

Specifications



Eaton 170302

Eaton Moeller series xEffect - FRCmM Type AC, A, U, R RCCB. Residual current circuit breaker (RCCB), 16A, 4p, 300mA, type G/A

General specifications

PRODUCT NAME	Eaton Moeller series xEffect - FRCmM Type AC, A, U, R RCCB
CATALOG NUMBER	170302
MODEL CODE	FRCMM-16/4/03-G/A
EAN	4015081668007
PRODUCT LENGTH/DEPTH	76 mm
PRODUCT HEIGHT	80 mm
PRODUCT WIDTH	70 mm
PRODUCT WEIGHT	0.341 kg
COMPLIANCES	RoHS conform
CERTIFICATIONS	ÖVE E 8601 EN45545-2 IEC 61373 IEC/EN 61008



Powering Business Worldwide

Additional information

FEATURES	Additional equipment possible Residual current circuit breaker
FITTED WITH:	Interlocking device
FUNCTIONS	Short-time delayed tripping
SPECIAL FEATURES	• FRCmM • Residual current circuit breakers • Type G/A (ÖVE E 8601)
USED WITH	FRCmM Type G/A (ÖVE E 8601) Residual current circuit breakers

Delivery programme

AMPERAGE RATING	16 A
APPLICATION	• Switchgear for industrial and advanced commercial applications • xEffect - Switchgear for industrial and advanced commercial applications
FAULT CURRENT RATING	300 mA
IMPULSE WITHSTAND CURRENT	3 kA (8/20 µs) surge-proof
NUMBER OF POLES	Four-pole
RATED SHORT-CIRCUIT STRENGTH	10 kA with back-up fuse
SENSITIVITY TYPE	Pulse-current sensitive
TRIPPING TIME	10 ms delayed Short time-delayed
TYPE	• Current test marks as per inscription • Maximum operating temperature is 55 °C: Starting at 40 °C, the max. permissible continuous current decreases by 3% for every 1 °C

Design verification to IEC/EN 61439

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 be evaluated.
10.2.7 INSCRIPTIONS	Meets the product standard's requirements.
10.3 DEGREE OF PROTECTION OF ASSEMBLIES	Does not apply, since the entire switchgear needs to be evaluated.
10.4 CLEARANCES AND CREEPAGE DISTANCES	Meets the product standard's requirements.
10.5 PROTECTION	Does not apply, since the

Design verification to IEC/EN 61439 - technical data

AMBIENT OPERATING TEMPERATURE - MAX	40 °C
AMBIENT OPERATING TEMPERATURE - MIN	-25 °C
EQUIPMENT HEAT DISSIPATION, CURRENT-DEPENDENT	2.9 W
HEAT DISSIPATION PER POLE, CURRENT-DEPENDENT	0.725 W
RATED OPERATIONAL CURRENT FOR SPECIFIED HEAT DISSIPATION (IN)	16 A

AGAINST ELECTRIC SHOCK	entire switchgear needs to be evaluated.
10.6 INCORPORATION OF SWITCHING DEVICES AND COMPONENTS	Does not apply, since the entire switchgear needs to be evaluated.
10.7 INTERNAL ELECTRICAL CIRCUITS AND CONNECTIONS	Is the panel builder's responsibility.
10.8 CONNECTIONS FOR EXTERNAL CONDUCTORS	Is the panel builder's responsibility.
10.9.2 POWER-FREQUENCY ELECTRIC STRENGTH	Is the panel builder's responsibility.
10.9.3 IMPULSE WITHSTAND VOLTAGE	Is the panel builder's responsibility.
10.9.4 TESTING OF ENCLOSURES MADE OF INSULATING MATERIAL	Is the panel builder's responsibility.

Technical data - electrical

ADMISSIBLE BACK-UP FUSE OVERLOAD - MAX	16 A gG/gL
FREQUENCY RATING	50 Hz / 60 Hz
LEAKAGE CURRENT TYPE	A
LIFESPAN, ELECTRICAL	4000 operations
POLLUTION DEGREE	2
RATED FAULT CURRENT - MAX	0.3 A
RATED FAULT CURRENT - MIN	0.3 A
RATED IMPULSE WITHSTAND VOLTAGE (UIMP)	4 kV
RATED INSULATION VOLTAGE (UI)	440 V
RATED OPERATIONAL VOLTAGE (UE) - MAX	415 V
RATED RESIDUAL MAKING AND BREAKING CAPACITY	500 A
RATED SHORT-TIME WITHSTAND CURRENT (ICW)	10 kA
SHORT-CIRCUIT RATING	63 A (max. admissible back-up fuse)
SURGE CURRENT CAPACITY	3 kA
TEST CIRCUIT RANGE	184 V AC - 440 V AC
VOLTAGE RATING (IEC/EN 60947-2)	240 V AC / 415 V AC

Technical data - mechanical

BUILT-IN DEPTH	70.5 mm
BUILT-IN WIDTH (NUMBER OF UNITS)	70 mm (4 SU)
BUSBAR MATERIAL THICKNESS	0.8 mm - 2 mm
CLIMATIC PROOFING	25-55 °C / 90-95% relative humidity according to IEC 60068-2
CONNECTABLE CONDUCTOR CROSS SECTION (MULTI-WIRED) - MAX	16 mm ²
CONNECTABLE CONDUCTOR CROSS SECTION (MULTI-WIRED) - MIN	1.5 mm ²
CONNECTABLE CONDUCTOR CROSS SECTION (SOLID-CORE) - MAX	35 mm ²
CONNECTABLE CONDUCTOR CROSS SECTION (SOLID-CORE) - MIN	1.5 mm ²
CONTACT POSITION INDICATOR COLOR	Red / green
DEGREE OF PROTECTION	IP20 IP20, IP40 with suitable enclosure
FRAME	45 mm
LIFESPAN, MECHANICAL	20000 operations
MOUNTING METHOD	Quick attachment with 2 latch positions for DIN-rail IEC/EN 60715 DIN rail
MOUNTING POSITION	As required
PERMITTED STORAGE AND TRANSPORT TEMPERATURE - MAX	60 °C
PERMITTED STORAGE AND TRANSPORT TEMPERATURE - MIN	-35 °C
STATUS INDICATION	White / blue
TERMINAL CAPACITY (CABLE)	M5 (with cross-recessed screw as defined in EN ISO 4757-Z2, PZ2)
TERMINAL CAPACITY (SOLID WIRE)	1.5 mm ² - 35 mm ²
TERMINAL CAPACITY (STRANDED CABLE)	16 mm ² (2x)

TERMINAL PROTECTION	Finger and hand touch safe, DGUV VS3, EN 50274
TERMINALS (TOP AND BOTTOM)	Twin-purpose terminals
TIGHTENING TORQUE	2 Nm - 2.4 Nm
WIDTH IN NUMBER OF MODULAR SPACINGS	4

Resources

BROCHURES	eaton-pdd-railrolling-stock-brochure-br011002en-en-us.pdf
DECLARATIONS OF CONFORMITY	eaton-rccb-declaration-of-conformity-uk251420en.pdf eaton-rccb-declaration-of-conformity-eu250057en.pdf
DRAWINGS	eaton-xeffect-faz-na-mcb-dimensions.jpg eaton-circuit-breaker-xeffect-frcmm-rccb-dimensions.jpg eaton-circuit-breaker-xeffect-frcmm-na-rccb-dimensions.eps
ECAD MODEL	ETN.FRCMM-16 4 03-G A.edz
INSTALLATION INSTRUCTIONS	eaton-mcb-rccb-rcbo-g9-il019140zu.pdf
MCAD MODEL	eaton-residual-current-circuit-breakers-3d-models-frcmm-4p.stp
WIRING DIAGRAMS	eaton-circuit-breaker-xeffect-frcmm-rccb-wiring-diagram-002.eps eaton-xeffect-frcmm-rccb-wiring-diagram-002.jpg

PROJECT NAME:
PROJECT NUMBER:
PREPARED BY:
DATE:



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