

Circuit-breaker, 3p, 400A

Part no. **NZMN3-VE400**
259132
EL Number **4358790**
(Norway)

General specifications		
Product name		Eaton Moeller series NZM molded case circuit breaker electronic
Part no.		NZMN3-VE400
EAN		4015082591328
Product Length/Depth		166 millimetre
Product height		275 millimetre
Product width		140 millimetre
Product weight		6.989 kilogram
Compliances		RoHS conform
Certifications		IEC/EN 60947 IEC
Product Tradename		NZM
Product Type		Molded case circuit breaker
Product Sub Type		Electronic
Delivery program		
Application		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 I _{cn}) R.m.s. value measurement and "thermal memory" Adjustable time delay setting to overcome current peaks I_r at 6 x I_r also infinity (without overload releases) Adjustable delay time t_{sd} i^2t constant function: switchable Rated current = rated uninterrupted current: 400 A Terminal capacity hint: Up to 240 mm ² can be connected depending on the cable manufacturer.
Technical Data - Electrical		
Voltage rating		690 V - 690 V
Rated insulation voltage (U _i)		1000 V AC
Rated impulse withstand voltage (U _{imp}) at auxiliary contacts		6000 V
Rated impulse withstand voltage (U _{imp}) at main contacts		8000 V
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 (I _i) - min		800 A
Instantaneous current setting (I _i) - max		4400 A
Overload current setting (I _r) - min		200 A
Overload current setting (I _r) - max		400 A
Short delay current setting (I _{sd}) - min		400 A
Short delay current setting (I _{sd}) - max		4000 A
Short-circuit release delayed setting - min		400 A
Short-circuit release delayed setting - max		4000 A
Short-circuit release non-delayed setting - min		800 A
Short-circuit release non-delayed setting - max		4400 A
Rated short-circuit breaking capacity I _{cs} (IEC/EN 60947) at 230 V, 50/60 Hz		85 kA
Rated short-circuit breaking capacity I _{cs} (IEC/EN 60947) at 400/415 V, 50/60 Hz		50 kA
Rated short-circuit breaking capacity I _{cs} (IEC/EN 60947) at 440 V, 50/60 Hz		35 kA
Rated short-circuit breaking capacity I _{cs} (IEC/EN 60947) at 525 V, 50/60 Hz		13 kA

Rated short-circuit breaking capacity Ics (IEC/EN 60947) at 690 V, 50/60 Hz			5 kA
Rated short-circuit making capacity Icm at 240 V, 50/60 Hz			187 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
Short-circuit total breaktime			< 10 ms
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 3000 operations at 690 V AC-1 5000 operations at 400 V AC-1 2000 operations at 690 V AC-3 5000 operations at 415 V AC-1
Direction of incoming supply			As required
Technical Data - Mechanical			
Mounting Method			Fixed Built-in device fixed built-in technique
Degree of protection			IP20 (basic degree of protection, in the operating controls area) IP20
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, constant, to IEC 60068-2-78 Damp heat, cyclic, to IEC 60068-2-30
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) R.m.s. value measurement and “thermal memory” Adjustable time delay setting to overcome current peaks tr at 6 x Ir also infinity (without overload releases) Adjustable delay time tsd i’t constant function: switchable Rated current = rated uninterrupted current: 400 A Terminal capacity hint: Up to 240 mm ² can be connected depending on the cable manufacturer.
Lifespan, mechanical			15000 operations
Technical Data - Mechanical - Terminals			
Standard terminals			Screw terminal
Optional terminals			Box terminal. Connection on rear. 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 (aluminum solid conductor/cable)			16 mm ² (1x) at tunnel terminal 10 mm ² - 16 mm ² (2x) direct at switch rear-side connection 16 mm ² (1x) direct at switch rear-side connection
Terminal capacity (aluminum stranded conductor/cable)			25 mm ² - 120 mm ² (2x) direct at switch rear-side connection 25 mm ² - 185 mm ² (1x) at tunnel terminal 50 mm ² - 240 mm ² (2x) at 2-hole tunnel terminal 25 mm ² - 120 mm ² (1x) direct at switch rear-side connection 50 mm ² - 240 mm ² (1x) 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 Max. 30 mm x 10 mm + 30 mm x 5 mm direct at switch rear-side connection
Terminal capacity (copper solid conductor/cable)			16 mm ² (1x) at tunnel terminal 16 mm ² (2x) direct at switch rear-side connection 16 mm ² (1x) direct at switch rear-side connection 16 mm ² (2x) at box terminal

			300 mm ² (2x) at rear-side width extension
Terminal capacity (copper stranded conductor/cable)			25 mm ² - 240 mm ² (1x) direct at switch rear-side connection 16 mm ² - 185 mm ² (1x) at 1-hole tunnel terminal 25 mm ² - 240 mm ² (2x) direct at switch rear-side connection 50 mm ² - 240 mm ² (2x) at 2-hole tunnel terminal 35 mm ² - 240 mm ² (1x) at box terminal 25 mm ² - 120 mm ² (2x) at box terminal
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) Max. 10 segments of 24 mm x 1 mm + 5 segments of 24 mm x 1 mm Max. 8 segments of 24 mm x 1 mm (2x) at box terminal Min. 6 segments of 16 mm x 0.8 mm at rear-side connection (punched) Min. 6 segments of 16 mm x 0.8 mm at box terminal
Design verification as per IEC/EN 61439 - technical data			
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
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			Systems, cable, selectivity and generator 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	400
Rated voltage	V	690 - 690
Rated short-circuit breaking capacity Icu at 400 V, 50 Hz	kA	50
Overload release current setting	A	200 - 400
Adjustment range short-term delayed short-circuit release	A	400 - 4000
Adjustment range undelayed short-circuit release	A	800 - 4400
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