DATASHEET - NZMN4-PX1000-TAZ



NZM4 PXR25 circuit breaker - integrated energy measurement class 1, 1000A, 3p, Screw terminal, earth-fault protection, ARMS and zone selectivity



Part no. NZMN4-PX1000-TAZ Catalog No. 189613

Delivery program

Delivery program			
Product range			Circuit-breaker
Protective function			Systems, cable, selectivity and generator protection Earth-fault protection Zone selectivity ARMS maintenance mode
Standard/Approval			IEC
Installation type			Fixed
Release system			Electronic release
Construction size			NZM4
Description			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
Number of poles			3 pole
Standard equipment			Screw connection
Switching capacity			
400/415 V 50 Hz	I _{cu}	kA	50
Rated current = rated uninterrupted current			
Rated current = rated uninterrupted current	$I_n = I_u$	Α	1000
Setting range			
Overload trip			
中	I _r	A	400 - 1000
Short-circuit releases			
Non-delayed	$I_i = I_n x \dots$		2 - 12
Delayed >	$I_{sd} = I_r x \dots$		2 – 10
Setting range of earth fault release min.	Ig = Inx		200
Setting range of earth fault release max.	Ig = Inx		1000

Technical data

General

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	°C	- 40 - + 70
Operation	°C	-25 - +70

Rated current = rated uninterrupted current In all Jump A word contracts Monitor contracts V word and contracts Second contract word and contracts V word and contracts	Mechanical shock resistance (10 ms half-sinusoidal shock) according to IEC 60068-2-27		g	15 (half-sinusoidal shock 11 ms)
Manuface proteins	Safe isolation to EN 61140			
Note the particum	Between auxiliary contacts and main contacts		V AC	500
	between the auxiliary contacts		V AC	300
Deure of protection Bevice Enclosures Terminations Other technical data (sheet catalogue) Other technical data (sheet cata	Mounting position			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
Device	Direction of incoming supply			as required
Enclosures	Degree of protection			
Terminations	Device			In the operating controls area: IP20 (basic degree of protection)
Terminations	Enclosures			
Circuit-breakers Wighter the chine of power faces Wighter the chine of power faces Circuit-breakers In = 1	Terminations			Tunnel terminal: IP10
Rated current = rated uninterrupted current In all Jump A word contracts Monitor contracts V word and contracts Second contract word and contracts V word and contracts	Other technical data (sheet catalogue)			Weight Temperature dependency, Derating
Rated surge voltage invariability Ummp V 8000 Main contacts V 8000 Common contacts V 8000 Rated operational voltage Ue V AC 890 Rated insulation voltage Ui V Dispensional voltage Use in unearthed supply systems V \$525 SVINTERING Immediate supply systems Immediate supply systems Immediate supply systems V \$525 SVINTERING Immediate supply systems Immediate supply	Circuit-breakers			
Main contacts	Rated current = rated uninterrupted current	$\boldsymbol{I}_n = \boldsymbol{I}_u$	Α	1000
Auxiliary contacts V 6000 Rated operational voltage Ue V AC 690 Overvoltage category/pollution degree III/3 1III/3 Rated insulation voltage V V 525 Use in unearthed supply systems V V 525 Switching capacity V V V V Rated short-circuit making capacity Icm KA 105 400/415 V Icm KA 105 440 V 90/60 Hz Icm KA 7 525 V 50/60 Hz Icm KA 40 8ated short-circuit breaking capacity Icm Icm KA 40 8ated short-circuit breaking capacity Icm Icm KA 50 8ated short-circuit breaking capacity Icm Icm KA 50 8ated short-circuit breaking capacity Icm Icm KA 50 4uo v 50/60 Hz Icm KA 50 4uo v 50/60 Hz Icm KA 50 525 V 50/60 Hz Icm KA <td>Rated surge voltage invariability</td> <td>U_{imp}</td> <td></td> <td></td>	Rated surge voltage invariability	U _{imp}		
Rated operational voltage U ₀ V AC 690 Overvoltage category/pollution degree U ₁ V 1000 Rated insulation voltage U ₁ V 525 Switching capacity Rated short-circuit making capacity 400/415 V I _{cm} KA 105 440 V 50/60 Hz I _{cm} KA 74 525 V 50/60 Hz I _{cm} KA 33 690 V 50/60 Hz I _{cm} KA 40 81 Let LEC/EN 68947 test cycle 0-t-CO Icu KA 50 400/415 V 50/60 Hz I _{cu} KA 50 400 V 50/60 Hz I _{cu} KA 50 1cu LEC/EN 68947 test cycle 0-t-CO I _{cu} KA 50 400/415 V 50/60 Hz I _{cu} KA 50 400/415 V 50/60 Hz I _{cu} KA 50 400/415 V 50/60 Hz I _{cu} KA 50 690 V 50/60 Hz I _{cu} KA 20 690 V 50/60 Hz I _{cu} KA	Main contacts		٧	8000
Over-violage category/pollution degree U _I V _I 10/3 Rated insulation voltage U _I V _I 3 25 Switching capacity Switching capacity 240 V I _{cm} KA 105 400/415 V I _{cm} KA 105 440 V 50/60 Hz I _{cm} KA 3 525 V 50/60 Hz I _{cm} KA 40 880 V 50/60 Hz I _{cm} KA 40 800 V 50/60 Hz I _{cm} KA 40 1 cu to IEC/EN 60947 test cycle 0-t-CO Icu KA 50 4 400 V 50/60 Hz I _{cm} KA 50 4 400 V 50/60 Hz I _{cm} KA 50 4 400 V 50/60 Hz I _{cm} KA 50 4 400 V 50/60 Hz I _{cm} KA 50 6 52 V 50/60 Hz I _{cm} KA 50 6 60 V 50/60 Hz I _{cm} KA 20 1 cs to IEC/EN 60947 test cycle 0-t-CO-t-CO I _{cm} KA 37 <td>Auxiliary contacts</td> <td></td> <td>٧</td> <td>6000</td>	Auxiliary contacts		٧	6000
Rated in sulation voltage Ui V 1000 Use in unearthed supply systems 525 Switching capacity Rated short-circuit making capacity Icm KA 105 440 V Qu'Ali S V Icm KA 105 440 V 50/60 Hz Icm KA 74 525 V 50/60 Hz Icm KA 3 680 V 50/60 Hz Icm KA 40 Rated short-circuit broaking capacity Icm Icm KA 40 Icu to IEC/EN 60947 test cycle 0-t-CO Icu KA 50 400 V 50/60 Hz Icu KA 50 400 V 50/60 Hz Icu KA 55 525 V 50/60 Hz Icu KA 55 680 V 50/60 Hz Icu KA 25 680 V 50/60 Hz Icu KA 25 680 V 50/60 Hz Icu KA 25 680 V 50/60 Hz Icu KA 26 400/415 V 50/60 Hz Icu KA 3	Rated operational voltage	U _e	V AC	690
Section Sect	Overvoltage category/pollution degree			III/3
Rated short-circuit making capacity Icm Icm kA 105 400/415 V Icm kA 105 440 V 50/60 Hz Icm kA 105 525 V 50/60 Hz Icm kA 53 690 V 50/60 Hz Icm kA 40 8ated short-circuit breaking capacity Icm Icm kA 40 8ated short-circuit breaking capacity Icm	Rated insulation voltage	Ui	٧	1000
Rated short-circuit making capacity I _{cm}	Use in unearthed supply systems		٧	≦ 525
240 V 1cm kA 105 400/415 V 1cm kA 105 440 V 50/60 Hz 1cm kA 53 680 V 50/60 Hz 1cm kA 40 8ated short-circuit breaking capacity 1cm 1cm kA 50 1cu to IEC/EN 60947 test cycle 0-t-CO 1cu kA 50 440 V 50/60 Hz 1cu kA 50 450 V 50/60 Hz 1cu kA 50 460 V 50/60 Hz 1cu kA 50 460 V 50/60 Hz 1cu kA 50 470 V 50/60 Hz 1cu kA 50 480 V 50/60	Switching capacity			
400/415 V	Rated short-circuit making capacity	I _{cm}		
	240 V	I _{cm}	kA	105
Same	400/415 V	I _{cm}	kA	105
Rated short-circuit breaking capacity I _{cn} I _{cn} I _{cn} I _{cu} to IEC/EN 60947 test cycle 0-t-CO Icu kA 50	440 V 50/60 Hz	I _{cm}	kA	74
Rated short-circuit breaking capacity cn cn cn	525 V 50/60 Hz	I _{cm}	kA	53
Cu to EC/EN 60947 test cycle 0-t-CO	690 V 50/60 H	Ic	kA	40
1cu kA 50 400/415 V 50/60 Hz 1cu kA 50 440 V 50/60 Hz 1cu kA 35 525 V 50/60 Hz 1cu kA 25 690 V 50/60 Hz 1cu kA 20 1cs to 1EC/EN 60947 test cycle 0-t-C0-t-C0 1cs kA 37 400/415 V 50/60 Hz 1cs kA 37 400/415 V 50/60 Hz 1cs kA 37 440 V 50/60 Hz 1cs kA 37 440 V 50/60 Hz 1cs kA 37 450 V 50/60 Hz 1cs kA 37 460 V 50/60 Hz 1cs kA 37 470 V 50/60 Hz 1cs kA 37 480 V 50/60 Hz 1cs k	Rated short-circuit breaking capacity I _{cn}	I _{cn}		
400/415 V 50/60 Hz 440 V 50/60 Hz 1cu kA 35 525 V 50/60 Hz 1cu kA 25 690 V 50/60 Hz 1cu kA 20 1cs to IEC/EN 60947 test cycle 0-t-C0-t-C0 1cs kA 240 V 50/60 Hz 400/415 V 50/60 Hz 1cs kA 37 400/415 V 50/60 Hz 1cs kA 37 440 V 50/60 Hz 1cs kA 26 525 V 50/60 Hz 1cs kA 19 690 V 50/60 Hz 1cs kA 15 Maximum back-up fuse, if the expected short-circuit currents at the installation location exceed the switching capacity of the circuit-breaker.	Icu to IEC/EN 60947 test cycle 0-t-C0	lcu	kA	
440 V 50/60 Hz Cu	240 V 50/60 Hz	I _{cu}	kA	50
440 V 50/60 Hz I _{CU} kA 35 525 V 50/60 Hz I _{CU} kA 25 690 V 50/60 Hz I _{CU} kA 20 Ics to IEC/EN 60947 test cycle 0-t-CO-t-CO Ics kA 37 240 V 50/60 Hz I _{CS} kA 37 400/415 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.	400/415 V 50/60 Hz	I _{cu}	kA	50
525 V 50/60 Hz Icu kA 25 690 V 50/60 Hz Ics to IEC/EN 60947 test cycle 0-t-CO-t-CO Ics kA 240 V 50/60 Hz Ics kA 37 400/415 V 50/60 Hz Ics kA 37 440 V 50/60 Hz Ics kA 26 525 V 50/60 Hz Ics kA 19 690 V 50/60 Hz Ics kA 15 Maximum back-up fuse, if the expected short-circuit currents at the installation location exceed the switching capacity of the circuit-breaker.	440 V 50/60 Hz		kA	35
690 V 50/60 Hz Ics to IEC/EN 60947 test cycle 0-t-C0-t-C0 Ics kA 240 V 50/60 Hz Ics kA 37 400/415 V 50/60 Hz Ics kA 37 440 V 50/60 Hz Ics kA 26 525 V 50/60 Hz Ics kA Ics kA Ins kA In				
Ics to IEC/EN 60947 test cycle 0-t-C0-t-C0 Ics kA 240 V 50/60 Hz Ics kA 37 400/415 V 50/60 Hz Ics kA 37 440 V 50/60 Hz Ics kA 26 525 V 50/60 Hz Ics kA 19 690 V 50/60 Hz Ics kA 15 Maximum back-up fuse, if the expected short-circuit currents at the installation location exceed the switching capacity of the circuit-breaker.				
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.				
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$				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.				
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.				
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.				
Maximum back-up fuse, if the expected short-circuit currents at the installation location exceed the switching capacity of the circuit-breaker.				
	090 V 30/00 M2	ICS	KA	Maximum back-up fuse, if the expected short-circuit currents at the installation
Rated short-time withstand current	Rated short-time withstand current			and a street and a street and a street and a street a street and a street a

		I. A	10
t = 0.3 s	I _{cw}	kA	12
t = 1 s	I _{cw}	kA	12
Utilization category to IEC/EN 60947-2			В
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	$< 25 \le 415 \text{ V}; < 35 > 415 \text{ V}$
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)
		IIIM	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
M. siroulan anadustan			6 x (95 - 240)
Al circular conductor			
Tunnel terminal			
Stranded			4 (50 040)
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

Design vermeation as per 120/214 01-105			
Technical data for design verification			
Rated operational current for specified heat dissipation	In	Α	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

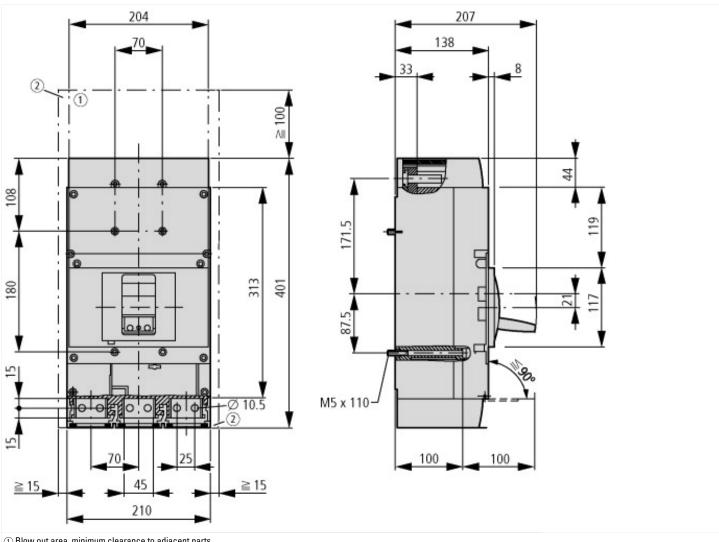
Low-voltage industrial components (EG000017) / Power circuit-breaker for trafo/generator/installation protection (EC000228)

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 voltage Rated short-circuit breaking capacity Icu 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 Yes Type of electrical connection of main circuit Screw connection	protection (eci@ss10.0.1-2/-3/-04-09 [AJZ/16013])		
Rated short-circuit breaking capacity Icu at 400 V, 50 Hz KA 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 Yes Type of electrical connection of main circuit Screw connection	Rated permanent current lu	Α	1000
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 Yes Type of electrical connection of main circuit Screw connection	Rated voltage	V	690 - 690
Adjustment range short-term delayed short-circuit release A 2 - 10 Adjustment range undelayed short-circuit release A 2 - 18 Integrated earth fault protection Yes Type of electrical connection of main circuit Screw connection	Rated short-circuit breaking capacity Icu at 400 V, 50 Hz	kA	37
Adjustment range undelayed short-circuit release A 2 - 18 Integrated earth fault protection Yes Type of electrical connection of main circuit Screw connection	Overload release current setting	Α	400 - 1000
Integrated earth fault protection Yes Type of electrical connection of main circuit Screw connection	Adjustment range short-term delayed short-circuit release	Α	2 - 10
Type of electrical connection of main circuit Screw connection	Adjustment range undelayed short-circuit release	Α	2 - 18
	Integrated earth fault protection		Yes
Perice construction Ruilt-in device fixed built-in technique	Type of electrical connection of main circuit		Screw connection
Salt in device built in terminate	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



- ① Blow out area, minimum clearance to adjacent parts Ui \leq 690 V: 100 mm Ui \leq 1500 V: 200 mm

- (2) Minimum clearance to adjacent parts Ui \leq 1000 V: 15 mm Ui \leq 1500 V: 70 mm

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=HPLEN&startpage=17.171	
Temperature dependency, Derating	http://ecat.moeller.net/flip-cat/?edition=HPLEN&startpage=17.172	
Effective power loss	http://ecat.moeller.net/flip-cat/?edition=HPLEN&startpage=17.174	