


**Residual current circuit breaker (RCCB), 40A, 4p, 30mA, type G/A**


**Part no.** FRCMM-40/4/003-G/A  
**Catalog No.** 170295  
**Alternate Catalog No.** FRCMM-40/4/003-G/A  
**EL-Nummer (Norway)** 1666287

Similar to illustration

**Delivery program**

|                              |                |      |                                                                |
|------------------------------|----------------|------|----------------------------------------------------------------|
| Basic function               |                |      | Residual current circuit-breakers                              |
| Number of poles              |                |      | 4 pole                                                         |
| Application                  |                |      | Switchgear for industrial and advanced commercial applications |
| Rated current                | $I_n$          | A    | 40                                                             |
| Rated short-circuit strength | $I_{cn}$       | kA   | 10 with back-up fuse                                           |
| Rated fault current          | $I_{\Delta N}$ | A    | 0.03                                                           |
| Type                         |                |      | Type G/A (ÖVE E 8601)                                          |
| Tripping                     |                | s... | Short time-delayed                                             |
| Product range                |                |      | FRCmM                                                          |
| Sensitivity                  |                |      | Pulse-current sensitive                                        |
| Impulse withstand current    |                |      | Surge-proof, 3 kA                                              |
| Contact sequence             |                |      |                                                                |

**Technical data**
**Electrical**

|                                                                                  |                      |      |                            |
|----------------------------------------------------------------------------------|----------------------|------|----------------------------|
| Types conform to                                                                 |                      |      | ÖVE E 8601                 |
| Current test marks                                                               |                      |      | As per inscription         |
| Tripping                                                                         |                      | s... | 10 ms delayed              |
| Rated voltage according to IEC/EN 60947-2                                        | $U_n$                | V AC | 240/415                    |
| Rated frequency                                                                  | f                    | Hz   | 50/60                      |
| Limit values of the operating voltage                                            |                      |      |                            |
| Test circuit                                                                     |                      | V AC | 184 - 440                  |
| Rated fault current                                                              | $I_{\Delta n}$       | mA   | 30                         |
| Sensitivity                                                                      |                      |      | Pulse-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                                                        |                      |      | 3 kA (8/20 μs) surge-proof |
| Max. admissible back-up fuse                                                     |                      |      |                            |
| Short-circuit                                                                    | gG/gL                | A    | 63                         |
| Overload                                                                         | gG/gL                | A    | 40                         |
| Rated making and breaking capacity / Rated residual making and breaking capacity | $I_m / I_{\Delta m}$ | A    | 500                        |
| lifespan                                                                         |                      |      |                            |
| Electrical                                                                       | Operations           |      | ≥ 4000                     |
| Mechanical                                                                       | Operations           |      | ≥ 20000                    |

**Mechanical**

|                          |  |    |                                                                   |
|--------------------------|--|----|-------------------------------------------------------------------|
| Standard front dimension |  | mm | 45                                                                |
| Device height            |  | mm | 80                                                                |
| Built-in width           |  | mm | 70 (4TE)                                                          |
| Mounting                 |  |    | Quick attachment with 2 latch positions for DIN-rail IEC/EN 60715 |

|                                                |  |                 |                                                                           |
|------------------------------------------------|--|-----------------|---------------------------------------------------------------------------|
| Degree of Protection                           |  |                 | IP40, IP54 (with moisture-proof enclosure)                                |
| Terminals top and bottom                       |  |                 | Twin-purpose terminals                                                    |
| Terminal protection                            |  |                 | Busbar tag shroud to BGV A3, ÖVE-EN 6                                     |
| Terminal cross-section                         |  |                 |                                                                           |
| Solid                                          |  | mm <sup>2</sup> | 1.5 - 35                                                                  |
| Stranded                                       |  | mm <sup>2</sup> | 2 x 16                                                                    |
| Terminal cross-section                         |  |                 | M5 (with cross-recessed screw as defined in EN ISO 4757-Z2, Pozidriv PZ2) |
| Tightening torque of fixing screws             |  | N/m             | 2 - 2.4                                                                   |
| Thickness of busbar material                   |  | mm              | 0.8 - 2                                                                   |
| Admissible ambient temperature range           |  | °C              | -25 - +40                                                                 |
| Permissible storage and transport temperatures |  | °C              | -35 - +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                                |  |                 | white / blue                                                              |

## Design verification as per IEC/EN 61439

|                                                                                                                        |                   |    |                                                                                                                                  |
|------------------------------------------------------------------------------------------------------------------------|-------------------|----|----------------------------------------------------------------------------------------------------------------------------------|
| Technical data for design verification                                                                                 |                   |    |                                                                                                                                  |
| Rated operational current for specified heat dissipation                                                               | I <sub>n</sub>    | A  | 40                                                                                                                               |
| Heat dissipation per pole, current-dependent                                                                           | P <sub>vid</sub>  | W  | 3.275                                                                                                                            |
| Equipment heat dissipation, current-dependent                                                                          | P <sub>vid</sub>  | W  | 13.1                                                                                                                             |
| 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 | 40                                                                                                                               |
|                                                                                                                        |                   |    | Starting at 40 °C, the max. permissible continuous current decreases by 3% 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 7.0

|                                                                                                                                                                                                                       |     |  |          |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|--|----------|
| 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                                                                                                                                                                                                       |     |  | 4        |
| Rated voltage                                                                                                                                                                                                         | V   |  | 415      |
| Rated current                                                                                                                                                                                                         | A   |  | 40       |
| Rated fault current                                                                                                                                                                                                   | mA  |  | 30       |
| Rated insulation voltage Ui                                                                                                                                                                                           | V   |  | 440      |
| Rated impulse withstand voltage Uimp                                                                                                                                                                                  | kV  |  | 4        |
| Mounting method                                                                                                                                                                                                       |     |  | DIN rail |
| Leakage current type                                                                                                                                                                                                  |     |  | A        |
| Selective protection                                                                                                                                                                                                  |     |  | No       |
| Short-time delayed tripping                                                                                                                                                                                           |     |  | Yes      |
| Short-circuit breaking capacity (Icw)                                                                                                                                                                                 | kA  |  | 10       |
| Surge current capacity                                                                                                                                                                                                | kA  |  | 3        |
| Frequency                                                                                                                                                                                                             |     |  | 50/60 Hz |
| Additional equipment possible                                                                                                                                                                                         |     |  | Yes      |
| With interlocking device                                                                                                                                                                                              |     |  | Yes      |
| Degree of protection (IP)                                                                                                                                                                                             |     |  | IP20     |
| Width in number of modular spacings                                                                                                                                                                                   |     |  | 4        |
| Built-in depth                                                                                                                                                                                                        | mm  |  | 70.5     |
| Ambient temperature during operating                                                                                                                                                                                  | °C  |  | -25 - 40 |
| Pollution degree                                                                                                                                                                                                      |     |  | 2        |
| Connectable conductor cross section multi-wired                                                                                                                                                                       | mm² |  | 1.5 - 16 |
| Connectable conductor cross section solid-core                                                                                                                                                                        | mm² |  | 1.5 - 35 |

Dimensions

