

Circuit-breaker, 3p, 550A



**Part no.** NZMN4-ME550  
**265783**  
**EL Number** 4358907  
**(Norway)**

General specifications	
Product name	Eaton Moeller series NZM molded case circuit breaker electronic
Part no.	NZMN4-ME550
EAN	4015082657833
Product Length/Depth	401 millimetre
Product height	207 millimetre
Product width	210 millimetre
Product weight	18.24 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 525 V
Type	Circuit breaker
Circuit breaker frame type	NZM4
Number of poles	Three-pole
Amperage Rating	550 A
Release system	Electronic release
Special features	IEC/EN 60947-4-1, IEC/EN 60947-2 The circuit-breaker fulfills all requirements for AC-3 switching category. R.m.s. value measurement and "thermal memory" Adjustable time delay setting to overcome current peaks $t_r$ at $6 \times I_r$ also infinity (without overload releases) All AC-3 rating data applies to direct switching by the circuit-breaker under normal operating conditions. If, for example, a contactor takes over AC-3 switching under normal operating conditions, the full rated uninterrupted current applies to the circuit-breaker, $I_n = I_u$ . 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 $I_{cn}$ ) Rated current = rated uninterrupted current: 550 A
Fitted with:	Thermal protection
Technical Data - Electrical	
Voltage rating	690 V - 690 V
Rated insulation voltage (Ui)	1000 V
Rated impulse withstand voltage (Uimp) at auxiliary contacts	6000 V
Rated impulse withstand voltage (Uimp) at main contacts	8000 V
Rated operational current	544 A (400 V AC-3) 550 A (690 V AC-3)
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	550 A
Instantaneous current setting (Ii) - max	7700 A
Overload current setting (Ir) - min	275 A
Overload current setting (Ir) - max	550 A
Short-circuit release non-delayed setting - min	1100 A
Short-circuit release non-delayed setting - max	7700 A
Rated short-circuit breaking capacity Ics (IEC/EN 60947) at 230 V, 50/60 Hz	37 kA
Rated short-circuit breaking capacity Ics (IEC/EN 60947) at 400/415 V, 50/60 Hz	26 kA
Rated short-circuit breaking capacity Ics (IEC/EN 60947) at 440 V, 50/60 Hz	26 kA

Rated short-circuit breaking capacity Ics (IEC/EN 60947) at 525 V, 50/60 Hz		19 kA
Rated short-circuit breaking capacity Ics (IEC/EN 60947) at 690 V, 50/60 Hz		15 kA
Rated short-circuit making capacity Icm at 240 V, 50/60 Hz		105 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
Rated operating power at AC-3, 230 V		160 kW
Rated operating power at AC-3, 400 V		315 kW
Short-circuit total breaktime		< 25 ms ( $\leq$ 415 V); < 35 ms (> 415 V)
Electrical connection type of main circuit		Screw connection
Isolation		500 V AC (between auxiliary contacts and main contacts) 300 V AC (between the auxiliary contacts)
Number of operations per hour - max		60
Handle type		Rocker lever
Utilization category		B (IEC/EN 60947-2)
Overvoltage category		III
Pollution degree		3
Lifespan, electrical		2000 operations at 400 V AC-3 2000 operations at 690 V AC-1 3000 operations at 400 V AC-1 1000 operations at 690 V AC-3 3000 operations at 415 V AC-1 2000 operations at 415 V AC-3
Direction of incoming supply		As required
<b>Technical Data - Mechanical</b>		
Mounting Method		Built-in device fixed built-in technique Fixed
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)		IP00 (terminations, phase isolator and strip terminal) IP10 (tunnel terminal)
Protection against direct contact		Finger and back-of-hand proof to VDE 0106 part 100
Shock resistance		15 g (half-sinusoidal shock 11 ms)
Switch off technique		Electronic
Climatic proofing		Damp heat, constant, to IEC 60068-2-78 Damp heat, cyclic, to IEC 60068-2-30
Special features		IEC/EN 60947-4-1, IEC/EN 60947-2 The circuit-breaker fulfills all requirements for AC-3 switching category. R.m.s. value measurement and "thermal memory" Adjustable time delay setting to overcome current peaks $I_{tr}$ at $6 \times I_r$ also infinity (without overload releases) All AC-3 rating data applies to direct switching by the circuit-breaker under normal operating conditions. If, for example, a contactor takes over AC-3 switching under normal operating conditions, the full rated uninterrupted current applies to the circuit-breaker, $I_n = I_u$ . 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 $I_{cn}$ ) Rated current = rated uninterrupted current: 550 A
Lifespan, mechanical		10000 operations
<b>Technical Data - Mechanical - Terminals</b>		
Standard terminals		Screw terminal
Optional terminals		Connection on rear. Strip terminal. Tunnel terminal
Terminal capacity (control cable)		0.75 mm <sup>2</sup> - 2.5 mm <sup>2</sup> (1x) 0.75 mm <sup>2</sup> - 1.5 mm <sup>2</sup> (2x)
Terminal capacity (aluminum solid conductor/cable)		70 mm <sup>2</sup> - 185 mm <sup>2</sup> (2x) at rear-side 1-hole module plate 240 mm <sup>2</sup> (2x) at rear-side width extension 50 mm <sup>2</sup> (4x) at rear-side 2-hole module plate 185 mm <sup>2</sup> - 240 mm <sup>2</sup> (1x) at rear-side 1-hole module plate 70 mm <sup>2</sup> - 240 mm <sup>2</sup> (6x) at rear-side width extension
Terminal capacity (aluminum stranded conductor/cable)		50 mm <sup>2</sup> - 240 mm <sup>2</sup> (4x) at 4-hole tunnel terminal
Terminal capacity (copper busbar)		Min. 60 mm x 10 mm at rear-side width extension Max. 50 mm x 10 mm (2x) direct at switch rear-side connection Min. 25 mm x 5 mm direct at switch rear-side connection Min. 25 mm x 5 mm at rear-side 1-hole module plate

		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 Max. 50 mm x 10 mm (2x) at rear-side 1-hole module plate M10 at rear-side screw connection
Terminal capacity (copper solid conductor/cable)		120 mm <sup>2</sup> - 300 mm <sup>2</sup> (1x) at rear-side 1-hole module plate 300 mm <sup>2</sup> (4x) at rear-side width extension 95 mm <sup>2</sup> - 240 mm <sup>2</sup> (6x) at rear-side width extension 95 mm <sup>2</sup> - 185 mm <sup>2</sup> (2x) at rear-side 2-hole module plate 35 mm <sup>2</sup> - 185 mm <sup>2</sup> (4x) at rear-side 2-hole module plate 50 mm <sup>2</sup> - 240 mm <sup>2</sup> (4x) at 4-hole tunnel terminal 95 mm <sup>2</sup> - 300 mm <sup>2</sup> (2x) at rear-side 1-hole module plate
Terminal capacity (copper stranded conductor/cable)		50 mm <sup>2</sup> - 185 mm <sup>2</sup> (4x) direct at switch rear-side connection 120 mm <sup>2</sup> - 185 mm <sup>2</sup> (1x) direct at switch rear-side connection
Terminal capacity (copper strip)		Min. 6 segments of 16 mm x 0.8 mm at flat conductor terminal 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 10 segments of 50 mm x 1 mm (2x) at 1-hole module plate Max. 10 segments of 50 mm x 1 mm (2x) at rear-side connection (punched) Min. 5 segments of 25 mm x 1 mm at rear-side connection (punched)
<b>Design verification as per IEC/EN 61439 - technical data</b>		
Rated operational current for specified heat dissipation (In)		550 A
Equipment heat dissipation, current-dependent		33.58 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
<b>Design verification as per IEC/EN 61439</b>		
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.
<b>Additional information</b>		
Functions		Motor protection Phase failure sensitive

## Technical data ETIM 9.0

Low-voltage industrial components (EG000017) / Motor protection circuit-breaker (EC000074)		
Electric engineering, automation, process control engineering / Low-voltage switch technology / Circuit breaker (LV < 1 kV) / Motor protection circuit-breaker (ecl@ss13-27-37-04-01 [AGZ529021])		
Overload release current setting	A	275 - 550
Adjustment range undelayed short-circuit release	A	550 - 7700
With thermal overload protection		Yes
Phase failure sensitive		Yes

Switch off technique		Electronic
Rated operating voltage	V	690 - 690
Rated permanent current I <sub>u</sub>	A	550
Rated operation power at AC-3, 230 V	kW	160
Rated operation power at AC-3, 400 V	kW	315
Power loss	W	
Type of electrical connection of main circuit		Screw connection
Type of control element		Rocker lever
Device construction		Built-in device fixed built-in technique
With integrated auxiliary switch		No
With integrated under voltage release		No
Number of poles		3
Rated short-circuit breaking capacity I <sub>cu</sub> at 400 V, AC	kA	26
Degree of protection (IP)		IP20
Height	mm	207
Width	mm	210
Depth	mm	401