

**NZM4 PXR25 circuit breaker - integrated energy measurement class 1, 1600A, 3p, Screw terminal, earth-fault protection, ARMS and zone selectivity**



**Part no. NZMH4-PX1600-TAZ  
189620**

<b>General specifications</b>		
Product name		Eaton Moeller series NZM molded case circuit breaker electronic
Part no.		NZMH4-PX1600-TAZ
EAN		4015081875672
Product Length/Depth		375 millimetre
Product height		170 millimetre
Product width		210 millimetre
Product weight		19 kilogram
Compliances		RoHS conform
Certifications		IEC/EN 60947 IEC
Product Tradename		NZM
Product Type		Molded case circuit breaker
Product Sub Type		Electronic
<b>Delivery program</b>		
Application		525 V
Type		Circuit breaker
Circuit breaker frame type		NZM4
Number of poles		Three-pole
Amperage Rating		1600 A
Release system		Electronic release
Features		Motor drive optional Protection unit
Special features		LSIG overload protection and delayed and non-delayed short-circuit protective device, earth-fault protection Class 1 energy measurement, r.m.s. value measurement, and "thermal memory" USB interface for configuration and test function with Power Xpert Protection Manager software Zone selectivity ZSI Maintenance Mode ARMS Interface module in equipment supplied. Optionally communication-capable with internal Modbus RTU module or CAM 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) Rated current = rated uninterrupted current: 1600 A
<b>Technical Data - Electrical</b>		
Voltage rating		690 V - 690 V
Rated insulation voltage (Ui)		1000 V AC
Rated impulse withstand voltage (Uimp) at auxiliary contacts		6000 V
Rated impulse withstand voltage (Uimp) at main contacts		8000 V
Rated short-time withstand current (t = 0.3 s)		19.2 kA
Rated short-time withstand current (t = 1 s)		19.2 kA
Earth-fault current setting (I <sub>g</sub> ) - min		320 x I <sub>n</sub>
Earth-fault current setting (I <sub>g</sub> ) - max		1600 x I <sub>n</sub>
Instantaneous current setting (I <sub>i</sub> ) - min		3200 A
Instantaneous current setting (I <sub>i</sub> ) - max		38400 A
Overload current setting (I <sub>r</sub> ) - min		640 A
Overload current setting (I <sub>r</sub> ) - max		1600 A
Short delay current setting (I <sub>sd</sub> ) - min		2 A
Short delay current setting (I <sub>sd</sub> ) - max		10 A
Short-circuit release delayed setting - min		2 A
Short-circuit release delayed setting - max		10 A
Short-circuit release non-delayed setting - min		2 A
Short-circuit release non-delayed setting - max		12 A

Rated short-circuit breaking capacity Ics (IEC/EN 60947) at 230 V, 50/60 Hz		63 kA
Rated short-circuit breaking capacity Ics (IEC/EN 60947) at 400/415 V, 50/60 Hz		50 kA
Rated short-circuit breaking capacity Ics (IEC/EN 60947) at 440 V, 50/60 Hz		50 kA
Rated short-circuit breaking capacity Ics (IEC/EN 60947) at 525 V, 50/60 Hz		50 kA
Rated short-circuit breaking capacity Ics (IEC/EN 60947) at 690 V, 50/60 Hz		37 kA
Rated short-circuit making capacity Icm at 240 V, 50/60 Hz		275 kA
Rated short-circuit making capacity Icm at 400/415 V, 50/60 Hz		187 kA
Rated short-circuit making capacity Icm at 440 V, 50/60 Hz		187 kA
Rated short-circuit making capacity Icm at 525 V, 50/60 Hz		143 kA
Rated short-circuit making capacity Icm at 690 V, 50/60 Hz		100 kA
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		3000 operations at 415 V AC-1 2000 operations at 690 V AC-1 3000 operations at 400 V AC-1
Direction of incoming supply		As required
<b>Technical Data - Mechanical</b>		
Mounting Method		Fixed Built-in device fixed built-in technique
Degree of protection		IP20 IP20 (basic degree of protection, in the operating controls area)
Degree of protection (IP), front side		IP66 (with door coupling rotary handle) IP40 (with insulating surround)
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		15 g (half-sinusoidal shock 11 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		LSIG overload protection and delayed and non-delayed short-circuit protective device, earth-fault protection Class 1 energy measurement, r.m.s. value measurement, and "thermal memory" USB interface for configuration and test function with Power Xpert Protection Manager software Zone selectivity ZSI Maintenance Mode ARMS Interface module in equipment supplied. Optionally communication-capable with internal Modbus RTU module or CAM 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) Rated current = rated uninterrupted current: 1600 A
Lifespan, mechanical		10000 operations
<b>Technical Data - Mechanical - Terminals</b>		
Standard terminals		Screw connection
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 stranded conductor/cable)		50 mm <sup>2</sup> - 240 mm <sup>2</sup> (4x) at 4-hole tunnel terminal
Terminal capacity (copper busbar)		Max. 50 mm x 10 mm (2x) at rear-side 1-hole module plate 50 mm x 10 mm (2x) at rear-side 2-hole module plate M10 at rear-side screw connection Min. 25 mm x 5 mm at rear-side 1-hole module plate Min. 60 mm x 10 mm at rear-side width extension Max. 80 mm x 10 mm (2x) at rear-side width extension Min. 25 mm x 5 mm direct at switch rear-side connection Max. 50 mm x 10 mm (2x) direct at switch rear-side 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

		95 mm <sup>2</sup> - 300 mm <sup>2</sup> (2x) at rear-side 1-hole module plate 300 mm <sup>2</sup> (4x) at rear-side width extension 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> - 185 mm <sup>2</sup> (2x) at rear-side 2-hole module plate 95 mm <sup>2</sup> - 240 mm <sup>2</sup> (6x) at rear-side width extension
Terminal capacity (copper stranded conductor/cable)		120 mm <sup>2</sup> - 185 mm <sup>2</sup> (1x) direct at switch rear-side connection 50 mm <sup>2</sup> - 185 mm <sup>2</sup> (4x) direct at switch rear-side connection
Terminal capacity (copper strip)		10 segments of 80 mm x 1 mm (2x) at rear-side width extension Min. 5 segments of 25 mm x 1 mm at rear-side connection (punched) Min. 6 segments of 16 mm x 0.8 mm at flat conductor terminal Min. 10 segments of 50 mm x 1 mm (2x) at rear-side connection (punched) 10 segments of 50 mm x 1 mm (2x) at 1-hole module plate Max. 10 segments of 32 mm x 1 mm (2x) at flat conductor terminal
<b>Design verification as per IEC/EN 61439 - technical data</b>		
Rated operational current for specified heat dissipation (I <sub>n</sub> )		1600 A
Equipment heat dissipation, current-dependent		284 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		ARMS maintenance mode Earth-fault protection Integrated earth fault protection Systems, cable, selectivity and generator protection Zone selectivity

## 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 I <sub>u</sub>	A	1600
Rated voltage	V	690 - 690
Rated short-circuit breaking capacity I <sub>cu</sub> at 400 V, 50 Hz	kA	50
Overload release current setting	A	640 - 1600
Adjustment range short-term delayed short-circuit release	A	2 - 10

Adjustment range undelayed short-circuit release	A	3200 - 38400
Power loss	W	
Device construction		Built-in device fixed built-in technique
Integrated earth fault protection		Yes
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