YDS70-C16 Smart Power Sensor

Quick Guide

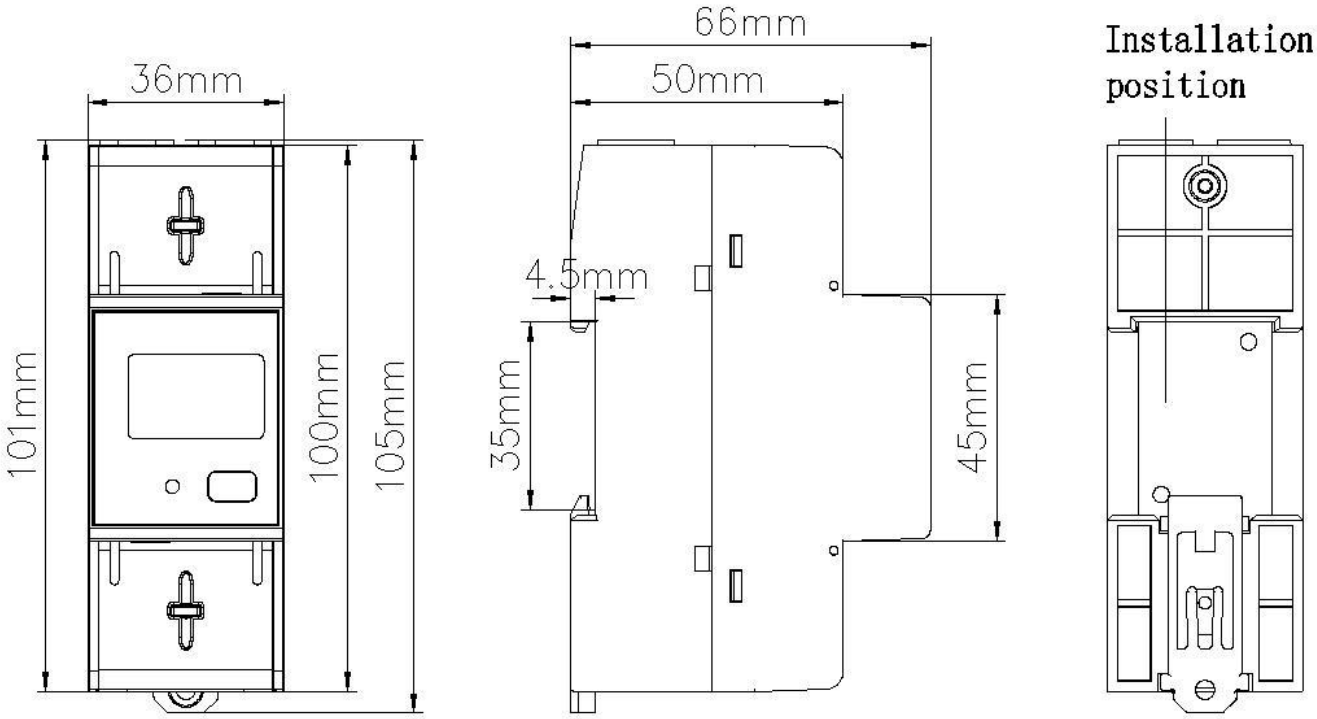
Issue: 01

Date: 2023-04-20

1 Overview

1.1 Model Naming Conventions

YDS70-C16



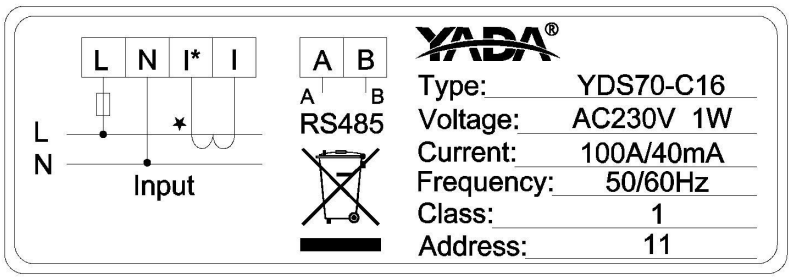
NOTE

The dimensional tolerance is ± 1 mm.

1.2 Appearance

Specifications on the front panel

Nameplate

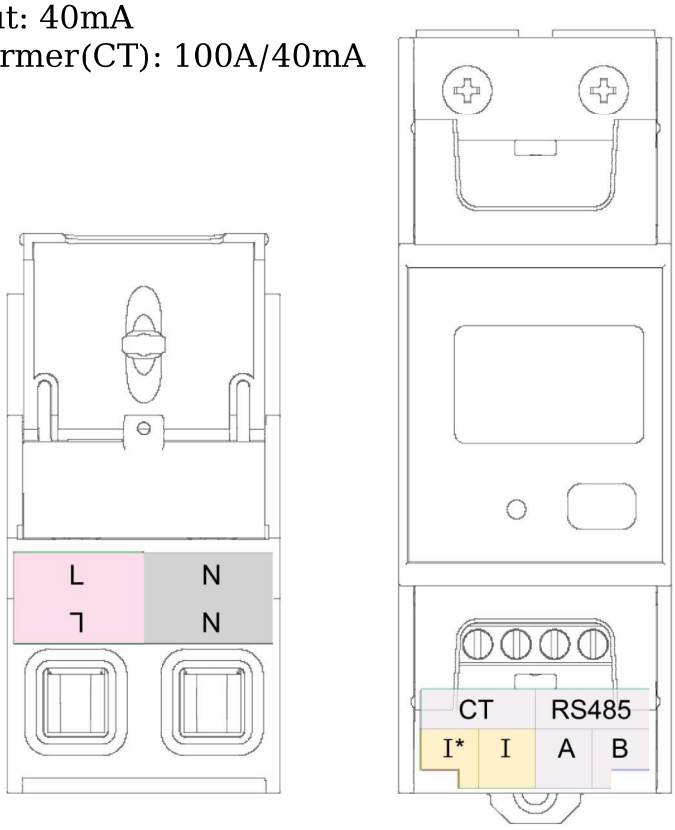


1.3 Key Specifications

Category	YDS70-C16
Nominal voltage	230 V AC, 50 Hz/60 Hz
Current measurement range	0~100A
Voltage measurement range	176V~288V
Electricity metering accuracy	Class 1 (error within ±1%)
Power grid system	Single-phase 2-wire L-N
Baud rate	4800/9600/19200/115200 bps (default value: 9600 bps)
Operating temperature	–25℃ to +60℃
Installation mode	Guide rail-mounted
Certification	CE, RCM, and UKCA

1.4 Port Definition

- Voltage Input: 230V
- CT Current Input: 40mA
- Current Transformer(CT): 100A/40mA

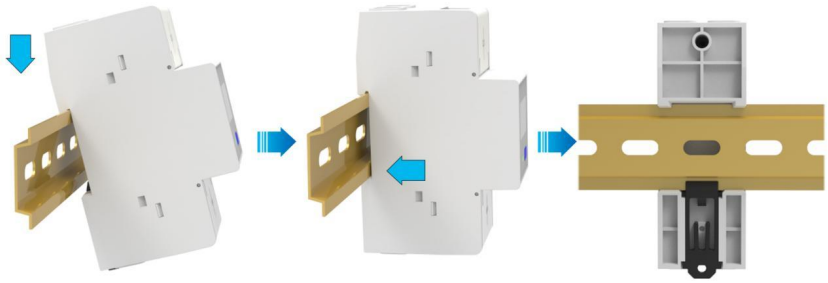


NOTE

The protective film of the nameplate can be tear off.

2 Installing the YDS70-C16

1. Install the Smart Power Sensor on the standard guide rail of DIN35mm.
2. Press the Smart Power Sensor downwards onto the guide rail, and then push it in place along the guide rail.



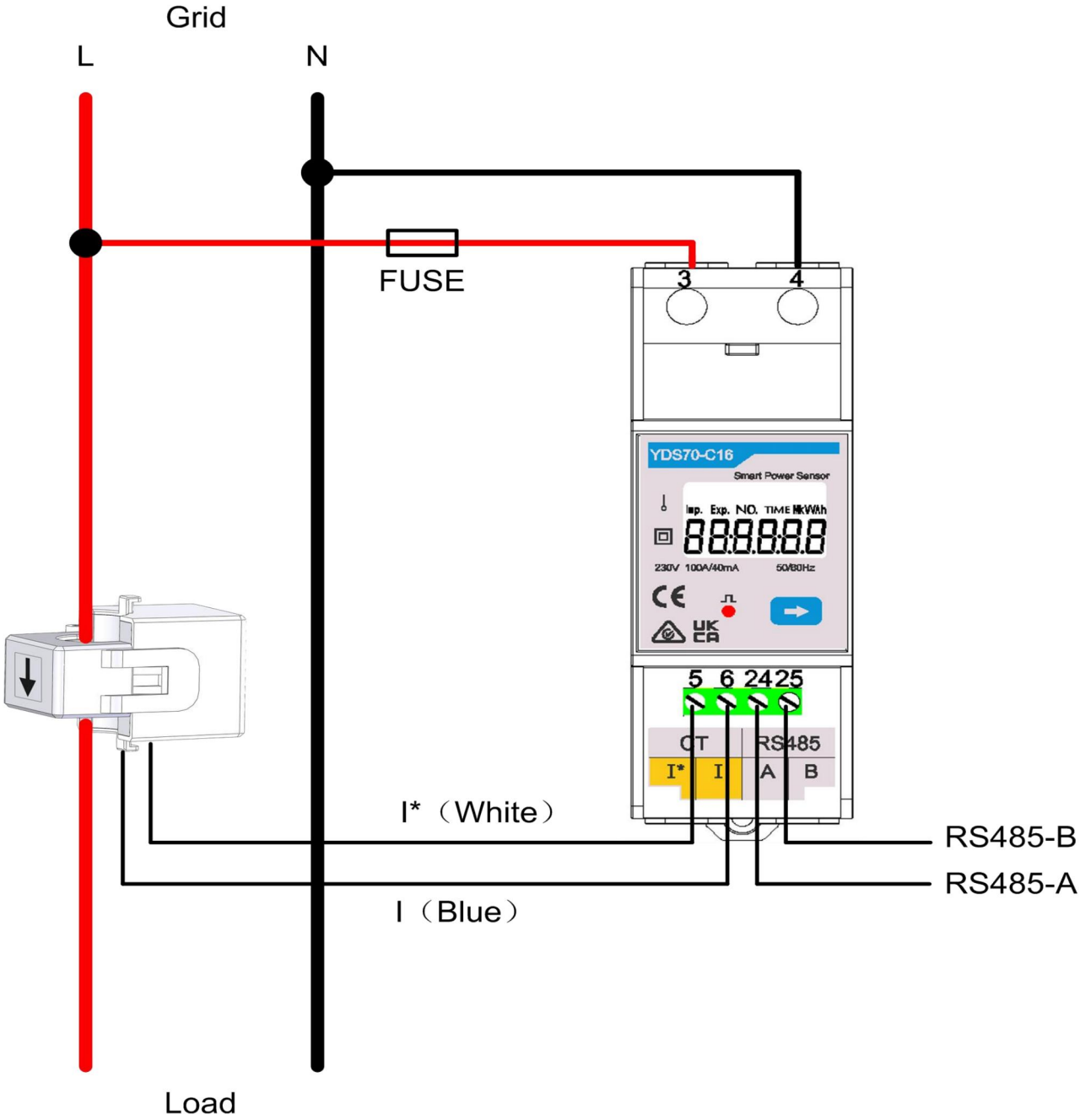
3 Installing Cables

3.1 Prepare cables

Cable	Port	Type	Conductor Cross-sectional Area Range	Outer Diameter	Source
voltage cable	L - 3	Two-core (L and N) outdoor copper cable	1.5-4mm^2	7-13mm	Prepared by the customer
	N - 4				
CT cable	I* - 5	/	/	/	Supplied with current transformers
	I - 6	/	/	/	
Communications cable	RS485A - 24	Two-core outdoor shielded twisted pair copper cable	0.25-1mm^2	4-11mm	Supplied by the manufacturer
	RS485B - 25				

3.2 Connecting Diagram

1. Connect the L,N voltage lines to the 3, 4 terminals of the collector.
2. Connect current transformer outlets I*(white line) and I (blue line)to terminals 5, 6 of the collector.
3. Connect RS485A and RS485B to the communication host.



NOTE

- The maximum torque of 3 and 4 terminal screws is 1.7N.m, and the recommended torque is (1.0 ± 0.1) N.m; The maximum torque of 5, 6, 24 and 25 terminal screws is 0.4N.m, and the recommended torque is (0.20 ± 0.05) N.m.
- 2A is recommended for FUSE in the wiring diagram.

4 User Interface

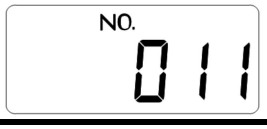
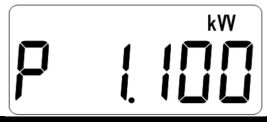
4.1 Model Display (Auto loop)

Auto loop per page hold time = 5s.

No.	Display interface	Description	No.	Display interface	Description
1		Imp. active energy =1.2kWh	2		Exp. active energy =1.00kWh
3		active power =1.1kW	4		Voltage =220.0V
5		Current =5.000A	6		Freq. =50.00Hz

4.2 Display(Key switch)

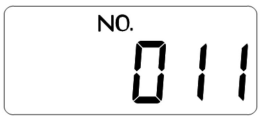
Press “→ “to switch between the following display interfaces.

No.	Display interface	Description	No.	Display interface	Description
1		Comb. active energy =0.20kWh	2		Imp. active energy =1.2kWh
3		Exp. active energy =1.00kWh	4		None parity, 8 data bits 1 stop bit, baud=9600bps The default value
5		Comm.Add = 11	6		Voltage =220.0V
7		Current =5.000A	8		active power =1.1kW
9		Power Factor =1.000	10		Freq. =50.00Hz

NOTE

Comb. active energy = Imp. active energy - Exp. active energy

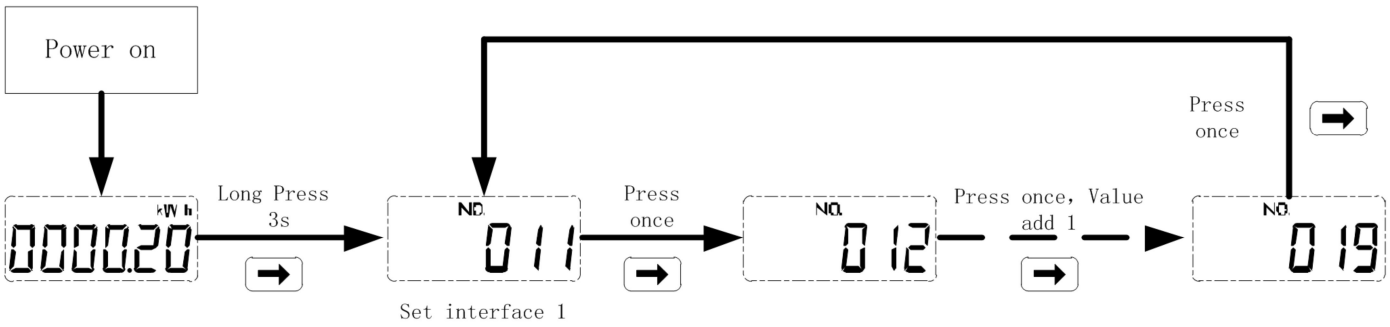
4.3 Parameter Setting

No.	Parameter	Value Range	Description
1		11~19	Modbus communication address
2		2：n1.4800； 3：n1.9600； 4：n1.19200； 5：n1.115200；	Communication baud rate： 2：4800bps； 3：9600bps 4：19200bps； 5：115200bps

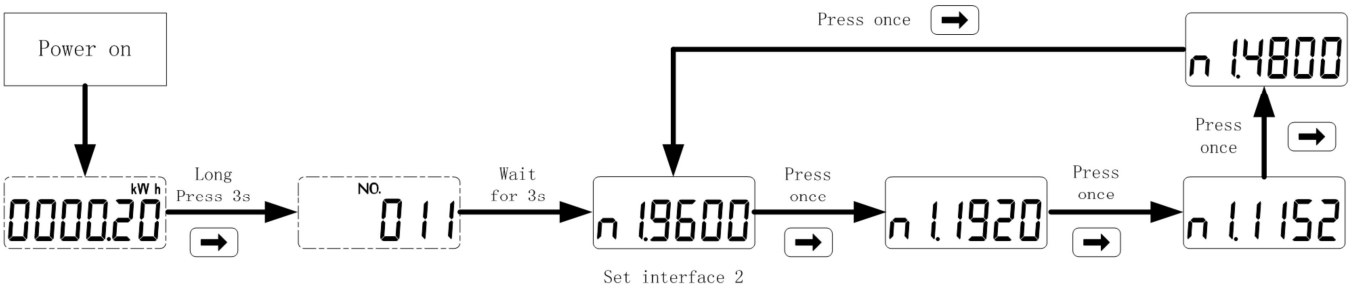
4.4 Parameter Setting Operations

The Smart Power Sensor can set up the communication address and the baud rate through the key : Long press the button 3s, The Power Sensor automatically enters into the setting interface of communication address, while the setting & display interface of communication address（set interface 1) and baud rate (set interface 2) circularly displays. Please press the button once required settings for communication address or baud rate , and it will exit the communication address and baud rate without button operation for twenty seconds.

Set communication address:



Set baud rate:



5 Troubleshooting

Symptom	Cause Analysis	Troubleshooting Method
No display after power-on	1. The cable connection is incorrect. 2. The voltage supplied to the meter is abnormal.	1. Connect the cables correctly (see wiring diagrams). 2. Supply the correct voltage based on the specifications.
Abnormal RS485 communication	1. The RS485 communication cable is disconnected, short-circuited, or reversely connected. 2. The communication address, baud rate, data bit, and parity bit of the meter do not match those of the inverter.	1. If the communication cable is faulty, replace it. 2. Set the communication address, baud rate, data bit, and parity bit of the meter to be the same as those of the inverter by pressing buttons. For details, see "Parameter Settings".
Inaccurate metering	1. The cable connection is incorrect. Check whether the corresponding phase sequence of voltage and current is correct. 2. Check whether the high and low ends of the current transformer inlet are reversely connected. If the values Pa, Pb, and Pc are negative, the high and low ends are connected incorrectly.	1. Connect the cables correctly (see wiring diagrams). 2. If a negative value is displayed, change the cable connection for the current transformer to ensure that the high and low ends are connected correctly.

6 Installation Verification

1. Check that all mounting brackets are securely installed and all screws are tightened.
2. Check that all cables are reliably connected in correct polarity without short circuit.