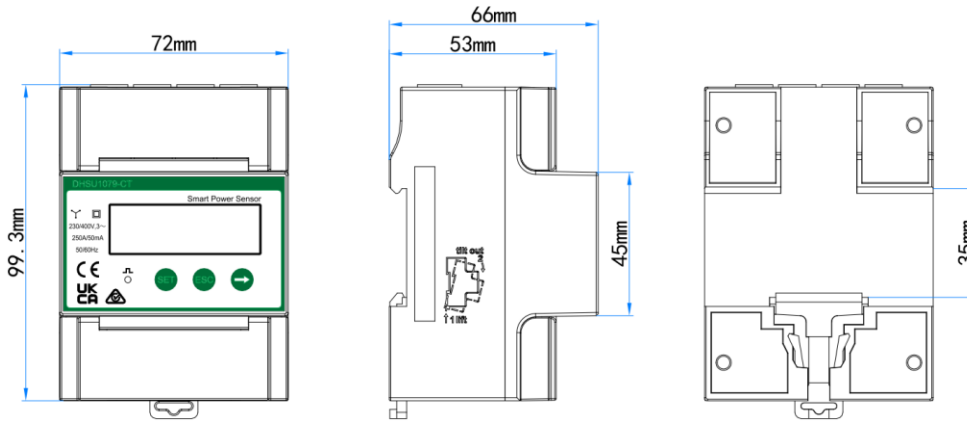
DHSU1079-CT 250 A/50 mA Smart Power Sensor
Quick Guide

Issue: 01
Date: 2024-01-30

1 Overview

1.1 Dimensions

DHSU1079-CT 250 A/50 mA: with three 250 A/50 mA current transformers (CTs)

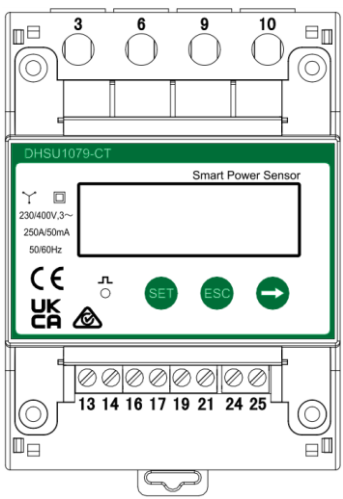


NOTE

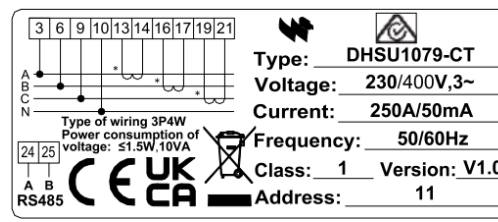
The dimensional tolerance is ±1 mm.

1.2 Appearance

Specifications on the front panel



Nameplate

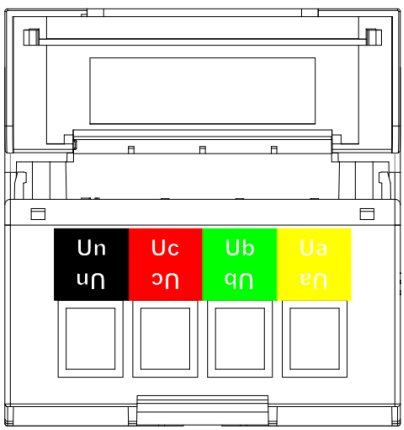


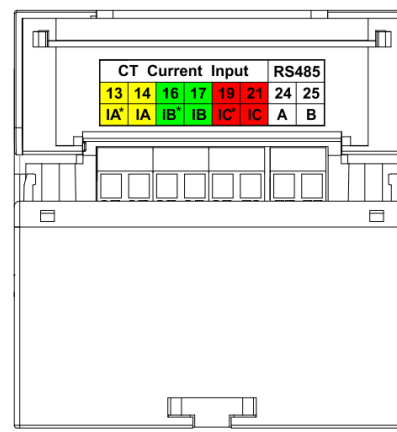
1.3 Key Specifications

Category	DHSU1079-CT 250 A/50 mA
Nominal voltage and frequency	230/400 V AC, 50/60 Hz
Current measurement range	0–250 A
Electricity metering accuracy	Class 1 (tolerance: ±1%)
Earthing system	Three-phase four-wire or three-phase three-wire
Baud rate	1200/2400/4800/9600/19,200/115,200 bit/s (default: 9600 bit/s)
Operating temperature	–25° C to +60° C
Installation mode	Guide rail-mounted
Certification	CE, RCM, and UKCA

1.4 Port Definition

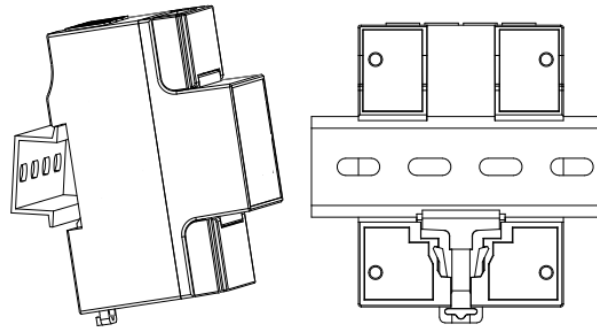
1. Input voltage: 3 x 230/400 V or 3 x 400 V
2. Input current: CT, 250 A/50 mA





2 Installing the DHSU1079-CT 250 A/50 mA

1. Install the Smart Power Sensor on the DIN 35 mm standard guide rail.
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 Required Cables

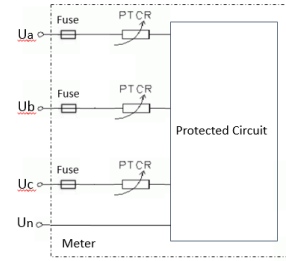
Cable	Port	Type	Conductor Cross-sectional Area	Outer Diameter	Source
AC output power cable	Ua-3	Four-core outdoor copper cable	1.5–4 mm^2	9–14 mm	Prepared by the customer
	Ub-6				
	Uc-9				
	Un-10				
CT cable	IA*-13	/	/	/	Provided by the manufacturer
	IA-14	/	/	/	
	IB*-16	/	/	/	
	IB-17	/	/	/	
	IC*-19	/	/	/	
	IC-21	/	/	/	
Communications cable	RS485A-24	Two-core outdoor shielded twisted pair	0.5 mm^2	6–8 mm	Provided by the manufacturer
	RS485B-25				

NOTE

The maximum torque of the screws for terminals 3, 6, 9, and 10 is 0.9 N·m, and the recommended torque is 0.6±0.1 N·m. The maximum torque of the screws for terminals 13, 14, 16, 17, 19, 21, 24, and 25 is 0.5 N·m, and the recommended torque is 0.34±0.05 N·m.

NOTE

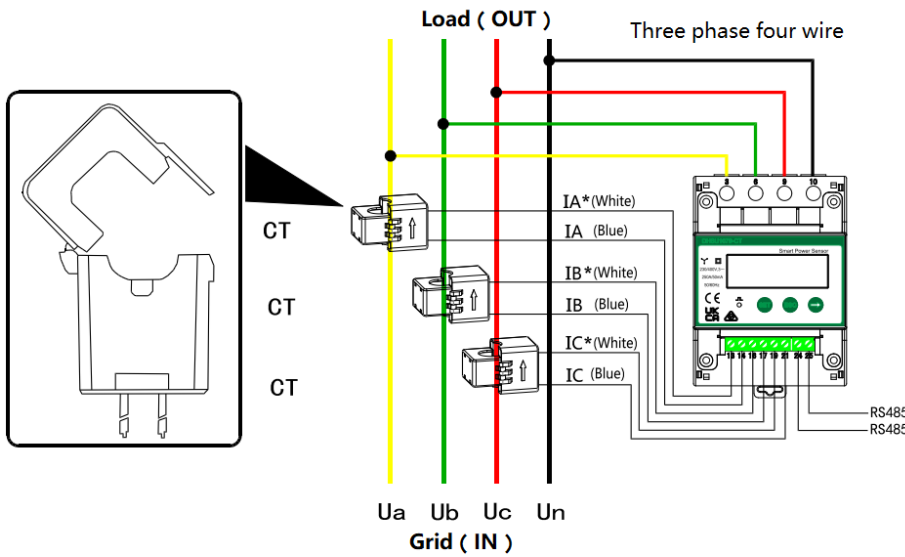
Each phase of Ua, Ub, and Uc in the Smart Power Sensor is connected with a fuse and a thermistor to prevent damage caused by external short circuits. Ua, Ub, and Uc do not need external fuse protection.



3.2 Wiring Scenarios – Three-Phase Four-Wire

Three-Phase Four-Wire

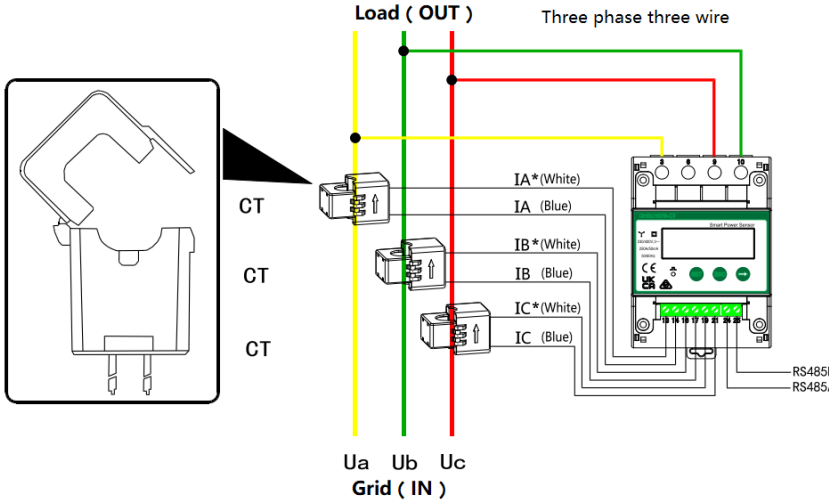
1. Three-phase four-wire: Connect voltage lines Ua, Ub, Uc, and Un to terminals 3, 6, 9, and 10, respectively. Connect CT output lines IA*, IA, IB*, IB, IC*, and IC to terminals 13, 14, 16, 17, 19, and 21, respectively.
2. Connect RS485A and RS485B to the communication host.
3. Operating voltage: 0.7–1.3 Un.



3.3 Wiring Scenarios – Three-Phase Three -Wire

Three-Phase Three-Wire

1. Three-phase three-wire: Connect voltage lines Ua, Uc, and Ub to terminals 3, 9, and 10, respectively. Connect CT output lines IA*, IA, IB*, IB, IC*, and IC to terminals 13, 14, 16, 17, 19, and 21, respectively.
2. Connect RS485A and RS485B to the communication host.
3. Operating voltage: 0.7–1.3 Un.



NOTE

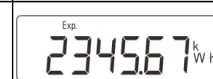
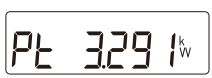
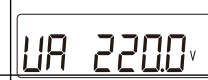
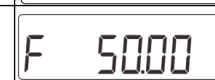
The CT direction must be consistent with the arrow direction as shown in the preceding figure.

4 Display and Parameter Settings

4.1 Display

Display (Auto Loop)

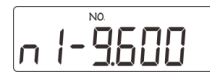
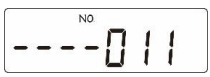
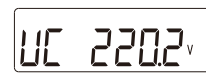
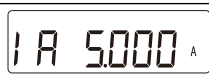
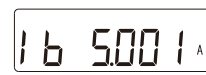
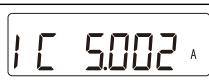
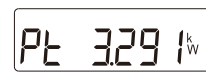
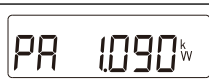
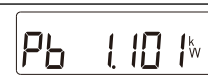
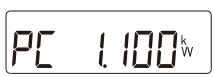
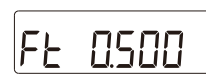
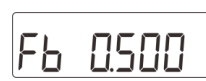
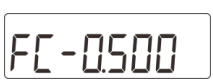
If no button is pressed for 60s, the backlight turns off. Auto loop switch time = 5s.

No.	Display Interface	Description	No.	Display Interface	Description
1		Imp. active energy = 10000.0 kWh	2		Exp. active energy = 2345.67 kWh
3		Total Active power = 3.291 kW	4		Phase A voltage = 220.0 V
5		Phase B Voltage = 220.1 V	6		Phase C voltage = 220.2 V
7		Phase A Current = 5.000 A	8		Phase B current = 5.001 A
9		Phase C Current = 5.002 A	10		Frequency Freq = 50.00 Hz

NOTE

1. The status bar will blink "" when the Sensor is in communication state.
2. The status bar will display "3" when the Sensor is in three-phase three-wire mode

Display (Switch by Button " ➡ ")

No.	Display Interface	Description	No.	Display Interface	Description
1		Comb. active energy = 7654.33 kWh	2		Imp. active energy = 10000.0 kWh
3		Exp. active energy = 2345.67 kWh	4		None parity, 1 stop bit, Baud = 9600 bit/s
5		011 represents address	6		Phase A voltage = 220.0 V
7		Phase B voltage = 220.1 V	8		Phase C voltage = 220.2 V
9		Phase A current = 5.000 A	10		Phase B current = 5.001 A
11		Phase C current = 5.002 A	12		Total active power = 3.291 kW
13		Phase A active power = 1.090 kW	14		Phase B active power = 1.101 kW
15		Phase C active power = 1.100 kW	16		Total Power factor PFt = 0.500 L
17		Phase A power factor Pfa = 1.000 L	18		Phase B power factor PFb = 0.500 L
19		Phase C power factor PFc = 0.500 C	20		Frequency Freq = 50.00 Hz

NOTE

Comb. active energy = Imp. active energy – Exp. active energy

4.2 Parameter Settings

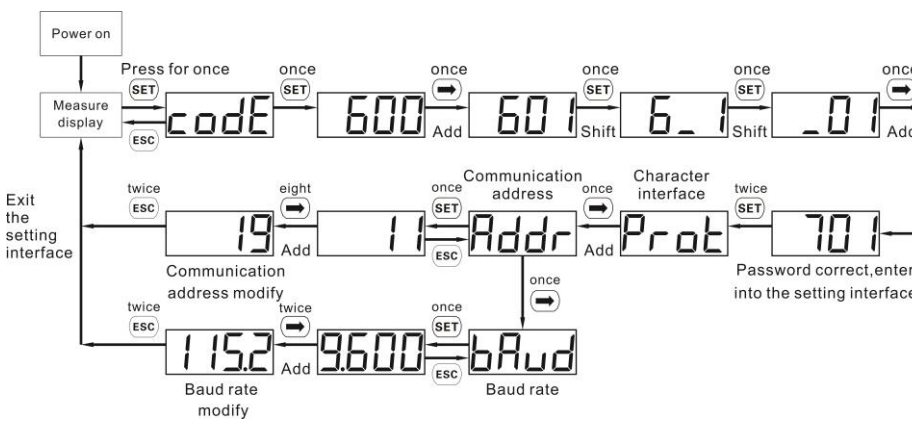
No.	Parameter	Value	Description
1	PrOt	2: n.2 3: n.1 4: E.1 5: o.1	Settings for communication stop bits and parity bits: 2: None parity, 2 stop bits, n.2 3: None parity, 1 stop bit, n.1 4: Even parity, 1 stop bit, E.1 5: Odd parity, 1 stop bit, o.1
2	Addr	11–19	Communication address
3	bAud	0: 1.200; 1: 2.400 2: 4.800; 3: 9.600 4: 19.20; 5: 115.2	Communication baud rate: 0: 1200 bit/s; 1: 2400 bit/s 2: 4800 bit/s; 3: 9600 bit/s 4: 19,200 bit/s; 5: 115,200 bit/s

4.3 Parameter Setting Operations

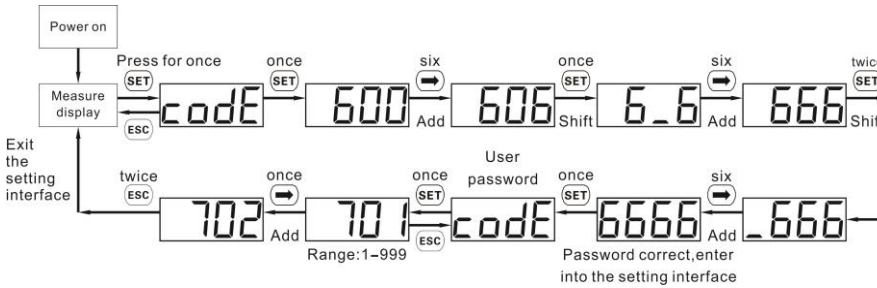
NOTE

The communications parameters have been configured for the Smart Power Sensor before delivery. If the communication is abnormal, check and set parameters.

Button description: "SET" represents "confirm" or "cursor shift" (when entering digits), "ESC" represents "exit", and "→" represents "add". The password is **701** by default.



To modify the user password:



5 Troubleshooting

Symptom	Cause Analysis	Troubleshooting Method
No display after power-on	1. The cable connection is incorrect. 2. The supply voltage 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 communications 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 communication host.	1. Reconnect the communications cable or 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 communication host 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 CT input line and output line are reversely connected. If the values of Pa, Pb, and Pc are negative, the cables are connected incorrectly.	1. Connect the cables correctly (see wiring diagrams). 2. If a negative value is displayed, change the cable connection for the CT to ensure that the input line and output line 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 circuits.