Specifications

Eaton 167102

Eaton Moeller series xEffect - FRCmM-NA RCCB. Residual current circuit breaker (RCCB), 40A, 4p, 30mA, type A, UL

General specifications

PRODUCT NAME	Eaton Moeller series xEffect - FRCmM-NA RCCB
CATALOG NUMBER	167102
MODEL CODE	FRCMM-40/4/003-A-NA
EAN	4015081636020
PRODUCT LENGTH/DEPTH	76 mm
PRODUCT HEIGHT	80 mm
PRODUCT WIDTH	70 mm
PRODUCT WEIGHT	0.32 kg
COMPLIANCES	RoHS conform
CERTIFICATIONS	UL 1053 IEC/EN 61008 EN45545-2 IEC 61373
CATALOG NOTES	Protects against special forms of residual pulsating DC which have not been smoothed.
GLOBAL CATALOG	167102
PRODUCT TYPE	RCCB

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Product specifications

USED WITH	FRCmM-NA Type A Residual current circuit breakers
AMPERAGE RATING	40 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	eaton-rcd-application-guide-br019003en-en-us.pdf
BROCHURES	UL 1053 DIN rail RCCB
CATALOGS	Circuit Protection, Miniature Circuit Breakers and Supplementary Protectors, Volume 4, Tab 1 eaton-xeffect-industrial-switchgear-range-catalog-ca003002en-en-us.pdf
DECLARATIONS OF CONFORMITY	eaton-rccb-declaration-of-conformity-eu250057en.pdf eaton-rccb-declaration-of-conformity-uk251420en.pdf
DRAWINGS	eaton-circuit-breaker-xeffect-frcmm-na-rccb-dimensions.eps
ECAD MODEL	ETN.FRCMM-40_4_003-A-NA
INSTALLATION INSTRUCTIONS	MA180503312
MCAD MODEL	eaton-residual-current-circuit-breakers-drawings-frcmm-4p-na.dwg
PEP ECO-PASSPORT	eaton-residual-current-circuit-breakers-pep-eato-00111-v0101-en.pdf
SPECIFICATIONS AND DATASHEETS	Eaton Specification Sheet - 167102
WIRING DIAGRAMS	eaton-circuit-breaker-xeffect-frcmm-rccb-wiring-diagram-002.eps eaton-xeffect-frcmm-rccb-wiring-diagram-002.jpg

	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 AGAINST ELECTRIC SHOCK	Does not apply, since the 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.
FITTED WITH:	Interlocking device
FRAME	45 mm
FREQUENCY RATING	50 Hz / 60 Hz
POLLUTION DEGREE	2
LIFESPAN, MECHANICAL	10000 operations
MOUNTING METHOD	DIN rail Quick attachment with 2 latch positions for DIN-rail IEC/EN 60715
CLIMATIC PROOFING	25-55 °C / 90-95% relative humidity according to IEC 60068-2
EQUIPMENT HEAT DISSIPATION, CURRENT-DEPENDENT	13.1 W
RATED IMPULSE WITHSTAND VOLTAGE (UIMP)	4 kV
RATED SHORT-TIME WITHSTAND CURRENT (ICW)	10 kA
ADMISSIBLE BACK-UP FUSE OVERLOAD - MAX	25 A gG/gL
AMBIENT HUMDITY	5 - 95 %

RANGE	
BUILT-IN WIDTH (NUMBER OF UNITS)	70 mm (4 SU)
SHORT-CIRCUIT RATING	Max. admissible back-up fuse: 63 A gG/gL, 70 A class J fuse (UL)
STATUS INDICATION	White / blue
TERMINAL PROTECTION	Finger and hand touch safe, DGUV VS3, EN 50274
TERMINALS (TOP AND BOTTOM)	Lift terminals
TEST CIRCUIT RANGE	184 V AC - 440 V AC, 196 V AC - 305 V AC (UL)
AMBIENT OPERATING TEMPERATURE - MAX	40 °C
AMBIENT OPERATING TEMPERATURE - MIN	-25 °C
BUILT-IN DEPTH	70.5 mm
CONNECTABLE CONDUCTOR CROSS SECTION (MULTI-WIRED) - MAX	16 mm²
CONNECTABLE CONDUCTOR CROSS SECTION (MULTI-WIRED) - MIN	1.5 mm²
CONNECTABLE CONDUCTOR CROSS SECTION (SOLID-CORE) - MAX	35 mm²
CONNECTABLE CONDUCTOR CROSS SECTION (SOLID-CORE) - MIN	1.5 mm²
FAULT CURRENT RATING	30 mA
HEAT DISSIPATION PER POLE, CURRENT-DEPENDENT	3.275 W
OVERVOLTAGE TESTED - MAX	530 V
PERMITTED STORAGE AND TRANSPORT TEMPERATURE - MAX	60 °C
PERMITTED STORAGE AND TRANSPORT TEMPERATURE - MIN	-35 °C
CONTACT POSITION INDICATOR COLOR	Red / green
MOUNTING POSITION	As required
DEGREE OF PROTECTION	IP20 IP20, IP40 with suitable

	enclosure
IMPULSE WITHSTAND CURRENT	250 A (8/20 µs) surge-proof Partly surge-proof 250 A
NUMBER OF POLES	Four-pole
LEAKAGE CURRENT TYPE	A
LIFESPAN, ELECTRICAL	4000 operations
TYPE	• FRCmM-NA • Residual current circuit breakers • Type A
SPECIAL FEATURES	• Current test marks as per inscription • Maximum operating temperature is 75 °C: Starting at 40 °C, the max. permissible continuous current decreases by 2.5% for every 1 °C • The maximum operating current of back-up fuse must not exceed the residual current circuit breaker's rated operational current
APPLICATION	Switchgear for export to North America (UL-listed)
PICK-UP CURRENT	22 mA
SENSITIVITY TYPE	Pulse-current sensitive
TERMINAL CAPACITY (CABLE)	M5 (with cross-recessed screw as defined in EN ISO 4757-Z2, PZ2)
RATED FAULT CURRENT - MAX	0.03 A
RATED FAULT CURRENT - MIN	0.03 A
RATED INSULATION VOLTAGE (UI)	440 V
RATED OPERATIONAL CURRENT FOR SPECIFIED HEAT DISSIPATION (IN)	40 A
RATED OPERATIONAL VOLTAGE (UE) - MAX	480 V
RATED RESIDUAL MAKING AND BREAKING	500 A

CAPACITY	
SURGE CURRENT CAPACITY	0.25 kA
WIDTH IN NUMBER OF MODULAR SPACINGS	4
VOLTAGE RATING (IEC/EN 60947-2)	240 V AC / 415 V AC
VOLTAGE RATING (UL)	480Y/277 V, 60 Hz
VOLTAGE TYPE	AC
TERMINAL CAPACITY (SOLID WIRE)	1.5 mm^2 - 35 mm^2
TRIPPING TIME	Non-delayed
RATED SHORT-CIRCUIT STRENGTH	10 kA with back-up fuse 5 kA (UL, as per CSA)
TERMINAL CAPACITY (STRANDED CABLE)	16 mm^2 (2x)
RAL-NUMBER	7035
COLOR	Gray

PROJECT NAME:	
PROJECT NUMBER:	
PREPARED BY:	
DATE:	

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