### DATASHEET - NZMS3-4-VX630-T-AVE

Part no.

Catalog No.



NZM3 PXR20 circuit breaker, 630A, 4p, earth-fault protection, withdrawable unit

NZMS3-4-VX630-T-AVE

191539



Similar to illustration

#### **Delivery program**

Include of polesmodule of CAMNumber of poles $4 pole$ Standard equipment $4 pole$ Switching capacity $l_{cu}$ $Ka$ 400(415 V 50 Hz $l_{cu}$ $Ka$ Acted current = rated uninterrupted current $l_{ru}$ $Ka$ Neutral conductor $l_{ru}$ $Ka$ Setting range $l_{ru}$ $Ka$ Overload trip $l_{ru}$ $Ka$ Short-circuit releases $l_{ru}$ $R_{ru}$ Non-delayed $l_{ru}$ $l_{ru}$ $R_{ru}$ Delayed $l_{ru}$ $l_{ru}$ $l_{ru}$ Steting range conductor $l_{ru}$ <th>benvery program</th> <th></th> <th></th> <th></th>	benvery program			
Cander//ApprovalEarth-fault protectionStandard/ApprovalECRelease systemECConstruction sizeEarth-fault protection and elayed and non-delayed short-circuit protectionDescriptionStore-fault protection and delayed and non-delayed short-circuit protectionDescriptionConstruction sizeDescriptionConstruction sizeNumber of polesConstructionNumber of polesConstructionStart de quipmentConstructionStart de quipmentConstructionStart state constructionImpact State ConstructionReled current - rated uninterrupted currentImpact State ConstructionReled current - rated uninterrupted currentImpact State ConstructionStort-circuit releasesConstructionStort-circuit releasesImpact State ConstructionStort-circuit releasesImpact State ConstructionNumber of polesImpact State ConstructionStort-circuit releasesImpact State ConstructionImpact State ConstructionImpact State ConstructionStort-circuit releasesImpact State ConstructionImpact S	Product range			Circuit-breaker
Installation       Withdrawable         Release system       Electronic release         Construction size       ZMM         Dascription       Solverload protection and delayed and non-delayed short-circuit protection and delayed short-circuit protection and delayed short-circuit protection and delayed short-ci	Protective function			
Release yets Construction sizeRelease yets Construction sizeRelation releaseDescription $V = V = V$ ValueLS overload protection and delayed and non-delayed short-circuit protective Manager software Manager softwar	Standard/Approval			IEC
Construction size       VIM3         Description       VIM3         Bescription       Sinterface for configuration and talayed and non-delayed short-circuit protection $Manager solution and tata function with Power Xpert Protection Manager solution and tata function and tase function with Power Xpert Protection Manager solution and tase function with Power Xpert Protection Manager solution capable with interface module and internal Module R module or CAM         Number of poles       4 pole         Standard equipment       5 crew connection         Switching capacity       6 crew connection         400415 V5 0k lz       Ison       70         Rated current = rated uninterrupted current       Ison f plase       5 crew connection         Neutral conductor       Yo of plase       5 crew connection         Setting range       000       600         Overload trip       Yo of plase       Yo         Non-delayed       Ison function       Yo of plase         Non-delayed       Ison function       Yo of plase         Non-delayed       Ison function       Yo of plase         Non-delayed       Ison function $	Installation type			Withdrawable
DescriptionIs subscriptionIs subscriptionIs overlaad protection and delayed and non-delayed short-circuit protection and delayed and non-delayed short-circuit protection and test function with Power Xpert Protection and manager software optionally communication-capable with interface module and internal Modules B anager software optionally communication-capable with interface module and internal Modules B anager software optionally communication-capable with interface module and internal Modules B anager software optionally communication-capable with interface module and internal Modules B anager software optionally communication-capable with interface module and internal Modules B anager software optionally communication-capable with interface module and internal Modules B anager software optionally communication-capable with interface module and internal Modules B anager software optionally communication-capable with interface module and internal Modules B anager software optionally communication-capable with interface module and internal Modules B anager software optionally communication-capable with interface module and internal Modules B anager software option (P anager so	Release system			Electronic release
Number of poles     Image: solution matchine solution and test function with Power Xpert Protection Managere software Optionally communication-capable with interface module and internal Module and internal Module and int	Construction size			NZM3
Standard equipmentStrew connectionSwitching capacity $l_{cu}$ KA400/415 V 50 Hz $l_{cu}$ KARated current = rated uninterrupted current $l_n = l_u$ ARated current = rated uninterrupted current $l_n = l_u$ ANeutral conductor $l_n = l_u$ ASetting range100Overload trip $l_r$ $A$ Short-circuit releases $l_r$ $A$ Non-delayed $l_s = l_r \times$ $l_s = l_r \times$ Delayed $l_{sd} = l_r \times$ $l_s = l_r \times$ Stating range of earth fault release min. $l_g = l_n \dots$ $l_s = l_s \dots$ Item conductor $l_{sd} = l_r \times$ $l_{sd} = l_s \dots$ Stating range of earth fault release min. $l_g = l_n \dots$ $l_s = l_s \dots$ Item conductor $l_{sd} = l_r \times$ $l_{sd} = l_s \dots$ Item conductor $l_{sd} = l_r \times$ $l_{sd} = l_s \dots$ Item conductor $l_{sd} = l_r \times$ $l_{sd} = l_s \dots$ Item conductor $l_{sd} = l_r \times$ $l_{sd} = l_s \dots$ Item conductor $l_{sd} = l_r \times$ $l_{sd} = l_s \dots$ Item conductor $l_{sd} = l_r \times$ $l_{sd} = l_s \dots$ Item conductor $l_{sd} = l_r \times$ $l_{sd} = l_s \dots$ Item conductor $l_{sd} = l_r \times$ $l_{sd} = l_s \dots$ Item conductor $l_{sd} = l_r \times$ $l_{sd} = l_s \dots$ Item conductor $l_{sd} = l_r \dots$ $l_{sd} = l_s \dots$ Item conductor $l_{sd} = l_s \dots$ $l_{sd} = l_s \dots$ Item conductor $l_{sd} = l_s \dots$	Description			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
Switching capacityIcuKA400/415 V 50 HzIcuKA70Rated current = rated uninterrupted currentIn = IuA630Rated current = rated uninterrupted currentIn = IuA630Neutral conductorVorbisse conductorNo10Setting rangeIn = IuIn = IuIn = IuOverload tripIn = IuIn = IuIn = IuNon-delayedIn = IuIn = IuIn = IuNon-delayedIn = IuIn = IuIn = IuDelayedIn = IuIn = IuIn = IuSetting range of earth fault release min.Ig = In xIg = In xSetting range of earth fault release min.Ig = In xIn = IuSetting range of earth fault release min.Ig = In xIn = IuSetting range of earth fault release min.Ig = In xIn = IuSetting range of earth fault release min.In = Iu xIn = IuSetting range of earth fault release min.In = Iu xIn = IuSetting range of earth fault release min.In = Iu xIn = IuSetting range of earth fault release min.In = Iu xIn = IuSetting range of earth fault release min.In = Iu xIn = IuSetting range of earth fault release min.In = Iu xIn = IuSetting range of earth fault release min.In = Iu xIn = IuSetting range of earth fault release min.In = Iu xIn = IuSetting range of earth fault release min.In = Iu xIn =	Number of poles			4 pole
400/415 V 50 HzIcuKA70Rated current = rated uninterrupted currentIn = IuA600Rated current = rated uninterrupted currentIn = IuA600Neutral conductorSo of phase conductor%100Setting rangeImage: So of phase conductor%522 - 630Overload tripImage: So of phase conductor%522 - 630Non-delayedImage: So of phase conductorImage: So of phase conductor%522 - 630Non-delayedImage: So of phase conductorImage: So of phase conductor%%522 - 630Non-delayedImage: So of phase conductorImage: So of phase conductor%%%DelayedImage: So of phase conductorImage: So of phase conductor%%%Setting range of earth fault release min.Image: So of phase conductor%%%Setting range of earth fault release min.Image: So of phase conductor%%%Setting range of earth fault release min.Image: So of phase conductor%%%Setting range of earth fault release min.Image: So of phase conductor%%%Setting range of earth fault release min.Image: So of phase conductor%%%Setting range of earth fault release min.Image: So of phase conductor%%%Setting range of earth fault release min.Image: So of phase conductor%%%<	Standard equipment			Screw connection
Rated current = rated uninterrupted current         In = Iu         A         630           Neutral conductor         % of phase conductor         %         Mathematical and conductor         100           Setting range           100         100         100           Verload trip          7         500         100	Switching capacity			
Rated current = rated uninterrupted current $I_n = I_u$ A60Neutral conductor $\ensuremath{\color}$	400/415 V 50 Hz	I <sub>cu</sub>	kA	70
Neutral conductor         No of phase conductor         No         I = ln x	Rated current = rated uninterrupted current			
Setting range         Conductor	Rated current = rated uninterrupted current	$I_n = I_u$	А	630
Overload trip         Ir         A         Stort-circuit releases         Ir         A         Stort-circuit release         Ir	Neutral conductor		%	100
Ir       A       252 - 630         Short-circuit releases       I       I         Non-delayed       I       I         Delayed       I       I         Setting range of earth fault release min.       Ig = Inx       16	Setting range			
Short-circuit releases   Non-delayed   Delayed   Delayed   Setting range of earth fault release min.     Ig = Inx     Ig = Inx </td <td>Overload trip</td> <td></td> <td></td> <td></td>	Overload trip			
Non-delayed       I= In x       2-8         Delayed       Isd = Ir x       1.5-7         Setting range of earth fault release min.       Isg = Inx       126	द	l <sub>r</sub>	A	252 - 630
Delayed     Isd = Ir x       Setting range of earth fault release min.     Ig = Inx				
Setting range of earth fault release min.     Ig = Inx     126	Non-delayed	I <sub>i</sub> = I <sub>n</sub> x		2-8
		$I_{sd} = I_r x \dots$		1.5 – 7
	Setting range of earth fault release min.	lg = lnx		126
Setting range of earth fault release max. Ig = Inx 630	Setting range of earth fault release max.	lg = lnx		630

## **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: - NZM2, 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 Terminations			With insulating surround: IP40 With door coupling rotary handle: IP66 Tunnel terminal: IP10
			Phase isolator and strip terminal: IP00
Other technical data (sheet catalogue)			Temperature dependency, Derating
Circuit-breakers		٨	500
Rated current = rated uninterrupted current	$I_n = I_u$	A	630
Rated surge voltage invariability	U <sub>imp</sub>	.,	2000
Main contacts		V	8000
Auxiliary contacts		V V AC	6000 690
Rated operational voltage	U <sub>e</sub>	V AU	
Overvoltage category/pollution degree Rated insulation voltage	Ui	V	690
Use in unearthed supply systems	0,	V	≤ 690
Switching capacity		v	= 050
Rated short-circuit making capacity	I <sub>cm</sub>		
240 V	I <sub>cm</sub>	kA	220
400/415 V	I <sub>cm</sub>	kA	154
440 V 50/60 Hz	I <sub>cm</sub>	kA	143
525 V 50/60 Hz	I <sub>cm</sub>	kA	80
690 V 50/60 H	lc	kA	50
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	100
400/415 V 50/60 Hz	I <sub>cu</sub>	kA	70
440 V 50/60 Hz	I <sub>cu</sub>	kA	65
525 V 50/60 Hz	I <sub>cu</sub>	kA	36
690 V 50/60 Hz	I <sub>cu</sub>	kA	25
Ics to IEC/EN 60947 test cycle 0-t-C0-t-C0	lcs	kA	
240 V 50/60 Hz	I <sub>cs</sub>	kA	100
400/415 V 50/60 Hz	I <sub>cs</sub>	kA	70
440 V 50/60 Hz	I <sub>cs</sub>	kA	65
525 V 50/60 Hz	I <sub>cs</sub>	kA	18
690 V 50/60 Hz	I <sub>cs</sub>	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 <sub>cw</sub>	kA	3.3
t = 1 s	I <sub>cw</sub>	kA	3.3

Utilization category to IEC/EN 60947-2			
	0		A 15000
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
Accessories required			NZM3-4-XAVS
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)
		mm-	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			
		2	110
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)	mm		
Bolt terminal and rear-side connection			
Screw connection			M10
			WID
Direct on the switch			20
	min.	mm	20 × 5
	max.	mm	30 × 10 + 30 × 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) 2 x (0.75 - 1.5)

## Design verification as per IEC/EN 61439

besign vermeation as per reo/en 01455			
Technical data for design verification			
Rated operational current for specified heat dissipation	In	А	630
Equipment heat dissipation, current-dependent	P <sub>vid</sub>	W	119.07
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**

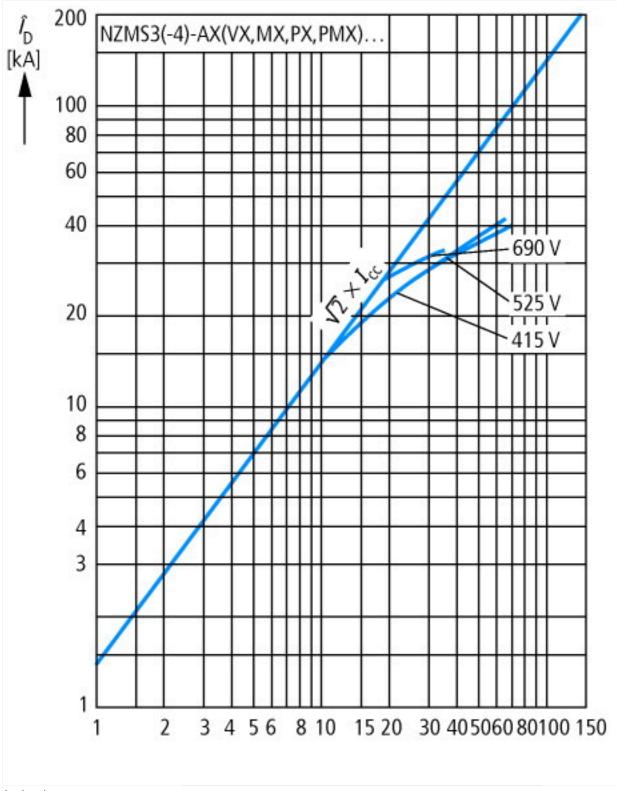
Low-voltage industrial components (EG000017) / Power circuit-breaker for trafo/generator/installation protection (EC000228)

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

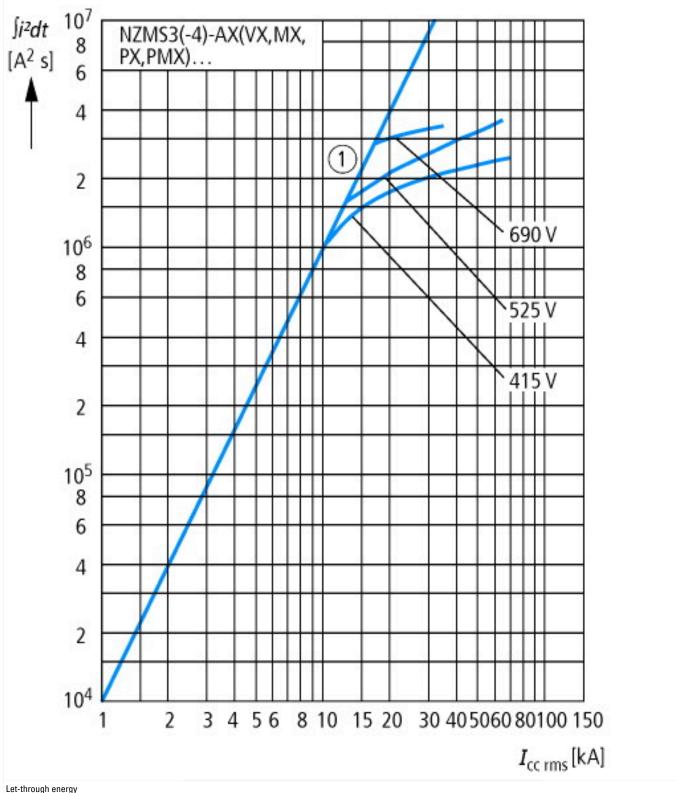
Rated permanent current lu	1	A	630
Rated voltage	١	V	690 - 690
Rated short-circuit breaking capacity Icu at 400 V, 50 Hz	ł	kA	70
Overload release current setting	/	A	252 - 630
Adjustment range short-term delayed short-circuit release	1	A	1.5 - 7
Adjustment range undelayed short-circuit release	/	A	2 - 8
Integrated earth fault protection			Yes
Type of electrical connection of main circuit			Other
Device construction			Built-in device slide-in technique (withdrawable)
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

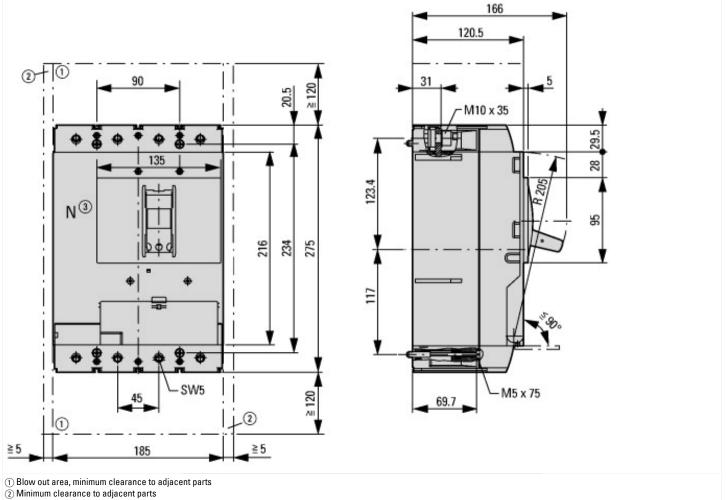
Number of auxiliary contacts as change-over contact	0
With switched-off indicator	No
With under voltage release	No
Number of poles	4
Position of connection for main current circuit	Front side
Type of control element	Rocker lever
Complete device with protection unit	Yes
Motor drive integrated	No
Motor drive optional	Yes
Degree of protection (IP)	IP20

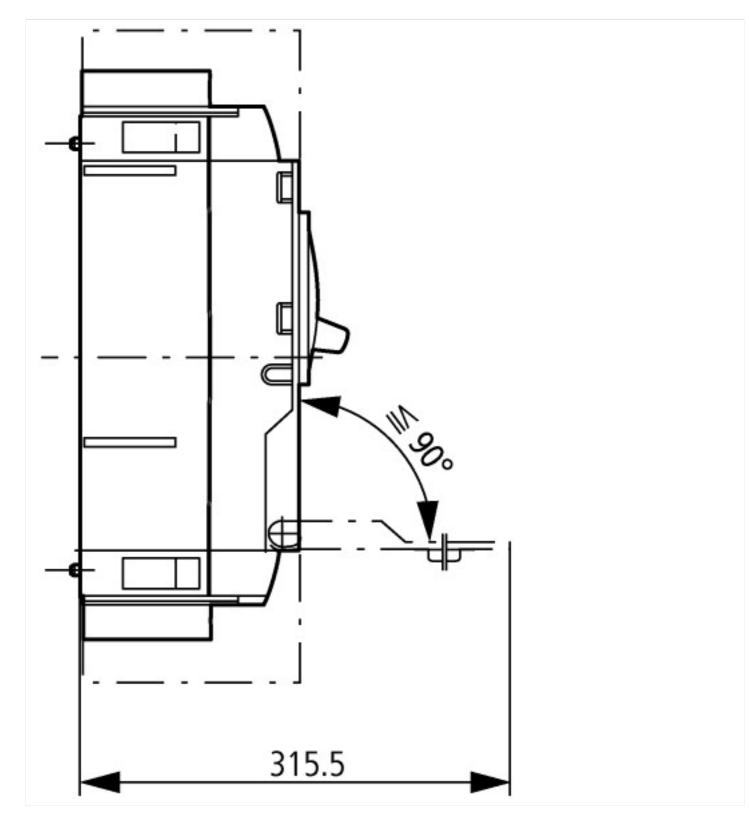
#### **Characteristics**



Let-through current







# 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
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