

Specifications



Photo is representative



Eaton 109685

Eaton Moeller series NZM - Molded Case Circuit Breaker. Circuit-breaker, 3p, 320A, H, 3

General specifications

PRODUCT NAME	Eaton Moeller series NZM molded case circuit breaker magnetic
CATALOG NUMBER	109685
MODEL CODE	NZMH3-S320
EAN	4015081092710
PRODUCT LENGTH/DEPTH	166 mm
PRODUCT HEIGHT	275 mm
PRODUCT WIDTH	140 mm
PRODUCT WEIGHT	5.8 kg
COMPLIANCES	RoHS conform
CERTIFICATIONS	IEC/EN 60947 IEC

Product specifications

AMPERAGE RATING	320 A
VOLTAGE RATING	690 V - 690 V
CIRCUIT BREAKER FRAME TYPE	NZM3
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	Does not apply, since the entire switchgear needs to

Resources

BROCHURES

[eaton-feerum-the-whole-grain-solution-success-story-en-us.pdf](#)

CATALOGUES

[eaton-digital-nzm-catalog-ca013003en-en-us.pdf](#)

CHARACTERISTIC CURVE

[eaton-circuit-breaker-nzm-mccb-characteristic-curve-033.eps](#)

DECLARATIONS OF CONFORMITY

[eaton-molded-case-circuit-breaker-declaration-of-conformity-eu250292en.pdf](#)

DRAWINGS

[eaton-circuit-breaker-nzm-mccb-dimensions-020.eps](#)

[eaton-circuit-breaker-switch-nzm-mccb-dimensions-016.eps](#)

[eaton-circuit-breaker-switch-nzm-mccb-3d-drawing-002.eps](#)

INSTALLATION VIDEOS

[Introduction of the new digital circuit breaker NZM](#)

[The new digital NZM Range](#)

[DA-CS-nzm3_3p](#)

[DA-CD-nzm3_3p](#)

PEP ECO-PASSPORT

[eaton-molded-case-switches-pep-eato-00184-v0101-en.pdf](#)

TECHNICAL DATA SHEETS

[eaton-nzm-technical-information-sheet](#)

ASSEMBLIES	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.
POLLUTION DEGREE	3
MOUNTING METHOD	Built-in device fixed built-in technique Fixed
CLIMATIC PROOFING	Damp heat, cyclic, to IEC 60068-2-30 Damp heat, constant, to IEC 60068-2-78
EQUIPMENT HEAT DISSIPATION, CURRENT-DEPENDENT	78.64 W
UTILIZATION CATEGORY	A (IEC/EN 60947-2)
ISOLATION	300 V AC (between the auxiliary contacts) 500 V AC (between auxiliary contacts and main contacts)
AMBIENT OPERATING TEMPERATURE - MAX	70 °C
AMBIENT OPERATING TEMPERATURE - MIN	-25 °C
AMBIENT STORAGE TEMPERATURE - MAX	70 °C
AMBIENT STORAGE TEMPERATURE - MIN	40 °C
PROTECTION AGAINST DIRECT CONTACT	Finger and back-of-hand proof to VDE 0106 part 100
RATED INSULATION	1000 V

VOLTAGE (UI)	
RATED OPERATING POWER AT AC-3, 230 V	90 kW
RATED OPERATING POWER AT AC-3, 400 V	160 kW
SWITCH OFF TECHNIQUE	Magnetic
DEGREE OF PROTECTION	IP20 IP20 (basic degree of protection, in the operating controls area)
DIRECTION OF INCOMING SUPPLY	As required
ELECTRICAL CONNECTION TYPE OF MAIN CIRCUIT	Screw connection
LIFESPAN, MECHANICAL	15000 operations
OVERVOLTAGE CATEGORY	III
RATED OPERATIONAL CURRENT	279 A (400 V AC-3)
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)
NUMBER OF POLES	Three-pole
TERMINAL CAPACITY (COPPER STRIP)	Max. 10 segments of 32 mm x 1 mm + 5 segments of 32 mm x 1 mm at rear-side connection (punched) Max. 10 segments of 24 mm x 1 mm + 5 segments of 24 mm x 1 mm at box terminal Min. 6 segments of 16 mm x 0.8 mm at box terminal 10 segments of 50 mm x 1 mm (2x) at rear-side width extension Min. 6 segments of 16 mm x 0.8 mm at rear-side connection (punched) Max. 8 segments of 24 mm x 1 mm (2x) at box terminal
LIFESPAN, ELECTRICAL	2000 operations at 400 V AC-3 2000 operations at 415 V AC-3 3000 operations at 690 V

AC-1	
5000 operations at 415 V	
AC-1	
2000 operations at 690 V	
AC-3	
5000 operations at 400 V	
AC-1	

FUNCTIONS	Short-circuit protection
TYPE	Circuit breaker

- 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})
- Motor protection in conjunction with overload relay
- With short-circuit release
- Without overload release I_r
- IEC/EN 60947-4-1, IEC/EN 60947-2
- The circuit-breaker fulfills all requirements for AC-3 switching category.
- Rated current = rated uninterrupted current: 320 A
- Terminal capacity hint: Up to 240 mm^2 can be connected depending on the cable manufacturer.

APPLICATION	Use in unearthing supply systems at 690 V
SHOCK RESISTANCE	20 g (half-sinusoidal shock 20 ms)
RATED OPERATIONAL CURRENT FOR SPECIFIED HEAT DISSIPATION (IN)	320 A
RATED SHORT-TIME WITHSTAND CURRENT (T_W)	3.3 kA

= 0.3 S)

**RATED SHORT-TIME
WITHSTAND CURRENT (T
= 1 S)** 3.3 kA

**SHORT-CIRCUIT RELEASE
NON-DELAYED SETTING -
MAX** 4480 A

**SHORT-CIRCUIT RELEASE
NON-DELAYED SETTING -
MIN** 2560 A

HANDLE TYPE Rocker lever

**INSTANTANEOUS
CURRENT SETTING (II) -
MAX** 14 A

**INSTANTANEOUS
CURRENT SETTING (II) -
MIN** 8 A

**NUMBER OF
OPERATIONS PER HOUR -
MAX** 60

**OVERLOAD CURRENT
SETTING (IR) - MAX** 0 A

**OVERLOAD CURRENT
SETTING (IR) - MIN** 0 A

**RATED SHORT-CIRCUIT
BREAKING CAPACITY ICS
(IEC/EN 60947) AT 230 V,
50/60 Hz** 150 kA

**RATED SHORT-CIRCUIT
BREAKING CAPACITY ICS
(IEC/EN 60947) AT
400/415 V, 50/60 Hz** 130 kA

**RATED SHORT-CIRCUIT
BREAKING CAPACITY ICS
(IEC/EN 60947) AT 440 V,
50/60 Hz** 130 kA

**RATED SHORT-CIRCUIT
BREAKING CAPACITY ICS
(IEC/EN 60947) AT 525 V,
50/60 Hz** 33 kA

**RATED SHORT-CIRCUIT
BREAKING CAPACITY ICS
(IEC/EN 60947) AT 690 V,
50/60 Hz** 9 kA

STANDARD TERMINALS Screw terminal

OPTIONAL TERMINALS Box terminal. Connection
on rear. Tunnel terminal

RELEASE SYSTEM Thermomagnetic release

**SHORT-CIRCUIT TOTAL
BREAKTIME** < 10 ms

**TERMINAL CAPACITY
(ALUMINUM SOLID** 16 mm² (1x) at tunnel
terminal

CONDUCTOR/CABLE)	
TERMINAL CAPACITY (ALUMINUM STRANDED CONDUCTOR/CABLE)	25 mm ² - 185 mm ² (1x) at tunnel terminal 50 mm ² - 240 mm ² (1x) at 2-hole tunnel terminal 50 mm ² - 240 mm ² (2x) at 2-hole 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)	Min. 20 mm x 5 mm direct at switch rear-side connection Max. 10 mm x 50 mm (2x) at rear-side width extension Max. 30 mm x 10 mm + 30 mm x 5 mm direct at switch rear-side connection M10 at rear-side screw connection
TERMINAL CAPACITY (COPPER SOLID CONDUCTOR/CABLE)	16 mm ² (2x) direct at switch rear-side connection 300 mm ² (2x) at rear-side width extension 16 mm ² (1x) at tunnel terminal 16 mm ² (1x) direct at switch rear-side connection 16 mm ² (2x) at box terminal
TERMINAL CAPACITY (COPPER STRANDED CONDUCTOR/CABLE)	35 mm ² - 240 mm ² (1x) at box terminal 25 mm ² - 240 mm ² (2x) direct at switch rear-side connection 16 mm ² - 185 mm ² (1x) at 1-hole tunnel terminal 25 mm ² - 240 mm ² (1x) direct at switch rear-side connection 25 mm ² - 120 mm ² (2x) at box terminal
RATED SHORT-CIRCUIT BREAKING CAPACITY ICU (IEC/EN 60947) AT 400/415 V, 50/60 HZ	130 kA
RATED SHORT-CIRCUIT MAKING CAPACITY ICM AT 400/415 V, 50/60 HZ	330 kA
RATED SHORT-CIRCUIT MAKING CAPACITY ICM AT 440 V, 50/60 HZ	286 kA
RATED SHORT-CIRCUIT	143 kA

**MAKING CAPACITY ICM
AT 525 V, 50/60 Hz**

**RATED SHORT-CIRCUIT
MAKING CAPACITY ICM
AT 690 V, 50/60 Hz**

**RATED SHORT-CIRCUIT
MAKING CAPACITY ICM
AT 240 V, 50/60 Hz**

**RATED IMPULSE
WITHSTAND VOLTAGE
(UIMP) AT AUXILIARY
CONTACTS**

**RATED IMPULSE
WITHSTAND VOLTAGE
(UIMP) AT MAIN
CONTACTS**

PROJECT NAME:

PROJECT NUMBER:

PREPARED BY:

DATE:



Eaton Corporation plc
Eaton House
30 Pembroke Road
Dublin 4, Ireland
Eaton.com

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