

Three-phase Meter Quick Guide

GROWATT

1. Overview

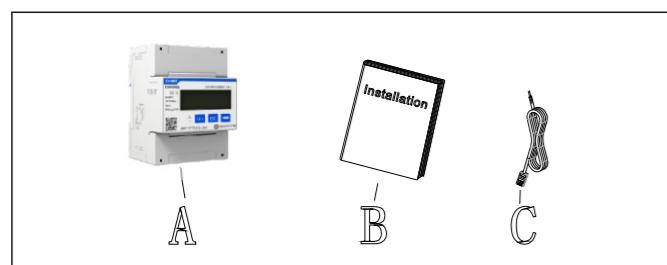
DTSU666 series three phase four wire electronic energy meter(din-rail) is designed based on power monitoring and energy metering demands for electric power system, communication industry, construction industry, etc. as a new generation of intelligent instrument combining measurement and communication function, 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 Growatt Hybrid inverter and AC coupled inverter.

2. Technical Parameters

General Specifications	
Rated voltage	3x230/400Vac
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	0.004lb
AC voltage withstand	2KV /5mA for 1 minute
Impulse voltage withstand	4KV-1.2/50uS waveform
Max. Reading	9999999kWh
Accuracy	
Active power	1% of range maximum
Reactive power	2% of range maximum

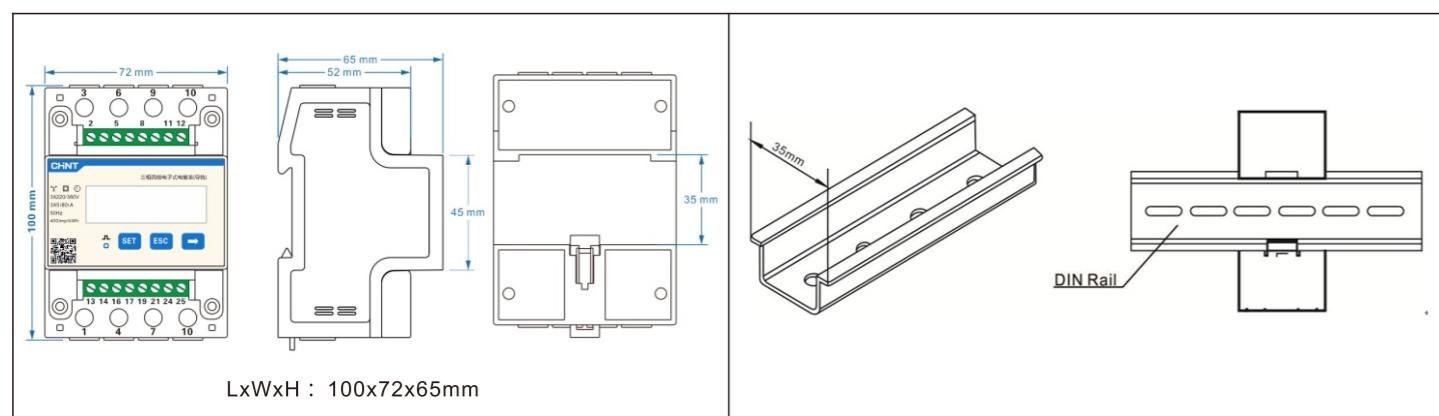
Enviroment	
Rated temperature	-10°C~+45°C
Limit temperature	-25°C~+70°C
Relative humidity(average annual)	<75%
Atmosphere	63.0kPa~106.0kPa
Installation category	CAT III
Degree of pollution	Conform to RoHS
Communication	
Communication	RS485 output for Modbus RTU
Baud rate	9600
Pulse	400imp/kWh
Mechanics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

3. Unpacking

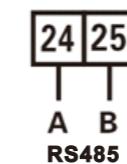
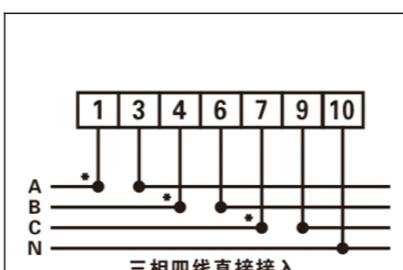


Item	Number	Description
A	1	Three phase meter
B	1	Rs485 cable (standard length 5m)
C	1	User Manual

4. Dimension (Unit: mm)



5. Installation



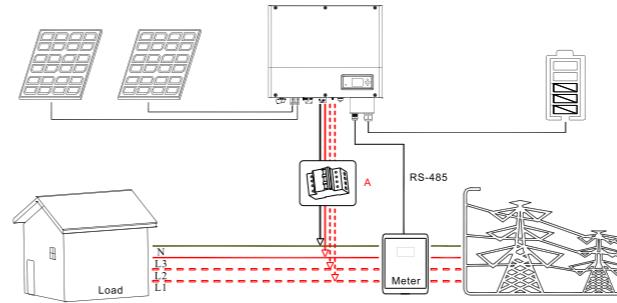
LAN line 1-8 colors as below:

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

Note: We describe Growatt hybrid inverter as "SPH" as below.

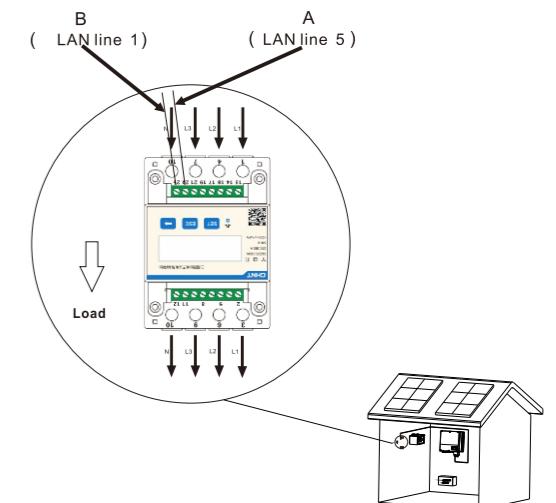
a. When SPH series products are used in three-phase power grid system, please set the "Sensor:Cable CT" of SPH as "Sensor: Meter". More details, please refer to SPH user manual.

b. For example, when connecting three-phase energy meter, SPH gets the information of the sum of three-phase active power to process the logical control by RS485 communication. The following figure is a diagram of the SPH working system.

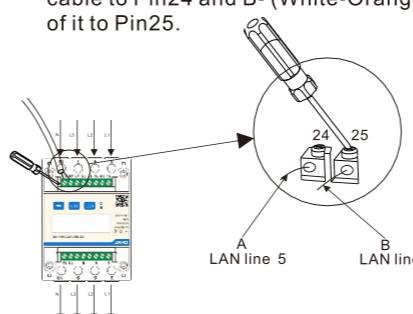


Note: As shown in the figure above, a switch must be installed at point A. In the process of use, if the SPH needs to be turned off, please turn off the switch at point A.

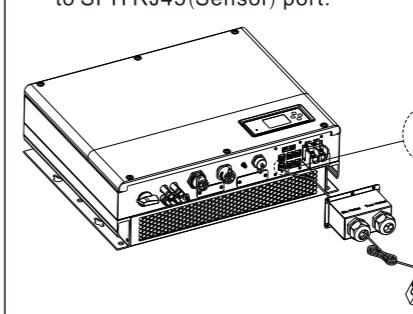
c. Install the three-phase energy meter in inlet AC distribution cabinet, and connect it to utility grid(L1, L2, L3) according to responding indicator mark. The arrow on the meter indicates the grid access port.



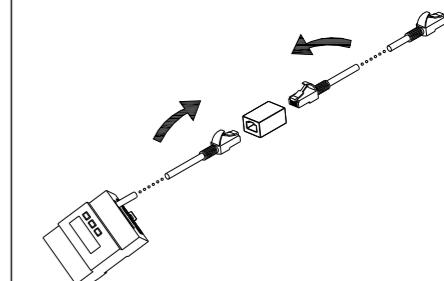
d. Connect the A+ (White-Blue) of Rs485 cable to Pin24 and B- (White-Orange) of it to Pin25.



e. Connect the end of the RS485 cable to SPH RJ45(Sensor) port.



f. The standard RS485 cable length is 5m. If the length is not long enough, please add another cable to extend the length.



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 out of range, it may destroy the meter.
2. Be careful the input and output of meter line, if lines are wrong, the system will work in a wrong way.

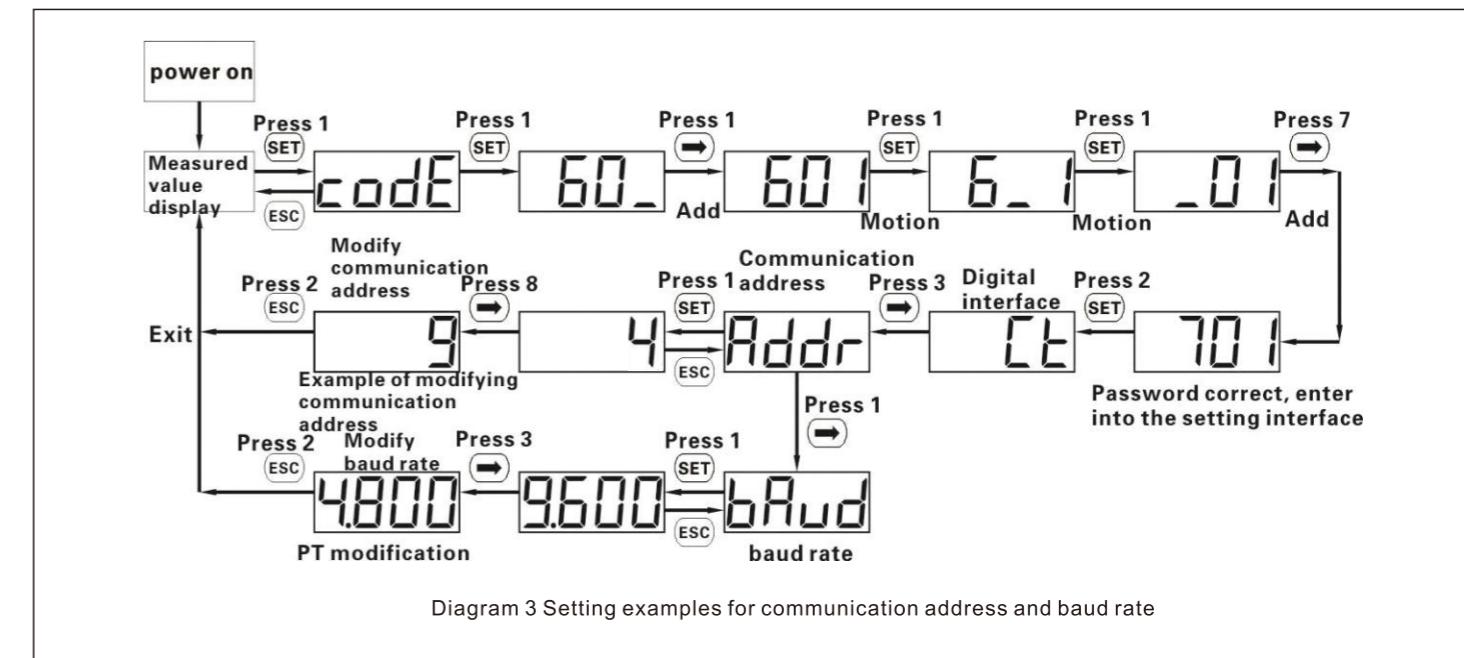
Note: If there is no communication (SPH shows warning 401 or meter communication indicator is not displayed), please check the communication LAN line, baud rate, and address.

6. 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. 100000.00 <small>kWh</small>	Positive active energy =10000.00kWh	10	IC 5002 <small>A</small>	Phase C current =5.002A
2	Exp. 2345.67 <small>kWh</small>	Reserve active energy =2345.67kWh	11	PE 329.1 <small>kW</small>	Combined phase active power =3.291kW
3	NO. n 1-9600	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 1090 <small>kW</small>	Phase A active power =1.090kW
4	NO. ----001	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	13	Pb 1101 <small>kW</small>	Phase B active power =1.101kW
5	VA 220.0 <small>V</small>		14	PC 1100 <small>kW</small>	Phase C active power =1.100kW
6	Ub 220.1 <small>V</small>	Phase B voltage =220.1V	15	PF 0.500	Combined phase power factor PFT=0.500L
7	UC 220.2 <small>V</small>	Phase C voltage =220.2V	16	FA 1000	Phase A power factor Pfa =1.000L
8	IA 5.000 <small>A</small>	Phase A current =5.000A	17	Fb 0.500	Phase B power factor Pfb =0.500L
9	IB 5001 <small>A</small>	Phase B current =5.001A	18	FC -0.500	Phase C power factor Pfc =-0.500L



7. Trouble shooting

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. If the 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 SPH.	The downstream power data and the upstream power data are not displayed in the SPH.	1. Check the "CT mode" of SPH 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 SPH. Also, make sure the wiring is fixed firmly.

8. Service and contact

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