DATASHEET - N4-4-1600-S15-DC

Switch-disconnector 4p 1600A 1500VDC

Part no. **N4-4-1600-S15-DC**
166417

General specifications

Product name	Eaton Moeller series NZM switch-disconnector
Part no.	N4-4-1600-S15-DC
EAN	4015081629251
Product Length/Depth	435 millimetre
Product height	280 millimetre
Product width	310 millimetre
Product weight	22 kilogram
Compliances	RoHS conform
Certifications	IEC
Product Tradename	NZM
Product Type	Switch-disconnector
Product Sub Type	None

Delivery program

Application	Open areas Utility buildings
Type	DC switch-disconnector Switch-disconnector
Circuit breaker frame type	N4
Number of poles	Four-pole
Amperage Rating	1600 A
Features	Motor drive optional Remote operation with shunt releases / remote operator Version as emergency stop installation Version as maintenance-/service switch Version as main switch
Special features	IEC/EN 60947-3 CCC China Compulsory Certificate Main switch characteristics including positive drive to IEC/EN 60204 and VDE 0113. Isolating characteristics to IEC/EN 60947-3 and VDE 0660. 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. Supplied as standard: Screw connection box terminal optional. When working with ungrounded systems (e.g., IT), the installation must ensure that a double ground fault will be impossible. Switch can not be combined with plug-in/withdrawable units and/or connection on rear. Lifespan, mechanical: of which max. 50 % trip by shunt/undervoltage release Rated current = rated uninterrupted current: 1600 A Values for rated uninterrupted current at 65 °C include jumpers.

Technical Data - Electrical

Voltage rating	1500 V - 1500 V
Rated operating voltage (Ue) at AC - max	0 V
Rated insulation voltage (Ui)	1500 V
Current rating (Iu) at 40°C with terminal jumpers	1600 A
Current rating (Iu) at 65°C with terminal jumpers	1500 A
Rated conditional short-circuit current (Iq)	0 kA
Rated operational current	1600 A (DC 22-A)
Rated permanent current at AC-21, 400 V	0 A
Rated permanent current at AC-23, 400 V	0 A
Rated short-time withstand current (Icw)	34 kA
Rated short-time withstand current (t = 0.1 s)	34 kA
Rated operating power at AC-3, 400 V	0 kW
Rated operating power at AC-23, 400 V	0 kW
Switching power at 400 V	0 kW
Electrical connection type of main circuit	Screw connection
Number of operations per hour - max	60
Handle type	Rocker lever
Utilization category	DC-22 A

Overvoltage category	III
Pollution degree	3
Technical Data - Mechanical	
Mounting Method	Distribution board installation Fixed Intermediate mounting Built-in device fixed built-in technique Ground mounting
Degree of protection	IP20
Degree of protection (IP), front side	IP20
Number of auxiliary contacts (change-over contacts)	0
Number of auxiliary contacts (normally closed contacts)	0
Number of auxiliary contacts (normally open contacts)	0
Number of switches	1
Handle color	Black
Switch positions	I, +, 0
Special features	IEC/EN 60947-3 CCC China Compulsory Certificate Main switch characteristics including positive drive to IEC/EN 60204 and VDE 0113. Isolating characteristics to IEC/EN 60947-3 and VDE 0660. 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. Supplied as standard: Screw connection box terminal optional. When working with ungrounded systems (e.g., IT), the installation must ensure that a double ground fault will be impossible. Switch can not be combined with plug-in/withdrawable units and/or connection on rear. Lifespan, mechanical: of which max. 50 % trip by shunt/undervoltage release Rated current = rated uninterrupted current: 1600 A Values for rated uninterrupted current at 65 °C include jumpers.
Lifespan, mechanical	10000 operations
Technical Data - Mechanical - Terminals	
Standard terminals	Screw terminal
Terminal capacity (aluminum stranded conductor/cable)	50 mm^2 - 240 mm^2 (4x) at 4-hole tunnel terminal
Terminal capacity (copper busbar)	50 mm x 10 mm (2x) at rear-side 2-hole module plate Min. 60 mm x 10 mm at rear-side width extension Min. 25 mm x 5 mm at rear-side 1-hole module plate Min. 25 mm x 5 mm direct at switch rear-side connection Max. 10 mm x 80 mm (2x) at rear-side width extension Max. 50 mm x 10 mm (2x) direct at switch rear-side connection Max. 80 mm x 10 mm (2x) direct at switch rear-side connection Max. 50 mm x 10 mm (2x) at rear-side 1-hole module plate M10 at rear-side screw connection
Terminal capacity (copper solid conductor/cable)	95 mm^2 - 185 mm^2 (2x) at rear-side 2-hole module plate 95 mm^2 - 240 mm^2 (6x) at rear-side width extension 120 mm^2 - 300 mm^2 (1x) at rear-side 1-hole module plate 50 mm^2 - 240 mm^2 (4x) at 4-hole tunnel terminal 95 mm^2 - 300 mm^2 (2x) at rear-side 1-hole module plate 300 mm^2 (4x) at rear-side width extension 35 mm^2 - 185 mm^2 (4x) at rear-side 2-hole module plate
Terminal capacity (copper stranded conductor/cable)	50 mm^2 - 185 mm^2 (4x) direct at switch rear-side connection 120 mm^2 - 185 mm^2 (1x) direct at switch rear-side connection
Terminal capacity (copper strip)	10 segments of 50 mm x 1 mm (2x) at 1-hole module plate Min. 10 segments of 50 mm x 1 mm (2x) at rear-side connection (punched) Max. 10 segments of 50 mm x 1 mm (2x) at rear-side connection (punched) Min. 6 segments of 16 mm x 0.8 mm at flat conductor terminal 10 segments of 80 mm x 1 mm (2x) at rear-side width extension Max. 10 segments of 32 mm x 1 mm (2x) at flat conductor terminal
Design verification as per IEC/EN 61439 - technical data	
Rated operational current for specified heat dissipation (In)	1600 A
Equipment heat dissipation, current-dependent	379 W
Ambient operating temperature - min	-25 °C
Ambient operating temperature - max	70 °C
Ambient storage temperature - min	40 °C
Ambient storage temperature - max	70 °C
Design verification as per IEC/EN 61439	
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 Resist. of insul. mat. to abnormal heat/fire by internal elect. 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.
10.9.2 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.

Additional information

Functions			Disconnectors/main switches Voltage release optional Photovoltaic applications Interlockable

Technical data ETIM 9.0

Low-voltage industrial components (EG000017) / Switch disconnector (low voltage) (EC000216)

Electric engineering, automation, process control engineering / Low-voltage switch technology / Off-load switch, circuit breaker, control switch / Switch disconnector (ecl@ss13-27-37-14-03 [AKF060018])

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 Ue AC		V	0
Rated operating voltage		V	1500 - 1500
Rated permanent current Iu		A	1600
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 Icw		kA	34
Rated operation power at AC-23, 400 V		kW	0
Switching power at 400 V		kW	0
Conditioned rated short-circuit current Iq		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 floor 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
With pre-assembled cabling			No
Degree of protection (IP), front side			IP20
Degree of protection (NEMA)			Other
Width		mm	310
Height		mm	280
Depth		mm	435
Width in number of modular spacings			

© 04/2023 by Eaton Industries GmbH