

# Specifications



## Eaton 167693

Eaton Moeller series xEffect - FRCmM-NA  
RCCB. FRCmM-NA-110, 2 pole, In: 25 A, Icn: 10 with back-up fuse kA, IDN: 0.03 A, 110-V systems

### General specifications

<b>PRODUCT NAME</b>	Eaton Moeller series xEffect - FRCmM-NA RCCB
<b>CATALOG NUMBER</b>	167693
<b>MODEL CODE</b>	FRCM-25/2/003-G/A-NA-110
<b>EAN</b>	4015081642359
<b>PRODUCT LENGTH/DEPTH</b>	76 mm
<b>PRODUCT HEIGHT</b>	80 mm
<b>PRODUCT WIDTH</b>	35 mm
<b>PRODUCT WEIGHT</b>	0.22 kg
<b>COMPLIANCES</b>	RoHS conform
<b>CERTIFICATIONS</b>	UL 1053 IEC/EN 61008 ÖVE E 8601 EN45545-2 IEC 61373
<b>CATALOG NOTES</b>	Additionally protects against special forms of residual pulsating DC which have not been smoothed.
<b>GLOBAL CATALOG</b>	167693
<b>PRODUCT TYPE</b>	RCCB

## Product specifications

USED WITH	FRCmM-NA-110 Residual current circuit breakers Type G/A (ÖVE E 8601)
AMPERAGE RATING	25 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

APPLICATION NOTES	<a href="#">eaton-rcd-application-guide-br019003en-en-us.pdf</a>
CATALOGS	<a href="#">eaton-xeffect-frcmm-na-rccb-catalog-ca003019en-en-us.pdf</a> <a href="#">eaton-xeffect-industrial-switchgear-range-catalog-ca003002en-en-us.pdf</a>
DECLARATIONS OF CONFORMITY	<a href="#">Circuit Protection, Miniature Circuit Breakers and Supplementary Protectors, Volume 4, Tab 1</a>
DRAWINGS	<a href="#">eaton-circuit-breaker-xeffect-frcmm-na-rccb-dimensions.eps</a>
ECAD MODEL	<a href="#">ETN.FRCMM-25_2_003-G_A-NA-110.edz</a>
INSTALLATION INSTRUCTIONS	<a href="#">MA180503312</a>
MCAD MODEL	<a href="#">eaton-residual-current-circuit-breakers-drawings-f9-ul1053-2p.dwg</a> <a href="#">eaton-residual-current-circuit-breakers-3d-models-f9-ul1053-2p.stp</a>
PEP ECO-PASSPORT	<a href="#">eaton-residual-current-circuit-breakers-pep-eato-00109-v0101-en.pdf</a>
SPECIFICATIONS AND DATASHEETS	<a href="#">Eaton Specification Sheet - 167693</a>
WIRING DIAGRAMS	<a href="#">eaton-circuit-breaker-xeffect-frcmm-na-rccb-wiring-diagram.eps</a> <a href="#">eaton-xeffect-frcmm-rccb-wiring-diagram.jpg</a>

	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>	10000 operations
<b>MOUNTING METHOD</b>	Quick attachment with 2 latch positions for DIN-rail IEC/EN 60715 DIN rail
<b>CLIMATIC PROOFING</b>	25-55 °C / 90-95% relative humidity according to IEC 60068-2
<b>EQUIPMENT HEAT DISSIPATION, CURRENT-DEPENDENT</b>	2 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>	25 A gG/gL
<b>AMBIENT HUMDITY</b>	5 - 95 %

<b>RANGE</b>	
<b>BUILT-IN WIDTH (NUMBER OF UNITS)</b>	35 mm (2 SU)
<b>SHORT-CIRCUIT RATING</b>	Max. admissible back-up fuse: 63 A gG/gL, 70 A class J fuse (UL)
<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>	Lift terminals
<b>TEST CIRCUIT RANGE</b>	100 V AC - 121 V AC, 94 V AC - 132 V AC (UL)
<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>	30 mA
<b>HEAT DISSIPATION CAPACITY</b>	0 W
<b>HEAT DISSIPATION PER POLE, CURRENT- DEPENDENT</b>	1 W
<b>OVERVOLTAGE TESTED - MAX</b>	530 V
<b>PERMITTED STORAGE AND TRANSPORT TEMPERATURE - MAX</b>	60 °C
<b>PERMITTED STORAGE AND TRANSPORT TEMPERATURE - MIN</b>	-35 °C
<b>CONTACT POSITION INDICATOR COLOR</b>	Red / green
<b>MOUNTING POSITION</b>	As required

<b>DEGREE OF PROTECTION</b>	IP20 IP20, IP40 with suitable enclosure
<b>IMPULSE WITHSTAND CURRENT</b>	3 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

<b>TYPE</b>	<ul style="list-style-type: none"> <li>• FRCmM-NA-110</li> <li>• Residual current circuit breakers</li> <li>• Type G/A (ÖVE E 8601)</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 55 °C: Starting at 40 °C, the max. permissible continuous current decreases by 3% for every 1 °C</li> <li>• The maximum operating current of back-up fuse must not exceed the residual current circuit breaker's rated operational current</li> </ul>
<b>APPLICATION</b>	Switchgear for 110-V systems
<b>FUNCTIONS</b>	Short-time delayed tripping
<b>PICK-UP CURRENT</b>	22 mA
<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>	0.03 A
<b>RATED FAULT CURRENT - MIN</b>	0.03 A
<b>RATED INSULATION VOLTAGE (UI)</b>	440 V
<b>RATED OPERATIONAL CURRENT FOR SPECIFIED HEAT DISSIPATION (IN)</b>	25 A

<b>RATED OPERATIONAL VOLTAGE (UE) - MAX</b>	110 V
<b>RATED RESIDUAL MAKING AND BREAKING CAPACITY</b>	500 A
<b>STATIC HEAT DISSIPATION, NON-CURRENT-DEPENDENT</b>	0 W
<b>SURGE CURRENT CAPACITY</b>	3 kA
<b>WIDTH IN NUMBER OF MODULAR SPACINGS</b>	2
<b>VOLTAGE RATING (IEC/EN 60947-2)</b>	110/190 V
<b>VOLTAGE RATING (UL)</b>	208/120 V, 60 Hz
<b>VOLTAGE TYPE</b>	AC
<b>TERMINAL CAPACITY (SOLID WIRE)</b>	1.5 mm <sup>2</sup> - 35 mm <sup>2</sup>
<b>TRIPPING TIME</b>	10 ms delay at 50 Hz 8 ms delay at 60 Hz Short time-delayed
<b>RATED SHORT-CIRCUIT STRENGTH</b>	5 kA (UL, as per CSA) 10 kA with back-up fuse
<b>TERMINAL CAPACITY (STRANDED CABLE)</b>	16 mm <sup>2</sup> (2x)
<b>RAL-NUMBER</b>	7035
<b>COLOR</b>	Gray

**PROJECT NAME:**

**PROJECT NUMBER:**

**PREPARED BY:**

**DATE:**



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