



119887

N4-4-1400-S1-DC

Overview

Specifications

Resources



Delivery program

Technical data

Design verification as per IEC/EN 61439

Technical data ETIM 7.0

Dimensions

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
N4

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.

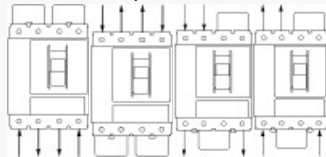
For DC switching, all 4 contacts must be connected in series. Refer to the information on jumper kit accessories.

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 [$I_n = I_u$]

1400 A

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

Rated operating frequency
DC

TECHNICAL DATA

Switch-disconnectors

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

Rated uninterrupted current with terminal jumpers
at 40°
1400

Rated uninterrupted current with terminal jumpers
at 65°
1400

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 [I_e]
1400 A

Rated operational current [I_e]
DC-21B [I_e]
1400 CSA

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

$t = 0.1 \text{ s}$ [I_{cw}]
34 kA

Lifespan, mechanical

Max. operating frequency
60 Ops/h

Lifespan, mechanical [Operations]
10000

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

Terminal capacity

Standard equipment
Screw connection

Round copper conductor
Tunnel terminal
Stranded
4-hole
4 x (50 - 240) mm²

Round copper conductor
Bolt terminals
Direct on the switch
Stranded
1 x (120 - 185)
4 x (50 - 185) mm²

Round copper conductor
Bolt terminals
Module plate
Single hole [min.]

1 x (120 - 300) mm²

Round copper conductor
Bolt terminals
Module plate
Single hole [max.]
2 x (95 - 300) mm²

Round copper conductor
Bolt terminals
Module plate
Double hole [min.]
2 x (95 - 185) mm²

Round copper conductor
Bolt terminals
Module plate
Double hole [max.]
4 x (35 - 185) mm²

Round copper conductor
Bolt terminals
Connection width extension
Connection width extension
4 x 300
6 x (95 - 240) mm²

Al conductors, Cu cable
Tunnel terminal
Stranded
4-hole
4 x (25 - 240) mm²

Al conductors, Cu cable
Bolt terminal and rear-side connection
Flat copper strip, with holes [min.]
(2x) 10 x 50 x 1.0 mm

Al conductors, Cu cable
Bolt terminal and rear-side connection
Flat copper strip, with holes [max.]
(2x) 10 x 50 x 1.0 mm

Al conductors, Cu cable
Bolt terminal and rear-side connection
Connection width extension
(2x) 10 x 80 x 1,0 mm

Cu strip (number of segments x width x segment
thickness)
Flat conductor terminal [min.]
6 x 16 x 0.8 mm

Cu strip (number of segments x width x segment thickness)
Flat conductor terminal [max.]
(2x) 10 x 32 x 1.0 mm

Cu strip (number of segments x width x segment thickness)
Module plate
Single hole
(2x) 10 x 50 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.]
(2x) 10 x 50 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 [max.]
(2x) 10 x 50 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 80 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.]
25 x 5 mm

Copper busbar (width x thickness) [mm]
Bolt terminal and rear-side connection
Direct on the switch [max.]
2 x (50 x 10)
2 x (80 x 10) mm

Copper busbar (width x thickness) [mm]
Bolt terminal and rear-side connection
Module plate
Single hole [min.]
25 x 5 mm

Copper busbar (width x thickness) [mm]
Bolt terminal and rear-side connection
Module plate
Single hole [max.]
2 x (50 x 10) mm

Copper busbar (width x thickness) [mm]
Bolt terminal and rear-side connection
Module plate
Double hole
2 x (50 x 10) mm

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

Copper busbar (width x thickness) [mm]
Bolt terminal and rear-side connection
Connection width extension
Connection width extension [max.]
2 x (10 x 80) mm

DESIGN VERIFICATION AS PER IEC/EN 61439

Technical data for design verification

Rated operational current for specified heat
dissipation [I_r]
1400 A

Equipment heat dissipation, current-dependent
[P_{vid}]
290 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.

Low-voltage industrial components (EG000017) / Switch disconnecter (E0000216)

Electric engineering, automation, process control engineering / Low-voltage switch technology / Off-load switch, circuit breaker, control switch / Switch disconnecter (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 U_e AC
0 V

Rated operating voltage
1000 - 1000 V

Rated permanent current I_u
1400 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 I_{cw}
34 kA

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

Switching power at 400 V
0 kW

Conditioned rated short-circuit current I_q
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

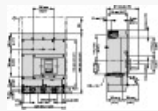
Interlockable
Yes

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
- 260 mm
- Minimum clearance to adjacent parts 15 mm

