



## Eaton 170449

Eaton Moeller series xEffect - FRCmM Type AC, A, U, R RCCB. Residual current circuit breaker (RCCB), 63A, 4p, 300mA, type S/A

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|                                 |                                                                  |
|---------------------------------|------------------------------------------------------------------|
| <b>PRODUCT NAME</b>             | Eaton Moeller series<br>xEffect - FRCmM Type AC,<br>A, U, R RCCB |
| <b>CATALOG NUMBER</b>           | 170449                                                           |
| <b>PRODUCT<br/>LENGTH/DEPTH</b> | 76 mm                                                            |
| <b>PRODUCT HEIGHT</b>           | 80 mm                                                            |
| <b>PRODUCT WIDTH</b>            | 70 mm                                                            |
| <b>PRODUCT WEIGHT</b>           | 0.351 kg                                                         |
| <b>COMPLIANCES</b>              | RoHS conform                                                     |
| <b>CERTIFICATIONS</b>           | IEC/EN 61008<br>EN45545-2<br>IEC 61373                           |



Powering Business Worldwide

**USED WITH**

FRCmM  
Residual current circuit  
breakers  
Type S/A

**AMPERAGE RATING**

63 A

**FEATURES**

Selective protection  
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**

Does not apply, since the

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xeffect-frcmm-rccb-  
dimensions.jpg](#)

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|-----------------------------------------------------------------|-------------------------------------------------------------------------------|
| <b>IMPACT</b>                                                   | 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>LIFESPAN, MECHANICAL</b>                                     | 20000 operations                                                              |
| <b>MOUNTING METHOD</b>                                          | DIN rail<br>Quick attachment with 2 latch positions for DIN-rail 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>            | 10.5 W                                                                        |
| <b>RATED IMPULSE WITHSTAND VOLTAGE (UIMP)</b>                   | 4 kV                                                                          |
| <b>RATED SHORT-TIME WITHSTAND CURRENT (ICW)</b>                 | 10 kA                                                                         |
| <b>ADMISSIBLE BACK-UP FUSE OVERLOAD - MAX</b>                   | 63 A gG/gL                                                                    |

|                                                                            |                                                   |
|----------------------------------------------------------------------------|---------------------------------------------------|
| <b>BUILT-IN WIDTH<br/>(NUMBER OF UNITS)</b>                                | 70 mm (4 SU)                                      |
| <b>BUSBAR MATERIAL<br/>THICKNESS</b>                                       | 0.8 mm - 2 mm                                     |
| <b>SHORT-CIRCUIT RATING</b>                                                | 63 A (max. admissible<br>back-up fuse)            |
| <b>STATUS INDICATION</b>                                                   | White / blue                                      |
| <b>TERMINAL PROTECTION</b>                                                 | Finger and hand touch<br>safe, DGUV VS3, EN 50274 |
| <b>TERMINALS (TOP AND<br/>BOTTOM)</b>                                      | Twin-purpose terminals                            |
| <b>TEST CIRCUIT RANGE</b>                                                  | 184 V AC - 440 V AC                               |
| <b>AMBIENT OPERATING<br/>TEMPERATURE - MAX</b>                             | 40 °C                                             |
| <b>AMBIENT OPERATING<br/>TEMPERATURE - MIN</b>                             | -25 °C                                            |
| <b>BUILT-IN DEPTH</b>                                                      | 70.5 mm                                           |
| <b>CONNECTABLE<br/>CONDUCTOR CROSS<br/>SECTION (MULTI-WIRED)<br/>- MAX</b> | 16 mm <sup>2</sup>                                |
| <b>CONNECTABLE<br/>CONDUCTOR CROSS<br/>SECTION (MULTI-WIRED)<br/>- MIN</b> | 1.5 mm <sup>2</sup>                               |
| <b>CONNECTABLE<br/>CONDUCTOR CROSS<br/>SECTION (SOLID-CORE) -<br/>MAX</b>  | 35 mm <sup>2</sup>                                |
| <b>CONNECTABLE<br/>CONDUCTOR CROSS<br/>SECTION (SOLID-CORE) -<br/>MIN</b>  | 1.5 mm <sup>2</sup>                               |
| <b>FAULT CURRENT RATING</b>                                                | 300 mA                                            |
| <b>HEAT DISSIPATION<br/>CAPACITY</b>                                       | 0 W                                               |
| <b>HEAT DISSIPATION PER<br/>POLE, CURRENT-<br/>DEPENDENT</b>               | 2.625 W                                           |
| <b>PERMITTED STORAGE<br/>AND TRANSPORT<br/>TEMPERATURE - MAX</b>           | 60 °C                                             |
| <b>PERMITTED STORAGE<br/>AND TRANSPORT<br/>TEMPERATURE - MIN</b>           | -35 °C                                            |
| <b>CONTACT POSITION<br/>INDICATOR COLOR</b>                                | Red / green                                       |
| <b>MOUNTING POSITION</b>                                                   | As required                                       |
| <b>DEGREE OF PROTECTION</b>                                                | IP20, IP40 with suitable<br>enclosure<br>IP20     |

|                                                                      |                                                                                                                                                                                                                                          |
|----------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>IMPULSE WITHSTAND CURRENT</b>                                     | 5 kA (8/20 µs) surge-proof                                                                                                                                                                                                               |
| <b>NUMBER OF POLES</b>                                               | Four-pole                                                                                                                                                                                                                                |
| <b>LEAKAGE CURRENT TYPE</b>                                          | A                                                                                                                                                                                                                                        |
| <b>LIFESPAN, ELECTRICAL</b>                                          | 4000 operations                                                                                                                                                                                                                          |
| <b>TYPE</b>                                                          | <ul style="list-style-type: none"> <li>• FRCmM</li> <li>• Residual current circuit breakers</li> <li>• Type S/A</li> </ul>                                                                                                               |
| <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> |
| <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>                                   |
| <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>                                     | 0.3 A                                                                                                                                                                                                                                    |
| <b>RATED FAULT CURRENT - MIN</b>                                     | 0.3 A                                                                                                                                                                                                                                    |
| <b>RATED INSULATION VOLTAGE (UI)</b>                                 | 440 V                                                                                                                                                                                                                                    |
| <b>RATED OPERATIONAL CURRENT FOR SPECIFIED HEAT DISSIPATION (IN)</b> | 63 A                                                                                                                                                                                                                                     |
| <b>RATED OPERATIONAL VOLTAGE (UE) - MAX</b>                          | 415 V                                                                                                                                                                                                                                    |
| <b>RATED RESIDUAL MAKING AND BREAKING CAPACITY</b>                   | 630 A                                                                                                                                                                                                                                    |
| <b>STATIC HEAT</b>                                                   | 0 W                                                                                                                                                                                                                                      |

|                                     |                                                              |
|-------------------------------------|--------------------------------------------------------------|
| DISSIPATION, NON-CURRENT-DEPENDENT  |                                                              |
| SURGE CURRENT CAPACITY              | 5 kA                                                         |
| WIDTH IN NUMBER OF MODULAR SPACINGS | 4                                                            |
| VOLTAGE RATING (IEC/EN 60947-2)     | 240 V AC / 415 V AC                                          |
| VOLTAGE TYPE                        | AC                                                           |
| TERMINAL CAPACITY (SOLID WIRE)      | 1.5 mm <sup>2</sup> - 35 mm <sup>2</sup>                     |
| TRIPPING TIME                       | 40 ms delayed - selective switch off<br>Selective switch off |
| RATED SHORT-CIRCUIT STRENGTH        | 10 kA with back-up fuse                                      |
| TIGHTENING TORQUE                   | 2 Nm - 2,4 Nm                                                |
| TERMINAL CAPACITY (STRANDED CABLE)  | 16 mm <sup>2</sup> (2x)                                      |
| RAL-NUMBER                          | 7035                                                         |
| COLOR                               | Gray                                                         |

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