DATASHEET - NZMH4-AE1000-S1

Circuit-breaker, 3p, 1000A 1000V

Part no. NZMH4-AE1000-S1
290372

EL Number (Norway) 4363154

Powering Business Worldwide™

General specifications

Product name	Eaton Moeller series NZM - Molded Case Circuit Breaker
Part no.	NZMH4-AE1000-S1
EAN	4015082903725
Product Length/Depth	401 millimetre
Product height	207 millimetre
Product width	210 millimetre
Product weight	19 kilogram
Compliances	RoHS conform
Certifications	IEC
Product Tradename	NZM
Product Type	Molded Case Circuit Breaker
Product Sub Type	None

Delivery program

Type	Circuit breaker
Circuit breaker frame type	NZM4
Number of poles	Three-pole
Amperage Rating	1000 A
Release system	Electronic release
Features	Protection unit Motor drive optional
Special features	Lifespan, mechanical: of which max. 50 % trip by shunt/undervoltage release R.m.s. value measurement and “thermal memory” NZM...S1 terminal type: NZM...XKSA cover required Rated current = rated uninterrupted current: 1000 A

Technical Data - Electrical

Voltage rating	1000 V - 1000 V
Rated insulation voltage (Ui)	1000 V AC
Rated impulse withstand voltage (Uimp) at auxiliary contacts	6000 V
Rated impulse withstand voltage (Uimp) at main contacts	8000 V
Rated short-time withstand current (t = 0.3 s)	19.2 kA
Rated short-time withstand current (t = 1 s)	19.2 kA
Instantaneous current setting (Ii) - min	2000 A
Instantaneous current setting (Ii) - max	12000 A
Overload current setting (Ir) - min	500 A
Overload current setting (Ir) - max	1000 A
Short delay current setting (Isd) - min	0 A
Short delay current setting (Isd) - max	0 A
Short-circuit release non-delayed setting - min	2000 A
Short-circuit release non-delayed setting - max	12000 A
Rated short-circuit breaking capacity Ics (IEC/EN 60947) at 230 V, 50/60 Hz	63 kA
Rated short-circuit breaking capacity Ics (IEC/EN 60947) at 400/415 V, 50/60 Hz	50 kA
Rated short-circuit breaking capacity Ics (IEC/EN 60947) at 440 V, 50/60 Hz	50 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	37 kA
Rated short-circuit breaking capacity Ics (IEC/EN 60947) at 1000 V, 50/60 Hz	15 kA
Rated short-circuit making capacity Icm at 240 V, 50/60 Hz	275 kA
Rated short-circuit making capacity Icm at 400/415 V, 50/60 Hz	187 kA
Rated short-circuit making capacity Icm at 440 V, 50/60 Hz	187 kA
Rated short-circuit making capacity Icm at 525 V, 50/60 Hz	143 kA

Rated short-circuit making capacity Icm at 690 V, 50/60 Hz	100 kA
Rated short-circuit making capacity Icm at 1000 V, 50/60 Hz	40 kA
Electrical connection type of main circuit	Screw connection
Number of operations per hour - max	60
Handle type	Rocker lever
Utilization category	A
Overvoltage category	III
Pollution degree	3
Lifespan, electrical	500 operations at 1000 V AC-1

Technical Data - Mechanical

Mounting Method	Fixed Built-in device fixed built-in technique
Degree of protection	IP20
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
Special features	Lifespan, mechanical: of which max. 50 % trip by shunt/undervoltage release R.m.s. value measurement and “thermal memory” NZM...S1 terminal type: NZM...XKSA cover required Rated current = rated uninterrupted current: 1000 A
Lifespan, mechanical	10000 operations

Technical Data - Mechanical - Terminals

Standard terminals	Screw 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 (aluminum stranded conductor/cable)	50 mm^2 - 240 mm^2 (4x) at 4-hole tunnel terminal
Terminal capacity (copper busbar)	Max. 80 mm x 10 mm (2x) direct at switch rear-side connection 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. 80 mm x 10 mm (2x) at rear-side width extension 50 mm x 10 mm (2x) at rear-side 2-hole module plate M10 at rear-side screw connection Min. 60 mm x 10 mm at rear-side width extension Max. 50 mm x 10 mm (2x) at rear-side 1-hole module plate Max. 50 mm x 10 mm (2x) direct at switch rear-side connection
Terminal capacity (copper solid conductor/cable)	50 mm^2 - 240 mm^2 (4x) at 4-hole tunnel terminal 185 mm^2 - 240 mm^2 (1x) at rear-side 1-hole module plate 35 mm^2 - 185 mm^2 (4x) at rear-side 2-hole module plate 50 mm^2 (4x) at rear-side 2-hole module plate 70 mm^2 - 185 mm^2 (2x) at rear-side 1-hole module plate 240 mm^2 (2x) at rear-side width extension 70 mm^2 - 240 mm^2 (6x) at rear-side width extension
Terminal capacity (copper strip)	Max. 10 segments of 50 mm x 1 mm (2x) at rear-side connection (punched) 10 segments of 50 mm x 1 mm (2x) at 1-hole module plate Min. 10 segments of 50 mm x 1 mm (2x) at rear-side connection (punched) 10 segments of 80 mm x 1 mm (2x) at rear-side width extension Max. 10 segments of 32 mm x 1 mm (2x) at flat conductor terminal Min. 6 segments of 16 mm x 0.8 mm at flat conductor terminal

Design verification as per IEC/EN 61439 - technical data

Rated operational current for specified heat dissipation (In)	1000 A
Equipment heat dissipation, current-dependent	123 W
Ambient operating temperature - min	-25 °C
Ambient operating temperature - max	70 °C
Ambient storage temperature - min	40 °C
Ambient storage temperature - max	70 °C

Design verification as per IEC/EN 61439

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.
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.
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.

Additional information

Functions			System and cable protection

Technical data ETIM 9.0

Low-voltage industrial components (EG000017) / Power circuit-breaker for trafo/generator/installation protection (EC000228)

Electric engineering, automation, process control engineering / Low-voltage switch technology / Circuit breaker (LV < 1 kV) / Circuit breaker for power transformer, generator and system protection (ecl@ss13-27-37-04-09 [AJZ716018])

Rated permanent current Iu		A	1000
Rated voltage		V	1000 - 1000
Rated short-circuit breaking capacity Icu at 400 V, 50 Hz		kA	50
Overload release current setting		A	500 - 1000
Adjustment range short-term delayed short-circuit release		A	0 - 0
Adjustment range undelayed short-circuit release		A	2000 - 12000
Power loss		W	
Device construction			Built-in device fixed built-in technique
Integrated earth fault protection			No
Type of electrical connection of main circuit			Screw connection
Suitable for DIN rail (top hat rail) mounting			No
DIN rail (top hat rail) mounting optional			No
Number of auxiliary contacts as normally closed contact			0
Number of auxiliary contacts as normally open contact			0
Number of auxiliary contacts as change-over contact			0
With switched-off indicator			No
With integrated under voltage release			No
Number of poles			3
Position of connection for main current circuit			Front side
Type of control element			Rocker lever
Complete device with protection unit			Yes
Motor drive integrated			No
Motor drive optional			Yes
Degree of protection (IP)			IP20