DATASHEET - NZMH2-A32-BT



Circuit-breaker, 3p, 32A, box terminals

NZMH2-A32-BT 110298

EL-Nummer 4358996 (Norway)

Part no. Catalog No.



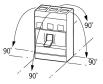
Similar to illustration

Delivery program

71 0			
Product range			Circuit-breaker
Protective function			System and cable protection
Standard/Approval			IEC
Installation type			Fixed
Release system			Thermomagnetic release
Construction size			NZM2
Number of poles			3 pole
Standard equipment			Box terminal
Switching capacity			
400/415 V 50 Hz	l _{cu}	kA	150
Rated current = rated uninterrupted current			
Rated current = rated uninterrupted current	$\boldsymbol{I}_n = \boldsymbol{I}_u$	А	32
Setting range			
Overload trip			
L	l _r	A	25 - 32
Short-circuit releases			
Non-delayed	I _i = I _n x		350 A fixed
Short-circuit releases			
min.		А	350

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	°(С	- 40 - + 70
Operation	°(С	-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	g	2.345
Mounting position			Vertical and 90° in all directions



90° 90°	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)2, NZM3, N(S)3, NZM4, N(S)4: vertical and 90° in all directions		
as required			
In the operating controls area: IP20) (basic degree of protection)		
With insulating surround: IP40 With door coupling rotary handle: IP66			
Tunnel terminal: IP10 Phase isolator and strip terminal: I	P00		

Temperature dependency, Derating

 $I_n = I_u$ U_{imp}

Ue

Ue

А	32
V	8000
V	6000
V AC	690
V DC	750

The following settings are required in order to ensure correct tripping:

The fast-response release will take longer to respond when used for DC applications. Because of this, the setting on the trip block inscription, which is specified for AC currents, must be set to a lower value for DC currents.

DC correction factor for instantaneous release response value:

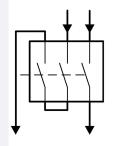
- o NZM1: 1.25
- o NZM2: 1.35
- o NZM3: 1.45
- Example: NZM3 le = 500A. Desired DC tripping current: 10 * le = 5000A.

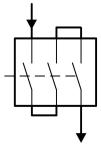
Calculation:

• Desired DC value / correction factor = AC setting on trip block

• 5000A / 1.45 = 3448 A ~ 7 * Ie = Value that needs to be set on the trip block

Permitted circuit configurations:





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	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}		

Direction of incoming supply

Degree of protection Device

Enclosures

Terminations

Circuit-breakers

Main contacts Auxiliary contacts Rated operational voltage

Rated operational voltage

Other technical data (sheet catalogue)

Rated surge voltage invariability

Rated current = rated uninterrupted current

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
500 V DC		kA	60
750 V DC	l _{cu}	kA	60
		kA	
Ics to IEC/EN 60947 test cycle 0-t-C0-t-C0 240 V 50/60 Hz	lcs	kA	150
400/415 V 50/60 Hz	I _{cs}	kA	150
400/413 V 50/60 Hz	I _{cs}	kA	130
525 V 50/60 Hz	I _{cs}		37.5
	I _{cs}	kA	
690 V 50/60 Hz	I _{cs}	kA	5
500 V DC	I _{cs}	kA	15
750 V DC	I _{cs}	kA	15 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	85
Utilization category to IEC/EN 60947-2			A
Lifespan, mechanical(of which max. 50 % trip by shunt/undervoltage release)	Operations		20000
Lifespan, electrical			
AC-1	0		
400 V 50/60 Hz	Operations		10000
415 V 50/60 Hz	Operations Operations		10000
690 V 50/60 Hz AC3	Operations		7500
400 V 50/60 Hz	Operations		6500
415 V 50/60 Hz	Operations		6500
690 V 50/60 Hz	Operations		5000
DC-1			
500 V DC	Operations		7500
750 V DC	Operations		7500
DC - 3			
500 V DC	Operations		3000
750 V DC	Operations		3000
Max. operating frequency		Ops/h	120
Total break time at short-circuit		ms	< 10
Terminal capacity			Developming
Standard equipment Optional accessories			Box terminal Screw terminal Tunnel terminal connection on rear
Round copper conductor			
Box terminal			
Solid		mm ²	1 x (10 - 16) 2 x (6 - 16)
Stranded		mm ²	1 x (25 - 185) 2 x (25 - 70)
Tunnel terminal			
Solid		mm ²	1 x 16
Stranded			
1-hole		mm ²	1 x (25 - 185)
Bolt terminal and rear-side connection			

Direct on the switch			
Solid		mm ²	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			
	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	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
	max.	mm	24 x 8
Control cables			
		mm ²	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 _n	А	32
Equipment heat dissipation, current-dependent	P _{vid}	W	9.65
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.

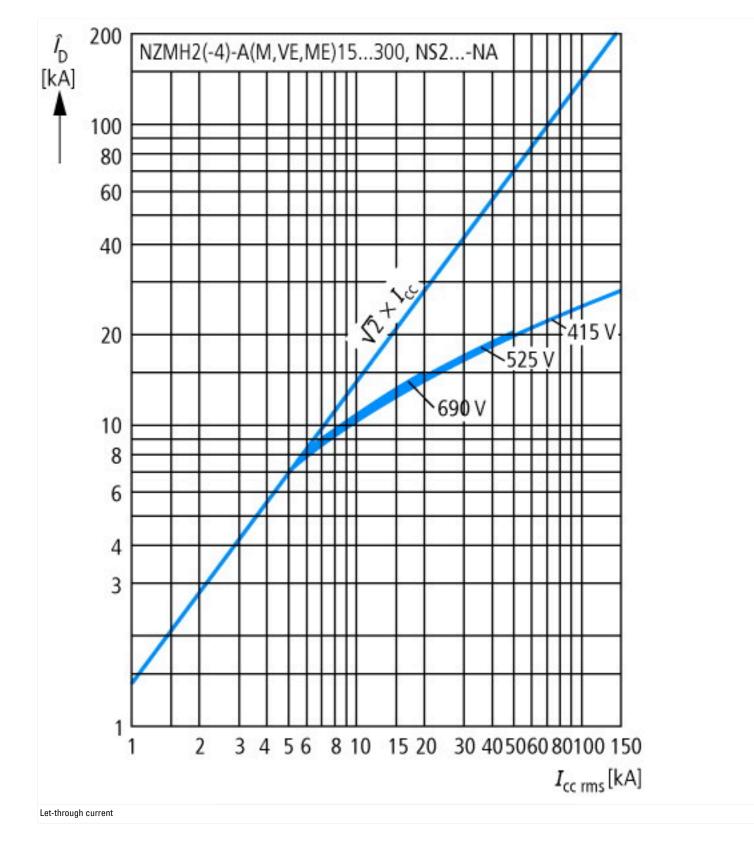
Technical data ETIM 7.0

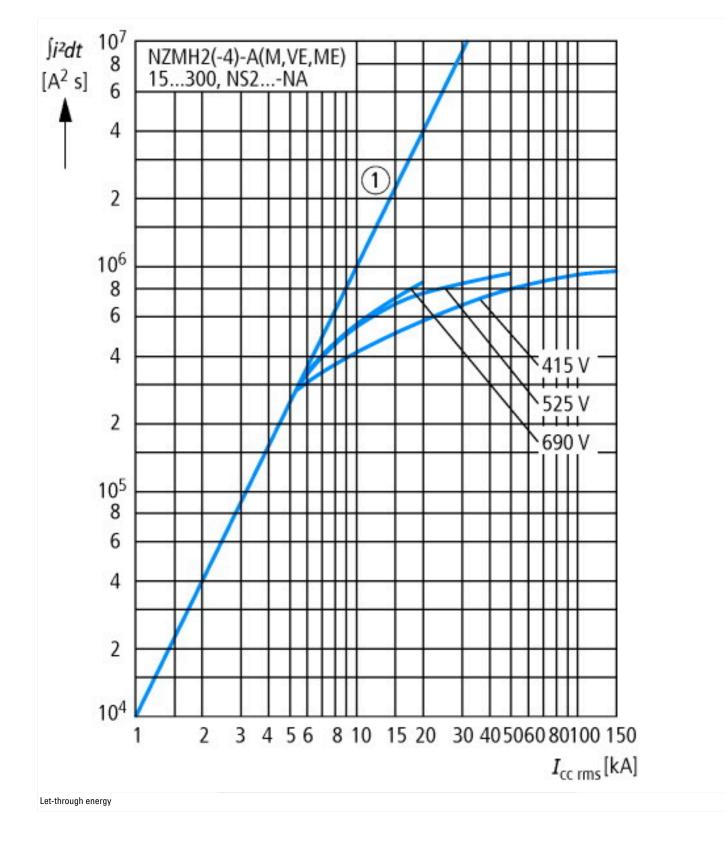
Low-voltage industrial components (EG000017) / Power circuit-breaker for trafo/generator/installation protection (EC000228)

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])

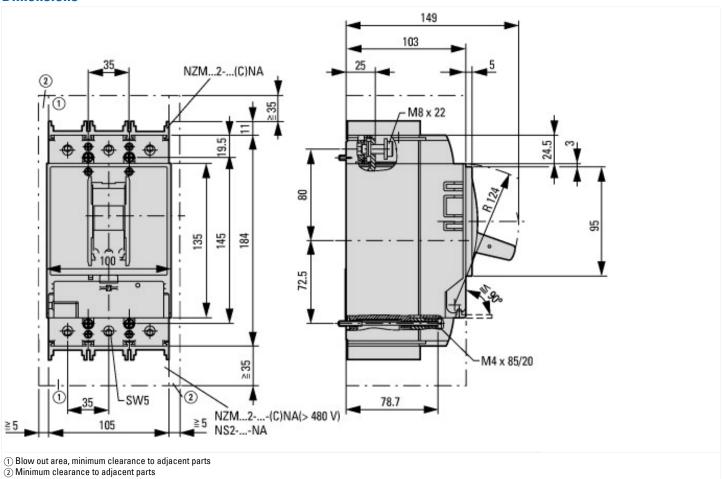
Rate voltage V 600-600 Rated short-circuit breaking capacity leu at 400 V, 50 Hz KA 50 Overload release current setting 25 - 32 Composed Securent setting 0 Adjustment range short-circuit release A 0 0 Adjustment range undelayed short-circuit release A 50 - 350 Integrated earth fault protection Fame clamp Suitable for DIN rail (top hat rail) mounting Fame clamp Divise construction Fame clamp Suitable for DIN rail (top hat rail) mounting optional No Number of auxiliary contacts as normally open contact Fame Clamp Outprotection Number of pausiliary contacts as normally open contact Fame Clamp Outprotection Number of pausiliary contacts as normally open contact Fame Clamp Outprotection Number of pausiliary contacts as change-over contact Fame Clamp Outprotection Number of pausiliary contacts as change-over contact Fame Clamp Outprotection Number of pausiliary contacts as change-over contact Fame Clamp Outprotection Number of pausiliary contacts as change-over contact Fame Clamp Fame Clamp </th <th>protection (eci@ss10.0.1-2/-3/-04-09 [AJ2/16013])</th> <th></th> <th></th>	protection (eci@ss10.0.1-2/-3/-04-09 [AJ2/16013])		
Aread short-icruit breaking capacity lot at 400 V, 50 Hz Ka 50 Overload release current setting A 5-32 Adjustment range short-term delayed short-circuit release A 0 Adjustment range undelayed short-circuit release A 50 Adjustment range undelayed short-circuit release A 50 Adjustment range undelayed short-circuit release A 50 Integrated earth fault protection A 50 Type of electrical connection of main circuit Frame clamp No Divice construction Built-in device fixed built-in technique No Divice for DIN rail (top hat rail) mounting Frame clamp No Number of auxiliary contacts as normally closed contact Frame Clamp No Number of auxiliary contacts as change-over contact Frame Clamp No With under voltage release No No No Number of poles No No No Number of poles No No No Number of poles Frame Slamp No No Type of control element <td>Rated permanent current lu</td> <td>А</td> <td>32</td>	Rated permanent current lu	А	32
Overload release current setting A 25-32 Adjustment range short-term delayed short-circuit release A 0 Adjustment range undelayed short-circuit release A 350-350 Atigustment range undelayed short-circuit release A So Integrated earth fault protection M No Type of electrical connection of main circuit M Fame clamp Device construction M So So Divide for DIN rail (top hat rail) mounting optional M No No Number of auxiliary contacts as normally closed contact M No No Number of auxiliary contacts as change-over contact M M No With under voltage release M M No No Number of poles M M No No Yep of control element M M M No Complete device with protection unit M M No No Motor drive integrated M M No No Nome M	Rated voltage	V	690 - 690
Adjustment range short-eirr udelayed short-circuit release Adjustment range undelayed short-circuit release Adjustment range range ra	Rated short-circuit breaking capacity Icu at 400 V, 50 Hz	kA	150
Adjustment range undelayed short-circuit release Adjustment range undelayed short-circuit release Adjustment range undelayed short-circuit release Adjustment range undelayed short-circuit release Solo 350 Integrated earth fault protection Frame clamp Device construction Frame clamp Device construction Built-in device fixed built-in technique Suitable for DIN rail (top hat rail) mounting optional No Number of auxiliary contacts as normally closed contact Yes Number of auxiliary contacts as change-over contact Yes With under voltage release No Number of poles Yes Position of connection for main current circuit Yes Type of control element Yes Complete device with protection unit Yes Motor drive integrated Yes	Overload release current setting	А	25 - 32
Integrated earth fault protection No Type of electrical connection of main circuit Frame clamp Device construction Built in device fixed built-in technique Suitable for DIN rail (top hat rail) mounting Ves DIN rail (top hat rail) mounting optional Ves Number of auxiliary contacts as normally closed contact Mo Number of auxiliary contacts as normally closed contact Mo Number of auxiliary contacts as normally closed contact Mo Number of auxiliary contacts as change-over contact Mo With under voltage release Mo Number of poles Fort side Position of connection for main current circuit Fort side Type of control element Fort side Complete device with protection unit Fort side Motor drive integrated Yes Motor drive integrated Yes	Adjustment range short-term delayed short-circuit release	А	0 - 0
Type of electrical connection of main circuit Frame clamp Device construction Built- in device fixed built- 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 under voltage release No Number of poles No Position of connection for main current circuit Yes Type of control element Yes Complete device with protection unit Yes Motor drive integrated Yes Motor drive optional Yes Motor drive optional Yes Motor drive optional Yes	Adjustment range undelayed short-circuit release	А	350 - 350
Device construction Maile in device fixed built-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 O Number of auxiliary contacts as normally open contact O Number of auxiliary contacts as normally open contact O Number of auxiliary contacts as normally open contact O Number of auxiliary contacts as change-over contact O With switched-off indicator O With under voltage release No Number of poles So is is is Position of connection for main current circuit So is is Type of control element Yes Complete device with protection unit Yes Motor drive integrated Yes Motor drive optional Yes	Integrated earth fault protection		No
Suitable for DIN rail (top hat rail) mounting Mo 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 normally open contact 0 Number of auxiliary contacts as normally open contact 0 Number of auxiliary contacts as change-over contact 0 With under voltage release No Number of poles Sandal Control Control control control control contact Yes Sandal Control co	Type of electrical connection of main circuit		Frame clamp
DIN rail (top hat rail) mounting optionalYesNumber of auxiliary contacts as normally closed contact0Number of auxiliary contacts as normally open contact0Number of auxiliary contacts as normally open contact0Number of auxiliary contacts as change-over contact0With switched-off indicatorNoWith under voltage releaseNoNumber of poles3Position of connection for main current circuitFront sideType of control elementRocker leverComplete device with protection unitYesMotor drive integratedNoMotor drive optionalYes	Device construction		Built-in device fixed built-in technique
Number of auxiliary contacts as normally closed contact 0 Number of auxiliary contacts as normally open contact 0 Number of auxiliary contacts as normally open contact 0 Number of auxiliary contacts as change-over contact 0 With switched-off indicator 0 With under voltage release No Number of poles 3 Position of connection for main current circuit Front side Type of control element Rocker lever Motor drive integrated No Motor drive optional Yes	Suitable for DIN rail (top hat rail) mounting		No
Number of auxiliary contacts as normally open contactONumber of auxiliary contacts as change-over contactOWith switched-off indicatorNoWith switched-off indicatorNoWith under voltage releaseSNumber of polesSPosition of connection for main current circuitFront sideType of control elementSocker leverComplete device with protection unitYesNotor drive integratedYesMotor drive optionalYes	DIN rail (top hat rail) mounting optional		Yes
Number of auxiliary contacts as change-over contact 0 With switched-off indicator No With under voltage release No Number of poles S Position of connection for main current circuit Fort side Type of control element S Complete device with protection unit S Motor drive integrated S Motor drive optional S Motor drive optional S	Number of auxiliary contacts as normally closed contact		0
With switched-off indicatorNoWith under voltage releaseNoNumber of polesSPosition of connection for main current circuitImage: Solar S	Number of auxiliary contacts as normally open contact		0
With under voltage releaseNoNumber of poles3Position of connection for main current circuitFont sideType of control elementRocker leverComplete device with protection unitYesMotor drive integratedNoMotor drive optionalSet Set Set Set Set Set Set Set Set Set	Number of auxiliary contacts as change-over contact		0
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 Sector	With switched-off indicator		No
Position of connection for main current circuitFont sideType of control elementRocker leverComplete device with protection unitYesMotor drive integratedNoMotor drive optionalSection (Section Control Co	With under voltage release		No
Type of control element Rocker lever Complete device with protection unit Yes Motor drive integrated No Motor drive optional Yes	Number of poles		3
Complete device with protection unit Yes Motor drive integrated No Motor drive optional Ses	Position of connection for main current circuit		Front side
Motor drive optional Model	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

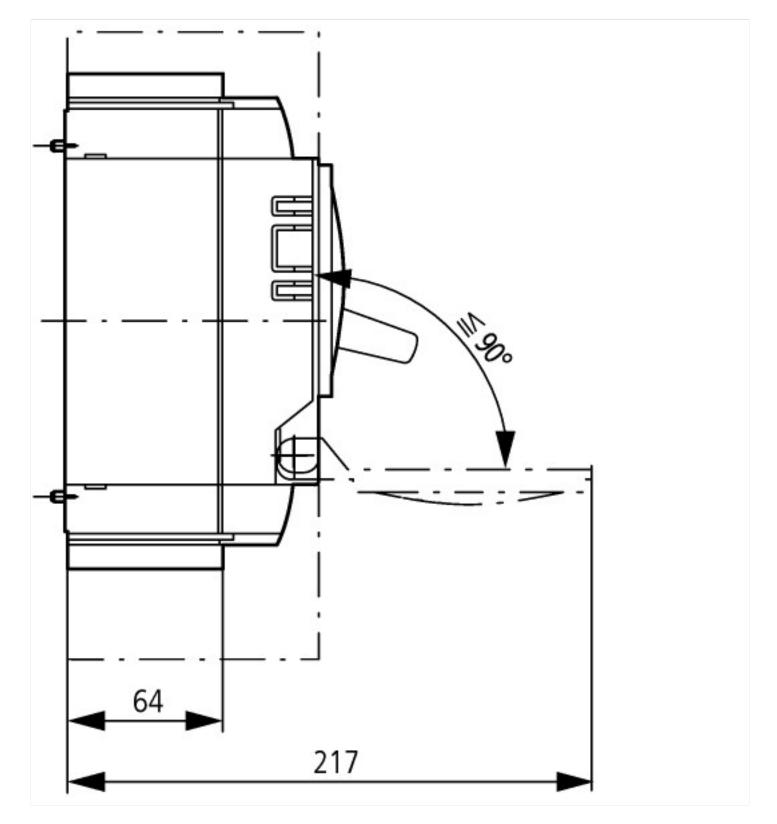






Dimensions





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