



CHiNT

DTSU666

Smart Power Sensor

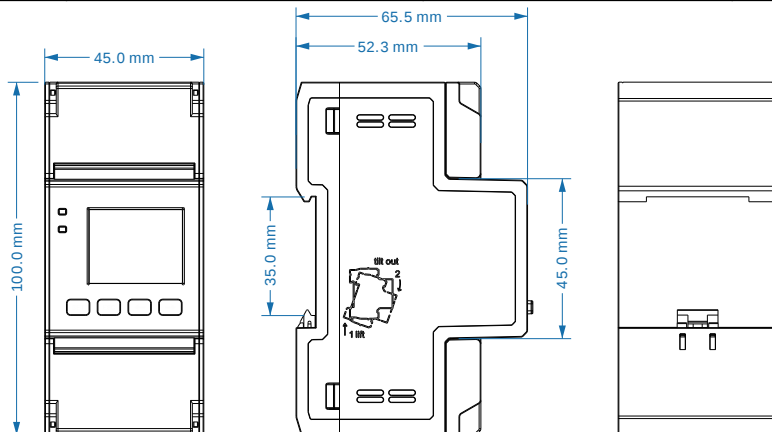
Quick Guide

Issue :021-01
Date :2025-09

1 Overview

1.1 Models

Type	Width(18 mm module in Din rail mounting)	Dimension (L*W*H)/mm	Net weight/g
DTSU666	2.5	100×45×65.5	Approx. 148



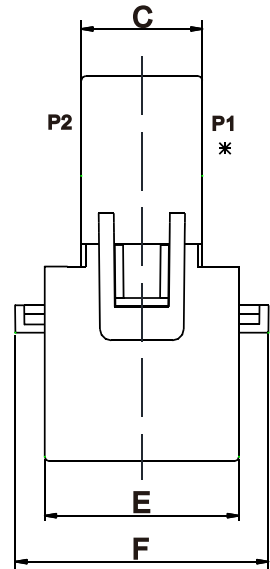
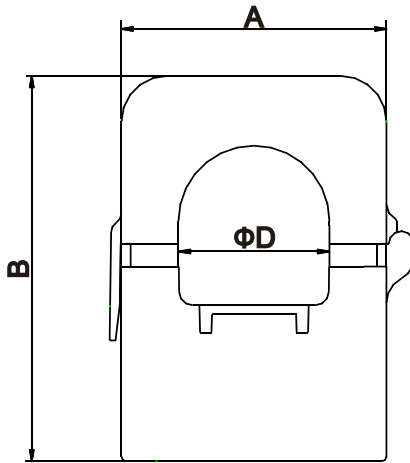
NOTE Unmarked tolerance is $\pm 1\text{mm}$;
The appearance, dimensions information please refer to the actual product received.

1.2 Performance and Specification

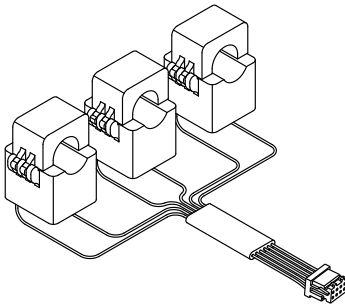
Category	DTSU666
Nominal voltage	$3 \times 220/380\text{V} \dots 3 \times 240/415\text{V}$
Nominal current	100A/40mA, 200A/40mA, 400A/40mA, *A/40mA (customizable)
Frequency	50/60Hz
Voltage range	$0.8U_n - 1.15U_n$
Accuracy class	Class 1
Power grid system	1P2W or 3P4W or 3P3W
Baud rate	1200bps/2400bps/4800bps/9600bps (default 9600bps) /19200bps/38400bps/115200bps (optional)
Temperature	$-25^\circ\text{C} \sim +55^\circ\text{C}$ (nominal), $-40^\circ\text{C} \sim +70^\circ\text{C}$ (ultimate)
Way to install	DIN-Rail Mounting
Certification	CE, SAA, RoHS, REACH

1.3 Current transformer(CT)

Type	Specifications	A mm	B mm	C mm	D mm	E mm	F mm	Cable length mm	Net weight per CT g
NCTK-16	100A/40mA	29.8	47	19	15.5	32	/	6000 ±20	Approx. 79
NCTK-24	200A/40mA	46.5	71	22.4	24.4	38.5	52		Approx. 595
NCTK-36	400A/40mA	57.5	82	26	32.5	42.5	55.5		Approx. 1190



- CT Assemble



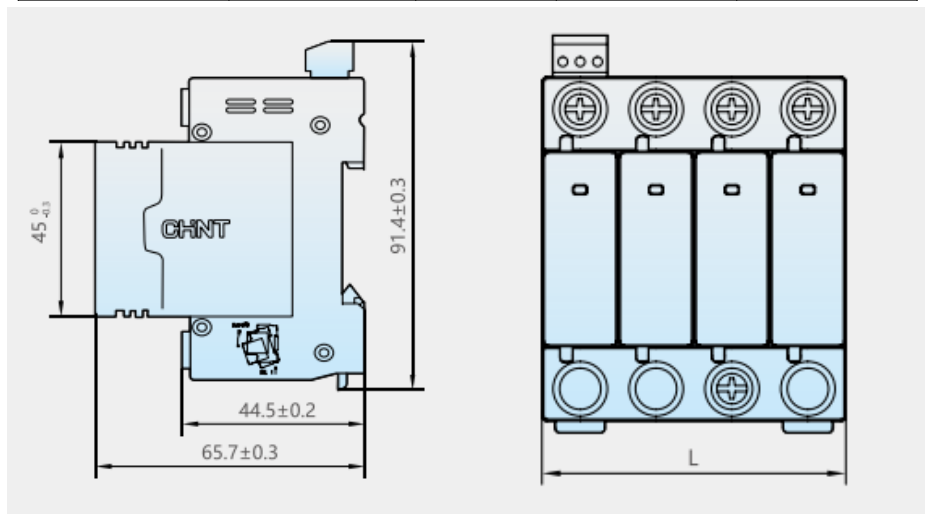
 **NOTE** The dimensional tolerance is $\pm 1\text{mm}$;
The appearance, size and information
are subject to actual objects.

 **NOTE**
The maximum tensile force of each CT cable
is 15N·m. Press the buckle of the CT
assembly connector and pull out.

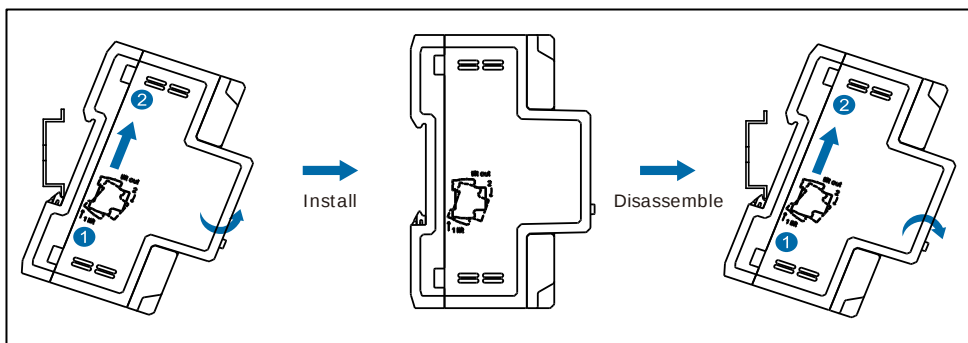
1.4 Surge protector

It is recommended that the user connect the recommended type of surge protector before the meter.

Type	Width(18 mm module in Din rail mounting)	Wire cross-sectional area(mm ²)	Dimension (L*W*H)/mm	Protection grade
NXU-II G 3P+N surge protector	3P+N	≤16	91.4×72×65.7	IP20
NXU-II G 4P surge protector	4P			



2 Installing



3 Installing the Cable

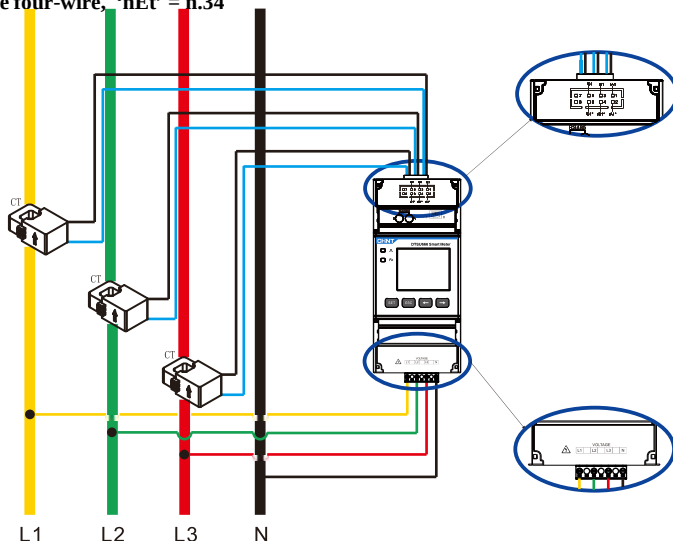
3.1 Prepare cables

Cable	Port	Type	Conductor Cross-sectional Area Range	Outer Diameter	Source
AC power cable	L1(Ua)	Multi-core outdoor copper cable	1.5mm ² ~2.5mm ²	3mm~5mm	Prepared by the customer
	L2(Ub)				
	L3(Uc)				
	N				
CT cable	IA1*、IA1	/	/	/	Manufacturer
	IB1*、IB1				
	IC1*、IC1				
communication cable	RS485	Two core outdoor shielded twisted pair	0.25mm ² ~1mm ²	4mm~11mm	Prepared by the customer
	RS485(RJ45)	Cat 6 Ethernet Cable	/	/	

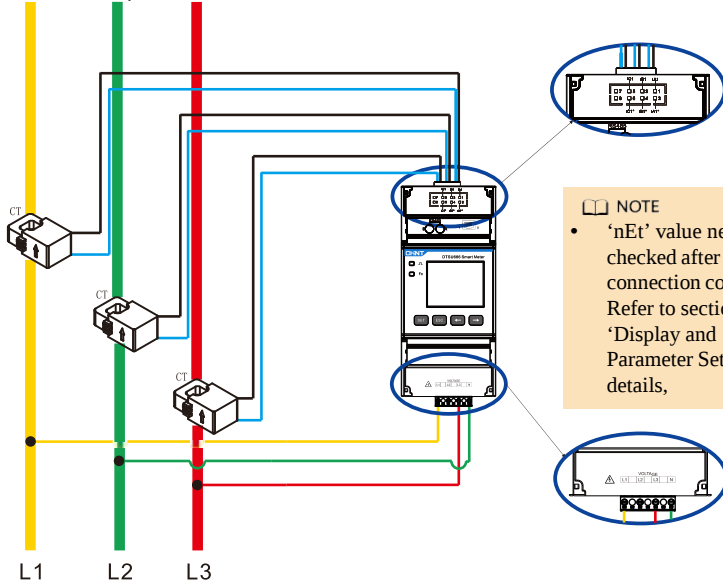
NOTE The maximum torque for terminals L1, L2, L3, and N is $0.5\text{N} \cdot \text{m}$, and the recommended torque is $0.45\text{N} \cdot \text{m}$. The recommended stripping length for communication cables and voltage cables is 7mm.

3.2 Wiring diagram

- Three-phase four-wire, 'nEt' = n.34



- Three-phase three-wire, 'nEt' = n.33



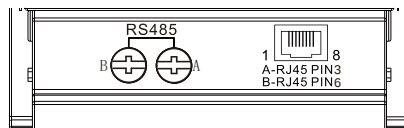
NOTE

- 'nEt' value need to be checked after connection complete. Refer to section 4 'Display and Parameter Settings' for details,

CAUTION

Before connecting cables, ensure that the Smart Meter is not damaged in any way; Please ensure that the grounding wire is securely installed; Before powering on, please ensure that the wiring is correct, otherwise electric shock, damage to the smart meter, or fire may occur.

3.3 Communication Connection

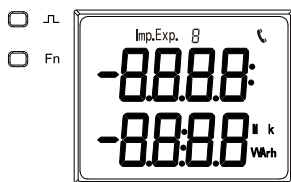


RS485

There are 2 types of connection interface. Screw type and RJ45 type. The default A is PIN3 and B is PIN6 in RJ45. Please note that the customer's customized requirements shall be subject to the actual product.

4 User Interface

4.1 LED and LCD overview



 **NOTE** The figure above is for reference only, please refer to the actual product received.

- **LED**

“Imp.” indicates energy pulse respectively; “Fn” is function indication, always on during phase sequence adjust process.

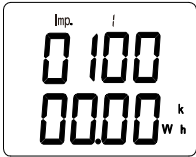
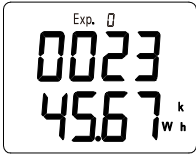
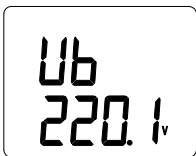
- **LCD**

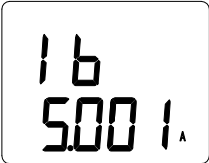
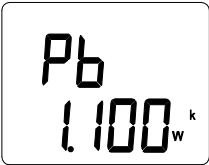
No.	Symbol	Description
1	Imp.	Import direction
2	Exp.	Export direction
3		Flash during communication
4		Unit (according to the display items)

4.2 Display

Press the “←” and “→” keys to switch the display items. The display items is listed in following table.

The sequence and items is varied from product types, please refer to the actual product received.

No.	Display interface	Description
1		Imp. active energy of the first loop = 10000.00kWh
2		Exp. active energy of the second loop = 2345.67kWh
3		Phase A voltage = 220.0V (3P3W not support)
4		Phase B voltage = 220.1V (3P3W not support)
5		Phase C voltage = 220.2V (3P3W not support)
6		Uab = 220.0V
7		Ubc = 220.0V

No.	Display interface	Description
8		$U_{ca} = 220.0V$
9		Phase A current of the first loop = 5.000 A
10		Phase B current of the first loop = 5.001A
11		Phase C current of the first loop = 5.002A
12		Total active power of the first loop = 3.291kW
13		Phase A active power of the first loop = 1.100 kW
14		Phase B active power of the first loop = 1.100 kW

No.	Display interface	Description
15		Phase C active power of the first loop = 1.100 kW
16		Power factor(PF) of the first loop =1.000 (direction is the same with active power)
17		Phase A PF of the first loop =1.000 (3P3W shows "----")
18		Phase B PF of the first loop =1.000 (3P3W shows "----")
19		Phase C PF of the first loop =1.000 (3P3W shows "----")
20		Frequency of the first loop =50.00Hz
21		RS485 is Modbus, and the communication address is 1

No.	Display interface	Description
22		The baud rate of the communication serial port is 115200bps; The communication serial port has 8 data bits, no checksum, and 1 stop bit

4.3 Parameter

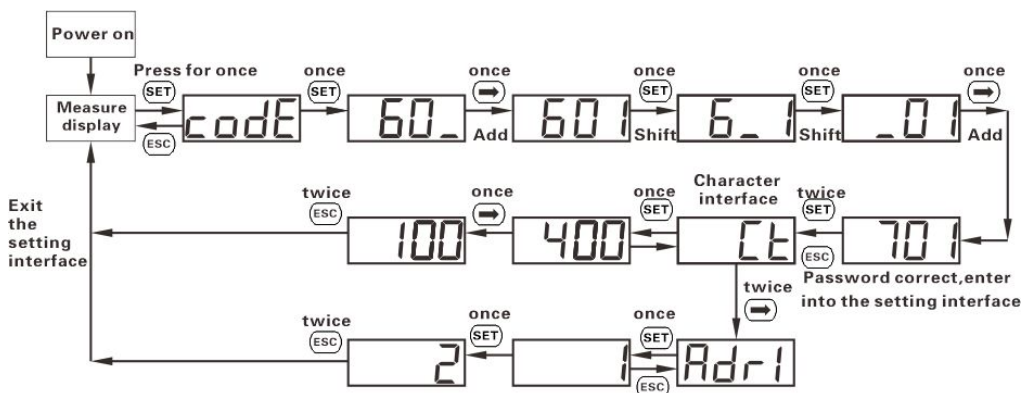
Parameter	Value range	Description
CT	100;200;400	Current ratio, used for setting the input loop current ratio: When the current is connected to the line via the transformer, Ct=the rated current of the primary loop / the rated current of the secondary circuit; 100=100A/40mA;200=200A/40mA;400=400/40mA
PT	1.0	Voltage transformation ratio cannot be set
Adr1	1~247	Communication serial port Modbus protocol communication address
bPS1	1.200; 2.400; 4.800; 9.600; 19.20; 38.40; 115.2	Communication serial port baud rate 1.200:1200bps; 2.400:2400bps; 4.800:4800bps; 9.600:9600bps; 19.20:19200bps; 38.40:38400bps; 115.2:115200bps
nEt	n.34; n.33;	Choose wiring method: n.34:represents 3P4W; n.33:represents 3P3W;

4.4 Parameter Setup

When modify digits, " SET " can be used as cursor shift button ; " → " is “ add ” button; " ESC " represents exiting the setting interface or switch to the character interface from digit modification interface, restarting adding from zero after setting the digits to be the maximum value.

Button description: "SET" represents "confirm" or "cursor shift" (when entering digits), "ESC"

represents "exit", "←" represents "reduce", and "→" represents "add". The password is **701** by default.



NOTE If the communication is abnormal, check and set parameters.

5 Diagnosis , analysis and elimination for common faults

Fault phenomenon	Reason analysis	Elimination
No display after the instrument being powered on	1.Incorrect wiring mode. 2.Abnormal voltage supplied for the instrument.	1.If the wiring mode is incorrect, please connect based on the correct wiring mode (see the wiring diagram). 2.If the supplied voltage is abnormal, please supply the voltage on the instrument specification.
Power metering inaccuracy	1.Wrong wiring, please check whether the corresponding phase sequence of voltage and current is correct. 2. Check whether the CT specification is correct. Note : Pa, Pb, and Pc are abnormal if the values are negative. (except for some special equipment).	1.For wrong wiring, please connect based on the correct wiring mode (see the wiring diagram). 2.If a negative value is displayed, change the cable connection mode of the current transformer to ensure that the high and low ends are connected properly.

Fault phenomenon	Reason analysis	Elimination
Abnormal RS485 communication	1. The RS485 communication cable is disconnected, short circuit or reversely connected. 2. The address, baud rate, data bit and parity bit of the instrument is not in accordance with the inverter. 3. The RS485 communication cable is not equipped with a matching resistor at the end (usually when the distance exceeds 150 meters); 4. Check whether external devices are reliably grounded; Note: The communication protocol command between the instrument and the host does not match.	1. If any problems for the communication cable, please change the cable. 2. Set the address, baud rate, data bit and parity bit of the instrument to be the same as the inverter through buttons and so as the "parameter setting". Note: If the communication distance exceeds 150 meters and the communication parameters between the instrument and the host are the same, but communication still cannot be achieved, please reduce the communication baud rate or add a 120 Ω resistor at the beginning and end of the communication cable (the resistance value can be adjusted according to the on-site conditions).

6 Warranty and Service

The manufacturer implements three guarantees for product quality. Within 18 months from the date of delivery, if the user fully complies with the provisions of this manual and the factory seal is still intact, the instrument is found damaged during use, and the company is responsible for free repair or replacement.

7 Environmental protection

Dear customer:

Please help us do one thing, when this product at the end of its life, in order to protect our environment, please do a good job of recycling the product or its parts and materials. Please also dispose of materials that cannot be recycled. Thank you very much for your cooperation and support.

8 Declaration

1. The products, services or features purchased by you are subject to the commercial contracts and terms signed with the Company, and all or part of the products, services or features described in this manual may not be included in the products purchased by you.
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9 Manufacturer Information

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