



# NDB1 Series Miniature Circuit Breakers

2019 Edition

**Nader**

## 1. Product Overview

		
Model	NDB1-32	NDB1-125
Rated Voltage (V)	AC230	AC400/415
Rated Current (A)	6、10、16、20、25、32	50、63、80、100、125
Number of Poles	1PN	1P、2P、3P、4P
Certificate	CCC	CCC

## 2. Product Features

### ● Application Scope

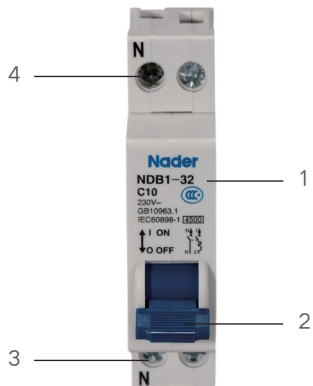
NDB1 Series MCB of TT and TN-S earth-system have such functions: Short-Circuit and Overload protection, control and disconnect. Such breaker is used in low-voltage terminal distribution for industry, civil building, energy, telecommunication and construction.

### ● Design Features

- ◆ When MCB normally open or trip because fault, the phase line and neutral line should keep disconnected status to avoid the electric hurt by electrified neutral line.
- ◆ Full Protection Functions with overload and short-circuit protection. When connect or do breaking operation, you should connect the neutral line at first, then do breaking operation.
- ◆ Connection is safety and reliable: Use "Frame" connection structure
- ◆ Easily mounting: TH35 standard mounting rail.

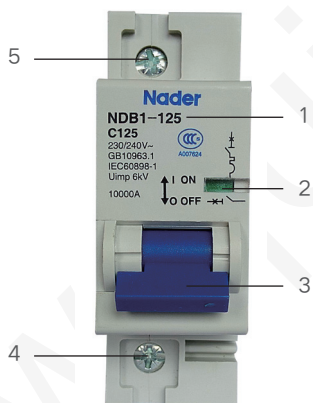
## ● Structure Features

### ◆ NDB1-32 External Structure



- 1、Model
- 2、Operation Handle
- 3、Load
- 4、Line

### ◆ NDB1-125 External Structure



- 1、Model
- 2、Switching Indicator
- 3、Operation Handle
- 4、Load
- 5、Line

## ● Standards

NDB1-32、NDB1-125 Standards as follow:

- ◆ GB 10963.1 Electrical accessories-Circuit-breakers for over-current protection for household and similar installation-Part 1: Circuit-breakers for AC operation
- ◆ IEC 60898-1 Electrical accessories-Circuit-breakers for overcurrent protection for household and similar installation-Part 1: Circuit-breakeres for a.c. operation

## 3. Working Condition

### ● Electrical symbol



### ● Applicable Condition

- ◆ Ambient Usage Temperature and Storage Temperature

Ambient Usage Temperature:  $-35^{\circ}\text{C}\sim+70^{\circ}\text{C}$ , Standard Temperature:  $+30^{\circ}\text{C}$ , correction factor of different ambient usage temperature refer to sheet 1

Storage Temperature:  $-35^{\circ}\text{C}\sim+70^{\circ}\text{C}$ .

- ◆ Altitude

The altitude of the mounting site  $\leq 2000\text{m}$

- ◆ Relative Usage Humidity and Relative Storage Humidity

The relative humidity shouldn't exceed 50% when the ambient air temperature is  $+40$  degrees, higher humidity can be allowed in lower temperature. For example, the humidity can be 90% when the ambient temperature is  $+20$  degrees. Necessary measures should be acted for the condensation produced by the changed temperature.

### ● Pollution Degree

2

### ● Protection Level

Level of Product Protection: IP20

### ● Mounting Types

II (For Load Level) and III (For distribution and control Level)

### ● Mounting Method

Mounted on TH35mm x 7.5 Standard Rail.

### ● Mounting Direction

- ◆ Vertical Mounting: The inclination between mounting plane and vertical plane should  $\leq \pm 5$  degrees
- ◆ Horizontal Mounting

### ● Environmental Requirement

Comply with RoHS

## 4. Product Technical Characteristic

### 4.1 Model and Implication

No.	Implication	Instruction	
1	Brand Code	ND: <b>Nader</b>	
2	Product Code	B: Miniature Circuit Breaker	
3	Design Code	1	
4	Frame Rating-Rated Current (A)	32	125
5	Instantaneous Tripping Characteristics	C: Instantaneous Tripping Range 5In ~ 10In;	B: Instantaneous Tripping Range 3~5In C: Instantaneous Tripping Range 5~10In D: Instantaneous Tripping Range 10~14In
6	Rated Working Current (A)	6, 10, 16, 20, 25, 32	50A, 63A, 80A, 100A, 125A
7	Number of Poles	1PN	1P, 2P, 3P, 4P

WWW

## 4.2 Technical Parameters

Model	NDB1-32	NDB1-125
Current Voltage (V)	AC230	AC230/240;DC60/80(1P), AC400/415;DC80/125 (2P、3P、4P)
Rated Current (A)	6、10、16、20、25、32	50、63、80、100,125
Tripping Characteristics	C	C、D
Number of Poles	1PN	1P、2P、3P、4P
Rated Insulation Voltage (V)	AC400V	AC500V
Rated Ultimate Short Circuit Breaking Current	4.5kA	
Rated Operation Short Circuit Breaking Current	4.5kA	
Rated Working Frequency (Hz)	50/60	50/60
Mechanical and Electrical Life	10000	10000
Connecting and Wiring Capacity	<ul style="list-style-type: none"> <li>◆ Tunnel Connecting Terminal</li> <li>◆ Terminal Connecting Area: 1~6 mm<sup>2</sup> cable is applicable</li> <li>◆ Connecting Screw is M4,Torque is 1.2N.m</li> </ul>	<ul style="list-style-type: none"> <li>◆ Tunnel Connecting Terminal</li> <li>◆ Terminal Connecting Area: 10~50 mm<sup>2</sup> cable is applicable</li> <li>◆ Connecting Screw is M7, Torque is 3.5N.m</li> </ul>

● Temperature Correction Factor Sheet (1)

Correction Current (A) Rated Current (A)	Ambient Temperature (C)											
	-35	-30	-25	-20	-15	-10	-5	-0	5	10	15	
1	1.27	1.25	1.23	1.21	1.19	1.17	1.15	1.13	1.10	1.08	1.06	
3	3.89	3.83	3.76	3.70	3.64	3.57	3.50	3.44	3.37	3.30	3.22	
6	7.70	7.58	7.46	7.34	7.21	7.09	6.96	6.83	6.70	6.56	6.42	
10	13.89	13.62	13.35	13.07	12.81	12.53	12.23	11.93	11.63	11.33	11.01	
16	20.78	20.43	20.08	19.75	19.40	19.05	18.70	18.33	17.96	17.58	17.20	
20	25.67	25.28	24.88	24.47	24.06	23.64	23.22	22.78	22.34	21.89	21.43	
25	32.21	31.72	31.22	30.70	30.18	29.65	29.10	28.55	27.98	27.41	26.82	
32	41.04	40.46	39.82	39.17	38.51	37.84	37.15	36.47	35.75	35.03	34.30	
40	51.63	50.86	50.04	40.21	48.37	47.51	46.63	45.74	44.83	43.90	42.95	
50	64.92	63.97	62.92	61.86	60.77	59.67	58.54	57.40	56.23	55.05	53.81	
63	83.48	82.06	80.64	79.19	77.72	76.22	74.70	73.14	71.54	69.91	68.24	
80	135	130	126	122	118	115	112	108	104	99	95	
100	160	155	150	146	142	137	133	129	125	122	118	

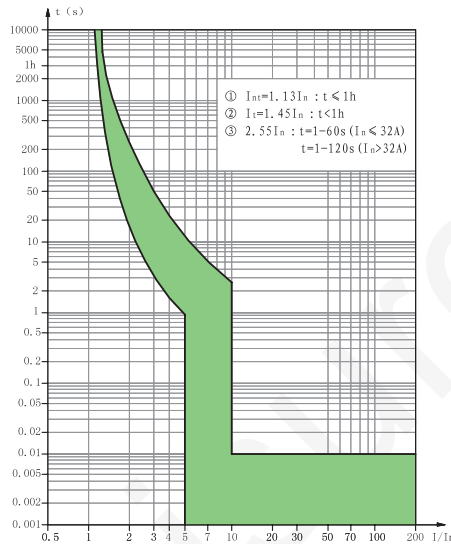
Correction Current (A) Rated Current (A)	Ambient Temperature (C)											
	20	25	30	35	40	45	50	55	60	65	70	
1	1.05	1.02	1.00	0.97	0.94	0.91	0.89	0.86	0.83	0.80	0.77	
3	3.14	3.06	3.00	2.92	2.84	2.76	2.67	2.58	2.49	2.38	2.27	
6	6.27	6.14	6.00	5.84	5.68	5.52	5.36	5.19	5.01	4.83	4.64	
10	10.67	10.34	10.00	9.63	9.24	8.85	8.45	8.01	7.55	7.06	6.55	
16	16.80	16.40	16.00	15.55	15.11	14.66	14.20	13.71	13.21	12.70	12.75	
20	20.96	20.47	20.00	19.47	18.95	18.42	17.87	17.30	16.71	16.10	15.47	
25	26.22	25.61	25.00	24.33	23.67	23.00	22.28	21.56	20.80	20.02	19.21	
32	33.54	32.77	32.00	31.17	30.34	29.48	28.60	27.69	26.75	25.78	24.77	
40	41.98	40.99	40.00	38.93	37.85	36.75	35.61	34.43	33.21	31.95	30.63	
50	52.56	51.28	50.00	47.82	46.24	44.81	43.33	41.81	40.23	38.58	35.77	
63	66.53	64.78	63.00	60.11	58.19	56.21	54.16	52.03	49.81	47.50	43.05	
80	91	88	85	82	80	75.5	72.5	68	64.5	58	52.5	
100	114	111	108	103	100	94	88	82	75	68	58	

## 4.3 Tripping Curve

### ● NDB1-32 Tripping Curve

#### C Curve

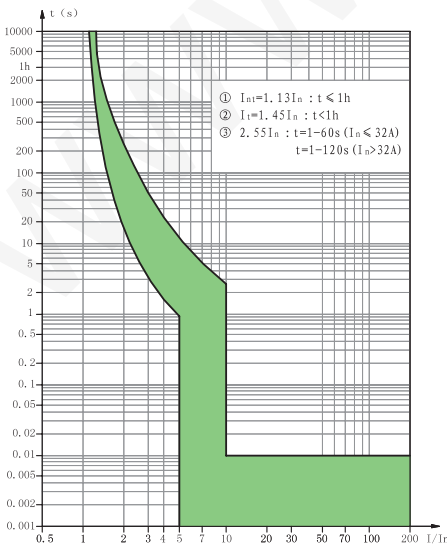
- ★ Protect nominal load and distribution cables
- ★ Rated Current: 6-32A
- ★ Tripping Characteristics: Instantaneous tripping range  $5I_n \sim 10I_n$



### ● NDB1-125 Tripping Curve

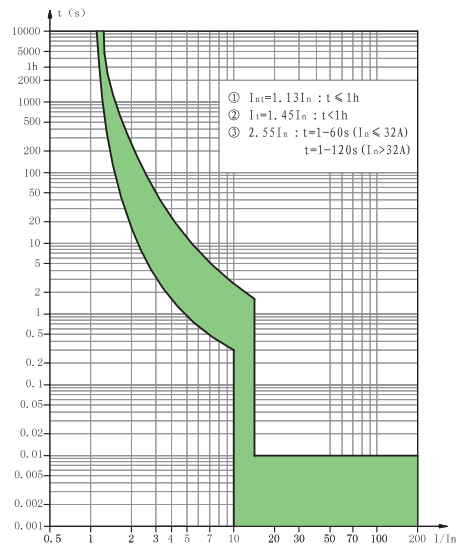
#### C Curve

- ★ Protect lighting distribution circuits
- ★ Tripping Characteristics: Instantaneous tripping range  $5I_n \sim 10I_n$



#### D Curve

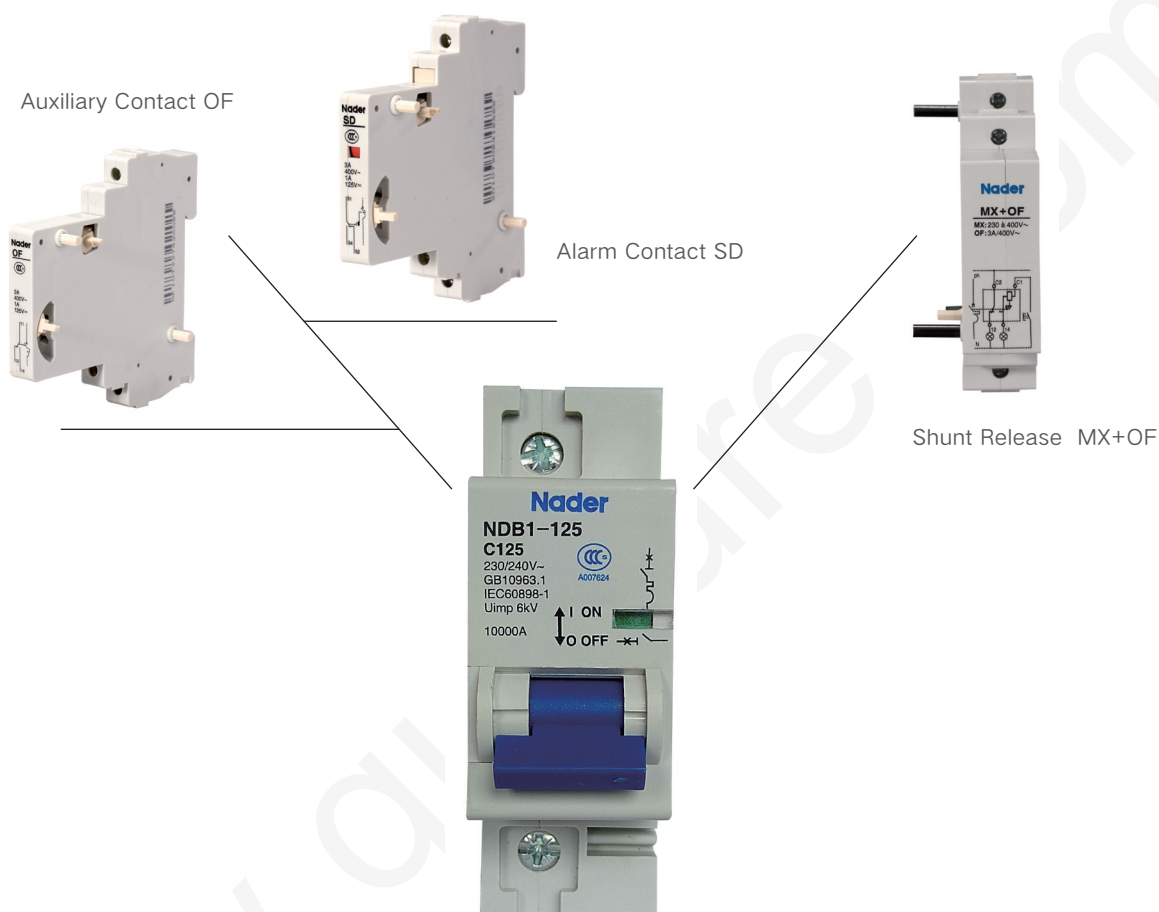
- ★ Protect industrial distribution systems
- ★ Tripping Characteristics: Instantaneous tripping range  $10I_n \sim 14I_n$





## 5. Accessory

### 5.1 Accessory Sheet



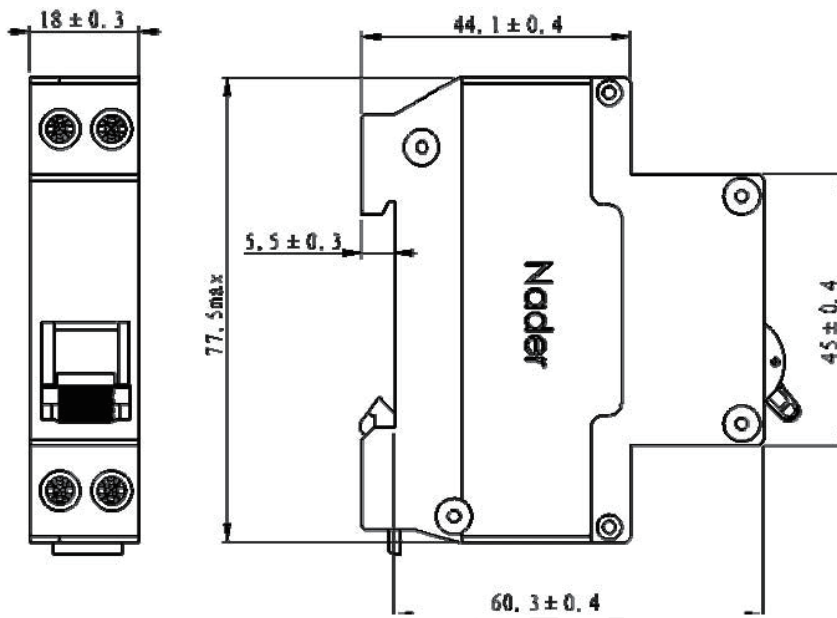
### 5.2 NDB1-125 Accessory Types

No.	Name	Accessory Code	Function and Matched Quantity
1	Auxiliary Contact	OF	Linked to the left side of MCB to indicate OPEN or CLOSE status of the associated breaker. Matched quantity: 3 Pcs Max.
2	Alarm Contact	SD	Linked to the left side of MCB to indicate the accidental tripping status of the associated breaker. Matched quantity: 3 Pcs Max.
3	Shunt Release	MX+OF	Linked to the right side of MCB to indicate accidental tripping status and remote breaking control of associated breaker.

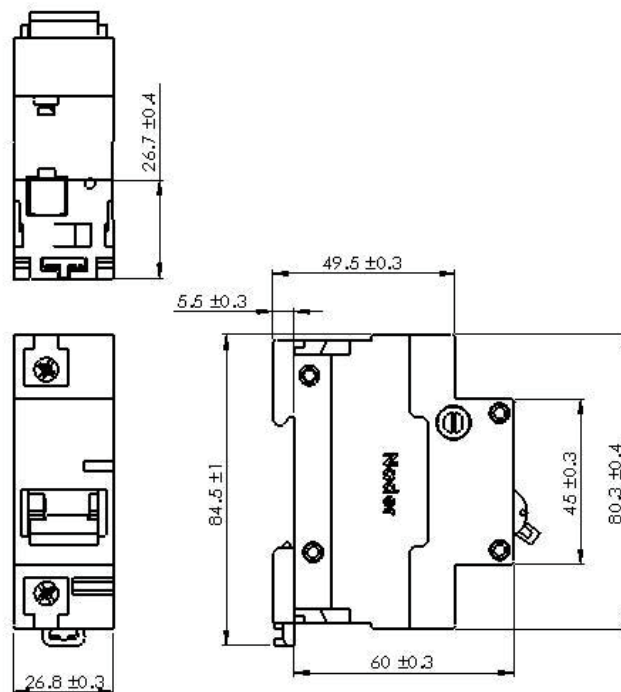
Note: Accessory parameters, please refer to "OF、SD, MX+OF" specimens.

## 6. Outline and Mounting Dimension

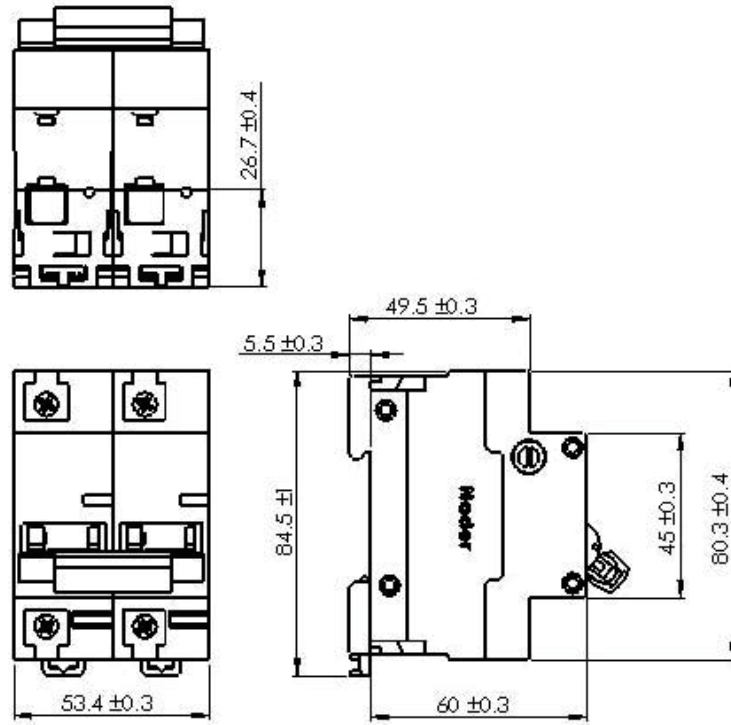
### ● NDB1-32 Mounting Dimension



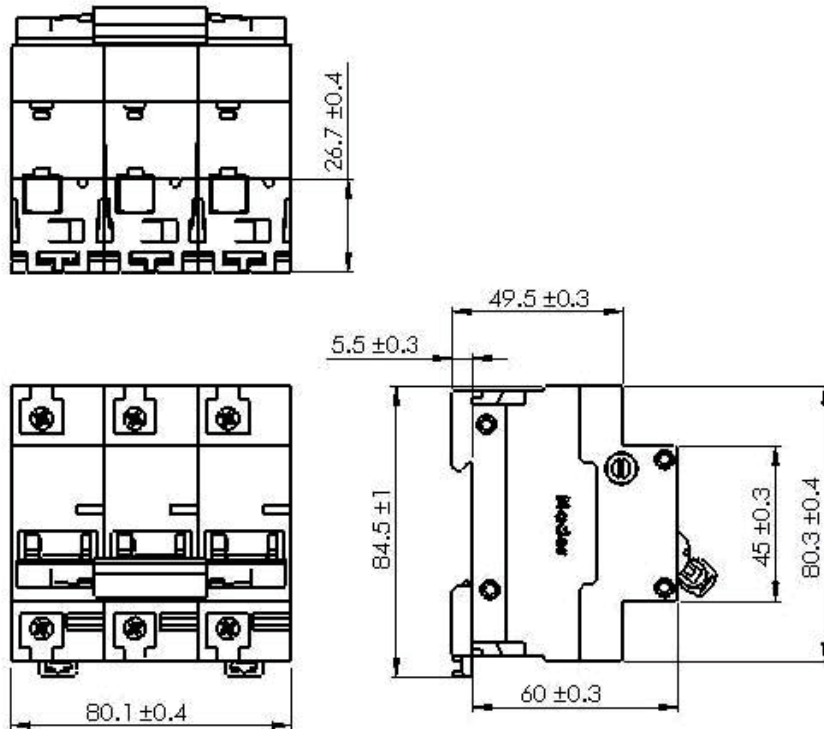
### ● NDB1-125 Mounting Dimension



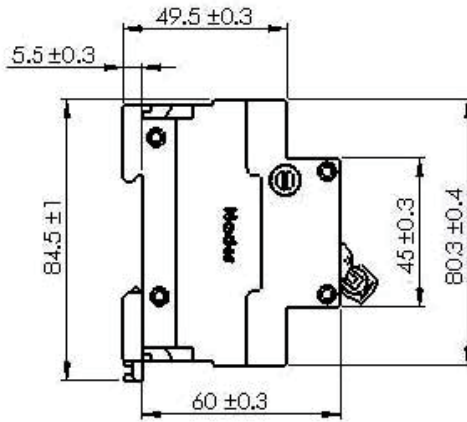
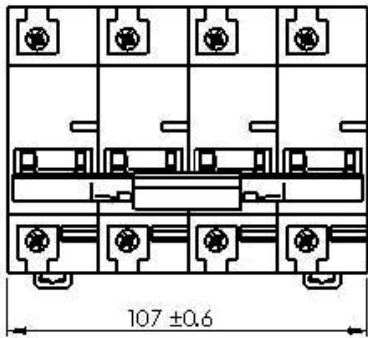
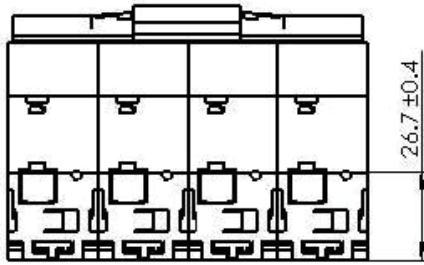
1P



2P



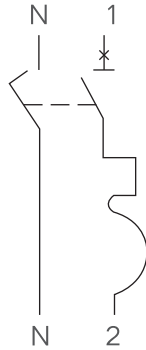
3P



2P

## 7. Wiring Diagram

### ● NDB1-32 Connecting



### ● NDB1-125 Connecting

