OF2 SD2 NFS2 MX+OF2 NGQ2A ATm Tm2 Accessories Nader

1. Product Overview

				
Specifications	**OF2 auxiliary contact**	**SD2 alarm contact**	**NFS2 auxiliary and alarm contact group**	**MX + OF2 shunt tripper**
Material number	30000354	30000503	30001722	30000367
Adaptation	NDB2-63 NDB2Z-63 NDB2ZB-40 NDB2T-63 NDB2LE-63	NDB2-63 NDB2Z-63 NDB2ZB-40 NDB2T-63 NDB2LE-63	NDB2-63 NDB2Z-63 NDB2ZB-40 NDB2T-63 NDB2LE-63	NDB2-63 NDB2Z-63 NDB2ZB-40 NDB2T-63 NDB2LE-63

			
Specifications	**NGQ2A overvoltage and under-voltage accessories**	**ATm reclosing control accessories**	**Tm2 remote control accessories**
Material number	30001743	30000501	
Material number	NDB2-63 NDB2Z-63 NDB2ZB-40 NDB2T-63 NDB2LE-63	NDB2-63 NDB2Z-63 NDB2T-63 NDB2LE-63	NDB2-63 NDB2Z-63 NDB2T-63 NDB2LE-63

2. Scope of Application

This series of accessories can be assembled in the terminal NDB2 products, and are used for the circuits with AC 50Hz, rated voltage of AC415V and below and DC130V and below. They have a wide range of applications in the low-voltage terminal power distribution equipment in such fields as industry, civil construction, energy, communication and infrastructure.

Installation way

TH35mm standard installation rail for installation.

Installation direction

- Horizontal installation
- Vertical installation

Environmental protection requirements

Products meet the RoHS standard.

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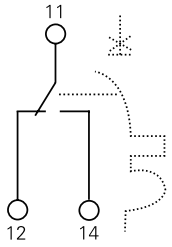
3. Technical Characteristics of the Product

3.1 OF2 Auxiliary Contact



Purpose

Installed on the left side of NDB2 miniature circuit breaker to indicate the On/Off state of the circuit breaker.

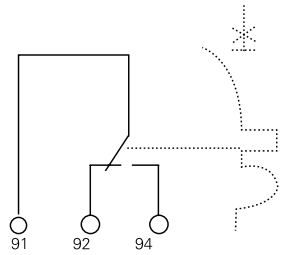
Technical parameters

Rated working parameters

	Voltage	Current		Voltage	Current
AC	415V	3A	AC	240V	6A
DC	250V	0.4A	DC	220V	1A
DC	130V	1A	DC	110V	1A
DC	48V	6A	DC	24V	6A

Density (mm): 9.
Note:
After assembled with the NDB2 circuit breaker, terminals 11 and 14 are connected at the time of closing.
At the time of opening, terminals 11 and 12 are connected.
3 OF2 can be assembled at most.

3.2 SD2 Alarm Contact



Purpose

Installed on the left side of NDB2 miniature circuit breaker to indicate the fault state of the circuit breaker.

Technical parameters

Rated working parameters

	Voltage	Current		Voltage	Current
AC	415V	3A	AC	240V	6A
DC	250V	0.4A	DC	220V	1A
DC	130V	1A	DC	110V	1A
DC	48V	6A	DC	24V	6A

Density (mm): 9.
Note:
After assembled with the NDB2 circuit breaker, terminals 91 and 92 are connected at the time of closing.
At the time of fault opening, 91 and 94 are connected.
At the time of manual opening, 91 and 92 are connected, but 91 and 94 are not.
3 SD2 can be assembled at most.

Purpose

- Single line: 2.5mm^2; Double line: 1.5mm^2.
- NDB2 series miniature circuit breaker accessories can be supplied separately, but are not recommended to be used in conjunction with the miniature circuit breakers of other companies.

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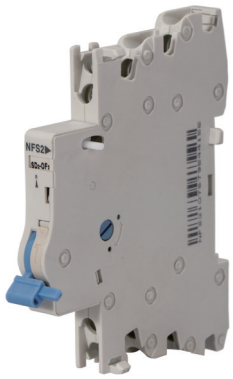
3.3 NFS2 Auxiliary and Alarm Contact Group



Rated current of the auxiliary contact

Rated operational voltage	Rated operating current	Use class
AC 240V	6A	AC 12
AC 415V	3A	AC 12
DC 24V	6A	DC 12
DC 48V	2A	DC 12
DC130V	1A	DC 12

Purpose

- NFS2 auxiliary and alarm contact group is assembled on the left side of NDB2-63 series products, and the secondary products can be switched between OF2+SD2 and OF2+OF2 mainly by use of a selective switch.
- Highlight: The functions of OF2 and SD2 are integrated as one, with the width as a module.

Two switching contacts may indicate

- “On” or “Off” state of the circuit breaker can be indicated by use of OF2-OF2;
- “Fault tripping” of circuit breaker.

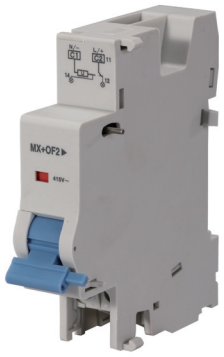
Two return circuits

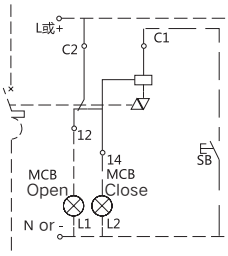
- Upper: OF2-OF2;
- Lower: SD2 or OF2;
- Rotary switch on the right is used to rotate.

Wiring

- Thread lug terminal may be connected with 1 or 2 wires with the maximum cross-section of 2.5mm2;
- There is an obvious mark next to the terminal.

3.4 MX+OF2 Shunt Tripper





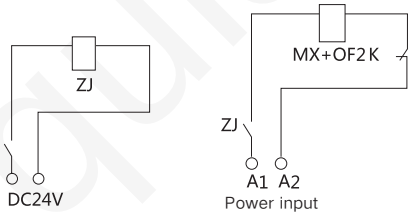
Purpose

- Installed on the left side of NDB2-63 miniature circuit breaker;
- Remote control of circuit breaker tripping.

Technical parameters

- Control power supply AC230V/400VDC24V/48V;
- Width (mm): 18

Note: The changeover contact is an active contact and is not allowed to connect other weak current modules as a passive contact.



Note: In case of DC24V power supply for control circuit, the shunt control circuit is recommended to be designed according to the figure above.

ZJ: DC24V intermediate relay, with the contact current capacity of 1A.

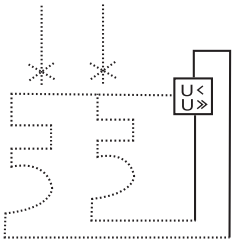
Wiring capacity

- Single line: 2.5mm^2
- Double line: 1.5mm^2
- This accessory can be supplied separately, but is not recommended to be used in conjunction with the miniature circuit breakers of other companies.

Technical parameters

- Control power supply AC230V/400VDC24V/48V;
- Width (mm): 18

3.5 NGQ2A Overvoltage and Under-voltage Tripper



Purpose

- Installed on the left side of NDB2-63 miniature circuit breaker to provide single-phase overvoltage, under-voltage, overvoltage and under-voltage protection.

Technical parameters

- Rated overvoltage operating value Uover: AC280V ± 12V, maximum breaking time: 0.2s;
- Rated under-voltage operating value Uover: AC170V ± 7V, maximum breaking time: 1s.

Density (mm): 18。

Note:

The user may only choose overvoltage tripper (NG2A) or under-voltage tripper (NQ2A) as needed.

Each circuit breaker can only be assembled with one under-voltage tripper to provide single-circuit protection.

3.6 ATm Reclosing Control Accessory

Application scope and purpose

ATm reclosing control accessory (ATm for short) is installed on the left side of Tm2 remote control accessory, and assembled with SD2 for use in return circuit with voltage of AC230V (-15%+10%) and frequency of 50~60Hz to

provide reclosing of circuit breaker after fault action. It is particularly suitable for the equipment and systems that are difficult to monitor and access and have high power supply continuity requirements.

Technical parameters

- Operating voltage: AC230V
- Normally open output contact: 2A (maximum), load of Class AC1
- ATm must be used in combination with Tm remote control accessories through SD2 alarm contacts, and SD2 is used to send "fault tripping" signal to ATm.
- ATm operation is associated with fault type (temporary fault/permanent fault). When a temporary fault occurs and is eliminated, ATm allows the circuit breaker to be automatically closed. In case of a permanent fault, ATm will lock Tm2 remote control accessories to avoid re-closing of the circuit breaker.
- The front panel of ATm has a transparent cover, and the front panel includes:
  - ★ A selective switch
  - ★ It is marked with the allowable times of reclosing of circuit breaker (0, 1, 2, 5 or 10) and ATm off/reset
  - ★ Rotary knob T1 is used to set the maximum duration to complete the given times of reclosing (12~120min)
  - ★ Rotary knob T2 is used to set the delay time of automatic reclosing (30~300s)
  - ★ ATm status indicator lamp (Yellow)
    - ※ Not on: Not energized or at the off/reset state
    - ※ Quick flash: Normal operation
    - ※ Slow flash: Reclosing state
    - ※ Normally on: Locked state
- ATm can also achieve the following functions:
  - ★ Inputting remote control signal to ATm by connecting a selective switch or changeover contact so that ATm is at the safe mode state, i.e., the same as the "0" state of selective switch on the front panel
  - ★ Remote indication that Tm2 is locked.
- At the time of manual control of Tm2 (namely, no fault signal), ATm setting will not work
- During the reclosing process, if the remote control accessory Tm2 fails to close the circuit breaker in place within 3 seconds, there may be the risk of short circuit in the secondary circuit, which will be deemed as permanent fault, lock Tm2, and prohibit reclosing.
- Wiring: Flexible cable (2X1.5mm^2 or 1X2.5mm^2) hard cable (2X2.5mm^2)

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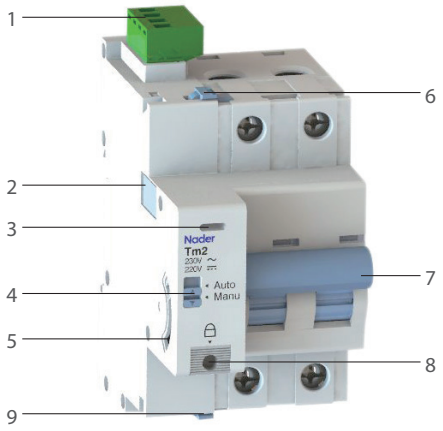
3.7 Tm2



1.Power supply control input terminal
2.Alarm accessory interface
3.Power indication lamp
4. Manual and automatic switching button
5.Auxiliary accessory interface
6.Buckle
7.Handle
8.Opening padlock
9.Snap spring

Legend	
Auto	Remote close-open circuit breaker
Manu	Local close-open circuit breaker

Legend	
Padlock	Disconnect all remote operations, padlock size Φ≤4mm

Legend	
Alarm accessory interface	Assembly model SD2
Auxiliary accessory interface	Assembly model OF2

Remarks:
1. After the assembly of Tm2 and circuit breaker body, assemble other accessories;
2. The left side of Tm2 can be assembled with 2 SD2 or 2 OF2 or 1 SD2, 1 OF2

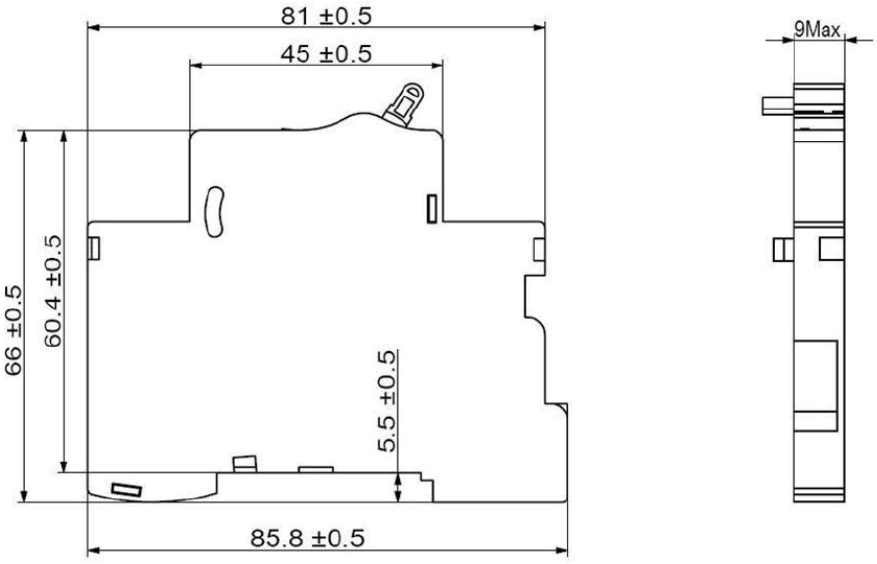
Legend	
Socket type terminal	Maximum wiring capacity of ports 1~4 is 2.5mm2 (24-14AWG) and wiring capacity 0.56N•m

● Technical parameters

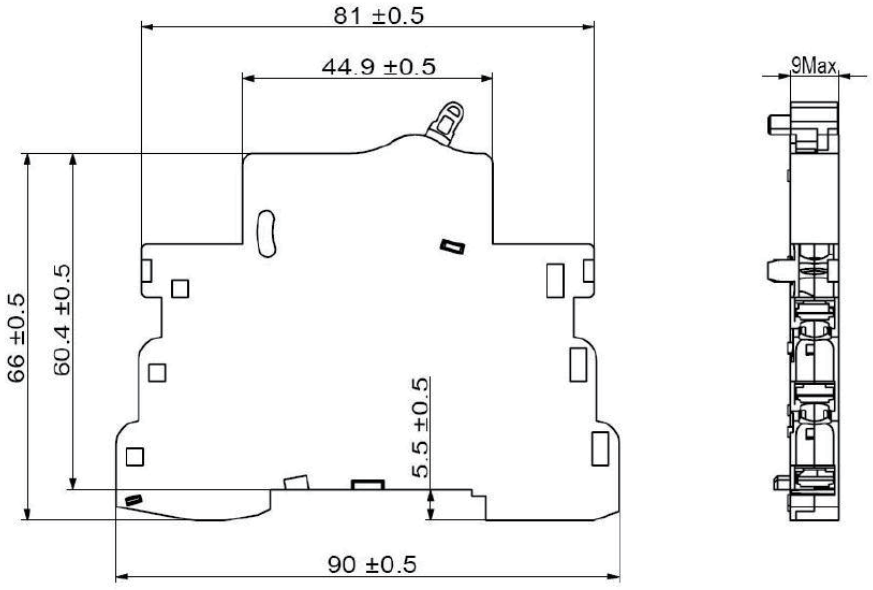
Parameter name	Description of specific parameters									
Number of poles	1P/2P					3P/4P				
Width (mm)	18					27				
Control voltage (V)	AC230/ DC220	AC110/ DC110	DC48	DC24	DC12	AC230/ DC220	AC110/ DC110	DC48	DC24	DC12
Start power consumption (W)	46	33	48	36	36	46	33	48	36	36
Operating current (A)	≤0.2	≤0.3	≤1	≤1.5	≤3	≤0.2	≤0.3	≤1	≤1.5	≤3
Insulation voltage (V)	500					500				
Closing or opening time (s)	≤0.5					≤0.5				
Operating life (Times)	20000					20000				
Protection grade	IP20					IP20				
Models which can be assembled	NDB2-63/1P、NDB2Z-63/1P、NDB2T-63/1P、NDB2LE-63/1PN					NDB2-63/3P、NDB2Z-63/3P、NDB2T-63/3P、NDB2LE-63/3P				
	NDB2-63/2P、NDB2Z-63/2P、NDB2T-63/2P、NDB2LE-63/2P					NDB2-63/4P、NDB2Z-63/4P、NDB2T-63/4P、NDB2LE-63/3PN /4P				
Weight (g)	107					123				

4. Outline and Installation Dimension

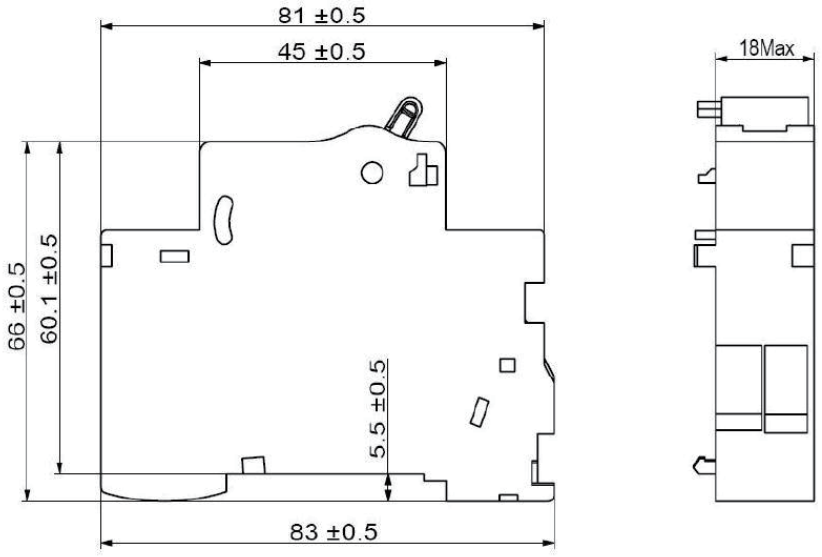
4.1 OF2, SD2 Outline Dimension



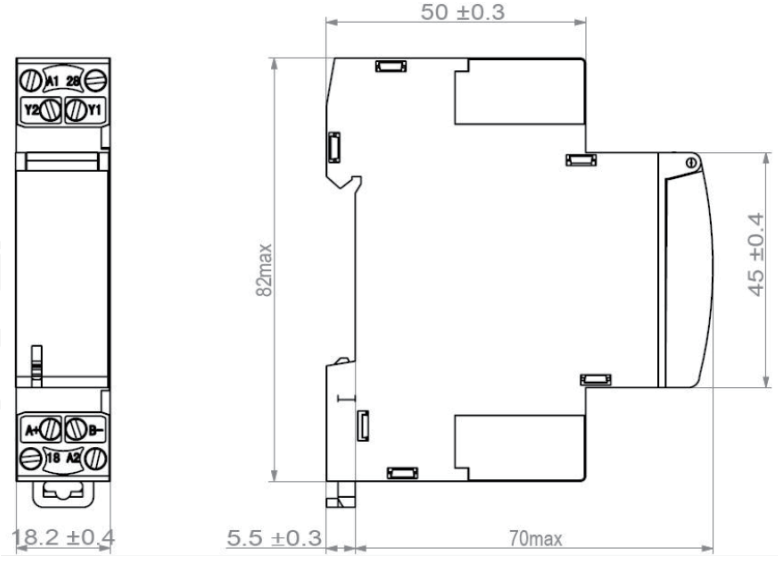
4.2 NFS2 Outline Dimension



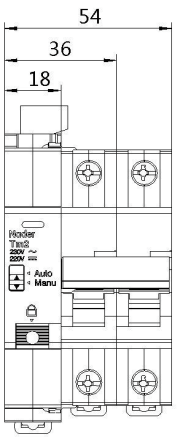
4.3 MX+OF2, NGQ2A Outline Dimension



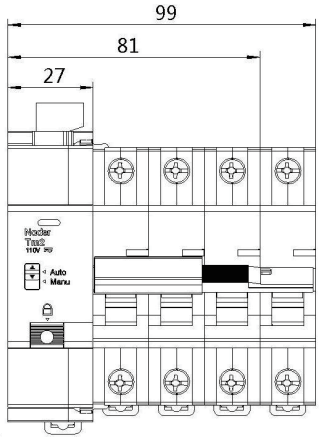
4.4 ATm Outline Dimension



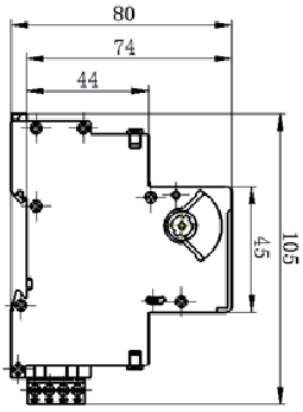
4.5 Tm2 Outline Dimension



1P/2P

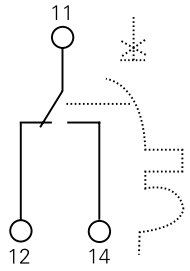


3P/4P

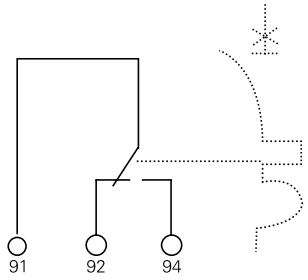


1/2/3/4P Side view

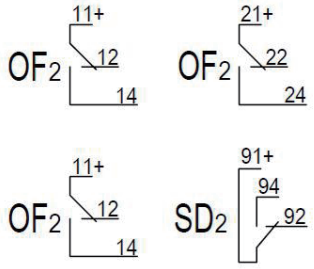
5. Product Wiring Diagram



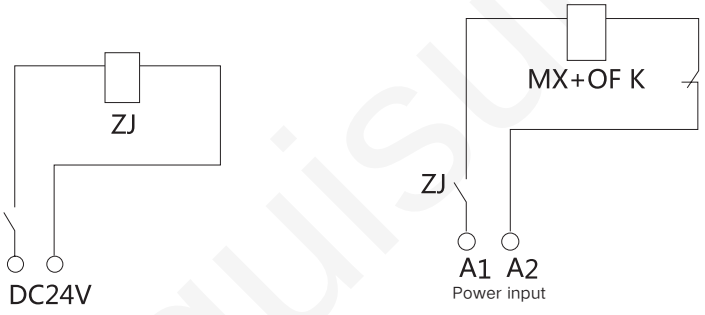
OF2



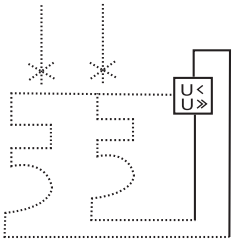
SD2



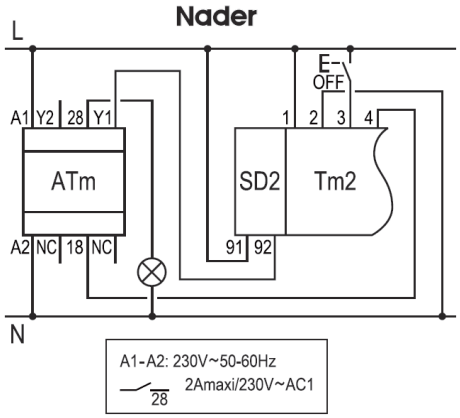
NFS2



MX+OF2

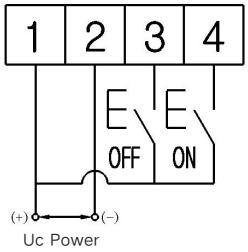


NGQ2A



ATm

Wiring terminal	Function description
A1-A2	AC 230（50~60HZ）
Y1	Input: SD2 contact signal
Y2	Input: Use normally open contact and disable ATm
18	Output: Remote control Tm2
28	Output: Remote indication that Tm2 is locked.
NC(A+)	Reserved terminal
NC(B-)	Reserved terminal



Tm2

Note: When the power supply is DC, the negative and positive electrodes cannot be reversed;
When the power supply is AC, the positive and negative electrodes may be freely wired