



142268

N3-4-500-S1-DC

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## DELIVERY PROGRAM

[Delivery program](#)

Product range  
Switch-disconnectors

[Technical data](#)

Protective function  
Disconnectors/main switches  
Photovoltaic applications

[Technical data ETIM 7.0](#)

Product range  
DC switch-disconnectors

[Dimensions](#)

Application field  
Utility buildings  
Open areas

Part no.  
N..DC

Standard/Approval  
IEC

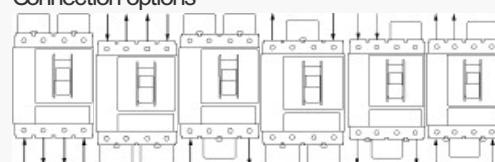
Rated operational voltage

Installation type  
Fixed

Construction size  
N3

Description  
IEC/EN 60947-3  
OCC 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.,  $\text{IT}$ ),  
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 [ $I_h = I_u$ ]  
500 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°  
500

Rated uninterrupted current with terminal jumpers  
at 65°  
500

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

Utilization category  
DC-22A

Rated operational current [Ie]  
DC 22-A [Ie]  
500 A

Overvoltage category/pollution degree  
III/3

Rated insulation voltage [Ui]  
1250 V

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

Ambient temperature  
Operation  
-25 - +70 °C

### Rated short-time withstand current

$t = 1 \text{ s } [I_{cw}]$   
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<sup>2</sup>

Round copper conductor

Box terminal  
Stranded  
1 x (35 - 240)  
2 x (25 - 120) mm<sup>2</sup>

Round copper conductor  
Tunnel terminal  
Stranded  
Stranded  
1 x (25 - 185) mm<sup>2</sup>

Round copper conductor  
Tunnel terminal  
Stranded  
Double hole  
1 x (50 - 240)  
2 x (50 - 240) mm<sup>2</sup>

Round copper conductor  
Bolt terminals  
Direct on the switch  
Solid  
1 x 16  
2 x 16 mm<sup>2</sup>

Round copper conductor  
Bolt terminals  
Direct on the switch  
Stranded  
1 x (25 - 240)  
2 x (25 - 240) mm<sup>2</sup>

Al conductors, Cu cable  
Tunnel terminal  
Solid  
1 x 16 mm<sup>2</sup>

Al conductors, Cu cable  
Tunnel terminal  
Stranded  
Stranded  
1 x (25 - 185) mm<sup>2</sup>

Al conductors, Cu cable  
Tunnel terminal  
Stranded  
Double hole  
1 x (50 - 240)  
2 x (50 - 240) mm<sup>2</sup>

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 [ $I_h$ ]  
500 A

Equipment heat dissipation, current-dependent [ $P_{vid}$ ]  
150 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

500 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

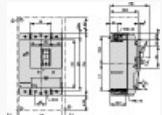
Interlockable  
Yes

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
- Minimum clearance to adjacent parts  5 mm
- Does not apply to DC applications





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