DATASHEET - NZMH2-4-VE250-SVE



Circuit-breaker, 4p, 250A, plug-in module

Part no. NZMH2-4-VE250-SVE Catalog No. 113393

EL-Nummer (Norway) 4357068





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			NZM2
Description			R.m.s. value measurement and "thermal memory" Adjustable time delay setting to overcome current peaks tr at 6 x Ir also infinity (without overload releases) Adjustable delay time tsd $\rm i^2t$ constant function: fixed OFF Set value in neutral conductor is synchronous with set value Ir of main pole.
Number of poles			4 pole
Standard equipment			Screw connection
Switching capacity			
400/415 V 50 Hz	I _{cu}	kA	150
Rated current = rated uninterrupted current			
Rated current = rated uninterrupted current	$I_n = I_u$	Α	250
Neutral conductor	% of phase conductor	%	100
Setting range			
Overload trip			
中	I _r	Α	125 - 250
Main pole	l _r	Α	125 - 250
Short-circuit releases			
Non-delayed	$I_i = I_n \times \dots$		3000 A fixed
Delayed X 1 >	$I_{sd} = I_r x \dots$		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			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 with remote operator: - 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)			Temperature dependency, Derating
Circuit-breakers	1 . 1	۸	350
Rated current = rated uninterrupted current	I _n = I _u	Α	250
Rated surge voltage invariability Main contacts	U _{imp}	V	9000
Main contacts		V	8000
Auxiliary contacts Rated operational voltage	U _e	V V AC	6000 690
Overvoltage category/pollution degree	O _e	V AC	III/3
Rated insulation voltage	Ui	V	1000
•	Ui		
Use in unearthed supply systems Switching capacity		V	≦ 690
Rated short-circuit making capacity	I _{cm}		
240 V	I _{cm}	kA	330
400/415 V	I _{cm}	kA	330
440 V 50/60 Hz	I _{cm}	kA	286
525 V 50/60 Hz	I _{cm}	kA	105
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	lcu	kA	
240 V 50/60 Hz	I _{cu}	kA	150
400/415 V 50/60 Hz	I _{cu}	kA	150
440 V 50/60 Hz	I _{cu}	kA	130
525 V 50/60 Hz	I _{cu}	kA	50
690 V 50/60 Hz	I _{cu}	kA	20
Ics to IEC/EN 60947 test cycle 0-t-C0-t-C0	Ics	kA	
240 V 50/60 Hz	I _{cs}	kA	150
400/415 V 50/60 Hz	I _{cs}	kA	150
440 V 50/60 Hz	I _{cs}	kA	130
525 V 50/60 Hz	I _{cs}	kA	37.5
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 s	I _{cw}	kA	1.9
t=1 s	I _{cw}	kA	1.9
-	- CVV		

Unique control and which max 29 % trip by abundwherhorhorhorhorhorhorhorhorhorhorhorhorhor	Utilization category to IEC/EN 60947-2			A
March Marc		Operations		
AC-1		operations		20000
#400 V 50800 Hz				
15 17 50 500 1st 10 1000 10 10				
### 15 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0				
AC-3 400 V \$3,00 it 2 500 V \$3,00 it 2 600 V \$3,00 it 2 6	415 V 50/60 Hz			10000
400 V 50000 Hz	690 V 50/60 Hz	Operations		7500
115 V 5050 Hz 105 V 5050 H	AC3			
Max. operating frequency Operations Op	400 V 50/60 Hz	Operations		6500
Max. operating frequency Opath 128 Total track time at short-crost ms 10 Terminal capacity Screw connection Standard equipment NZM2 4 XSVS Accessories required NZM2 4 XSVS Opporal accessories Screw connection Round capper conductor Screw connection on rear Box turninal Turnel terminal Solid mm² 1 x (0 - 16) Stranded mm² 1 x (5 - 185) Solid mm² 1 x (5 - 185) Solid mm² 1 x (2 - 186) Solid mm² 1 x (2 - 185) Stranded mm² <th< td=""><td>415 V 50/60 Hz</td><td>Operations</td><td></td><td>6500</td></th<>	415 V 50/60 Hz	Operations		6500
Total break time at shart-circuit 5 common to expecting 5 common to expecting 5 common to expect to mendation 5 common to expect to mendation 6 common to expect to mendation 6 common to expect to mendation to expect to ex	690 V 50/60 Hz	Operations		5000
Terminal capacity Sundard equipment Server connection Optional accessories KEAP SVS Optional accessories Fore terminal connection on rear Round capper ceduator KEAP SVS Boot terminal KEAP SVS Solid Manual SVS Stranded KEAP SVS Stranded KEAP SVS Solid Manual SVS Solid Manual SVS Stranded Manual SVS Stranded Manual SVS Bolt terminal and rear-side connection Manual SVS Direct on the switch Manual SVS Stranded Manual SVS	Max. operating frequency		Ops/h	120
Sandard equipment Service woonnection NZMZ 4 XSVS Optional accessories Box terminal terminal connection on rear Box terminal Mm² 2 x 10 - 10 graph (more terminal connection on rear Salid mm² 2 x 10 - 10 graph (more terminal connection on rear Salid mm² 2 x 10 - 10 graph (more terminal connection) Stranded mm² 1 x 15 graph (more terminal connection) Stranded mm² 1 x 125 - 185) Bolt terminal and rear-side connection mm² 1 x 125 - 185) Solid mm² 1 x 125 - 185) Alcircular conductor mm² 1 x 125 - 185) Tunnol terminal mm² 1 x 125 - 185) Stranded mm² 1 x 125 - 185) Stranded mm² 1 x 125 - 185) Custic number of segments x width x segment thickness) mm² 2 x 125 - 185) Box terminal			ms	<10
Accessories required VAMPA - AVSVS Optional accessories Box terminal commentation and immentational commentation on reserving and commentation and commentation on reserving and commentation and c				
				Screw connection
Tunnel terminal connection on rear Tunnel terminal connection Tunnel terminal connecti				NZM2-4-XSVS
Box terminal				Tunnel terminal
Solid mm² 1x (10 - 16) 2x (6 - 16) 1x (12 - 18) 2x (6 - 16) 1x (12 - 18) 2x (6 - 16) 1x (12 - 18) 2x (2 - 270) 1x (12 - 18) 2x (2 - 180) 1x (2 - 185) 1x (2 - 185) 1x (2 - 185) 1x (2 - 185) 2x (2 - 16) 2x (6 - 16)				
			2	1 x (10 - 16)
Tunnel terminal				2 x (6 - 16)
Solid Stranded S			mm ²	
Stranded 1-hole mm² 1x (25 - 185)				
1-hole	Solid		mm ²	1 x 16
Bolt terminal and rear-side connection Direct on the switch	Stranded			
Direct on the switch mm² 1x (10 - 16) 2x (6 - 16) Stranded x (25 - 16) x (25 - 18) At circular conductor x (25 - 70) x (25 - 70) Tunnel terminal y x (25 - 70) x (25 - 70) Stranded y x (25 - 70) x (25 - 70) Stranded y x (25 - 185) x (25 - 185) Stranded x (25 - 185) x (25 - 185) Cu strip (number of segments x width x segment thickness) x (25 - 185) x (25 - 185) Box terminal min. mm x 2 9 x 0.8 x (25 - 185) Box terminal and rear-side connection min. mm x 10 x 16 x 0.8 x (25 x 1.55 x 0.8 Bolt terminal and rear-side connection min. mm x 16 x 0.8 x (25 x 2.6 x 0.8 Copper busbar (width x thickness) mm 10 x 24 x 0.8 x (25 x 0.8) Bolt terminal and rear-side connection mm	1-hole		mm^2	1 x (25 - 185)
Num	Bolt terminal and rear-side connection			
Stranded	Direct on the switch			
Al circular conductor Tunnel terminal Solid mm² 1 x 16	Solid		mm ²	
Tunnel terminal mm² 1 x 16 Stranded mm² 1 x (25 - 185) Stranded mm² 1 x (25 - 185) Cu strip (number of segments x width x segment thickness) mm² 1 x (25 - 185) Box terminal min. mm 2 x 9 x 0.8 Box terminal and rear-side connection max. mm 10 x 16 x 0.8 (2x) 8 x 15.5 x 0,8 Bolt terminal and rear-side connection min. mm 2 x 16 x 0.8 Flat copper strip, with holes max. mm 10 x 24 x 0.8 Copper busbar (width x thickness) mm 10 x 24 x 0.8 Bolt terminal and rear-side connection mm M8 Screw connection M8 Direct on the switch min. mm 16 x 5	Stranded		mm ²	
Solid Stranded Stranded Stranded Cu strip (number of segments x width x segment thickness) Box terminal min. mm 2 x 9 x 0.8 max. mm 10 x 16 x 0.8 (2x) 8 x 15.5 x 0,8 Bolt terminal and rear-side connection Flat copper strip, with holes Flat copper strip, with holes Flat copper strip, with holes Max. mm 10 x 24 x 0.8 Copper busbar (width x thickness) mm Bolt terminal and rear-side connection Screw connection Screw connection Direct on the switch min. mm 16 x 5	Al circular conductor			
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Stranded Cu strip (number of segments x width x segment thickness) Box terminal min. mm 2x 9 x 0.8 max. mm 10 x 16 x 0.8 (2x) 8 x 15.5 x 0.8 Bolt terminal and rear-side connection Flat copper strip, with holes Flat copper strip, with holes Max. mm 2x 16 x 0.8 (2x) 8 x 15.5 x 0.8 Flat copper strip, with holes Max. mm 10 x 24 x 0.8 Flat copper strip, with holes Max. mm 10 x 24 x 0.8 Copper busbar (width x thickness) Bolt terminal and rear-side connection Screw connection Direct on the switch min. mm 16 x 5	Stranded			
Cu strip (number of segments x width x segment thickness) Box terminal min. mm 2x 9x 0.8 max. mm 10x 16x 0.8 (2x) 8x 15.5x 0,8 Bolt terminal and rear-side connection Flat copper strip, with holes min. mm 2x 16x 0.8 Flat copper strip, with holes max. mm 10x 24x 0.8 Copper busbar (width x thickness) mm Bolt terminal and rear-side connection Screw connection Direct on the switch M8			2	1 x (25 - 185)
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Bolt terminal and rear-side connection Flat copper strip, with holes Flat copper strip, with holes max. mm 2 x 16 x 0.8 Flat copper strip, with holes max. mm 10 x 24 x 0.8 Copper busbar (width x thickness) mm Bolt terminal and rear-side connection Screw connection Direct on the switch min. mm 16 x 5				
Bolt terminal and rear-side connection Flat copper strip, with holes Flat copper strip, with holes min. mm 2 x 16 x 0.8 Flat copper strip, with holes max. mm 10 x 24 x 0.8 Copper busbar (width x thickness) mm Screw connection Screw connection Direct on the switch min. mm 16 x 5		min.	mm	2 x 9 x 0.8
Bolt terminal and rear-side connection Flat copper strip, with holes min. mm 2 x 16 x 0.8 Flat copper strip, with holes max. mm 10 x 24 x 0.8 Copper busbar (width x thickness) mm Screw connection Screw connection Direct on the switch min. mm 16 x 5		max.	mm	
Flat copper strip, with holes min. mm 2 x 16 x 0.8 Flat copper strip, with holes max. mm 10 x 24 x 0.8 Copper busbar (width x thickness) mm Bolt terminal and rear-side connection Screw connection M8 Direct on the switch min. mm 16 x 5	Date in the state of			(ZX) & X 13.5 X U,8
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Copper busbar (width x thickness) Bolt terminal and rear-side connection Screw connection Direct on the switch min. mm 16 x 5				
Bolt terminal and rear-side connection Screw connection Direct on the switch min. mm 16 x 5			mm	10 x 24 x 0.8
Screw connection Direct on the switch min. mm 16 x 5		mm		
Direct on the switch min. mm 16 x 5				
min. mm 16 x 5				M8
	Direct on the switch			
max. mm 24 x 8		min.	mm	16 x 5
		max.	mm	24 x 8
Control cables	Control cables			
mm ² 1 x (0.75 - 2.5) 2 x (0.75 - 1.5)			mm ²	

D	esian	verification	as	per	IEC/EN	61439

2001gii 1011110411011 40 poi 120/211 01 100			
Technical data for design verification			
Rated operational current for specified heat dissipation	In	Α	250
Equipment heat dissipation, current-dependent	P _{vid}	W	51.56
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

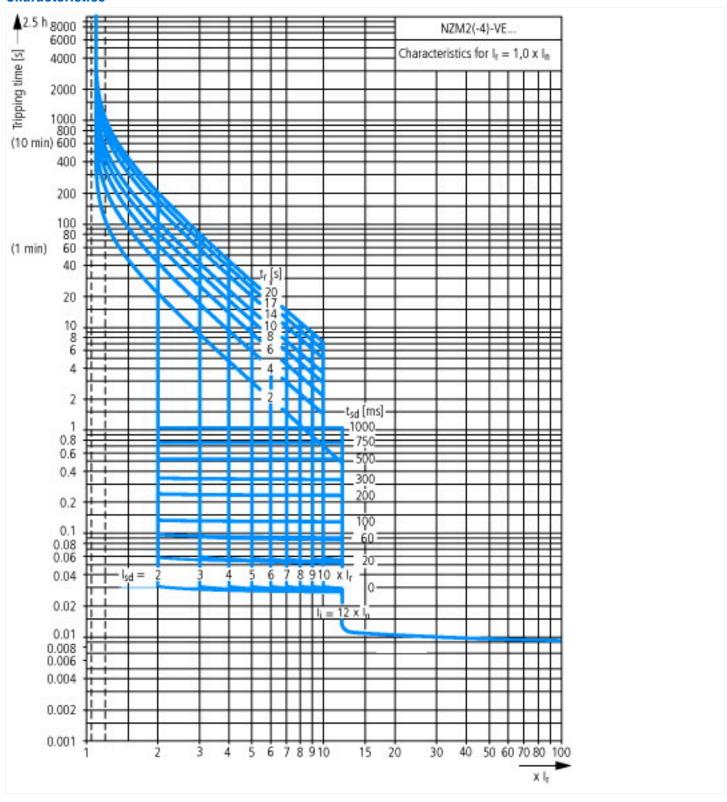
Low-voltage industrial components (EG000017) / Power circuit-breaker for trafo/generator/installation protection (EC000228)

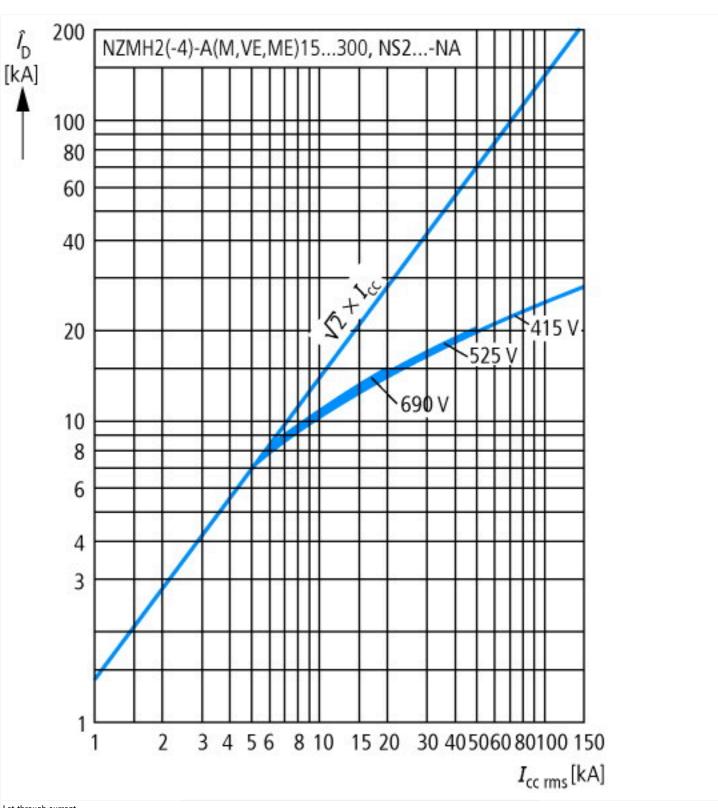
Electric engineering, automation, process control engineering / Low-voltage switch technology / Circuit breaker (LV < 1 kV) / Circuit breaker for power transformer, generator and system protection (eci@ss10.0.1-27-37-04-09 [AJZ716013])

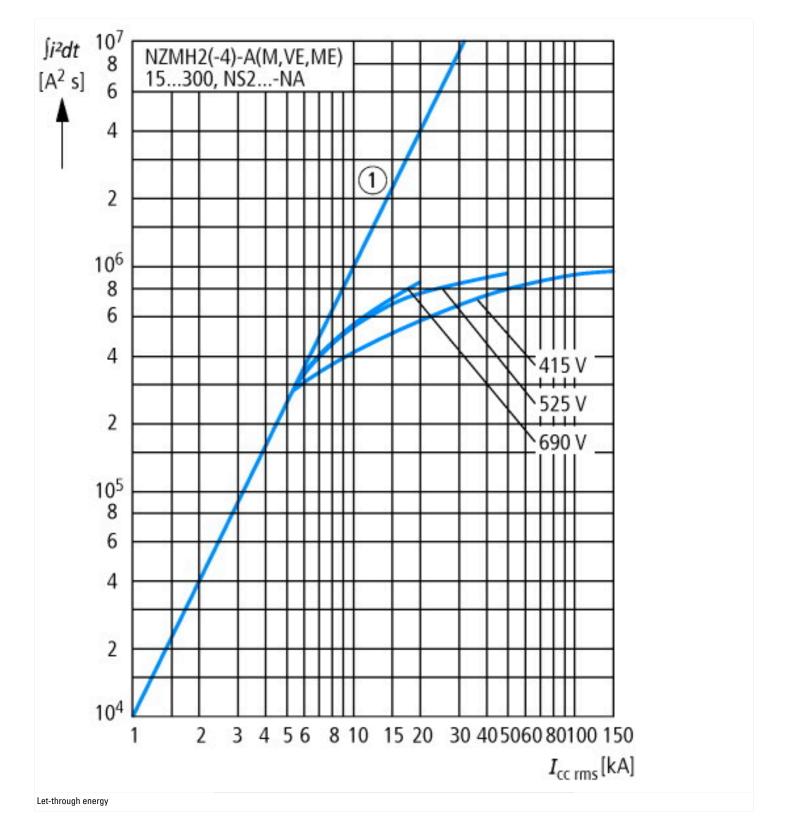
protection (ecl@ss10.0.1-27-37-04-09 [AJZ716013])		
Rated permanent current lu	Α	250
Rated voltage	V	690 - 690
Rated short-circuit breaking capacity Icu at 400 V, 50 Hz	kA	150
Overload release current setting	А	125 - 250
Adjustment range short-term delayed short-circuit release	Α	250 - 2500
Adjustment range undelayed short-circuit release	А	3000 - 3000
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		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 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

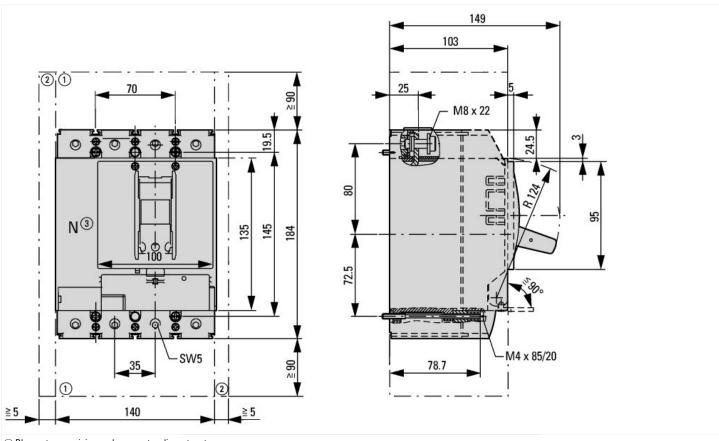


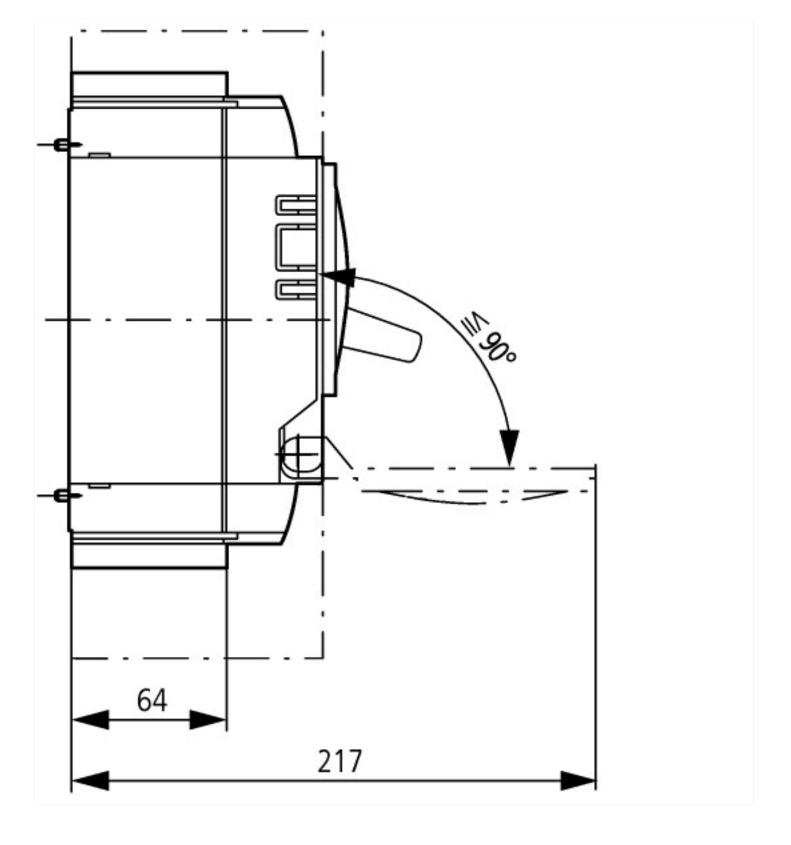


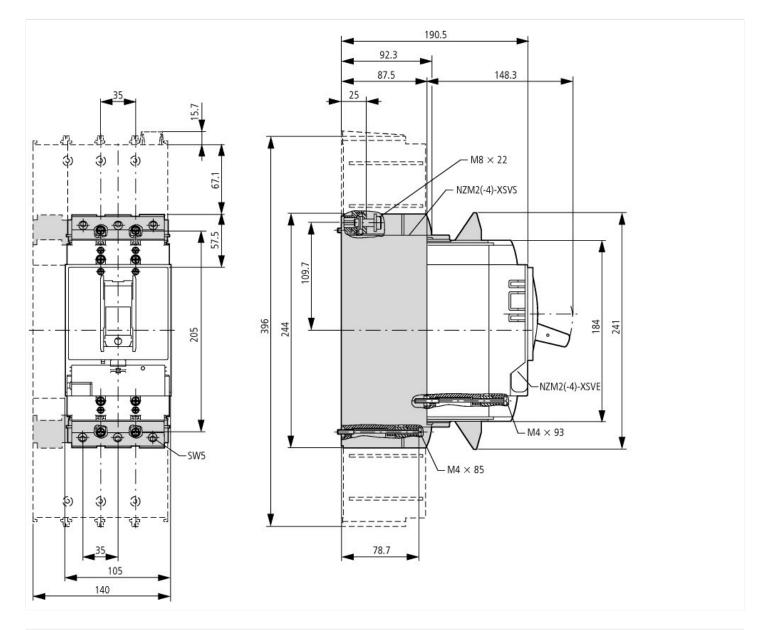


Eaton 113393 ED2022 V88.0 EN

Dimensions







Additional product information (links)

radiation product in the control (in the contr	
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
Eaton configurator	http://www.eaton.eu/DE/Europe/Electrical/CustomerSupport/ConfigurationTools/ConfiguratorCircuitBreaker/index.htm
additional technical information for NZM power switch	https://es-assets.eaton.com/DOCUMENTATION/PDF/nzm_technic_de_en.pdf