

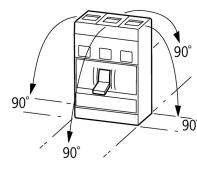

NZM4 PXR25 circuit breaker - integrated energy measurement class 1, 1000A, 3p, Screw terminal
EATON
Powering Business Worldwide™
Part no. **NZMN4-PX1000**
Catalog No. **189603**
Delivery program

Product range	Circuit-breaker		
Protective function	Systems, cable, selectivity and generator protection		
Standard/Approval	IEC		
Installation type	Fixed		
Release system	Electronic release		
Construction size	NZM4		
Description	LSI overload protection and delayed and non-delayed short-circuit protective device 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 Interface module in equipment supplied. Optionally communication-capable with internal Modbus RTU module or CAM		
Number of poles	3 pole		
Standard equipment	Screw connection		
Rated current = rated uninterrupted current			
Rated current = rated uninterrupted current	$I_n = I_u$	A	1000
Setting range			
Overload trip		I_r	A
			400 - 1000
Short-circuit releases		$I_i = I_n \times \dots$	
Non-delayed			2 - 12
Delayed		$I_{sd} = I_r \times \dots$	2 - 10

Technical data

General			
Standards	IEC/EN 60947		
Protection against direct contact	Finger and back of hand proof to VDE 0106 Part 100		
Climatic proofing	Damp heat, constant, to IEC 60068-2-78 Damp heat, cyclic, to IEC 60068-2-30		
Ambient temperature			
Ambient temperature, storage	$^{\circ}\text{C}$	- 40 - + 70	
Operation	$^{\circ}\text{C}$	- 25 - + 70	
Mechanical shock resistance (10 ms half-sinusoidal shock) according to IEC 60068-2-27	g	15 (half-sinusoidal shock 11 ms)	
Safe isolation to EN 61140			
Between auxiliary contacts and main contacts	V AC	500	
between the auxiliary contacts	V AC	300	
Mounting position	Vertical and 90° in all directions		

Direction of incoming supply	as required
Degree of protection	
Device	In the operating controls area: IP20 (basic degree of protection)
Enclosures	With insulating surround: IP40 With door coupling rotary handle: IP66
Terminations	Tunnel terminal: IP10 Phase isolator and strip terminal: IP00
Other technical data (sheet catalogue)	Weight Temperature dependency, Derating Effective power loss



With XFI earth-fault release:
 - NZM1, N1, NZM2, N2: vertical and 90° in all directions with plug-in unit
 - NZM1, N1, NZM2, N2: vertical, 90° right/left with withdrawable unit:
 - NZM3, N3: vertical, 90° right/left
 - NZM4, N4: vertical with remote operator:
 - NZM2, N(S)2, NZM3, N(S)3, NZM4, N(S)4: vertical and 90° in all directions

Circuit-breakers

Rated current = rated uninterrupted current	$I_n = I_u$	A	1000
Rated surge voltage invariability	U_{imp}		
Main contacts		V	8000
Auxiliary contacts		V	6000
Rated operational voltage	U_e	V AC	690
Overvoltage category/pollution degree			III/3
Rated insulation voltage	U_i	V	1000
Use in unearthing supply systems		V	≤ 525

Switching capacity

Rated short-circuit making capacity	I_{cm}		
240 V	I_{cm}	kA	105
400/415 V	I_{cm}	kA	105
440 V 50/60 Hz	I_{cm}	kA	74
525 V 50/60 Hz	I_{cm}	kA	53
690 V 50/60 Hz	I_c	kA	40
Rated short-circuit breaking capacity I_{cn}	I_{cn}		
Icu to IEC/EN 60947 test cycle 0-t-C0	I_{cu}	kA	
690 V 50/60 Hz	I_{cu}	kA	20
Ics to IEC/EN 60947 test cycle 0-t-C0-t-C0	I_{cs}	kA	
240 V 50/60 Hz	I_{cs}	kA	37
400/415 V 50/60 Hz	I_{cs}	kA	37
440 V 50/60 Hz	I_{cs}	kA	26
525 V 50/60 Hz	I_{cs}	kA	19
690 V 50/60 Hz	I_{cs}	kA	15
			Maximum back-up fuse, if the expected short-circuit currents at the installation location exceed the switching capacity of the circuit-breaker.

Rated short-time withstand current	I_{cw}	kA	12
$t = 0.3 \text{ s}$	I_{cw}	kA	12
$t = 1 \text{ s}$	I_{cw}	kA	12
Utilization category to IEC/EN 60947-2			B
Lifespan, mechanical (of which max. 50 % trip by shunt/undervoltage release)	Operations		10000
Lifespan, electrical			
AC-1			
400 V 50/60 Hz	Operations		3000
415 V 50/60 Hz	Operations		3000
690 V 50/60 Hz	Operations		2000
Max. operating frequency		Ops/h	60

Total break time at short-circuit	ms	< 25 ≤ 415 V; < 35 > 415 V
Terminal capacity		
Standard equipment		Screw connection
Optional accessories		Tunnel terminal connection on rear Strip terminal
Round copper conductor		
Tunnel terminal		
Stranded		
4-hole	mm ²	4 x (50 - 240)
Bolt terminal and rear-side connection		
Direct on the switch		
Stranded	mm ²	1 x (120 - 185) 4 x (50 - 185)
Module plate		
Single hole	min.	mm ² 1 x (120 - 300)
Single hole	max.	mm ² 2 x (95 - 300)
Module plate		
Double hole	min.	mm ² 2 x (95 - 185)
Double hole	max.	mm ² 4 x (35 - 185)
Connection width extension		mm ²
Connection width extension	mm ²	4 x 300 6 x (95 - 240)
Al circular conductor		
Tunnel terminal		
Stranded		
4-hole	mm ²	4 x (50 - 240)
Cu strip (number of segments x width x segment thickness)		
Flat conductor terminal		
min.	mm	6 x 16 x 0.8
max.	mm	(2 x) 10 x 32 x 1.0
Module plate		
Single hole		mm (2 x) 10 x 50 x 1.0
Bolt terminal and rear-side connection		
Flat copper strip, with holes	min.	mm 5 x 25 x 1.0
Flat copper strip, with holes	max.	mm (2 x) 10 x 50 x 1.0
Connection width extension		mm (2 x) 10 x 80 x 1.0
Copper busbar (width x thickness)	mm	
Bolt terminal and rear-side connection		
Screw connection		M10
Direct on the switch		
min.	mm	25 x 5
max.	mm	2 x (50 x 10)
Module plate		
Single hole	min.	mm 25 x 5
Single hole	max.	mm 2 x (50 x 10)
Module plate		
Double hole		mm 2 x (50 x 10)
Connection width extension		mm
Connection width extension	min.	mm 60 x 10
Connection width extension	max.	mm 2 x (80 x 10)
Control cables		
	mm ²	1 x (0.75 - 2.5) 2 x (0.75 - 1.5)

Design verification as per IEC/EN 61439

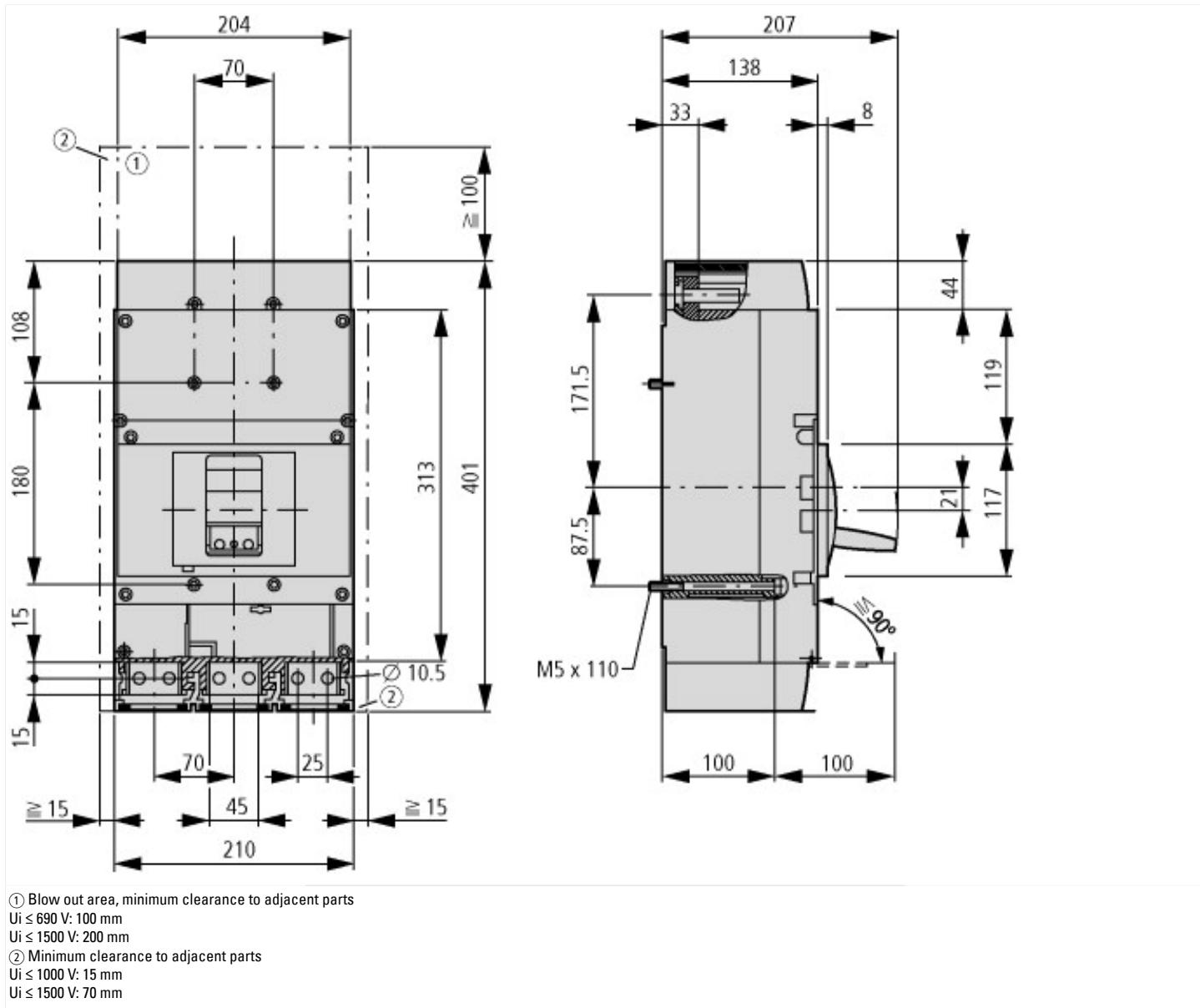
Technical data for design verification			
Rated operational current for specified heat dissipation	I_n	A	1000
Equipment heat dissipation, current-dependent	P_{vid}	W	165
Operating ambient temperature min.		°C	-25
Operating ambient temperature max.		°C	70
IEC/EN 61439 design verification			
10.2 Strength of materials and parts			
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 Verification of resistance of insulating materials to abnormal heat and fire due to internal electric 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 Insulation properties			
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.

Technical data ETIM 8.0

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@ss10.0.1-27-37-04-09 [AJZ716013])			
Rated permanent current I_n		A	1000
Rated voltage		V	690 - 690
Rated short-circuit breaking capacity I_{cu} at 400 V, 50 Hz		kA	37
Overload release current setting		A	400 - 1000
Adjustment range short-term delayed short-circuit release		A	2 - 10
Adjustment range undelayed short-circuit release		A	2 - 18
Integrated earth fault protection			No
Type of electrical connection of main circuit			Screw connection
Device construction			Built-in device fixed built-in technique
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

Dimensions



Additional product information (links)

IL012101ZU NZM4-PXR circuit-breaker, basic device, NZM4-PXR Circuit-Breaker, basic unit	
IL012101ZU NZM4-PXR circuit-breaker, basic device, NZM4-PXR Circuit-Breaker, basic unit	https://es-assets.eaton.com/DOCUMENTATION/AWA_INSTRUCTIONS/IL012101ZU2022_01.pdf
Weight	http://ecat.moeller.net/flip-cat/?edition=HPL&startpage=17.171
Temperature dependency, Derating	http://ecat.moeller.net/flip-cat/?edition=HPL&startpage=17.172
Effective power loss	http://ecat.moeller.net/flip-cat/?edition=HPL&startpage=17.174
additional technical information for NZM power switch	https://es-assets.eaton.com/DOCUMENTATION/PDF/nzm_technic_de_en.pdf