



## Eaton 170980

Eaton Moeller series xEffect - FRBm6/M RCBO - residual-current circuit breaker with overcurrent protection. RCD/MCB, 4A, 10mA, MCB trip type C, 1-phase+N, RCCB trip type: AC

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| <b>PRODUCT NAME</b>         | Eaton Moeller series xEffect - FRBm6 RCBO - residual-current circuit breaker with overcurrent protection |
| <b>CATALOG NUMBER</b>       | 170980                                                                                                   |
| <b>PRODUCT LENGTH/DEPTH</b> | 80 mm                                                                                                    |
| <b>PRODUCT HEIGHT</b>       | 75 mm                                                                                                    |
| <b>PRODUCT WIDTH</b>        | 35 mm                                                                                                    |
| <b>PRODUCT WEIGHT</b>       | 0.205 kg                                                                                                 |
| <b>COMPLIANCES</b>          | CE Marked<br>RoHS conform                                                                                |
| <b>CERTIFICATIONS</b>       | CE<br>EN45545-2<br>IEC 61373                                                                             |

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| <b>VOLTAGE RATING</b>                                                                   | 240 V - 240 V                                                                                                                    |
| <b>SURGE CURRENT CAPACITY</b>                                                           | 0.25 kA                                                                                                                          |
| <b>VOLTAGE TYPE</b>                                                                     | AC                                                                                                                               |
| <b>WIDTH IN NUMBER OF MODULAR SPACINGS</b>                                              | 2                                                                                                                                |
| <b>FEATURES</b>                                                                         | Concurrently switching N-neutral                                                                                                 |
| <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 be evaluated.                                                               |
| <b>10.2.6 MECHANICAL IMPACT</b>                                                         | Does not apply, since the entire switchgear needs to be evaluated.                                                               |

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| □□□□ | <a href="#">xEffect_FR_RCCB_FAZ%20MCB.pdf</a>                         |
| □□□□ | <a href="#">eaton-xeffect-frbm6-rcbo-catalog-ca003015en-en-us.pdf</a> |
|      | <a href="#">eaton-xeffect-frbm6m-wiring-diagram.jpg</a>               |
|      | <a href="#">eaton-xeffect-frbm6m-dimensions.jpg</a>                   |
| □□   | <a href="#">eaton-xeffect-frbm6m-3d-drawing-006.jpg</a>               |
|      | <a href="#">eaton-xeffect-frbm6m-characteristic-curve.jpg</a>         |

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| <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>OPERATING AMBIENT TEMPERATURE - MAX</b>                           | 40 °C                                                              |
| <b>OPERATING AMBIENT TEMPERATURE - MIN</b>                           | -25 °C                                                             |
| <b>PRODUCT RANGE</b>                                                 | FRBmM                                                              |
| <b>RATED CURRENT</b>                                                 | 4 A                                                                |
| <b>RATED FAULT CURRENTS OF PRODUCT RANGE</b>                         | 10, 30, 100, 300 MilliAmpere                                       |
| <b>RATED OPERATIONAL CURRENT FOR SPECIFIED HEAT DISSIPATION (IN)</b> | 4 A                                                                |
| <b>RATED SWITCHING CAPACITY (IEC/EN 61009)</b>                       | 10 kA                                                              |
| <b>STATIC HEAT DISSIPATION, NON-CURRENT-DEPENDENT</b>                | 0 W                                                                |
| <b>TRIPPING CHARACTERISTIC</b>                                       | C                                                                  |
| <b>BUILT-IN DEPTH</b>                                                | 75.5 mm                                                            |
| <b>CURRENT LIMITING CLASS</b>                                        | 3                                                                  |
| <b>RATED SHORT-CIRCUIT BREAKING CAPACITY (EN 60947-2)</b>            | 15 kA                                                              |
| <b>AMBIENT OPERATING</b>                                             | 40 °C                                                              |

|                                                            |                                                             |
|------------------------------------------------------------|-------------------------------------------------------------|
| <b>TEMPERATURE - MAX</b>                                   |                                                             |
| <b>AMBIENT OPERATING TEMPERATURE - MIN</b>                 | -25 °C                                                      |
| <b>FAULT CURRENT RATING</b>                                | 0.01 A                                                      |
| <b>HEAT DISSIPATION CAPACITY</b>                           | 0 W                                                         |
| <b>HEAT DISSIPATION PER POLE, CURRENT-DEPENDENT</b>        | 0 W                                                         |
| <b>NUMBER OF POLES (PROTECTED)</b>                         | 1                                                           |
| <b>NUMBER OF POLES (TOTAL)</b>                             | 2                                                           |
| <b>RATED OPERATIONAL VOLTAGE (UE) - MAX</b>                | 240 V                                                       |
| <b>RATED SHORT-CIRCUIT BREAKING CAPACITY (IEC 60947-2)</b> | 15 kA                                                       |
| <b>RATED SWITCHING CAPACITY</b>                            | 10 kA                                                       |
| <b>BASIC FUNCTION</b>                                      | Combined RCD/MCB devices                                    |
| <b>MOUNTING METHOD</b>                                     | DIN rail                                                    |
| <b>EQUIPMENT HEAT DISSIPATION, CURRENT-DEPENDENT</b>       | 1.5 W                                                       |
| <b>RATED IMPULSE WITHSTAND VOLTAGE (UIMP)</b>              | 4 kV                                                        |
| <b>DEGREE OF PROTECTION</b>                                | IP20                                                        |
| <b>OPERATING AMBIENT TEMPERATURE HINT</b>                  | Keep in mind the derating at temperatures higher than 40 °C |
| <b>TRIPPING</b>                                            | Non-delayed                                                 |
| <b>OVERVOLTAGE CATEGORY</b>                                | III                                                         |
| <b>POLLUTION DEGREE</b>                                    | 2                                                           |
| <b>IMPULSE WITHSTAND CURRENT</b>                           | Partly surge-proof, 250 A                                   |
| <b>LEAKAGE CURRENT TYPE</b>                                | AC                                                          |
| <b>RELEASE CHARACTERISTIC</b>                              | C                                                           |
| <b>SENSITIVITY TYPE</b>                                    | AC current sensitive                                        |
| <b>FREQUENCY RATING</b>                                    | 50 Hz                                                       |
| <b>RATED INSULATION VOLTAGE (UI)</b>                       | 500 V                                                       |
| <b>CONNECTABLE CONDUCTOR CROSS SECTION (SOLID-CORE) -</b>  | 1 mm <sup>2</sup>                                           |

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| MIN                                                              |                                                                      |
| CONNECTABLE<br>CONDUCTOR CROSS<br>SECTION (SOLID-CORE) -<br>MAX  | 25 mm <sup>2</sup>                                                   |
| CONNECTABLE<br>CONDUCTOR CROSS<br>SECTION (MULTI-WIRED)<br>- MIN | 1 mm <sup>2</sup>                                                    |
| CONNECTABLE<br>CONDUCTOR CROSS<br>SECTION (MULTI-WIRED)<br>- MAX | 25 mm <sup>2</sup>                                                   |
| RATED SHORT-CIRCUIT<br>BREAKING CAPACITY (EN<br>61009)           | 10 kA                                                                |
| RATED SHORT-CIRCUIT<br>BREAKING CAPACITY (EN<br>61009-1)         | 10 kA                                                                |
| NUMBER OF POLES                                                  | Single-pole + N                                                      |
| DISCONNECTION<br>CHARACTERISTIC                                  | Undelayed                                                            |
| TYPE                                                             | RCBO                                                                 |
| APPLICATION                                                      | Switchgear for industrial<br>and advanced commercial<br>applications |

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| PROJECT NAME:   |
| PROJECT NUMBER: |
| PREPARED BY:    |
|                 |



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