



NZM2 PXR20 circuit breaker, 250A, 4p, box terminal

Part no. NZMN2-4-VX250-BT
Catalog No. 191641

EL-Nummer (Norway) 4362606

Similar to illustration

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			NZM2
Description			LSI overload protection and delayed and non-delayed short-circuit protective device R.m.s. value measurement and "thermal memory" USB interface for configuration and test function with Power Xpert Protection Manager software Optionally communication-capable with interface module and internal Modbus RTU module or CAM
Number of poles			4 pole
Standard equipment			Box terminal





Switching capacity

400/415 V 50 Hz	I_{cu}	kA	50
-----------------	----------	----	----

Rated current = rated uninterrupted current

Rated current = rated uninterrupted current	$I_n = I_u$	A	250
Neutral conductor	% of phase conductor	%	100

Setting range

Overload trip			
	I_r	A	100 - 250
Short-circuit releases			
			
Non-delayed	$I_i = I_n \times \dots$		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		°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	 <p>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</p>
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	

Circuit-breakers

Rated current = rated uninterrupted current	$I_n = I_u$	A	250
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	690
Use in unearthed supply systems		V	≤ 690

Switching capacity

Rated short-circuit making capacity	I_{cm}		
240 V	I_{cm}	kA	187
400/415 V	I_{cm}	kA	110
440 V 50/60 Hz	I_{cm}	kA	77
525 V 50/60 Hz	I_{cm}	kA	55
690 V 50/60 H	I_c	kA	40
Rated short-circuit breaking capacity I_{cn}	I_{cn}		
I_{cu} to IEC/EN 60947 test cycle O-t-CO	I_{cu}	kA	
240 V 50/60 Hz	I_{cu}	kA	85
400/415 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
I_{cs} to IEC/EN 60947 test cycle O-t-CO-t-CO	I_{cs}	kA	
240 V 50/60 Hz	I_{cs}	kA	85
400/415 V 50/60 Hz	I_{cs}	kA	50
440 V 50/60 Hz	I_{cs}	kA	35
525 V 50/60 Hz	I_{cs}	kA	25
690 V 50/60 Hz	I_{cs}	kA	5
			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	1.9
$t = 1$ s	I_{cw}	kA	1.9
Utilization category to IEC/EN 60947-2			A
Lifespan, mechanical(of which max. 50 % trip by shunt/undervoltage release)	Operations		20000

Lifespan, electrical			
AC-1			
400 V 50/60 Hz	Operations		10000
415 V 50/60 Hz	Operations		10000
690 V 50/60 Hz	Operations		7500
Max. operating frequency		Ops/h	120
Total break time at short-circuit		ms	< 10

Terminal capacity

Standard equipment				Box terminal
Optional accessories				Screw terminal Tunnel terminal connection on rear
Round copper conductor				
Box terminal				
Solid		mm ²	1 x (10 - 16) 2 x (6 - 16)	
Stranded		mm ²	1 x (25 - 185) 2 x (25 - 70)	
Tunnel terminal				
Solid		mm ²	1 x 16	
Stranded				
1-hole		mm ²	1 x (25 - 185)	
Bolt terminal and rear-side connection				
Direct on the switch				
Solid		mm ²	1 x (10 - 16) 2 x (6 - 16)	
Stranded		mm ²	1 x (25 - 185) 2 x (25 - 70)	
Al circular conductor				
Tunnel terminal				
Solid		mm ²	1 x 16	
Stranded				
Stranded		mm ²	1 x (25 - 185)	
Cu strip (number of segments x width x segment thickness)				
Box terminal				
	min.	mm	2 x 9 x 0.8	
	max.	mm	10 x 16 x 0.8 (2x) 8 x 15.5 x 0,8	
Bolt terminal and rear-side connection				
Flat copper strip, with holes	min.	mm	2 x 16 x 0.8	
Flat copper strip, with holes	max.	mm	10 x 24 x 0.8	
Copper busbar (width x thickness)				
Bolt terminal and rear-side connection				
Screw connection				M8
Direct on the switch				
	min.	mm	16 x 5	
	max.	mm	24 x 8	
Control cables				
		mm ²	1 x (0.75 - 2.5) 2 x (0.75 - 1.5)	

Design verification as per IEC/EN 61439

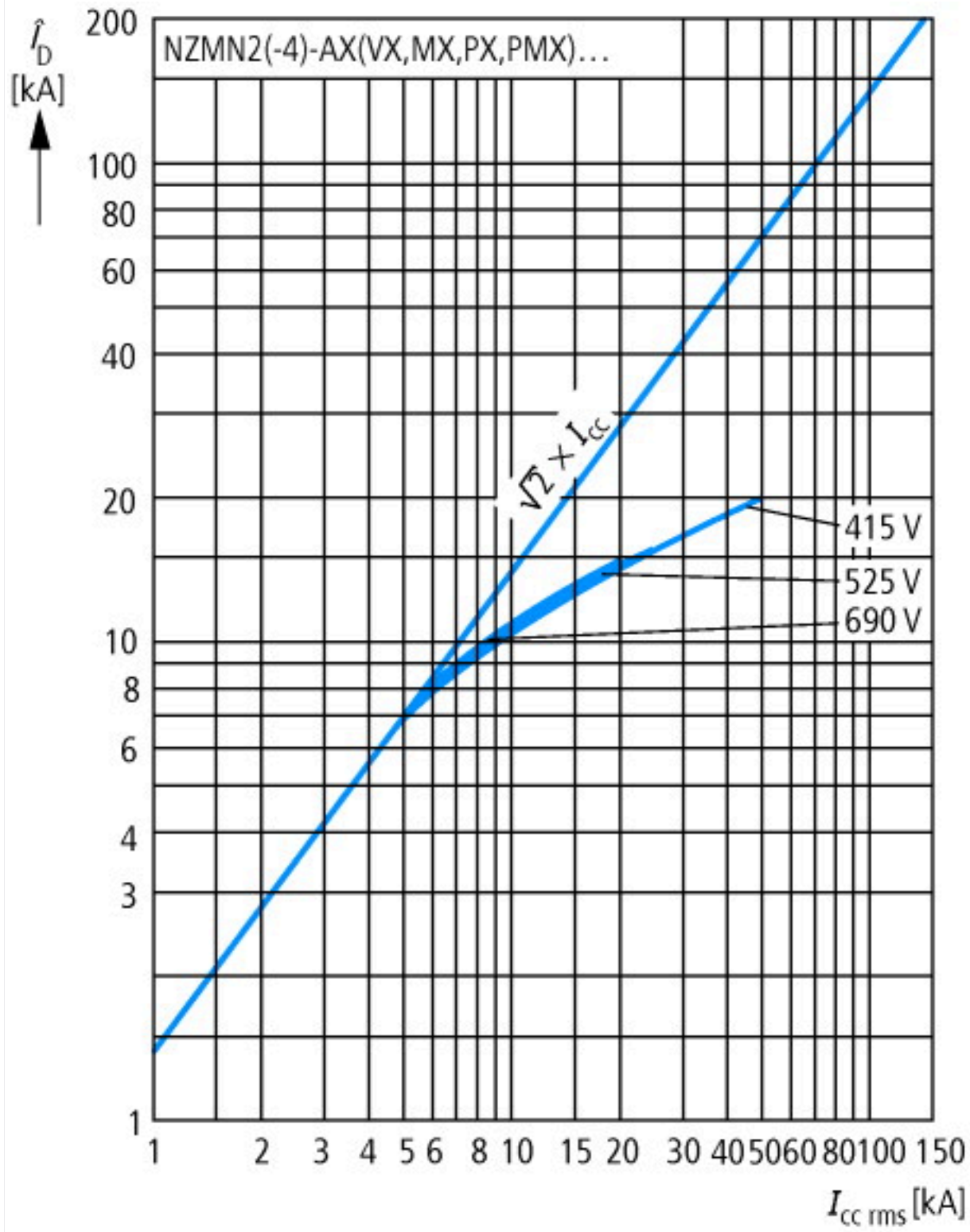
Technical data for design verification			
Rated operational current for specified heat dissipation	I _n	A	250
Equipment heat dissipation, current-dependent	P _{vid}	W	51.5625
Operating ambient temperature min.		°C	-25
Operating ambient temperature max.		°C	70
IEC/EN 61439 design verification			

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 (ec@ss10.0.1-27-37-04-09 [AJZ716013])			
Rated permanent current I _u	A		250
Rated voltage	V		690 - 690
Rated short-circuit breaking capacity I _{cu} at 400 V, 50 Hz	kA		50
Overload release current setting	A		100 - 250
Adjustment range short-term delayed short-circuit release	A		2 - 10
Adjustment range undelayed short-circuit release	A		2 - 12
Integrated earth fault protection			No
Type of electrical connection of main circuit			Frame clamp
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			Yes
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			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

Characteristics



Let-through current



Let-through energy

Dimensions



- ① Blow out area, minimum clearance to adjacent parts
- ② Minimum clearance to adjacent parts



Additional product information (links)

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
additional technical information for NZM power switch	https://es-assets.eaton.com/DOCUMENTATION/PDF/nzm_technic_de_en.pdf