |
| Width in number of modular spacings             |                 | 2        |
| Built-in depth                                  | mm              | 77.5     |
| Ambient temperature during operating            | °C              | -25 - 60 |
| Pollution degree                                |                 | 2        |
| Connectable conductor cross section multi-wired | mm <sup>2</sup> | 1.5 - 16 |
| Connectable conductor cross section solid-core  | mm <sup>2</sup> | 1.5 - 50 |
| Explosion-proof                                 |                 | No       |