







Circuit-breaker, 4 p, 800A

Part no. LZMN4-4-AE800-I
Article no. 116477

Similar to illustration

Delivery programme

Product range				Circuit-breaker
Protective function				System and cable protection
Standard/Approval				IEC
Installation type				Fixed
Release system				Electronic release
Construction size				LZM4
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 50/60 Hz	I_{cu}	kA		50
Rated current = rated uninterrupted current				
Rated current = rated uninterrupted current	$I_n = I_u$	A		800
Neutral conductor	% of phase conductor	CSA		100
Setting range				
Overload trip				
	I_r	A		400 - 800
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, VDE 0660
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
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




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° 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 area of the HMI devices: IP20 (basic protection type)
Enclosures		with insulating surround: IP40 with door coupling rotary handle: IP66
Terminations		Tunnel terminal: IP10 Phase isolator and band terminal: IP00

Circuit-breakers

Rated current = rated uninterrupted current	$I_n = I_u$	A	800
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 50/60 Hz	I_{cm}	kA	105
400/415 V 50/60 Hz	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	
230 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
Rated short-time withstand current			Maximum back-up fuse, if the expected short-circuit currents at the installation location exceed the switching capacity of the circuit-breaker.
$t = 0.3$ s	I_{cw}	kA	19.2
$t = 1$ s	I_{cw}	kA	19.2
Utilization category to IEC/EN 60947-2			B (2000A: A)
Rated making and breaking capacity			
Rated operational current	I_e	A	
AC-1			
380 V 400 V	I_e	A	2000
415 V	I_e	A	1600

690 V	I _e	A	2000
AC--3			
380 V 400 V	I _e	A	800
415 V	I _e	A	800
660 V 690 V	I _e	A	800
			For AC--3 rated operational current with NZM4 the following applies: 400 V: max. 650 kW; 690 V: max. 600 kW
Lifespan, mechanical	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-2, 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
Current heat losses per pole at I _u are based on the maximum rated operational current of the frame size.		W	97
			For current heat loss per pole the specification refers to the maximum rated operational current of the frame size.
Total downtime in a short-circuit		ms	< 25 \leq 415 V; < 35 > 415 V

Terminal capacity

Standard equipment				Screw connection
Overview				Basic equipment
				Box terminal
				Screw connection
				accessory consideration
				Box terminals
				Screw connection
				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 (120 - 300)	
Single hole	max.	mm ²	2 x (95 - 300)	
Module plate				
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 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	(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	(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	(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 ²	25 x 5
	max.	mm ²	2 x (50 x 10) 2 x (80 x 10)
Module plate			
Single hole	min.	mm ²	25 x 5
Single hole	max.	mm ²	2 x (50 x 10)
Module plate			
Double hole		mm ²	2 x (50 x 10)
Connection width extension		mm ²	
Connection width extension	min.	mm ²	60 x 10
Connection width extension	max.	mm ²	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

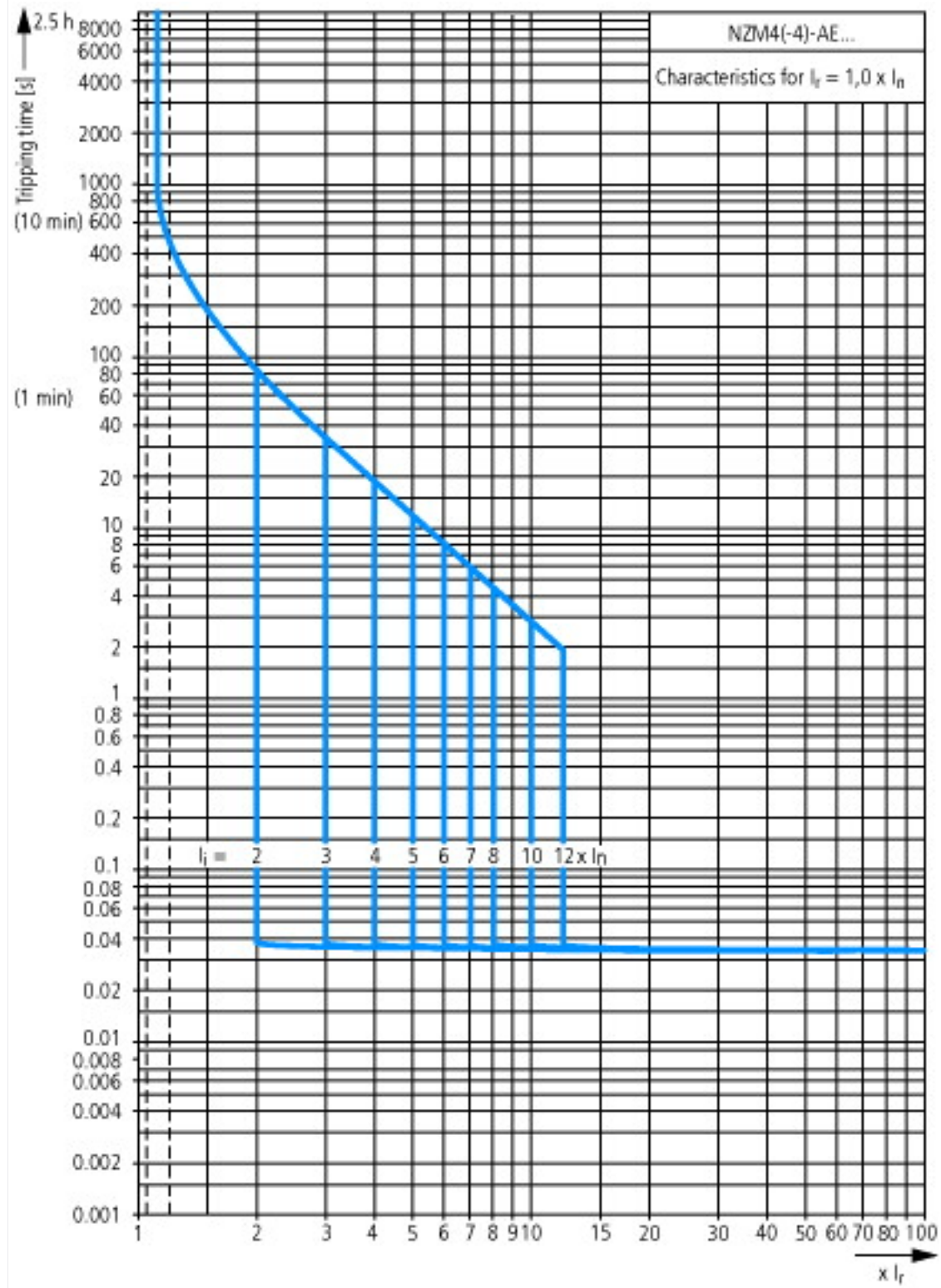
Technical data for design verification			
Rated operational current for specified heat dissipation	I _n	A	800
Equipment heat dissipation, current-dependent	P _{vid}	W	111.36
IEC/EN 61439 design verification			
10.2 Strength of materials and parts			
10.2.2 Corrosion resistance			Meets the product standard's 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.

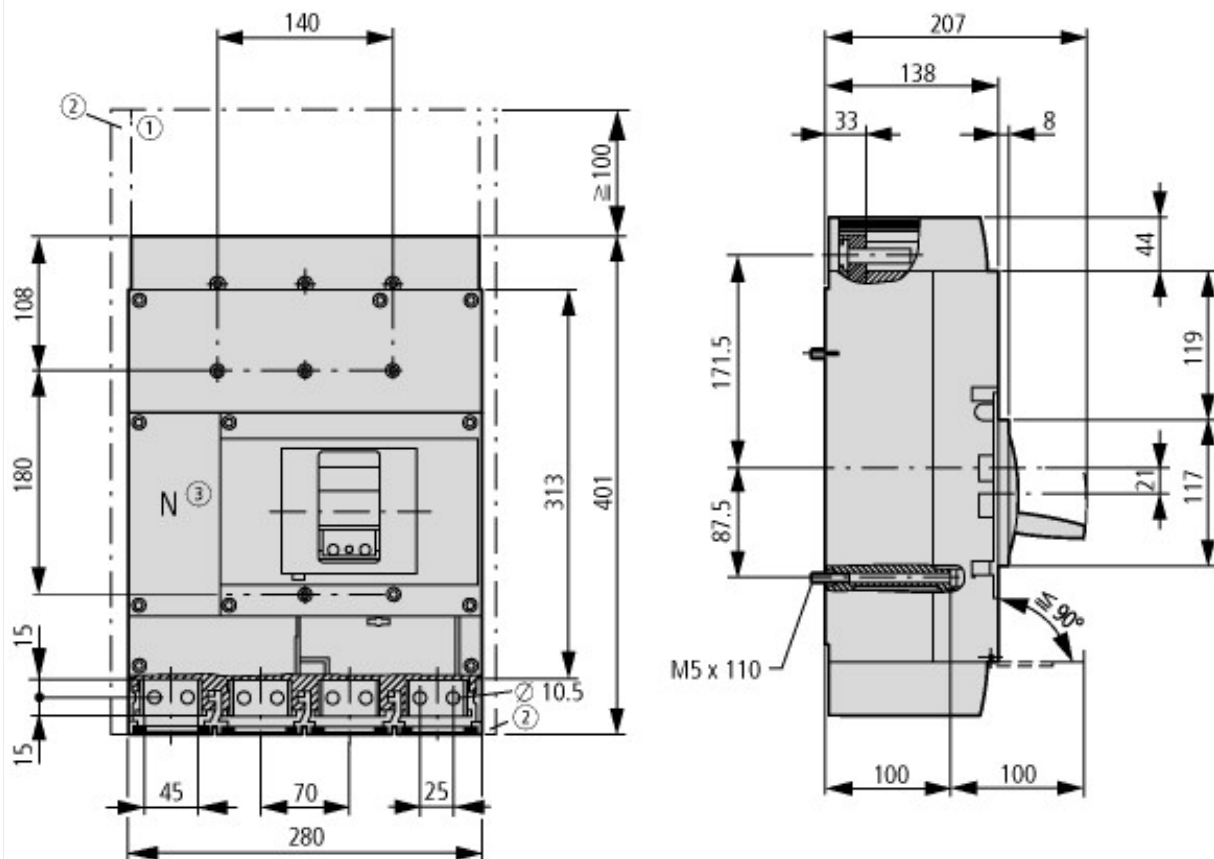
Technical data ETIM 5.0

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@ss8-27-37-04-09 [AJZ716009])		
Rated permanent current I _u	A	800
Rated short-circuit breaking capacity I _{cu} at 400 V, 50 Hz	kA	50
Setting range overload protector	A	400 - 800
Adjustment range short-term delayed short-circuit release	A	0 - 0
Adjustment range undelayed short-circuit release	A	1600 - 9600
Integrated earth fault protection		No
Connection type main current circuit		Screw connection
Device construction		Built-in device fixed built-in technique
Suitable for DIN rail (top hat rail) mounting		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 connection
Type of control element		Rocker lever
Motor drive optional		Yes
Motor drive integrated		No
Degree of protection (IP)		IP20

Characteristics



Dimensions



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

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

Additional product information (links)

IL01210018Z circuit-breaker LZM4, switch-disconnector LN4

IL01210018Z circuit-breaker LZM4, switch-disconnector LN4

ftp://ftp.moeller.net/DOCUMENTATION/AWA_INSTRUCTIONS/IL01210018Z2011_01.pdf