



**Molded Case Switch 4p 1000A 1000VDC UL**

**Part no. N4-4-1000-S1-PV-NA**  
**Catalog No. 179326**



**Delivery program**

Product range			Switch-disconnectors
Protective function			Disconnectors/main switches Photovoltaic applications
Product range			DC switch-disconnectors
Application field			Utility buildings Open areas
Part no.			N...PV-NA
Standard/Approval			UL489B IEC 60947-3 CE CCC
Rated operational voltage			1000
Installation type			Fixed
Construction size			N4
Description			<p>Main switch characteristics including positive drive to IEC/EN 60204 and VDE 0113. Isolating characteristics to IEC/EN 60947-3 and VDE 0660.</p> <p>N switch-disconnectors can, in addition, be combined with NZM...-XU, NZM...-XA shunt releases and auxiliary contacts as well as with NZM...-XR... remote operator. For DC switching, all 4 contacts must be connected in series. Refer to the information on jumper kit accessories.</p> <p>When working with ungrounded systems (e.g., IT), the installation must ensure that a double ground fault will be impossible.</p> <p>Switch can not be combined with plug-in/withdrawable units and/or connection on rear.</p> <p>Within the scope of application for UL489B, the switch cannot be combined with connection width extensions, module plates, or band terminals either.</p> <p>N4-4...-S15-DC feeder unit and outgoer from the bottom only.</p> <p>Suitable for 100%-rated application together with an enclosure with minimum dimensions of 1200 x 600 x 275 mm (WxHxD).</p> <p>Does not provide any overcurrent protection.</p>
Connection options			
Number of poles			4-pole basic device, usable in a 1-pole or 2-pole configuration depending on the type of connection
Standard equipment			Screw connection
Switch positions			I, +, 0
Rated current = rated uninterrupted current	$I_n = I_u$	A	1000

Remotely control / trip			Optionally with XR remote operator/Can be optionally controlled remotely with XU/ XA shunt release
Rated operating frequency			DC

## Technical data

### Switch-disconnectors

Rated operational voltage, max.	U <sub>e</sub>	V DC	1000
Rated uninterrupted current with terminal jumpers			
at 40°			1000
at 65°			1000
			Values for rated uninterrupted current at 65 °C include jumpers.
Utilization category			DC22A
Rated operational current	I <sub>e</sub>	A	
DC 22-A	I <sub>e</sub>	A	1000
Overvoltage category/pollution degree			III/3
Rated insulation voltage	U <sub>i</sub>	V	1250
Ambient temperature			
Ambient temperature, storage		°C	- 40 - + 70
Operation		°C	-25 - +70

### Rated short-time withstand current

t = 0.1 s	I <sub>cw</sub>	kA	34
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### Lifespan, mechanical

Max. operating frequency		Ops/h	60
Lifespan, mechanical	Operations		10000
			Lifespan, mechanical: of which max. 50 % trip by shunt/undervoltage release

### Lifespan, electrical

Electrical	Operations		500
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### Terminal capacity

Standard equipment			Screw connection
Round copper conductor			
Tunnel terminal			
Stranded			
4-hole		mm <sup>2</sup>	4 x (50 - 240)
Bolt terminals			
Direct on the switch			
Stranded		mm <sup>2</sup>	1 x (120 - 185) 4 x (50 - 185)
Module plate			
Single hole	min.	mm <sup>2</sup>	1 x (120 - 300)
Single hole	max.	mm <sup>2</sup>	2 x (95 - 300)
Module plate			
Double hole	min.	mm <sup>2</sup>	2 x (95 - 185)
Double hole	max.	mm <sup>2</sup>	4 x (35 - 185)
Connection width extension		mm <sup>2</sup>	
Connection width extension		mm <sup>2</sup>	4 x 300 6 x (95 - 240)
Al conductors, Cu cable			
Tunnel terminal			
Stranded			
4-hole		mm <sup>2</sup>	4 x (25 - 240)
Bolt terminal and rear-side connection			
Flat copper strip, with holes	min.	mm	(2x) 10 x 50 x 1.0
Flat copper strip, with holes	max.	mm	(2x) 10 x 50 x 1.0
Connection width extension		mm	(2x) 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	(2x) 10 x 32 x 1.0
Module plate			
Single hole		mm	(2x) 10 x 50 x 1,0
Bolt terminal and rear-side connection			
Flat copper strip, with holes	min.	mm	(2x) 10 x 50 x 1.0
Flat copper strip, with holes	max.	mm	(2x) 10 x 50 x 1.0
Connection width extension		mm	(2x) 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	20 x 5
	max.	mm	2 x (50 x 10) 2 x (80 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 (10 x 80)

## 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	148
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.

## Technical data ETIM 7.0

Low-voltage industrial components (EG000017) / Switch disconnecter (EC000216)

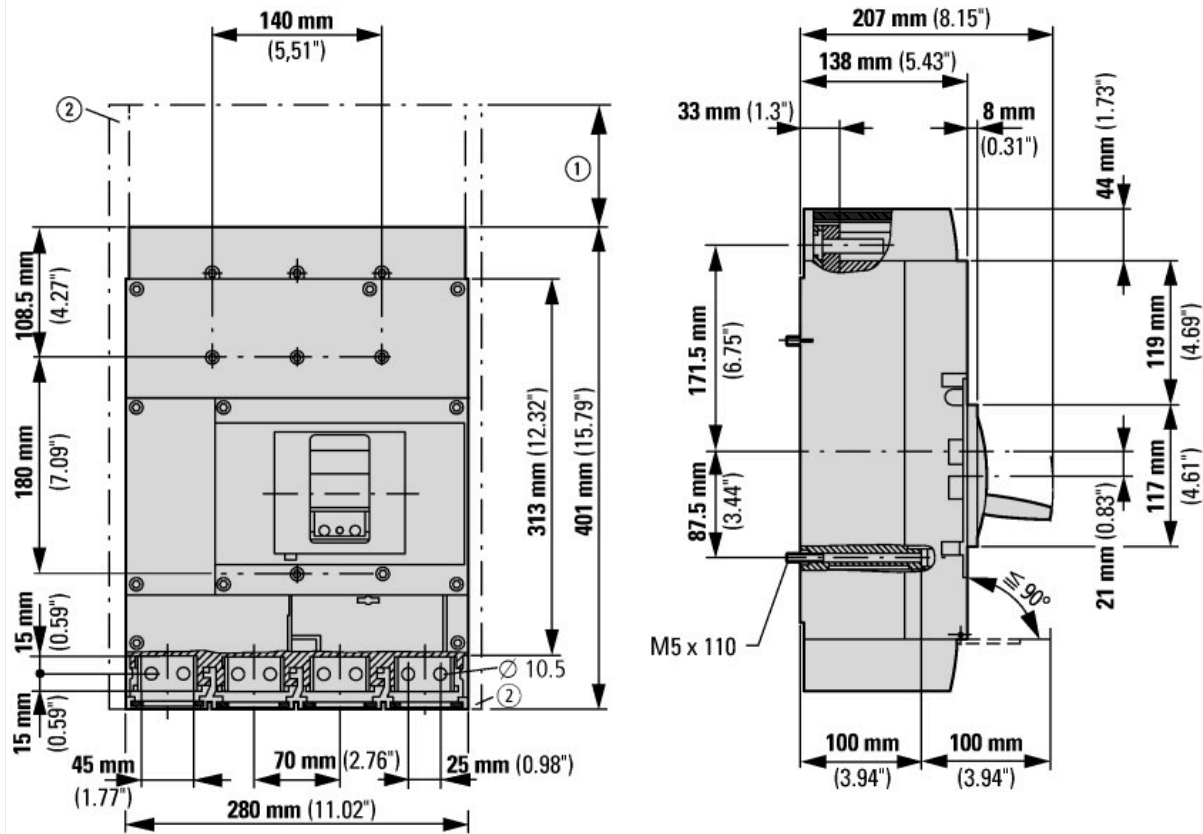
Electric engineering, automation, process control engineering / Low-voltage switch technology / Off-load switch, circuit breaker, control switch / Switch disconnecter (ec1@ss10.0.1-27-37-14-03 [AKF060013])

Version as main switch		Yes
Version as maintenance-/service switch		Yes
Version as safety switch		No
Version as emergency stop installation		Yes
Version as reversing switch		No
Number of switches		1
Max. rated operation voltage U <sub>e</sub> AC	V	0
Rated operating voltage	V	1000 - 1000
Rated permanent current I <sub>u</sub>	A	1000
Rated permanent current at AC-23, 400 V	A	0
Rated permanent current at AC-21, 400 V	A	0
Rated operation power at AC-3, 400 V	kW	0
Rated short-time withstand current I <sub>cw</sub>	kA	34
Rated operation power at AC-23, 400 V	kW	0
Switching power at 400 V	kW	0
Conditioned rated short-circuit current I <sub>q</sub>	kA	0
Number of poles		4
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
Motor drive optional		Yes
Motor drive integrated		No
Voltage release optional		Yes
Device construction		Built-in device fixed built-in technique
Suitable for ground mounting		Yes
Suitable for front mounting 4-hole		No
Suitable for front mounting centre		No
Suitable for distribution board installation		Yes
Suitable for intermediate mounting		Yes
Colour control element		Black
Type of control element		Rocker lever
Interlockable		Yes
Type of electrical connection of main circuit		Screw connection
Degree of protection (IP), front side		IP20
Degree of protection (NEMA)		

## Approvals

Product Standards		UL 489B; IEC 60947-3; CE marking; CCC
UL File No.		E471671
CSA File No.		-
CSA Class No.		-
North America Certification		UL listed
Specially designed for North America		No
Suitable for		Feeder circuits, branch circuits
Current Limiting Circuit-Breaker		No
Max. Voltage Rating		1000 VDC
Degree of Protection		IEC: IP20; UL/CSA Type: -

## Dimensions



- ① Blow out area, minimum clearance to other parts  $\geq 260$  mm  
 ② Minimum clearance to adjacent parts  $\geq 15$  mm

## Additional product information (links)

CurveSelect characteristics program	<a href="http://www.eaton.eu/DE/Europe/Electrical/Customersupport/ConfigurationTools/CharacteristicsProgram/index.htm">http://www.eaton.eu/DE/Europe/Electrical/Customersupport/ConfigurationTools/CharacteristicsProgram/index.htm</a>
Eaton configurator	<a href="http://www.eaton.eu/DE/Europe/Electrical/Customersupport/ConfigurationTools/ConfiguratorCircuitBreaker/index.htm">http://www.eaton.eu/DE/Europe/Electrical/Customersupport/ConfigurationTools/ConfiguratorCircuitBreaker/index.htm</a>
Additional technical data: Photovoltaics catalog (starting on page 35)	<a href="http://www.moeller.net/binary/pdf_kat/br01601001z_en.pdf">http://www.moeller.net/binary/pdf_kat/br01601001z_en.pdf</a>