DATASHEET - NZMH2-4-A32-SVE



Circuit-breaker, 4p, 32A, plug-in module

NZMH2-4-A32-SVE Part no. Catalog No. 113400

EL-Nummer (Norway)

4357072



Similar to illustration

Delivery program			
Product range			Circuit-breaker
Protective function			System and cable protection
Standard/Approval			IEC
Installation type			Plug-in units
Release system			Thermomagnetic release
Construction size			NZM2
Description			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	32
Neutral conductor	% of phase conductor	CSA	100
Setting range			
Overload trip			
中	l _r	Α	25 - 32
Main pole	I _r	Α	25 - 32
Short-circuit releases			
Non-delayed	$I_i = I_n x \dots$		350 A fixed

Technical data

General

deneral		
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	3.5
Mounting position		Vertical and 90° in all directions



With XFI earth-fault release: - NZM1, N1, NZM2, N2: vertical and 90° in all directions

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)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	

Circuit-breakers

Rated current = rated uninterrupted current	$I_n = I_u$	Α	32
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	Ui	V	1000
Use in unearthed supply systems		V	≦ 690

Lifespan, electrical AC-1

400 V 50/60 Hz

Switching capacity			
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
Utilization category to IEC/EN 60947-2			Α
Lifespan, mechanical(of which max. 50 $\%$ trip by shunt/undervoltage release)	Operations		20000

Operations

10000

690 V 50/60 Hz 0 AC3 400 V 50/60 Hz 0 415 V 50/60 Hz 0		Ops/h	10000 7500 6500 6500 5000 120 < 10
AC3 400 V 50/60 Hz 0 415 V 50/60 Hz 0 690 V 50/60 Hz 0 Max. operating frequency Total break time at short-circuit Terminal capacity Standard equipment	Operations Operations Operations	Ops/h	6500 6500 5000
400 V 50/60 Hz 415 V 50/60 Hz 690 V 50/60 Hz 0 Max. operating frequency Total break time at short-circuit Terminal capacity Standard equipment) perations Operations	Ops/h	6500 5000 120
415 V 50/60 Hz 0 690 V 50/60 Hz 0 Max. operating frequency Total break time at short-circuit Terminal capacity Standard equipment) perations Operations	Ops/h	6500 5000 120
690 V 50/60 Hz Max. operating frequency Total break time at short-circuit Terminal capacity Standard equipment	perations	Ops/h	5000
Max. operating frequency Total break time at short-circuit Terminal capacity Standard equipment		Ops/h	120
Total break time at short-circuit Terminal capacity Standard equipment			
Terminal capacity Standard equipment		IIIS	< 10
Standard equipment			
			Screw connection
			NZM2-4-XSVS
Optional accessories			Box terminal
			Tunnel terminal connection on rear
Round copper conductor			0011100110110111011
Box terminal			
Solid		mm ²	1 x (10 - 16)
		111111	2 x (6 - 16)
Stranded			1 x (25 - 185) 2 x (25 - 70)
Tunnel terminal			2 X (23 - 70)
Solid		2	1 x 16
		mm ²	1 X 10
Stranded			
1-hole		mm ²	1 x (25 - 185)
Bolt terminal and rear-side connection			
Direct on the switch			
Solid			1 x (10 - 16) 2 x (6 - 16)
Stranded		mm ²	1 x (25 - 185) 2 x (25 - 70)
Al circular conductor			
Tunnel terminal			
Solid		mm ²	1 x 16
Stranded			
Stranded		mm ²	1 x (25 - 185)
Cu strip (number of segments x width x segment thickness)			
Box terminal			
m	nin.	mm	2 x 9 x 0.8
п	nax.		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	nin.	mm	2 x 16 x 0.8
Flat copper strip, with holes	nax.	mm	10 x 24 x 0.8
Copper busbar (width x thickness)	nm		
Bolt terminal and rear-side connection			
Screw connection			M8
Direct on the switch			
m	nin.	mm	16 x 5
m	nax.	mm	24 x 8
Control cables			
			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	In	Α	32
Equipment heat dissipation, current-dependent	P _{vid}	W	9.65
Operating ambient temperature min.		°C	-25

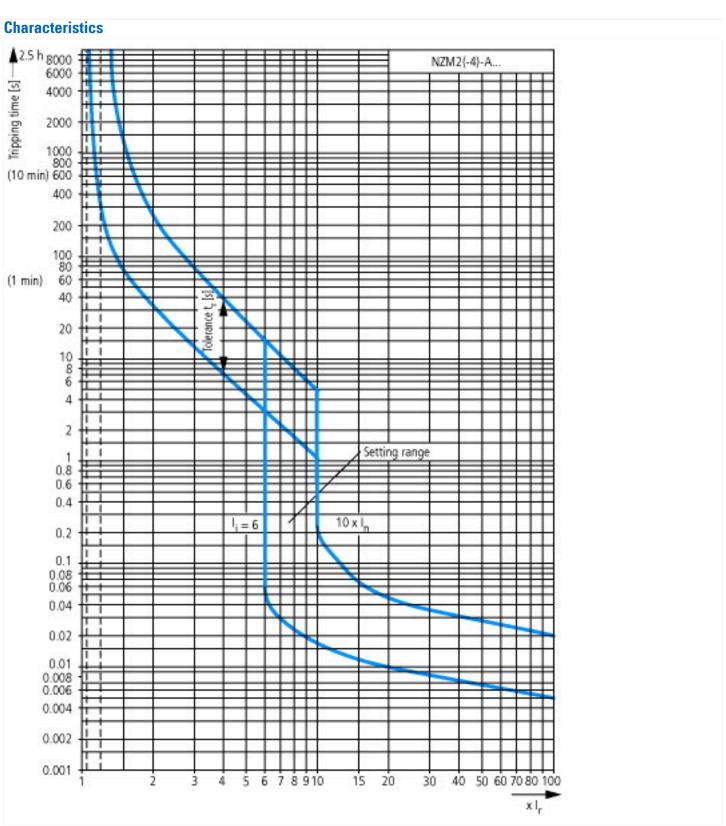
Operating ambient temperature max.	°C	70
C/EN 61439 design verification		
10.2 Strength of materials and parts		
10.2.2 Corrosion resistance		Meets the product standard's requirements.
10.2.3.1 Verification of thermal stability of enclosures		Meets the product standard's requirements.
10.2.3.2 Verification 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 switch gear must be observed.
10.12 Electromagnetic compatibility		Is the panel builder's responsibility. The specifications for the switch gear must be observed.
10.13 Mechanical function		The device meets the requirements, provided the information in the instruction leaflet (IL) is observed.

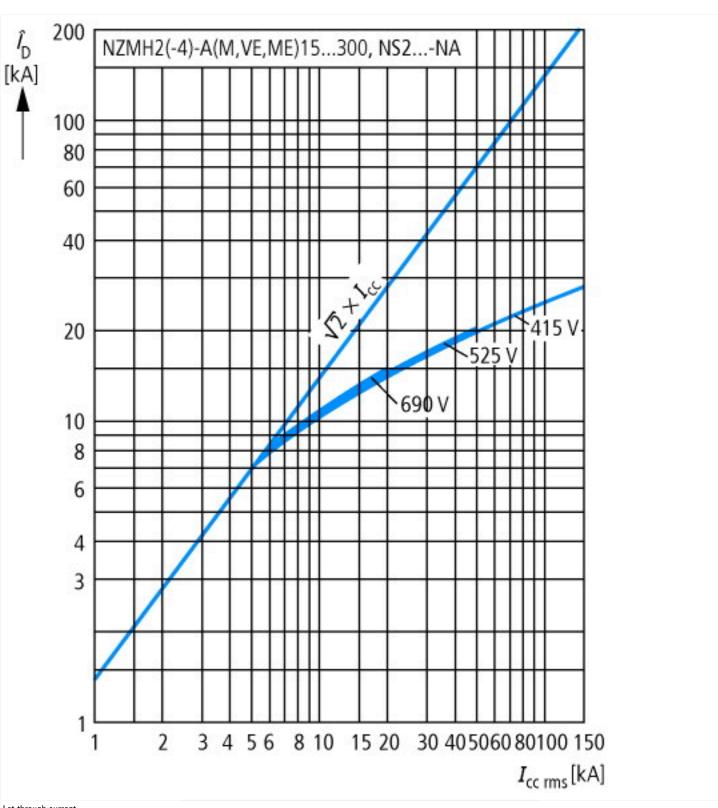
Technical data ETIM 7.0

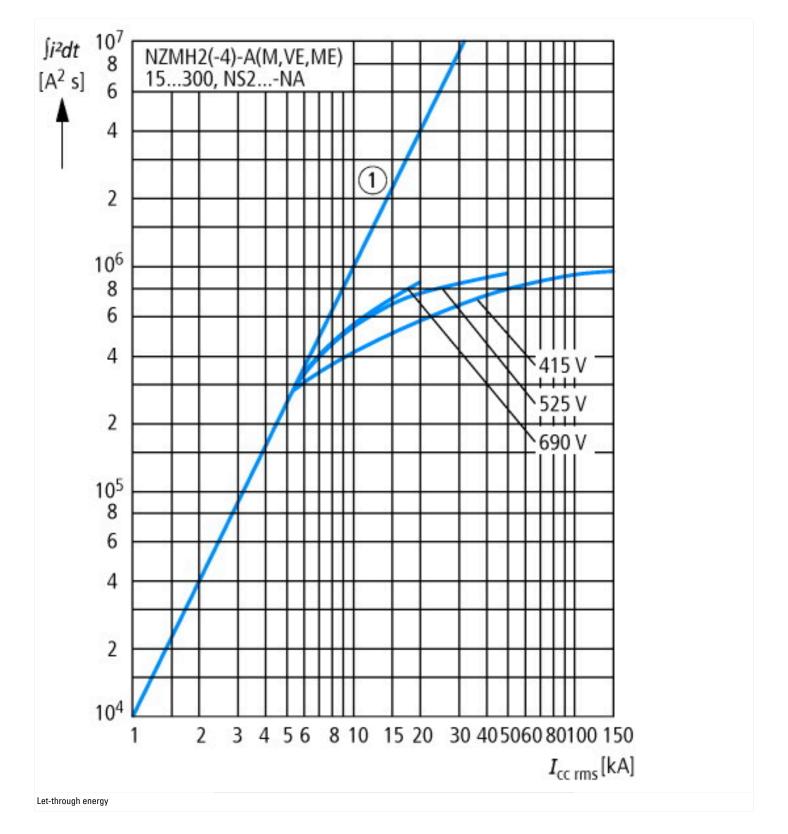
 $Low-voltage\ industrial\ components\ (EG000017)\ /\ Power\ circuit-breaker\ for\ trafo/generator/installation\ protection\ (EC000228)$

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])

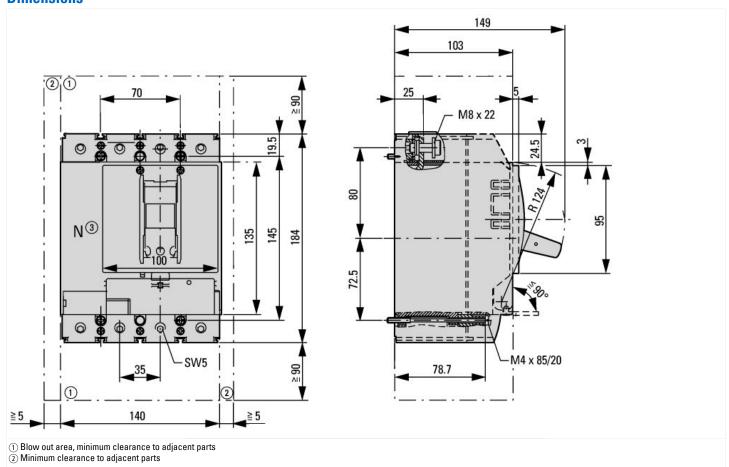
Rated voltage Rated voltage Rated short-circuit breaking capacity lou at 400 V, 50 Hz Overload release current setting ADUSTAND ACTION	protection (eci@ss10.0.1-2/-3/-04-09 [AJZ/16013])		
Rated short-circuit breaking capacity lcu at 400 V, 50 Hz Overload release current setting A 25 - 32 Adjustment range short-term delayed short-circuit release A 0 - 0 Adjustment range undelayed short-circuit release A 0 - 0 Adjustment range undelayed short-circuit release A 0 - 0 Adjustment range undelayed short-circuit release A 0 - 0 Adjustment range undelayed short-circuit release A 0 - 0 Adjustment range undelayed short-circuit release A 0 - 0 Adjustment range undelayed short-circuit release A 0 - 0 Adjustment range undelayed short-circuit release A 0 - 0	Rated permanent current lu	А	32
Overload release current setting A 25 - 32 Adjustment range short-term delayed short-circuit release A 0 - 0 Adjustment range undelayed short-circuit release A 350 - 350 Integrated earth fault protection No Screw connection Type of electrical connection of main circuit Suitable for DIN rail (top hat rail) mounting Built-in device plug-in technique Suitable for DIN rail (top hat rail) mounting optional Yes No Number of auxiliary contacts as normally closed contact 0 0 Number of auxiliary contacts as change-over contact 0 0 With switched-off indicator No No With under voltage release No No Number of poles 4 4 Position of connection for main current circuit Front side Front side Type of control element Rocker lever Complete device with protection unit Yes No Motor drive integrated No No	Rated voltage	V	690 - 690
Adjustment range short-term delayed short-circuit release Adjustment range undelayed store undelayed southern device plug-in technique Availant device plug-in t	Rated short-circuit breaking capacity Icu at 400 V, 50 Hz	kA	150
Adjustment range undelayed short-circuit release Integrated earth fault protection Type of electrical connection of main circuit Device construction Suitable for DIN rail (top hat rail) mounting DIN rail (top hat rail) mounting optional Number of auxiliary contacts as normally closed contact Number of auxiliary contacts as normally open contact Number of auxiliary contacts as change-over contact Number of auxiliary contacts as change-over contact Nith switched-off indicator Nith under voltage release Number of poles Number of poles Versition of connection for main current circuit Type of control element Complete device with protection unit Motor drive integrated Motor drive optional	Overload release current setting	Α	25 - 32
Integrated earth fault protection Type of electrical connection of main circuit Device construction Suitable for DIN rail (top hat rail) mounting DIN rail (top hat rail) mounting optional No DIN rail (top hat rail) mounting optional Number of auxiliary contacts as normally closed contact Number of auxiliary contacts as normally open contact Number of auxiliary contacts as change-over contact Number of auxiliary contacts as change-over contact No With switched-off indicator No With under voltage release No No Number of poles Position of connection for main current circuit Type of control element Complete device with protection unit Motor drive integrated Motor drive optional	Adjustment range short-term delayed short-circuit release	А	0 - 0
Type of electrical connection of main circuit Device construction Built-in device plug-in technique No No DIN rail (top hat rail) mounting optional Number of auxiliary contacts as normally closed contact Number of auxiliary contacts as normally open contact Number of auxiliary contacts as change-over contact Number of auxiliary contacts as change-over contact No With switched-off indicator No With under voltage release No No Number of poles Position of connection for main current circuit Type of control element Complete device with protection unit Motor drive integrated No Motor drive optional	Adjustment range undelayed short-circuit release	А	350 - 350
Device construction Suitable for DIN rail (top hat rail) mounting DIN rail (top hat rail) mounting optional Number of auxiliary contacts as normally closed contact Number of auxiliary contacts as normally open contact Number of auxiliary contacts as change-over contact Number of poles No No No No No No No No No N	Integrated earth fault protection		No
Suitable for DIN rail (top hat rail) mounting DIN rail (top hat rail) mounting optional Number of auxiliary contacts as normally closed contact Number of auxiliary contacts as normally open contact Number of auxiliary contacts as change-over contact Number of poles No	Type of electrical connection of main circuit		Screw connection
DIN rail (top hat rail) mounting optional Number of auxiliary contacts as normally closed contact Number of auxiliary contacts as normally open contact Number of auxiliary contacts as change-over contact Number of auxiliary contacts as change-over contact Number of auxiliary contacts as change-over contact No With switched-off indicator With under voltage release No Number of poles Acceptable Position of connection for main current circuit Type of control element Complete device with protection unit Motor drive integrated No Motor drive optional Yes	Device construction		Built-in device plug-in technique
Number of auxiliary contacts as normally closed contact Number of auxiliary contacts as normally open contact Number of auxiliary contacts as change-over contact Number of auxiliary contacts as change-over contact No With switched-off indicator With under voltage release No No Number of poles 4 Position of connection for main current circuit Type of control element Complete device with protection unit Motor drive integrated Motor drive optional O Acceptable device with protection unit No Motor drive optional	Suitable for DIN rail (top hat rail) mounting		No
Number of auxiliary contacts as normally open contact Number of auxiliary contacts as change-over contact No With switched-off indicator With under voltage release No No Number of poles Position of connection for main current circuit Type of control element Complete device with protection unit Motor drive integrated Motor drive optional O O No	DIN rail (top hat rail) mounting optional		Yes
Number of auxiliary contacts as change-over contact With switched-off indicator No With under voltage release No Number of poles Position of connection for main current circuit Type of control element Complete device with protection unit Motor drive integrated Motor drive optional O Rocker lever Yes No Yes	Number of auxiliary contacts as normally closed contact		0
With switched-off indicator With under voltage release No Number of poles Position of connection for main current circuit Type of control element Complete device with protection unit Motor drive integrated Motor drive optional No No No No No No No Yes	Number of auxiliary contacts as normally open contact		0
With under voltage release No Number of poles 4 Position of connection for main current circuit Type of control element Complete device with protection unit Motor drive optional No No No No No No Yes	Number of auxiliary contacts as change-over contact		0
Number of poles 4 Position of connection for main current circuit Type of control element Complete device with protection unit Motor drive integrated Motor drive optional 4 Rocker lever Rocker lever Yes Motor drive optional 4 Rocker lever Rocker lever No Yes	With switched-off indicator		No
Position of connection for main current circuit Type of control element Complete device with protection unit Motor drive optional Front side Rocker lever Yes No Yes	With under voltage release		No
Type of control element Complete device with protection unit Motor drive optional Rocker lever Yes No Yes	Number of poles		4
Complete device with protection unit Yes Motor drive integrated Motor drive optional Yes Yes	Position of connection for main current circuit		Front side
Motor drive integrated No Motor drive optional Yes	Type of control element		Rocker lever
Motor drive optional Yes	Complete device with protection unit		Yes
	Motor drive integrated		No
Degree of protection (IP)	Motor drive optional		Yes
	Degree of protection (IP)		IP20

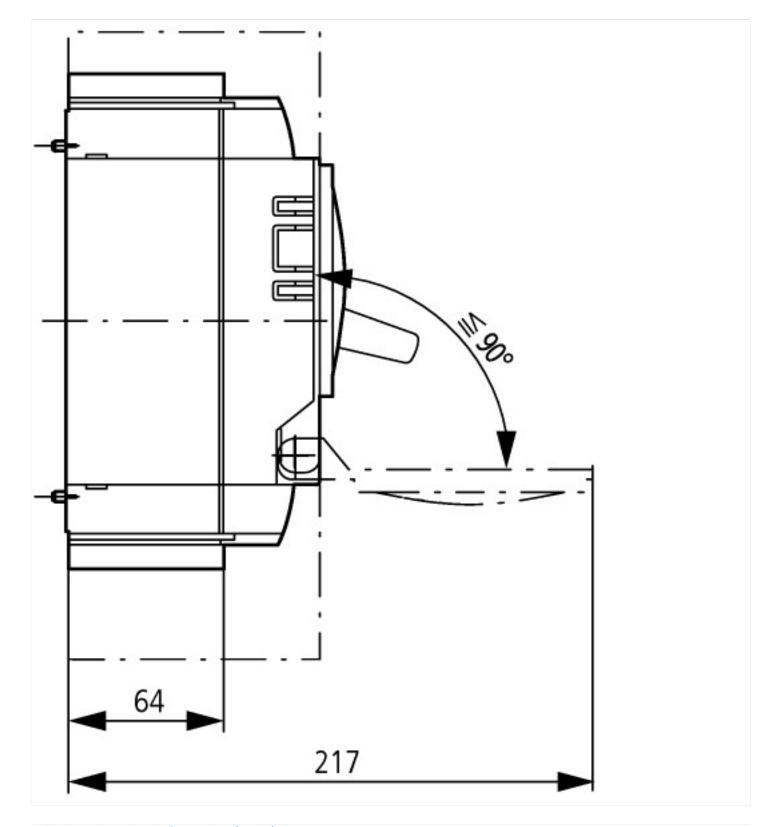






Dimensions





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