DATASHEET - N2-4-160-S15-DC

Switch-disconnector 4p 160A 1500VDC

Part no. **N2-4-160-S15-DC**
167688

General specifications

Product name	Eaton Moeller series NZM switch-disconnector
Part no.	N2-4-160-S15-DC
EAN	4015081642311
Product Length/Depth	149 millimetre
Product height	184 millimetre
Product width	140 millimetre
Product weight	3.5 kilogram
Compliances	RoHS conform
Certifications	IEC
Product Tradename	NZM
Product Type	Switch-disconnector
Product Sub Type	None

Delivery program

Application	Utility buildings Open areas
Type	DC switch-disconnector
Circuit breaker frame type	N2
Number of poles	Four-pole
Amperage Rating	160 A
Features	Version as maintenance-/service switch Remote operation with shunt releases / remote operator Version as main switch Version as emergency stop installation Motor drive optional
Special features	Values for rated uninterrupted current at 65 °C include jumpers. Rated current = rated uninterrupted current: 160 A Lifespan, mechanical: of which max. 50 % trip by shunt/undervoltage release Switch can not be combined with plug-in/withdrawable units and/or connection on rear. When working with ungrounded systems (e.g., IT), the installation must ensure that a double ground fault will be impossible. box terminal optional. Supplied as standard: Screw connection For DC switching, all 4 contacts must be connected in series. Refer to the information on jumper kit accessories. 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. Isolating characteristics to IEC/EN 60947-3 and VDE 0660. Main switch characteristics including positive drive to IEC/EN 60204 and VDE 0113. CCC China Compulsory Certificate IEC/EN 60947-3

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	160 A
Current rating (Iu) at 65°C with terminal jumpers	160 A
Rated conditional short-circuit current (Iq)	0 kA
Rated operational current	160 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)	3.6 kA
Rated short-time withstand current (t = 1 s)	3.6 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	120
Handle type	Rocker lever
Utilization category	DC-22 A
Overvoltage category	III
Pollution degree	2

Technical Data - Mechanical

Mounting Method	Intermediate mounting Ground mounting Distribution board installation Fixed Built-in device fixed built-in technique
Degree of protection	Other
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	Values for rated uninterrupted current at 65 °C include jumpers. Rated current = rated uninterrupted current: 160 A Lifespan, mechanical: of which max. 50 % trip by shunt/undervoltage release Switch can not be combined with plug-in/withdrawable units and/or connection on rear. When working with ungrounded systems (e.g., IT), the installation must ensure that a double ground fault will be impossible. box terminal optional. Supplied as standard: Screw connection For DC switching, all 4 contacts must be connected in series. Refer to the information on jumper kit accessories. 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. Isolating characteristics to IEC/EN 60947-3 and VDE 0660. Main switch characteristics including positive drive to IEC/EN 60204 and VDE 0113. CCC China Compulsory Certificate IEC/EN 60947-3
Lifespan, mechanical	20000 operations

Technical Data - Mechanical - Terminals

Standard terminals	Screw terminal
Terminal capacity (aluminum solid conductor/cable)	16 mm^2 (1x) at tunnel terminal
Terminal capacity (aluminum stranded conductor/cable)	25 mm^2 - 185 mm^2 (1x) at tunnel terminal
Terminal capacity (copper busbar)	Max. 24 mm x 8 mm direct at switch rear-side connection Min. 16 mm x 5 mm direct at switch rear-side connection M8 at rear-side screw connection
Terminal capacity (copper solid conductor/cable)	4 mm^2 - 16 mm^2 (2x) at box terminal 4 mm^2 - 16 mm^2 (1x) at box terminal 4 mm^2 - 16 mm^2 (2x) direct at switch rear-side connection 10 mm^2 - 16 mm^2 (1x) direct at switch rear-side connection 16 mm^2 (1x) at tunnel terminal
Terminal capacity (copper stranded conductor/cable)	25 mm^2 - 185 mm^2 (1x) direct at switch rear-side connection 25 mm^2 - 70 mm^2 (2x) direct at switch rear-side connection 25 mm^2 - 185 mm^2 (1x) at tunnel terminal 25 mm^2 - 185 mm^2 (1x) at box terminal 25 mm^2 - 70 mm^2 (2x) at box terminal
Terminal capacity (copper strip)	Min. 2 segements of 16 mm x 0.8 mm at rear-side connection (punched) Max. 10 segments of 16 mm x 0.8 mm at box terminal Max. 10 segments of 24 mm x 0.8 mm at rear-side connection (punched) Max. 8 segments of 15.5 mm x 0.8 mm (2x) at box terminal Min. 2 segments of 9 mm x 0.8 mm at box terminal

Design verification as per IEC/EN 61439 - technical data

Rated operational current for specified heat dissipation (In)	160 A
Equipment heat dissipation, current-dependent	27 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			Interlockable Disconnectors/main switches Photovoltaic applications Voltage release optional

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	160
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	3.6
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	140
Height		mm	184
Depth		mm	149
Width in number of modular spacings			

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