# NOARK ASD16DC

PV/BPS DC Switch Disconnectors from 600A to1600A

**User Manual** 





## ZASD16DC202406UL

# ΝοαΓΚ

# Installation manual

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# Danger and Warning

This device should be installed, operated, serviced and maintained only by professional personnel.

Noark Electric is not responsible for any consequences caused by non-compliance with this the manual.

- ★ After unpacking the product, check for any damage and the integrity of other items.
- ★ Do not install the product in inflammable, explosive, humid and condensing environment.
- ★ Do not install the product at places where gas medium can cause metal corrosion and insulation damage.
- ★ Connect the product to the proper power supply and standard wires.
- ★ Leave sufficient space and safe distance around the product.
- ★ Do not touch the conductive parts during operation.
- Disconnect all the power sources during installation and maintenance.
- ★ Failure to follow the above instructions may result in equipment damage, personal injury or even death.

## **I** Environmental protection

To protect environment, this product and its components should be disposed properly as industrial waste upon end of life; or delivered to recycling plant who will dismantle and recycle the product according to relevant national regulations.

# Codes and Standards

- ★ UL489
- ★ UL file number: E529658
- ★ UL489B
- ★ UL file number: E529657
- ★ IEC 60947-3
- ★ GB/T 14048.3

## Overview



- 1. Jumper busbar
- 2. Control circuit wiring terminals
- 3. Brand
- 4. Opening push-button (O)
- 5. Main contact position indicator
  - a) opening

b) closing



- 6. Ready to close indicator
  - a) ready

# b) not ready



- 7. Terminal connectors
- 8. Closing push-button (I)
- 9. Nameplate
- 10. Spring charged/discharged indicator
  - a) Spring charged

b) Spring discharged

- Charged
- 11. Manual spring charge handle

## UL489/UL489B

Туре	ASD16DC			
Pole	4P (in series)			
Mounting type	Fixed (Front connection)			
Rated current(A)	600/800/1000/1200/1600			
Rated maximum voltage DC(V)	1500			
Short time withstand current(kA)/50ms	75			
Operating time(ma)	Close	< 60		
Operating time(ms)	Open	< 30		
Life evelotime)	Mechanical	12500		
	Electrical	500		
External dimensions				
H×W×D (inch/mm)	10.02/13.43/1.01(413/341/130.3)			
Enclosure dimensions	23.62X19.84X19.68(600X504X500)			
H×W×D (inch/mm)	Ventilation Area Top: 70495mm <sup>2</sup>	Ventilation Area Top: 70495mm <sup>2</sup>		

### IEC60947-3/GB/T14048.3

Туре	ASD16DC			
Pole	4P (in series)			
Mounting type	Fixed (Front connection	Fixed (Front connection)		
Utilization category	DC-PV2			
Rated operational current(A)	600/800/1000/1200/1	600		
Rated operational Volatge DC(Ue)	1500V			
Rated insulation Volatge DC(Ui)	1600V			
Rated impulse withstand Volatge DC(Uimp)	12kV			
Short circuit withstand current(Icw)/1s	50kA			
Rated short-circuit making capacity(Icm)	50kA			
Operating time(ms)	Close		< 60	
	Open		< 30	
	Mechanical		12500	
Life cycle(time)	Floatrical	≤ 800A	2000	
	Electrical	> 800A	500	
External dimensions H×W×D (inch/mm)	18.62X13.43X7.81(473X341X198.5)			
Enclosure dimensions	23.62X19.84X19.68(600X504X500)			
H×W×D (inch/mm)	Ventilation Area Top: 70495mm <sup>2</sup>			

## **Environmental Conditions**

#### Ambient temperature

ASD16DC switch disconnector can operate in  $-45^{\circ}$ C ~ 70°C environmental conditions.

ASD16DC switch disconnector can operate at higher temperatures than the reference temperature 40°C, in this case, the derating coefficients shown in the table must be applied.

The switch disconnector needs to be specially customized when the operating temperature is below -25°C.

Rated	Temperature(°C)						
Current(A)	<40	45	50	55	60	65	70
600	100%	100%	100%	100%	100%	100%	100%
800	100%	100%	100%	100%	100%	100%	100%
1000	100%	100%	100%	100%	100%	100%	100%
1200	100%	100%	100%	100%	100%	100%	100%
1600	100%	100%	100%	95%	92%	85%	80%

#### Altitude

ASD16DC switch disconnectors do not change in rated performance up to 2000m. Above 2000m, the derating coefficients shown in the table must be applied.

	Altitude(m)			
	<2000	3000	4000	5000
Rated Voltage(V)	1xUe	0.95xUe	0.8xUe	0.7xUe
Rated Current(A)	1xln	0.99xIn	0.96xIn	0.94xln

#### Humidity

The relative humidity does not exceed 85% at 40°C, the monthly average maximum of relative humidity in the wettest month does not exceed 90%.

The effect of surface condensation caused by temperature changes on product performance should be taken into consideration.



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# Storage











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Manual 06

Unpacking

Nameplate example



Connection



NOTE: 1. Available with lower supply only 2. For ungrounded system only

#### Jumper busbars dimensions

Unit: in(mm)





#### Applicable busbar as following:

Model Rated C	Data d Ourrant	Vertical Type		
	Rated Current	Qty	Size (in)	Size (mm)
ASD16DC	600A	1	1/4x2	6.35X50.8
ASD16DC	800A	1	1/4x3	6.35X76.2
ASD16DC	1000A	2	1/4x2	6.35X50.8
ASD16DC	1200A	2	1/4x2	6.35X50.8
ASD16DC	1600A	2	1/4x3	6.35X76.2

Connection



Unit: in(mm)





## Installation

### Heat Sink Installation



The torque should be 3~4.5 N·m.



Front Connection Plates Installation





## Installation



# Handling

# Unit: lb/kg





# Installation Dimension

Lower supply



Unit: in(mm)







### Accessories

#### Undervoltage release/UVT





Shunt trip release/SHT



The shunt trip is an optional device on switch disconnectors .It opens the switch disconnector instantaneously when its coil is energized by a voltage input.

Note: The releases operate by means of minimum impulse current duration time of 200 ms.

#### Shunt trip offering:

Control voltage	Operational voltage range (70–110%)	Inrush/ continuous power consumption	Operating time
24-30Vdc	17-33Vdc	500W/4.5W	≤50ms
48-60Vac/dc	34-66Vac/dc	500W/4.5W	≤50ms
110-130Vac/dc	77-143Vac/dc	500W/4.5W	≤50ms
200-240Vac/dc	140-264Vac/dc	500W/4.5W	≤50ms
380-440Vac	266-484Vac	500W/4.5W	≤50ms

Closing release/XF





The closing release is an optional device. It remotely closes the switch disconnector when its coil is energized by a voltage input.

Note: The releases operate by means of minimum impulse current duration time of 200 ms.

#### Closing offering:

Control voltage	Operational voltage range (70–110%)	Inrush/ continuous power consumption	Operating time
24-30Vdc	17-33Vdc	500W/4.5W	≤70ms
48-60Vac/dc	34-66Vac/dc	500W/4.5W	≤70ms
110-130Vac/dc	77-143Vac/dc	500W/4.5W	≤70ms
200-240Vac/dc	140-264Vac/dc	500W/4.5W	≤70ms
380-440Vac	266-484Vac	500W/4.5W	≤70ms

The undervoltage release is an optional device on both manually and electrically operated switch disconnectors. It opens the switch disconnector when its supply voltage falls to 30–60% of rated voltage. If the release is not energized to 85% of its supply voltage, the switch disconnector can not be closed electrically or manually.

Undervoltage release offering:

Control voltage	Operational voltage range (85–110%)	Dropout voltage 30-60%	Inrush/ continuous power consumption	Operating time
24-30Vdc	20-33Vdc	7-18Vdc	500W/4.5W	≤70ms
48-60Vac/dc	41-66Vac/dc	14-36Vdc	500W/4.5W	≤70ms
110-130Vac/dc	94-143Vac/dc	33-78Vac/Vdc	500W/4.5W	≤70ms
200-240Vac/dc	170-264Vac/dc	60-144Vac/ADC	500W/4.5W	≤70ms
380-440Vac	323-484Vac	114-264vac	500W/4.5W	≤70ms

#### Accessories

#### Auxiliary contact/AX



Motor operator



The auxiliary contact remotely monitors ON/OFF position of air switch disconnector from remote place.

Contact configuration: 11: 1NO and 1NC; 22: 2NO and 2NC; 22C: 2NO or 2NC; 44C: 4NO or 4NC

Volta	Rated Current /A	
A.C.	125	5
AC	250	5
DC.	125	0.2
BC	250	0.2

The electric motor charges the closing spring of mechanism when the switch disconnector is closed. Mechanical charging handle can be used when maintaining or without power supply. Equipped with a limit switch contact which signals that spring is charged.

Operational voltage range(85-110%)	Inrush/continuous power consumption	Charging time
20-33Vdc	750W/75W	≤4s
41-66Vdc	750W/75W	≤4s
94-143Vdc	750W/75W	≤4s
170-264Vdc	750W/75W	≤4s
323-484Vdc	750W/75W	≤4s
	Operational voltage range(85-110%)   20-33Vdc   41-66Vdc   94-143Vdc   170-264Vdc   323-484Vdc	Operational voltage range(85-110%) Inrush/continuous power consumption   20-33Vdc 750W/75W   41-66Vdc 750W/75W   94-143Vdc 750W/75W   170-264Vdc 750W/75W   323-484Vdc 750W/75W

OFF position keylock/KLK



KLK10N



Suitable for Switch Disconnector. The OFF position key lock can keep the breaker in OFF position mechanically. Please choose the right KLK as you need. KLK12N1: 1 lock with 1 key KLK12N2: 2 lock with the same key KLK12N3: 3 lock with 2 key



#### Pushbutton lock device/VBP



VBP10N



When the left cover is closed, the opening button remains pressed, and it cannot be manually or electrically closed. A cover blocks access to the push buttons of the breaker/switch.

Note: The padlock diameter must be 8±0.2mm, otherwise it will not work properly.

Front connection plates/ACP





Delivered as a set (4 pcs).

G

The dimension of front connection plates refers to page 9 and 10.

#### Ready to close/PF





Equipped with a limit switch contact which signals that the switch disconnector is ready to close.

## Accessories

Phase barriers/PHS



PHS10N4



Improve insulation level between main terminals.

Jumper/JPR





Used for connecting four poles in series

The dimension and connection of jumper busbars refers to page 8 and 10.

## **Control Circuit Wiring**

#### ASD16DC switch disconnector control circuit wiring diagram



- MD spring charge motor
  - U1, U2, U3: Spring charge motor power input; Spring charge indicator should be provided by user.
- CC closing release
  - A1, A2: Closing release power input. The SB2 should be provided by user.
- SHT shunt trip
- C1, C2: Shunt trip power input. The SB1 should be provided by user.
- UVT under-voltage release (optional)
- D1, D2: Under-voltage release power input. The SB3 should be provided by user.
- Ready to close contact indication
  - 251#, 252#: Ready to close contact indicator power input. The indicator should be provided by user.
- Auxiliary contacts ordered
  - N11:11#-12#(NC), 14#-16#(NC)
  - N22C:11#-12#(NC), 11#-13#(NO), 14#-15#(NC), 14#-16#(NO)
  - N22:11#-12#(NC), 14#-16#(NO), 17#-18#(NC), 20#-22#(NO)

N44C:11#-12#(NC), 11#-13#(NO), 14#-15#(NC), 14#-16#(NO), 17#-18#(NC), 17#-19#(NO), 20#-21#(NC), 20#-22#(NO)



Spare parts for secondary terminal wiring







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