DATASHEET - NZMH3-AE400-NA

Circuit-breaker, 3p, 400A

Part no. **NZMH3-AE400-NA**
269303

Product name	Eaton Moeller series NZM molded case circuit breaker electronic
Part no.	NZMH3-AE400-NA
EAN	4015082693039
Product Length/Depth	166 millimetre
Product height	297 millimetre
Product width	140 millimetre
Product weight	7.021 kilogram
Compliances	RoHS conform
Certifications	CSA (File No. 22086) UL listed IEC 60947-2 UL 489 CSA certified CE marking CSA (Class No. 1432-01) IEC/EN 60947 UL (Category Control Number DIVQ) UL (File No. E31593) Specially designed for North America IEC UL/CSA CSA-C22.2 No. 5-09
Product Tradename	NZM
Product Type	Molded case circuit breaker
Product Sub Type	Electronic
Application	Branch circuits, feeder circuits Use in unearthed supply systems at 690 V
Type	Circuit breaker
Circuit breaker frame type	NZM3
Number of poles	Three-pole
Amperage Rating	400 A
Release system	Electronic release
Features	Motor drive optional Protection unit
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 Icn) Rated current = rated uninterrupted current: 400 A Switches conform to UL/CSA as well as the IEC regulations. IEC switching performance values are contained on the rating plate. Adjustable overload releases Ir R.m.s. value measurement and “thermal memory”
Voltage rating	690 V - 690 V
Rated operating voltage Ue (UL) - max	600 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 operational current	630 A (380/400 V AC-1, making and breaking capacity) 500 A (415 V AC-1, making and breaking capacity) 400 A (690 V AC -1, making and breaking capacity) 400 A (660-690 V AC-3, making and breaking capacity)
Rated short-time withstand current (t = 0.3 s)	3.3 kA
Rated short-time withstand current (t = 1 s)	3.3 kA
Instantaneous current setting (Ii) - min	800 A
Instantaneous current setting (Ii) - max	4400 A
Overload current setting (Ir) - min	200 A

Overload current setting (Ir) - max	400 A
Short delay current setting (Isd) - min	0 A
Short delay current setting (Isd) - max	0 A
Short-circuit release non-delayed setting - min	800 A
Short-circuit release non-delayed setting - max	4400 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	150 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
Rated short-circuit making capacity Icm at 240 V, 50/60 Hz	330 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	143 kA
Rated short-circuit making capacity Icm at 690 V, 50/60 Hz	74 kA
Short-circuit total breaktime	< 10 ms
Low-voltage HBC fuse - max	400 A gG/gL
Electrical connection type of main circuit	Screw connection
Isolation	300 V AC (between the auxiliary contacts) 500 V AC (between auxiliary contacts and main contacts)
Number of operations per hour - max	60
Handle type	Rocker lever
Utilization category	A (IEC/EN 60947-2)
Overvoltage category	III
Pollution degree	3
Lifespan, electrical	2000 operations at 400 V AC-3 2000 operations at 415 V AC-3 2000 operations at 690 V AC-3 3000 operations at 690 V AC-1 5000 operations at 400 V AC-1
Direction of incoming supply	As required
Mounting Method	Fixed Built-in device fixed built-in technique
Degree of protection	IP20 IP20 (basic degree of protection, in the operating controls area)
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)
Protection against direct contact	Finger and back-of-hand proof to DIN EN 50274/VDE 0106 part 110
Shock resistance	20 g (half-sinusoidal shock 20 ms)
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
Climatic proofing	Damp heat, cyclic, to IEC 60068-2-30 Damp heat, constant, to IEC 60068-2-78
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 Icn) Rated current = rated uninterrupted current: 400 A Switches conform to UL/CSA as well as the IEC regulations. IEC switching performance values are contained on the rating plate. Adjustable overload releases Ir R.m.s. value measurement and “thermal memory”
Lifespan, mechanical	15000 operations
Standard terminals	Screw terminal
Terminal capacity (control cable)	14 mm^2 - 18 mm^2 (1x) 16 mm^2 - 18 mm^2 (2x)
Terminal capacity (aluminum solid conductor/cable)	16 mm^2 (1x) at tunnel terminal
Terminal capacity (aluminum stranded conductor/cable)	Max. 500 mm^2 (1x) at 2-hole tunnel terminal

		Max. 500 mm^2 (2x) at 2-hole tunnel terminal
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 M10 at rear-side screw connection
Terminal capacity (copper solid conductor/cable)		500 mm^2 (2x) at rear-side width extension 16 mm^2 - 185 mm^2 (1x) at tunnel terminal
Terminal capacity (copper stranded conductor/cable)		2 mm^2 - 500 mm^2 (1x) at box terminal 350 mm^2 (2x) direct at switch rear-side connection 4 mm^2 - 350 mm^2 (1x) at tunnel terminal 4 mm^2 - 350 mm^2 (1x) direct at switch rear-side connection
Terminal capacity (copper strip)		Max. 10 segments of 24 mm x 1 mm + 5 segments of 24 mm x 1 mm Max. 10 segments of 32 mm x 1 mm + 5 segments of 32 mm x 1 mm at rear-side connection (punched) 10 segments of 50 mm x 1 mm (2x) at rear-side width extension 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 Min. 6 segments of 16 mm x 0.8 mm at rear-side connection (punched)
Rated operational current for specified heat dissipation (In)		400 A
Equipment heat dissipation, current-dependent		48 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
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.
Functions		Current limiting circuit breaker System and cable protection

Technical data ETIM 8.0

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@ss10.0.1-27-37-04-09 [AJZ716013])

Rated permanent current Iu	A	400
Rated voltage	V	690 - 690
Rated short-circuit breaking capacity Icu at 400 V, 50 Hz	kA	150
Overload release current setting	A	200 - 400
Adjustment range short-term delayed short-circuit release	A	0 - 0

Adjustment range undelayed short-circuit release		A	800 - 4,400
Integrated earth fault protection			No
Type of electrical connection of main circuit			Screw connection
Device construction			Built-in device fixed built-in technique
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