



## Circuit-breaker, 4p, 630A, plug-in module

Part no.	NZMN3-4-VE630-SVE
Catalog No.	168507
Alternate Catalog No.	NZMN3-4-VE630-SVE
EL-Nummer (Norway)	4357592

Similar to illustration

Powering Business Worldwide™

## Delivery program

Product range	Circuit-breaker		
Protective function	Systems, cable, selectivity and generator protection		
Standard/Approval	IEC		
Installation type	Plug-in units		
Release system	Electronic release		
Construction size	NZM3		
Description	R.m.s. value measurement and "thermal memory" Adjustable time delay setting to overcome current peaks $t_r$ at $6 \times I_r$ also infinity (without overload releases) Adjustable delay time $t_{sd}$		
Number of poles	4 pole		
Standard equipment	Screw connection		
<b>Rated current = rated uninterrupted current</b>			
Rated current = rated uninterrupted current	$I_n = I_u$	A	630
Neutral conductor	% of phase conductor	%	100
<b>Setting range</b>			
Overload trip	$I_r$	A	315 - 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	$^{\circ}\text{C}$	- 40 - + 70			
Operation	$^{\circ}\text{C}$	- 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 				
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	630
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	1000
Use in unearthing supply systems		V	$\leq 690$

### 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 Hz	$I_c$	kA	40
Rated short-circuit breaking capacity $I_{cn}$	$I_{cn}$		
$I_{cs}$ to IEC/EN 60947 test cycle 0-t-CO-t-CO	$I_{cs}$	kA	
240 V 50/60 Hz	$I_{cs}$	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	$I_{cs}$	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			
$t = 0.3 \text{ s}$	$I_{cw}$	kA	3.3
$t = 1 \text{ s}$	$I_{cw}$	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
AC-3			
400 V 50/60 Hz	Operations		2000
415 V 50/60 Hz	Operations		2000
690 V 50/60 Hz	Operations		2000
Max. operating frequency		Ops/h	60
Total break time at short-circuit		ms	$< 10$

### Terminal capacity

Standard equipment		Screw connection
Accessories required		NZM3-XSVS
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)	mm		
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) 2 x (0.75 - 1.5)

## Design verification as per IEC/EN 61439

Technical data for design verification			
Rated operational current for specified heat dissipation	I <sub>n</sub>	A	630
Equipment heat dissipation, current-dependent	P <sub>vid</sub>	W	178.61
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.

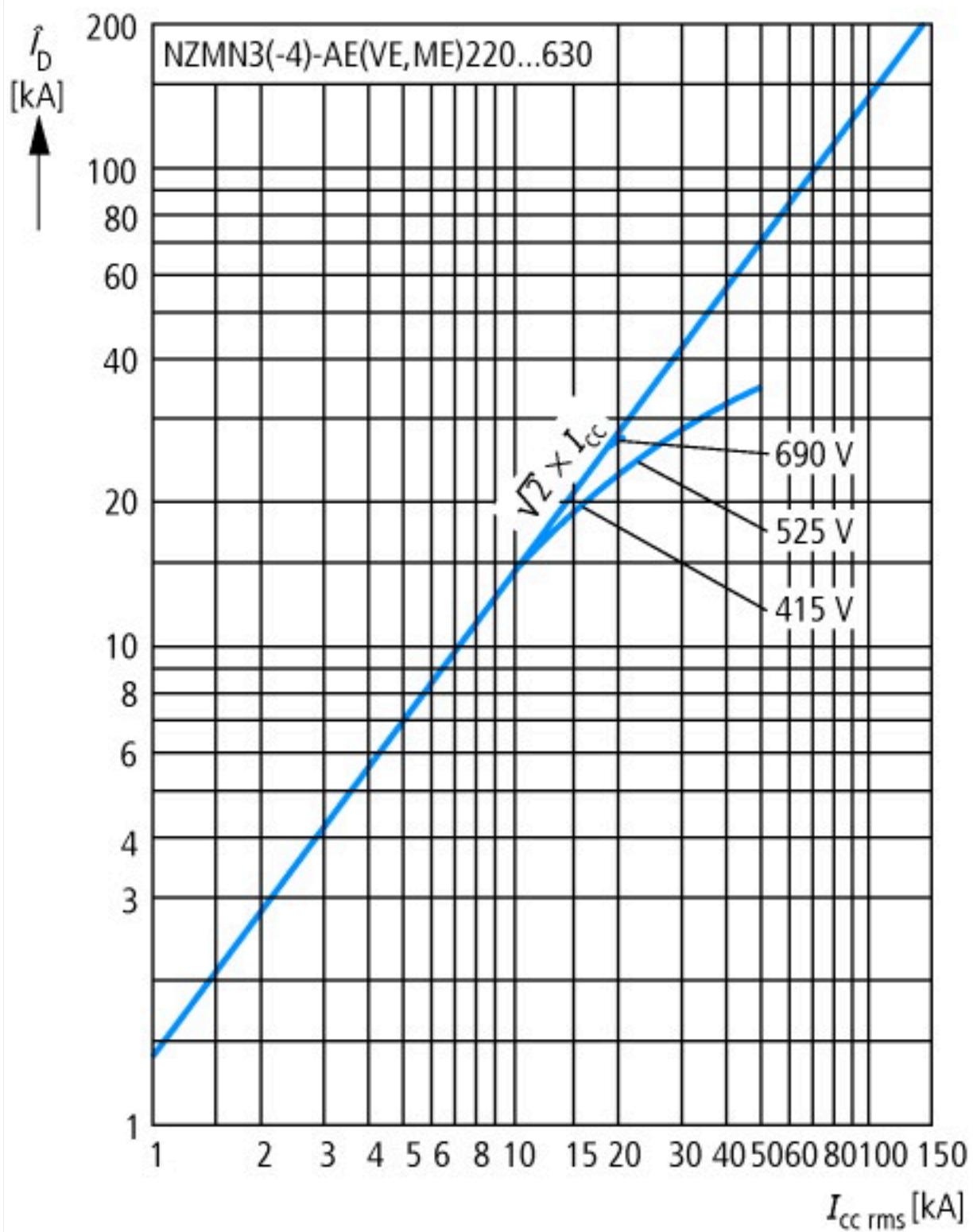
## Technical data ETIM 7.0

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

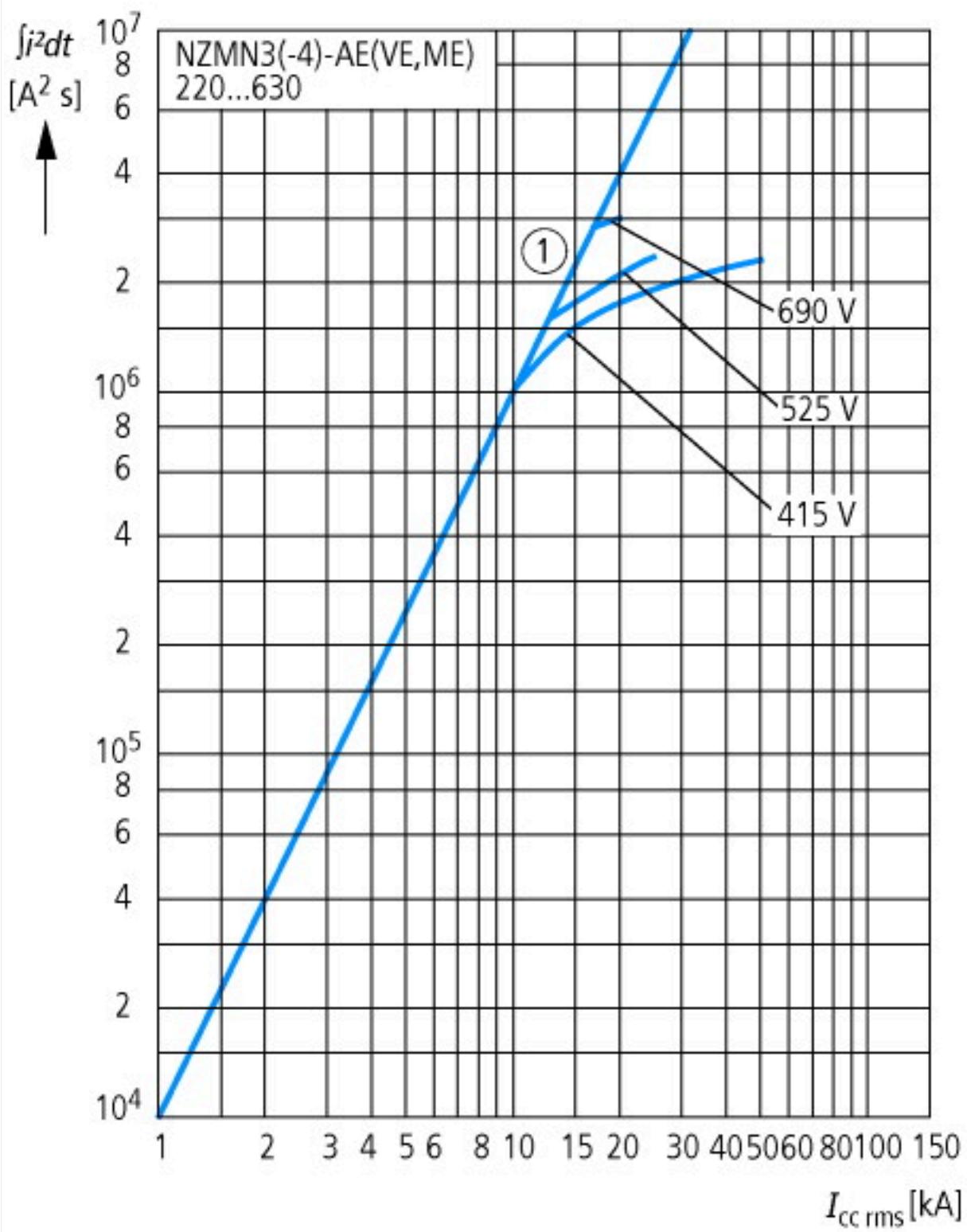
Electric engineering, automation, process control engineering / Low-voltage switch technology / Circuit breaker (LV < 1 kV) / Circuit breaker for power transformer, generator and system protection (ecl@ss10.0.1-27-37-04-09 [AJZ716013])

Rated permanent current $I_p$	A	630
Rated voltage	V	690 - 690
Rated short-circuit breaking capacity $I_{cu}$ at 400 V, 50 Hz	kA	50
Overload release current setting	A	315 - 630
Adjustment range short-term delayed short-circuit release	A	472.5 - 4410
Adjustment range undelayed short-circuit release	A	1260 - 5040
Integrated earth fault protection		No
Type of electrical connection of main circuit		Screw connection
Device construction		Built-in device plug-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

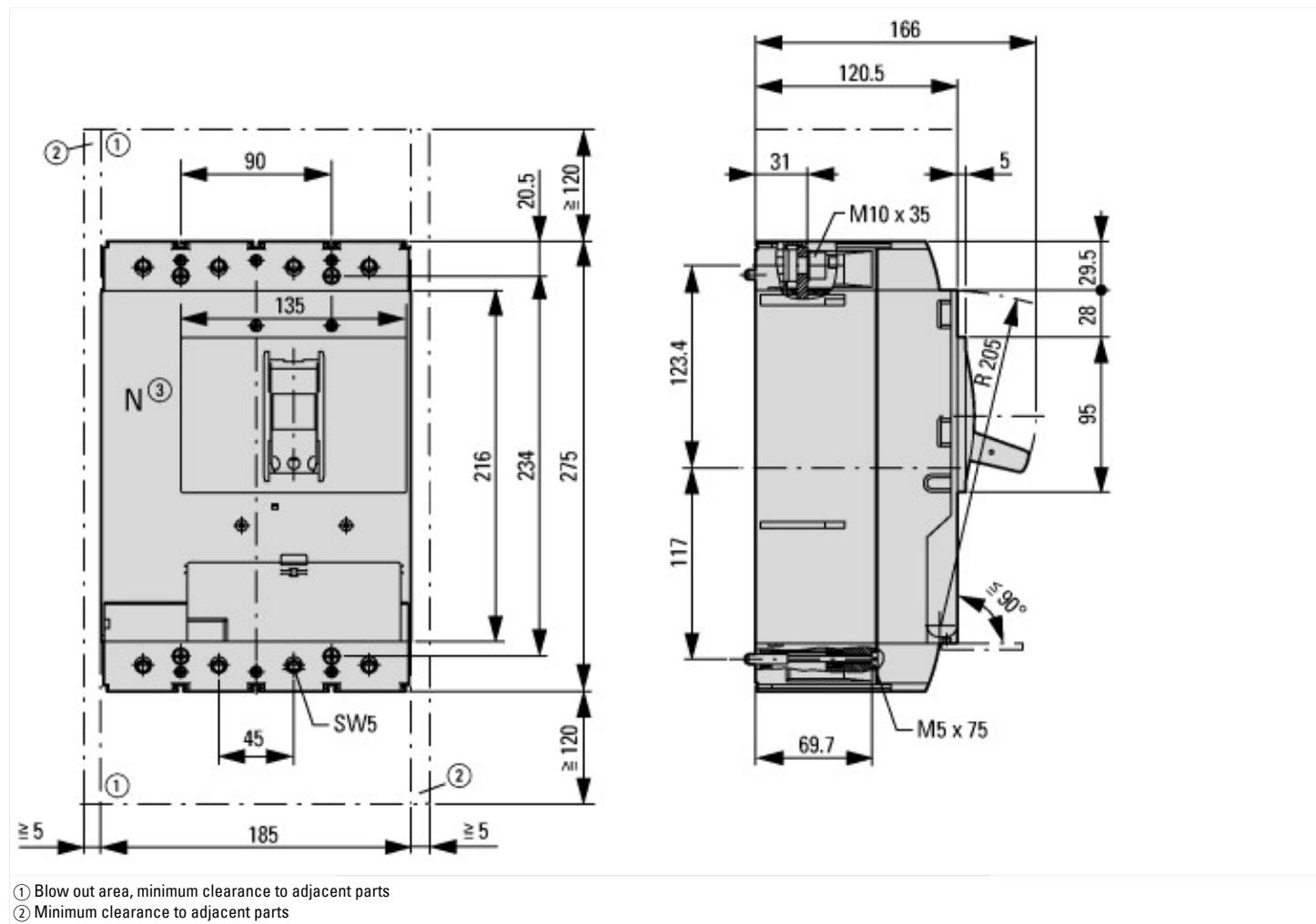


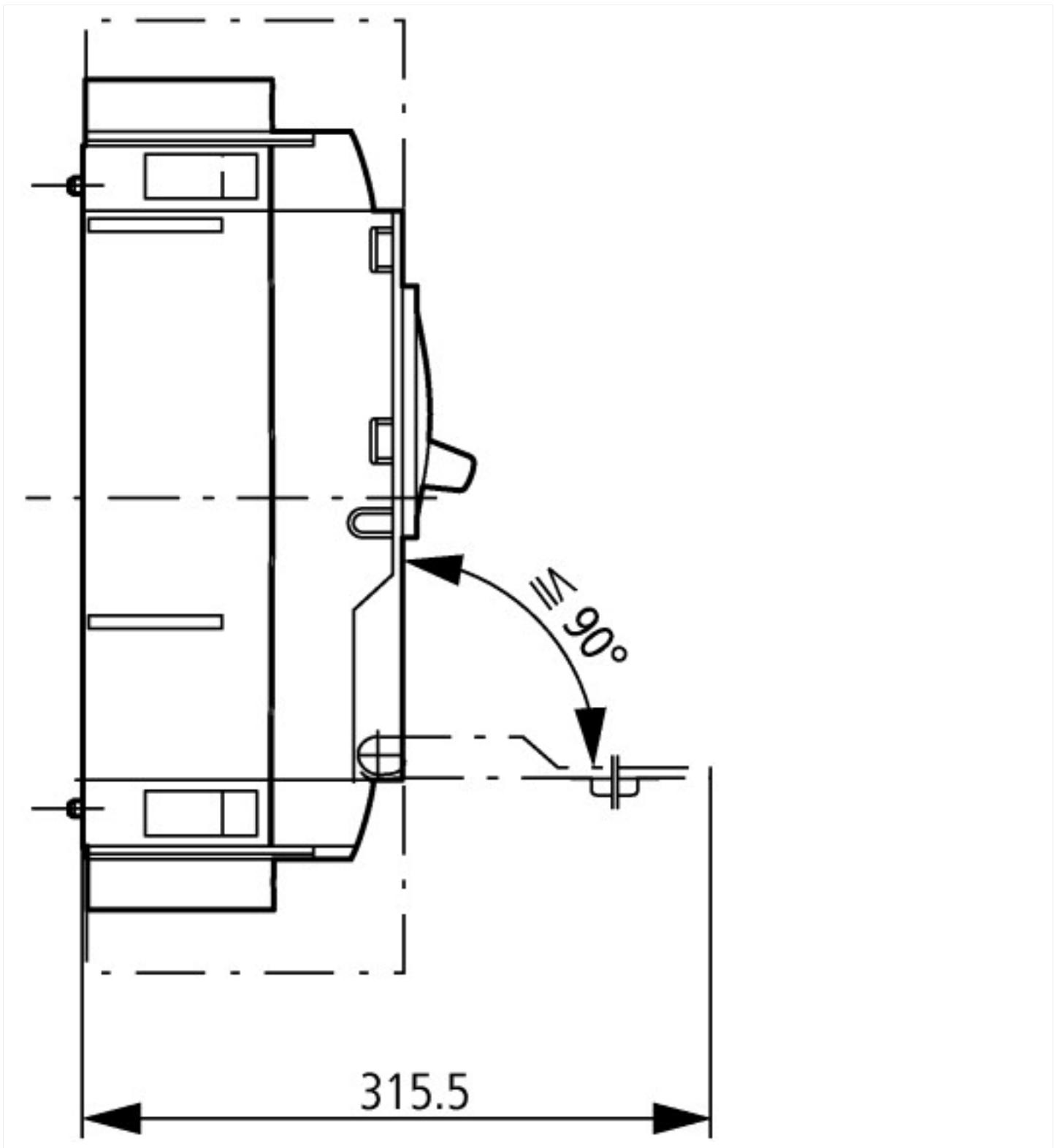
Let-through current

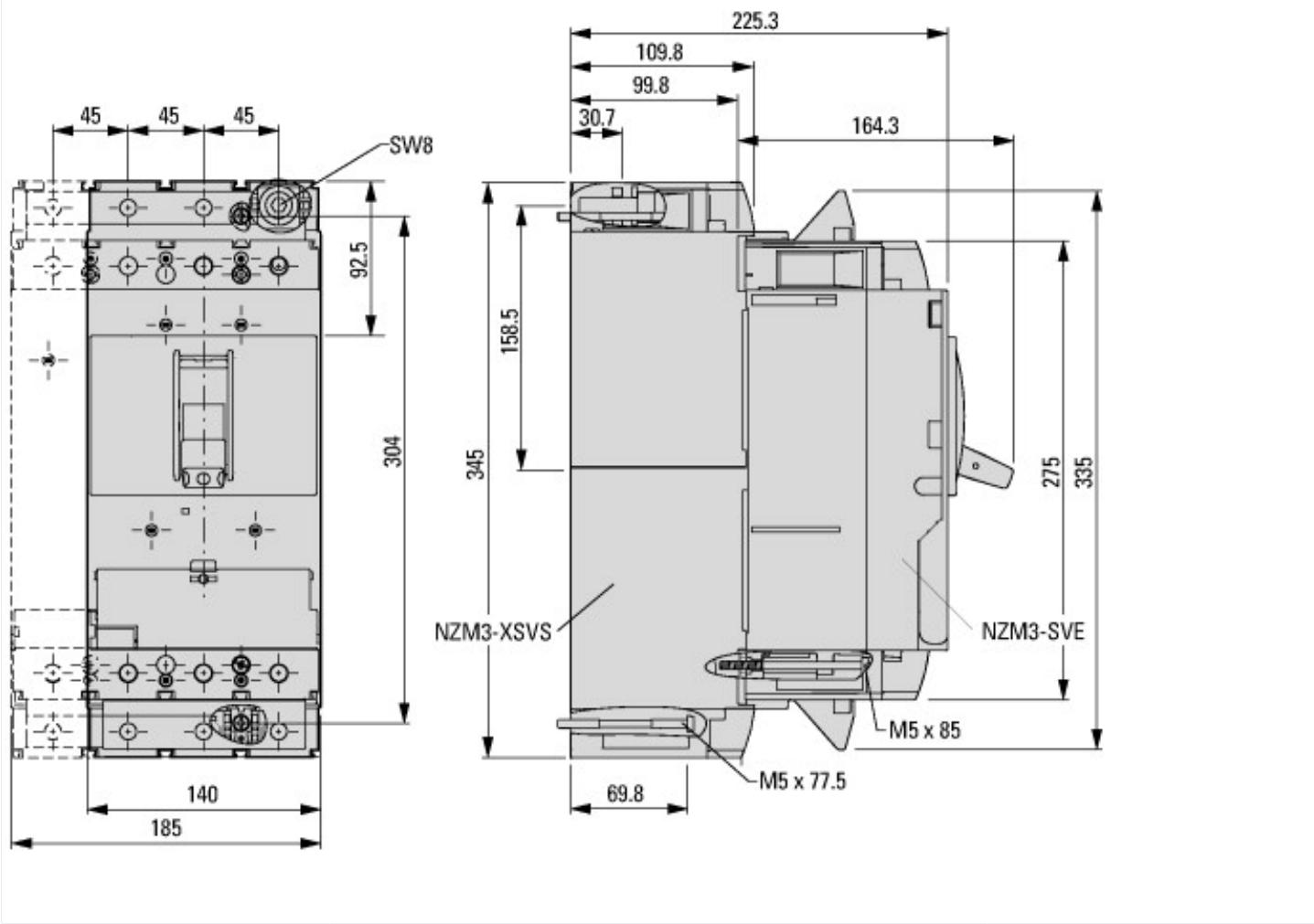


Let-through energy

## Dimensions







## Additional product information (links)

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)