DATASHEET - NZMN3-PMX450-NA

NZM3 PXR25 circuit breaker, 450A, 3p, Screw terminal, UL/CSA

Part no. NZMN3-PMX450-NA
193352

Powering Business Worldwide™

Product name	Eaton Moeller series NZM molded case circuit breaker electronic
Part no.	NZMN3-PMX450-NA
EAN	9010238016972
Product Length/Depth	166 millimetre
Product height	275 millimetre
Product width	140 millimetre
Product weight	7.054 kilogram
Compliances	RoHS conform
Certifications	IEC/EN 60947 UL/CSA CSA (File No. 22086) UL (File No. E31593) CSA (Class No. 1432-01) IEC 60947-2 CE marking CSA-C22.2 No. 5-09 CSA certified UL (Category Control Number DIVQ) UL 489 Specially designed for North America IEC UL508 UL listed
Product Tradename	NZM
Product Type	Molded case circuit breaker
Product Sub Type	Electronic
Globally Marketable	Yes
Application	Branch circuits, feeder circuits Use in unearthed supply systems at 690 V
Type	Circuit breaker
Circuit breaker frame type	NZM3
Number of poles	Three-pole
Amperage Rating	450 A
Release system	Electronic release
Special features	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) Motor protection - overload- and short-circuit protective device LI Motor Class 1 energy measurement, phase loss protection, r.m.s. value measurement, and "thermal memory" USB interface for configuration and test function with Power Xpert Protection Manager software Interface module in equipment supplied. Optionally communication-capable with interface module and internal Modbus RTU module or CAM Switches conform to UL/CSA as well as the IEC regulations. IEC switching performance values are contained on the rating plate. Rated current = rated uninterrupted current: 450 A
Fitted with:	Thermal protection
Voltage rating	690 V - 690 V
Rated operating voltage Ue (UL) - max	600 V
Rated insulation voltage (Ui)	690 V
Rated impulse withstand voltage (Uimp) at auxiliary contacts	6000 V
Rated impulse withstand voltage (Uimp) at main contacts	8000 V
Rated operational current	630 A (400 V AC-1, making and breaking capacity) 630 A (690 V AC-1, making and breaking capacity) 450 A (660-690 V AC-3, making and breaking capacity) 500 A (415 V AC-1, making and breaking capacity)
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 (Ii) - min	900 A
Instantaneous current setting (Ii) - max	5400 A

Overload current setting (Ir) - min	225 A
Overload current setting (Ir) - max	450 A
Short-circuit release non-delayed setting - min	900 A
Short-circuit release non-delayed setting - max	5400 A
Rated short-circuit breaking capacity Ics (IEC/EN 60947) at 230 V, 50/60 Hz	85 kA
Rated short-circuit breaking capacity Ics (IEC/EN 60947) at 400/415 V, 50/60 Hz	35 kA
Rated short-circuit breaking capacity Ics (IEC/EN 60947) at 440 V, 50/60 Hz	35 kA
Rated short-circuit breaking capacity Ics (IEC/EN 60947) at 525 V, 50/60 Hz	13 kA
Rated short-circuit breaking capacity Ics (IEC/EN 60947) at 690 V, 50/60 Hz	5 kA
Rated short-circuit making capacity Icm at 240 V, 50/60 Hz	187 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	132 kW
Rated operating power at AC-3, 400 V	250 kW
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 5000 operations at 400 V AC-1 2000 operations at 690 V AC-3 3000 operations at 690 V AC-1
Direction of incoming supply	As required
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	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	20 g (half-sinusoidal shock 20 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	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) Motor protection - overload- and short-circuit protective device LI Motor Class 1 energy measurement, phase loss protection, r.m.s. value measurement, and "thermal memory" USB interface for configuration and test function with Power Xpert Protection Manager software Interface module in equipment supplied. Optionally communication-capable with interface module and internal Modbus RTU module or CAM Switches conform to UL/CSA as well as the IEC regulations. IEC switching performance values are contained on the rating plate. Rated current = rated uninterrupted current: 450 A
Lifespan, mechanical	15000 operations
Standard terminals	Screw terminal
Terminal capacity (copper busbar)	M10 at rear-side screw connection
Rated operational current for specified heat dissipation (In)	450 A
Equipment heat dissipation, current-dependent	60.75 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			Current limiting circuit breaker Phase failure sensitive Motor protection

Technical data ETIM 8.0

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@ss10.0.1-27-37-04-01 [AGZ529016])			
Overload release current setting		A	225 - 450
Adjustment range undelayed short-circuit release		A	900 - 5,400
With thermal protection			Yes
Phase failure sensitive			Yes
Switch off technique			Electronic
Rated operating voltage		V	690 - 690
Rated permanent current Iu		A	450
Rated operation power at AC-3, 230 V		kW	132
Rated operation power at AC-3, 400 V		kW	250
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 Icu at 400 V, AC		kA	35
Degree of protection (IP)			IP20
Height		mm	275
Width		mm	140
Depth		mm	166