







Circuit-breaker, 4p, 1250A, 800A in 4th pole

Part no. NZMN4-4-AE1250/800
Article no. 265916

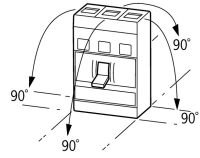
Similar to illustration

Delivery program


Product range				Circuit-breaker
Protective function				System and cable protection
Standard/Approval				IEC
Installation type				Fixed
Release system				Electronic release
Construction size				NZM4
Description				Set value in neutral conductor is synchronous with set value I_r of main pole. R.m.s. value measurement and "thermal memory"
Number of poles				4 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	$I_n = I_u$	A		1250
Neutral conductor	% of phase conductor	CSA		60
Reduced neutral conductor protection		A		800
Neutral conductor protection				Reduced neutral conductor protection
Setting range				
Overload trip				
	I_r	A		630 - 1250
Main pole				
	I_r	A		400 - 800
Short-circuit releases				
				
Non-delayed				
	$I_i = I_n \times \dots$			2 - 12

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		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
Weight	kg	27
Mounting position	Vertical and 90° in all directions	 <p>With residual-current release XFI: - NZM1, N1, NZM2, N2: vertical and 90° in all directions with plug-in adapter elements - NZM1, N1, NZM2, N2: vertical, 90° right/left with withdrawable unit: - NZM3, N3: vertical, 90 ° 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</p>
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)		Weight Temperature dependency, Derating Effective power loss

Circuit-breakers

Rated current = rated uninterrupted current	$I_n = I_u$	A	1250
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	U_i	V	1000
Use in unearthed supply systems		V	 525

Switching capacity

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	I_{cm}	kA	53
690 V 50/60 Hz	I_c	kA	40
Rated short-circuit breaking capacity I_{cn}	I_{cn}		
I_{cu} to IEC/EN 60947 test cycle O-t-CO	I_{cu}	kA	
240 V 50/60 Hz	I_{cu}	kA	50
400/415 V 50/60 Hz	I_{cu}	kA	50
440 V 50/60 Hz	I_{cu}	kA	35
525 V 50/60 Hz	I_{cu}	kA	25
690 V 50/60 Hz	I_{cu}	kA	20
I_{cs} to IEC/EN 60947 test cycle O-t-CO-t-CO	I_{cs}	kA	
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	19.2
t = 1 s	I_{cw}	kA	19.2
Utilization category to IEC/EN 60947-2			A

Rated making and breaking capacity				
Rated operational current	I_e	A		
AC-1				
380 V 400 V	I_e	A	1250	
415 V	I_e	A	1250	
690 V	I_e	A	1250	
AC--3				
380 V 400 V	I_e	A	1250	
415 V	I_e	A	1250	
660 V 690 V	I_e	A	1250	
				For AC--3 rated operational current with NZM4 the following applies: 400 V: max. 650 kW; 690 V: max. 600 kW
Lifespan, mechanical(of which max. 50 % trip by shunt/undervoltage release)	Operations		10000	
Lifespan, electrical				
AC-1				
400 V 50/60 Hz	Operations		3000	
415 V 50/60 Hz	Operations		3000	
690 V 50/60 Hz	Operations		2000	
AC--3				
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 downtime in a short-circuit		ms	< 25	\leq 415 V; < 35 > 415 V

Terminal capacity

Standard equipment				Screw connection
Optional accessories				Tunnel terminal connection on rear Strip terminal
Round copper conductor				
Tunnel terminal				
Stranded			mm^2	
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) 4 x (50 - 185)
Module plate				
Single hole	min.		mm^2	1 x (185 - 240)
Single hole	max.		mm^2	2 x (70 - 185)
Module plate				
Double hole	min.		mm^2	4 x 50
Double hole	max.		mm^2	4 x (35 - 185)
Connection width extension			mm^2	
Connection width extension			mm^2	2 x 240 6 x (70 - 240)
Al conductors, Cu cable				
Stranded			mm^2	
4-hole			mm^2	4 x (50 - 240)
Bolt terminal and rear-side connection				
Flat copper strip, with holes	min.		mm	(2 x) 10 x 50 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
Cu strip (number of segments x width x segment thickness)				

Flat conductor terminal			
	min.	mm	6 x 16 x 0.8
	max.	mm	(2 x) 10 x 32 x 1.0
Module plate			
Single hole		mm	(2 x) 10 x 50 x 1.0
Bolt terminal and rear-side connection			
Flat copper strip, with holes	min.	mm	(2 x) 10 x 50 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

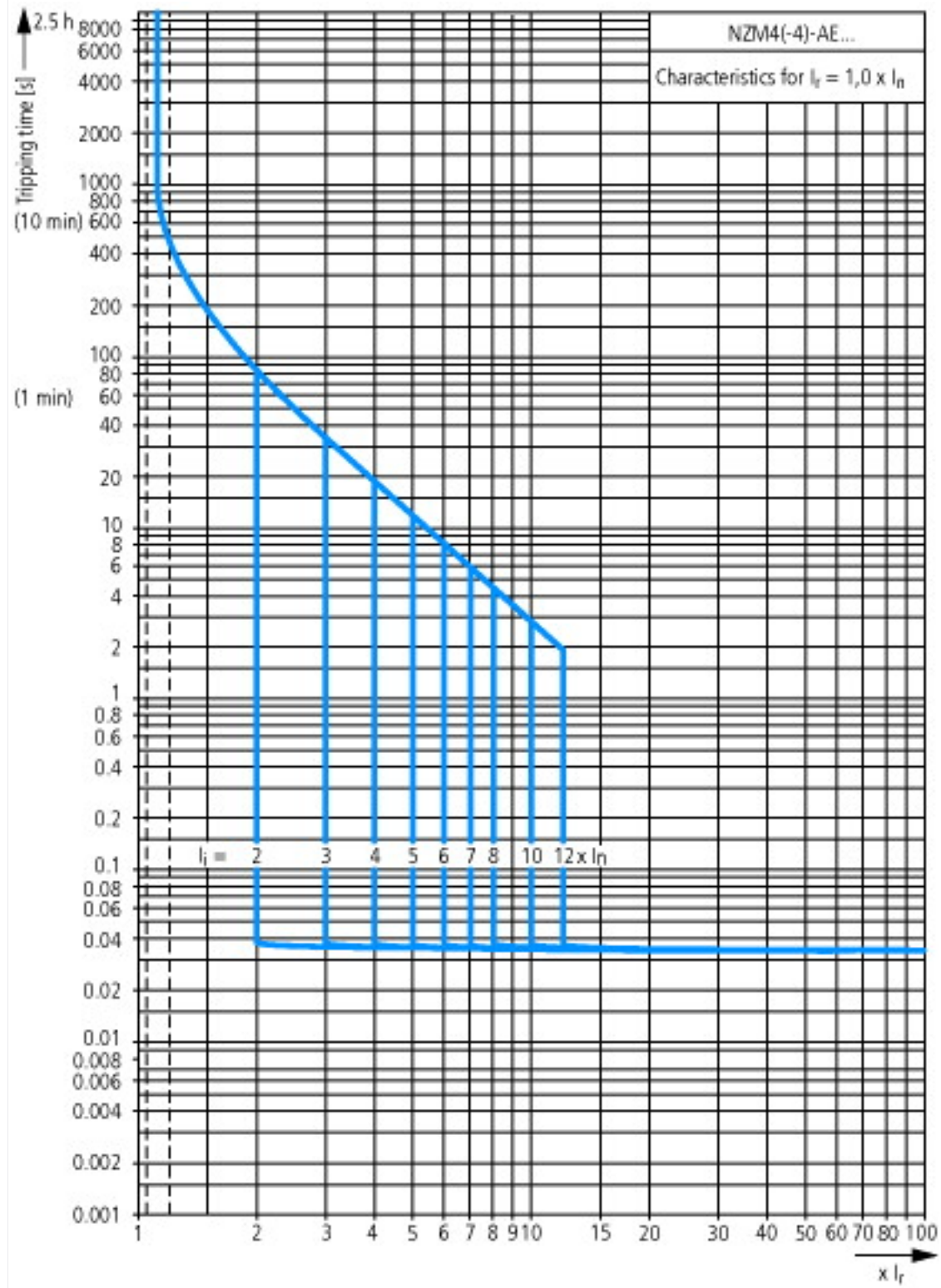
Technical data for design verification			
Rated operational current for specified heat dissipation	I _n	A	1250
Equipment heat dissipation, current-dependent	P _{vid}	W	173.44
Operating ambient temperature min.		°C	-25
Operating ambient temperature max.		°C	70
IEC/EN 61439 design verification			
10.2 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.

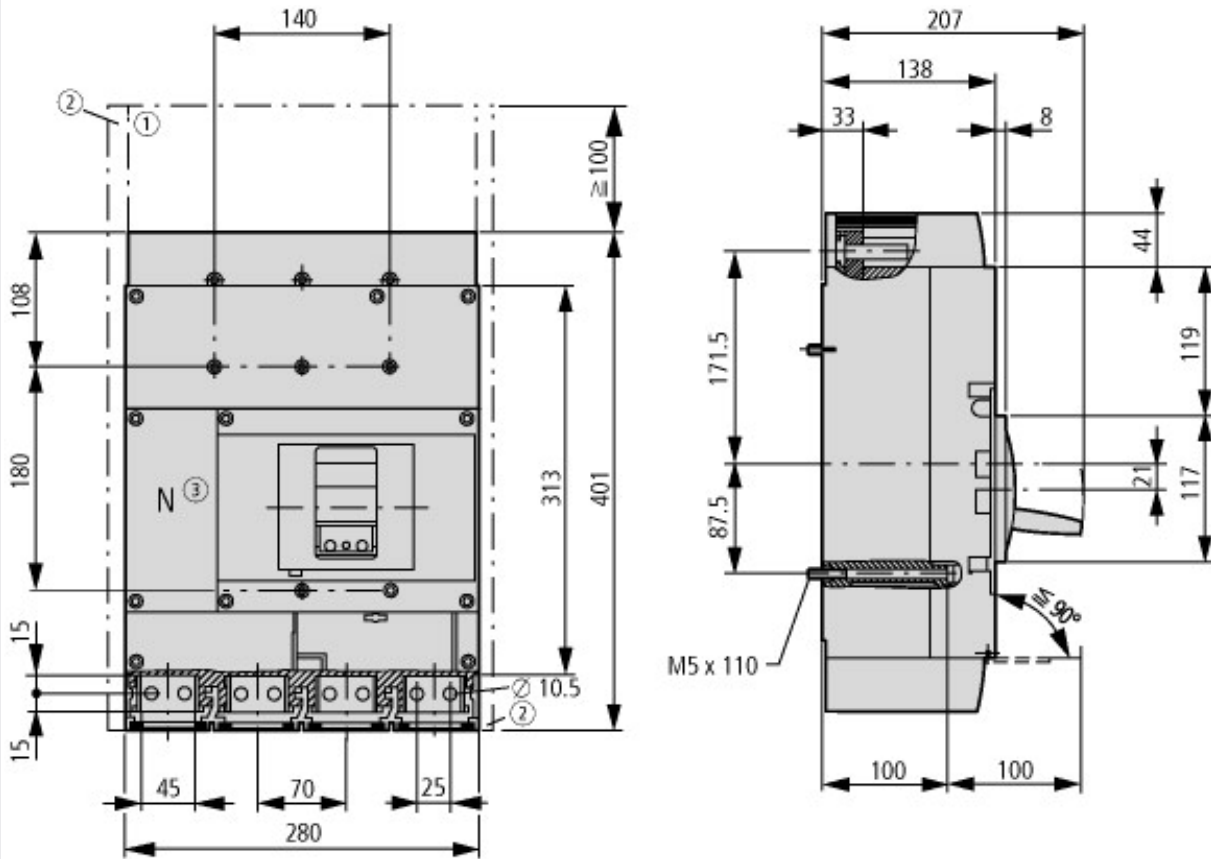
Technical data ETIM 6.0

Low-voltage industrial components (EG000017) / Power circuit-breaker for trafo/generator/installation prot. (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@ss8.1-27-37-04-09 [AJZ716010])		
Rated permanent current I _u	A	1250
Rated voltage	V	690 - 690
Rated short-circuit breaking capacity I _{cu} at 400 V, 50 Hz	kA	50
Overload release current setting	A	630 - 1250
Adjustment range short-term delayed short-circuit release	A	0 - 0
Adjustment range undelayed short-circuit release	A	2500 - 15000
Integrated earth fault protection		No
Type of electrical connection of main circuit		Screw connection
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		No
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
Switched-off indicator available		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



Dimensions



① Blow out area, minimum clearance to adjacent parts
 $U_i \leq 690$ V: 100 mm
 $U_i \leq 1500$ V: 200 mm

② Minimum clearance to adjacent parts
 $U_i \leq 1000$ V: 15 mm
 $U_i \leq 1500$ V: 70 mm

Additional product information (links)

IL01210010Z (AWA1230-2022) Circuit-Breaker, basic unit

IL01210010Z (AWA1230-2022) Circuit-Breaker, basic unit	ftp://ftp.moeller.net/DOCUMENTATION/AWA_INSTRUCTIONS/IL01210010Z2015_11.pdf
Weight	http://ecat.moeller.net/flip-cat/?edition=HPLEN&startpage=17.171
Temperature dependency, Derating	http://ecat.moeller.net/flip-cat/?edition=HPLEN&startpage=17.172
Effective power loss	http://ecat.moeller.net/flip-cat/?edition=HPLEN&startpage=17.174
CurveSelect characteristics program	http://www.eaton.eu/DE/Europe/Electrical/CustomSupport/ConfigurationTools/CharacteristicsProgram/index.htm