

# Specyfikacje



## Eaton 300638

Eaton Moeller series xEffect - FRCdM Type B, B+, Bfq RCCB, 25 A, 2p, 30 mA, type G/B

### General specifications

|                      |                                                                      |
|----------------------|----------------------------------------------------------------------|
| PRODUCT NAME         | Eaton Moeller series xEffect - FRCdM Type B, B+, Bfq RCCB            |
| CATALOG NUMBER       | 300638                                                               |
| EAN                  | 9010238122802                                                        |
| PRODUCT LENGTH/DEPTH | 80 mm                                                                |
| PRODUCT HEIGHT       | 71 mm                                                                |
| PRODUCT WIDTH        | 70 mm                                                                |
| PRODUCT WEIGHT       | 0.32 kg                                                              |
| COMPLIANCES          | RoHS conform                                                         |
| CERTIFICATIONS       | ÖVE E 8601<br>IEC/EN 62423<br>IEC/EN 61008<br>EN45545-2<br>IEC 61373 |
| MODEL CODE           | FRCdM-25/2/003-G/B                                                   |

| Dostawa                      |                                                                                                                                                                                                                                                                                                                                    |
|------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| APPLICATION                  | xEffect - Switchgear for industrial and advanced commercial applications                                                                                                                                                                                                                                                           |
| NUMBER OF POLES              | Two-pole                                                                                                                                                                                                                                                                                                                           |
| TRIPPING TIME                | Short time-delayed<br>10 ms delayed                                                                                                                                                                                                                                                                                                |
| AMPERAGE RATING              | 25 A                                                                                                                                                                                                                                                                                                                               |
| RATED SHORT-CIRCUIT STRENGTH | 10 kA                                                                                                                                                                                                                                                                                                                              |
| FAULT CURRENT RATING         | 30 mA                                                                                                                                                                                                                                                                                                                              |
| SENSITIVITY TYPE             | All current sensitive                                                                                                                                                                                                                                                                                                              |
| IMPULSE WITHSTAND CURRENT    | 3 kA (8/20 µs) surge-proof                                                                                                                                                                                                                                                                                                         |
| TYPE                         | <ul style="list-style-type: none"><li>&gt; 500000 operations</li><li>Current test marks as per inscription</li><li>Dry auxiliary contact:<br/>&gt; 100,000 electrical switching operations per minute at 2 A 30 VDC resistive load</li><li>Maximum operating temperature is 60 °C in accordance with the de-rating table</li></ul> |

| Elektryczne dane techniczne - suchy styl pomocniczy                        |        |
|----------------------------------------------------------------------------|--------|
| RATED SWITCHING CAPACITY (RESISTIVE LOAD) OF AUXILIARY CONTACT AT 30 V DC  | 2 A    |
| RATED SWITCHING CAPACITY (RESISTIVE LOAD) OF AUXILIARY CONTACT AT 240 V AC | 0.25 A |
| SWITCHING DUTY WITH RESISTIVE LOAD OF AUXILIARY CONTACT - MAX              | 60 W   |
| SWITCHING VOLTAGE AT AC OF AUXILIARY CONTACT - MAX                         | 240 V  |

| Elektryczne dane techniczne                 |                                     |
|---------------------------------------------|-------------------------------------|
| VOLTAGE RATING (IEC/EN 60947-2)             | 240 V AC / 415 V AC                 |
| VOLTAGE RATING - MIN                        | 50 VAC                              |
| VOLTAGE RATING - MAX                        | 456 VAC                             |
| RATED OPERATIONAL VOLTAGE (UE) - MAX        | 240 V                               |
| RATED INSULATION VOLTAGE (UI)               | 440 V                               |
| RATED IMPULSE WITHSTAND VOLTAGE (UIMP)      | 4 kV                                |
| RATED FAULT CURRENT - MIN                   | 0.03 A                              |
| RATED FAULT CURRENT - MAX                   | 0.03 A                              |
| FREQUENCY RATING                            | 50 Hz                               |
| SHORT-CIRCUIT RATING                        | 63 A (max. admissible back-up fuse) |
| LEAKAGE CURRENT TYPE                        | B                                   |
| RATED RESIDUAL MAKING AND BREAKING CAPACITY | 500 A                               |
| ADMISSIBLE BACK-UP FUSE                     | 63 A gG/gL                          |
| ADMISSIBLE BACK-UP FUSE OVERLOAD - MAX      | 25 A gG/gL                          |
| RATED SHORT-TIME WITHSTAND CURRENT (ICW)    | 10 kA                               |
| SURGE CURRENT CAPACITY                      | 3 kA                                |
| TEST CIRCUIT RANGE                          | 196 V AC - 264 V AC                 |
| POLLUTION DEGREE                            | 2                                   |
| LIFESPAN, ELECTRICAL                        | 4000 operations                     |

| Mechaniczne dane techniczne         |                                                                               |
|-------------------------------------|-------------------------------------------------------------------------------|
| 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                                                                       |
| 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                                    |

|                                                           |                                            |
|-----------------------------------------------------------|--------------------------------------------|
| <b>SWITCHING VOLTAGE AT DC OF AUXILIARY CONTACT - MAX</b> | 220 V                                      |
| <b>SWITCHING CURRENT OF AUXILIARY CONTACT - MAX</b>       | 2 A                                        |
| <b>SWITCHING CAPACITY OF AUXILIARY CONTACT - MIN</b>      | 10 $\mu$ A, 10 mV DC                       |
| <b>TERMINAL CAPACITY OF AUXILIARY CONTACT</b>             | 0.25 mm <sup>2</sup> - 1.5 mm <sup>2</sup> |

|                                                                |                                                                  |
|----------------------------------------------------------------|------------------------------------------------------------------|
| <b>STATUS INDICATION</b>                                       | White / blue                                                     |
| <b>TERMINALS (TOP AND BOTTOM)</b>                              | Twin-purpose terminals                                           |
| <b>TERMINAL CAPACITY (SOLID WIRE)</b>                          | 1.5 mm <sup>2</sup> - 35 mm <sup>2</sup>                         |
| <b>CONNECTABLE CONDUCTOR CROSS SECTION (SOLID-CORE) - MIN</b>  | 1.5 mm <sup>2</sup>                                              |
| <b>CONNECTABLE CONDUCTOR CROSS SECTION (SOLID-CORE) - MAX</b>  | 35 mm <sup>2</sup>                                               |
| <b>TERMINAL CAPACITY (STRANDED CABLE)</b>                      | 16 mm <sup>2</sup> (2x)                                          |
| <b>CONNECTABLE CONDUCTOR CROSS SECTION (MULTI-WIRED) - MIN</b> | 1.5 mm <sup>2</sup>                                              |
| <b>CONNECTABLE CONDUCTOR CROSS SECTION (MULTI-WIRED) - MAX</b> | 16 mm <sup>2</sup>                                               |
| <b>TERMINAL CAPACITY (CABLE)</b>                               | M5 (with cross-recessed screw as defined in EN ISO 4757-Z2, PZ2) |
| <b>TERMINAL PROTECTION</b>                                     | Finger and hand touch safe, DGUV VS3, EN 50274                   |
| <b>TIGHTENING TORQUE</b>                                       | 2 Nm - 2.4 Nm                                                    |
| <b>CONTACT POSITION INDICATOR COLOR</b>                        | Red / green                                                      |
| <b>BUSBAR MATERIAL THICKNESS</b>                               | 0.8 mm - 2 mm                                                    |
| <b>LIFESPAN, MECHANICAL</b>                                    | 20000 operations                                                 |
| <b>PERMITTED STORAGE AND TRANSPORT TEMPERATURE - MIN</b>       | -35 °C                                                           |
| <b>PERMITTED STORAGE AND TRANSPORT TEMPERATURE - MAX</b>       | 60 °C                                                            |
| <b>CLIMATIC PROOFING</b>                                       | 25-55 °C / 90-95% relative humidity according to IEC 60068-2     |

| <b>Weryfikacja projektu zgodnie z IEC/EN 61439 - dane techniczne</b> |       |
|----------------------------------------------------------------------|-------|
| <b>RATED OPERATIONAL CURRENT FOR SPECIFIED HEAT DISSIPATION (IN)</b> | 25 A  |
| <b>HEAT DISSIPATION PER POLE, CURRENT-DEPENDENT</b>                  | 0 W   |
| <b>EQUIPMENT HEAT DISSIPATION, CURRENT-DEPENDENT</b>                 | 3.1 W |

| <b>Weryfikacja projektu zgodnie z IEC/EN 61439</b>                                |                                            |
|-----------------------------------------------------------------------------------|--------------------------------------------|
| <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>STATIC HEAT DISSIPATION, NON-CURRENT-DEPENDENT</b> | 0 W    |
| <b>HEAT DISSIPATION CAPACITY</b>                      | 3.1 W  |
| <b>AMBIENT OPERATING TEMPERATURE - MIN</b>            | -25 °C |
| <b>AMBIENT OPERATING TEMPERATURE - MAX</b>            | 60 °C  |

|                                                                                         |                                                                                                                                  |
|-----------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------|
| <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.                                                               |
| <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>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.                         |

| Dodatkowe informacje |                                                                                                                                            |
|----------------------|--------------------------------------------------------------------------------------------------------------------------------------------|
| FEATURES             | Residual current circuit-breakers, digital<br>Additional equipment possible<br>Selective protection                                        |
| FITTED WITH:         | Interlocking device                                                                                                                        |
| FUNCTIONS            | Short-time delayed tripping                                                                                                                |
| SPECIAL FEATURES     | <ul style="list-style-type: none"> <li>FRCdM</li> <li>Residual current circuit-breakers, digital</li> <li>Type G/B (ÖVE E 8601)</li> </ul> |
| USED WITH            | Type G/B (ÖVE E 8601)<br>FRCdM<br>Residual current circuit-breakers, digital                                                               |

| Zasoby               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|----------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| BROSZURY             | <a href="#">eaton-xeffect-digital-switchgear-brochure-br003004en-en-us.pdf</a>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| CHARACTERISTIC CURVE | <a href="#">eaton-current-xeffect-frcdm-rccb-characteristic-curve-005.jpg</a><br><br><a href="#">KL rccb b300 KL rccb b30</a><br><br><a href="#">eaton-mcb-xeffect-frcdm-rccb-characteristic-curve.eps</a><br><br><a href="#">eaton-current-xeffect-frcdm-rccb-characteristic-curve-003.jpg</a><br><br><a href="#">1220DIA-18</a>                                                                                                                                                                                                                                          |
| DEKLARACJE ZGODNOŚCI | <a href="#">DA-DC-03 FRCdM-B</a><br><br><a href="#">DA-DC-03 FRCdM</a><br><br><a href="#">eaton-frcdm-bfq-declaration-of-confirmity-pl.pdf</a><br><br><a href="#">eaton-frcdm-b-declaration-of-confirmity-pl.pdf</a><br><br><a href="#">eaton-frcdm-b-plus-declaration-of-confirmity-pl.pdf</a>                                                                                                                                                                                                                                                                            |
| DWG                  | <a href="#">Mas PDFM</a><br><br><a href="#">eaton-current-xeffect-frcdm-rccb-dimensions.jpg</a>                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| ECAD MODEL           | <a href="#">ETN.FRCdM-25 2 003-G B.edz</a>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| INSTRUKCJE MONTAŻU   | <a href="#">IL019241ZU</a><br><br><a href="#">eaton-residual-current-circuit-breakers-frcdm-instruction-leaflet-il019013zu.pdf</a><br><br><a href="#">eaton-cadenas-front view-frcdm rccb 2p front.pra</a><br><br><a href="#">eaton-cadenas-path-rail digital-frcdm rccb 2p.3db</a><br><br><a href="#">eaton-frcdm rccb 2p-drawing.dwg</a><br><br><a href="#">eaton-cadenas-side view-frcdm rccb 2p side.pra</a><br><br><a href="#">eaton-300638-drawing.dwg</a><br><br><a href="#">eaton-frcdm rccb 2p-3-d-model.stp</a><br><br><a href="#">eaton-300638-3d-model.stp</a> |
| NOTATKI APLIKACYJNE  | <a href="#">eaton-quality-standards-for-railway-applications-application-paper-ap003005en-en-us.pdf</a>                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| SCHEMATY POŁĄCZEŃ    | <a href="#">FRCdM 4p TypB 2</a>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |

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[eaton-xeffect-frcdm-rccb-wiring-diagram-002.jpg](#)

[FRCdM\\_4p\\_TypB](#)

[eaton-xeffect-frcdm-rccb-wiring-diagram.jpg](#)

[FRCdM\\_4p\\_TypB\\_3](#)

[eaton-current-xeffect-frcdm-rccb-wiring-diagram.jpg](#)

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**PROJECT NAME:**

**PROJECT NUMBER:**

**PREPARED BY:**

**DATA:**

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