AT100G-YF

Single Phase DIN Rail

Prepayment Energy Meter

User Manual V1.0

Hangzhou Antin Power Technology Co., Ltd

Statement

The Company reserves the right to make changes in the specifications of the products described in this manual without prior notice. Before ordering, please contact us or your local agent for the latest specifications of this product.

Content

Chapter 1 Product Overview

1.1 Product Introduction

AT100G-YF series single-phase din rail prepayment energy meter has the advantages of good anti-electromagnetic interference, low power consumption, good stability and long service life. It has RS485 communication interface and supports high-speed communication function of RS485. It is ideal for energy management system, energy monitoring system and sub-metering.

AT100G-YF is suitable for real-time power monitoring system with multi-function, multi-purpose, high stability and long service life.

The meter has 1 pulse output, and the pulse constant, pulse width and output unit can be set.

1.2 Product Features

- Up to 100A direct access
- Multifunction measurement
- Support prepayment function
- Clearable display of electricity usage
- High brightness LCD display with white backlight
- Standard din rail mounting

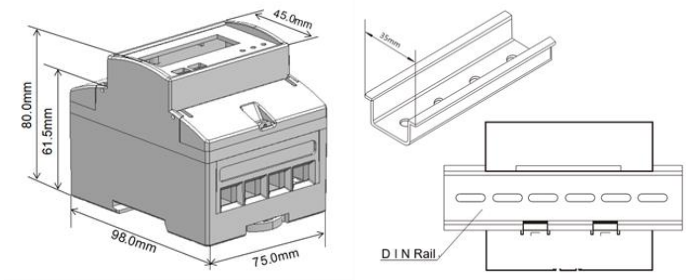
Chapter 2 Technical Specifications

2.1 Technical Parameters

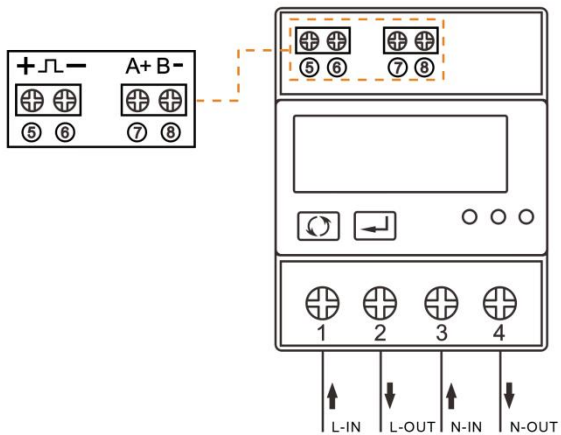
Parameter		Value
Working Voltage	Rated value	230V AC
	Range	±20 of rated value
Measurement form		Valid value
Input current		Rated value 5A
Maximum current		100A
Short-time overcurrent		30 times the maximum current lasting 0.01 seconds
Input Frequency	Rated Value	50/60Hz
	Range	45-65Hz
Voltage withstand capacity	AC withstand voltage	4kV/1min
	Pulse withstand voltage	6kV – 1.2μs waveform
Power consumption		≤2W
Pulse port output		Can be set
Pulse light output		Fixed to 1000imp/kWh
Maximum reading		999999.99kWh
Measurement accuracy	Voltage, current	0.5%
	Frequency	0.2%

	Power Factor	0.5%
	Power	±1%
	Energy	±1%
RS485 communication	Bus Type	RS485
	Communication protocol	Modbus RTU
Performance standard	Operating Humidity	≤90%，No condensation
	Storage Humidity	≤95%
	Operating Temperature	−25℃ ~ +55℃
	Storage Temperature	−40℃ ~ +70℃
	Accuracy Class	0.5
	Installation category	VATII
	Protection class	IP51（indoor）
	Insulation class	II
	Altitude	≤2000m

2.2 Shape and installation dimensions



2.3 Wiring Diagram



Chapter 3 Operating Instructions

3.1 Panel Indication and Key Operation Instructions

3.1.1 Panel Instructions

After the wiring is correct, the power is turned on and it will enter the normal measurement state, and the screen will be displayed as follows:

The first screen	Power-on full-screen display
Second screen	Displays the software version
The third	Remaining amount

screen	
Fourth screen	Accumulate the total amount that has been used
Fifth screen	Accumulated amount of electricity used
Sixth screen	There is always active power
Seventh screen	The amount of this top-up
Eighth screen	Correspondence address
Ninth screen	Newsletter baud rate
Tenth screen	Communication check digit
Eleventh screen	Communication stop bit
Twelfth screen	Pulse constant
Thirteenth screen	The serial number of the meter
Fourteenth screen	Software version number

Fault interface	Display fault code: The display interface of the fault code and the normal display interface will automatically switch the display in turn, and the switching time is 3s. Error-01 indicates that the relay cannot be disconnected from the fault.

At the touch of a button, you can view:

The remaining → amount, the accumulated amount used, the accumulated amount of electricity used →, the total active power, the →amount of the recharge →, the mailing address, the →communication baud rate →, the communication check bit, the communication stop bit→, the pulse constant, the →serial number of the meter→→→Software version number

3.1.2 Key Definition

keystroke	**definition**	**Short press function**	**Long press on the function**
 Button No. 1	Exit/page turn key	Measurement mode: Toggle the display screen. In setting mode: toggle the sibling menu or increase the single digit.	Measurement mode: Enter or exit the auxiliary information viewing interface. In setup mode: Return to the previous menu.

 Button 2	Confirm key	Measurement mode: Invalid. In setup mode: move the cursor (the cursor is the bits that are flashing in the set state).	Measurement mode: Enter the setup mode. In setting mode, you can check the selection of menu items and the modification of parameters.

Note: (1): Holding down the button for more than 3 seconds is regarded as a long press operation, otherwise it is regarded as a short press operation.

3.2 Prepaid Function Description

Alarm threshold and emergency amount:

The meter has a two-level balance alarm threshold, called the first-level alarm threshold and the second-level alarm threshold, where the first-level alarm threshold is greater than the second-level alarm threshold, that is, the first-level alarm value is triggered first when the balance is insufficient.

The meter has the function of emergency amount, when the emergency amount is set to a value greater than 0, the emergency function is turned on, that is, the user is allowed to overdraft a certain amount of expenses, if the user uses the emergency amount, then the next time the electricity bill is recharged, the emergency amount used will be deducted first, and the remaining electricity fee will be recharged to the meter. When the emergency amount is set to 0, disable this feature.

3.2.1 Electricity purchase

The user shall go to the electricity sales management department to handle the power purchase business。

3.2.2 Electricity

When the remaining amount of the meter is less than the first-level alarm value, the alarm indicator starts to flash. This function reminds the user that the amount is insufficient and needs to be recharged.

If you do not recharge at this time, when the remaining amount of the meter is less than the secondary alarm value, the alarm indicator will become solid at this time. The feature reminds users that they need to top up immediately.

3.2.3 Emergency

When the remaining amount of the meter reaches 0, the relay will be automatically disconnected and the power will be cut off, and if the emergency amount function is not turned on, the relay will always remain disconnected. If the emergency amount function is turned on, the meter will automatically turn on the relay after the user presses any button, and the relay will be automatically disconnected until the user consumes the emergency amount.

3.3 Measurement Parameters

At the touch of a button, you can view:

The remaining→ amount, the total amount used, the total→ amount used, the total active power→, the amount of the recharge→, the mailing address, the → communication baud rate → , the communication check bit, the

communication stop bit→, the pulse constant, the →serial number of the meter→→→Software version number

	Remaining amount For example: $60.00
	Accumulate the total amount that has been used For example: $80.00
	Accumulated amount of electricity used For example: 120.00kWh
	There is always active power For example: 120.00kWh
	The amount of this top-up For example: $120.00
	Correspondence address For example: 001

	Newsletter baud rate For example: 9600
	Communication check digit For example: None 说明：校验位 nrepresentativenone; E-representative even; o Representative ODD
	Communication stop bit For example: 1
	Pulse constant For example, the image on the left represents the pulse output mode with the total active charge and the pulse constant at 1000imp/kWh
	Meter serial number For example: 20111201
	Software version number For example: 12 01.00

	Fault codes For example: Err-01 Err-01: Indicates that the relay cannot be disconnected from the fault. Err-02: Indicates that the meter battery is dead, and the system time may be wrong after the meter is re-energized. The display interface of the fault code and the normal display interface automatically switch the display in turn, and the switching time is 3S.

3.4 Auxiliary Parameters

Under the measurement parameter interface, press and hold the No. 1 button to enter the auxiliary display interface, and at this time, you can turn the page by pressing the No. 1 button. Under the auxiliary display interface, press and hold the No. 1 button to return to the main display interface. If there is no button operation for more than 1 minute in the auxiliary display interface, the meter will automatically return to the main display interface.

At the touch of a button, you can view:

Voltage, →current, →active power, power→ factor→, frequency

	Phase voltage For example: 230.0V
	current For example: 5.003A
	Active power For example: 1.1kW
	Factor For example: 0.5
	frequency

3.5 Basic Settings

Press and hold the "No. 2 button" for three seconds to enter the setting mode (if the setting interface is not operated in the next minute, exit the setting interface and return to the remaining amount interface):

	The setting is successful, display: good
	The setting failed, and the :err message is displayed
	**password** Enter the settings page and ask for a password Default password: 1000 Short press the "No. 1 button" to select the number, and short press the "No. 2 button" to select the shift. Then long press the "No. 2 button" to enter the setting system.
	**Correspondence address** Default mailing address: 001 Mailing address range: 001~247

	Press the number 1 button to adjust the number of the set bits. Press the number 2 button to move the setting bit. Press and hold the No. 2 button to confirm the setting, and the meter will save the setting value and exit the setting state. Press and hold the No. 1 button to exit the setting state without saving the setting parameters.
	**baud rate** Default baud rate: 9600 bps Baud rate range: 1200, 2400, 4800, 9600.
	Press the number 1 button to select the baud rate value. Press and hold the No. 2 button to confirm the setting, and the meter will save the setting value and exit the setting state. Press and hold the No. 1 button to exit the setting state without saving the setting parameters.

	**Check digit** Default: None Optional: None, Even, Odd
	Press the number 1 button to select the check digit type. Press and hold the No. 2 button to confirm the setting, and the meter will save the setting value and exit the setting state. Press and hold the No. 1 button to exit the setting state without saving the setting parameters. n Representative None, E Representative Even, O Representative Odd
	**Check digit** Default: 1 Optional: 1, 2 Note: The stop bit can be set to 2 only when the check digit is set to None

	Press the No. 1 button to select the stop digit value. Press and hold the No. 2 button to confirm the setting, and the meter will save the setting value and exit the setting state. Press and hold the No. 1 button to exit the setting state without saving the setting parameters.
	**Pulse output port constant** Default: 1000imp/kwh Optional: 1000, 100, 10,1.
	Press the No. 1 button to select the value of the pulse constant. Press and hold the No. 2 button to confirm the setting, and the meter will save the setting value and exit the setting state. Press and hold the No. 1 button to exit the setting state without saving the setting parameters.
	**Pulse width** Default: 35ms Optional: 200, 100, 60.

	If the pulse constant is equal to 1000 imp/kWh, the setting screen is not available for the user to set and the pulse width is fixed at 35 ms.
	Press the No. 1 button to select the value of the pulse width. Press and hold the No. 2 button to confirm the setting, and the meter will save the setting value and exit the setting state. Press and hold the No. 1 button to exit the setting state without saving the setting parameters.
	**Automatic rotation time** Default: 0s (no wheel) Wheel display time range: 0 ~ 30s.
	Press the number 1 button to adjust the number of the set bits. Press the number 2 button to move the setting bit. Press and hold the No. 2 button to confirm the setting, and the meter will save the setting value and exit the setting

	state. Press and hold the No. 1 button to exit the setting state without saving the setting parameters.
	**Backlight lights up the time** Default: 60 min Optional: off, on, 5, 10, 20, 30, 60, 120. OFF means that the backlight is always off, and ON means that the backlight is always on.
	Press the No. 1 button to select the value of the pulse width. Press and hold the No. 2 button to confirm the setting, and the meter will save the setting value and exit the setting state. Press and hold the No. 1 button to exit the setting state without saving the setting parameters.
	**User password** Default: 1000 Optional: 0 ~ 9999

	Press the number 1 button to increase or decrease the number of the set bits. Press the number 2 button to move the setting bit. Press and hold the No. 2 button to confirm the setting, and the meter will save the setting value and exit the setting state. Press and hold the No. 1 button to exit the setting state without saving the setting parameters.

English correspondence table of digital tubes

1	2	3	4	5	6	7	8	9	0	A	B
											
C	D	E	F	G	H	I	J	K	L	M	N
											
O	P	Q	R	S	T	U	V	W	X	Y	Z
											

After-sales service

1. If the user does not understand the description in the manual during installation and commissioning, please contact the technical director.
2. The company's technology is ready to answer product-related questions.
3. The problems arising in the use of the product will be replied within one working day.
4. Our company has a one-year free warranty for the above products from the date of sale.

Technical descriptions are subject to change without notice

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