## **DATASHEET - NZMN2-4-AX40**

Part no. Catalog No.



## NZM2 PXR10 circuit breaker, 40A, 4p, Screw terminal

NZMN2-4-AX40 193357



Similar to illustration

**Delivery program** 

Delivery program			
Product range			Circuit-breaker
Protective function			System and cable protection
Standard/Approval			IEC
Installation type			Fixed
Release system			Electronic release
Construction size			NZM2
Description			Overload and short-circuit protection LI R.m.s. value measurement and "thermal memory" USB interface for configuration and test function with Power Xpert Protection Manager software
Number of poles			4 pole
Standard equipment			Screw connection
Switching capacity			
400/415 V 50 Hz	I <sub>cu</sub>	kA	50
Rated current = rated uninterrupted current			
Rated current = rated uninterrupted current	$I_n = I_u$	Α	40
Neutral conductor	% of phase conductor	%	100
Setting range			
Overload trip			
4	l <sub>r</sub>	A	20 - 40
Short-circuit releases			
Non-delayed	$I_i = I_n \times \dots$		2-12
Delayed X 1 >	$I_{sd} = I_r x \dots$		100 - 1000

### **Technical data**

General

donorui			
Standards		I	EC/EN 60947
Protection against direct contact		F	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	2	20 (half-sinusoidal shock 20 ms)
Safe isolation to EN 61140			
Between auxiliary contacts and main contacts	V	AC 5	500
between the auxiliary contacts	V	AC 3	300
Mounting position		١	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:
- NZM2, N(S)2, NZM3, N(S)3,
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)	Weight Temperature dependency, Derating Effective power loss

#### **Circuit-breakers**

Rated current = rated uninterrupted current	$I_n = I_u$	Α	40
Rated surge voltage invariability	$U_{imp}$		
Main contacts		V	8000
Auxiliary contacts		V	6000
Rated operational voltage	U <sub>e</sub>	V AC	690
Overvoltage category/pollution degree			III/3
Rated insulation voltage	Ui	V	690
Use in unearthed supply systems		V	≦ 690

#### Switching canacity

AC-1

Switching capacity			
Rated short-circuit making capacity	I <sub>cm</sub>		
240 V	I <sub>cm</sub>	kA	187
400/415 V	I <sub>cm</sub>	kA	105
440 V 50/60 Hz	I <sub>cm</sub>	kA	74
525 V 50/60 Hz	I <sub>cm</sub>	kA	53
690 V 50/60 H	Ic	kA	40
Rated short-circuit breaking capacity I <sub>cn</sub>	I <sub>cn</sub>		
Icu to IEC/EN 60947 test cycle 0-t-C0	lcu	kA	
240 V 50/60 Hz	I <sub>cu</sub>	kA	85
400/415 V 50/60 Hz	I <sub>cu</sub>	kA	50
440 V 50/60 Hz	I <sub>cu</sub>	kA	35
525 V 50/60 Hz	I <sub>cu</sub>	kA	25
690 V 50/60 Hz	I <sub>cu</sub>	kA	20
Ics to IEC/EN 60947 test cycle 0-t-C0-t-C0	Ics	kA	
240 V 50/60 Hz	I <sub>cs</sub>	kA	85
400/415 V 50/60 Hz	I <sub>cs</sub>	kA	50
440 V 50/60 Hz	I <sub>cs</sub>	kA	35
525 V 50/60 Hz	I <sub>cs</sub>	kA	25
690 V 50/60 Hz	I <sub>cs</sub>	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 <sub>cw</sub>	kA	1.9
t = 1 s	I <sub>cw</sub>	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			

400 V 50/60 Hz	Operations		10000
415 V 50/60 Hz	Operations		10000
690 V 50/60 Hz	Operations		7500
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
Total break time at short enear			1.0
Terminal capacity		0	
			Screw connection
Terminal capacity			
Terminal capacity Standard equipment			
Terminal capacity Standard equipment Round copper conductor		mm <sup>2</sup>	
Terminal capacity Standard equipment Round copper conductor Tunnel terminal	mm		Screw connection
Terminal capacity Standard equipment Round copper conductor Tunnel terminal Solid	mm		Screw connection

# Design verification as per IEC/EN 61439

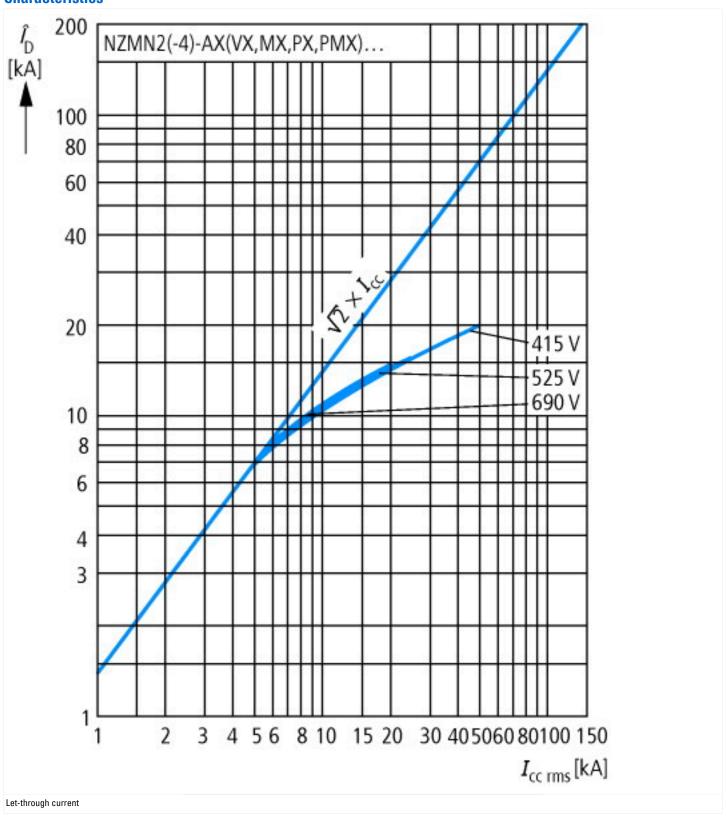
Technical data for design verification			
Rated operational current for specified heat dissipation	In	Α	40
Equipment heat dissipation, current-dependent	P <sub>vid</sub>	W	1.32
Operating ambient temperature min.		°C	-25
Operating ambient temperature max.		°C	70
IEC/EN 61439 design verification			
10.2 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 switch gear must be observed.
10.12 Electromagnetic compatibility			Is the panel builder's responsibility. The specifications for the switch gear must be observed.
10.13 Mechanical function			The device meets the requirements, provided the information in the instruction leaflet (IL) is observed.

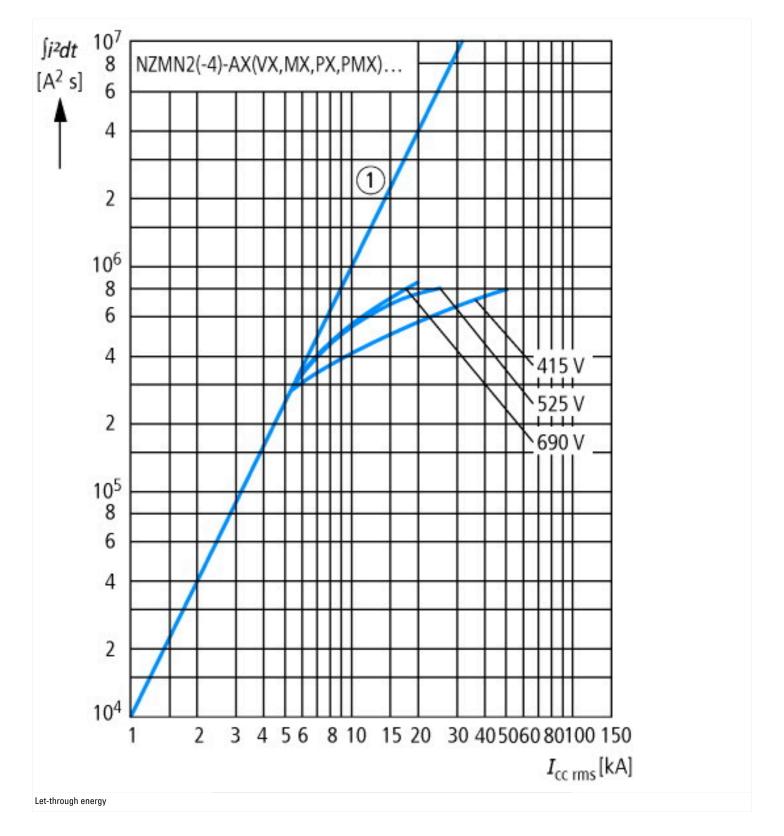
### **Technical data ETIM 8.0**

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

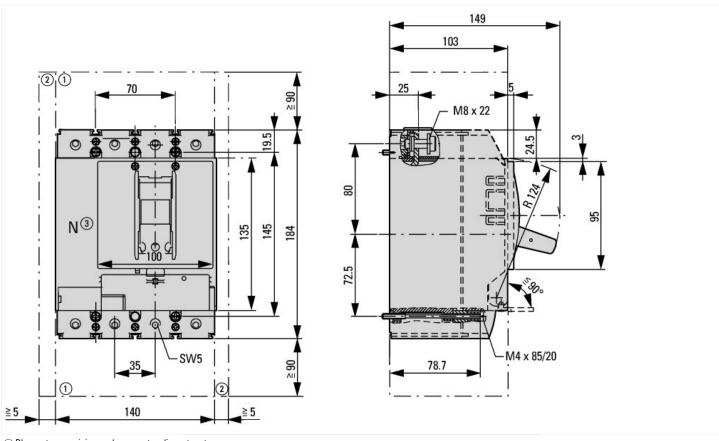
Electric engineering, automation, process control engineering / Low-voltage switch technology / Circuit breaker (LV < 1 kV) / Circuit breaker for power transformer, generator and system			
protection (ecl@ss10.0.1-27-37-04-09 [AJZ716013])			
Rated permanent current lu	А	40	
Rated voltage	V	690 - 690	
Rated short-circuit breaking capacity Icu at 400 V, 50 Hz	kA	50	
Overload release current setting	А	20 - 40	
Adjustment range short-term delayed short-circuit release	Α	0 - 0	
Adjustment range undelayed short-circuit release	А	2 - 12	
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		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 integrated 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	

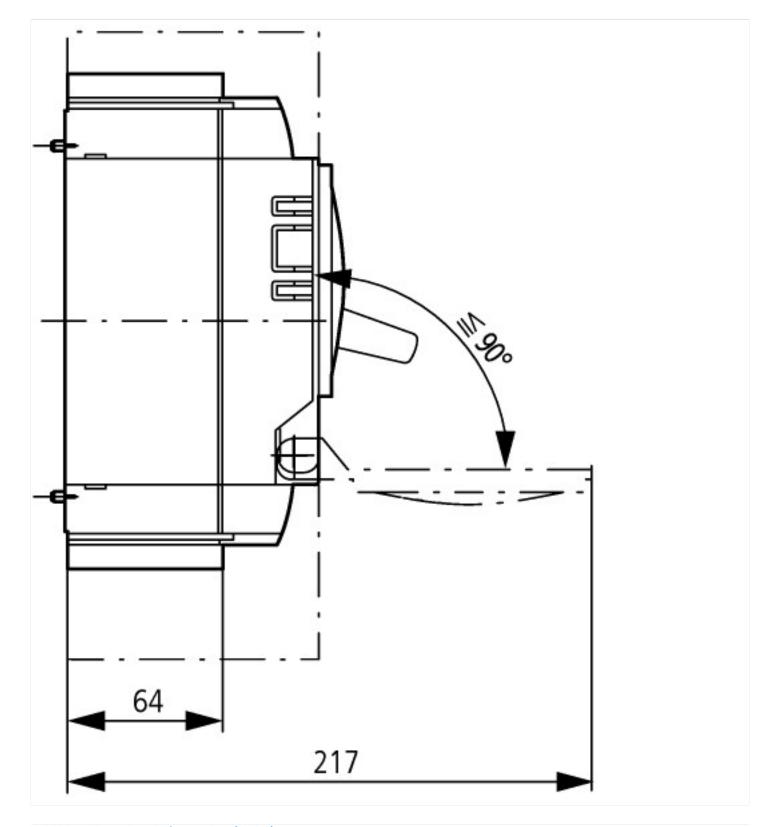
### **Characteristics**





# **Dimensions**





### **Additional product information (links)**

Additional product information (miks)				
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	https://es-assets.eaton.com/DOCUMENTATION/PDF/nzm_technic_de_en.pdf			