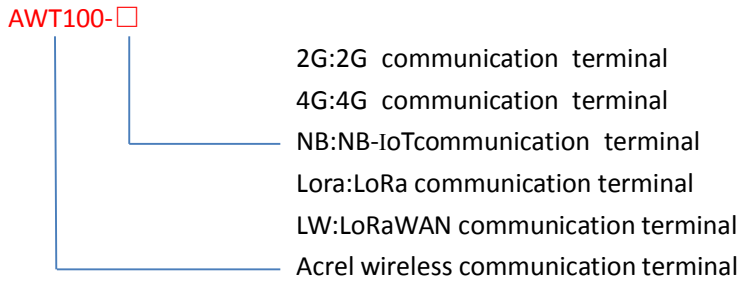
AWT100 wireless communication terminal

General

At present, wireless technology has gradually become an important direction for the development and application of networks in the industrial Internet in the future due to its advantages of easy deployment, low construction cost and wide applicable environment. AWT100 wireless communication terminal is a new wireless data acquisition device launched by Acrel. The uplink communication includes 2G, 4G, NB, LoRa, LoRaWAN and other communication modes. The downlink interface provides a standard RS485 data interface, which can easily connect power meters and RTUs, PLC, industrial computers and other equipment, only need to complete the initial configuration, you can complete the data acquisition of MODBUS equipment; at the same time AWT100 series wireless communication terminal uses a powerful micro-processing chip, with built-in watchdog technology, reliable performance stable.

Type Description



Function Description

■ Support data acquisition of serial port MODBUS RTU protocol, and communicate with Acrel server through Acrel platform protocol.

■ Supports data acquisition for up to 30 MODBUS RTU devices.

■ Supports the acquisition of 5 register address fields for each MODBUS device, each register address range does not exceed 64.

■ Supports triggering alarms by preset alarm addresses and alarm values for each MODBUS address range. Each address domain alarm address currently has a maximum of five.

■ Support server MODBUS or LoRa transparent communication.

■ Support fixed IP and dynamic domain name resolution to connect to the data center.

■ Support transparent transmission protocol, universal mode (active rotation, timed reporting), MQTT protocol, smart power wireless protocol, prepaid wireless protocol
Negotiation, custom development.

■ The functions of the AWT100-LW wireless communication terminal are still under development, and data can be uploaded to the server through LoRa communication in the

future.

Note: ①The AWT100-2G/NB/4G wireless communication terminal can communicate with the Acrel server through the Encore platform protocol.

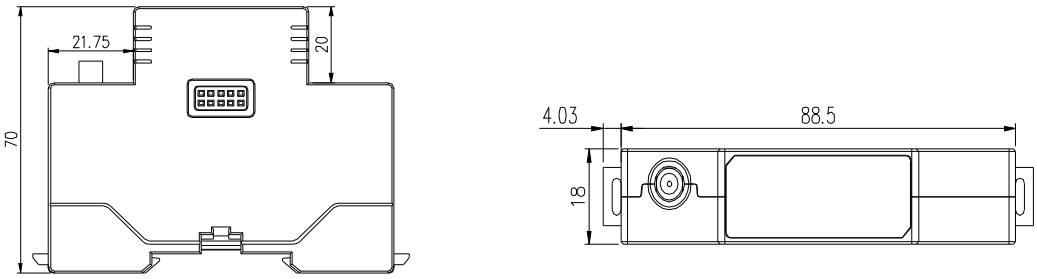
Technical Parameter

Parameter name	AWT100-4G	AWT100-NB	AWT100-2G	AWT100-LoRa AWT100-LW
Working frequency	LTE-FDD B1 B3 B5 B8 LTE-TDD B34 B38 B39 B40 B41 CDMA B1 B5 B8 GSM 900/1800M	H-FDD B1 B3 B8 B5 B20	GSM 850 EGSM 900 DCS 1800 PCS 1900	LoRa 460～510MHz
Transmission rate	LTE-FDD Downstream rate up to 150Mbps Uplink rate up to 50Mbps LTE-TDD Downstream rate up to 130Mbps Uplink rate up to 35Mbps CDMA Downstream rate up to 3.1Mbps Uplink rate up to 1.8Mbps GSM Downstream rate up to 107Kbps Uplink rate up to 85.6Kbps	Downstream rate up to 25.2Kbps Uplink rate up to 15.62Kbps	GPRS Downstream rate up to 85.6kbps Uplink rate up to 85.6kbps	LoRa 62.5kbps
Downstream	RS485 communication			
Uplink	4G communication	NB-IoT communication	2G communication	LoRa communication
SIM card voltage	3V，1.8V			/
Working current	Static power consumption: ≤1W, transient power consumption: ≤3W			Static power consumption：≤0.5W，transient power consumption:≤1W

Antenna interface	50Ω/SMA(Female head)
Serial port type	RS-485
Baud rate	4800bps、9600bps、19200bps、38400bps(default 9600bps)
Working Voltage	DC24V or AC/DC220V①
Working temperature	-10℃～55℃
Storage temperature	-20℃～70℃
Humidity range	0 to 95% non-condensing

Note: ①AC/DC220V power supply requires an external AWT100 power module.

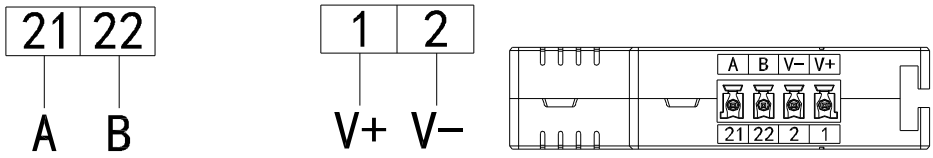
Dimension Drawings



Wiring and Installing

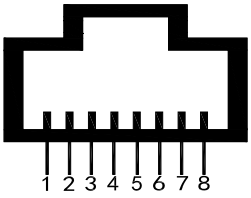
Wiring sample of voltage and current

1.(1)AWT100-2G/NB/4G/LoRa/LW terminals and wiring

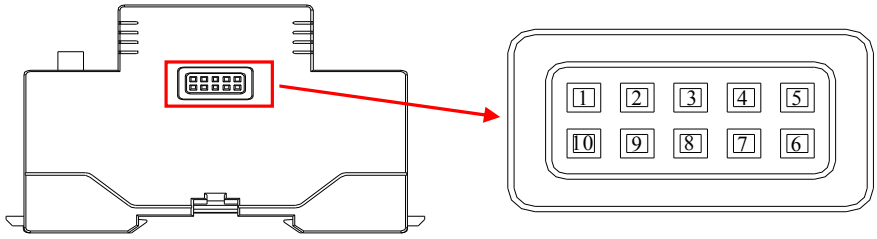


(2) The network port function (the power and RS485 interface) definition

1	2	3	4	5	6	7	8
POWER （DC12V）		GND		NC		485A	485B



(3)AWT100-2G/NB/4G/LoRa/LW side interface definition

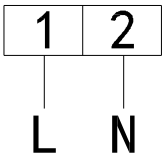


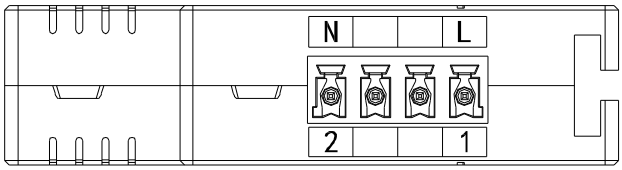
1	2	3	4	5	6	7	8	9	10
NC	+5V	GND	485A	NC		485B	GND	+5V	NC

Note:

The two interfaces of the network port and the terminal can only be used one by one and cannot be used at the same time.

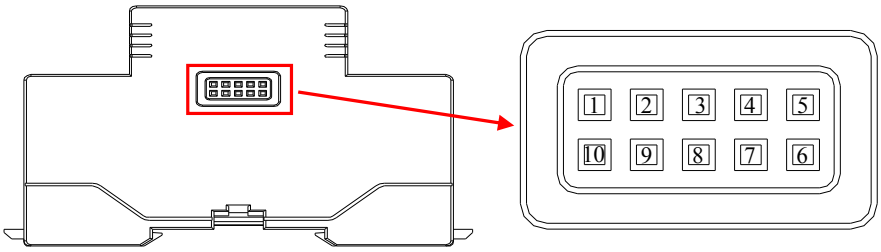
2.(1)Terminals and Wiring of AWT100 Power Module (Selected for AC220V Power Supply)





Auxiliary power supply (AC/DC 220V)

(2) AWT100 Power Module side interface definition



1	2	3	4	5	6	7	8	9	10
NC		GND	+5V	NC		+5V	GND	NC	

Panel light definition

1.AWT100-2G/NB/4G wireless communication terminal panel light definition

LINK Green	RSSI Red	COMM Orange
The green indicator light flashes for 2 seconds. The wireless module is being initialized.	The red indicator flashes for 3 seconds. The signal strength is lower than 20%.	The orange indicator blinks to show that there is network data communication.
The green indicator blinks for 1 second and is connecting to the server.		
If the green indicator is steady on, the server is connected and the signal strength is greater than 20%.		

2.AWT100-LoRa/LW wireless communication terminal panel light definition

RUN Green	LoRa Red	COMM Orange
The green indicator light is steady on, indicating that the meter is working properly.	The red indicator flashes for 1 second when there is a LoRa signal receiving and transmitting data.	The orange indicator flashes for 1 second when there is 485 signal receiving and sending data.

3.Panel Light Definition for AWT100 Power Module

RUN： If the green indicator light is steady on, the power module is working properly. If the indicator is off, the module is not powered or faulty.