DATASHEET - NZMH2-A25-BT



Circuit-breaker, 3p, 25A, box terminals

Part no. NZMH2-A25-BT Catalog No. 110297

EL-Nummer (Norway)

4358995



Similar to illustration

Delivery program			
Product range			Circuit-breaker
Protective function			System and cable protection
Standard/Approval			IEC
nstallation 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	I _{cu}	kA	150
Rated current = rated uninterrupted current			
Rated current = rated uninterrupted current	$\boldsymbol{I}_n = \boldsymbol{I}_u$	Α	25
Setting range			
Overload trip			
中	I _r	Α	20 - 25
Short-circuit releases			
Non-delayed	$I_i = I_n \times \dots$		350 A fixed
Short-circuit releases			

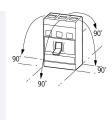
Technical data

min.

General

delicital			
Standards		IE	C/EN 60947
Protection against direct contact		Fir	nger and back of hand proof to VDE 0106 Part 100
Climatic proofing			amp heat, constant, to IEC 60068-2-78 amp heat, cyclic, to IEC 60068-2-30
Ambient temperature			
Ambient temperature, storage	°C	- 4	40 - + 70
Operation	°C	-2	5 - +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 50	00
between the auxiliary contacts	V	AC 30	00
Mounting position		Ve	ertical and 90° in all directions

350



With XFI earth-fault release: - NZM1, N1, NZM2, N2: vertical and

- NZM1, N1, NZMZ, NZ: Vertical ar 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

	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	$I_n = I_u$	Α	25
Rated surge voltage invariability	U_{imp}		
Main contacts		V	8000
Auxiliary contacts		V	6000
Rated operational voltage	U _e	V AC	690
Rated operational voltage	U _e	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

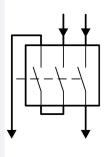
o NZM3: 1.45

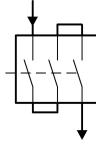
Example: NZM3 Ie = 500A. Desired DC tripping current: 10 * Ie = 5000A.

Calculation:

- Desired DC value / correction factor = AC setting on trip block
- \bullet 5000A / 1.45 = 3448 A \sim 7 * Ie = Value that needs to be set on the trip block

Permitted circuit configurations:





Overvoltage category/pollution degree			111/3
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
ated short-circuit breaking capacity I _{cn}	I _{cn}		

Icu to IEC/EN 60947 test cycle 0-t-C0	Icu	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	I _{cu}	kA	60
750 V DC	I _{cu}	kA	60
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
500 V DC	I _{cs}	kA	15
750 V DC	I _{cs}	kA	15
	US		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			A
Lifespan, mechanical(of which max. 50 % trip by shunt/undervoltage release)	Operations		20000
Lifespan, electrical			
AC-1			
400 V 50/60 Hz	Operations		10000
415 V 50/60 Hz	Operations		10000
690 V 50/60 Hz	Operations		7500
AC3			
400 V 50/60 Hz	Operations		6500
415 V 50/60 Hz	Operations		6500
690 V 50/60 Hz DC-1	Operations		5000
500 V DC	Operations		7500
750 V DC	Operations		7500
DC - 3	Орогалоно		7000
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			
Standard equipment			Box terminal
Optional accessories			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)
Flat copper strip, with holes Flat copper strip, with holes Copper busbar (width x thickness) Bolt terminal and rear-side connection Screw connection Direct on the switch	min. max. mm	mm mm	(2x) 8 x 15.5 x 0,8 2 x 16 x 0.8 10 x 24 x 0.8 M8 16 x 5 24 x 8

Design verification as per IEC/EN 61439

Design verification as per IEG/EIN 61439			
Technical data for design verification			
Rated operational current for specified heat dissipation	In	Α	25
Equipment heat dissipation, current-dependent	P _{vid}	W	7.97
Operating ambient temperature min.		°C	-25
Operating ambient temperature max.		°C	70
EC/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.
10.2.3.3Verification of resistanceofinsulatingmaterialstoabnormalheatandfireduetointernalelectriceffects			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 FTIM 7.0

Complete device with protection unit

Motor drive integrated

Degree of protection (IP)

Motor drive optional

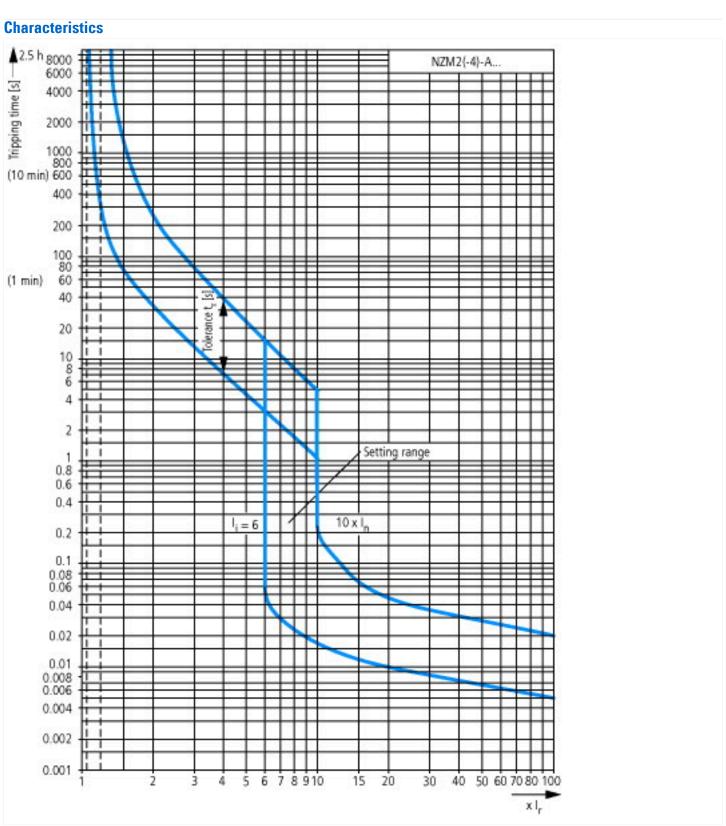
Technical data ETIM 7.0				
Low-voltage industrial components (EG000017) / Power circuit-breaker for trafo/generator/installation protection (EC000228)				
Electric engineering, automation, process control engineering / Low-voltage switch technology / Circuit breaker (LV < 1 kV) / Circuit breaker for power transformer, generator and system protection (ecl@ss10.0.1-27-37-04-09 [AJZ716013])				
	A	25		
,	V	690 - 690		
ı	kA	150		
	A	20 - 25		
	A	0 - 0		
	A	350 - 350		
		No		
		Frame clamp		
		Built-in device fixed built-in technique		
		No		
		Yes		
		0		
		0		
		0		
		No		
		No		
		3		
		Front side		
		Rocker lever		
	n technology / C			

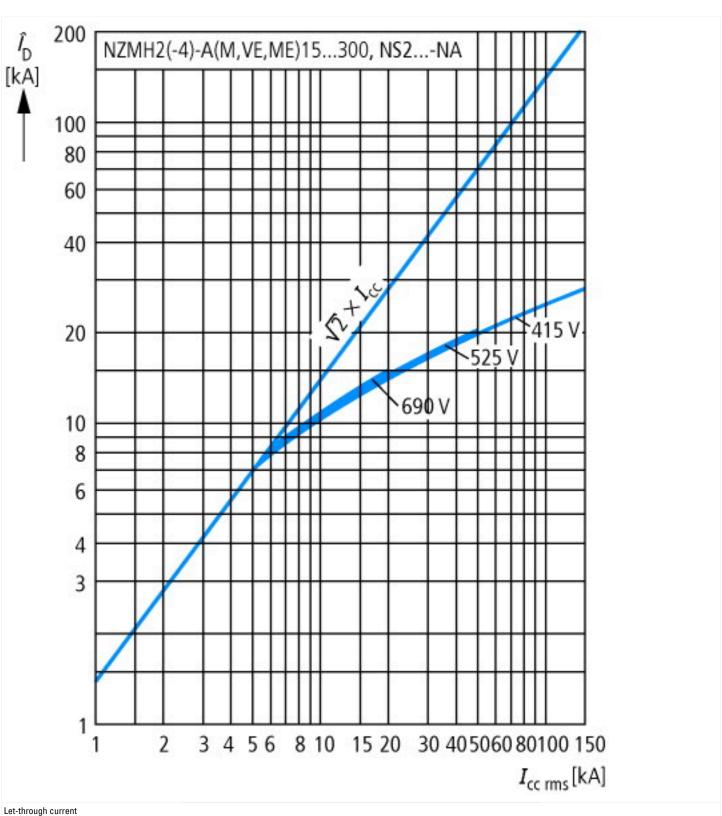
Yes

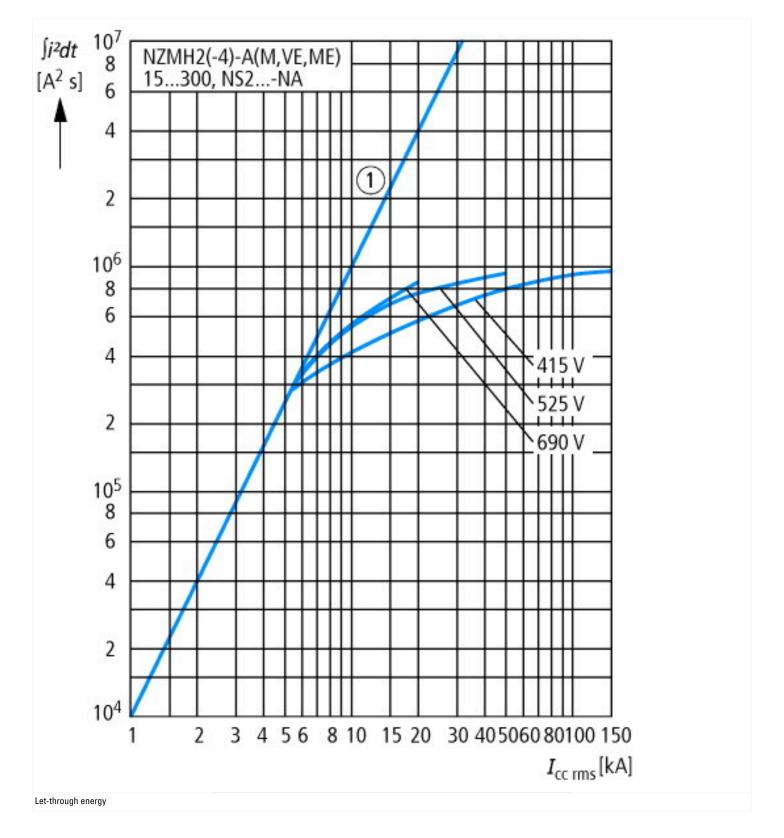
No

Yes

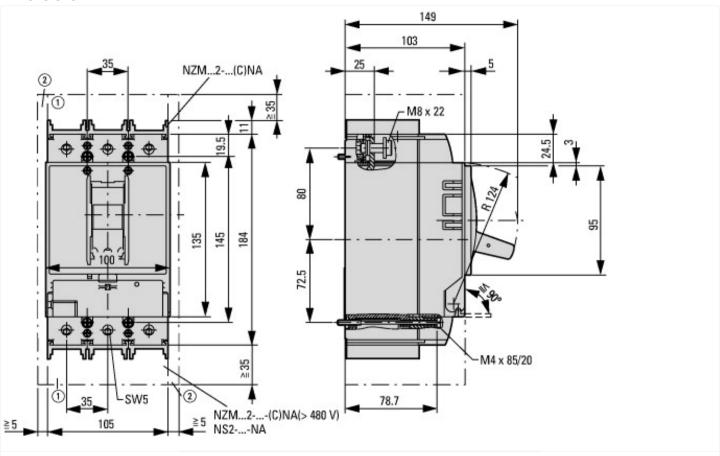
IP20



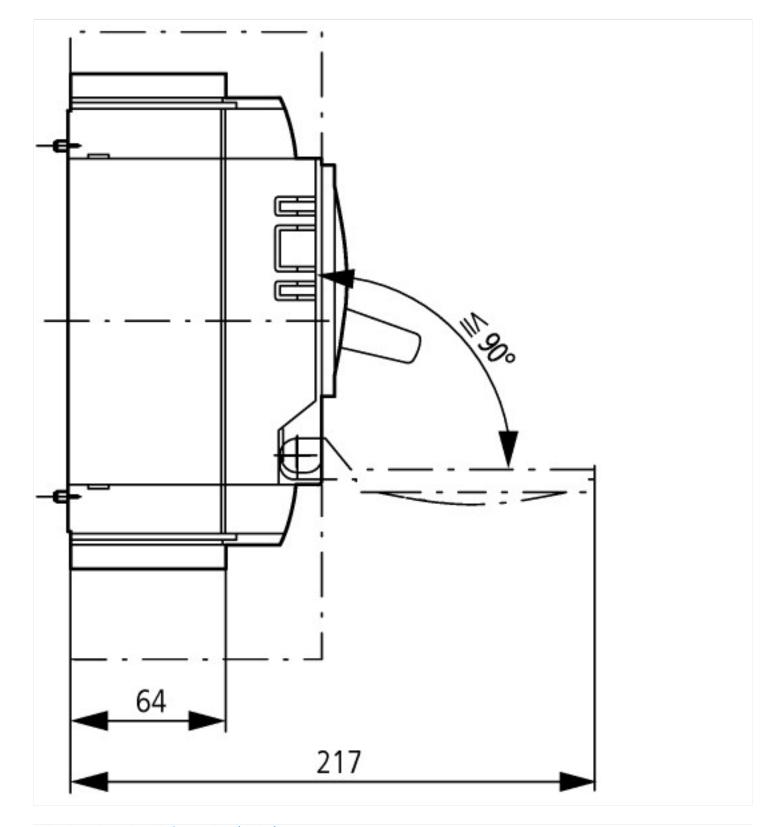




Dimensions



Blow out area, minimum clearance to adjacent parts
 Minimum clearance to adjacent parts



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	https://es-assets.eaton.com/DOCUMENTATION/PDF/nzm_technic_de_en.pdf