

Circuit-breaker 4-pole 400/250A, selective protect, earth fault protection, withdrawable unit



**Part no. NZMS3-4-VE400/250-T-AVE
113605**

Product name	Eaton Moeller series NZM molded case circuit breaker electronic
Part no.	NZMS3-4-VE400/250-T-AVE
EAN	4015081131303
Product Length/Depth	346 millimetre
Product height	260 millimetre
Product width	230 millimetre
Product weight	14.025 kilogram
Compliances	RoHS conform
Certifications	IEC IEC/EN 60947
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	Motor drive optional Protection unit
Special features	2) Up to 240 mm ² 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 _{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 ² t constant function: switchable Earth-fault release: Not dependent on mains and control voltages I _g = 0.35 - 0.4 - 0.5 - 0.6 - 0.7 - 0.8 - 0.9 - 1.0 x I _n tg = 0 - 20 - 60 - 100 - 200 - 300 - 500 - 750 - 1000 ms Rated current = rated uninterrupted current: 400 A Reduced neutral conductor protection
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
Current rating of neutral conductor	60% of phase conductor 250 A
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	800 A
Short delay current setting (I _{sd}) - max	4000 A
Rated short-circuit breaking capacity I _{cs} (IEC/EN 60947) at 230 V, 50/60 Hz	100 kA
Rated short-circuit breaking capacity I _{cs} (IEC/EN 60947) at 400/415 V, 50/60 Hz	70 kA
Rated short-circuit breaking capacity I _{cs} (IEC/EN 60947) at 440 V, 50/60 Hz	65 kA
Rated short-circuit breaking capacity I _{cs} (IEC/EN 60947) at 525 V, 50/60 Hz	18 kA

Rated short-circuit breaking capacity Ics (IEC/EN 60947) at 690 V, 50/60 Hz		6 kA
Rated short-circuit making capacity Icm at 240 V, 50/60 Hz		220 kA
Rated short-circuit making capacity Icm at 400/415 V, 50/60 Hz		154 kA
Rated short-circuit making capacity Icm at 440 V, 50/60 Hz		143 kA
Rated short-circuit making capacity Icm at 525 V, 50/60 Hz		80 kA
Rated short-circuit making capacity Icm 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		2000 operations at 415 V AC-3 2000 operations at 400 V AC-3 1000 operations at 690 V AC-3 3000 operations at 690 V AC-1 5000 operations at 400 V AC-1 2000 operations at 415 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, cyclic, to IEC 60068-2-30 Damp heat, constant, to IEC 60068-2-78
Special features		2) Up to 240 mm ² 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 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 ² t constant function: switchable Earth-fault release: Not dependent on mains and control voltages Ig = 0.35 - 0.4 - 0.5 - 0.6 - 0.7 - 0.8 - 0.9 - 1.0 x In tg = 0 - 20 - 60 - 100 - 200 - 300 - 500 - 750 - 1000 ms Rated current = rated uninterrupted current: 400 A Reduced neutral conductor protection
Lifespan, mechanical		15000 operations
Standard terminals		Screw connection
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
Terminal capacity (aluminum stranded conductor/cable)		25 mm ² - 185 mm ² (1x) at tunnel terminal 50 mm ² - 240 mm ² (1x) at 2-hole tunnel terminal 50 mm ² - 240 mm ² (2x) at 2-hole tunnel terminal
Terminal capacity (copper busbar)		M10 at rear-side screw connection Min. 20 mm x 5 mm direct at switch rear-side connection Max. 10 mm x 50 mm (2x) at rear-side width extension Max. 30 mm x 10 mm + 30 mm x 5 mm direct at switch rear-side connection
Terminal capacity (copper solid conductor/cable)		300 mm ² (2x) at rear-side width extension 16 mm ² (1x) at tunnel terminal 16 mm ² (2x) direct at switch rear-side connection 16 mm ² (2x) at box terminal 16 mm ² (1x) direct at switch rear-side connection

Terminal capacity (copper stranded conductor/cable)		35 mm ² - 240 mm ² (1x) at box terminal 25 mm ² - 240 mm ² (2x) direct at switch rear-side connection 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 - 120 mm ² (2x) at box terminal
Terminal capacity (copper strip)		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) 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 Min. 6 segments of 16 mm x 0.8 mm at box terminal 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)
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		Earth-fault protection Systems, cable, selectivity and generator protection Integrated earth fault protection