Specifications



Photo is representative

Eaton 111978

Eaton Moeller series Power Defense - Molded Case Circuit Breaker. Circuit-breaker, 3 p, 800A

General specifications	
PRODUCT NAME	Eaton Moeller series Power Defense molded case circuit-breaker
CATALOG NUMBER	111978
MODEL CODE	LZMN4-AE800-I
EAN	4015081115266
PRODUCT LENGTH/DEPTH	401 mm
PRODUCT HEIGHT	207 mm
PRODUCT WIDTH	210 mm
PRODUCT WEIGHT	19 kg
COMPLIANCES	RoHS conform
CERTIFICATIONS	IEC VDE 0660 IEC/EN 60947

Additional information

FUNCTIONS	System and cable protection

Delivery program

AMPERAGE RATING	800 A
APPLICATION	Use in unearthed supply systems at 525 V
CIRCUIT BREAKER FRAME TYPE	LZM4
FEATURES	Protection unit Motor drive optional
NUMBER OF POLES	Three-pole
RELEASE SYSTEM	Electronic release
SPECIAL FEATURES	• For AC-3 rated operational current with NZM4 the following applies: 400 V: max. 650 kW; 690 V: max. 600 kW (switching capacity, rated making and breaking capacity) • 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 Icn) • R.m.s. value measurement and “thermal memory” • Rated current = rated uninterrupted current: 800 A
TYPE	Circuit breaker

Design verification as per 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 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.

Design verification as per IEC/EN 61439 - technical data

EQUIPMENT HEAT DISSIPATION, CURRENT-DEPENDENT	111.36 W
RATED OPERATIONAL CURRENT FOR SPECIFIED HEAT DISSIPATION (IN)	800 A

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	800 A
DIRECTION OF INCOMING SUPPLY	As required
ELECTRICAL CONNECTION TYPE OF MAIN CIRCUIT	Screw connection
HANDLE TYPE	Rocker lever
INSTANTANEOUS CURRENT SETTING (II) - MAX	9600 A
INSTANTANEOUS CURRENT SETTING (II) - MIN	1600 A
ISOLATION	500 V AC (between auxiliary contacts and main contacts) 300 V AC (between the auxiliary contacts)
LIFESPAN, ELECTRICAL	2000 operations at 400 V AC-3 2000 operations at 415 V AC-3 1000 operations at 690 V AC-3 2000 operations at 690 V AC-1 3000 operations at 400 V AC-1 3000 operations at 415 V AC-1
NUMBER OF OPERATIONS PER HOUR - MAX	60
OVERLOAD CURRENT SETTING (IR) - MAX	800 A
OVERLOAD CURRENT SETTING (IR) - MIN	400 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	8000 V
RATED INSULATION VOLTAGE (UI)	1000 V AC
RATED OPERATIONAL CURRENT	2000 A (380/400 V AC-1, making and breaking capacity) 800 A (415 V AC-3, making and breaking capacity) 2000 A (690 V AC -1, making and breaking capacity) 1600 A (415 V AC-1, making and breaking capacity) 800 A (660-690 V AC-3, making and breaking capacity)

Technical data - mechanical

CLIMATIC PROOFING	Damp heat, cyclic, to IEC 60068-2-30 Damp heat, constant, to IEC 60068-2-78
DEGREE OF PROTECTION	In the area of the HMI devices: IP20 (basic protection type) IP20
DEGREE OF PROTECTION (IP), FRONT SIDE	IP40 (with insulating surround) IP66 (with door coupling rotary handle)
DEGREE OF PROTECTION (TERMINATIONS)	IP10 (tunnel terminal) IP00 (terminations, phase isolator and band terminal)
LIFESPAN, MECHANICAL	10000 operations
MOUNTING METHOD	Fixed Built-in device fixed built-in technique
NUMBER OF AUXILIARY CONTACTS (CHANGE-OVER CONTACTS)	0
NUMBER OF AUXILIARY CONTACTS (NORMALLY CLOSED CONTACTS)	0
NUMBER OF AUXILIARY CONTACTS (NORMALLY OPEN CONTACTS)	0
POSITION OF CONNECTION FOR MAIN CURRENT CIRCUIT	Front side
PROTECTION AGAINST DIRECT CONTACT	Finger and back-of-hand proof to DIN EN 50274/VDE 0106 part 110
SHOCK RESISTANCE	15 g (half-sinusoidal shock 11 ms)
SPECIAL FEATURES	• For AC-3 rated operational current with NZM4 the following applies: 400 V: max. 650 kW; 690 V: max. 600 kW (switching capacity, rated making and breaking capacity) • 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 Icn) • R.m.s. value measurement and “thermal memory” • Rated current = rated uninterrupted current: 800 A

RATED SHORT-CIRCUIT BREAKING CAPACITY ICS (IEC/EN 60947) AT 230 V, 50/60 HZ	37 kA
RATED SHORT-CIRCUIT BREAKING CAPACITY ICS (IEC/EN 60947) AT 400/415 V, 50/60 HZ	37 kA
RATED SHORT-CIRCUIT BREAKING CAPACITY ICS (IEC/EN 60947) AT 440 V, 50/60 HZ	26 kA
RATED SHORT-CIRCUIT BREAKING CAPACITY ICS (IEC/EN 60947) AT 525 V, 50/60 HZ	19 kA
RATED SHORT-CIRCUIT MAKING CAPACITY ICM AT 240 V, 50/60 HZ	105 kA
RATED SHORT-CIRCUIT MAKING CAPACITY ICM AT 400/415 V, 50/60 HZ	105 kA
RATED SHORT-CIRCUIT MAKING CAPACITY ICM AT 440 V, 50/60 HZ	74 kA
RATED SHORT-CIRCUIT MAKING CAPACITY ICM AT 525 V, 50/60 HZ	53 kA
RATED SHORT-CIRCUIT MAKING CAPACITY ICM AT 690 V, 50/60 HZ	40 kA
RATED SHORT-TIME WITHSTAND CURRENT (T = 0.3 S)	19.2 kA
RATED SHORT-TIME WITHSTAND CURRENT (T = 1 S)	19.2 kA
SHORT DELAY CURRENT SETTING (ISD) - MAX	0 A
SHORT DELAY CURRENT SETTING (ISD) - MIN	0 A
SHORT-CIRCUIT RELEASE NON-DELAYED SETTING - MAX	9600 A
SHORT-CIRCUIT RELEASE NON-DELAYED SETTING - MIN	1600 A
SHORT-CIRCUIT TOTAL BREAKTIME	< 25 ms (415 V); < 35 ms (> 415 V)
UTILIZATION CATEGORY	B (2000A: A, IEC/EN 60947-2)
VOLTAGE RATING	690 V - 690 V

Technical data - mechanical - terminals

STANDARD TERMINALS	Screw terminal
TERMINAL CAPACITY (ALUMINUM STRANDED CONDUCTOR/CABLE)	50 mm² - 240 mm² (4x) at 4-hole tunnel terminal
TERMINAL CAPACITY (CONTROL CABLE)	0.75 mm² - 1.5 mm² (2x) 0.75 mm² - 2.5 mm² (1x)
TERMINAL CAPACITY (COPPER BUSBAR)	M10 at rear-side screw connection Max. 50 mm x 10 mm (2x) at rear-side 1-hole module plate Min. 25 mm x 5 mm at rear-side 1-hole module plate Min. 25 mm x 5 mm direct at switch rear-side connection Max. 50 mm x 10 mm (2x) direct at switch rear-side connection Max. 80 mm x 10 mm (2x) direct at switch rear-side connection 50 mm x 10 mm (2x) at rear-side 2-hole module plate Max. 80 mm x 10 mm (2x) at rear-side width extension Min. 60 mm x 10 mm at rear-side width extension
TERMINAL CAPACITY (COPPER SOLID CONDUCTOR/CABLE)	50 mm² - 240 mm² (4x) at 4-hole tunnel terminal 35 mm² - 185 mm² (4x) at rear-side 2-hole module plate 120 mm² - 300 mm² (1x) at rear-side 1-hole module plate 95 mm² - 300 mm² (2x) at rear-side 1-hole module plate 95 mm² - 240 mm² (6x) at rear-side width extension 300 mm² (4x) at rear-side width extension 95 mm² - 185 mm² (2x) at rear-side 2-hole module plate
TERMINAL CAPACITY (COPPER STRANDED CONDUCTOR/CABLE)	120 mm² - 185 mm² (1x) direct at switch rear-side connection 50 mm² - 185 mm² (4x) direct at switch rear-side connection
TERMINAL CAPACITY (COPPER STRIP)	10 segments of 80 mm x 1 mm (2x) at rear-side width extension Min. 10 segments of 50 mm x 1 mm (2x) at rear-side connection (punched) Min. 6 segments of 16 mm x 0.8 mm at flat conductor terminal 10 segments of 50 mm x 1 mm (2x) at 1-hole module plate Max. 10 segments of 32 mm x 1 mm (2x) at flat conductor terminal Max. 10 segments of 50 mm x 1 mm (2x) at rear-side connection (punched)

Resources

CHARACTERISTIC CURVE	eaton-circuit-breaker-nzm-mccb-characteristic-curve-047.eps
DECLARATIONS OF CONFORMITY	eaton-molded-case-circuit-breaker-declaration-of-conformity-eu250346en.pdf
DRAWINGS	eaton-circuit-breaker-nzm-mccb-dimensions-022.eps eaton-circuit-breaker-switch-nzm-mccb-3d-drawing-003.eps
INSTALLATION INSTRUCTIONS	eaton-circuit-breaker-basic-unit-lzm4-il01210018z.pdf
INSTALLATION VIDEOS	Power Defense EMEA
MCAD MODEL	DA-CS-nzm4_3p

PROJECT NAME:	
PROJECT NUMBER:	
PREPARED BY:	
DATE:	

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