

**Circuit-breaker, 3p, 220A, motor protection, 1000 V**

**Part no.** **NZMH3-ME220-S1**  
**119364**

**EL Number** **4363146**  
**(Norway)**

<b>General specifications</b>		
Product name		Eaton Moeller series NZM molded case circuit breaker electronic
Part no.		NZMH3-ME220-S1
EAN		4015081175000
Product Length/Depth		166 millimetre
Product height		275 millimetre
Product width		140 millimetre
Product weight		6.34 kilogram
Compliances		RoHS conform
Certifications		IEC
Product Tradename		NZM
Product Type		Molded case circuit breaker
Product Sub Type		Electronic
<b>Delivery program</b>		
Type		Circuit breaker
Circuit breaker frame type		NZM3
Number of poles		Three-pole
Amperage Rating		220 A
Release system		Electronic release
Special features		<p>Lifespan, mechanical: of which max. 50% trip by shunt/undervoltage release</p> <p>Phase-failure sensitivity</p> <p>IEC/EN 60947-4-1, IEC/EN 60947-2</p> <p>R.m.s. value measurement and "thermal memory"</p> <p>adjustable time delay setting to overcome current peaks <math>t_r</math>: 2 – 20 s at 6 x <math>I_r</math> also infinity (without overload releases)</p> <p>NZM...S1 terminal type: NZM...XKSA cover required</p> <p>NZM4...S1 terminal type: Insulated busbar connection (NZM4-XKS screw connection)</p> <p>Rated current = rated uninterrupted current: 220 A</p> <p>Terminal capacity hint: Up to 240 mm<sup>2</sup> can be connected depending on the cable manufacturer.</p>
Fitted with:		Thermal protection
<b>Technical Data - Electrical</b>		
Voltage rating		1000 V - 1000 V
Rated insulation voltage ( $U_i$ )		1000 V
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		220 A
Instantaneous current setting ( $I_i$ ) - max		3080 A
Overload current setting ( $I_r$ ) - min		110 A
Overload current setting ( $I_r$ ) - max		220 A
Short-circuit release non-delayed setting - min		220 A
Short-circuit release non-delayed setting - max		3080 A
Rated short-circuit breaking capacity $I_{cs}$ (IEC/EN 60947) at 230 V, 50/60 Hz		150 kA
Rated short-circuit breaking capacity $I_{cs}$ (IEC/EN 60947) at 400/415 V, 50/60 Hz		130 kA
Rated short-circuit breaking capacity $I_{cs}$ (IEC/EN 60947) at 440 V, 50/60 Hz		130 kA
Rated short-circuit breaking capacity $I_{cs}$ (IEC/EN 60947) at 525 V, 50/60 Hz		33 kA
Rated short-circuit breaking capacity $I_{cs}$ (IEC/EN 60947) at 690 V, 50/60 Hz		9 kA
Rated short-circuit breaking capacity $I_{cs}$ (IEC/EN 60947) at 1000 V, 50/60 Hz		10 kA
Rated short-circuit making capacity $I_{cm}$ at 240 V, 50/60 Hz		330 kA

Rated short-circuit making capacity I <sub>cm</sub> at 400/415 V, 50/60 Hz		330 kA
Rated short-circuit making capacity I <sub>cm</sub> at 440 V, 50/60 Hz		286 kA
Rated short-circuit making capacity I <sub>cm</sub> at 525 V, 50/60 Hz		143 kA
Rated short-circuit making capacity I <sub>cm</sub> at 690 V, 50/60 Hz		74 kA
Rated short-circuit making capacity I <sub>cm</sub> at 1000 V, 50/60 Hz		17 kA
Rated operating power at AC-3, 230 V		55 kW
Rated operating power at AC-3, 400 V		110 kW
Electrical connection type of main circuit		Screw connection
Number of operations per hour - max		60
Handle type		Rocker lever
Utilization category		A
Overvoltage category		III
Pollution degree		3
Lifespan, electrical		1000 operations at 1000 V AC-1
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
Switch off technique		Electronic
Special features		Lifespan, mechanical: of which max. 50% trip by shunt/undervoltage release Phase-failure sensitivity IEC/EN 60947-4-1, IEC/EN 60947-2 R.m.s. value measurement and “thermal memory” adjustable time delay setting to overcome current peaks tr: 2 – 20 s at 6 x I <sub>r</sub> also infinity (without overload releases) NZM...S1 terminal type: NZM...XKSA cover required NZM4...S1 terminal type: Insulated busbar connection (NZM4-XKS screw connection) Rated current = rated uninterrupted current: 220 A Terminal capacity hint: Up to 240 mm² can be connected depending on the cable manufacturer.
Lifespan, mechanical		15000 operations
<b>Technical Data - Mechanical - Terminals</b>		
Standard terminals		Screw terminal
Terminal capacity (control cable)		0.75 mm² - 2.5 mm² (1x) 0.75 mm² - 1.5 mm² (2x)
Terminal capacity (aluminum solid conductor/cable)		16 mm² (1x) at tunnel terminal
Terminal capacity (aluminum stranded conductor/cable)		50 mm² - 240 mm² (2x) at 2-hole tunnel terminal 50 mm² - 240 mm² (1x) at 2-hole tunnel terminal 25 mm² - 185 mm² (1x) at 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. 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
Terminal capacity (copper solid conductor/cable)		16 mm² (2x) at box terminal 10 mm² - 16 mm² (2x) direct at switch rear-side connection 16 mm² (1x) direct at switch rear-side connection
Terminal capacity (copper stranded conductor/cable)		25 mm² - 120 mm² (1x) direct at switch rear-side connection 25 mm² - 185 mm² (1x) at tunnel terminal 35 mm² - 240 mm² (1x) at box terminal 25 mm² - 120 mm² (2x) at box terminal 25 mm² - 120 mm² (2x) direct at switch rear-side connection
Terminal capacity (copper strip)		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 Max. 10 segments of 24 mm x 1 mm + 5 segments of 24 mm x 1 mm at box terminal 10 segments of 50 mm x 1 mm (2x) at rear-side width extension 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
<b>Design verification as per IEC/EN 61439 - technical data</b>		
Rated operational current for specified heat dissipation (I <sub>n</sub> )		220 A
Equipment heat dissipation, current-dependent		14.52 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		Phase failure sensitive Motor protection

## 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	110 - 220
Adjustment range undelayed short-circuit release	A	220 - 3080
With thermal overload protection		Yes
Phase failure sensitive		Yes
Switch off technique		Electronic
Rated operating voltage	V	1000 - 1000
Rated permanent current I <sub>u</sub>	A	220
Rated operation power at AC-3, 230 V	kW	55
Rated operation power at AC-3, 400 V	kW	110
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	130
Degree of protection (IP)		IP20
Height	mm	275
Width	mm	140
Depth	mm	166