142267
N3-4-400-S1-DC

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..DC

Standard/Approval
IEC

Rated operational voltage

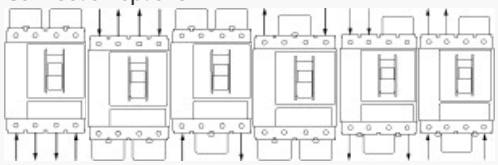
1000

Installation type
Fixed

Construction size
N3

Description
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.
N4-4-...-S15-DC feeder unit and outgoer from the bottom only.

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 [$I_n = I_u$]
400 A

Short-circuit protective device max. fuse gR-characteristic
2 x 250 A gR

Remotely control / trip
Remote operation with shunt releases / remote operator

Rated operating frequency
DC

TECHNICAL DATA

Switch-disconnectors

Rated operational voltage, max. [Ue]
1000 V DC

Rated uninterrupted current with terminal jumpers at 40°
400

Rated uninterrupted current with terminal jumpers at 65°
400

Rated uninterrupted current with terminal jumpers
Values for rated uninterrupted current at 65 °C include jumpers.

Utilization category
DC-22A

Rated operational current [I_e]
DC 22-A [Ie]
400 A

Overvoltage category/pollution degree
III/3

Rated insulation voltage [U_i]
1250 V

Ambient temperature
Ambient temperature, storage
- 40 - + 70 °C

Ambient temperature
Operation
-25 - +70 °C

Rated short-time withstand current

t = 1 s [I_{cw}]
6.6 kA

Rated conditional short-circuit current [kA]

1000 V
15 kA

With back-up fuse
2 x 250 A gR

Lifespan, mechanical

Max. operating frequency
60 Ops/h

Lifespan, mechanical [Operations]
15000

Lifespan, mechanical: of which max. 50 % trip by shunt/undervoltage release

Terminal capacity

Standard equipment
Screw connection

Round copper conductor
Box terminal
Solid
2 x 16 mm^2

Round copper conductor

Box terminal
Stranded
1 x (35 - 240)
2 x (25 - 120) mm^2

Round copper conductor
Tunnel terminal
Stranded
Stranded
1 x (25 - 185) mm^2

Round copper conductor
Tunnel terminal
Stranded
Double hole
1 x (50 - 240)
2 x (50 - 240) mm^2

Round copper conductor
Bolt terminals
Direct on the switch
Solid
1 x 16
2 x 16 mm^2

Round copper conductor
Bolt terminals
Direct on the switch
Stranded
1 x (25 - 240)
2 x (25 - 240) mm^2

Al conductors, Cu cable
Tunnel terminal
Solid
1 x 16 mm^2

Al conductors, Cu cable
Tunnel terminal
Stranded
Stranded
1 x (25 - 185) mm^2

Al conductors, Cu cable
Tunnel terminal
Stranded
Double hole
1 x (50 - 240)
2 x (50 - 240) mm^2

Al conductors, Cu cable
Bolt terminal and rear-side connection
Flat copper strip, with holes [min.]

6 x 16 x 0.8 mm

Al conductors, Cu cable
Bolt terminal and rear-side connection
Flat copper strip, with holes [max.]
10 x 32 x 1.0 + 5 x 32 x 1.0 mm

Al conductors, Cu cable
Bolt terminal and rear-side connection
Connection width extension
(2x) 10 x 50 x 1,0 mm

Cu strip (number of segments x width x segment thickness)
Box terminal [min.]
6 x 16 x 0,8 mm

Cu strip (number of segments x width x segment thickness)
Box terminal [max.]
10 x 24 x 1,0 + 5 x 24 x 1,0
(2x) 8 x 24 x 1,0 mm

Cu strip (number of segments x width x segment thickness)
Bolt terminal and rear-side connection
Flat copper strip, with holes [min.]
6 x 16 x 0.8 mm

Cu strip (number of segments x width x segment thickness)
Bolt terminal and rear-side connection
Flat copper strip, with holes [max.]
10 x 32 x 1.0 + 5 x 32 x 1.0 mm

Cu strip (number of segments x width x segment thickness)
Bolt terminal and rear-side connection
Connection width extension
(2x) 10 x 50 x 1,0 mm

Copper busbar (width x thickness) [mm]
Bolt terminal and rear-side connection
Screw connection
M10

Copper busbar (width x thickness) [mm]
Bolt terminal and rear-side connection
Direct on the switch [min.]
20 x 5 mm

Copper busbar (width x thickness) [mm]
Bolt terminal and rear-side connection
Direct on the switch [max.]
30 x 10 + 30 x 5 mm

Copper busbar (width x thickness) [mm]
Bolt terminal and rear-side connection
Connection width extension
Connection width extension [max.]
2 x (10 x 50) mm

DESIGN VERIFICATION AS PER IEC/EN 61439

Technical data for design verification

Rated operational current for specified heat dissipation [I_n]
400 A

Equipment heat dissipation, current-dependent [P_{vid}]
96 W

Operating ambient temperature min.
-25 °C

Operating ambient temperature max.
+70 °C

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 Strength of materials and parts
10.2.3.1 Verification of thermal stability of enclosures
Meets the product standard's requirements.

10.2 Strength of materials and parts
10.2.3.2 Verification of resistance of insulating materials to normal heat
Meets the product standard's requirements.

10.2 Strength of materials and parts
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 Strength of materials and parts
10.2.4 Resistance to ultra-violet (UV) radiation
Meets the product standard's requirements.

10.2 Strength of materials and parts
10.2.5 Lifting
Does not apply, since the entire switchgear needs to be evaluated.

10.2 Strength of materials and parts
10.2.6 Mechanical impact
Does not apply, since the entire switchgear needs to be evaluated.

10.2 Strength of materials and parts
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 Insulation properties
10.9.3 Impulse withstand voltage
Is the panel builder's responsibility.

10.9 Insulation properties
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) / Switch disconnector (EC000216)

Electric engineering, automation, process control engineering / Low-voltage switch technology / Off-load switch, circuit breaker, control switch / Switch disconnector (ecl@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 Ue AC
0 V

Rated operating voltage
1000 - 1000 V

Rated permanent current Iu
400 A

Rated permanent current at AC-23, 400 V
0 A

Rated permanent current at AC-21, 400 V
0 A

Rated operation power at AC-3, 400 V
0 kW

Rated short-time withstand current Icw
6.6 kA

Rated operation power at AC-23, 400 V
0 kW

Switching power at 400 V
0 kW

Conditioned rated short-circuit current Iq
0 kA

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

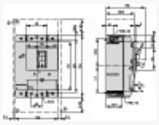
Interlockable
Yes

Type of electrical connection of main circuit
Screw connection

Degree of protection (IP), front side
IP20

Degree of protection (NEMA)

DIMENSIONS



- Blow out area, minimum clearance to other parts
- 120 mm
- Mnimum clearance to adjacent parts 5 mm
- Does not apply to DC applications