DATASHEET - NZMN3-AE630-AVE



Circuit-breaker, 3p, 630A, withdrawable unit



NZMN3-AE630-AVE 110842



Delivery program

Product range			Circuit-breaker
Protective function			System and cable protection
Standard/Approval			IEC
Installation type			Withdrawable
Release system			Electronic release
Construction size			NZM3
Description			R.m.s. value measurement and "thermal memory"
Number of poles			3 pole
Standard equipment			Screw connection
Switching capacity			
400/415 V 50 Hz	l _{cu}	kA	50
Rated current = rated uninterrupted current			
Rated current = rated uninterrupted current	$I_n = I_u$	А	630
Setting range			
Overload trip			
с‡	l _r	A	315 - 630
Short-circuit releases			
Non-delayed	I _i = I _n x		2 - 8

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
Weight	kg	6.34
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:

with withdrawable unit: - NZM3, N3: vertical, 90° right/left

- NZM4, N4: vertical

Direction of incoming supply as required Degree of protection In the operating controls area: IP20 (basic 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	
Device In the operating controls area: IP20 (basic degree of p Enclosures With insulating surround: IP40	
Enclosures With insulating surround: IP40	
	protection)
With door counling 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 630	
Rated surge voltage invariability U _{imp}	
Main contacts V 8000	
Auxiliary contacts V 6000	
Rated operational voltage Ue VAC 690	
Overvoltage category/pollution degree III/3	
Rated insulation voltage Ui V 1000	
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 105	
440 V 50/60 Hz I _{cm} kA 74	
525 V 50/60 Hz I _{cm} kA 53	
690 V 50/60 H IC KA 40	
Rated short-circuit breaking capacity I _{cn} I _{cn}	
Icu to IEC/EN 60947 test cycle 0-t-C0	
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	
Ics to IEC/EN 60947 test cycle 0-t-C0-t-C0 Ics kA 240 V 50/60 Hz Ics 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 13	
690 V 50/60 Hz Ics KA 5 Maximum back-up fuse, if the expected short-circuit of location exceed the switching capacity of the circuit-	
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	
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	
AC3	
400 V 50/60 Hz Operations 2000	
415 V 50/60 Hz Operations 2000	

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picket servicespicket servicespicket servicesRoter opper contoorImage: servicesImage: servicesRoter opper contoorImage: servicesImage: servicesSoldImage: services<				Screw connection
Roid coper anducor Roid coper anducor Roid coper anducor Roid coper anducor Back terminal Sea Se	Accessories required			NZM3-XAVS
BoxMarkMar	Optional accessories			Tunnel terminal
Solid2 × 16Standedx x 35 × 301Tunnel terminalx x 35 × 301Solidx x x 3Solidx x x x x x x x x x x x x x x x x x x	Round copper conductor			
Sranded Image: Standed in the state of the	Box terminal			
Image and the second of the	Solid		mm ²	2 x 16
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Botterminia and rae-side connection Image: side connection Direct on the writch Image: side connection Strandad Image: side connection Strandad Image: side connection Connection with extension Image: side connection Acticular conductor Image: side connection Tomol terminial Image: side connection Strandad Image: side connection	Stranded			
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Image: Part of the section with extensionImage: Part of the section wit	Direct on the switch			
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Stranded nm ² 1x(52 183) ²) Double hole nm ² 1x(50 - 240) Double hole ² Up to 240 mm ² can be connected depending on the cable manufacturer. Strip (number of segments x width x segment thickness)	Solid		mm ²	1 x 16
Dubble hole nm² 1x (50 - 240) 2x (50 - 240) Cu strip (number of segments xwidth x segment thickness) P P Box terminal nm 6x 16x 0.8 Cu strip (number of segments xwidth x segment thickness) nm 6x 16x 0.8 Box terminal nm 6x 16x 0.8 Cu strip (number of segments xwidth x segment thickness) nm 6x 16x 0.8 Box terminal nm 6x 16x 0.8 Flat copper strip, with holes nm 6x 16x 0.8 Flat copper strip, with holes nm 1x 22x 1.0 + 5x 32x 1.0 Connection width extension nm 1x 22x 1.0 + 5x 32x 1.0 Copper busbar (width xthickness) nm 1x 22x 1.0 + 5x 32x 1.0 Bott terminal and rear-side connection nm 1x 22x 1.0 + 5x 32x 1.0 Copper busbar (width xthickness) nm 1x 2x 1.0 + 5x 32x 1.0 Bott terminal and rear-side connection nm 1x 10 + 5x 10 +	Stranded			
kmm 2 x (50 - 240) 2 x (50 - 240) 2 y (bo 240 mm² can be connected depending on the cable manufacturer. 2 u tor store minal 2 y (bo 240 mm² can be connected depending on the cable manufacturer. Box terminal mm. mm 6 x 16 x 0.8 I was terminal and rear-side connection mm. mm 6 x 16 x 0.8 Bot terminal and rear-side connection mm. mm 6 x 16 x 0.8 Flat copper strip, with holes mm. mm 6 x 16 x 0.8 Connection width extension mm. mm 6 x 16 x 0.8 Copper bushar (width x thickness) mm. mm 6 x 16 x 0.8 Bot terminal and rear-side connection mm 0 x 32 x 1.0 + 5 x 32 x 1.0 Copper bushar (width x thickness) mm 0 x 32 x 1.0 + 5 x 32 x 1.0 Bot terminal and rear-side connection mm 0 x 32 x 1.0 + 5 x 32 x 1.0 Screw connection mm 0 x 10 x 5 5 mm Direct on the switch mm 0 x 5 5 I function width extension mm 0 x 5 5 I function width extension mm 0 x 5 5 I function the switch mm 0 x 5 5 I function the switch mm 0 x 5 5 I function the switch mm 0 x 5 5 I function the switch<	Stranded		mm ²	1 x (25 - 185) ²⁾
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Box terminal Imm Imm 6 × 16 × 0.8 min. max. mm 10× 24 × 1.0 5 × 24 × 1.0 (2 ×) 8 × 24 × 1.0 (2 ×) 8 × 24 × 1.0 (2 ×) 8 × 24 × 1.0 Bolt terminal and rear-side connection min. mm 6 × 16 × 0.8 Flat copper strip, with holes min. mm 6 × 16 × 0.8 Flat copper strip, with holes min. mm 6 × 16 × 0.8 Connection width extension max. mm 6 × 16 × 0.8 Copper busbar (width x thickness) max. mm 10 × 32 × 1.0 + 5 × 32 × 1.0 Bolt terminal and rear-side connection mm (2 × 10 × 50 × 1.0 Copper busbar (width x thickness) mm (2 × 10 × 50 × 1.0 Bolt terminal and rear-side connection mm (2 × 10 × 50 × 1.0 Screw connection mm (2 × 10 × 50 × 1.0 Direct on the switch mm (2 × 10 × 50 × 1.0 Direct on the switch mm (2 × 10 × 50 × 1.0 Image: I				$^{\rm 2)}$ Up to 240 $\rm mm^2$ can be connected depending on the cable manufacturer.
init min.	Cu strip (number of segments x width x segment thickness)			
Image: space of the system of the s	Box terminal			
Image: Single		min.	mm	6 x 16 x 0.8
Flat copper strip, with holes min. mm 6x 16x 0.8 Flat copper strip, with holes max. mm 10x 32x 1.0 + 5x 32x 1.0 Connection width extension mm (2x) 10x 50x 1.0 Copper busbar (width x thickness) mm		max.	mm	+ 5 x 24 x 1.0
Flat copper strip, with holes max. mm 10×32×1.0+5×32×1.0 Connection width extension mm (2×) 10×50×1.0 Copper busbar (width x thickness) mm (2×) 10×50×1.0 Bolt terminal and rear-side connection mm Mm Screw connection mm MI0 Direct on the switch min. mm Mm Image: Strew connection mm Screw connection MI0 Image: Strew connection mm Screw connection Screw connection Image: Strew connection mm Screw connection MI0 Image: Strew connection mm Screw connection Screw connection Image: Strew connection min. mm Screw connection Image: Strew connection mm Screw connection Screw connection Image: Strew connection Image: Strew connection Screw connection Screw connection Image: Strew connection	Bolt terminal and rear-side connection			
Connection width extension mm (2x) 10 x 50 x 1.0 Copper busbar (width x thickness) mm MM Bolt terminal and rear-side connection MM MIO Screw connection MM MIO Direct on the switch MM Socrew connection Min. Mm Socrew connection Min. Mm Socrew connection Direct on the switch MM Socrew connection Min. Mm Socrew connection	Flat copper strip, with holes	min.	mm	6 x 16 x 0.8
Copper busbar (width x thickness) mm Bolt terminal and rear-side connection MM Screw connection MI0 Direct on the switch mm Imax mm Sorrege Sorrege Connection width extension mm	Flat copper strip, with holes	max.	mm	10 x 32 x 1.0 + 5 x 32 x 1.0
Bolt terminal and rear-side connection Image: Screw connection Image: Screw connection Screw connection Image: Screw connection M10 Direct on the switch Image: Screw connection Image: Screw connection Image: Screw connection Image: Screw connection Image: Screw connection Image: Screw connection Image: Screw connection Image: Screw connection Image: Screw connection width extension Image: Screw connection Image: Screw connection	Connection width extension		mm	(2 x) 10 x 50 x 1.0
Screw connection MD Direct on the switch min. mm 0 max. mm Connection width extension mm 30 x 10 +30 x 5	Copper busbar (width x thickness)	mm		
Direct on the switch Image: Second	Bolt terminal and rear-side connection			
min. mm 20 x 5 max. mm 30 x 10 + 30 x 5 Connection width extension mm	Screw connection			M10
max. mm $30 \times 10 + 30 \times 5$ Connection width extension mm	Direct on the switch			
Connection width extension mm		min.	mm	20 x 5
		max.	mm	
			mm	
Connection width extension max. mm 2 x (10 x 50)		max.	mm	2 x (10 x 50)
Control cables	Control cables			
mm ² 1 × (0.75 - 2.5) 2 × (0.75 - 1.5)			mm ²	

Design verification as per IEC/EN 61439			
Technical data for design verification			
Rated operational current for specified heat dissipation	I _n	А	630
Equipment heat dissipation, current-dependent	P _{vid}	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

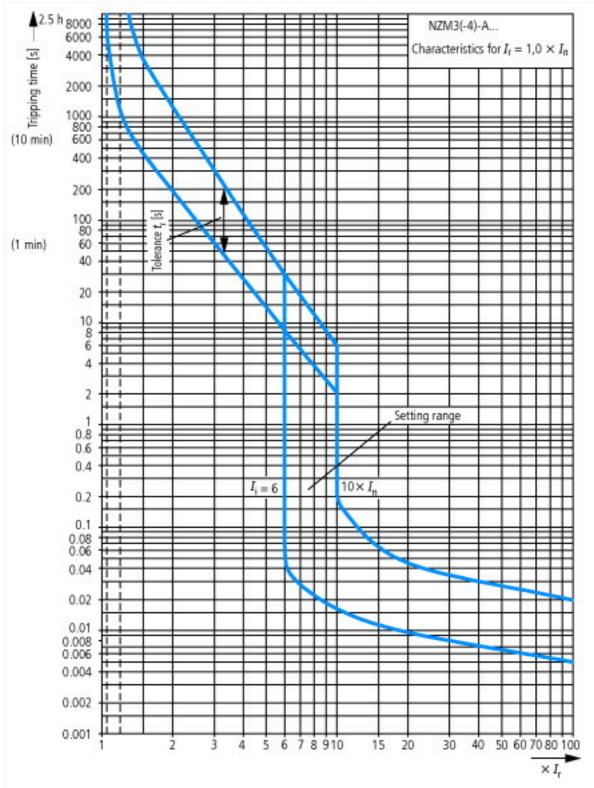
Low-voltage industrial components (EG000017) / Power circuit-breaker for trafo/generator/installation protection (EC000228)

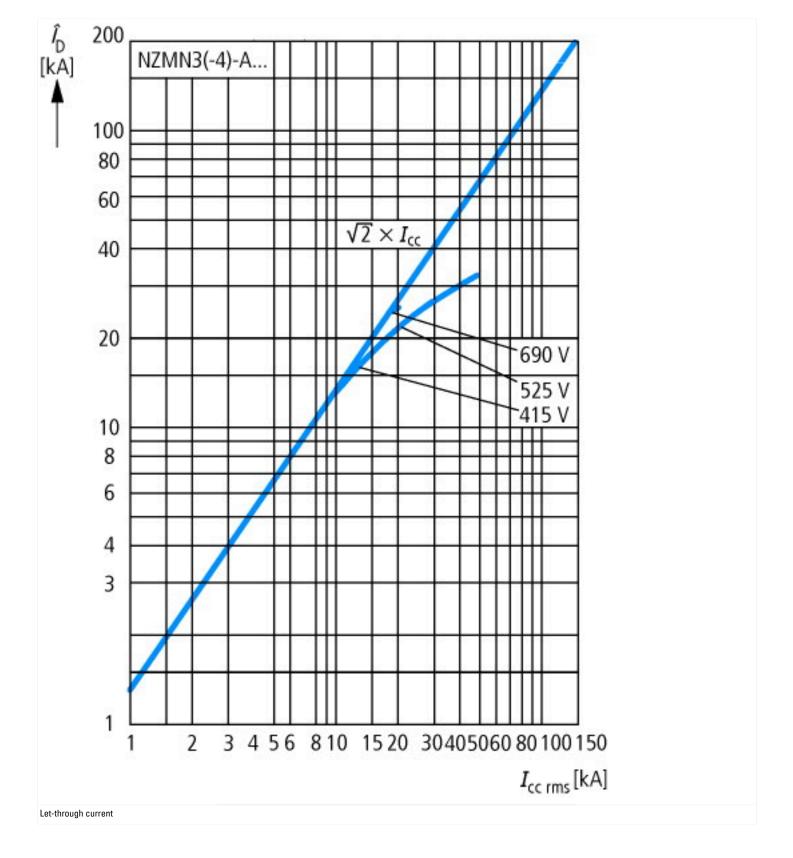
Electric engineering, automation, process control engineering / Low-voltage switch technology / Circuit breaker (LV < 1 kV) / Circuit breaker for power transformer, generator and system protection (ecl@ss10.0.1-27-37-04-09 [AJZ716013])

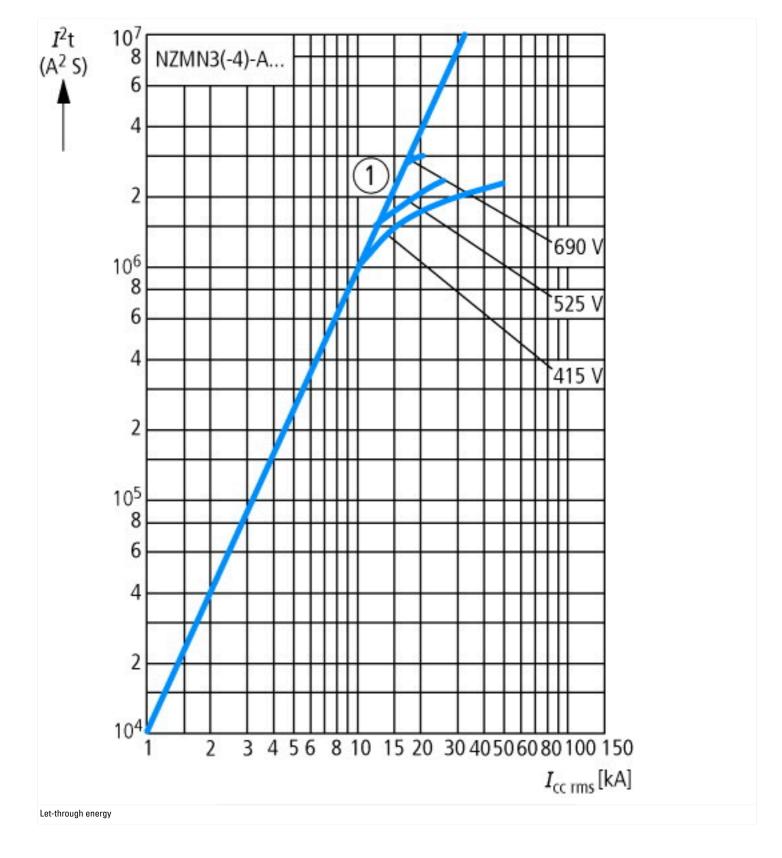
Rated permanent current lu	А	630
Rated voltage	V	690 - 690
Rated short-circuit breaking capacity Icu at 400 V, 50 Hz	kA	50
Overload release current setting	А	315 - 630
Adjustment range short-term delayed short-circuit release	А	0 - 0
Adjustment range undelayed short-circuit release	А	1260 - 5040
Integrated earth fault protection		No
Type of electrical connection of main circuit		Screw connection
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		3

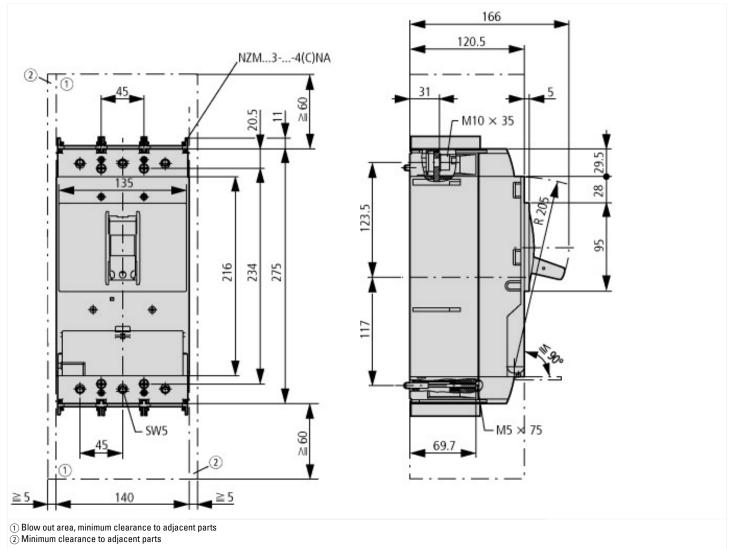
Position of connection for main current circuit	Front side
Type of control element	Rocker lever
Complete device with protection unit	Yes
Motor drive integrated	No
Motor drive optional	Yes
Degree of protection (IP)	IP20

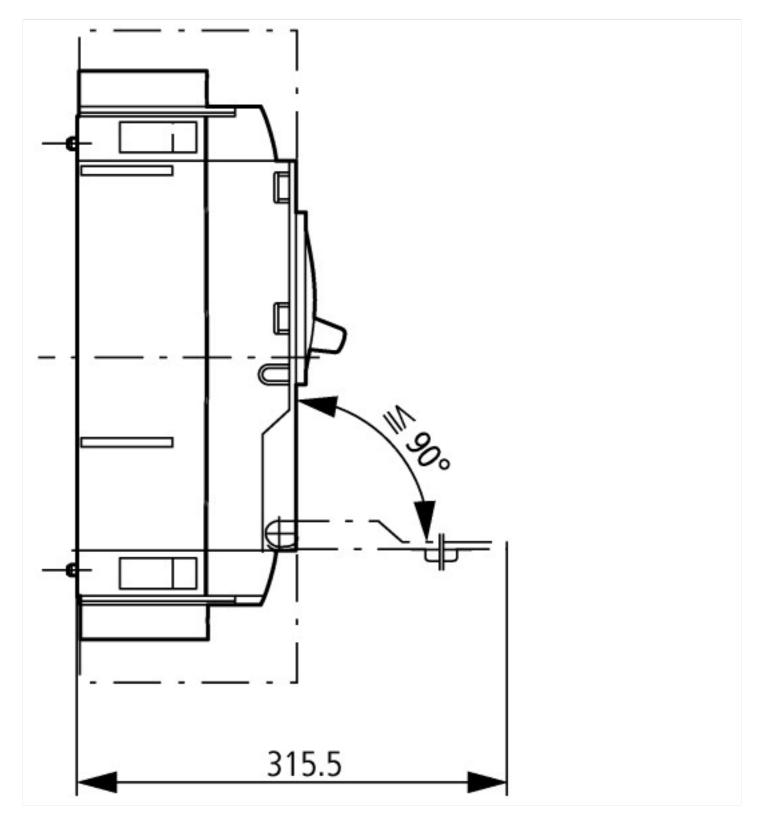
Characteristics











Additional product information (links)

Temperature dependency, Derating	http://ecat.moeller.net/flip-cat/?edition=HPLEN&startpage=17.172
CurveSelect characteristics program	http://www.eaton.eu/DE/Europe/Electrical/CustomerSupport/ConfigurationTools/CharacteristicsProgram/ index.htm
additional technical information for NZM power switch	ftp://ftp.moeller.net/DOCUMENTATION/PDF/nzm_technic_de_en.pdf