



NZM3 PXR20 circuit breaker, 400A, 4p, variable, screw terminal

Part no. **NZMS3-4-VX400/VAR**  
 Catalog No. **191522**

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			NZM3
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			Screw connection





## Switching capacity

400/415 V 50 Hz	$I_{cu}$	kA	70
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## Rated current = rated uninterrupted current

Rated current = rated uninterrupted current	$I_n = I_u$	A	400
Neutral conductor	% of phase conductor	%	0 - 60 - 100

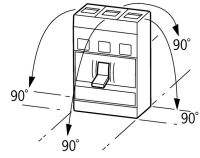
## Setting range

Overload trip			
	$I_r$	A	160 - 400
Short-circuit releases			
			
Non-delayed	$I_l = I_n \times \dots$		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		<p>Vertical and 90° in all directions</p>  <p>With XFI earth-fault release:</p> <ul style="list-style-type: none"> <li>- NZM1, N1, NZM2, N2: vertical and 90° in all directions with plug-in unit</li> <li>- NZM1, N1, NZM2, N2: vertical, 90° right/left with withdrawable unit:</li> <li>- NZM3, N3: vertical, 90° right/left</li> <li>- NZM4, N4: vertical with remote operator:</li> <li>- NZM2, N(S)2, NZM3, N(S)3, NZM4, N(S)4: vertical and 90° in all directions</li> </ul>
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			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	220
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	$I_c$	kA	50
Rated short-circuit breaking capacity $I_{cn}$	$I_{cn}$		
Icu to IEC/EN 60947 test cycle O-t-CO	$I_{cu}$	kA	
240 V 50/60 Hz	$I_{cu}$	kA	100
400/415 V 50/60 Hz	$I_{cu}$	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 O-t-CO-t-CO	$I_{cs}$	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, mechanical(of which max. 50 % trip by shunt/undervoltage release)	Operations		15000

Lifespan, electrical			
AC-1			
400 V 50/60 Hz	Operations		5000
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
Optional accessories			Box terminal Tunnel terminal connection on rear
Round copper conductor			
Box terminal			
Solid		mm <sup>2</sup>	2 x 16
Stranded		mm <sup>2</sup>	1 x (35 - 240) 2 x (25-120)
Tunnel terminal			
Solid		mm <sup>2</sup>	1 x 16
Stranded			
1-hole		mm <sup>2</sup>	1 x (16 - 185)
Bolt terminal and rear-side connection			
Direct on the switch			
Solid		mm <sup>2</sup>	1 x 16 2 x 16
Stranded		mm <sup>2</sup>	1 x (25 - 240) 2 x (25 - 240)
Connection width extension		mm <sup>2</sup>	
Connection width extension		mm <sup>2</sup>	2 x 300
Al circular conductor			
Tunnel terminal			
Solid		mm <sup>2</sup>	1 x 16
Stranded			
Stranded		mm <sup>2</sup>	1 x (25 - 185) <sup>2)</sup>
Double hole		mm <sup>2</sup>	1 x (50 - 240) 2 x (50 - 240)
			<sup>2)</sup> Up to 240 mm <sup>2</sup> 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 x 16 x 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)			
Bolt terminal and rear-side connection			
Screw connection			M10
Direct on the switch			
	min.	mm	20 x 5
	max.	mm	30 x 10 + 30 x 5
Connection width extension		mm	
Connection width extension	max.	mm	2 x (10 x 50)
Control cables			
		mm <sup>2</sup>	1 x (0.75 - 2.5)

## Design verification as per IEC/EN 61439

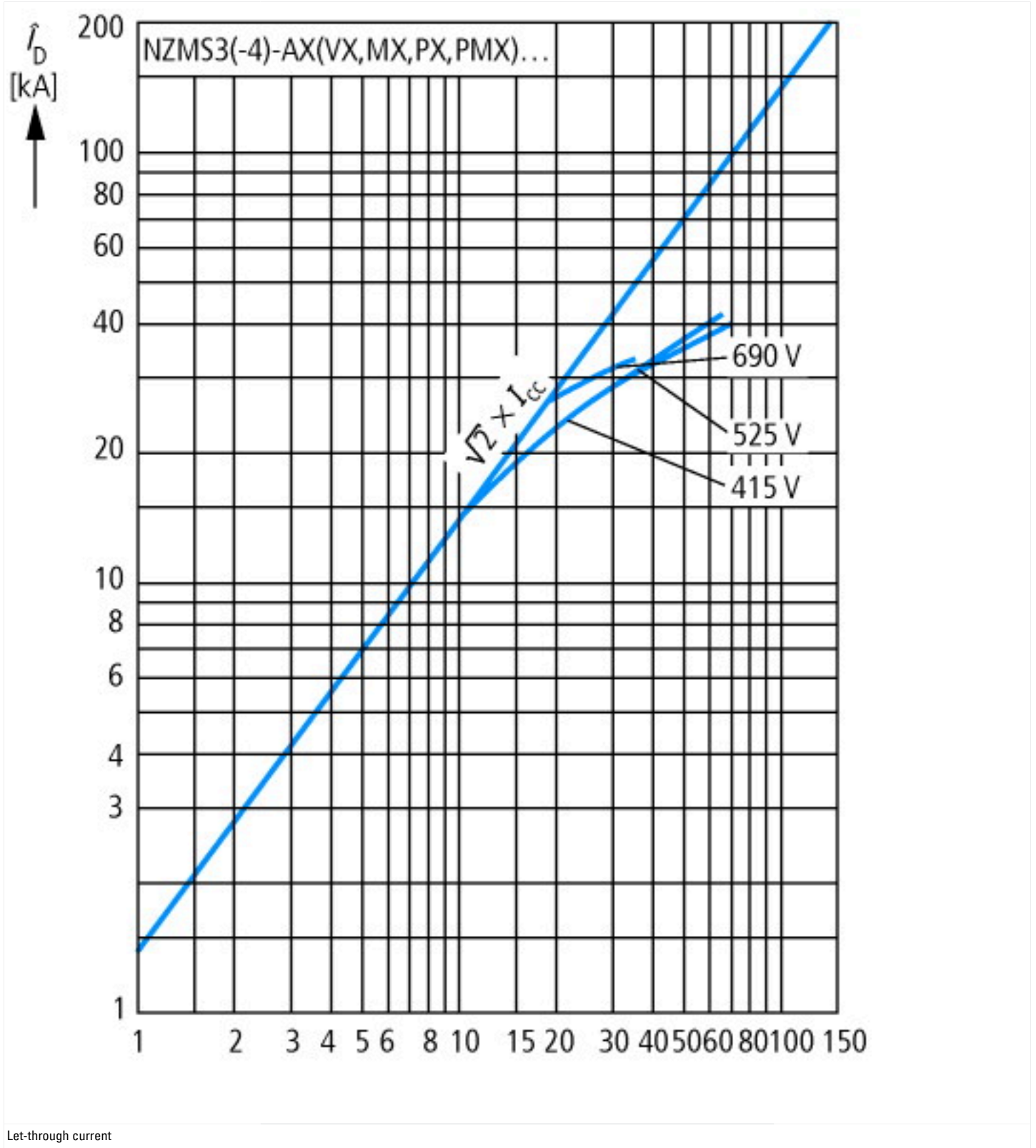
Technical data for design verification			
Rated operational current for specified heat dissipation	$I_n$	A	400
Equipment heat dissipation, current-dependent	$P_{vid}$	W	48
Operating ambient temperature min.		°C	-25
Operating ambient temperature max.		°C	70
IEC/EN 61439 design verification			
10.2 Strength of materials and parts			
10.2.2 Corrosion resistance			
10.2.2.1 Verification of thermal stability of enclosures			
10.2.2.2 Verification of resistance of insulating materials to normal heat			
10.2.2.3 Verification of resistance of insulating materials to abnormal heat and fire due to internal electric effects			
10.2.4 Resistance to ultra-violet (UV) radiation			
10.2.5 Lifting			
10.2.6 Mechanical impact			
10.2.7 Inscriptions			
10.3 Degree of protection of ASSEMBLIES			
10.4 Clearances and creepage distances			
10.5 Protection against electric shock			
10.6 Incorporation of switching devices and components			
10.7 Internal electrical circuits and connections			
10.8 Connections for external conductors			
10.9 Insulation properties			
10.9.2 Power-frequency electric strength			
10.9.3 Impulse withstand voltage			
10.9.4 Testing of enclosures made of insulating material			
10.10 Temperature rise			
10.11 Short-circuit rating			
10.12 Electromagnetic compatibility			
10.13 Mechanical function			

## 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 $I_u$		A	400
Rated voltage		V	690 - 690
Rated short-circuit breaking capacity $I_{cu}$ at 400 V, 50 Hz		kA	70
Overload release current setting		A	160 - 400
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			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			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	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

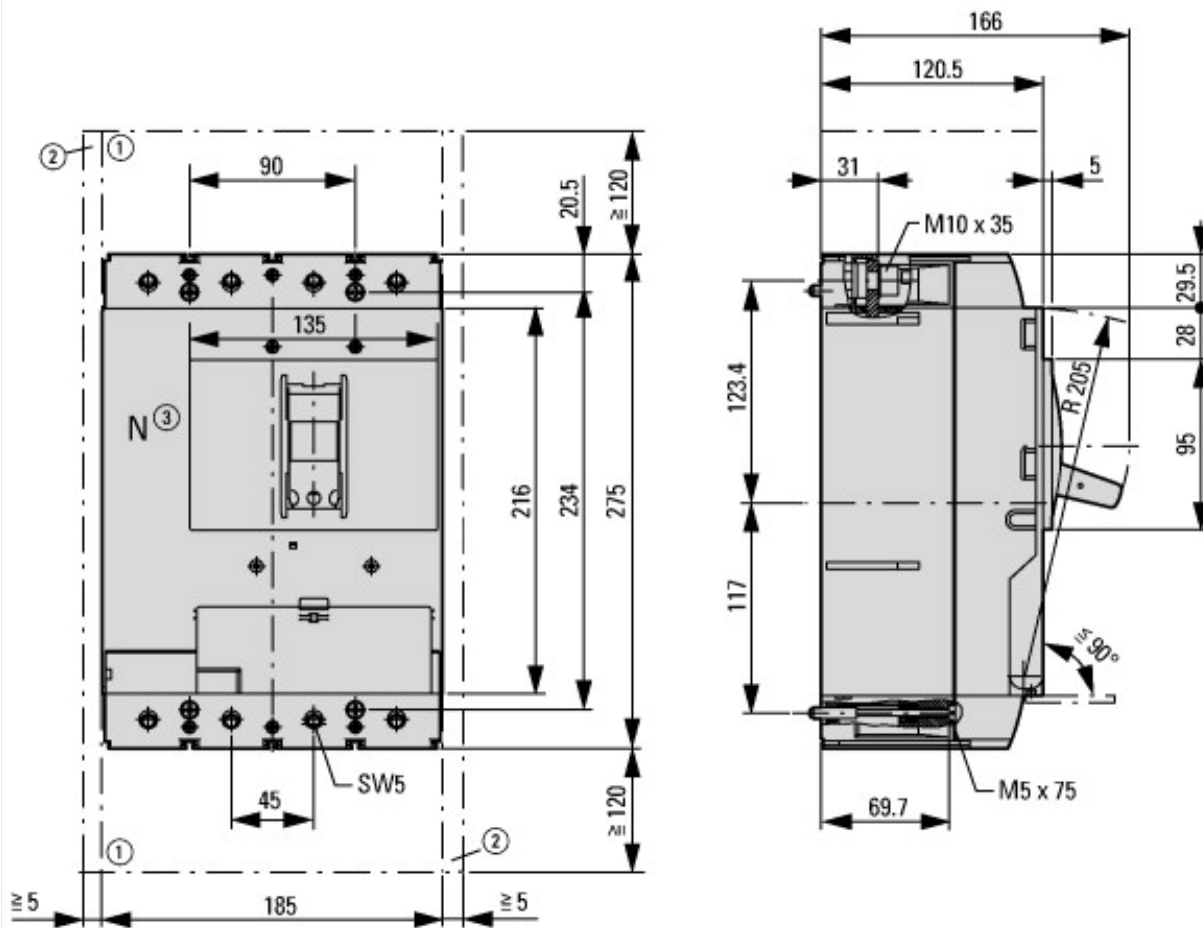


Let-through current



Let-through energy

## Dimensions



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



### Additional product information (links)

#### IL012100ZU NZM3-PXR circuit-breaker, basic device , NZM3-PXR Circuit-Breaker, basic unit

IL012100ZU NZM3-PXR circuit-breaker, basic device , NZM3-PXR Circuit-Breaker, basic unit

[https://es-assets.eaton.com/DOCUMENTATION/AWA\\_INSTRUCTIONS/IL012100ZU2020\\_10.pdf](https://es-assets.eaton.com/DOCUMENTATION/AWA_INSTRUCTIONS/IL012100ZU2020_10.pdf)

Temperature dependency, Derating

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

additional technical information for NZM power switch

[https://es-assets.eaton.com/DOCUMENTATION/PDF/nzm\\_technic\\_de\\_en.pdf](https://es-assets.eaton.com/DOCUMENTATION/PDF/nzm_technic_de_en.pdf)