

## Eaton 170439

Eaton Moeller series xEffect - FRCmM Type AC, A, U, R RCCB. Residual current circuit breaker (RCCB), 63A, 2p, 100mA, type S/A

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| <b>PRODUCT NAME</b>         | Eaton Moeller series xEffect - FRCmM Type AC, A, U, R RCCB |
| <b>CATALOG NUMBER</b>       | 170439                                                     |
| <b>PRODUCT LENGTH/DEPTH</b> | 76 mm                                                      |
| <b>PRODUCT HEIGHT</b>       | 80 mm                                                      |
| <b>PRODUCT WIDTH</b>        | 35 mm                                                      |
| <b>PRODUCT WEIGHT</b>       | 0.202 kg                                                   |
| <b>COMPLIANCES</b>          | RoHS conform                                               |
| <b>CERTIFICATIONS</b>       | IEC/EN 61008<br>EN45545-2<br>IEC 61373                     |

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| <b>USED WITH</b>                                                                        | FRCmM<br>Residual current circuit breakers<br>Type S/A                                                                           |
| <b>AMPERAGE RATING</b>                                                                  | 63 A                                                                                                                             |
| <b>FEATURES</b>                                                                         | Additional equipment possible<br>Residual current circuit breaker<br>Selective protection                                        |
| <b>10.10 TEMPERATURE RISE</b>                                                           | The panel builder is responsible for the temperature rise calculation. Eaton will provide heat dissipation data for the devices. |
| <b>10.11 SHORT-CIRCUIT RATING</b>                                                       | Is the panel builder's responsibility. The specifications for the switchgear must be observed.                                   |
| <b>10.12 ELECTROMAGNETIC COMPATIBILITY</b>                                              | Is the panel builder's responsibility. The specifications for the switchgear must be observed.                                   |
| <b>10.13 MECHANICAL FUNCTION</b>                                                        | The device meets the requirements, provided the information in the instruction leaflet (IL) is observed.                         |
| <b>10.2.2 CORROSION RESISTANCE</b>                                                      | Meets the product standard's requirements.                                                                                       |
| <b>10.2.3.1 VERIFICATION OF THERMAL STABILITY OF ENCLOSURES</b>                         | Meets the product standard's requirements.                                                                                       |
| <b>10.2.3.2 VERIFICATION OF RESISTANCE OF INSULATING MATERIALS TO NORMAL HEAT</b>       | Meets the product standard's requirements.                                                                                       |
| <b>10.2.3.3 RESIST. OF INSUL. MAT. TO ABNORMAL HEAT/FIRE BY INTERNAL ELECT. EFFECTS</b> | Meets the product standard's requirements.                                                                                       |
| <b>10.2.4 RESISTANCE TO ULTRA-VIOLET (UV) RADIATION</b>                                 | Meets the product standard's requirements.                                                                                       |
| <b>10.2.5 LIFTING</b>                                                                   | Does not apply, since the entire switchgear needs to                                                                             |

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| <a href="#">eaton-circuit-breaker-xeffect-frcmm-rccb-wiring-diagram.eps</a> |
| <a href="#">eaton-circuit-breaker-xeffect-frcmm-rccb-dimensions.jpg</a>     |

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|                                                                 | be evaluated.                                                                    |
| <b>10.2.6 MECHANICAL IMPACT</b>                                 | Does not apply, since the entire switchgear needs to be evaluated.               |
| <b>10.2.7 INSCRIPTIONS</b>                                      | Meets the product standard's requirements.                                       |
| <b>10.3 DEGREE OF PROTECTION OF ASSEMBLIES</b>                  | Does not apply, since the entire switchgear needs to be evaluated.               |
| <b>10.4 CLEARANCES AND CREEPAGE DISTANCES</b>                   | Meets the product standard's requirements.                                       |
| <b>10.5 PROTECTION AGAINST ELECTRIC SHOCK</b>                   | Does not apply, since the entire switchgear needs to be evaluated.               |
| <b>10.6 INCORPORATION OF SWITCHING DEVICES AND COMPONENTS</b>   | Does not apply, since the entire switchgear needs to be evaluated.               |
| <b>10.7 INTERNAL ELECTRICAL CIRCUITS AND CONNECTIONS</b>        | Is the panel builder's responsibility.                                           |
| <b>10.8 CONNECTIONS FOR EXTERNAL CONDUCTORS</b>                 | Is the panel builder's responsibility.                                           |
| <b>10.9.2 POWER-FREQUENCY ELECTRIC STRENGTH</b>                 | Is the panel builder's responsibility.                                           |
| <b>10.9.3 IMPULSE WITHSTAND VOLTAGE</b>                         | Is the panel builder's responsibility.                                           |
| <b>10.9.4 TESTING OF ENCLOSURES MADE OF INSULATING MATERIAL</b> | Is the panel builder's responsibility.                                           |
| <b>FITTED WITH:</b>                                             | Interlocking device                                                              |
| <b>FRAME</b>                                                    | 45 mm                                                                            |
| <b>FREQUENCY RATING</b>                                         | 50 Hz / 60 Hz                                                                    |
| <b>POLLUTION DEGREE</b>                                         | 2                                                                                |
| <b>MOUNTING METHOD</b>                                          | DIN rail<br>Quick attachment with 2 latch positions for DIN-rail<br>IEC/EN 60715 |
| <b>CLIMATIC PROOFING</b>                                        | 25-55 °C / 90-95% relative humidity according to IEC 60068-2                     |
| <b>EQUIPMENT HEAT DISSIPATION, CURRENT-DEPENDENT</b>            | 7.2 W                                                                            |
| <b>RATED IMPULSE WITHSTAND VOLTAGE (UIMP)</b>                   | 4 kV                                                                             |
| <b>RATED SHORT-TIME</b>                                         | 10 kA                                                                            |

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| <b>WITHSTAND CURRENT (ICW)</b>                                 |                                                |
| <b>ADMISSIBLE BACK-UP FUSE OVERLOAD - MAX</b>                  | 63 A gG/gL                                     |
| <b>BUILT-IN WIDTH (NUMBER OF UNITS)</b>                        | 35 mm (2 SU)                                   |
| <b>BUSBAR MATERIAL THICKNESS</b>                               | 0.8 mm - 2 mm                                  |
| <b>SHORT-CIRCUIT RATING</b>                                    | 63 A (max. admissible back-up fuse)            |
| <b>STATUS INDICATION</b>                                       | White / blue                                   |
| <b>TERMINAL PROTECTION</b>                                     | Finger and hand touch safe, DGUV VS3, EN 50274 |
| <b>TERMINALS (TOP AND BOTTOM)</b>                              | Twin-purpose terminals                         |
| <b>TEST CIRCUIT RANGE</b>                                      | 184 V AC - 250 V AC                            |
| <b>AMBIENT OPERATING TEMPERATURE - MAX</b>                     | 40 °C                                          |
| <b>AMBIENT OPERATING TEMPERATURE - MIN</b>                     | -25 °C                                         |
| <b>BUILT-IN DEPTH</b>                                          | 70.5 mm                                        |
| <b>CONNECTABLE CONDUCTOR CROSS SECTION (MULTI-WIRED) - MAX</b> | 16 mm <sup>2</sup>                             |
| <b>CONNECTABLE CONDUCTOR CROSS SECTION (MULTI-WIRED) - MIN</b> | 1.5 mm <sup>2</sup>                            |
| <b>CONNECTABLE CONDUCTOR CROSS SECTION (SOLID-CORE) - MAX</b>  | 35 mm <sup>2</sup>                             |
| <b>CONNECTABLE CONDUCTOR CROSS SECTION (SOLID-CORE) - MIN</b>  | 1.5 mm <sup>2</sup>                            |
| <b>FAULT CURRENT RATING</b>                                    | 100 mA                                         |
| <b>HEAT DISSIPATION PER POLE, CURRENT-DEPENDENT</b>            | 3.6 W                                          |
| <b>PERMITTED STORAGE AND TRANSPORT TEMPERATURE - MAX</b>       | 60 °C                                          |
| <b>PERMITTED STORAGE AND TRANSPORT TEMPERATURE - MIN</b>       | -35 °C                                         |
| <b>CONTACT POSITION</b>                                        | Red / green                                    |

|                                  |                                            |
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| <b>INDICATOR COLOR</b>           |                                            |
| <b>MOUNTING POSITION</b>         | As required                                |
| <b>LIFESPAN, MECHANICAL</b>      | 20000 operations                           |
| <b>DEGREE OF PROTECTION</b>      | IP20<br>IP20, IP40 with suitable enclosure |
| <b>IMPULSE WITHSTAND CURRENT</b> | 5 kA (8/20 µs) surge-proof                 |
| <b>NUMBER OF POLES</b>           | Two-pole                                   |
| <b>LEAKAGE CURRENT TYPE</b>      | A                                          |
| <b>LIFESPAN, ELECTRICAL</b>      | 4000 operations                            |

|             |                                                                                                                            |
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| <b>TYPE</b> | <ul style="list-style-type: none"> <li>• FRCmM</li> <li>• Residual current circuit breakers</li> <li>• Type S/A</li> </ul> |
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| <b>SPECIAL FEATURES</b> | <ul style="list-style-type: none"> <li>• Current test marks as per inscription</li> <li>• Maximum operating temperature is 75 °C: Starting at 40 °C, the max. permissible continuous current decreases by 1.8% for every 1 °C</li> </ul> |
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| <b>APPLICATION</b> | <ul style="list-style-type: none"> <li>• Switchgear for industrial and advanced commercial applications</li> <li>• xEffect - Switchgear for industrial and advanced commercial applications</li> </ul> |
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| <b>SENSITIVITY TYPE</b>              | Pulse-current sensitive                                          |
| <b>TERMINAL CAPACITY (CABLE)</b>     | M5 (with cross-recessed screw as defined in EN ISO 4757-Z2, PZ2) |
| <b>RATED FAULT CURRENT - MAX</b>     | 0.1 A                                                            |
| <b>RATED FAULT CURRENT - MIN</b>     | 0.1 A                                                            |
| <b>RATED INSULATION VOLTAGE (UI)</b> | 440 V                                                            |

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| <b>RATED OPERATIONAL<br/>CURRENT FOR SPECIFIED<br/>HEAT DISSIPATION (IN)</b> | 63 A                                                            |
| <b>RATED OPERATIONAL<br/>VOLTAGE (UE) - MAX</b>                              | 240 V                                                           |
| <b>RATED RESIDUAL<br/>MAKING AND BREAKING<br/>CAPACITY</b>                   | 630 A                                                           |
| <b>SURGE CURRENT<br/>CAPACITY</b>                                            | 5 kA                                                            |
| <b>WIDTH IN NUMBER OF<br/>MODULAR SPACINGS</b>                               | 2                                                               |
| <b>VOLTAGE RATING (IEC/EN<br/>60947-2)</b>                                   | 240 V AC                                                        |
| <b>VOLTAGE TYPE</b>                                                          | AC                                                              |
| <b>TERMINAL CAPACITY<br/>(SOLID WIRE)</b>                                    | 1.5 mm <sup>2</sup> - 35 mm <sup>2</sup>                        |
| <b>TRIPPING TIME</b>                                                         | Selective switch off<br>40 ms delayed - selective<br>switch off |
| <b>RATED SHORT-CIRCUIT<br/>STRENGTH</b>                                      | 10 kA with back-up fuse                                         |
| <b>TIGHTENING TORQUE</b>                                                     | 2 Nm - 2.4 Nm                                                   |
| <b>TERMINAL CAPACITY<br/>(STRANDED CABLE)</b>                                | 16 mm <sup>2</sup> (2x)                                         |
| <b>RAL-NUMBER</b>                                                            | 7035                                                            |
| <b>COLOR</b>                                                                 | Gray                                                            |

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| <b>PROJECT NAME:</b>   |
| <b>PROJECT NUMBER:</b> |
| <b>PREPARED BY:</b>    |
| :                      |



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