350

ADW300 Wireless metering instruments

Installation instructions V1.1

Jiangsu Acrel Electric Manufacturing Co., Ltd

Declaration

we reserve the right to modify the product specifications described in the manual without prior notice. Please contact the local agent to know the current specification of this product before ordering.

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1 General

ADW300 wireless metering instrument is mainly used to measure the three-phase active power of low-voltage network, which has the advantages of small volume, high precision and rich function, and has many optional communication modes, which can support wireless communication modes such as RS485 communication and Lora、2G、NB、4G, and increase the current sampling mode of external transformer, so as to facilitate users to install and use in different situations. can be flexibly installed in the distribution box to realize the requirements of sub-electric energy metering, operation and maintenance supervision or power monitoring for different areas and different loads.

2 Product Model Specifications and Functional Features

2. 1 ADW300 Naming rules for wireless metering instruments

Model	Description
ADW300	Wireless measuring meter
None	Internal CT
W	External Split core CT
LR	LoRa wireless communication
2G	GPRS wireless communication
NB	NB-IOT
4G	4G wireless communication
K	4DI/2DO
C	RS485(Modbus-RTU)
T	4 Channels temperature
L	1 Channel residual current

2. 2 ADW300 Features of Wireless Metering Instrument

Feature 1 ADW300 Main Function

Function	Function declaration

Display	LCD（Digital）
Electricity metering	Active power metering (positive and reverse), four-quadrant reactive power
electrical measurement	Voltage, current, power factor, frequency, active power, reactive power, apparent power
Harmonic Function	Total harmonic content and times harmonic content （2～31st）
pulse output	Active pulse output
Three-phase imbalance	Voltage and current imbalance
Temperature measurement function	A、B、C、N four channel Temperature Measurement （Optional T）
DI/DO	4DI,2DO（Optional K）
residual current	1 residual current measurement（Optional L）
LED indicator	Pulse indicator
External transformer	External split core transformer (optional W)
Electric reference alarm	undervoltage, overvoltage, undercurrent, undercurrent, underload, etc.
Communication	Infrared communication
	RS485 Interface （Optional C）
	470MHz Wireless transform（Optional LR）
	GPRS Wireless communication（Optional 2G）
	NB-IOT Wireless communication（Optional NB）
	4G Wireless communication（Optional 4G）

3 Technical parameters

3.1 Electrical specification

Sheet 2 ADW300 Electrical specification

Voltage input	Rated voltage	3×57.7/100V, 3×220/380V, 3×380/660V, 3×100V, 3×380V, 3×660V
	Reference frequency	50Hz
	Power consumption	Each phase<0.5VA
Current input	Input current	3×1(6)A ; 3×1(6)A（ADW300W）, 3×20(100)A（ADW300W）
	Starting current	1‰Ib(0.5S 级), 4‰Ib(1 级)
	Power consumption	Each phase<1VA
Auxiliary power supply	Power supply	AC 85~265V
	Power consumption	<2W
Measurement	Standard	GB/T17215.322-2008, GB/T17215.321-2008

performance	Active power accuracy	Class 0.5S（ADW300）, Class 1（ADW300W）
	Temperature accuracy	±2℃
Pulse	Pulse length	80±20ms
	Pulse constant	6400imp/kWh , 400imp/kWh
Communication	Wireless	470MHz wireless transform , open space distance : 1km; 2G; NB
	Infrared communications	Fixed baud rate 1200
	Interface	RS485(A、B)
	Medium	STP
	Protocol	MODBUS-RTU、DL/T 645-07

3.2 Environment condition

Sheet 3 ADW300 Environment condition

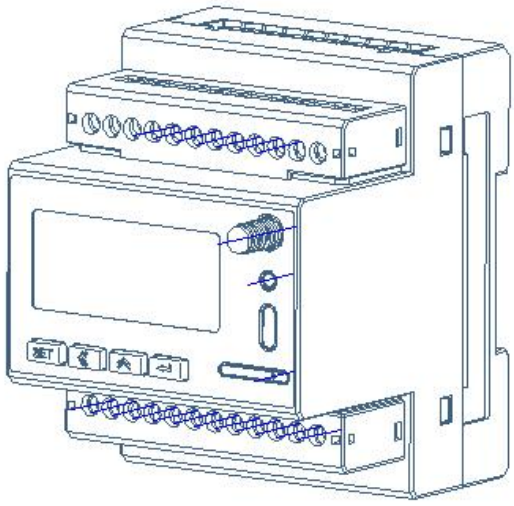
Temperature range	Work temperature	-25℃~55℃
	Storage temperature	-40℃~70℃
Humidity		≤95%（no condensation ）
Altitude		<2000m

4 Dimensions and installation instructions (Unit：mm)

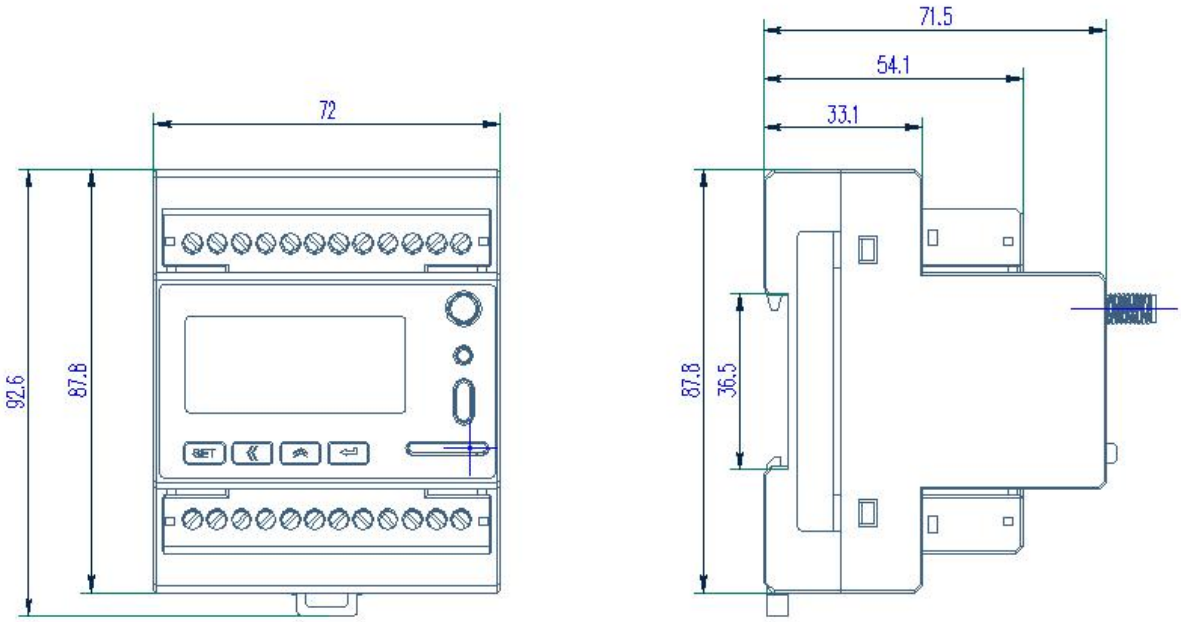
4.1 Shape size(Unit：mm)

Sheet 4 ADW300 Matched Residual Current Transformer Specification & Size

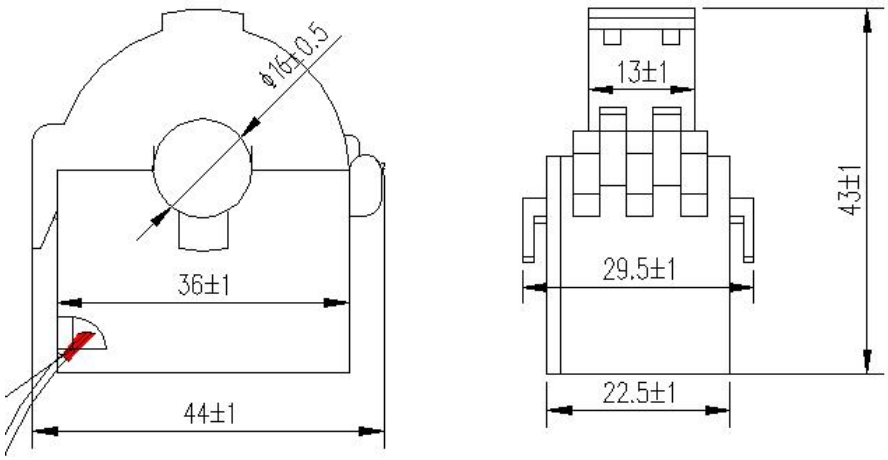
Type	Rated Current In	Internal aperture Φ mm	External aperture Φmm	Weight
AKH-0.66L45	16～100A	45	76	0.18
AKH-0.66L80	100～250A	80	120	0.42
AKH-0.66L100	250～400A	100	140	0.50
AKH-0.66L150	400～800A	150	190	1.32
AKH-0.66L200	800～1500A	200	240	1.94



Graph 1 ADW300impression drawing

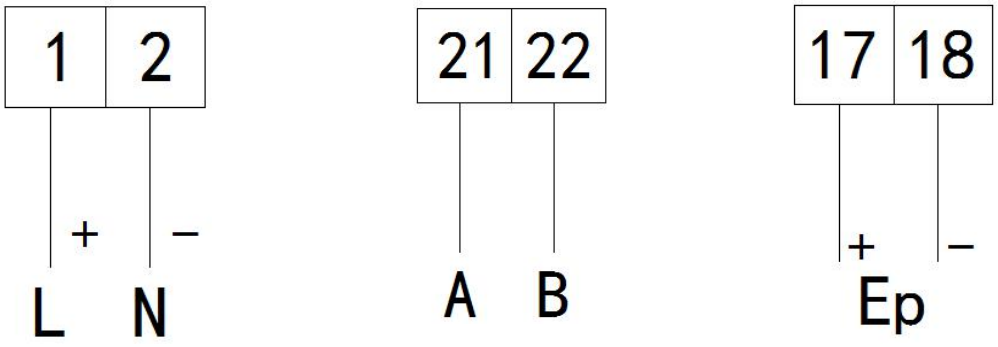


Sheet 2 ADW300 dimensional drawing



Graph 3 ADW300W Matching transformers HCT16K-FJ dimensional drawing

4.2 Power terminal, RS485 communication terminal, pulse output terminal

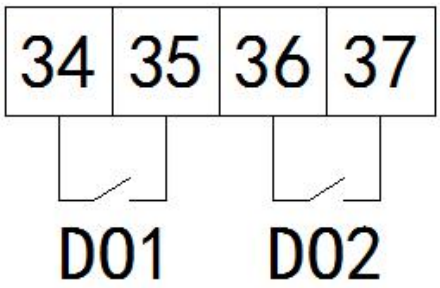


auxiliary power　　communication interface　　Pulse port

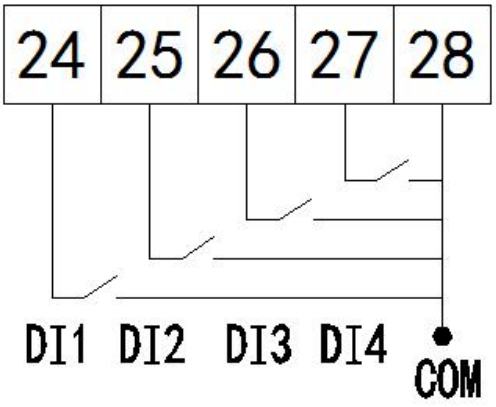
4.3 Switch input/output terminals

Switch input is all using switch signal input mode, the instrument is equipped with 12 V of working power supply, no external power supply. When the outside is turned on or off, the on or off information is collected through the instrument switch input module and displayed locally through the instrument. switch quantity input can not only collect and display the local switch information, but also realize the remote transmission function through the RS485 of the instrument, that is ," remote signal "function.

Switch output is relay output, can realize "remote control" and alarm output.

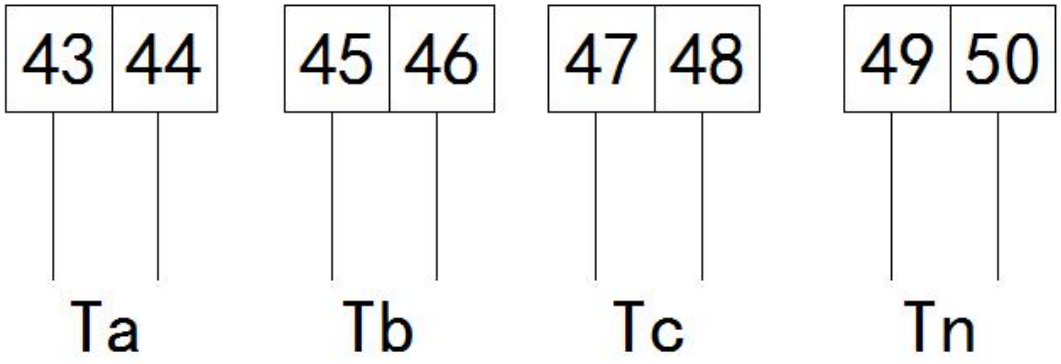


Switching output

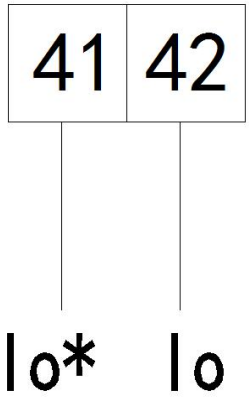


Switching input

4.4 Temperature measurement, leakage current terminal



Temperature input

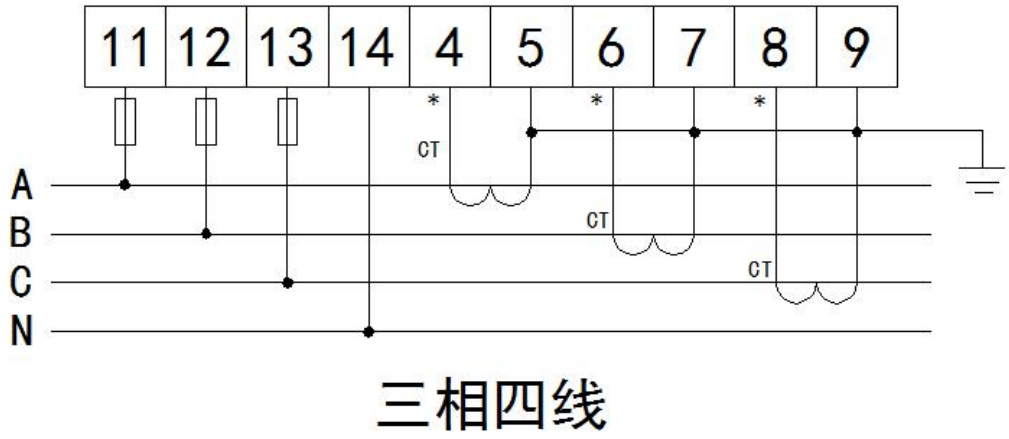


Leakage input

4.5 Wiring instructions

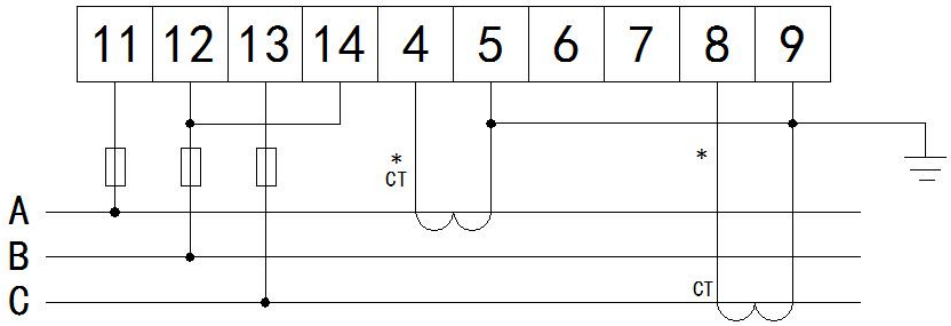
ADW300 and ADW300W can be connected by three-phase four-wire current transformer, three-phase three-wire current transformer, three-phase four-wire current transformer and three-phase three-wire current transformer.

4.5.1 ADW300 Wiring instructions



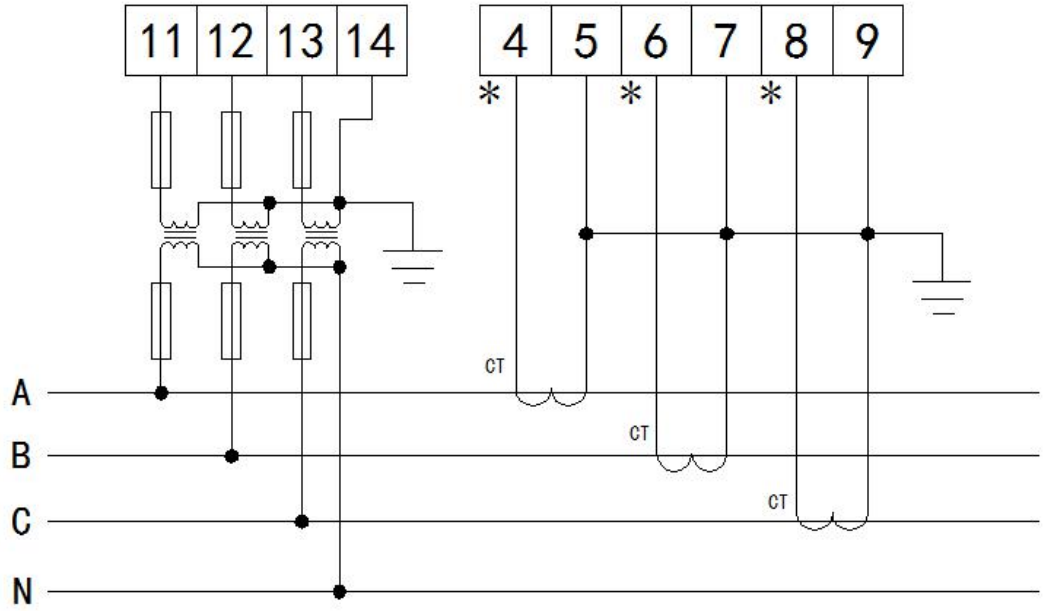
三相四线

3P4W

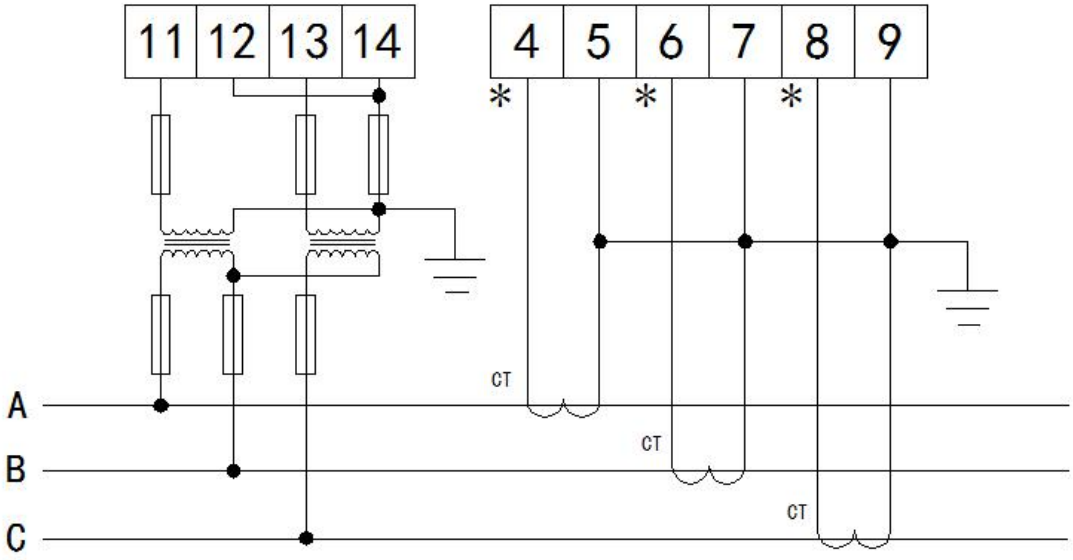


三相三线 3P3W

Voltage PT access：

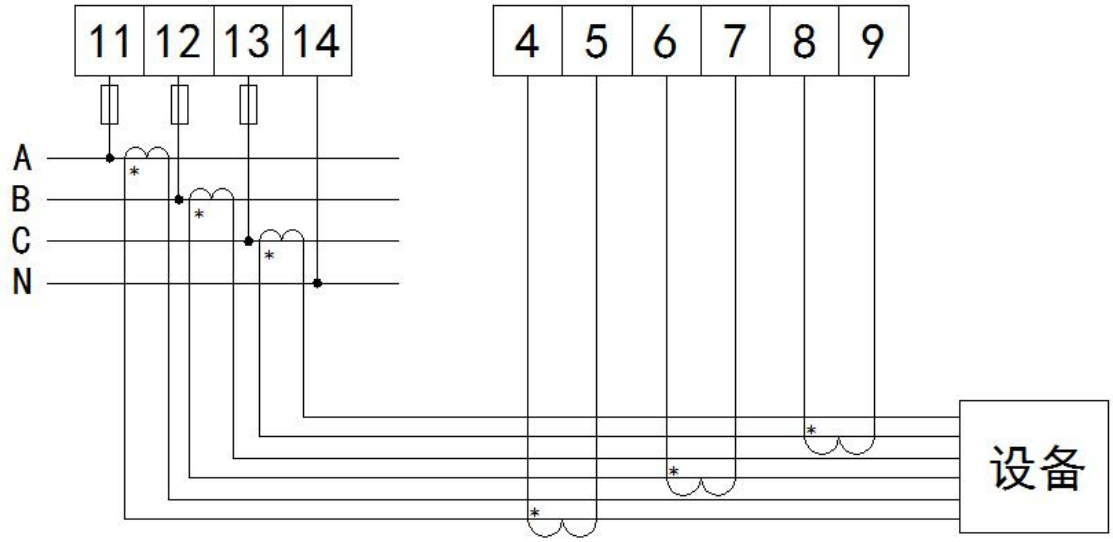


三相四线 3P4W

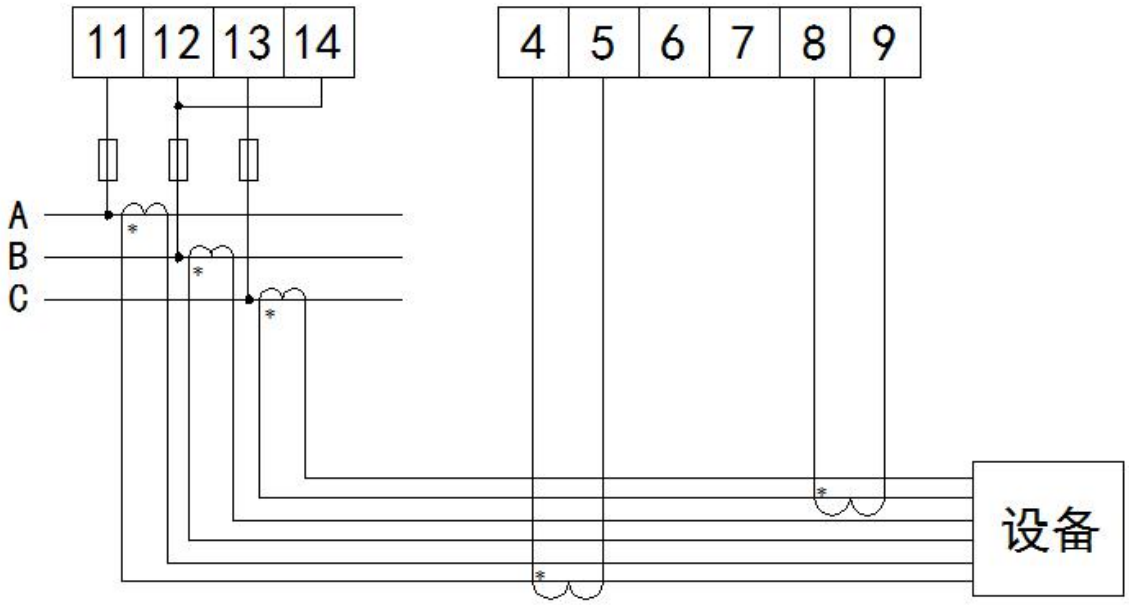


三相三线 3P3W

4.5.2 ADW300W Wiring instructions



三相四线 3P4W



三相三线 3P3W

5 Main functional features

5.1 Measuring function

The full power parameters can be measured including voltage U、 current I、 active power P、 reactive power Q、apparent power, power factor, phase angle between voltage and current Φ、voltage

imbalance, current imbalance, frequency F、31 subharmonic, parity total harmonic content and total harmonic content. where voltage U retain 1 decimal, frequency F retain 2 decimal, current I retain 3 decimal, power P retain 4 decimal, phase angle Φ retain 2 decimal, imbalance △ retain 2 decimal

Example: U = 220.1V, f = 49.98HZ, I = 1.999A, P = 0.2199KW, Φ= 60.00°, △=0.00%

Support 4 way temperature measurement range :-40~99℃, accuracy ±2.

Residual current detection, initial range :0~1000 mA, can set range multiple (1~60)

5.2 Measurement function

Can measure current combined active power, forward active power, reverse active power, inductive reactive power, capacitive reactive power, as seen in the electric energy

5.3 Time sharing function

Each of the two time slots can be divided into 4 time zones per year with 12 day slots and 4 rates (F1、F2、F3、F4 peak flat valley). The basic idea of time-sharing billing is to use electric energy as a commodity, using economic leverage, high electricity price in peak period and low electricity price in low period, so as to cut the peak and fill the valley, improve the quality of electricity consumption and improve the comprehensive economic benefit.

5.4 Demand function

Relevant concepts of requirements are as follows:

Demand	The average power measured in the demand period is called the demand
maximum demand	The maximum demand in a specified time zone is called the maximum Demand
Slip difference time	From any time, the method of recursively measuring demand by time less than the period of demand is called slip differential demand. Time of recursion is time of slip
Demand period	Time intervals for continuous measurement of equal average power, also known as window time

The default demand period is 15 minutes and the slip time is 1 minute

Can measure 8 kinds of maximum demand namely A/B/C three-phase current, forward active power, reverse active power, inductive reactive power, capacitive reactive power, apparent power maximum demand and

the time when the maximum demand occurs.

Display real-time eight requirements namely A/B/C three-phase current, forward active, reverse active, inductive reactive, capacitive reactive, apparent power requirements.

5.5 Historical Power Statistics Function

Energy statistics for December's history (including 4 quadrants, per rate)

5.6 Switching Input and Output Function

here are 2 switch quantity output ,4 switch quantity input, switch quantity output is relay output, can realize "remote control" and alarm output. switch quantity input can not only collect and display the local switch information, but also realize the remote transmission function through the RS485 of the instrument, that is ," remote signal "function.

5.7 Wireless communication function

ADW300 support 470 MHz of LORA communications ,2 G、NB and 4 communications. A specific agreement on G、NB、4G 2 communication can be obtained by contacting the relevant personnel of our company.

6 Communications instruction

6.1 Communications protocol

This instrument adopts MODBUS-RTU agreement or DL/T645 protocol. Please refer to the relevant agreement standard for the specific agreement format.

6.2 MODBUS Communication

When communicating with Modbus protocol, the function code of read data command is 03 H, the function code of write data command is 10 H..
The specific register address table is as follows:

Original Address	Data Name	Length (bytes)	Read/ write	Remark
0000H	Communication Address	2	R/W	1～247
0001H	Baud Rate	2	R/W	1：1200bps

				2：3400bps 3：4800bps 4：9600bps
0002H	Spread frequency factor	2	R/W	6~12
0003H	Channel setting	2	R/W	0-45(The same primary station as the channel)
0004H	High: verification mode, low: stop bit	2	R/W	High :0- no verification ,1- even verification ,2- odd verification, low :0-1 stop bit ,1-2 stop bit
0005H	Save			
0006H	Pulse constant			
0007H	Backlight Time			
0008H	Password			
0009H~000CH	Save			
000DH	Current specifications			
000EH	Voltage ratio			
000FH	Current ratio			
0010H	N Phase Temperature	2	R	Shaping symbols Unit 0.1℃
0011H~0013H	Time Date (seconds, minutes, hours, days, months, years)			
0014H	A phase voltage	2	R	Integral 1 decimal place is reserved, and the data obtained in units V(divided by 10 is the actual data. The following data decimal places are processed in this way)
0015H	B phase voltage	2	R	
0016H	C phase voltage	2	R	
0017H	AB phase voltage	2	R	
0018H	BC line voltage	2	R	
0019H	CA line voltage	2	R	
001AH	A phase current	2	R	Integral , UnitA Keep 3 decimal places
001BH	B phase current	2	R	
001CH	C phase current	2	R	
001DH	The sum of three-phase current loss	2	R	
001EH	A Phase active power	4	R	Integral symbol UnitkW Keep 3 decimal places
0020H	B Phase active power	4	R	
0022H	C Phase active power	4	R	
0024H	Total active power	4	R	
0026H	A Phase reactive power	4	R	Integral symbol

0028H	B Phase reactive power	4	R	UnitkVar Keep 3 decimal places
002AH	C Phase reactive power	4	R	
002CH	Total reactive power	4	R	
002EH	A Phase apparent power	4	R	Integral UnitKVA Keep 3 decimal places
0030H	B Phase apparent power	4	R	
0032H	C Phase apparent power	4	R	
0034H	Total apparent power	4	R	
0036H	A Phase power factor	2	R	Integral Keep 3 decimal places
0037H	B Phase power factor	2	R	
0038H	C Phase power factor	2	R	
0039H	Total power factor	2	R	
003AH	DI status	2	R	shaping Bit0：DI1 Bit1：DI2 Bit2：DI3 Bit3：DI4
003BH	Power Frequency	2	R	Integral 3 decimal places
003CH	Combined total active power	4	R	Integral UnitkWh Keep 3 decimal places
003EH	Forward active power	4	R	
0040H	Reverse active power	4	R	
0042H	Forward reactive power	4	R	Integral , UnitkVarh Keep 3 decimal places
0044H	Reverse reactive power	4	R	
0046H	A phase total electrical energy	4	R	Integral UnitkWh Keep 3 decimal places
0048H	A Phase positive active power	4	R	
004AH	A phase reverse active energy	4	R	
004CH	A Phase positive reactive power	4	R	Integral , UnitkVarh Keep 3 decimal places
004EH	A phase reverse reactive power	4	R	
0050H	B phase total electrical energy	4	R	Integral UnitkWh Keep 3 decimal places
0052H	B phase positive active power	4	R	
0054H	B instead of active energy	4	R	
0056H	B phase forward reactive power	4	R	Integral , UnitkVarh Keep 3 decimal places
0058H	B phase reverse reactive power	4	R	
005AH	C phase total electrical energy	4	R	Integral UnitkWh

005CH	C phase positive active power	4	R	Keep 3 decimal places
005EH	C phase reverse active energy	4	R	
0060H	C phase positive reactive power	4	R	Integral , UnitkVarh Keep 3 decimal places
0062H	C phase reverse reactive power	4	R	
0064H	Maximum active power demand for the month	4	R	Integral , UnitKW Keep 3 decimal places
0066H~0067H	Occur time	4	R	minute、hour、day、month
0068H	Maximum reverse active power requirement for the month	4	R	Integral , UnitkVar Keep 3 decimal places
006AH~006BH	Occur time	4	R	minute、hour、day、month
006CH	Maximum demand for forward reactive power for the month	4	R	Integral , UnitkVar Keep 3 decimal places
006EH~006FH	Occur time	4	R	minute、hour、day、month
0070H	Maximum reverse reactive power requirement for the month	4	R	Integral , UnitkVar Keep 3 decimal places
0072H~0073H	Occur time	4	R	minute、hour、day、month
0074H	A phase voltage total distortion rate	2	R	Total distortion rate of split voltage and current Integral Keep 2 decimal places
0075H	B phase voltage total distortion rate	2	R	
0076H	C phase voltage total distortion rate	2	R	
0077H	A phase current total distortion rate	2	R	
0078H	B phase current total distortion rate	2	R	
0079H	C phase current total distortion rate	2	R	
007AH	A phase voltage times harmonics(2-31st)	2×30	R	Current Phase 2~31 Harmonic Content shaping Keep 2 decimal places
0098H	B phase voltage times harmonics(2-31st)	2×30	R	
00B6H	C phase voltage times harmonics(2-31st)	2×30	R	
00D4H	A phase current times harmonics(2-31st)	2×30	R	Current Phase 2~31 Harmonic Content shaping Keep 2 decimal places
00F2H	B phase current times harmonics(2-31st)	2×30	R	
0110H	C phase current times	2×30	R	

	harmonics(2-31st)			
012EH	A phase fundamental wave voltage	2	R	Integral ， UnitV Keep 1 decimal places
012FH	B phase fundamental wave voltage	2	R	
0130H	C phase fundamental wave voltage	2	R	
0131H	A phase harmonic voltage	2	R	
0132H	B phase harmonic voltage	2	R	
0133H	C phase harmonic voltage	2	R	
0134H	A phase fundamental wave current	2	R	Integral ， UnitA Keep 2 decimal places
0135H	B phase fundamental wave current	2	R	
0136H	C phase fundamental wave current	2	R	
0137H	A phase harmonic current	2	R	
0138H	B phase harmonic current	2	R	
0139H	C phase harmonic current	2	R	
013AH	A phase fundamental wave active power	4	R	Integral symbol, UnitkW Keep 3 decimal places
013CH	B phase fundamental wave active power	4	R	
013EH	C phase fundamental wave active power	4	R	
0140H	Total active power of fundamental wave	4	R	
0142H	A phase reactive power of fundamental wave	4	R	Integral symbol, UnitkVar Keep 3 decimal places
0144H	B phase reactive power of fundamental wave	4	R	
0146H	C phase reactive power of fundamental wave	4	R	
0148H	Total reactive power of fundamental wave	4	R	
014AH	A phase harmonic active power	4	R	Integral symbol, UnitkW Keep 3 decimal places
014CH	B phase harmonic active power	4	R	
014EH	C phase harmonic active power	4	R	
0150H	Total harmonic active power	4	R	
0152H	A phase harmonic reactive power	4	R	Integral symbol, UnitkVar Keep 3 decimal places
0154H	B phase harmonic reactive	4	R	

	power			
0156H	C phase harmonic reactive power	4	R	
0158H	Total harmonic reactive power	4	R	
015AH	Current forward active demand	4	R	Integral , UnitkW Keep 3 decimal places
015CH	Current reverse active power demand	4	R	
015EH	Current forward reactive power demand	4	R	Integral , UnitkVar Keep 3 decimal places
0160H	Current reverse reactive power demand	4	R	
0162H	Voltage imbalance	2	R	shaping Unit0.01%
0163H	Current imbalance	2	R	
0164H	A phase temperature	2	R	Shaping Symbol Unit0.1℃
0165H	B phase temperature	2	R	
0166H	C phase temperature	2	R	
0167H	Time Zone Schedule Number / Time Zone Date: Day	2	R/W	Time area tables
0168H	Time Zone Date: Month/Time Zone Schedule Number	2	R/W	
0169H	Time zone date: day/time zone date: month	2	R/W	
016AH	Time Zone Schedule Number / Time Zone Date: Day	2	R/W	
016BH	Time Zone Date: Month/Time Zone Schedule Number	2	R/W	
016CH	Time zone date: day/time zone date: month	2	R/W	
016DH	Time 1 Rate / Time 1 Start: minute	2	R/W	1#time period Schedule
016EH		2	R/W	
016FH	Start of Time 2: minute / Start of Time 2:hour	2	R/W	
0170H	Time 3 Rate / Time3 Start: minute	2	R/W	
0171H	Start of time period 3: Hour/Time period 4 Rate Number	2	R/W	
0172H	Start of time period 4:minute/Start of time	2	R/W	

	period 4:: hour			
0173H	Time 4 Rate / Time 5 Start: minute	2	R/W	
0174H	Start of time period 5:: hour /Time period 6 Rate Number	2	R/W	
0175H	Start of Time period 6 : minute /Start of Time period 6: hour	2	R/W	
0176H	Time period 7 Rate Number/ Start of Time period 7 : minute	2	R/W	
0177H	Start of Time period 7 : hour /Time period 8 Rate Number	2	R/W	
0178H	Start of Time period 8 : minute/Start of Time period 8 : hour	2	R/W	
0179H	Time period 9 Rate Number/Start of Time period 9 : minute	2	R/W	
017AH	Start of Time period 9 : hour/Time period 10 Rate Number	2	R/W	
017BH	Start of Time period 10 : minute/Start of Time period 10 : hour	2	R/W	
017CH	Time period 11 Rate Number/Start of Time period 11: minute	2	R/W	
017DH	Start of Time period 11 : hour/Time period 12 Rate Number	2	R/W	
017EH	Start of Time period 12: minute/Start of Time period 12 : hour	2	R/W	
017FH	Time period 13 Rate Number/Start of Time period 13: minute	2	R/W	
0180H	Start of Time period 13 : hour/Time period 14 Rate Number	2	R/W	
0181H	Start of Time period 14: minute/Start of Time period 14 : hour	2	R/W	
0182H	Rate number for time	2	R/W	2# time period Schedule

	period 1 /Start of Time period 1: minute			
0183H	Start of Time period 1: hour/Rate number for time period 2	2	R/W	
0184H	Start of Time period 2: minute/Start of Time period 2: hour	2	R/W	
0185H	Rate number for time period 3 /Start of Time period 3: minute	2	R/W	
0186H	Start of Time period 3: hour/Rate number for time period 4	2	R/W	
0187H	Start of Time period 4: minute/Start of Time period 4: hour	2	R/W	
0188H	Rate number for time period 5 /Start of Time period 5: minute	2	R/W	
0189H	Start of Time period 5: hour/Rate number for time period 6	2	R/W	
018AH	Start of Time period 6: minute/Start of Time period 6: hour	2	R/W	
018BH	Rate number for time period 7 /Start of Time period 7: minute	2	R/W	
018CH	Start of Time period 7: hour/Rate number for time period 8	2	R/W	
018DH	Start of Time period 8: minute/Start of Time period 8: hour	2	R/W	
018EH	Rate number for time period 9 /Start of Time period 9:	2	R/W	

	minute			
018FH	Start of Time period 9: hour/Rate number for time period 10	2	R/W	
0190H	Start of Time period 10: minute/Start of Time period 10: hour	2	R/W	
0191H	Rate number for time period 11 /Start of Time period 11: minute	2	R/W	
0192H	Start of Time period 11: hour/Rate number for time period 12	2	R/W	
0193H	Start of Time period 12: minute/Start of Time period 12: hour	2	R/W	
0194H	Rate number for time period 13 /Start of Time period 13: minute	2	R/W	
0195H	Start of Time period 13: hour/Rate number for time period 14	2	R/W	
0196H	Start of Time period 14: minute/Start of Time period 14: hour	2	R/W	
0197H	Current total Active sharp power	4	R	Integral , UnitkWh Keep 2 decimal places
0199H	Current Total Active Peak Power	4	R	
019BH	Current Total Active Flat Power	4	R	
019DH	Current total active valley power	4	R	
019FH	Current forward active sharp power	4	R	
01A1H	Current forward active peak power	4	R	
01A3H	Current forward active flat power	4	R	
01A5H	Current forward active valley power	4	R	

01A7H	Current reverse active sharp power	4	R	
01A9H	Current reverse active peak power	4	R	
01ABH	Current reverse active flat power	4	R	
01ADH	Current valley active sharp power	4	R	
01AFH	Current forward reactive sharp power	4	R	Integral , UnitkVarh Keep 2 decimal places
01B1H	Current forward reactive peak power	4	R	
01B3H	Current forward reactive flat power	4	R	
01B5H	Current forward reactive valley power	4	R	
01B7H	Current reverse reactive sharp power	4	R	
01B9H	Current reverse reactive peak power	4	R	
01BBH	Current reverse reactive flat power	4	R	
01BDH	Current reverse reactive valley power	4	R	
01BFH	wireless signal strength	2	R	Symbol shaping
01C1H	residual current	2	R	shaping UnitA Keep 3 decimal places
01C2H	DO1	2	R/W	shaping Bit0 valid
01C3H	DO2	2	R/W	shaping Bit0 valid

6.3 Alarm function related settings

start address	Name of data item	Length (bytes)	Read/ write	remark
01EBH	Alarm status	2	R	bit0: Over voltage alarm bit1: Under voltage alarm Bit2: Over current alarm Bit3: Undercurrent Alarm Bit4: Overpower alarm Bit5: Under power alarm Bit6:DO1 Alarm output bit7:DO2 Weather Alarm output

				Bit8:A phase current loss alarm Bit9:B phase current loss alarm Bit10:C phase current loss alarm Bit11:A phase voltage loss alarm Bit12:B phase voltage loss alarm Bit13:C phase voltage loss alarm Bit14: Phase Sequence Error Alarm
01D0H	Alarm Allowable Bit	2	R/W	Bit0: Overvoltage Alarm Allowable Bit Bit1: Underpressure Alarm Allowable Bit Bit2: Overcurrent Alarm Allowable Bit Bit3: Undercurrent Alarm Allowable Bit Bit4:Overpower Alarm Allowable Bit Bit5:Low Power Alarm Allowable Bit
01D1H	Over voltage alarm threshold	2	R/W	shaping Unit0.1V
01D2H	Over voltage alarm delay	2	R/W	shaping Unit0.01S
01D3H	Under voltage alarm threshold	2	R/W	shaping Unit0.1V
01D4H	Over voltage alarm delay	2	R/W	shaping Unit0.01S
01D5H	Overcurrent alarm threshold	2	R/W	shaping Unit0.01A
01D6H	Overcurrent Alarm Delay	2	R/W	shaping Unit0.01S
01D7H	Undercurrent alarm threshold	2	R/W	shaping Unit0.01A
01D8H	Delay of Undercurrent Alarm	2	R/W	shaping Unit0.01S
01D9H	Overpower alarm threshold	2	R/W	shaping Unit0.001kw
01DAH	Over power alarm delay	2	R/W	shaping Unit0.01S

01DBH	Low power alarm threshold	2	R/W	shaping Unit0.001kw
01DCH	Delay of Underpower Alarm	2	R/W	shaping Unit0.01S
01DDH	DI1 initial status	2	R/W	0:normally open 1:normal close
01DEH	DII programming	2	R/W	0:noassociationDO 1:associationDO1 2:associationDO2
01DFH	DI2 initial status	2	R/W	0:normally open 1:normally close
01E0H	DI2 programming	2	R/W	0:noassociationDO 1:associationDO1 2:associationDO2
01E1H	DI3 initial status	2	R/W	0:normally open 1:normally close
01E2H	DI3 programming	2	R/W	0:noassociationDO 1:associationDO1 2:associationDO2
01E3H	DI4 initial status	2	R/W	0:normally open 1:normally close
01E4H	DI4 programming	2	R/W	0:noassociationDO 1:associationDO1 2:associationDO2
01E5H	DO1 Output mode	2	R/W	0:electrical level 1:pulse
01E6H	DO1 association content	2	R/W	0:normal DO 1:Total failure 2:Total failure+DI1+DI2 3:DI1 4:DI2 5:DI1+DI2
01E7H	DO1output pulse width	2	R/W	0:无 1:1S 2:2S 3:3S 4:4S 5:5S
01E8H	DO2 Output mode	2	R/W	0: electrical level 1:pulse
01E9H	DO2association content	2	R/W	0:Normal DO 1:Total failure 2:Total failure+DI1+DI2 3:DI1

				4:DI2 5:DI1+DI2
01EAH	DO output pulse width	2	R/W	0:none 1:1S 2:2S 3:3S 4:4S 5:5S

6.4 Historical data storage

Last 12 month power reading is as follows:

Interval first address (high byte)	Historical data type
48-53H	Last January -Last December

Interval first address (low byte)	Data type
00H	Date and time of recording
03H	Total active power of historical combination
05H	Total active power in history
07H	Historical reverse total active power
09H	Historical forward reactive power total
0BH	Historical reverse reactive power total
0DH	A phase combined active power total
0FH	A phase positive active power total
11H	A phase forward and reverse total active power
13H	A phase positive reactive power
15H	A phase negative reactive power
17H	B phase se combined active power total
19H	B phase positive active power total

1BH	B phase negative active power total
1DH	B phase positive reactive power
1FH	B phase negative reactive power
21H	C phase combined active power total
23H	C phase positive active power total
25H	C phase negative active power total
27H	C phase positive reactive power
29H	C Total reactive power
2BH	Current total Active sharp power
2DH	Current total Active peak power
2FH	Current total Active flat power
31H	Current total Active valley power
33H	Current total positive Active sharp power
35H	Current total positive Active peak power
37H	Current total positive Active flat power
39H	Current total positive Active valley power
3BH	Current total negative Active sharp power
3DH	Current total negative Active peak power
3FH	Current total negative Active flat power
41H	Current total negative Active valley power
43H	Current Positive Reactive sharp power
45H	Current Positive Reactive peak power
47H	Current Positive Reactive flat power
49H	Current Positive

	Reactive valley power
4BH	Current Negative Reactive sharp power
4DH	Current Negative Reactive peak power
4FH	Current Negative Reactive flat power
51H	Current Negative Reactive valley power

6.5 Extreme Data Storage

Maximum record:

Interval first address (high byte)	Interval first address (high byte)
04	Monthly records of extrema and occurrence time
05	Record of extrema and occurrence time of last month
06	Last February Extreme Value and Time Record
07	Last March Extreme Value and Time Record

Interval offset address (low byte)	Data type
00	A phase Voltage Max occurrence time record
03	B phase Voltage Max occurrence time record
06	C phase Voltage Max occurrence time record
09	AB line voltage max and occurrence time record
0C	BC line voltage max and occurrence time record
0F	CA line voltage max and occurrence time record
12	A phase voltage max and occurrence time record
15	B phase voltage max and occurrence time record
18	C phase voltage max and occurrence time record
1B	Three-phase current vector and maximum and time of occurrence record
1E	A phase active power max and time of occurrence record
22	B phase active power max and time of occurrence record
26	C phase active power max and time of occurrence record
2A	Total active power max and time of

	occurrence record
2E	A phase reactive power max and time of occurrence record
32	B phase reactive power max and time of occurrence record
36	C phase reactive power max and time of occurrence record
3A	Total reactive power max and time of occurrence record
3E	A phase apparent power max and time of occurrence record
42	B phase apparent power max and time of occurrence record
46	C phase apparent power max and time of occurrence record
4A	A phase total apparent power max and time of occurrence record

Minimum record:

Interval first address (high byte)	Historical data type
04	Monthly records of extrema and occurrence time
05	Record of extrema and occurrence time of last month
06	Last 2 month Extreme Value and Time Record
07	Last 3 month Extreme Value and Time Record

Interval offset address (low byte)	Data center
4E	A phase Voltage Minimum occurrence time record
51	B phase Voltage Minimum occurrence time record
54	C phase Voltage Minimum occurrence time record
57	AB line voltage Minimum and occurrence time record
5A	BC line voltage Minimum and occurrence time record
5D	CA line voltage Minimum and occurrence time record
60	A phase voltage Minimum and occurrence time record
63	B phase voltage Minimum and occurrence time record
66	C phase voltage Minimum and occurrence time record
69	Three-phase current vector and minimum and time of occurrence record

6C	A phase active power minimum and time of occurrence record
70	B phase active power minimum and time of occurrence record
74	C phase active power minimum and time of occurrence record
78	Total active power minimum and time of occurrence record
7C	A phase reactive power minimum and time of occurrence record
80	B phase reactive power minimum and time of occurrence record
84	C phase reactive power minimum and time of occurrence record
88	Total reactive power minimum and time of occurrence record
8C	A phase apparent power minimum and time of occurrence record
90	B phase apparent power minimum and time of occurrence record
94	C phase apparent power minimum and time of occurrence record
98	Total apparent power minimum and time of occurrence record

Note: The record length of each extreme value and occurrence time is 3 words, and the data arrangement refers to the following table:

Register address	Event	Data Type	Remark
0400H	A Phase Voltage Max and Time Record	Extreme Data Specific Data	Specific data type and decimal reference 6.2 address table
0401H		time of occurrence by minute, hour	High byte is minute
0402H		time of occurrence by day, month	High byte is hour

7 Common Troubleshooting

7.1 Instrument rs485 network communication failure.

Recommendation: Please confirm whether the rs485 connection is loose or ab, and then check the table through the key parameters such as address, baud rate, check whether the correct setting

7.2 Instrument wireless communication failure.

Test suggestion: please use USB turn 485 serial port line to connect with instrument RS485 interface first, read the table parameters through communication, confirm that the table parameters are the same as the upper master station wireless configuration (channel and spread spectrum factor), if different, please modify the instrument wireless parameters and the master station after re-test; if the same, it may be too far from the master station or serious interference, at this time can try to use the external sucker antenna, or consider the nearest new wireless master station, re-test.

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