ROWATT DTSU666 Three-Phase Smart Meter User Guide

Contents

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ROWATT DTSU666 Three-Phase Smart Meter

OVERVIEW

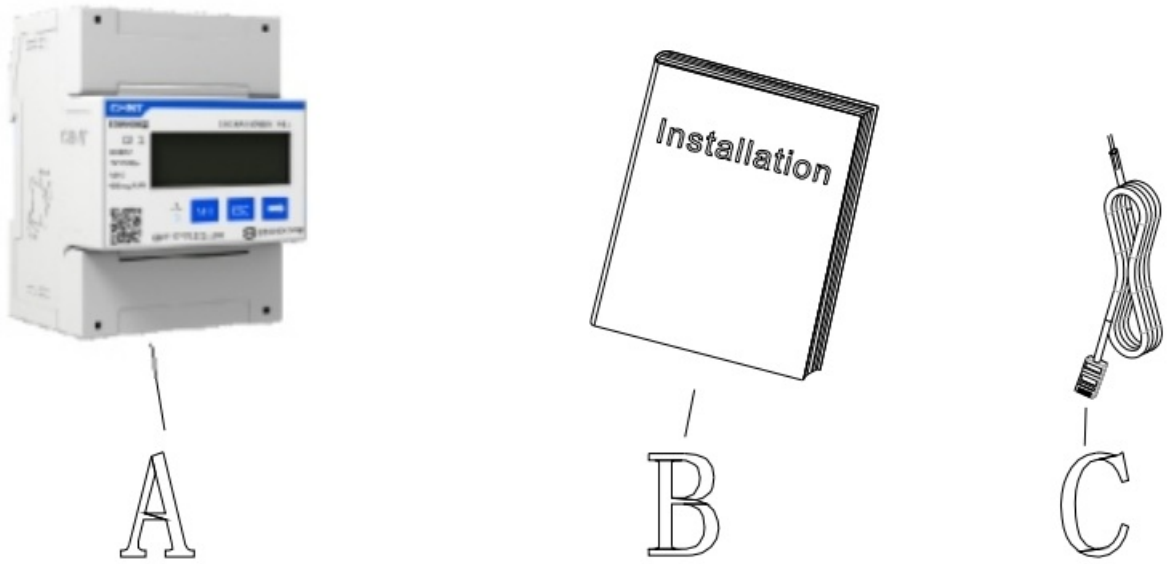
DTSU666 series three phases four wire electronic energy meter(din-rail) is designed based on power monitoring and energy metering demands for electric power systems, the communication industry, the construction industry, etc. as a new generation of intelligent instrument combining measurement and communication functions, mainly applied into the measurement and display for the electric parameters in the electric circuit including three voltage, three current, active power, reactive power, frequency, positive&negative energy, four-quadrant energy, etc. Adopting the standard DIN35mm din rail mounting and modular design, it is characterized with small volume, easy installation and easy networking Can be applied into Growell Hybrid inverter and AC coupled inverter.

Technical Parameters

General Specifications	
Rated voltage	3×230/400Vac
Reference frequency	50Hz/60Hz
Specified operating voltage range	0.9Un～1.1Un
Extended operating voltage range	0.8Un～1.15Un
Voltage line power consumption	≤1.5W/6VA
Input current	0.25-5(80)A
Starting current	0.004Ib
AC voltage withstand	2KV /5mA for 1 minute
Impulse voltage withstand	4KV-1.2/50uS wavform
Max. Reading	9999999kWh
Accuracy	
Active power	1% of range maximum
Reactive power	2% of range maximum

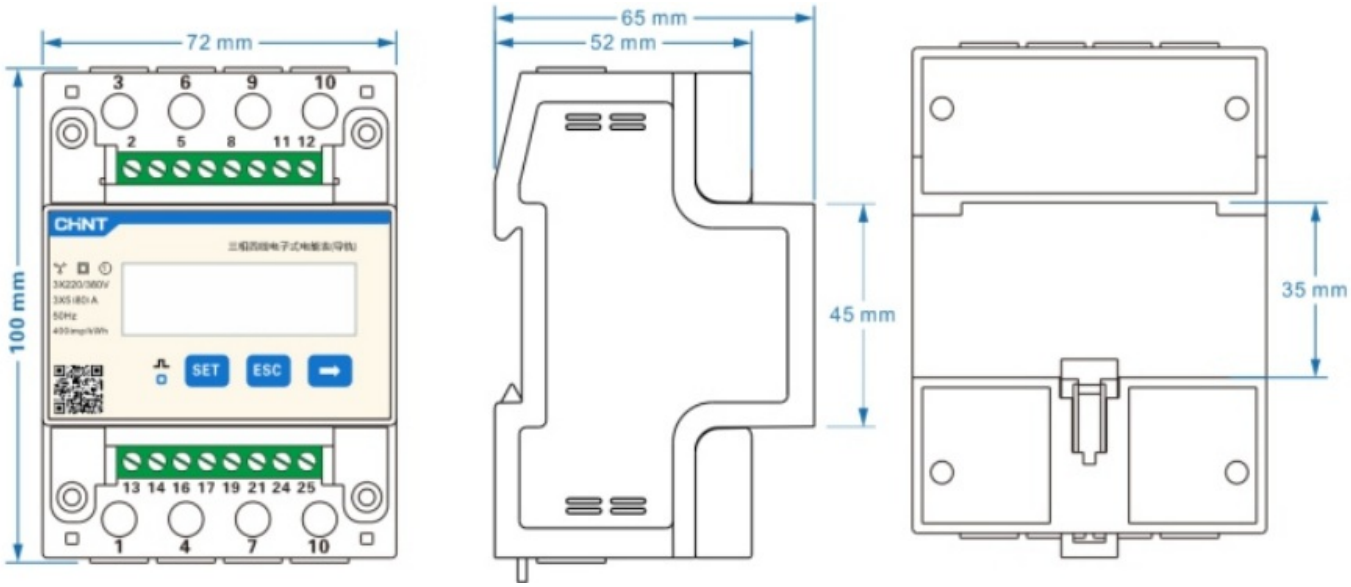
Enviroment	
Rated temperature	-10℃～+45℃
Limit temperature	-25℃～+70℃
Relative humidity(average annual)	<75%
Atmosphere	63.0kPa～106.0kPa
Installation category	CAT III
Degree of pollution	Conform to RoHS
Communication	
Communication	RS485 output for Modbus RTU
Baud rate	9600
Pulse	400imp/kWh
Mechanics	
Din rail dimensions	100x72x65(LxWxH)
Mounting	DIN rail 35mm
Sealing	IP51 (indoor)

Unpacking

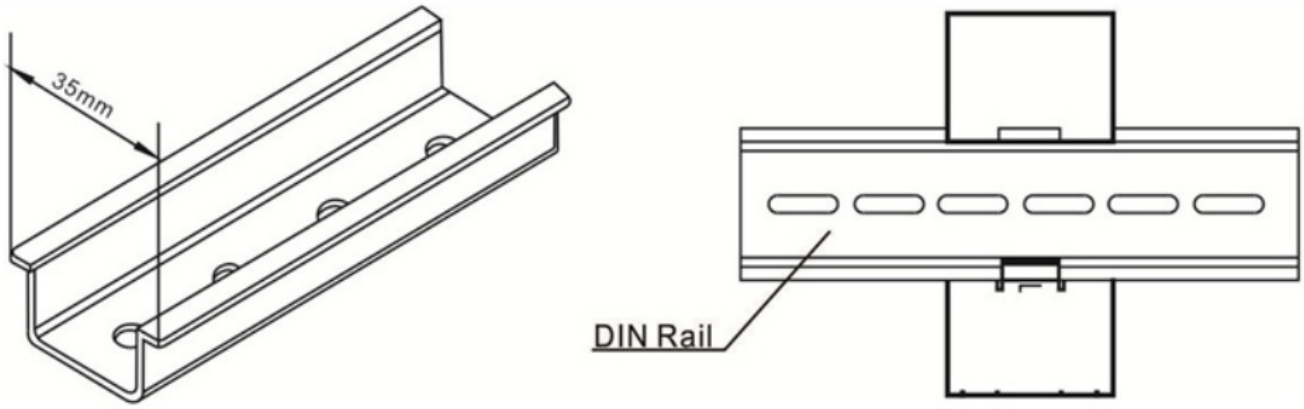


Item	Number	Description
A	1	Three phase meter (TPM-C)
B	1	User Manual
C	1	Rs485 cable（standard length 5m）

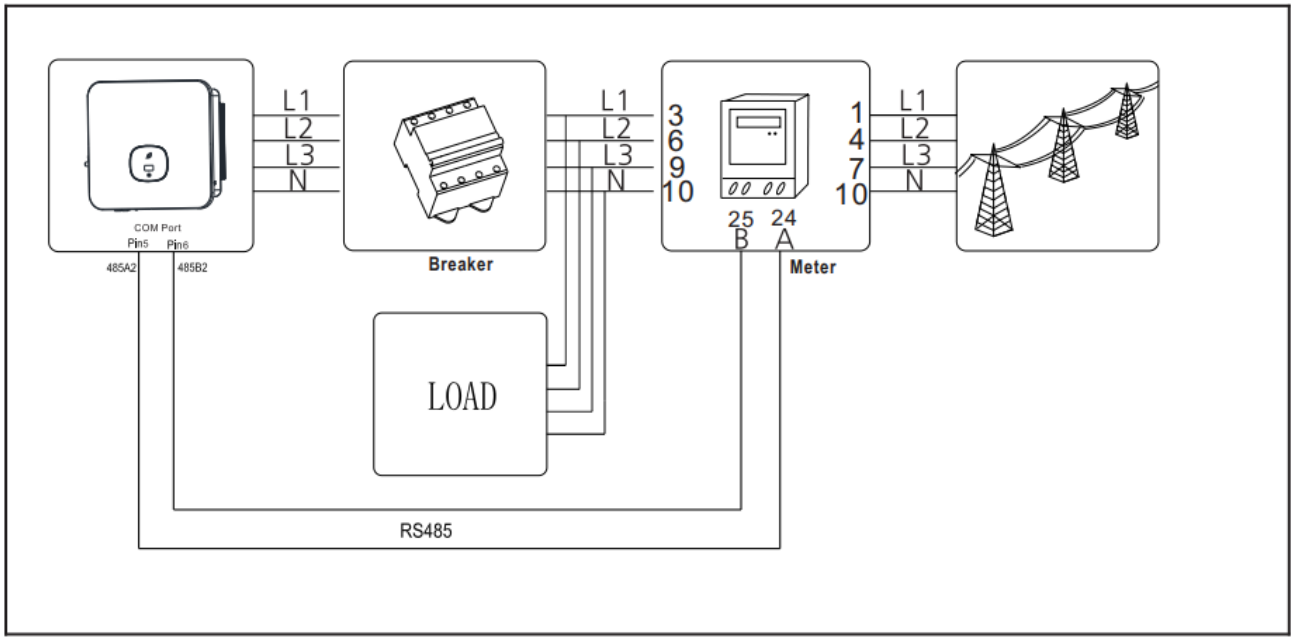
Dimension (Unit: mm)



LxWxH: 100x72x65mm

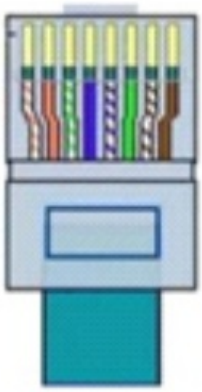


Installation



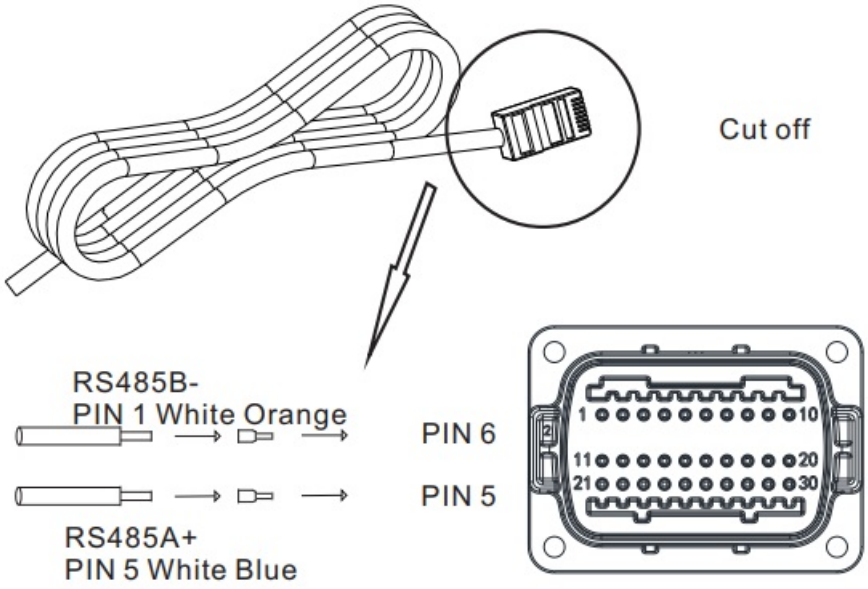
Meter Pin NO.	Description	Meter Connection
1/4/7/10	L1/L2/L3/N-in	Grid L1/L2/L3/N
3/6/9/10	L1/L2/L3/ N-out	AC connector & Load L1/L2/L3/N
24	RS485A	COM Port Pin 5 RS485A3
25	RS485B	COM Port Pin 6 RS485B3

- The network cable is described as follows:
  - LAN line 1-8 colors as below:

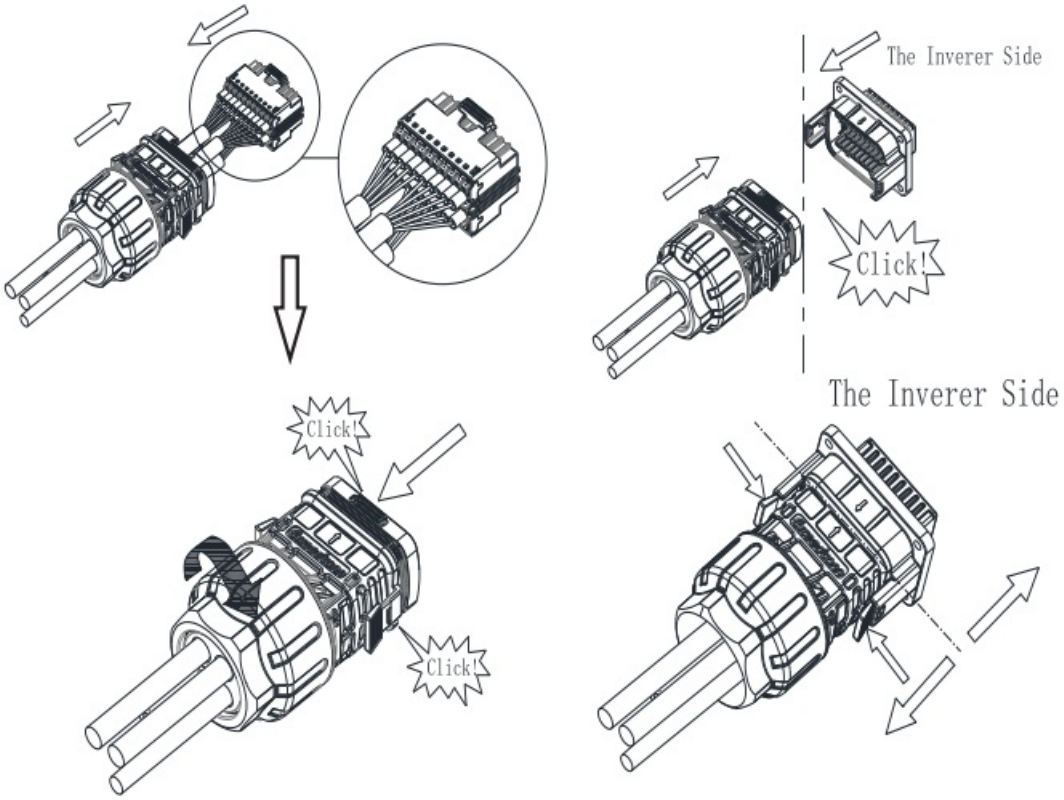


PIN	1	2	3	4
Clour	White orange	Orange	White green	Blue
PIN	5	6	7	8
Clour	White blue	Green	White brown	Brown

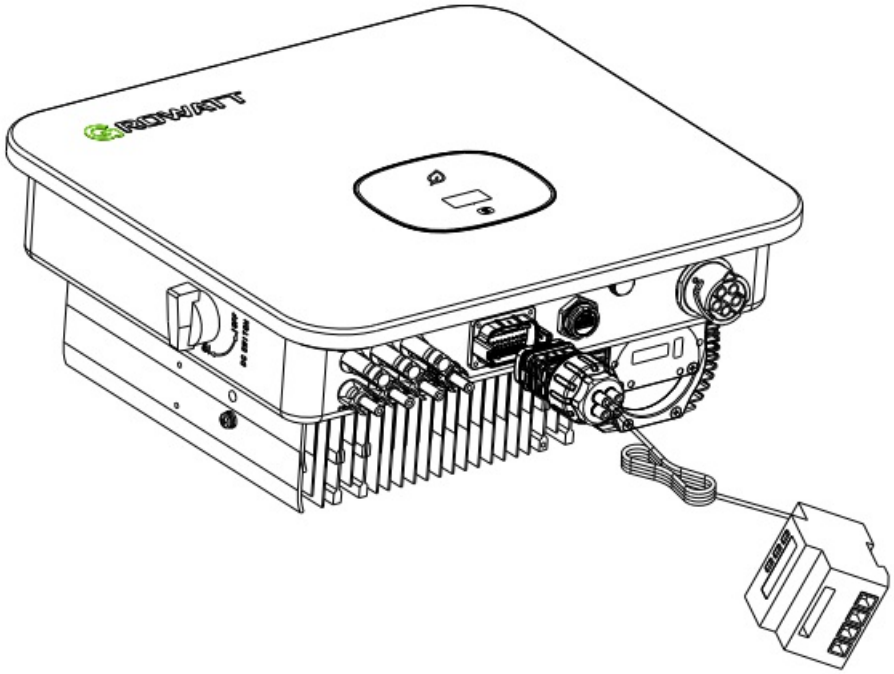
- Cut the crystal head, find out PIN1 and PIN5, and connect the communication terminals according to the picture.



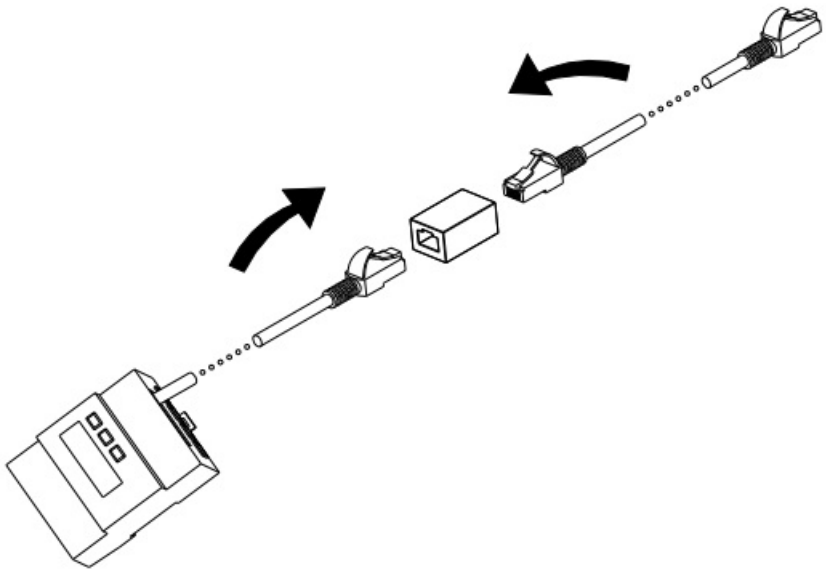
- Connect the communication terminals as shown.



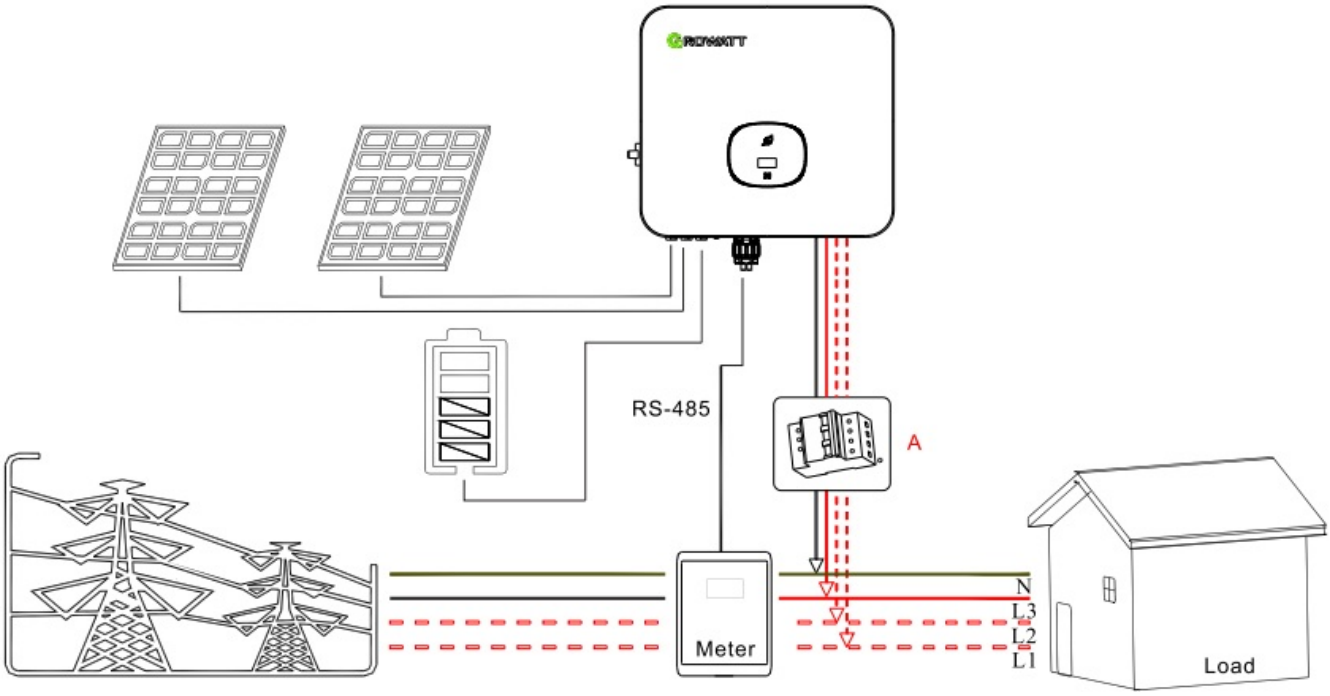
- Connect the communication terminals to the 30-pin communication terminals of the inverter.



- The standard RS485 cable length is 15m. If need a longer RS485 cable, please use an ethernet coupler to extend and make sure RS485 cable less than 100m(the recommended length is less than 25m).



- MOD XH system application block diagram wiring is as follows.



Note

1. Be careful the wire of input and output of L/N and the range of input voltage or current, if the data is outrange, it may destroy the meter.
2. Be careful the input and output of meter line, if lines are wrong. system will work in a wrong way.

Note: If there is no communication (MOD-XH shows warning 401 or meter communication indicator is don't display), please check the communication LAN line, baud rate, and address.

Display

Diagram 1Liquid crystal display

From the displayed interface, the electrical parameter and energy data are all primary side data (that is, the multiplied by current and voltage ratios). The energy measuring value will be displayed seven bits, with the displaying range from 0.00kWh to 9999999Mwh.

NO	Display interface	Instruction	NO	Display interface	Instruction
1	Imp. 10000.00 kWh	Positive active energy =10000.00kWh	10	IC 5.002 A	Phase C current =5.002A
2	Exp. 2345.67 kWh	Reserve active energy =2345.67kWh	11	Pt 3.291 kW	Combined phase active power =3.291kW
3	NO. n1-9600	Communication protocol is ModBus-RTU. N1 indicates that there are 1 stop bits without parity. 9.600 indicates that the baud rate is 9600bps 001 indicating table address	12	PA 1.090 kW	Phase A active power =1.090kW
4	NO. ----001		13	Pb 1.101 kW	Phase B active power =1.101kW
5	UA 220.0 V	Phase A voltage =220.0V	14	PC 1.100 kW	Phase C active power =1.100kW
6	Ub 220.1 V	Phase B voltage =220.1V	15	Ft 0.500	Combined phase power factor PFt=0.500L
7	UC 220.2 V	Phase C voltage =220.2V	16	FA 1.000	Phase A power factor Pfa =1.000L
8	IA 5.000 A	Phase A current =5.000A	17	Fb 0.500	Phase B power factor Pfb =0.500L
9	Ib 5.001 A	Phase B current =5.001A	18	FC-0.500	Phase C power factor Pfc = -0.500L

Note: This meter and MOD-XH default communication address is 04, the baud rate is 9600, if the meter and MOD-XH communication is not on.you can confirm the communication address and baud rate is accurate, view and modify the path as follows

Button description: “SET” button represents “confirmation”, or “cursor shift”(when input digits), “ESC” button represents “exit “→” (^ (A) button represents “add”. The input code is (default 701).

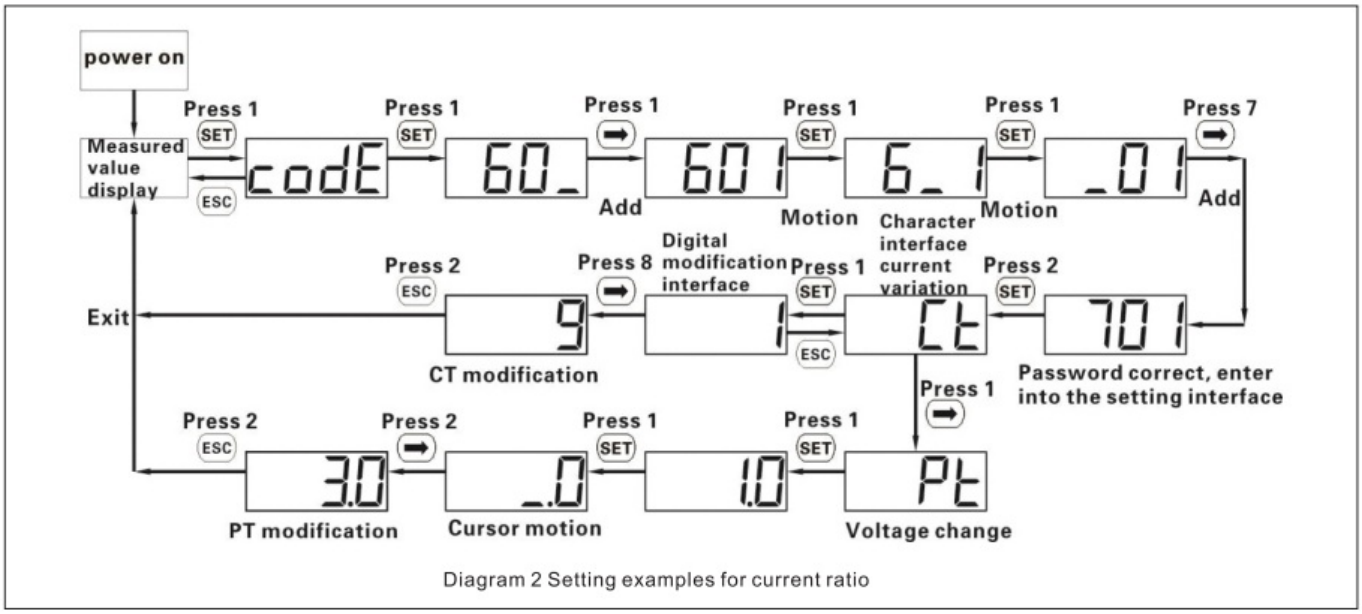


Diagram 2 Setting examples for current ratio

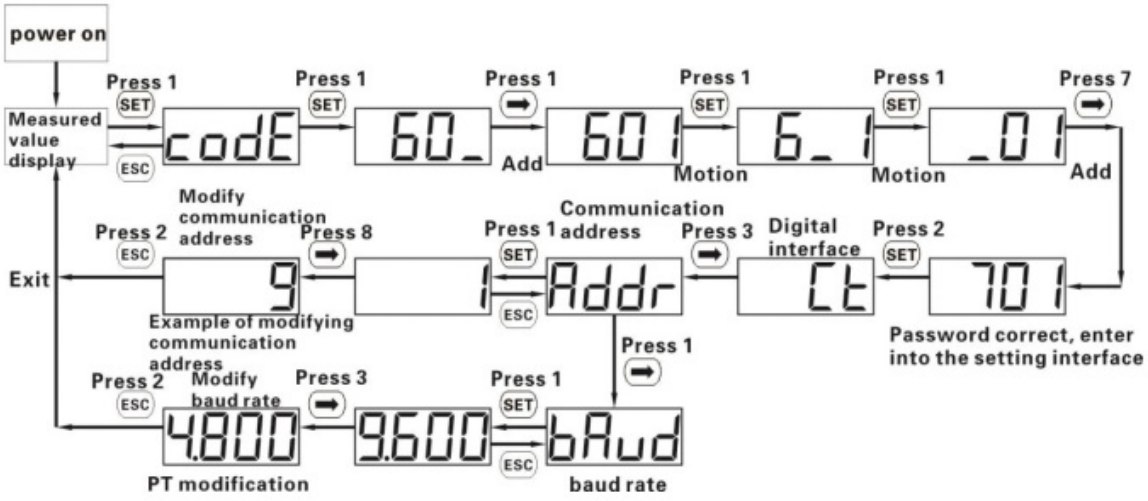


Diagram 3 Setting examples for communication address and baud rate

Troubleshooting

Fault phenomenon	Reason analysis	Elimination
Big deviation between electric energy measurement and actual value.	1. If it is wrongly connected, please reconnect based on the right wiring mode (see the wiring diagram). 2. If not the above problems, please contact with the local supplier.	1. Wiring error, voltage and current corresponding phase sequence is correct? 2. Ifthe ends of the incoming and downstream ends of the current transformers reversed?
The downstream power data and the upstream power data are not displayed in the MOD-XH.	The downstream power data and the upstream power data are not displayed in the MOD-XH.	1.Check the“CT mode”of MOD-XH is”energy meter mode". 2.Check the voltage between A+ and B- is within the range of +(4.4~4.5)V; 3.Check the RS485 communication cable is right. That is to say the A+/B+ of energy meter is matched to A+/B- of MOD -XH.Also,make sure the wiring is fixed firmly.

Service and contact

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Documents / Resources

	ROWATT DTSU666 Three-Phase Smart Meter [pdf] User Guide DTSU666 Three-Phase Smart Meter, DTSU666, Three-Phase Smart Meter, Phase Smart Meter, Smart Meter, Meter

References

- Growatt | Global Leading Distributed Energy Solution Provider