

Specifications



Photo is representative

Eaton 115454

Eaton Moeller series Molded case circuit breaker, Thermomagnetic, NZMH1, 100 A, Three-pole, 690 V

General specifications

PRODUCT NAME	Eaton Moeller series NZM molded case circuit breaker thermo-magnetic
CATALOG NUMBER	115454
MODEL CODE	NZMH1-M100
EAN	4015081151943
PRODUCT LENGTH/DEPTH	88 mm
PRODUCT HEIGHT	145 mm
PRODUCT WIDTH	90 mm
PRODUCT WEIGHT	1.011 kg
COMPLIANCES	RoHS conform
CERTIFICATIONS	IEC IEC/EN 60947

Additional information

FUNCTIONS

Motor protection
Phase failure sensitive

Delivery programme

AMPERAGE RATING 100 A

APPLICATION Use in unearthed supply systems at 690 V

CIRCUIT BREAKER FRAME TYPE NZM1

FITTED WITH: Thermal protection

NUMBER OF POLES Three-pole

RELEASE SYSTEM Thermomagnetic release

SPECIAL FEATURES

Maximum back-up fuse, if the expected short-circuit currents at the installation location exceed the switching capacity of the circuit breaker (Rated short-circuit breaking capacity I_{cn}) Rated current = rated uninterrupted current: 100 A Terminal capacity hint: Up to 95 mm² can be connected depending on the cable manufacturer. With phase-failure sensitivity Tripping class 10 A IEC/EN 60947-4-1, IEC/EN 60947-2 The circuit-breaker fulfills all requirements for AC-3 switching category.

TYPE Circuit breaker

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	70 °C
AMBIENT STORAGE TEMPERATURE - MAX	70 °C
AMBIENT OPERATING TEMPERATURE - MIN	-25 °C
AMBIENT STORAGE TEMPERATURE - MIN	40 °C
EQUIPMENT HEAT DISSIPATION, CURRENT-DEPENDENT	23.85 W
RATED OPERATIONAL CURRENT FOR SPECIFIED HEAT DISSIPATION (IN)	100 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

AMPERAGE RATING	100 A
DIRECTION OF INCOMING SUPPLY	As required
ELECTRICAL CONNECTION TYPE OF MAIN CIRCUIT	Other
HANDLE TYPE	Rocker lever
INSTANTANEOUS CURRENT SETTING (II) - MAX	1250 A
INSTANTANEOUS CURRENT SETTING (II) - MIN	800 A
ISOLATION	500 V AC (between auxiliary contacts and main contacts) 300 V AC (between the auxiliary contacts)
LIFESPAN, ELECTRICAL	5000 operations at 690 V AC-3 7500 operations at 415 V AC-3 7500 operations at 690 V AC-1 10000 operations at 400 V AC-1 7500 operations at 400 V AC-3 10000 operations at 415 V AC-1
NUMBER OF OPERATIONS PER HOUR - MAX	120
OVERLOAD CURRENT SETTING (IR) - MAX	100 A
OVERLOAD CURRENT SETTING (IR) - MIN	80 A
OVERVOLTAGE CATEGORY	III
POLLUTION DEGREE	3
RATED IMPULSE WITHSTAND VOLTAGE (UIMP) AT AUXILIARY CONTACTS	6000 V
RATED IMPULSE WITHSTAND VOLTAGE (UIMP) AT MAIN CONTACTS	6000 V
RATED INSULATION VOLTAGE (UI)	690 V
RATED OPERATING	30 kW

Technical data - mechanical

CLIMATIC PROOFING	Damp heat, constant, to IEC 60068-2-78 Damp heat, cyclic, to IEC 60068-2-30
DEGREE OF PROTECTION	IP20 (basic degree of protection, in the operating controls area) IP20
DEGREE OF PROTECTION (IP), FRONT SIDE	IP66 (with door coupling rotary handle) IP40 (with insulating surround)
DEGREE OF PROTECTION (TERMINATIONS)	IP00 (terminations, phase isolator and strip terminal) IP10 (tunnel terminal)
LIFESPAN, MECHANICAL	20000 operations
MOUNTING METHOD	Built-in device fixed built-in technique Fixed
PROTECTION AGAINST DIRECT CONTACT	Finger and back-of-hand proof to VDE 0106 part 100
SHOCK RESISTANCE	20 g (half-sinusoidal shock 20 ms)
SPECIAL FEATURES	Maximum back-up fuse, if the expected short-circuit currents at the installation location exceed the switching capacity of the circuit breaker (Rated short-circuit breaking capacity I _{cn})Rated current = rated uninterrupted current: 100 A Terminal capacity hint: Up to 95 mm ² can be connected depending on the cable manufacturer. With phase-failure sensitivity Tripping class 10 AIEC/EN 60947-4-1, IEC/EN 60947-2 The circuit-breaker fulfills all requirements for AC-3 switching category.
SWITCH OFF TECHNIQUE	Thermomagnetic

POWER AT AC-3, 230 V	
RATED OPERATING POWER AT AC-3, 400 V	55 kW
RATED OPERATIONAL CURRENT	99 A (400 V AC-3)
RATED SHORT-CIRCUIT BREAKING CAPACITY ICS (IEC/EN 60947) AT 230 V, 50/60 HZ	100 kA
RATED SHORT-CIRCUIT BREAKING CAPACITY ICS (IEC/EN 60947) AT 400/415 V, 50/60 HZ	35 kA
RATED SHORT-CIRCUIT BREAKING CAPACITY ICS (IEC/EN 60947) AT 440 V, 50/60 HZ	35 kA
RATED SHORT-CIRCUIT BREAKING CAPACITY ICS (IEC/EN 60947) AT 525 V, 50/60 HZ	10 kA
RATED SHORT-CIRCUIT BREAKING CAPACITY ICS (IEC/EN 60947) AT 690 V, 50/60 HZ	7.5 kA
RATED SHORT-CIRCUIT MAKING CAPACITY ICM AT 240 V, 50/60 HZ	220 kA
RATED SHORT-CIRCUIT MAKING CAPACITY ICM AT 400/415 V, 50/60 HZ	220 kA
RATED SHORT-CIRCUIT MAKING CAPACITY ICM AT 440 V, 50/60 HZ	154 kA
RATED SHORT-CIRCUIT MAKING CAPACITY ICM AT 525 V, 50/60 HZ	40 kA
RATED SHORT-CIRCUIT MAKING CAPACITY ICM AT 690 V, 50/60 HZ	17 kA
SHORT-CIRCUIT RELEASE NON-DELAYED SETTING - MAX	1250 A
SHORT-CIRCUIT RELEASE NON-DELAYED SETTING - MIN	800 A
SHORT-CIRCUIT TOTAL BREAKTIME	< 10 ms
UTILIZATION CATEGORY	A (IEC/EN 60947-2)
VOLTAGE RATING	690 V - 690 V

Technical data - mechanical - terminals

OPTIONAL TERMINALS	Connection on rear. Screw terminal. Tunnel terminal
STANDARD TERMINALS	Box terminal
TERMINAL CAPACITY (ALUMINUM SOLID CONDUCTOR/CABLE)	16 mm ² (1x) at tunnel terminal
TERMINAL CAPACITY (ALUMINUM STRANDED CONDUCTOR/CABLE)	25 mm ² - 95 mm ² (1x) at tunnel terminal
TERMINAL CAPACITY (CONTROL CABLE)	0.75 mm ² - 1.5 mm ² (2x) 0.75 mm ² - 2.5 mm ² (1x)
TERMINAL CAPACITY (COPPER BUSBAR)	M6 at rear-side screw connection Min. 12 mm x 5 mm direct at switch rear-side connection Max. 16 mm x 5 mm direct at switch rear-side connection
TERMINAL CAPACITY (COPPER SOLID CONDUCTOR/CABLE)	10 mm ² - 16 mm ² (1x) at box terminal 6 mm ² - 16 mm ² (2x) direct at switch rear-side connection 6 mm ² - 16 mm ² (2x) at box terminal 10 mm ² - 16 mm ² (1x) direct at switch rear-side connection 16 mm ² (1x) at tunnel terminal
TERMINAL CAPACITY (COPPER STRANDED CONDUCTOR/CABLE)	6 mm ² - 25 mm ² (2x) at box terminal 10 mm ² - 70 mm ² (1x) at box terminal 10 mm ² - 70 mm ² (1x) direct at switch rear-side connection 25 mm ² (2x) direct at switch rear-side connection 25 mm ² - 95 mm ² (1x) at 1-hole tunnel terminal
TERMINAL CAPACITY (COPPER STRIP)	Min. 2 segments of 9 mm x 0.8 mm at box terminal Max. 9 segments of 9 mm x 0.8 mm at box terminal

Resources

BROCHURES	eaton-feerum-the-whole-grain-solution-success-story-en-us.pdf eaton-digital-nzm-brochure-br013003en-en-us.pdf
CATALOGUES	eaton-digital-nzm-catalog-ca013003en-en-us.pdf eaton-circuit-breaker-nzm-mccb-characteristic-curve-058.eps
CHARACTERISTIC CURVE	eaton-circuit-breaker-let-through-current-nzm-mccb-characteristic-curve-003.eps
DECLARATIONS OF CONFORMITY	eaton-molded-case-circuit-breaker-declaration-of-conformity-eu250289en.pdf eaton-molded-case-circuit-breaker-declaration-of-conformity-uk251450en.pdf
DRAWINGS	eaton-circuit-breaker-switch-nzm-mccb-dimensions-014.eps eaton-circuit-breaker-nzm-mccb-dimensions-017.eps eaton-general-ie-ready-dilm-contactor-standards.eps eaton-circuit-breaker-socket-nzm-mccb-3d-drawing.eps
INSTALLATION VIDEOS	The new digital NZM Range Introduction of the new digital circuit breaker NZM
MCAD MODEL	eaton-molded-case-switches-mcad-3d-models-nzm1-3p.stp eaton-molded-case-switches-mcad-drawings-nzm1-3p.dwg DA-CD-nzm1_3p
PEP ECO-PASSPORT	eaton-molded-case-switches-pep-eato-00225-v0101-en.pdf

PROJECT NAME:

PROJECT NUMBER:

PREPARED BY:

DATE:



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