

Circuit-breaker 4-pole 400A, selective protect, withdrawable unit



**Part no.** **NZMS3-4-VE400-AVE**  
**113561**

Product name	Eaton Moeller series NZM molded case circuit breaker electronic
Part no.	NZMS3-4-VE400-AVE
EAN	4015081130863
Product Length/Depth	346 millimetre
Product height	260 millimetre
Product width	230 millimetre
Product weight	14 kilogram
Compliances	RoHS conform
Certifications	IEC/EN 60947 IEC
Product Tradename	NZM
Product Type	Molded case circuit breaker
Product Sub Type	Electronic
Application	690 V
Type	Circuit breaker
Circuit breaker frame type	NZM3
Accessories required	NZM3-4-XAVS
Number of poles	Four-pole
Amperage Rating	400 A
Release system	Electronic release
Features	Protection unit Motor drive optional
Special features	2) Up to 240 mm <sup>2</sup> can be connected depending on the cable manufacturer. 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 <sub>cs</sub> ) R.m.s. value measurement and "thermal memory" adjustable time delay setting to overcome current peaks tr: 2 – 14 s at 6 x I <sub>r</sub> also infinity (without overload releases) Adjustable delay time tsd: Steps: 0, 20, 60, 100, 200, 300, 500, 750, 1000 ms i <sup>2</sup> t constant function: switchable Rated current = rated uninterrupted current: 400 A
Voltage rating	690 V - 690 V
Rated insulation voltage (U <sub>i</sub> )	1000 V AC
Rated impulse withstand voltage (U <sub>imp</sub> ) at auxiliary contacts	6000 V
Rated impulse withstand voltage (U <sub>imp</sub> ) at main contacts	8000 V
Current rating of neutral conductor	100% of phase conductor
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 <sub>i</sub> ) - min	800 A
Instantaneous current setting (I <sub>i</sub> ) - max	4400 A
Overload current setting (I <sub>r</sub> ) - min	200 A
Overload current setting (I <sub>r</sub> ) - max	400 A
Short delay current setting (I <sub>sd</sub> ) - min	800 A
Short delay current setting (I <sub>sd</sub> ) - max	4000 A
Rated short-circuit breaking capacity I <sub>cs</sub> (IEC/EN 60947) at 230 V, 50/60 Hz	100 kA
Rated short-circuit breaking capacity I <sub>cs</sub> (IEC/EN 60947) at 400/415 V, 50/60 Hz	70 kA
Rated short-circuit breaking capacity I <sub>cs</sub> (IEC/EN 60947) at 440 V, 50/60 Hz	65 kA
Rated short-circuit breaking capacity I <sub>cs</sub> (IEC/EN 60947) at 525 V, 50/60 Hz	18 kA
Rated short-circuit breaking capacity I <sub>cs</sub> (IEC/EN 60947) at 690 V, 50/60 Hz	6 kA
Rated short-circuit making capacity I <sub>cm</sub> at 240 V, 50/60 Hz	220 kA
Rated short-circuit making capacity I <sub>cm</sub> at 400/415 V, 50/60 Hz	154 kA

Rated short-circuit making capacity I <sub>cm</sub> at 440 V, 50/60 Hz		143 kA
Rated short-circuit making capacity I <sub>cm</sub> at 525 V, 50/60 Hz		80 kA
Rated short-circuit making capacity I <sub>cm</sub> at 690 V, 50/60 Hz		50 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		1000 operations at 690 V AC-3 2000 operations at 415 V AC-3 5000 operations at 400 V AC-1 2000 operations at 400 V AC-3 2000 operations at 415 V AC-1 3000 operations at 690 V AC-1
Direction of incoming supply		As required
Mounting Method		Built-in device slide-in technique (withdrawable) Withdrawable
Degree of protection		IP20 (basic degree of protection, in the operating controls area) 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 strip terminal)
Protection against direct contact		Finger and back-of-hand proof to VDE 0106 part 100
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		Back side
Climatic proofing		Damp heat, constant, to IEC 60068-2-78 Damp heat, cyclic, to IEC 60068-2-30
Special features		2) Up to 240 mm <sup>2</sup> can be connected depending on the cable manufacturer. 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 <sub>cn</sub> ) R.m.s. value measurement and "thermal memory" adjustable time delay setting to overcome current peaks tr: 2 – 14 s at 6 x I <sub>r</sub> also infinity (without overload releases) Adjustable delay time tsd: Steps: 0, 20, 60, 100, 200, 300, 500, 750, 1000 ms i <sup>2</sup> t constant function: switchable Rated current = rated uninterrupted current: 400 A
Lifespan, mechanical		15000 operations
Standard terminals		Screw connection
Optional terminals		Box terminal. Connection on rear. Tunnel terminal
Terminal capacity (control cable)		0.75 mm <sup>2</sup> - 1.5 mm <sup>2</sup> (2x) 0.75 mm <sup>2</sup> - 2.5 mm <sup>2</sup> (1x)
Terminal capacity (aluminum solid conductor/cable)		16 mm <sup>2</sup> (1x) at tunnel terminal
Terminal capacity (aluminum stranded conductor/cable)		50 mm <sup>2</sup> - 240 mm <sup>2</sup> (1x) at 2-hole tunnel terminal 25 mm <sup>2</sup> - 185 mm <sup>2</sup> (1x) at tunnel terminal 50 mm <sup>2</sup> - 240 mm <sup>2</sup> (2x) at 2-hole tunnel terminal
Terminal capacity (copper busbar)		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 Min. 20 mm x 5 mm direct at switch rear-side connection M10 at rear-side screw connection
Terminal capacity (copper solid conductor/cable)		300 mm <sup>2</sup> (2x) at rear-side width extension 16 mm <sup>2</sup> (2x) at box terminal 16 mm <sup>2</sup> (2x) direct at switch rear-side connection 16 mm <sup>2</sup> (1x) at tunnel terminal 16 mm <sup>2</sup> (1x) direct at switch rear-side connection
Terminal capacity (copper stranded conductor/cable)		25 mm <sup>2</sup> - 240 mm <sup>2</sup> (1x) direct at switch rear-side connection 25 mm <sup>2</sup> - 240 mm <sup>2</sup> (2x) direct at switch rear-side connection 35 mm <sup>2</sup> - 240 mm <sup>2</sup> (1x) at box terminal 16 mm <sup>2</sup> - 185 mm <sup>2</sup> (1x) at 1-hole tunnel terminal 25 mm <sup>2</sup> - 120 mm <sup>2</sup> (2x) at box terminal
Terminal capacity (copper strip)		10 segments of 50 mm x 1 mm (2x) at rear-side width extension

		<p>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)  Max. 10 segments of 24 mm x 1 mm + 5 segments of 24 mm x 1 mm  Max. 10 segments of 24 mm x 1 mm + 5 segments of 24 mm x 1 mm at box terminal  Max. 10 segments of 32 mm x 1 mm + 5 segments of 32 mm x 1 mm at rear-side connection (punched)  Max. 8 segments of 24 mm x 1 mm (2x) at box terminal</p>
Rated operational current for specified heat dissipation (In)		400 A
Equipment heat dissipation, current-dependent		72 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		Systems, cable, selectivity and generator protection