

Three phase meter's specification and user manual

Type: DTSD422-D3-WiFi





I. Introduction

The six circuit multi-function ammeter is designed with advanced single-chip microcomputer processing system. It has the advantages of simple installation, high reliability and high precision. It can measure the power consumption of two circuits and three phases. The open type transformer can measure the data of current, voltage, active power, reactive power, power factor, forward and backward total electric energy, time-sharing electric energy and split phase electric energy in real-time without changing the original wiring; the built-in WiFi communication module does not need to be configured, plug and play, and the wiring is completed in 15 minutes, and the monitoring on power generation and consumption could be visualized via Solarman cloud WEB/APP after power on.

II. Characteristics

- 1. Bio-direction measuring and monitoring on generation and consumption
- 2. Two paths of three phase application could be monitored
- 3. 36mm wide; 35mm standard din-rail for installation
- 4. Open type CT design, no need to change the wire
- 5. Built-in wifi module for remote communication

III. Basic parameters

| Туре | Parameter | | | |
|-----------------|----------------------|--|--|--|
| | Remote communication | WiFi (2.4G HZ) | | |
| | Serial communication | RS485 | | |
| | Rated voltage | 3x230/400V | | |
| | Rated current | 6x5 (100) A | | |
| | Lengths of CT | 2m | | |
| Handryona laval | Rated frequency | 50/60Hz | | |
| | Accuracy | Active:Class 1.0, Reactive: Claess-2.0 | | |
| | Wire connection | 3 phase 4 wire | | |
| | Start-up current | ≪0.004Ib | | |
| | Power consumption | ≤3.5W | | |
| | Working temperature | -25°C~+60°C | | |
| | Working humudity | ≤95%(non-condensing) | | |



IV. Definitions of ports

| | Area | Real picture | Description | | Туре | Notes |
|---|--------|----------------------------------|----------------|--------------------------------|-------|------------------------------------|
| | А | | L-line: A | | AC | |
| | В | | L-line: B | | AC | |
| 1 | С | • • | L-line: C | | AC | |
| N | N-line | | AC | | | |
| | 485b | | RS485 B | 485B- | I/O | |
| | 485a | | RS485 A | 485A+ | I/O | |
| | GND | | GND | GND | Power | Power supply: GND |
| 2 | GND | | GND | GND | Power | Power supply: GND |
| | P2+ | 1858 = 48 GND = G P2+= = P | Active pulse 2 | Strong current interface | | Baud rate: 2400 Check bit: even |
| | P1+ | 85A ND 1+ | Active pulse 1 | Strong current interface | | Stop bit: 1 Date bit: 8 |
| | CT1+ | | CT 1+ | | | |
| | CT2+ | | CT 2+ | | | 1 st path of 3 |
| | CT3+ | CT 3+ | | | P1 | |
| 3 | | GND | | | | |
| | CT4+ | CT4+ CT5+ CT6+ CT- | CT 4+ | | | |
| | CT5+ | | CT 5+ | | | 2^{nd} path of 3 |
| | CT6+ | [1+ [2+ [3+ | CT 6+ | | | P2 |
| | CT- | | GND | | | |
| 4 | RESET | • RESET | Reset button | | | Restart/reset |



V. Instructions of LED lights

| No | Icon | Definition | Instruction |
|----|-------|---|--|
| 1 | DOWED | Power supply light | Flashing: normal |
| 1 | | (Green) | Off: with no power supply |
| 2 | ALARM | Alarm light (Red) | Flashing: abnormal |
| | | | Off: no alarm |
| 3 | P1 | 1 st pulse light (refer to | Elashing, energy consumption |
| 5 | 11 | CT1,CT2,CT3)(Red) | Trashing. energy consumption |
| 1 | D2 | 2^{nd} pulse light (refer to | Elashing, energy consumption |
| 4 | Γ2 | CT4、CT5、CT6)(Red) | Trashing: energy consumption |
| 5 | СОМ | Com status light between wifi module and meter (Green) | 1.On : connection between wifi module and meter is normal 2.On 400ms / off 1600ms: moldule is initialized 3. On 400ms / off 400ms: data is sent between module and meter 4. Off:Communication between module and meter failed |
| 6 | SER | Comm. status light between wifi module and server (Green) | 1.On:succeed in connecting 2.On 400ms / off 400ms: connection with router is successful 3.Off: failed |
| 7 | NET | Working status(Green) | 1.On64ms/off 2000ms: normal 2.On/off: abnormal |

VI. Structure







VII. Measuring functions

Voltage, frequency, split phase current (ct1-ct6), power factor, total power of phase separation forward and reverse (ct1-ct6), total power of forward and reverse direction of phase separation (ct1-ct6), total positive and negative total power, total positive and negative reactive power, total positive and negative reactive power of the first three-phase (ct1-ct3), total forward and reverse total power, total positive and negative reactive power of the second three-phase (ct4-ct6) Power, total electric energy of positive and negative reactive power.

VIII. Wiring diagrm

8.1 One path of 3 phase

8.1.1 Installation point: GRID side



8.1.2 Installation point: Generation side





8.1.3 Installation point: Consumption side



8.2 Two paths of 3 phase

8.2.1 Installation point: GRID side + Generation side



8.2.2 Installation point: GRID side + Consumption side





8.2.3 Installation point: Generation side + Consumption side



USER MANUAL for SOLARMAN APP



iPhone: Search "SOLARMAN Smart" / "SOLARMAN BUSINESS" in Apple Store. Android: Search "SOLARMAN Smart" / "SOLARMAN BUSINESS" in Google Play.

You can also login via WEB as below: pro.solarmanpv.com home.solarmanpv.com

2. Registration on SOLARMAN SMART

Go to SOLARMAN SMART and register. Click "Register" and create your account here.



| 10:14 AM | English 🗸 | ← Regis | ster |
|--------------------|------------------|--|-------------|
| 🙆 SOLARI | MAN Smart | | E-mail |
| E-mail Phone Numbe | r Username | | |
| E-mail E-mail | | E-mail Please enter E-mail | |
| Password | Sec. | Verification Code Please enter verificati | ion code |
| | | Password | |
| | | Password | Sec. |
| Log | g in | Password length must be greater | than 6 bits |
| Register | Forgot Password? | | |

3. Create a Plant

Click "Add Now" to create your plant. Please fill in plant basic info and other info here.

| ants | + < | Plant Details | |
|-----------------------------|------------|------------------------------|-----------------------------|
| | Basic Info | | |
| | Plant Nar | ne Demo plant-4 | Commercial > |
| | Plant Loc | Zhw | /jiang yuyao > |
| 111 | Tîme Zon | e ((UTC+08:00)Beijin Hong | g,Chongqing, Kong,Urumqi |
| 111 | Creation | Date 2 | 019-05-04 > |
| You have no plants for now. | Founder | | Clavin |
| | System Inf | o | |
| Add Now | Plant Typ | e Residen | tial Rooftop |
| | System T | уре | All on Grid |
| | Installed | Capacity (kWp) | 18350 > |
| | · ··· ·· | 2 5 | |
| 6 ± | | Finish | |

4. Add a Device

Method 1: Enter logger SN manually.

Method 2: Click the icon in the right and scan to enter logger SN You can find logger SN in the external packaging or on the logger body.

| y Plants + |
|--|
| Create a Plant |
| Add a device SN Piessee enter device SN Cannot Find SN/Barcod Cannot Find SN/Barcod B8.00W A5.38MWh Production-Today 45.38K CNY 773.30K CNY |
| Demo plant-Micro inverter Image: Cannot Find SN/Bardod 88.00W 45.38MWh Power Production-Today 45.38K CNY 773.30K CNY |
| Anticipated Yield- Today Month |
| Updated 8 mins ago |

5. Meter Configuration

The aim of meter configuration is to send meter data to platform and calculate meter data.

5.1 Add a meter to plant via logger

SOLARMAN platform does not support adding a meter directly. Users can add a logger first and logger will send meter data to platform.

Connect the devices first. After logger is powered on and data is transmitting, target meter will be listed on device list.

| \leftarrow | Device info | + |
|--------------|------------------------------|---------------|
| Inverter | No. of Connections:1 | |
| Logger | Meter SN:002502414374-001 | Online |
| Meter | Meter | configuration |
| | Loaded | |

6.Network Configuration

After the logger is added, please configure the network to ensure normal operation.

Go to "Plant Details"-"Device List", find the target SN and click "Networking".



| 10:14 AM | | ***** | - |
|--------------|--------------------------|-----------------|-----|
| \leftarrow | Device Detai | ls | + |
| Inverter | No. of Connections: 2 | | |
| Logger | Logger SN:123341245 | Norr | nal |
| Meter | Select associated device | Device Networki | ng |
| Module | Logger SN:136689995 | (cm | |
| | | Device Networki | ng |

Step 1: Confirm Wi-Fi Info

Please make sure your phone has connected to the right WiFi network. And click "Start".

| Notice: 5G WiFi is not su | apported. |
|-----------------------------------|---|
| Avoid the use of special characte | ers in WiFi networks (, ; = """) |
| | 10:14.AM •••••• 🖿 |
| | ← SN:2312423 ≓ |
| | Password |
| | App_only Change network |
| | ************************************ |
| | |
| | |
| | 5G frequency band is not supported. Please cornect to 2.4G frequency band. |
| | Start to configure |
| | Reminder |
| | Please make sure the signal strength of VM-FI is good During the configuration, some Android phones will prompt that the current network is not available. Please ignore the prompt. |
| | |

Step 2: Connect to AP network

Click "Go to connect" and find the right "AP_XXXXX" network (XXXXX refers to logger SN).

If the password is required, you can find the password on the logger body.

Go back to SOLARMAN Smart APP, after connecting to AP network.



| Go to WLAN Setting and connect the | < settings WLAN | |
|---|-----------------|--------------|
| following network manually | WLAN | â 😤 🛈 |
| Android 🔍 🗣 🛈 | MY NETWORKS | |
| AP_622602179 | Android | ? 0 |
| 1084-56 à 🕈 0 1084-88.00 à 🕈 0 | ChinaNet | ≜ ? 0 |
| Some devices might need a password | AP_622602179 | ? 0 |
| to connect the network. You can find the password on the device enclosure. | HYH123 | â 🕈 🛈 |
| Connected. | IGEN-5G | ≜ ? 0 |
| Go to connect | OTHER NETWORKS | |
| Orrector | act-blue | ? () |
| Cancelar | ChinaNet-igen | ≜ 奈 ① |
| | | |

Step 3: Auto Configuration

Please wait for a while to complete the configuration. Then system will switch to the following page.

Click "Done" to check plant data. (Usually, the data will be updated in 10 mins)

| 10:14 AM | = | 10:14 AM | |
|--------------|--|---------------------------|--------------------|
| \leftarrow | Device Configuration | | |
| | | Configuration sur | cceeded |
| Please sl | horten the distance between the device, router and phone. | you can check device stat | us in device list. |
| O Cor | nnect to device | | |
| C Cor | hguring | | |
| Hes | fant | | |
| e ven | | Done | |
| 1 | | | |

If configuration failure occurs, please check the following reason and try it again.

- (1) Make sure WLAN is ON.
- (2) Make sure WiFi is normal.
- (3) Make sure wireless router does not implement the white-black list.
- (4) Remove the special characters in Wi-Fi network.
- (5) Shorten the distance between the phone and device.
- (6) Try to connect to other Wi-Fi.