





Molded Case Switch, 3p, 1000A

Part no. NS4-1000-NA
Catalog No. 102690

Similar to illustration

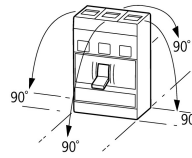
Delivery program

Product range			Switch-disconnectors
Protective function			Disconnectors/main switches
Standard/Approval			UL/CSA, IEC
Installation type			Fixed
Construction size			N4
Description			IEC/EN 60947-2: Circuit-breakers without overcurrent (CBI-X) with main switch characteristics and isolating characteristics to IEC/EN 60204.
Number of poles			3 pole
Standard equipment			Screw connection
Switch positions			I, +, 0
Rated current = rated uninterrupted current	$I_n = I_u$	A	1000
Rated current = rated uninterrupted current	$I_n = I_u$	A	1000
Switching capacity			
SCCR 480Y/277 V 60 Hz	I_{cu}	kA	65
SCCR 480 V 60 Hz	I_{cu}	kA	65
SCCR 600Y/347 V 60 Hz	I_{cu}	kA	42
SCCR 600 V 60 Hz	I_{cu}	kA	42
Short-circuit releases			
			
Non-delayed	$I_j = I_n \times \dots$		25000 A fixed
			

Technical data

Switch-disconnectors

Rated surge voltage invariability	U_{imp}		
Main contacts		V	8000
Auxiliary contacts		V	6000
Rated operational voltage	U_e	V AC	690
Rated current = rated uninterrupted current	$I_n = I_u$	A	1000
Rated current = rated uninterrupted current	$I_n = I_u$	A	1000
Rated uninterrupted current	I_u	A	
IEC/EN 61131-3	I_u	A	1200
UL 489, CSA 22.2 No. 5.1	I_u	A	1200
Overvoltage category/pollution degree			III/3
Rated insulation voltage	U_i	V	1000
Other technical data (sheet catalogue)			Weight Temperature dependency, Derating Effective power loss
Ambient temperature			
Ambient temperature, storage		°C	- 40 - + 70
Operation		°C	-25 - +70

Mounting position		Vertical and 90° in all directions		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
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		

Switching capacity (UL489, CSA 22.2 No. 5.1)

SCCR 240 V 60 Hz	I_{cu}	kA	125
SCCR 480Y/277 V 60 Hz	I_{cu}	kA	65
SCCR 480 V 60 Hz	I_{cu}	kA	65
SCCR 600Y/347 V 60 Hz	I_{cu}	kA	42
SCCR 600 V 60 Hz	I_{cu}	kA	42

Rated short-circuit making capacity

240 V 50/60 Hz	I_{cm}	kA	187
400/415 V 50/60 Hz	I_{cm}	kA	154
440 V 50/60 Hz	I_{cm}	kA	143
525 V 50/60 Hz	I_{cm}	kA	84
690 V 50/60 Hz	I_c	kA	74

Rated short-circuit breaking capacity I_{cn}

I_{cu} to IEC/EN 60947 test cycle O-t-CO	I_{cu}	kA	
240 V 50/60 Hz	I_{cu}	kA	85
400/415 V 50 Hz	I_{cu}	kA	70
440 V 50/60 Hz	I_{cu}	kA	65
525 V 50/60 Hz	I_{cu}	kA	40
690 V 50/60 Hz	I_{cu}	kA	35
I_{cs} to IEC/EN 60947 test cycle O-t-CO-t-CO	I_{cs}	kA	
230 V 50/60 Hz	I_{cs}	kA	43
400/415 V 50/60 Hz	I_{cs}	kA	35
440 V 50/60 Hz	I_{cs}	kA	33
525 V 50/60 Hz	I_{cs}	kA	20
690 V 50/60 Hz	I_{cs}	kA	18
Lifespan, mechanical	Operations		10000
Max. operating frequency		Ops/h	60

Lifespan, electrical

400 V 50/60 Hz	Operations		3000
415 V 50/60 Hz	Operations		2000
690 V 50/60 Hz	Operations		2000
400 V 50/60 Hz	Operations		2000
415 V 50/60 Hz	Operations		2000
690 V 50/60 Hz	Operations		1000
		ms	< 25 ≤ 415 V; < 35 > 415 V

Terminal capacity IEC

Standard equipment			Screw connection
Optional accessories			Tunnel terminal connection on rear Strip terminal

Copper conductors and cables			
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) 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			
Connection width extension		mm ²	4 x 300 6 x (95 - 240)
Al conductors, Al cable			
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			
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.	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)			
Bolt terminal and rear-side connection			
Screw connection			
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			
Connection width extension	min.	mm	60 x 10
Connection width extension	max.	mm	2 x (80 x 10)

NA terminal capacity

Copper conductors and cables			
Tunnel terminal			
Stranded		AWG	
4-hole		AWG/ kcmil	4 x (0 - 500)
Bolt terminal and rear-side connection			
Module plate			
1-hole	Min.	AWG/ kcmil	1 x (250 - 600)
1-hole	Max.	AWG/ kcmil	2 x (3/0 - 600)
Module plate			
2-hole	Min.	AWG/ kcmil	2 x (3/0 - 350)
2-hole	Max.	AWG/ kcmil	4 x (2 - 350)
Connection width extension			
Connection width extension		AWG/ kcmil	4 x 600 6 x (3/0 - 500)
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			
Connection width extension	min.	mm	60 x 10
Connection width extension	max.	mm	2 x (80 x 10)

Design verification as per IEC/EN 61439

Technical data for design verification			
Rated operational current for specified heat dissipation	I_n	A	1000
Equipment heat dissipation, current-dependent	P_{vid}	W	111
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			
10.2.2.1 Verification of thermal stability of enclosures			Meets the product standard's requirements.
10.2.2.2 Verification of resistance of insulating materials to normal heat			Meets the product standard's requirements.
10.2.2.3 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

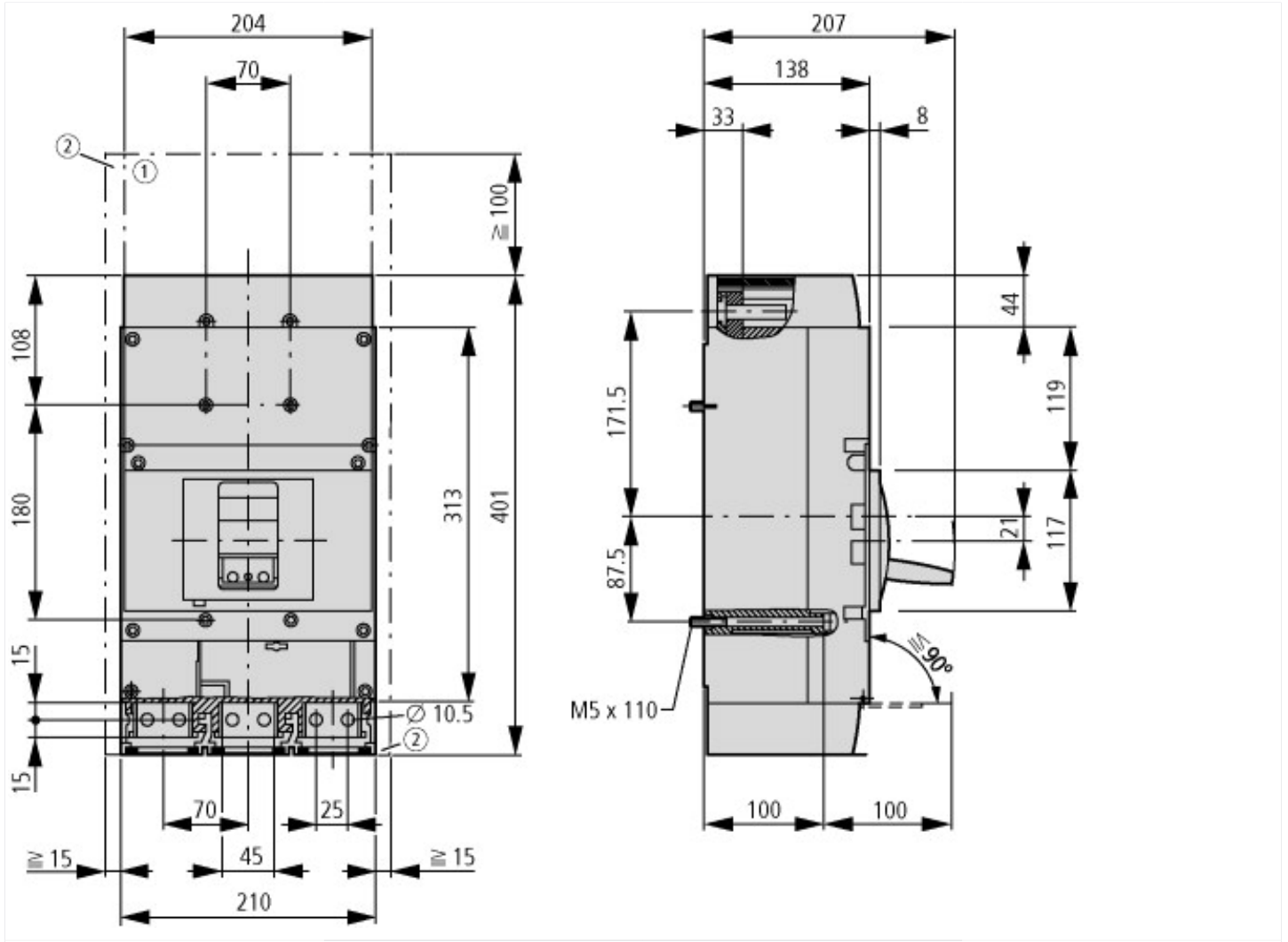
Low-voltage industrial components (EG000017) / Power circuit-breaker for trafo/generator/installation protection (EC000228)		
Electric engineering, automation, process control engineering / Low-voltage switch technology / Circuit breaker (LV < 1 kV) / Circuit breaker for power transformer, generator and system protection (ecl@ss10.0.1-27-37-04-09 [AJZ716013])		
Rated permanent current I _u	A	1000
Rated voltage	V	690 - 690
Rated short-circuit breaking capacity I _{cu} at 400 V, 50 Hz	kA	70
Overload release current setting	A	0 - 0
Adjustment range short-term delayed short-circuit release	A	0 - 0
Adjustment range undelayed short-circuit release	A	25000 - 25000
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		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 switched-off indicator		No
With under voltage release		No
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		Yes
Degree of protection (IP)		IP20

Approvals

Product Standards		UL 489; CSA-C22.2 No. 5-09; IEC 60947-2; CE marking
UL File No.		E148671
UL Category Control No.		WJAZ
CSA File No.		022086
CSA Class No.		4652-06

North America Certification	UL listed, CSA certified
Specially designed for North America	Yes
Suitable for	Feeder circuits, branch circuits
Current Limiting Circuit-Breaker	No
Max. Voltage Rating	600 V
Degree of Protection	IEC: IP20; UL/CSA Type: -

Dimensions



- ① Blow out area, minimum clearance to adjacent 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)

IL01208009Z (AWA1230-1992) Circuit-Breaker, basic unit	
IL01208009Z (AWA1230-1992) Circuit-Breaker, basic unit	ftp://ftp.moeller.net/DOCUMENTATION/AWA_INSTRUCTIONS/IL01208009Z2018_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/CustomerSupport/ConfigurationTools/CharacteristicsProgram/index.htm
Eaton configurator	http://www.eaton.eu/DE/Europe/Electrical/CustomerSupport/ConfigurationTools/ConfiguratorCircuitBreaker/index.htm
additional technical information for NZM power switch	ftp://ftp.moeller.net/DOCUMENTATION/PDF/nzm_techinc_de_en.pdf