

Specifications



Photo is representative

Eaton 155431

Eaton Moeller series NZM - Molded Case Circuit Breaker. Circuit-breaker, 3p, 220A, withdrawable unit, L3-ME220-AVE

General specifications

PRODUCT NAME	Eaton Moeller series NZM molded case circuit breaker electronic
CATALOG NUMBER	155431
MODEL CODE	NZML3-ME220-AVE
EAN	4015081521418
PRODUCT LENGTH/DEPTH	260 mm
PRODUCT HEIGHT	346 mm
PRODUCT WIDTH	185 mm
PRODUCT WEIGHT	17.989 kg
COMPLIANCES	RoHS conform
CERTIFICATIONS	IEC/EN 60947 IEC
GLOBAL CATALOG	155431

Product specifications

AMPERAGE RATING	220 A
VOLTAGE RATING	690 V - 690 V
CIRCUIT BREAKER FRAME TYPE	NZM3
ACCESSORIES REQUIRED	NZM3-XAVS
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.

Resources

BROCHURES

[eaton-digital-nzm-brochure-br013003en-en-us.pdf](#)

CATALOGS

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

CHARACTERISTIC CURVE

[eaton-circuit-breaker-nzm-mccb-characteristic-curve-009.eps](#)

[eaton-circuit-breaker-nzm-mccb-characteristic-curve-056.eps](#)

[eaton-circuit-breaker-nzm-mccb-characteristic-curve-008.eps](#)

DECLARATIONS OF CONFORMITY

[eaton-molded-case-circuit-breaker-declaration-of-conformity-eu250293en.pdf](#)

DRAWINGS

[eaton-circuit-breaker-withdrawable-unit-nzm-mccb-dimensions-002.eps](#)

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

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

[eaton-circuit-breaker-nzm-switch-disconnector-3d-drawing-004.eps](#)

[eaton-general-ie-ready-dilm-contactor-standards.eps](#)

ECAD MODEL

[DA-CE-ETN.NZM3-ME220-AVE](#)

INSTALLATION INSTRUCTIONS

[eaton-circuit-breaker-basic-device-nzmn-b-il01208009z.pdf](#)

INSTALLATION VIDEOS

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

[The new digital NZM Range](#)

PEP ECO-PASSPORT

[eaton-molded-case-switches-pep-eato-00244-v0101-en.pdf](#)

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:	Thermal protection
POLLUTION DEGREE	3
MOUNTING METHOD	Built-in device slide-in technique (withdrawable) Withdrawable
CLIMATIC PROOFING	Damp heat, cyclic, to IEC 60068-2-30 Damp heat, constant, to IEC 60068-2-78
EQUIPMENT HEAT DISSIPATION, CURRENT-DEPENDENT	14.52 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	Finger and back-of-hand

DIRECT CONTACT	proof to VDE 0106 part 100
RATED INSULATION VOLTAGE (UI)	1000 V
RATED OPERATING POWER AT AC-3, 230 V	55 kW
RATED OPERATING POWER AT AC-3, 400 V	110 kW
SWITCH OFF TECHNIQUE	Electronic
DEGREE OF PROTECTION	IP20 (basic degree of protection, in the operating controls area) IP20
DIRECTION OF INCOMING SUPPLY	As required
ELECTRICAL CONNECTION TYPE OF MAIN CIRCUIT	Screw connection
LIFESPAN, MECHANICAL	10000 operations
OVERVOLTAGE CATEGORY	III
RATED OPERATIONAL CURRENT	196 A (400 V AC-3) 202 A (690 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)	10 segments of 50 mm x 1 mm (2x) at rear-side width extension Max. 10 segments of 32 mm x 1 mm + 5 segments of 32 mm x 1 mm at rear-side connection (punched) Min. 6 segments of 16 mm x 0.8 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 Max. 8 segments of 24 mm x 1 mm (2x) at box terminal Min. 6 segments of 16 mm x 0.8 mm at box terminal
LIFESPAN, ELECTRICAL	2000 operations at 690 V AC-3

5000 operations at 400 V AC-1
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

FUNCTIONS	Motor protection Phase failure sensitive
TYPE	Circuit breaker

SPECIAL FEATURES	<ul style="list-style-type: none"> • IEC/EN 60947-4-1, IEC/EN 60947-2 • The circuit-breaker fulfills all requirements for AC-3 switching category. • R.m.s. value measurement and "thermal memory" • Adjustable time delay setting to overcome current peaks t_r at $6 \times I_r$ also infinity (without overload releases) • All AC-3 rating data applies to direct switching by the circuit-breaker under normal operating conditions. If, for example, a contactor takes over AC-3 switching under normal operating conditions, the full rated uninterrupted current applies to the circuit-breaker, $I_n = I_u$. • Maximum back-up fuse, if the expected short-circuit currents at the installation location exceed the switching capacity of the circuit breaker (Rated
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short-circuit
breaking capacity
(Icn)

- Rated current =
rated
uninterrupted
current: 220 A
- Terminal capacity
hint: Up to 240
mm² 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)	220 A
RATED SHORT-TIME WITHSTAND CURRENT (T = 0.3 S)	2.8 kA
RATED SHORT-TIME WITHSTAND CURRENT (T = 1 S)	2.8 kA
SHORT-CIRCUIT RELEASE NON-DELAYED SETTING - MAX	3080 A
SHORT-CIRCUIT RELEASE NON-DELAYED SETTING - MIN	440 A
HANDLE TYPE	Rocker lever
INSTANTANEOUS CURRENT SETTING (II) - MAX	3080 A
INSTANTANEOUS CURRENT SETTING (II) - MIN	440 A
NUMBER OF OPERATIONS PER HOUR - MAX	60
OVERLOAD CURRENT SETTING (IR) - MAX	220 A
OVERLOAD CURRENT SETTING (IR) - MIN	110 A
RATED SHORT-CIRCUIT BREAKING CAPACITY ICS (IEC/EN 60947) AT 230 V, 50/60 Hz	150 kA
RATED SHORT-CIRCUIT	130 kA

BREAKING CAPACITY ICS**(IEC/EN 60947) AT****400/415 V, 50/60 Hz****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**

50 kA

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

20 kA

STANDARD TERMINALS

Screw terminal

OPTIONAL TERMINALSBox terminal. Connection
on rear. Tunnel terminal**RELEASE SYSTEM**

Electronic release

SHORT-CIRCUIT TOTAL

< 10 ms

BREAKTIME**TERMINAL CAPACITY**
(ALUMINUM SOLID
CONDUCTOR/CABLE)16 mm² (1x) at tunnel
terminal

50 mm² - 240 mm² (2x) at
2-hole tunnel terminal
25 mm² - 185 mm² (1x) at
tunnel terminal
50 mm² - 240 mm² (1x) at
2-hole tunnel terminal**TERMINAL CAPACITY**
(CONTROL CABLE)0.75 mm² - 2.5 mm² (1x)
0.75 mm² - 1.5 mm² (2x)**TERMINAL CAPACITY**
(COPPER BUSBAR)M10 at rear-side screw
connection
Min. 20 mm x 5 mm direct
at switch rear-side
connection
Max. 30 mm x 10 mm + 30
mm x 5 mm direct at
switch rear-side
connection
Max. 10 mm x 50 mm (2x)
at rear-side width
extension**TERMINAL CAPACITY**
(COPPER SOLID
CONDUCTOR/CABLE)300 mm² (2x) at rear-side
width extension
16 mm² (1x) direct at
switch rear-side
connection
16 mm² (2x) at box
terminal
16 mm² (2x) direct at
switch rear-side
connection
16 mm² (1x) at tunnel

TERMINAL CAPACITY (COPPER STRANDED CONDUCTOR/CABLE)	terminal 25 mm ² - 120 mm ² (2x) at box terminal 25 mm ² - 240 mm ² (1x) direct at switch rear-side connection 25 mm ² - 240 mm ² (2x) direct at switch rear-side connection 35 mm ² - 240 mm ² (1x) at box terminal 16 mm ² - 185 mm ² (1x) at 1-hole tunnel 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 MAKING CAPACITY ICM AT 525 V, 50/60 Hz	220 kA
RATED SHORT-CIRCUIT MAKING CAPACITY ICM AT 690 V, 50/60 Hz	176 kA
RATED SHORT-CIRCUIT MAKING CAPACITY ICM AT 240 V, 50/60 Hz	330 kA
RATED IMPULSE WITHSTAND VOLTAGE (UIMP) AT AUXILIARY CONTACTS	6000 V
RATED IMPULSE WITHSTAND VOLTAGE (UIMP) AT MAIN CONTACTS	8000 V
PROJECT NAME:	
PROJECT NUMBER:	
PREPARED BY:	
DATE:	



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