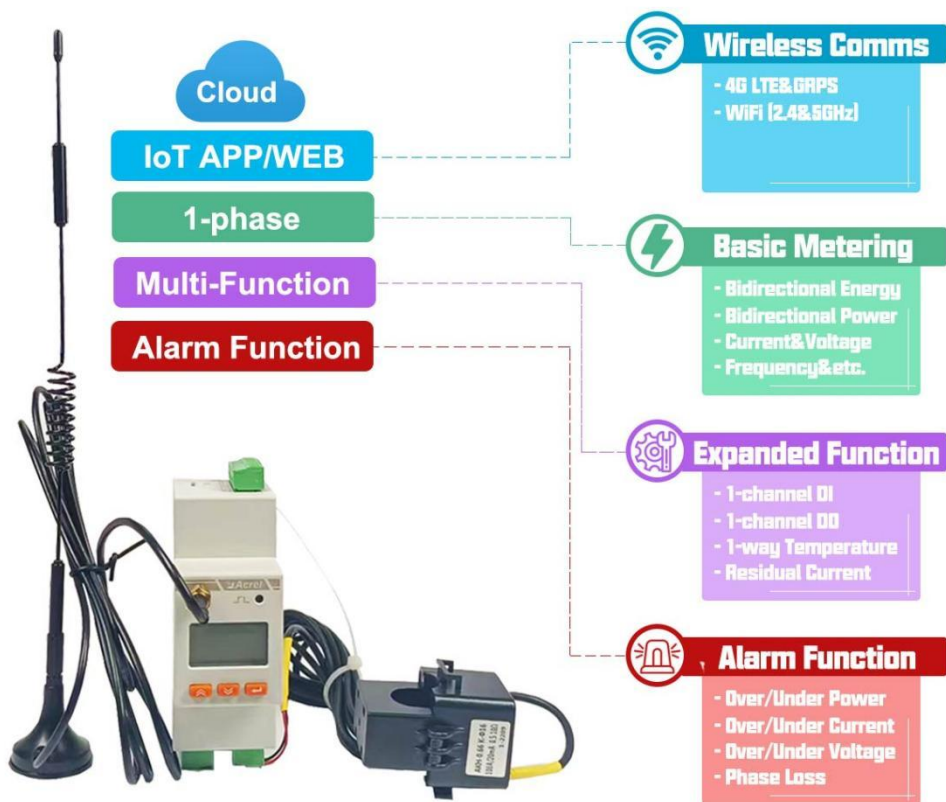


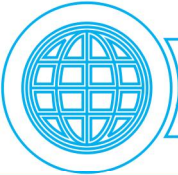


ADW310 IoT 1-phase Wireless Smart Energy Meter



■ Quotation

Shape & Cut-out	Function
	<ul style="list-style-type: none"> • Measurement: 1-phase Active Power, Reactive Power, Current, Voltage, Frequency, Power Factor, Apparent Power, Harmonics • Communication: wireless 4G, WiFi (MQTT, MODBUS-TCP); wired RS485(MODBUS-RTU) • Application Scenario: Building, Factory, Smart Grids, DB Room etc • Rated Voltage: 220~264Vac L-N • Rated Current: 20(100)A AC (via paired CTs) • Optional functions: Setting 1DO,1DI, 2-way cable Temperature measurement, Multi-rate set



Common Application



Product Features

Function

Accuracy
Active energy: Class 1
Reactive energy: Class 1

Frequency
Range: 50Hz

Pulse output
1600imp/kWh

Consumption
<2W



Dimension(L*W*H)
36*70*90mm

Wireless
Transmission on LoRa 470Mhz and maximum distance in open space is 1km; 4G; WiFi

Starting current
1%Ib(0.5S class), 4%Ib(1 class)

Characteristic



Communication
4G; WiFi; LoRa 470Mhz;
RS485(Modbus-RTU)



Display
LCD display



Rated U and I
AC 220V ; AC 20(100)A

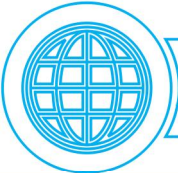
Main Features



<p>Online&Remote Energy Monitoring</p> <ul style="list-style-type: none"> • Paired with Acrel IoT Energy Monitoring System • PC Access via IoT EMS WEB • Mobile Phone Access via IoT EMS APP • 4G Wireless Communication (Global) • WiFi Wiress Communication (2.4GHz) • Support MQTT, MODBUS-TCP protocol • Support standard RS485 interface (MODBUS-RTU) 	<p>ADW310 Series Acrel IoT System</p>
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<p>Multiple Extra Function</p> <ul style="list-style-type: none"> • 1-channel DO (Digital Ouput) • 1-channel DI (Digital Input) • 2-channel Cable Temperature Monitoring • Active Pulse Output 	<p>Indicator Light Remote Control</p> <p>Digital Output</p>	<p>Acquire CB On/Off Status</p> <p>Digital Input</p>
	<p>2-way Cable Temperature Monitoring</p> <p>Temperature Monitor</p>	<p>Active Pulse Output</p> <p>Pulse Output</p>

<p>Alarm Function</p> <ul style="list-style-type: none"> • Over/Under Current • Over/Under Voltage • Over/Under Power 	<p>Value of (Current/Voltage/Power)</p> <p>High Alarm Threshold</p> <p>Normal Area</p> <p>Low Alarm Threshold</p> <p>Time</p>
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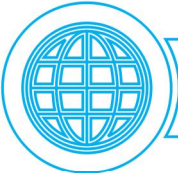
■ Specification

1. Function Overview

Function	Description
Measurement (Standard)	Single-phase AC Active&Reactive Energy (both forward and backward), Active Power, Reactive Power, Current, Voltage, Frequency, Power Factor, Apparant Power, Frequency
Measurement (Optional)	Temperature Measurement:2-channel (Live line,Neutral line) Cable Temperature Monitoring; Thermistor:NTC; Range: -40~+99℃; Accuracy:±2℃
Communication (Standard)	RS485 Port with Modbus-RTU protocol - 1 start bit,8 data bit,1 stop bit,no parity; Baud Rate 1200~38400 bps etc. Infrared Communication - Constant Baud Rate 1200 bps
Communication (Optional)	4G LTE - Normal Communicaiton Module Support: LTE-FDD: B1/B3/B5/B8; LTE-TDD:B34/B38/B39/B40/B41
	4G LTE - Global Communication Module Support: LTE-FDD:B1/B3/B5/B7/B8/B20/B28; LTE-TDD:B38/B40/B41
	WiFi - Support 2.4GHz or 5GHz
	Protocol (For wireless Communication): MQTT and MODBUS-TCP
Display (Standard)	LCD Display and LED Indicator
HMI (Standard)	Keypads Programming: Setting of CT/PT Ratio, Communication, Phase Wiring and etc
Software (Standard)	Adjustment Software: Setting of Data Upload Interval, WiFi configuration (Account&Password), Server Address, Port and etc
Alarm Function (Standard)	Undervoltage, Overvoltage, Undercurrent, Overcurrent, Underload, Overload, Communication Disconnection and etc
I/O Function (Optional)	1-channel DI (Digital Input)
	1-channel DO (Digital Output)

2. Main Parameters

Parameter	Description&Value	
Voltage Input	Rated Voltage	220~264Vac L-N
	Reference Frequency	45~65Hz
	Power Consumption	<0.5VA (each Phase)
Current	Rated Current	20(100)A AC



Input	Starting Current	1% Ib (Class 0.5); 4% Ib(Class 1)
	Power Consumption	< 1VA (each Phase)
Phase Wiring	1P2W	1-phase 2-wire
Measurement Performance	Standard	GB/T17215.322-2008, GB/T17215.321-2008
	kWh Accuracy	Class 1
Pulse	Width of Pulse	80±20ms
	Pulse Constant	1600imp/kWh;

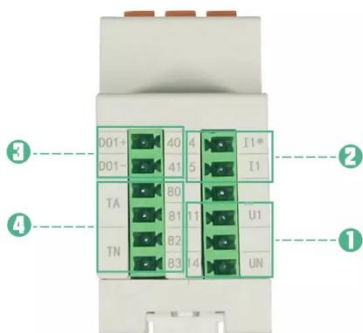
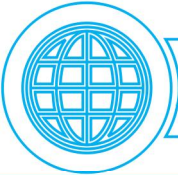
3. Environment

Condition	Description&Value
Temperature	Operating Temperature: -25℃~+55℃; Storage Temperature: -40℃ ~+70℃
Humidity	≤95%RH,no condensation,without corrosive gas
Altitude	≤ 2000m

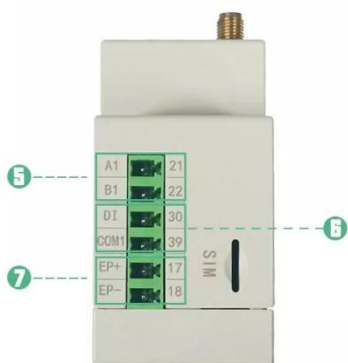
■ Wiring Instruction

PIN Overview

PIN/Terminal Overview of ADW310 Series



ADW310
Side View 1



ADW310
Side View 2

1

Terminal/PIN for Voltage Input

① PIN #11: Live Line Voltage Input
② PIN #14: Neutral Line Voltage Input

2

Terminal/PIN for Current

① PIN #4: Live Line Current Input
② PIN #5: Live Line Current Output
③ Noted: Current Input via CT

3

Terminal/PIN for Digital Output

① PIN #40: Relay Output +
② PIN #41: Relay Output -

4

Terminal/PIN for Temperature Input

① PIN #80&81: 1st Temp. Signal Input
② PIN #82&83: 2nd Temp. Signal Input
③ Noted: Thermistor use paired Acrel Special NTC Temperature Sensor.

5

Terminal/PIN for RS485 Interface

① PIN #21: RS485 Port A+
② PIN #22: RS485 Port B-

6

Terminal/PIN for Digital Input

① PIN #30: DI Input
② PIN #39: COM PIN for DI

7

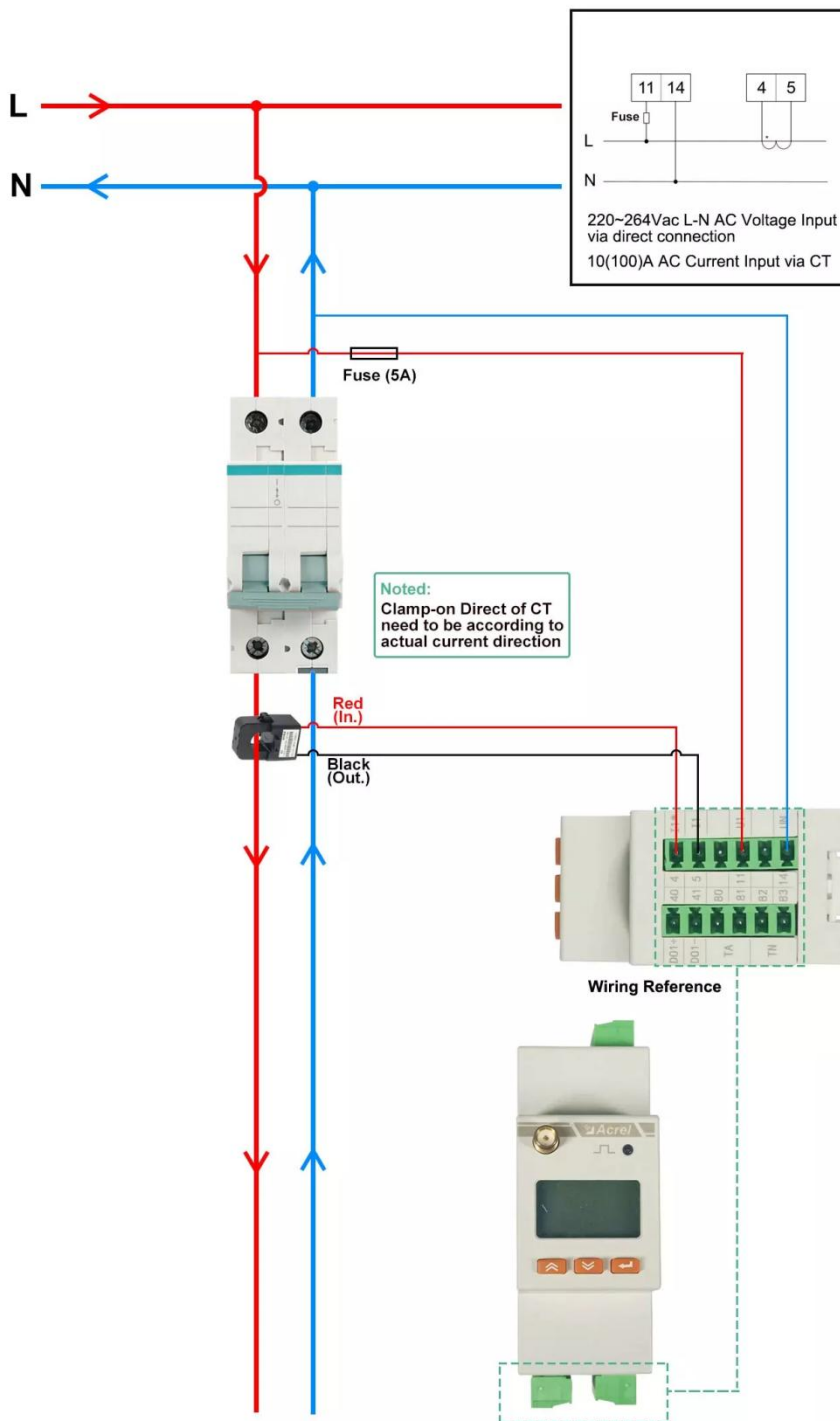
Terminal/PIN for Pulse Output

① PIN #17: Positive Pulse Output
② PIN #18: Negative Pulse Output



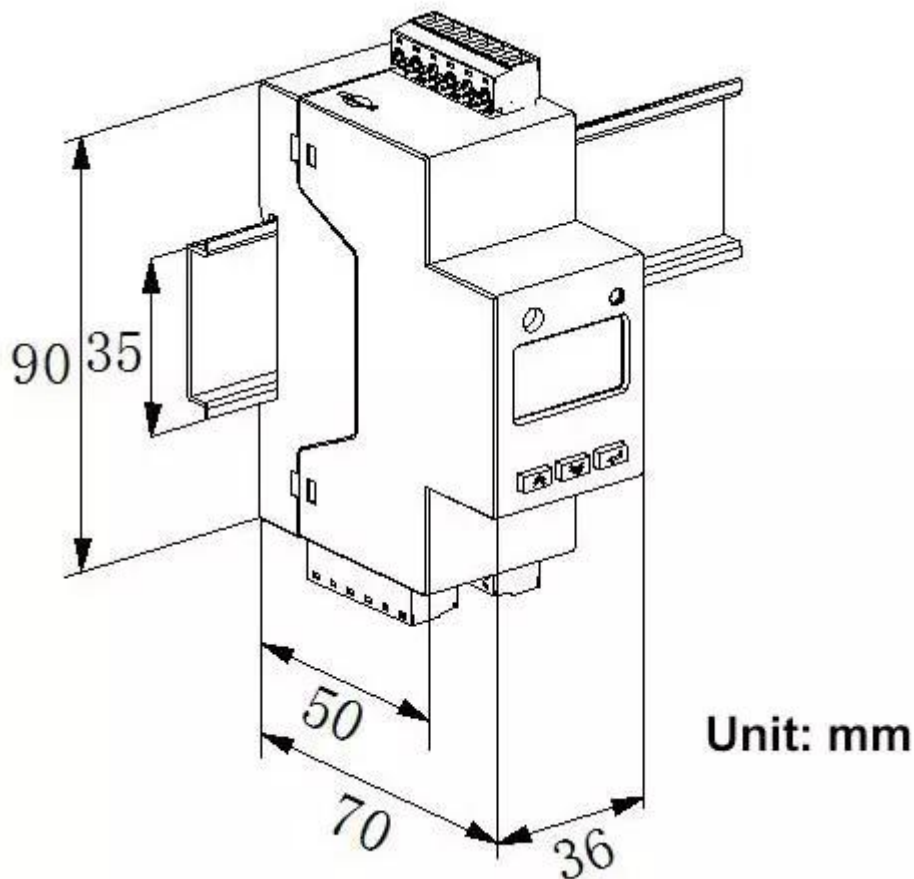
Wiring Diagram

1-phase 2-wire Wiring Diagram (Voltage&Current Input)



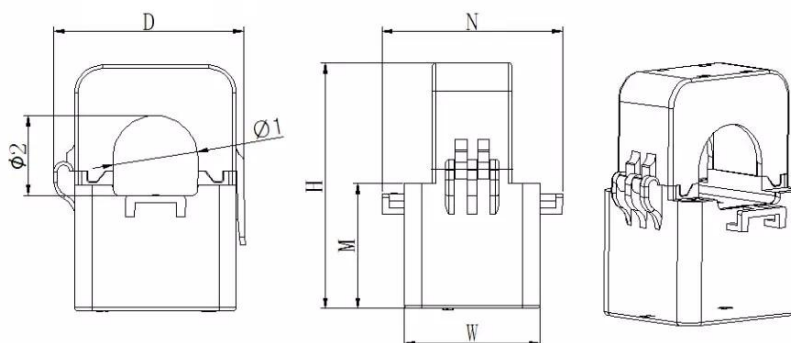
■ Dimension&Packagement

Outline Dimension

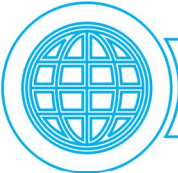


Dimension of ADW310 (Main Body)



Specification	Dimensions (mm)					Perforation size (mm)		Tolerance (mm)
	W	H	D	M	N	Φ1	Φ2	
AKH-0.66/K-∅ 10N	27	44	32	25	36	10	9	±1
AKH-0.66/K-∅ 16N	31	50	36	27	42	16	17	



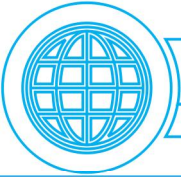
Dimension of paired CT for ADW310



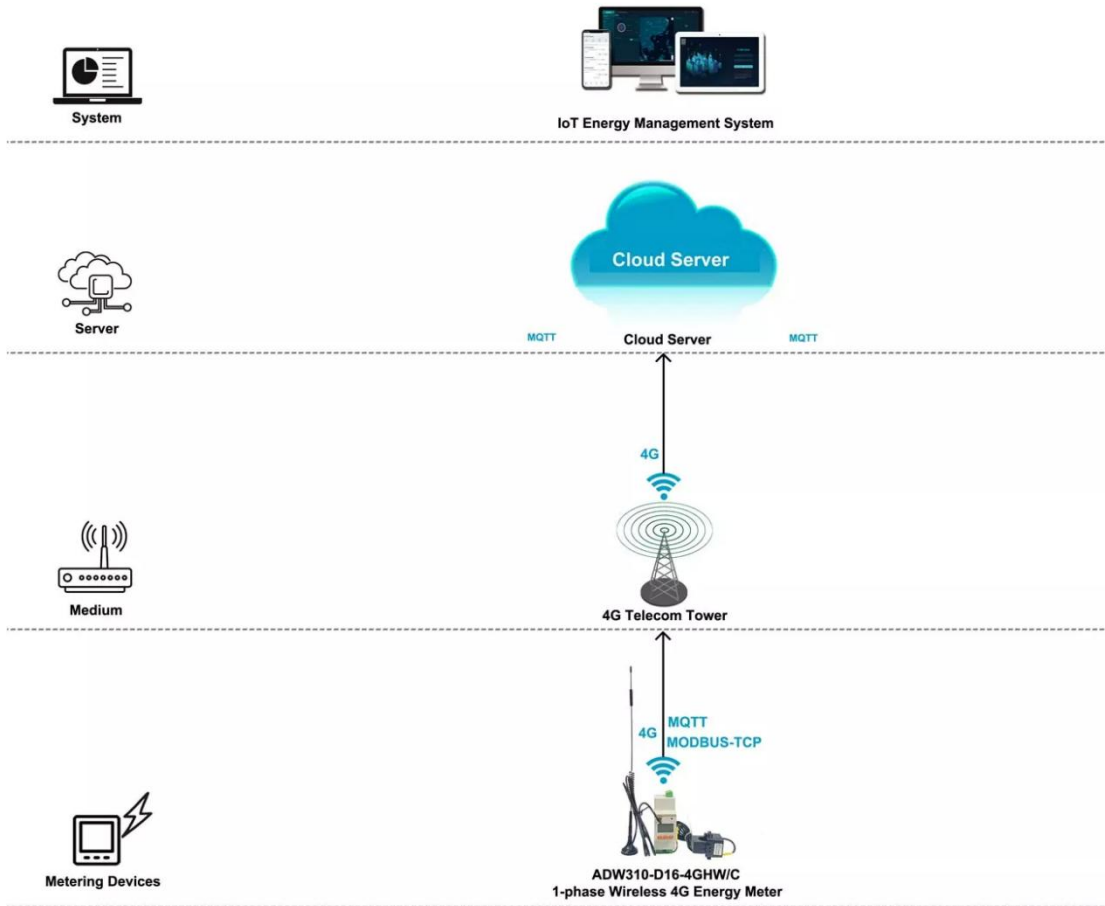
About Packagingment

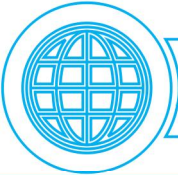
<p>Packaging Overview (Minimum)</p>	<p>MINIMUM PACKAGE</p> 	
<p>Packing Dimension and Weight (Minimum)</p>	<p>Minimum Package Contain 1 pcs Product</p> <p>Dimension: 170mm*150mm*130mm</p>	<p>Total N.W. (1 pcs)</p> <p>0.233 KG</p>
<p>Packing Dimension and Weight (Large)</p>	<p>Large Package Contain 36 pcs Products</p> <p>Dimension: 540mm*530mm*490mm</p>	<p>Total N.W. (48 pcs)</p> <p>10 KG</p>
<p>Average Lead Time</p>	<p>Manufacturing: 3~4 days</p> <p>(If paired with system need extra 1~2 days for adjustment)</p>	<p>Shippment: 8~9 days</p> <p>(World Wide Shipment)</p>
<p>Product HS Code</p>	<p>9028301300</p>	
<p>CO Country of Origin</p>	<p>China</p>	

■ Application in IoT System

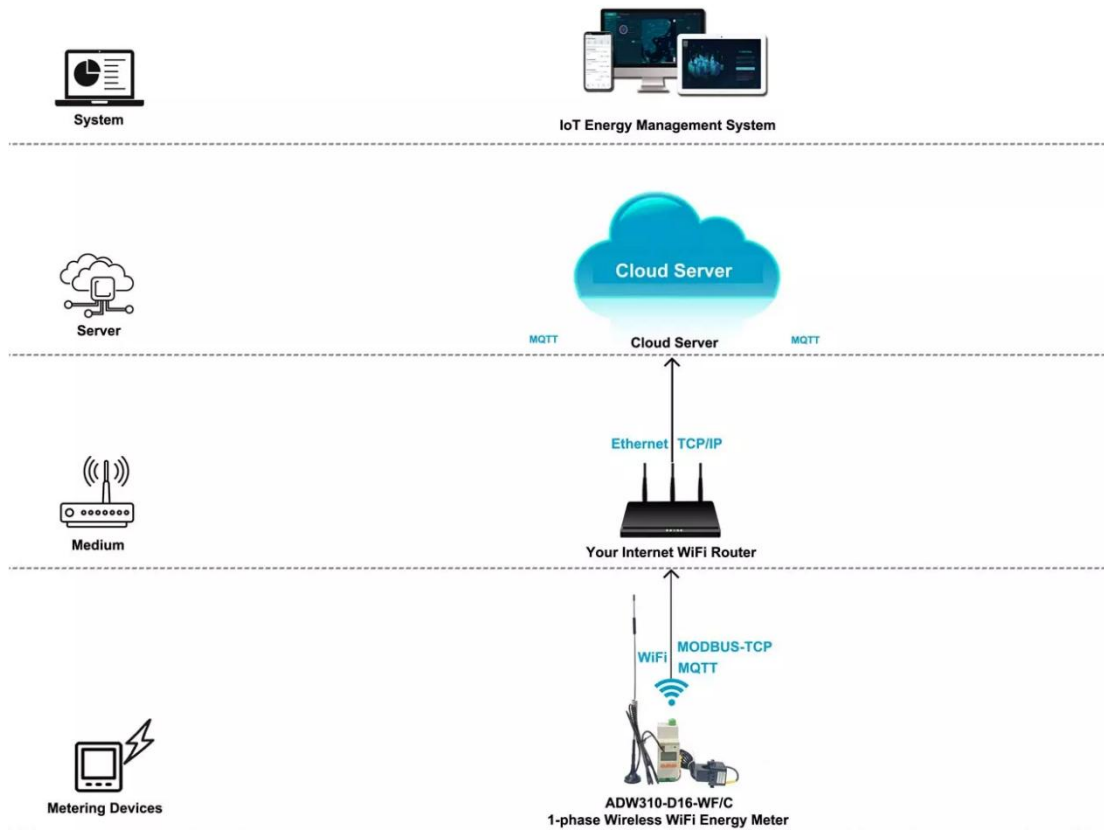


4G Based Solution





WiFi Based Solution



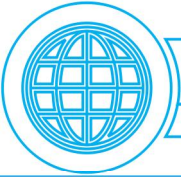
Common FAQ

Q: What's the biggest advantage of ADW310?

A: ADW300 has its built-in wireless communication module which allow it to realize 4G LTE, WiFi upstream communication without using extra IoT gateways. For the application scenarios when the meters can't be of centralized installation, ADW310 will usually be the best option for monitor 3-phase circuits that were far from each other.

Q: How should I deal with RS485 network communication malfunction?

A: First, check if the wiring of RS485 communication line was loosen or wired incorrectly.(like reversely wiring the A,B terminal).



Next, inspect if the meter's setting of **address**, **baud rate**, **check bit** was correct by using keypads on the meter.

Q: Which part of wiring was necessary for ADW310 to gain some basic electricity parameters monitoring?

A: Normally, only current input wiring via CT and voltage input wiring via direction connection was necessary for ADW310 to realize basic metering function.

Q: What's the power supply for ADW310 Series

A: Voltage input of ADW310 also serve as the power supply of ADW310 Seires. Be aware the rated/max voltage input range must be within the range of 85~265Vac L-N.

Other Question? Please contact us and we will get back to you as soon as possible.