DATASHEET - NZMN4-VE1000



Circuit-breaker, 3p, 1000A

Part no. NZMN4-VE1000 Catalog No. 265770

EL-Nummer (Norway) 0004358939



Similar to illustration

Delivery program

Delivery program			
Product range			Circuit-breaker
Protective function			Systems, cable, selectivity and generator protection
Standard/Approval			IEC
Installation type			Fixed
Release system			Electronic release
Construction size			NZM4
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: switchable
Number of poles			3 pole
Standard equipment			Screw connection
Switching capacity			
400/415 V 50 Hz	I _{cu}	kA	50
Rated current = rated uninterrupted current			
Rated current = rated uninterrupted current	$I_n = I_u$	Α	1000
Setting range			
Overload trip			
中	I _r	Α	500 - 1000
Short-circuit releases			
Non-delayed	$I_i = I_n \times \dots$		2 - 12
Delayed X >	$I_{sd} = I_r \times \dots$		2 - 10

Technical data

General

delleral			
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	15 (half-sinusoidal shock 11 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 - 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 Rated current = rated uninterrupted current	$I_n = I_u$	Α	1000
Rated current = rated uninterrupted current Rated surge voltage invariability		^	1000
	U _{imp}	V	0000
Main contacts Auxiliary contacts		V	8000
Auxiliary contacts Rated operational voltage	U _e	V V AC	6000 690
	O _e	V AC	
Overvoltage category/pollution degree Rated insulation voltage	Ui	V	1000
	U _i		
Use in unearthed supply systems Switching capacity		V	≦ 525
Rated short-circuit making capacity	I _{cm}		
240 V	I _{cm}	kA	105
400/415 V	I _{cm}	kA	105
440 V 50/60 Hz	I _{cm}	kA	74
525 V 50/60 Hz		kA	53
690 V 50/60 H	I _{cm}	kA	40
Rated short-circuit breaking capacity I _{cn}		NA.	40
Icu to IEC/EN 60947 test cycle 0-t-C0	I _{cn}	kA	
240 V 50/60 Hz	lcu	kA	50
400/415 V 50/60 Hz	I _{cu}		
440 V 50/60 Hz	I _{cu}	kA	50
·	I _{cu}	kA	35
525 V 50/60 Hz	I _{cu}	kA	25
690 V 50/60 Hz	I _{cu}	kA	20
Ics to IEC/EN 60947 test cycle 0-t-C0-t-C0	lcs	kA	27
240 V 50/60 Hz	I _{cs}	kA	37
400/415 V 50/60 Hz	I _{cs}	kA	37
440 V 50/60 Hz	I _{cs}	kA	26
525 V 50/60 Hz	I _{cs}	kA	19
690 V 50/60 Hz	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	12
t = 1 s	I _{cw}	kA	12
Utilization category to IEC/EN 60947-2			В
Lifespan, mechanical(of which max. 50 % trip by shunt/undervoltage release) Lifespan, electrical	Operations		10000

400 M 70/00 M	•		2000
400 V 50/60 Hz	Operations		3000
415 V 50/60 Hz	Operations		3000
690 V 50/60 Hz	Operations		2000
AC3			
400 V 50/60 Hz	Operations		2000
415 V 50/60 Hz	Operations		2000
690 V 50/60 Hz	Operations		1000
Max. operating frequency		Ops/h	60
Total break time at short-circuit		ms	$< 25 \le 415 \text{ V}; < 35 > 415 \text{ V}$
Terminal capacity			
Standard equipment			Screw connection
Optional accessories			Tunnel terminal connection on rear Strip terminal
Round copper conductor			
Tunnel terminal			
Stranded			
4-hole		mm ²	4 x (50 - 240)
Bolt terminal and rear-side connection			
Direct on the switch			
Stranded		mm ²	1 x (120 - 185)
Saundo		mm-	4 x (50 - 185)
Module plate			
Single hole	min.	mm ²	1 x (120 - 300)
Single hole	max.	mm ²	2 x (95 - 300)
		111111	
Module plate		2	0(05, 105)
Double hole	min.	mm ²	2 x (95 - 185)
Double hole	max.	mm ²	4 x (35 - 185)
Connection width extension		mm ²	
Connection width extension		mm ²	4 x 300 6 x (95 - 240)
Al circular conductor			
Tunnel terminal			
Stranded			
4-hole		mm ²	4 x (50 - 240)
Bolt terminal and rear-side connection			
Module plate			
Single hole	min.	mm ²	1 x (185 - 240)
Single hole	max.	mm ²	2 x (70 - 185)
Module plate			
Double hole		mm^2	4 x 50
Connection width extension		mm ²	
Connection width extension		mm ²	2 x 240 6 x (70 - 240)
Cu strip (number of segments x width x segment thickness)			
Flat conductor terminal			
	min. max.	mm mm	6 x 16 x 0.8 (2 x) 10 x 32 x 1.0
Module plate	IIIax.	111111	\2 A 10 A U Z A 1.0
Single hole		mm	(2 v) 10 v 50 v 1 0
		mm	(2 x) 10 x 50 x 1.0
Bolt terminal and rear-side connection			F., 2F., 10
Flat copper strip, with holes	min.	mm	5 x 25 x 1.0
Flat copper strip, with holes	max.	mm	(2 x) 10 x 50 x 1.0
Connection width extension		mm	(2 x) 10 x 80 x 1.0
Copper busbar (width x thickness)	mm		

Bolt terminal and rear-side connection			
Screw connection			M10
Direct on the switch			
	min.	mm	25 x 5
	max.	mm	2 x (50 x 10)
Module plate			
Single hole	min.	mm	25 x 5
Single hole	max.	mm	2 x (50 x 10)
Module plate			
Double hole		mm	2 x (50 x 10)
Connection width extension		mm	
Connection width extension	min.	mm	60 x 10
Connection width extension	max.	mm	2 x (80 x 10)
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	In	Α	1000
Equipment heat dissipation, current-dependent	P _{vid}	W	165
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

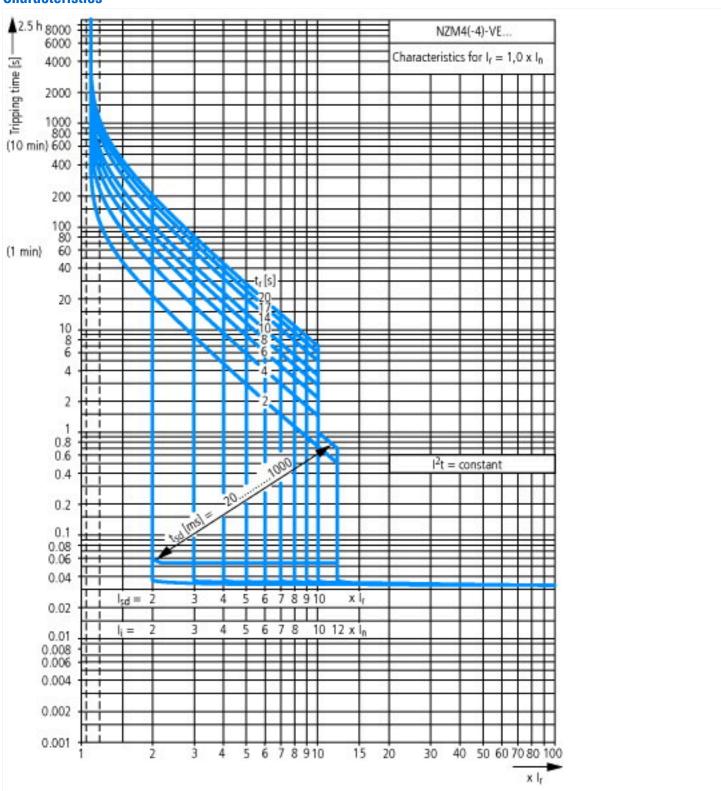
Low-voltage industrial components (EG000017) / Power circuit-breaker for trafo/generator/installation protection (EC000228)

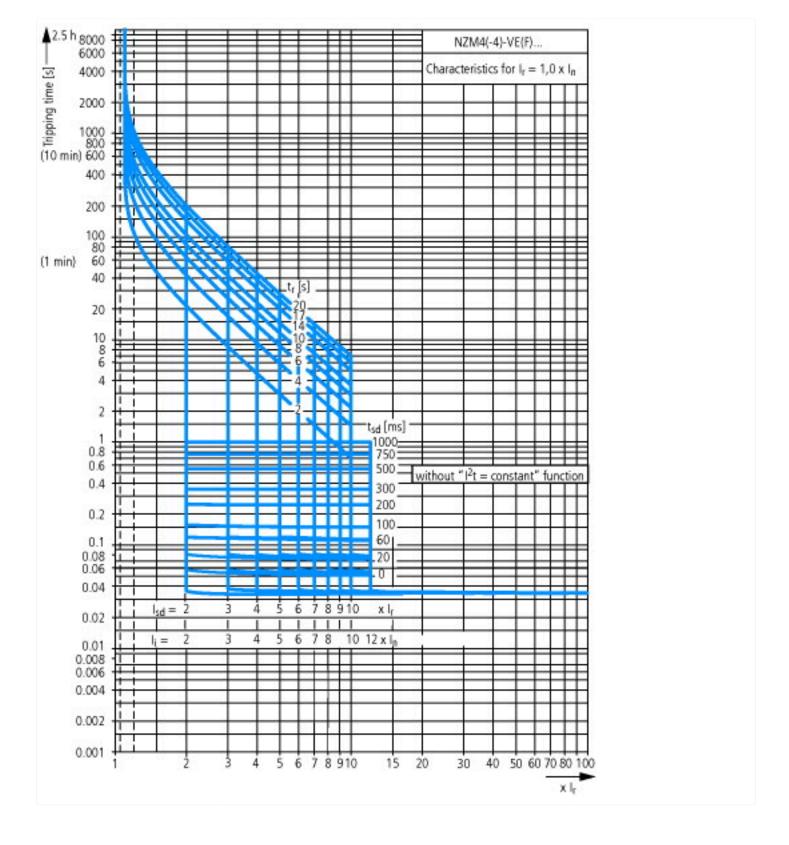
Electric engineering, automation, process control engineering / Low-voltage switch technology / Circuit breaker (LV < 1 kV) / Circuit breaker for power transformer, generator and system protection (ecl@ss10.0.1-27-37-04-09 [AJZ716013])

F			
Rated permanent current lu	Α	1000	

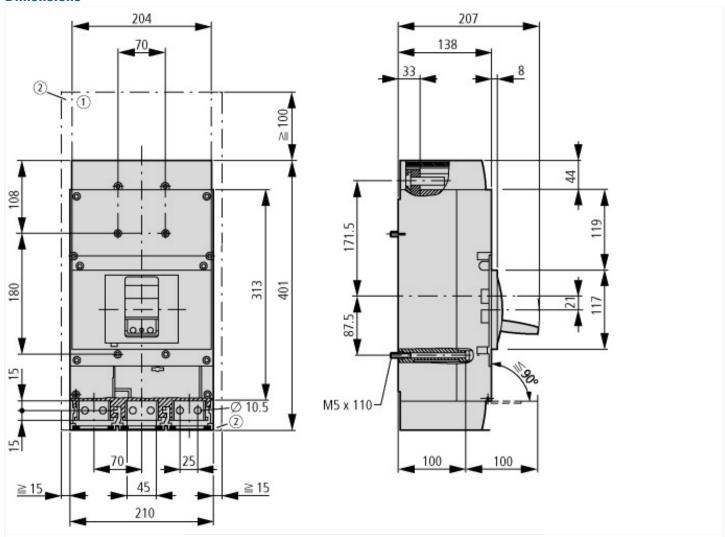
Rated voltage Rated short-circuit breaking capacity Icu at 400 V, 50 Hz Overload release current setting Adjustment range short-term delayed short-circuit release Adjustment range undelayed short-circuit release A Soor-10	1000
Overload release current setting A 500 - 10 Adjustment range short-term delayed short-circuit release A 1000 - 1 Adjustment range undelayed short-circuit release A 2000 - 1 Integrated earth fault protection	10000
Adjustment range short-term delayed short-circuit release A 1000 - 1 Adjustment range undelayed short-circuit release A 2000 - 1 Integrated earth fault protection No	10000
Adjustment range undelayed short-circuit release A 2000 - 1 Integrated earth fault protection No	12000
Integrated earth fault protection No	
·	v connection
Type of electrical connection of main circuit Screw	v connection
Device construction Built-in	in device fixed built-in technique
Suitable for DIN rail (top hat rail) mounting	
DIN rail (top hat rail) mounting optional	
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 3	
Position of connection for main current circuit Front s	side
Type of control element Rocker	er lever
Complete device with protection unit Yes	
Motor drive integrated No	
Motor drive optional Yes	
Degree of protection (IP)	

Characteristics





Dimensions



- ① Blow out area, minimum clearance to adjacent parts Ui \leq 690 V: 100 mm Ui \leq 1500 V: 200 mm ② Minimum clearance to adjacent parts Ui \leq 1000 V: 15 mm Ui \leq 1500 V: 70 mm