DATASHEET - NZMN2-PMX40



NZM2 PXR25 circuit breaker - integrated energy measurement class 1, 40A, 3p, Screw terminal



Part no. NZMN2-PMX40 Catalog No. 192104

Similar to illustration

livery		

Delivery program			
Product range			Circuit-breaker
Protective function			Motor protection
Standard/Approval			IEC
Installation type			Fixed
Release system			Electronic release
Construction size			NZM2
Description			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
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	$I_n = I_u$	Α	40
Setting range			
Overload trip			
中	l _r	A	20 - 40
Short-circuit releases			
Non-delayed	$I_i = I_n x \dots$		2-18
Motor rating AC-3 50/60 Hz			
380 V 400 V	Р	kW	18.5
Motor rating AC-3 50/60 Hz			
400 V	Р	kW	18.5

Technical data

General

delleral		
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

Nomining position Procession of incoming apoly Direction of incoming apo	between the auxiliary contacts		V AC	300
With ATE and feature disease. AVEAURAL NET AND ALL Wentered and Your department of the potential procession of the control of			V AC	
Device Formation of the chine	Mountaing 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
Degree of protection Device Enclosures Terminations Terminations Other tochnical data (sheet catalogue) Circuit-breakers Rated current = rated uninterrupted current Audillary contacts Audillary cont	Discretiza of in coming county			
Device Enclosures Terminations Other technical data (shoet catalogue) Other technic				as required
Enclosures Terminations Terminations Timenite transition and strip terminal IP86 Transition and strip terminal IP80 Phase isolator				In the approximate order to a second ID20 / he sign degree of protection
Phase isolator and strip terminal. PD0 Phase isolator edgenerabor. Pase is terminal. PD0 Pha				With insulating surround: IP40
Circuit-breakers Weight Temperature dependency, Darating Erictive power loss Rated current = rated uninterrupted current I _n = I _n A A	Terminations			
Precision Process Pr	Other technical data (sheet catalogue)			Weight
Rated current = rated uninterrupted current I _n = I _u A was a contacts V main contacts V mode 6000 Rated operational voltage U _e V Mode 600 III3 Rated insulation voltage U _e V Mode 690 Use in unearthed supply systems V V Mode 690 Switching capacity V Mode 690 Rated short-circuit making capacity Icm K Mode 690 240 V Icm K Mode 165 440 V 50/60 Hz Icm K Mode 165 440 V 50/60 Hz Icm K Mode 165 80 V 50/60 Hz Icm K Mode 165 1 Icu to IEC/EN 60947 test cycle 0-t-CO Icu K Mode 165 2 40 V 50/60 Hz Icu K Mode 165 1 Icu to IEC/EN 60947 test cycle 0-t-CO-t-CO Icu K Mode 165 2 40 V 50/60 Hz Icu K Mode 165				
Name				
Main contacts V 8000 Auxiliary contacts V 8000 Rated operational voltage Ue VAC 899 Overvoltage category/pollution degree Ui V M 690 Rated insulation voltage Ui V M 690 Use in unearthed supply systems V M 690 Switching capacity Value in water and supply systems Switching capacity Value in water and supply systems Value in water and supply systems Value RA 487 400 Value in water and supply systems Value RA 40 240 V So (60 Hz In water and supply systems Value RA 5 400 V So (60 Hz In water	·		Α	40
Auxiliary contacts	Rated surge voltage invariability	U _{imp}		
Rated operational voltage U _e V AC 690 Overvoltage category/pollution degree U _i V 690 Rated insulation voltage U _i V 690 Use in unearthed supply systems V 690 Switching capacity Valor 240 V I _{cm} KA 187 440 V 50/60 Hz I _{cm} KA 105 440 V 50/60 Hz I _{cm} KA 33 680 V 50/60 Hz I _{cm} KA 40 Reted short-circuit breaking capacity I _{cm} I _{cm} KA 40 Reted short-circuit breaking capacity I _{cm} I _{cm} KA 40 Reted short-circuit breaking capacity I _{cm} I _{cm} KA 50 Reted short-circuit breaking capacity I _{cm} I _{cm} KA 50 Reted short-circuit breaking capacity I _{cm} I _{cm} KA 50 Les to IEC/EN 60947 test cycle O-t-CO I _{cm} KA 50 400/415 V 50/60 Hz I _{cm} KA 50	Main contacts			
Overvoltage category/pollution degree U _i V 990 Use in unearthed supply systems V ≤ 690 Switching capacity Rated short-circuit making capacity I _{cm} KA 187 240 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 H I _c KA 40 Rated short-circuit breaking capacity I _{cm} I _c KA 40 Icu to IEC/EN 60947 test cycle 0-t-CO I _c KA 50 Icu to IEC/EN 60947 test cycle 0-t-CO I _c KA 50 240 V 50/60 Hz I _c KA 50 400/415 V 50/60 Hz I _c KA 50 400 V 50/60 Hz I _c KA 50 400 V 50/60 Hz				
Name	Rated operational voltage	U _e	V AC	690
V Selou Switching capacity Cm				
Switching capacity Icm		Ui		690
Rated short-circuit making capacity Icm KA 187 240 V Icm KA 105 440 V 50/60 Hz Icm KA 74 525 V 50/60 Hz Icm KA 53 690 V 50/60 H Icm KA 40 Rated short-circuit breaking capacity Icm Icm KA 40 Icu to IEC/EN 60947 test cycle 0-t-CO Icu KA 50 Ics to IEC/EN 60947 test cycle 0-t-CO+-CO Ics KA 50 240 V 50/60 Hz Ics KA 85 400/415 V 50/60 Hz Ics KA 50 440 V 50/60 Hz Ics KA 50 440 V 50/60 Hz Ics KA 50 440 V 50/60 Hz Ics KA 50 690 V 50/60 Hz Ics KA 55 690 V 50/60 Hz Ics KA 55 690 V 50/60 Hz Ics KA 5 690 V 50/60 Hz Ics KA 5 690 V 50/60 Hz			V	≦ 690
1				
A00/415 V I _{cm}	• , ,		IrΛ	107
1				
525 V 50/60 Hz				
690 V 50/60 H	·			
Rated short-circuit breaking capacity I _{cn} I _{cu} I _{cu}				
			kA	40
1	\$ 1 7 S.II			
Ics to IEC/EN 60947 test cycle O-t-CO-t-CO Ics kA 240 V 50/60 Hz Ics kA 85 400/415 V 50/60 Hz Ics kA 50 440 V 50/60 Hz Ics kA 35 525 V 50/60 Hz Ics kA 25 690 V 50/60 Hz Ics kA 50 Maximum back-up fuse, if the expected short-circuit currents at the install location exceed the switching capacity of the circuit-breaker. Rated short-time withstand current t = 0.3 s Ics kA 10 Ics kA				
240 V 50/60 Hz				50
400/415 V 50/60 Hz 440 V 50/60 Hz Ics kA 35 525 V 50/60 Hz Ics kA 25 690 V 50/60 Hz Ics kA 5 Maximum back-up fuse, if the expected short-circuit currents at the install location exceed the switching capacity of the circuit-breaker. Rated short-time withstand current t = 0.3 s Ics kA 15 Maximum back-up fuse, if the expected short-circuit currents at the install location exceed the switching capacity of the circuit-breaker.				
440 V 50/60 Hz Ics kA 35 525 V 50/60 Hz Ics kA 25 690 V 50/60 Hz Ics kA 5 Maximum back-up fuse, if the expected short-circuit currents at the install location exceed the switching capacity of the circuit-breaker. Rated short-time withstand current t = 0.3 s Icw kA 19				
525 V 50/60 Hz Ics kA 25 690 V 50/60 Hz Ics kA 5 Maximum back-up fuse, if the expected short-circuit currents at the install location exceed the switching capacity of the circuit-breaker. Rated short-time withstand current t = 0.3 s Icw kA 1.9				
690 V 50/60 Hz I _{cs} kA 5 Maximum back-up fuse, if the expected short-circuit currents at the install location exceed the switching capacity of the circuit-breaker. Rated short-time withstand current t = 0.3 s I _{cw} kA 1.9		I _{cs}		
Maximum back-up fuse, if the expected short-circuit currents at the install location exceed the switching capacity of the circuit-breaker. Rated short-time withstand current t = 0.3 s		I _{cs}		
Rated short-time withstand current $t = 0.3 \text{ s} \hspace{1cm} \text{l}_{\text{cw}} \hspace{1cm} \text{kA} \hspace{1cm} 1.9$	690 V 50/60 Hz	I _{cs}	kA	
t = 0.3 s	Rated short-time withstand current			Maximum back-up fuse, if the expected short-circuit currents at the installation location exceed the switching capacity of the circuit-breaker.
		I _{cw}	kA	1.9
$t = 1 s$ I_{cw} kA 1.9				
Utilization category to IEC/EN 60947-2		· CVV		
Lifespan, mechanical(of which max. 50 % trip by shunt/undervoltage release) Operations 20000		Operations		
Lifespan, electrical		орогинина		
AC-1				
400 V 50/60 Hz Operations 10000		Operations		10000
415 V 50/60 Hz Operations 10000				

AC3			
400 V 50/60 Hz	Operations		6500
415 V 50/60 Hz	Operations		6500
690 V 50/60 Hz	Operations		5000
Max. operating frequency		Ops/h	120
Total break time at short-circuit		ms	<10
Terminal capacity		1113	10
Standard equipment			Screw connection
Optional accessories			Box terminal
Optional accessories			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)
55110		mm	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			
DUX terminar			2000
	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)	mm		
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)
		111111	2 x (0.75 - 1.5)

Operations

7500

Design verification as per IEC/EN 61439

690 V 50/60 Hz

Technical data for design verification			
Rated operational current for specified heat dissipation	In	Α	40
Equipment heat dissipation, current-dependent	P _{vid}	W	1.32
Operating ambient temperature min.		°C	-25
Operating ambient temperature max.		°C	70
EC/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 mus observed.
10.12 Electromagnetic compatibility	Is the panel builder's responsibility. The specifications for the switchgear must observed.
10.13 Mechanical function	The device meets the requirements, provided the information in the instruction leaflet (IL) is observed.

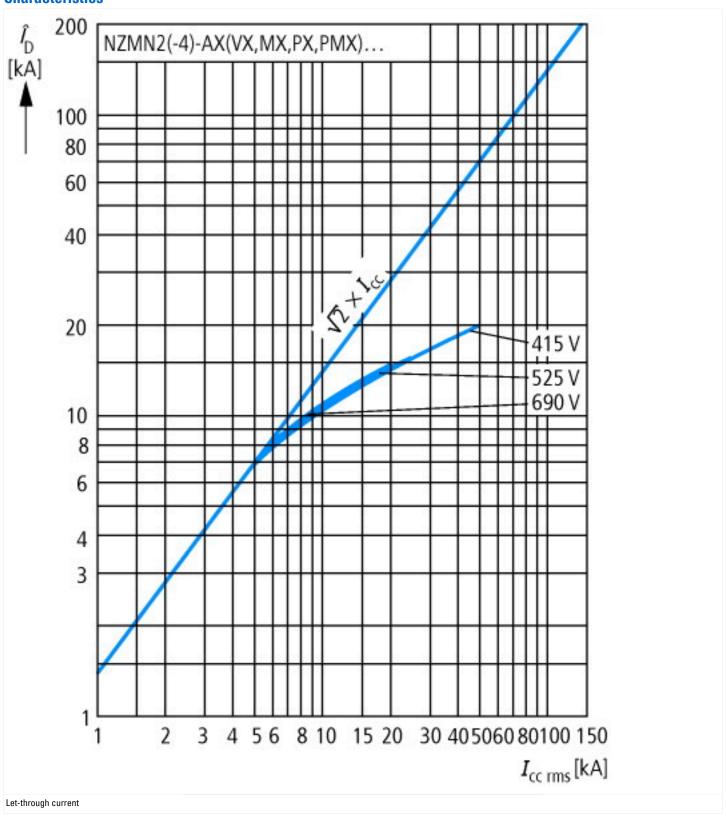
Technical data ETIM 8.0

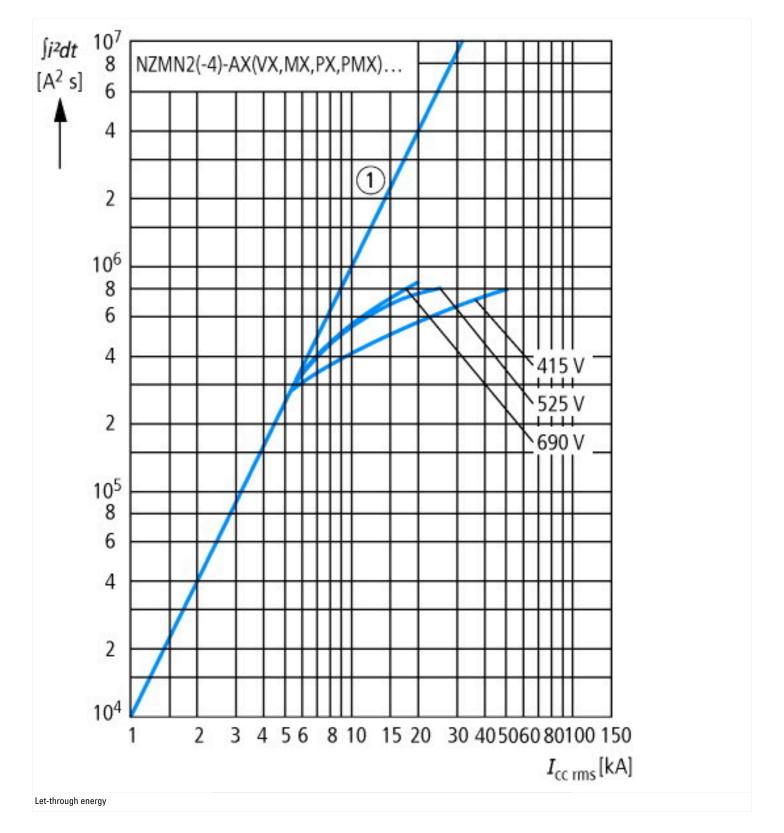
Low-voltage industrial components (EG000017) / Motor protection circuit-breaker (EC000074)

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])

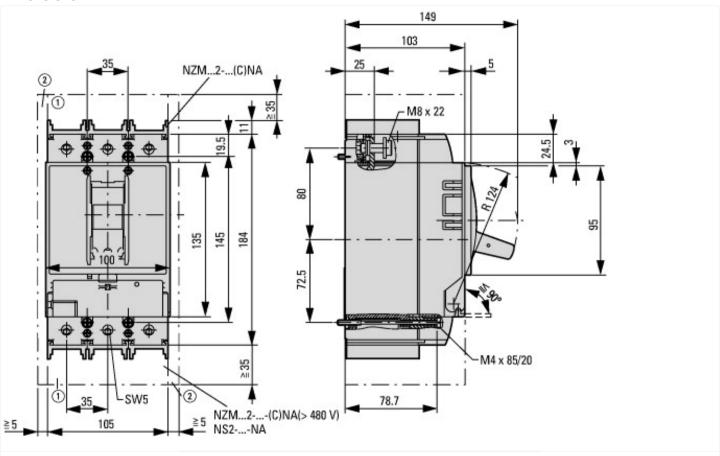
Overload release current setting	Α	20 - 40
Adjustment range undelayed short-circuit release	A	80 - 720
Vith thermal protection		Yes
Phase failure sensitive		Yes
Switch off technique		Electronic
Rated operating voltage	V	690 - 690
Rated permanent current lu	Α	40
Rated operation power at AC-3, 230 V	kW	11
Rated operation power at AC-3, 400 V	kW	18.5
Type of electrical connection of main circuit		Screw connection
Type of control element		Rocker lever
Device construction		Built-in device fixed built-in technique
Nith integrated auxiliary switch		No
Nith 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	184
Vidth	mm	105
Depth	mm	149

Characteristics

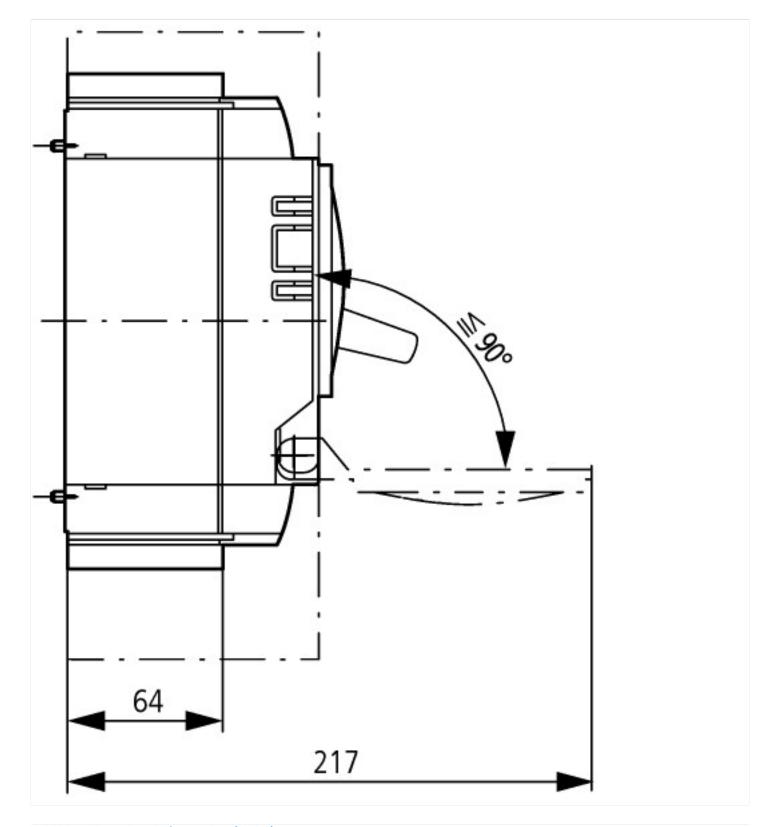




Dimensions



Blow out area, minimum clearance to adjacent parts
 Minimum clearance to adjacent parts



Additional product information (links)

(
IL012099ZU NZM2-PXR circuit-breaker, basic device, NZM2-PXR Circuit-Breaker, basic unit		
IL012099ZU NZM2-PXR circuit-breaker, basic device, NZM2-PXR Circuit-Breaker, basic unit	https://es-assets.eaton.com/DOCUMENTATION/AWA_INSTRUCTIONS/IL012099ZU2019_03.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	
additional technical information for NZM power switch	https://es-assets.eaton.com/DOCUMENTATION/PDF/nzm_technic_de_en.pdf	