# DATASHEET - FRCMM-100/4/03-A-110

**Residual current circuit breaker (RCCB), 100A, 4p, 300mA, type A, 110V**

**Part no.** **FRCMM-100/4/03-A-110**
**180621**

Powering Business Worldwide

| | |
|---|---|
| **General specifications** | |
| Product name | Eaton Moeller series xEffect - FRCmM Type AC, A, U, R RCCB |
| Part no. | FRCMM-100/4/03-A-110 |
| EAN | 4015081757862 |
| Product Length/Depth | 80 millimetre |
| Product height | 76 millimetre |
| Product width | 70 millimetre |
| Product weight | 0.381 kilogram |
| Compliances | RoHS conform |
| Certifications | EN45545-2<br>IEC 61373<br>IEC/EN 61008 |
| Product Tradename | xEffect - FRCmM Type AC, A, U, R |
| Product Type | RCCB |
| Product Sub Type | None |
| **Delivery program** | |
| Application | xEffect - Switchgear for industrial and advanced commercial applications<br>Switchgear for industrial and advanced commercial applications |
| Number of poles | Four-pole |
| Tripping time | Non-delayed |
| Amperage Rating | 100 A |
| Rated short-circuit strength | 10 kA with back-up fuse |
| Fault current rating | 300 mA |
| Sensitivity type | Pulse-current sensitive |
| Impulse withstand current | 250 A (8/20 µs) surge-proof<br>Partly surge-proof 250 A |
| Type | Type A<br>Residual current circuit breakers<br>FRCmM |
| **Technical Data - Electrical** | |
| Voltage rating (IEC/EN 60947-2) | 110/190 V |
| Rated operational voltage (Ue) - max | 110 V |
| Rated insulation voltage (Ui) | 440 V |
| Rated impulse withstand voltage (Uimp) | 4 kV |
| Rated fault current - min | 0.3 A |
| Rated fault current - max | 0.3 A |
| Frequency rating | 50 Hz / 60 Hz |
| Short-circuit rating | 100 A (max. admissible back-up fuse) |
| Leakage current type | A |
| Rated residual making and breaking capacity | 1000 A |
| Admissible back-up fuse overload - max | 80 A gG/gL |
| Rated short-time withstand current (Icw) | 10 kA |
| Surge current capacity | 0.25 kA |
| Test circuit range | 94 V AC - 210 V AC |
| Pollution degree | 2 |
| Lifespan, electrical | 4000 operations |
| **Technical Data - Mechanical** | |
| Frame | 45 mm |
| Width in number of modular spacings | 4 |
| Built-in width (number of units) | 70 mm (4 SU) |
| Built-in depth | 70.5 mm |

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| Mounting Method | Quick attachment with 2 latch positions for DIN-rail IEC/EN 60715<br>DIN rail |
| Mounting position | As required |
| Degree of protection | IP20<br>IP20, IP40 with suitable enclosure |
| Status indication | White / blue |
| Terminals (top and bottom) | Twin-purpose terminals |
| Terminal capacity (solid wire) | 1.5 $mm^2$ - 35 $mm^2$ |
| Connectable conductor cross section (solid-core) - min | 1.5 $mm^2$ |
| Connectable conductor cross section (solid-core) - max | 35 $mm^2$ |
| Terminal capacity (stranded cable) | 16 $mm^2$ (2x) |
| Connectable conductor cross section (multi-wired) - min | 1.5 $mm^2$ |
| Connectable conductor cross section (multi-wired) - max | 16 $mm^2$ |
| Terminal capacity (cable) | M5 (with cross-recessed screw as defined in EN ISO 4757-Z2, PZ2) |
| Terminal protection | Finger and hand touch safe, DGUV VS3, EN 50274 |
| Contact position indicator color | Red / green |
| Tightening torque | 2 Nm - 2.4 Nm |
| Busbar material thickness | 0.8 mm - 2 mm |
| Lifespan, mechanical | 20000 operations |
| Permitted storage and transport temperature - min | -35 °C |
| Permitted storage and transport temperature - max | 60 °C |
| Climatic proofing | 25-55 °C / 90-95% relative humidity according to IEC 60068-2 |

## Design verification as per IEC/EN 61439 - technical data

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|---|---|
| Rated operational current for specified heat dissipation (In) | 100 A |
| Heat dissipation per pole, current-dependent | 4.7 W |
| Equipment heat dissipation, current-dependent | 18.8 W |
| Static heat dissipation, non-current-dependent | 0 W |
| Heat dissipation capacity | 0 W |
| Ambient operating temperature - min | -25 °C |
| Ambient operating temperature - max | 40 °C |

## Design verification as per IEC/EN 61439

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| 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 Resist. of insul. mat. to abnormal heat/fire by internal elect. 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. |
| 10.9.2 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. |

## Additional information

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| Features | | | Additional equipment possible<br>Residual current circuit breaker |
| Fitted with: | | | Interlocking device |
| Special features | | | Maximum operating temperature is 75 °C: Starting at 40 °C, the max. permissible continuous current decreases by 1.2% for every 1 °C<br>Current test marks as per inscription |
| Used with | | | FRCmM<br>Type A<br>Residual current circuit breakers |

## Technical data ETIM 9.0

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) (ecl@ss13-27-14-22-01 [AAB906019])

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|---|---|---|---|
| Number of poles | | | 4 |
| Rated voltage | | V | 110 |
| Rated current | | A | 100 |
| Rated fault current | | A | 0.3 |
| Rated insulation voltage Ui | | V | 440 |
| Rated impulse withstand voltage Uimp | | kV | 4 |
| Power loss | | W | |
| Mounting method | | | DIN rail |
| Leakage current type | | | A |
| 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 | | | 50/60 Hz |
| Additional equipment possible | | | 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 | | $mm^2$ | 1.5 - 16 |
| Connectable conductor cross section solid-core | | $mm^2$ | 1.5 - 35 |
| RAL-number (similar) | | | 7035 |
| Explosion-proof | | | No |


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