DATASHEET - NZMS3-4-PX400/VAR-SVE



NZM3 PXR25 circuit breaker - integrated energy measurement class 1, 400A, 4p, variable, plug-in technology



Part no. Catalog No. NZMS3-4-PX400/VAR-SVE 192299

Similar to illustration

Delivery program

Installation typePlug-in unitsRelease systemElectronic releaseConstruction sizeNZM3DescriptionLSI overload protection and delayed and non-delayed short-circuit protective device (LISAS 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 CAMNumber of poles4 poleSwitching capacityIcuKA400/15 V50 HzIcuKA				
Standard/Approval IC Installation type IP Release system IP Construction size IP Description IP Number of poles IP Standard quipment IP Standard quipment IP 400/415 V 50 Hz IP Release system IP 400/415 V 50 Hz IP Reled current = rated uninterrupted current IP Reled current = rated uninterrupted current IP Reled current = rated uninterrupted current IP IP IP </td <td>Product range</td> <td></td> <td></td> <td>Circuit-breaker</td>	Product range			Circuit-breaker
Instaliance of the service of the se	Protective function			Systems, cable, selectivity and generator protection
Release systm Image: systm Image: systm Construction size V XIM Description V SID vertrade protection and delayed and non-delayed short-circuit protective device Number of poles V V Standard equigment V V Standard equigment V V Addylits V So Hz V V Rated current = rated uninterrupted current V V Rated current = rated uninterrupted current A 0 Nutral conductor V V V Nutral conductor V V V Stating range V V V Overload trip V V V V Stating range V V V V Overload trip V V V V Stating range V V V V Overload trip V V V V Stating range V V V V Overload trip V V V V Stating range V V V V Overload trip V V V V Stating range	Standard/Approval			IEC
Construction size Image: Marking the state of a configuration and delayed and non-delayed short-circuit protection and delayed and non-delayed short-circuit protection with Power Xper Protection Wild binetrate of configuration and test function with Power Xper Protection Wild binetrate of configuration and test function with Power Xper Protection Wild binetrate of configuration and test function with Power Xper Protection Wild binetrate of configuration and test function with Power Xper Protection Wild binetrate of configuration and test function with Power Xper Protection Wild binetrate of configuration and test function with Power Xper Protection Wild be applied. Number of poles 4 pole Statiand equipment Yet 400/415 V50 Hz KA Atted current = rated uninterrupted current KA Muttal conductor Image: Statian Protection Prot	Installation type			Plug-in units
Description Iso were defined on and delayed and non-delayed short-circuit protective diversal non-delayed short-circuit protection non-delayed mon-delayed mon-delay	Release system			Electronic release
Number of poles Yeak Apole Standard equipment Yeak Apole Standard equipment Yeak Yeak Ad0415 V50 Hz Yeak Yeak Rated current = rated uninterrupted current Yeak Yeak Neutral conductor Yeak Yeak Neutral conductor Yeak Yeak Overload trip Yeak Yeak Short-circuit releases Yeak Yeak Non-delayed Yeak Yeak Non-delayed Yeak Yeak	Construction size			NZM3
Stadard equipmentImage: Stadard equipmentServe connectionSwitching capacityIauKatFeadurent (Serve Connection)400/415 V 50 HzIauIauKatToRated current = rated uninterrupted currentImage: Serve Connection)Image: Serve Connection)Image: Serve Connection)Neutral conductorImage: Serve Connection)Image: Serve Connection)Image: Serve Connection)Image: Serve Connection)Setting range: Serve ConnectionImage: Serve Connection)Image: Serve Connection)Image: Serve Connection)Setting range: Serve ConnectionImage: Serve Connection)Image: Serve Connection)Image: Serve Connection)Setting range: Serve Connection)Image: Serve Connection)Image: Serve Connection)Image: Serve Connection)Setting range: Serve Connection)Image: Serve Connection)Image: Serve Connection)Image: Serve Connection)Setting range: Serve Connection)Image: Serve Connection)Image: Serve Connection)Image: Serve Connection)Setting range: Serve Connection)Image: Serve Connection)Image: Serve Connection)Image: Serve Connection)Setting range: Serve Connection)Image: Serve Connection)Image: Serve Connection)Image: Serve Connection)Setting range: Serve Connection)Image: Serve Connection)Image: Serve Connection)Image: Serve Connection)Setting range: Serve Connection)Image: Serve Connection)Image: Serve Connection)Image: Serve Connection)Setting range: Serve Connection)Image: Serve Connection)Image: Serve Connect	Description			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.
Switch gapacity Icu Kale 400/415 V 50 Hz Icu Kale Acted current = rated uninterrupted current Icu Kale Rated current = rated uninterrupted current In = lu A Neutral conductor % of phase conductor % of phase conductor % of phase conductor % of phase Steting range Kate Kate - 60 - 100 Overload trip Kate Kate - 60 - 100 Short-circuit releases Ir A A Non-delayed Ising In x A - 60 - 100	Number of poles			4 pole
400/415 V 50 HzIcuKA70Rated current = rated uninterrupted currentIn = IuKA400Rated current = rated uninterrupted currentIn = IuKA400Neutral conductor% of phase conductor% of phase 	Standard equipment			Screw connection
Rated current = rated uninterrupted current In = Iu Au 400 Rated current = rated uninterrupted current In = Iu Au 400 Neutral conductor % of phase c	Switching capacity			
Rated current = rated uninterrupted current In = Iu A 400 Neutral conductor % of phase conductor % of phase conductor % of phase conductor % of phase	400/415 V 50 Hz	I _{cu}	kA	70
Non-delayed In the total state Non-delayed In total state Non-delayed In total state In total state In total state	Rated current = rated uninterrupted current			
conductor conductor Setting range Image: Conductor Overload trip Image: Conductor Image: Conductor	Rated current = rated uninterrupted current	$I_n = I_u$	А	400
Overload trip Ir A Short-circuit releases Ir Ir Non-delayed Ir Ir Ir Ir <tr< td=""><td>Neutral conductor</td><td></td><td>%</td><td>0 - 60 - 100</td></tr<>	Neutral conductor		%	0 - 60 - 100
Image: ProblemImage: ProblemImage: ProblemImage: ProblemImage: ProblemShort-circuit releasesImage: ProblemImage: ProblemImage: ProblemNon-delayedImage: ProblemImage: Proble	Setting range			
Short-circuit releases Image: Non-delayed Image: Non-delayed Ima	Overload trip			
Non-delayed I = In x 2-12	с‡	I _r	A	160 - 400
Delayed I _{sd} = I _r x 2 - 10	Non-delayed	I _i = I _n x		2 – 12
	Delayed	$I_{sd} = I_r x \dots$		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	°C	- 40 - + 70
Operation	°C	-25 - +70
Mechanical shock resistance (10 ms half-sinusoidal shock) according to IEC 60068-2-27	g	20 (half-sinusoidal shock 20 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 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: - NZM4, N(S)4: 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)			Temperature dependency, Derating
Circuit-breakers			
Rated current = rated uninterrupted current	$I_n = I_u$	A	400
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			111/3
Rated insulation voltage	Ui	V	690
Use in unearthed supply systems		V	≦ 690
Switching capacity Rated short-circuit making capacity	I _{cm}		
240 V		kA	220
	I _{cm}		
400/415 V	I _{cm}	kA	154
440 V 50/60 Hz	I _{cm}	kA	143
525 V 50/60 Hz	I _{cm}	kA	80
690 V 50/60 H	lc	kA	50
Rated short-circuit breaking capacity I _{cn}	I _{cn}		
Icu to IEC/EN 60947 test cycle 0-t-C0	lcu	kA	
240 V 50/60 Hz	I _{cu}	kA	100
400/415 V 50/60 Hz	l _{cu}	kA	70
440 V 50/60 Hz	I _{cu}	kA	65
525 V 50/60 Hz	I _{cu}	kA	36
690 V 50/60 Hz	I _{cu}	kA	25
Ics to IEC/EN 60947 test cycle 0-t-C0-t-C0	lcs	kA	
240 V 50/60 Hz	I _{cs}	kA	100
400/415 V 50/60 Hz	I _{cs}	kA	70
440 V 50/60 Hz	I _{cs}	kA	65
525 V 50/60 Hz	I _{cs}	kA	18
690 V 50/60 Hz	I _{cs}	kA	6 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			
t = 0.3 s	I _{cw}	kA	3.3
t = 1 s	I _{cw}	kA	3.3
Utilization category to IEC/EN 60947-2			A

Lifespan, electrical			
AC-1			
400 V 50/60 Hz	Operations		5000
400 V 50/60 Hz 415 V 50/60 Hz	Operations		5000
690 V 50/60 Hz	Operations	• "	3000
Max. operating frequency		Ops/h	60
Total break time at short-circuit		ms	< 10
Terminal capacity Standard equipment			Screw connection
Standard equipment			
Accessories required Optional accessories			NZM3-4-XSVS Box terminal Tunnel terminal connection on rear
Round copper conductor			
Box terminal			
Solid		mm ²	2 × 16
Stranded		mm ²	1 x (35 - 240) 2 x (25-120)
Tunnel terminal			
Solid		mm ²	1 x 16
Stranded			
1-hole		mm ²	1 x (16 - 185)
Bolt terminal and rear-side connection			
Direct on the switch			
Solid		mm ²	1 x 16
		mm	2 x 16
Stranded		mm ²	1 x (25 - 240) 2 x (25 - 240)
Connection width extension		mm ²	
Connection width extension		mm ²	2 x 300
Al circular conductor			
Tunnel terminal			
Solid		mm ²	1 x 16
Stranded			
Stranded		mm ²	1 x (25 - 185) ²⁾
Double hole		mm ²	1 x (50 - 240)
			2 x (50 - 240)
			²⁾ Up to 240 mm ² can be connected depending on the cable manufacturer.
Cu strip (number of segments x width x segment thickness)			
Box terminal			
	min.	mm	6 x 16 x 0.8
	max.	mm	10 x 24 x 1.0 + 5 x 24 x 1.0 (2 x) 8 x 24 x 1.0
Bolt terminal and rear-side connection			
Flat copper strip, with holes	min.	mm	6 × 16 × 0.8
Flat copper strip, with holes	max.	mm	10 x 32 x 1.0 + 5 x 32 x 1.0
Connection width extension		mm	(2 x) 10 x 50 x 1.0
Copper busbar (width x thickness)	mm		
Bolt terminal and rear-side connection			
Screw connection			M10
Direct on the switch			
	min.	mm	20 x 5
Connection with anter in	max.	mm	30 x 10 + 30 x 5
Connection width extension		mm	
Connection width extension	max.	mm	2 x (10 x 50)
Control cables			

mm² 1 x (0.75 - 2.5) 2 x (0.75 - 1.5)

Design verification as per IEC/EN 61439

besign vermeation as per reo/en or 405			
Technical data for design verification			
Rated operational current for specified heat dissipation	In	А	400
Equipment heat dissipation, current-dependent	P _{vid}	W	48
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 7.0

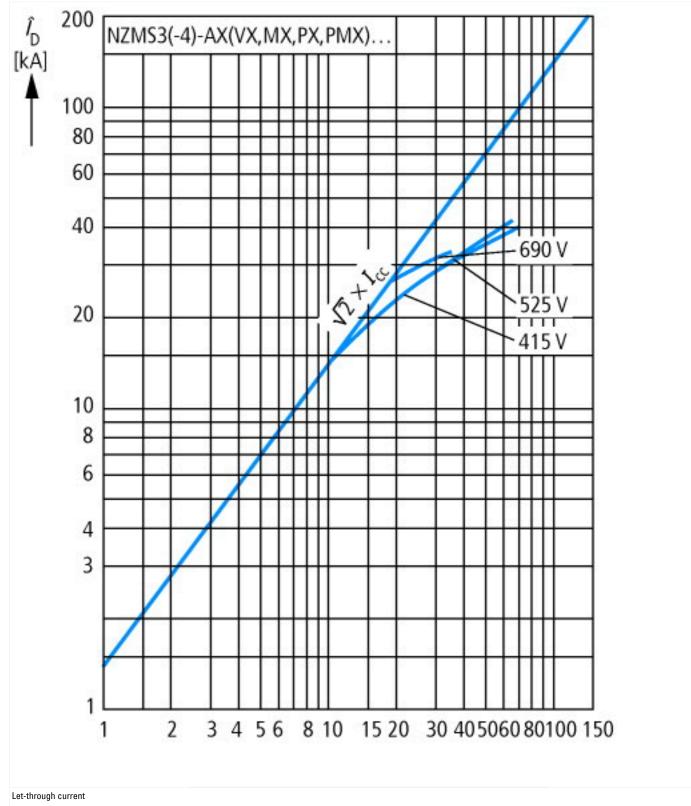
Low-voltage industrial components (EG000017) / Power circuit-breaker for trafo/generator/installation protection (EC000228)

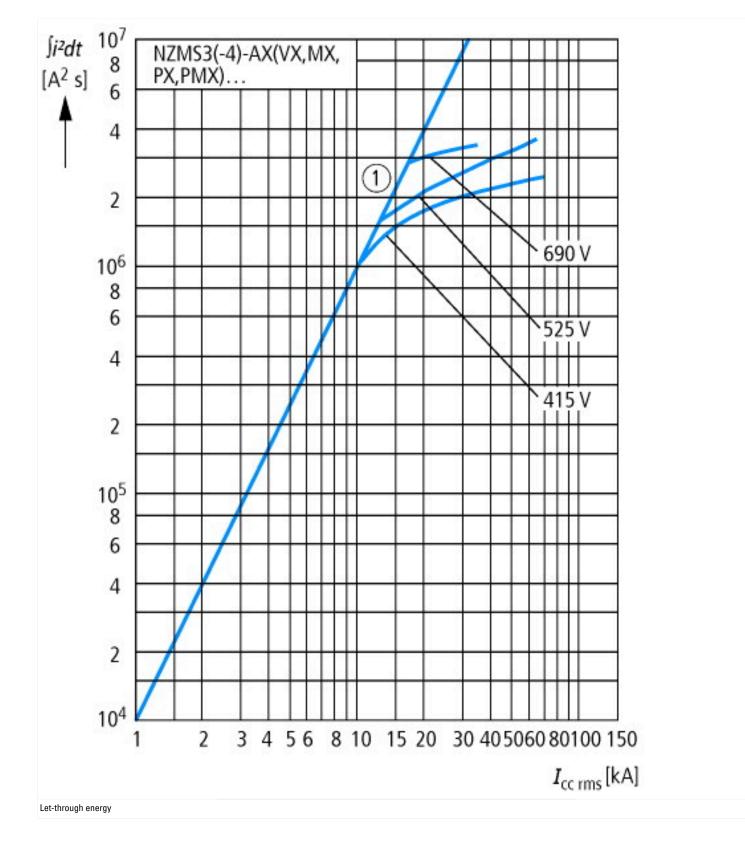
Electric engineering, automation, process control engineering / Low-voltage switch technology / Circuit breaker (LV < 1 kV) / Circuit breaker for power transformer, generator and system protection (ecl@ss10.0.1-27-37-04-09 [AJZ716013])

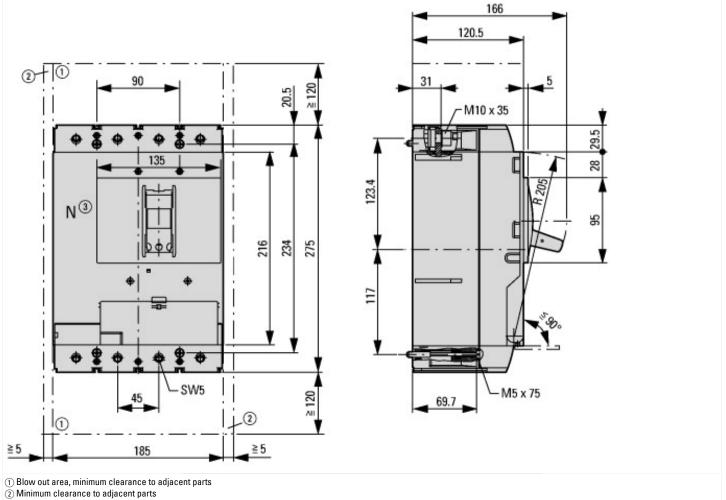
Rated permanent current lu	А	400
Rated voltage	V	690 - 690
Rated short-circuit breaking capacity Icu at 400 V, 50 Hz	kA	70
Overload release current setting	А	160 - 400
Adjustment range short-term delayed short-circuit release	A	2 - 10
Adjustment range undelayed short-circuit release	А	2 - 12
Integrated earth fault protection		No
Type of electrical connection of main circuit		Other
Device construction		Built-in device plug-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

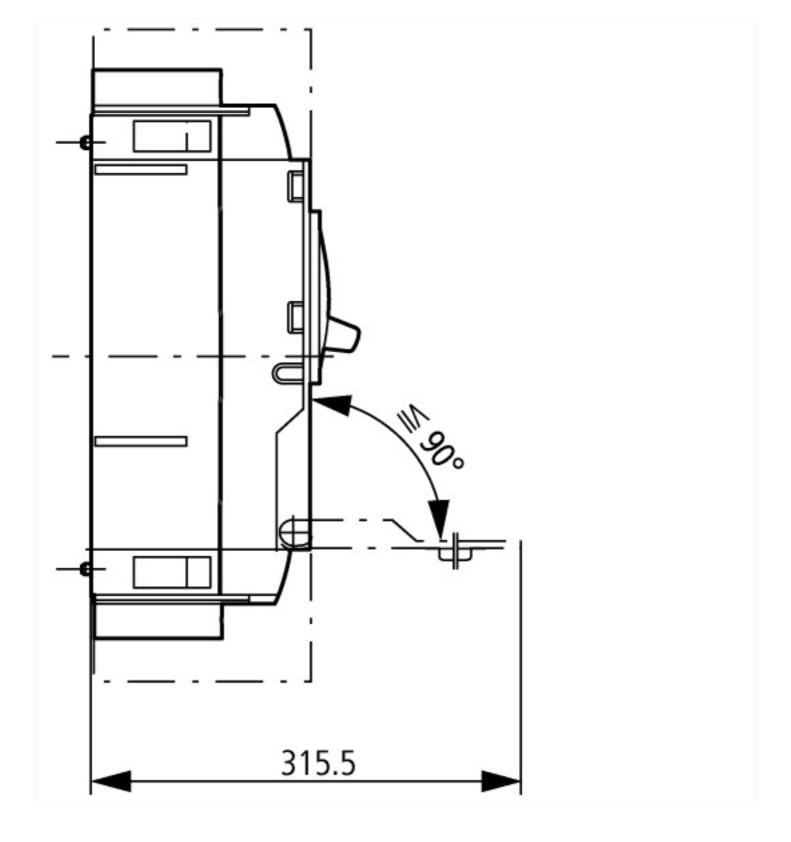
With under voltage release	No
Number of poles	4
Position of connection for main current circuit	Connection at separate chassis part
Type of control element	Rocker lever
Complete device with protection unit	Yes
Motor drive integrated	No
Motor drive optional	Yes
Degree of protection (IP)	IP20

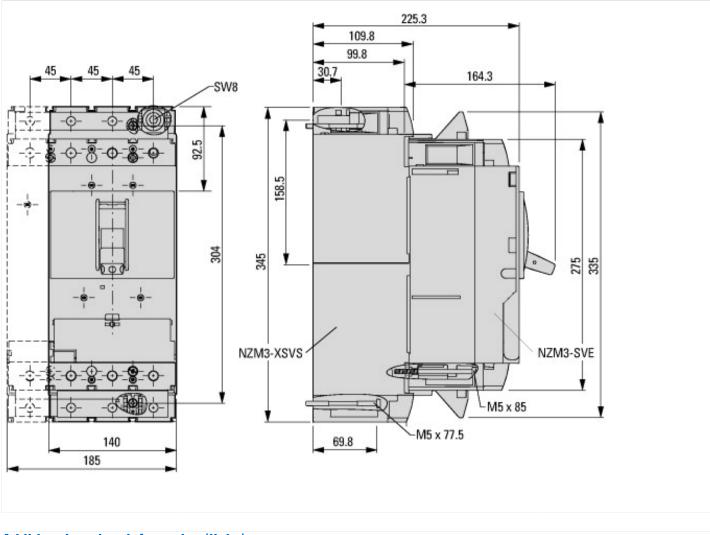
Characteristics











Additional product information (links)

Temperature dependency, Derating

additional technical information for NZM power switch

http://ecat.moeller.net/flip-cat/?edition=HPLEN&startpage=17.172

https://es-assets.eaton.com/DOCUMENTATION/PDF/nzm_technic_de_en.pdf