AT180G-CT

Three Phase Din Rail Multi-function Energy Meter

User Manual

V1.0

Hangzhou Antin Power Technology Co., Ltd

Declarations

The Company reserves the right to modify the product specifications described in this manual without prior notice. Before ordering, please contact our company or local agent for the latest specifications of this product.

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Chapter 1 Product Overview

1.1 Product Introduction

AT180G series three-phase din rail type energy meter is designed to collect, analyze and measure power parameters, the series of products can support the measurement and analysis of a variety of power parameters in variety of grid environment. This series of products have RS485 communication interface, which can easily realize remote data reading. Meanwhile, it adopts LCD display, which can view and set various measurement parameters locally, and the product has password protection function to ensure the data security of the product.

1.2 Product Features

- Multi-function parameter measurement
- Support bi-directional power metering
- Support direct access type, CT variable ratio access
- Support 1-channel pulse optocoupler output interface, can set the output parameters
- Support RS485 communication function, support Modbus RTU protocol
- Standard 4-mode digital width, TH35-7.5 type din rail mounting
- Large LCD display, white backlight, backlight lighting time adjustable
- LCD display refresh time: 1 second, support manual page turning and automatic rotation display (can be set to switch)

1.3 Product Parameters

Measure voltage	Phase voltage, line voltage
	Current
	Frequency
	Active phase power and total power
	Reactive phase power and total power
	Apparent Phase Power and Total Power
	Split-phase and average power factor
	Split-phase contact temperature and ambient temperature
	Residual current, (through transformer)
Power measurement	Forward and reverse active power
	Forward and reverse reactive power
Communication mode	RS485

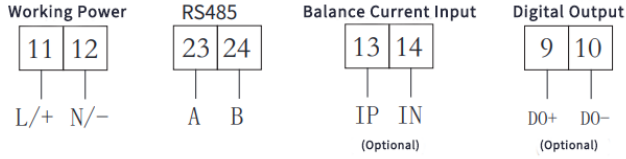
Chapter 2 Technical Specifications

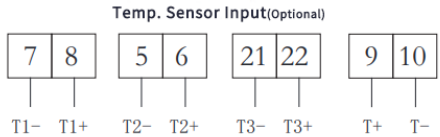
2.1 Technical Parameters

Parameters		Value
Applicable Grid		3 phase 4 wires, 3 phase 3 wires
Working power	Voltage range	AC/DC85~265V
	Power consumption	<5VA

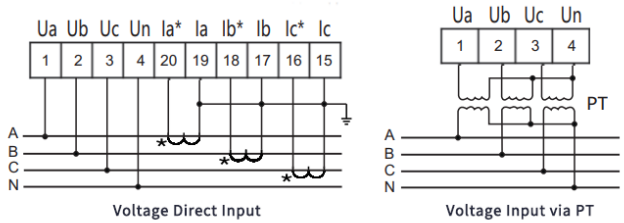
Accuracy Class	Voltage, current	±0.5%
	Power	±1%
	Power Factor	±1%
	Frequency	±0.2
	Electricity	±1%
Frequency		45Hz~65Hz
Pulse constant		400imp/kWh
EMC electromagnetic compatibility test	Electrostatic discharge immunity test	GB/T 17626.2-2006：test level 4
	RF electromagnetic field immunity test	GB/T 17626.3-2006：test level 3
	Fast transient pulse group test	GB/T 17626.4-2008：test level 4
	Surge (shock) immunity test	GB/T 17626.5-2008：test level 4
	Conducted disturbance immunity test for RF field induction	GB/T 17626.6-2008: Test grade 3

2.2 Wiring diagram

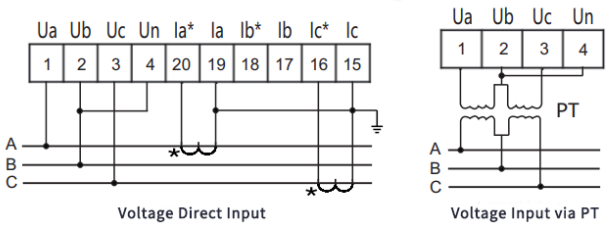




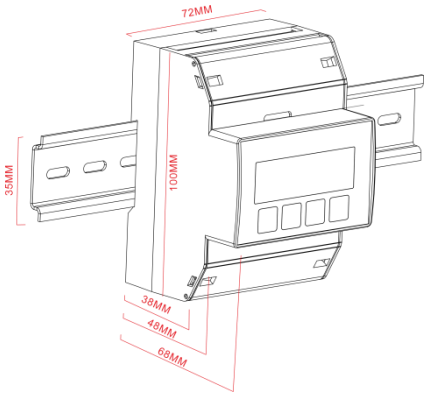
3P4W Terminal wiring ▼



3P3W terminal wiring ▼



2.3 Dimensions and installation diagram



Chapter 3 Operating Instructions

3.1 Button Description

Bs	BS key: Return to the previous menu. When setting parameters, if in the last level menu, it is used as a shift to move the blinking bits.
Up	Up button: Check the power level on the previous screen, select the previous option in the same menu or type in the value to increment the value.
Dn	DN key: Check the battery level on the next screen display, select the next option in the sibling menu or type in the value to decrement the value.

	ST key: Go to the next level menu. When setting parameters, if you are in the last level menu, it is used as "Save and return to the upper-level menu"; When the current menu is the password input menu, judge whether the password is correct, and enter the next level menu if it is correct, otherwise, return to the previous level menu.

3.2 Startup Interface

	The startup interface displays all segment codes in the full screen, and the interface is kept for 0.5s to detect whether the LCD screen can be displayed normally.
	The second interface displays the instrument self-test interface, indicating that the instrument self-test passes or fails, and is used to start the software and hardware check inside the instrument.

3.3 Indicator Description

	Representation: Power pulse indicator.

3.4 Electricity inquiry

In the initial display interface, the "Up" button and "Dn" button are used to switch display power parameters such as voltage, current, power, frequency, power factor, and temperature in turn.

3.4.1 Query of power parameters

	A-phase voltage display.
	B-phase voltage display.
	C-phase voltage display.
	A phase current display.
	B-phase current display.
	C-phase current display.
	Total active power display.
	Total reactive power display.
	Total apparent power display.
	The total power factor display.
	System frequency display.

	Total active energy display.
	Forward active energy display.
	Reverse active energy display.
	Total reactive energy display.
	Forward reactive energy display.
	Reverse reactive energy display.
	Point 1 temperature display.
	Point 2 temperature display.
	Point 3 temperature display.
	Ambient temperature display.
	residual current display.

	Pulse constant display.
	The current device address is displayed.
	The current device communication baud rate is displayed.

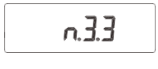
3.5 Parameter Settings

In any power or energy display interface, press the "ST" key to enter the menu code display interface, and through the "Up" or "Dn" key for menu selection, the user must enter the correct password under the PUT menu, if the password is entered incorrectly, then can not enter the setting menu, can not change the parameters. After the initial password value "0001" is entered, press the "Bs" button again to enter the settings menu.

	In any power or energy display interface, press the "Bs" button to display the menu code interface.
	If the user enters the menu code for the first time, only the "Put" menu can be displayed, and when the user enters the password correctly, the other parameter menus can be displayed.

	Under the "Put" menu, press the "St" key to enter the password input screen. Use the "Up" or "Dn" key to add or decrease numbers, and use the "St" key to switch the password digit from right to left to complete password entry. When the input is complete, press the "Bs" key again to save the data and go back.
	If the user enters the password correctly, press the "Bs" key, and select the "SET" menu through the "Dn" key, and enter the menu to change the password, the password range is 0~9999.

3.5.1 Power parameter setting

	When the user enters the password correctly, press the "Bs" key twice until it returns to the "code" interface, and select the main menu through "Up" or "Dn". Select "SET" to display the energy parameters and line system
	Under the "NET" submenu, press "St" to select the menu, and select the three-phase four-wire system or three-phase three-wire system through "Up" or "Dn". Press the "Bs" key again, save the data and go back.
	
	
	The user selects the submenu "CT." Under the interface, you can set the current conversion ratio, which is 1 by

	default. Use the "St" key to switch the position from right to left, and use the "Up" or "Dn" key to increase or decrease the number. Press the "Mu" key again to save the data and go back. If the Ct conversion ratio is 100, the current primary voltage value = secondary value× 100.
	The user selects the submenu "PT. U" interface, you can set the voltage conversion ratio, and the default is 1. Use the "St" key to switch the position from right to left, and use the "Up" or "Dn" key to increase or decrease the number. Press the "Bs" key again to save the data and go back. If the Pt transformation ratio is 100, the current primary voltage value = secondary value× 100.
	

3.5.2 Communication parameter setting

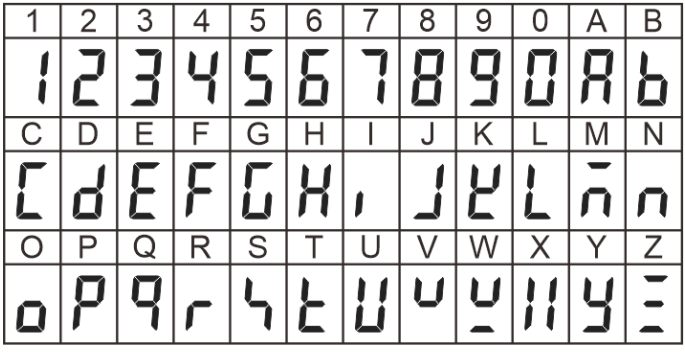
	When the user enters the password correctly, press the "Bs" key twice until it returns to the "Code" interface, and select the main menu through "Up" or "Dn". Select "Conn" to enter the communication settings.
	Users can set the communication address under the "Add" interface of the submenu, which is 1 by default.
	

 	Users can select the submenu "BUD" interface to set the baud rate, which is 9600 by default.
   	Users can select the submenu "data" interface to set the communication format, the default is no parity 8 digit data and 1-digit stop digit. Users can choose even parity 8 digit data and 1-digit stop digit or odd parity 8 digit data and 1-digit stop digit. When all the settings are completed, return to the "Code" interface, press the "Bs" key again, the "YES" interface appears, press the "St" button to confirm. Press "St" to confirm the modification, press "Bs" to cancel the modification.

3.5.3 Data Zeroing setting

 	The user selects the submenu "E.CLE" interface to clean up the energy data. Use "Up" or "Dn" to select zeroing or not. "YESE" is zeroing, and "NOLE" is not zeroing. Press the "Bs" key again, save the data and go back. When all the settings are completed, return to the "Code" interface, press the "Bs" button again, the "YES" interface appears, press "St" to confirm the modification, and press "Bs" to cancel the modification.
	

English correspondence table of LCD segment code



After-sales service

1. If the user does not understand the description in the manual during installation and commissioning, please contact the aftersales team.
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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