

Specifications

Eaton 167102

Eaton Moeller series xEffect - FRCmM-NA RCCB. Residual current circuit breaker (RCCB), 40A, 4p, 30mA, type A, UL

General specifications

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| PRODUCT NAME | Eaton Moeller series xEffect - FRCmM-NA RCCB |
| CATALOG NUMBER | 167102 |
| MODEL CODE | FRCMM-40/4/003-A-NA |
| EAN | 4015081636020 |
| PRODUCT LENGTH/DEPTH | 76 mm |
| PRODUCT HEIGHT | 80 mm |
| PRODUCT WIDTH | 70 mm |
| PRODUCT WEIGHT | 0.32 kg |
| COMPLIANCES | RoHS conform |
| CERTIFICATIONS | UL 1053 IEC/EN 61008 EN45545-2 IEC 61373 |
| CATALOG NOTES | Protects against special forms of residual pulsating DC which have not been smoothed. |
| GLOBAL CATALOG | 167102 |
| PRODUCT TYPE | RCCB |



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Product specifications

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| USED WITH | FRCmM-NA Type A Residual current circuit breakers |
| AMPERAGE RATING | 40 A |
| FEATURES | Residual current circuit breaker Additional equipment possible |
| 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. |
| 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 |

Resources

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| APPLICATION NOTES | eaton-rcd-application-guide-br019003en-en-us.pdf |
| BROCHURES | UL 1053 DIN rail RCCB eaton-xeffect-industrial-switchgear-range-catalog-ca003002en-en-us.pdf |
| CATALOGS | Circuit Protection, Miniature Circuit Breakers and Supplementary Protectors, Volume 4, Tab 1 |
| DECLARATIONS OF CONFORMITY | eaton-rccb-declaration-of-conformity-eu250057en.pdf eaton-rccb-declaration-of-conformity-uk251420en.pdf |
| DRAWINGS | eaton-circuit-breaker-xeffect-frcmm-na-rccb-dimensions.eps |
| ECAD MODEL | ETN.FRCMM-40_4_003-A-NA |
| INSTALLATION INSTRUCTIONS | MA180503312 |
| MCAD MODEL | eaton-residual-current-circuit-breakers-drawings-f9-ul1053-4p.dwg eaton-residual-current-circuit-breakers-3d-models-f9-ul1053-4p.stp |
| PEP ECO-PASSPORT | eaton-residual-current-circuit-breakers-pep-eato-00111-v0101-en.pdf |
| SPECIFICATIONS AND DATASHEETS | Eaton Specification Sheet - 167102 |
| WIRING DIAGRAMS | eaton-xeffect-frcmm-rccb-wiring-diagram-002.jpg eaton-circuit-breaker-xeffect-frcmm-rccb-wiring-diagram-002.eps |

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| | 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. |
| FITTED WITH: | Interlocking device |
| FRAME | 45 mm |
| FREQUENCY RATING | 50 Hz / 60 Hz |
| POLLUTION DEGREE | 2 |
| LIFESPAN, MECHANICAL | 10000 operations |
| MOUNTING METHOD | DIN rail Quick attachment with 2 latch positions for DIN-rail IEC/EN 60715 |
| CLIMATIC PROOFING | 25-55 °C / 90-95% relative humidity according to IEC 60068-2 |
| EQUIPMENT HEAT DISSIPATION, CURRENT-DEPENDENT | 13.1 W |
| RATED IMPULSE WITHSTAND VOLTAGE (UIMP) | 4 kV |
| RATED SHORT-TIME WITHSTAND CURRENT (ICW) | 10 kA |
| ADMISSIBLE BACK-UP FUSE OVERLOAD - MAX | 25 A gG/gL |
| AMBIENT HUMDITY | 5 - 95 % |

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| RANGE | |
| BUILT-IN WIDTH (NUMBER OF UNITS) | 70 mm (4 SU) |
| SHORT-CIRCUIT RATING | Max. admissible back-up fuse: 63 A gG/gL, 70 A class J fuse (UL) |
| STATUS INDICATION | White / blue |
| TERMINAL PROTECTION | Finger and hand touch safe, DGUV VS3, EN 50274 |
| TERMINALS (TOP AND BOTTOM) | Lift terminals |
| TEST CIRCUIT RANGE | 184 V AC - 440 V AC, 196 V AC - 305 V AC (UL) |
| AMBIENT OPERATING TEMPERATURE - MAX | 40 °C |
| AMBIENT OPERATING TEMPERATURE - MIN | -25 °C |
| BUILT-IN DEPTH | 70.5 mm |
| CONNECTABLE CONDUCTOR CROSS SECTION (MULTI-WIRED) - MAX | 16 mm ² |
| CONNECTABLE CONDUCTOR CROSS SECTION (MULTI-WIRED) - MIN | 1.5 mm ² |
| CONNECTABLE CONDUCTOR CROSS SECTION (SOLID-CORE) - MAX | 35 mm ² |
| CONNECTABLE CONDUCTOR CROSS SECTION (SOLID-CORE) - MIN | 1.5 mm ² |
| FAULT CURRENT RATING | 30 mA |
| HEAT DISSIPATION PER POLE, CURRENT-DEPENDENT | 3.275 W |
| OVERVOLTAGE TESTED - MAX | 530 V |
| PERMITTED STORAGE AND TRANSPORT TEMPERATURE - MAX | 60 °C |
| PERMITTED STORAGE AND TRANSPORT TEMPERATURE - MIN | -35 °C |
| CONTACT POSITION INDICATOR COLOR | Red / green |
| MOUNTING POSITION | As required |
| DEGREE OF PROTECTION | IP20 IP20, IP40 with suitable |

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| | enclosure |
| IMPULSE WITHSTAND CURRENT | 250 A (8/20 μ s) surge-proof Partly surge-proof 250 A |
| NUMBER OF POLES | Four-pole |
| LEAKAGE CURRENT TYPE | A |
| LIFESPAN, ELECTRICAL | 4000 operations |
| TYPE | <ul style="list-style-type: none"> • FRCmM-NA • Residual current circuit breakers • Type A |

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| SPECIAL FEATURES | <ul style="list-style-type: none"> • Current test marks as per inscription • Maximum operating temperature is 75 °C: Starting at 40 °C, the max. permissible continuous current decreases by 2.5% for every 1 °C • The maximum operating current of back-up fuse must not exceed the residual current circuit breaker's rated operational current |
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| APPLICATION | Switchgear for export to North America (UL-listed) |
| PICK-UP CURRENT | 22 mA |
| SENSITIVITY TYPE | Pulse-current sensitive |
| TERMINAL CAPACITY (CABLE) | M5 (with cross-recessed screw as defined in EN ISO 4757-Z2, PZ2) |
| RATED FAULT CURRENT - MAX | 0.03 A |
| RATED FAULT CURRENT - MIN | 0.03 A |
| RATED INSULATION VOLTAGE (UI) | 440 V |
| RATED OPERATIONAL CURRENT FOR SPECIFIED HEAT DISSIPATION (IN) | 40 A |
| RATED OPERATIONAL VOLTAGE (UE) - MAX | 480 V |
| RATED RESIDUAL MAKING AND BREAKING | 500 A |

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| CAPACITY | |
| SURGE CURRENT CAPACITY | 0.25 kA |
| WIDTH IN NUMBER OF MODULAR SPACINGS | 4 |
| VOLTAGE RATING (IEC/EN 60947-2) | 240 V AC / 415 V AC |
| VOLTAGE RATING (UL) | 480Y/277 V, 60 Hz |
| VOLTAGE TYPE | AC |
| TERMINAL CAPACITY (SOLID WIRE) | 1.5 mm ² - 35 mm ² |
| TRIPPING TIME | Non-delayed |
| RATED SHORT-CIRCUIT STRENGTH | 10 kA with back-up fuse 5 kA (UL, as per CSA) |
| TERMINAL CAPACITY (STRANDED CABLE) | 16 mm ² (2x) |
| RAL-NUMBER | 7035 |
| COLOR | Gray |

PROJECT NAME:

PROJECT NUMBER:

PREPARED BY:

DATE:



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