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ADW100 wireless electricity collector

Installation and Operation Instruction V1.0

ACREL Co., Ltd.

Declaration

The company reserves the right to modify the specifications described in this manual without prior notice.Before ordering,please consult your local agent for new specifications.

Contents

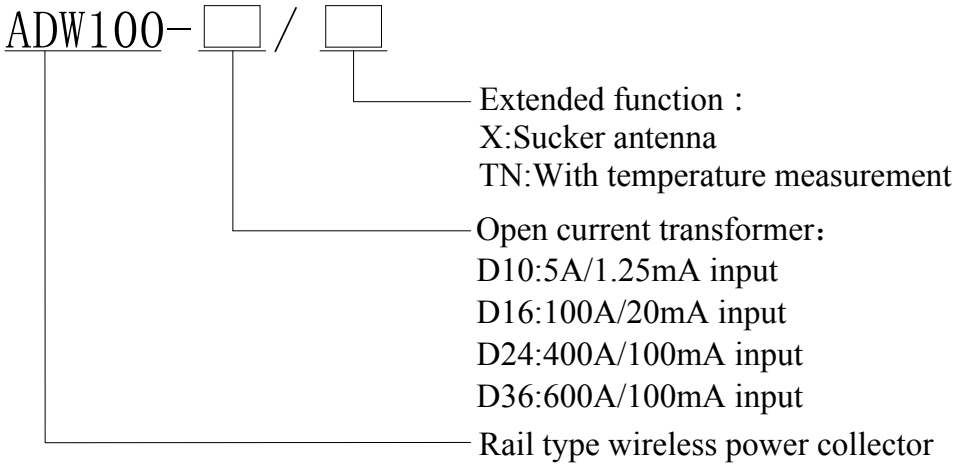
1 Overview

ADW100 wireless power collector is mainly used for active energy measurement of low-voltage three-phase network.The collector has RS485 communication functions.It can directly or indirectly measure voltage and current,power,power factor,phase angle,unbalance,harmonic and other parameters.Current transformer and temperature sensor are easy to plug,The voltage can be obtained by magnetic steel or puncture,which is convenient for on-site installation of products.Due to the relatively scattered installation environment,the product adopts Lora wireless communication mode,which is convenient for customers to network on site.

Executive standard：enterprise standard of Q/320281DGB68-2021《ADW100 wireless power collector》

2 Products model and specification

2.1 ADW100 naming rules



Note：external sucker antenna can be selected,the length of standard line is 2 meters.

2.2 Model and specification of matching transformer

Table1 ADW100 series model and specification of matching transformer

Voltage specification	Instrument model	Current specification	Matching current transformer
3×220/380V 3×380V	ADW100-D10/port	3×1.5(6)A	AKH-0.66 K-Φ10DN 0.5 level
	ADW100-D16/port	3×20(100)A	AKH-0.66 K-Φ16DN 0.5 level
	ADW100-D24/port	3×80(400)A	AKH-0.66 K-Φ24DN 0.5 level
	ADW100-D36/port	3×120(600)A	AKH-0.66 K-Φ36DN 0.5 level

3 Product function and technical parameters

3.1 Product function

One three-phase circuit electric parameter measurement, electric energy measurement, harmonic measurement, 4-way input monitoring and 4-way temperature measurement.

3.2 Technical parameters of instruments

Table 2 ADW100 technical parameters

Auxiliary power supply		AC/DC 85～265V；power consumption≤3W；
Input signal	frequency	45～65Hz；
	voltage	Rated value：AC 3×220V/380V, AC 3×380V
		Overload： 1.2 times rated value(continuous)； 2 times rated value/1 second；
		Power consumption：≤0.5VA（every route）；
	current	Rated value：AC3×1.5(6)A、3×20(100)A、3×80(400)A, 3×120(600)A；（external opening transformer ）
		Overload： 1.2 times rated value(continuous)； 10 times rated value/1 second；
		power consumption：≤0.5VA（every route）；
Measurement accuracy		Frequency 0.05Hz、voltage current 0.5 level、active energy 1 level 、2～31 times harmonic accuracy、B level；
function	communication	Lora communication（470MHz）、RS485 interface、Modbus-RTU protocol；Baud rate 1200～19200；infrared communication
	Switch input	Dry contact input，Built-in power supply；

3.3 Other technical parameters

Table 4 Other technical parameters

security	power-frequency withstand voltage	>AC 2kV/1min；
	Insulation resistance	Input and output end to housing>100MΩ；
Environment		Working temperature：-20℃～+55℃； Storage temperature：-40℃～+70℃； Relative humidity：≤95% no condensation； Altitude：≤2000m；
Electromagnetic compatibility		ESD immunity test with severity level 3； Immunity test of electrical fast transient burst with severity level 4； Surge(impact) immunity test with severity level 4；

4 Dimensions and installation instructions

4.1 Dimensions(Unit： mm)

(1)ADW100 Dimensional drawing

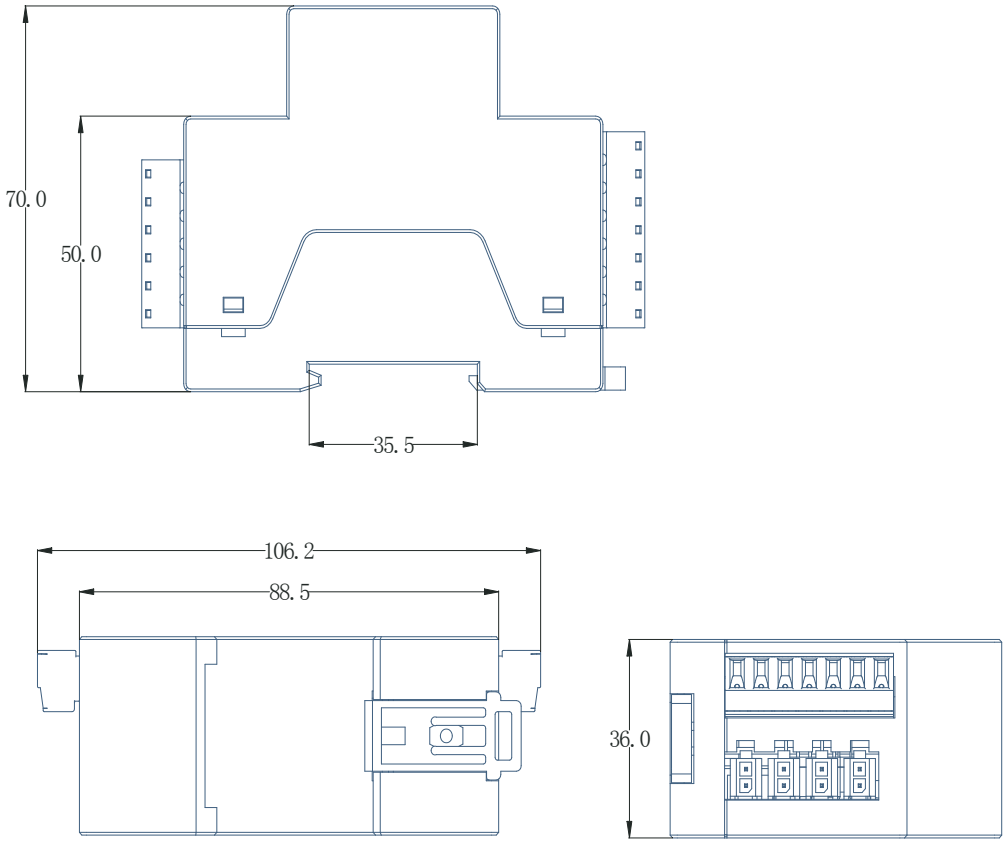


Figure 1 ADW100 Dimensional drawing

Table 5 ADW100 Dimensions

	Dimensions（mm）				Guide rail size（mm）	tolerance（mm）
	length	wide	high	Length with terminal		
ADW100	88.5	36	70	106.2	35.5	±1

(2)external dimension of matching transformer

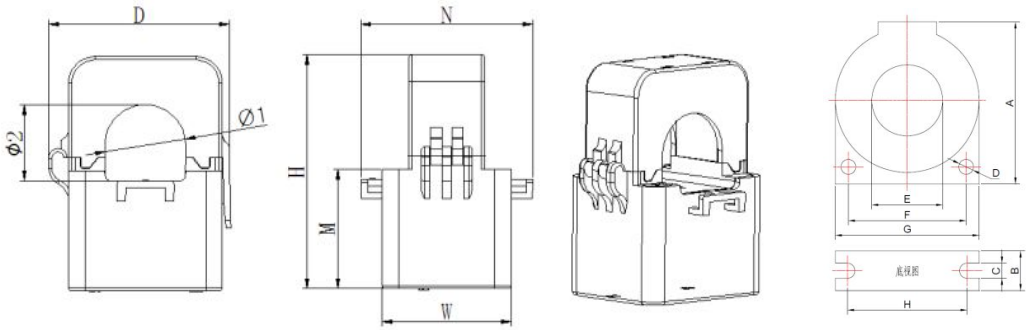


Table 6 Dimension of matching transformer

Open ended current transformer	Dimension（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	
AKH-0.66/K-⌀ 24N	39	71	46	36	52	24	23.5	
AKH-0.66/K-⌀ 36N	42.5	82	58	40	56	33.5	35	

Notes：

1、Default line length of transformer.

2、When using transformer named AKH-0.66/K-⌀ 10N,the installation position of the transformer shall be more than 0.5m away from the secondary transformer on site.

4.2 Wiring instructions

The wiring terminal is as shown in the figure below： the auxiliary power supply is connected to L and N terminals;the voltage signal lines of A,B and C are respectively connected to UA、UB and UC terminals;the UN terminal is connected to the terminal.

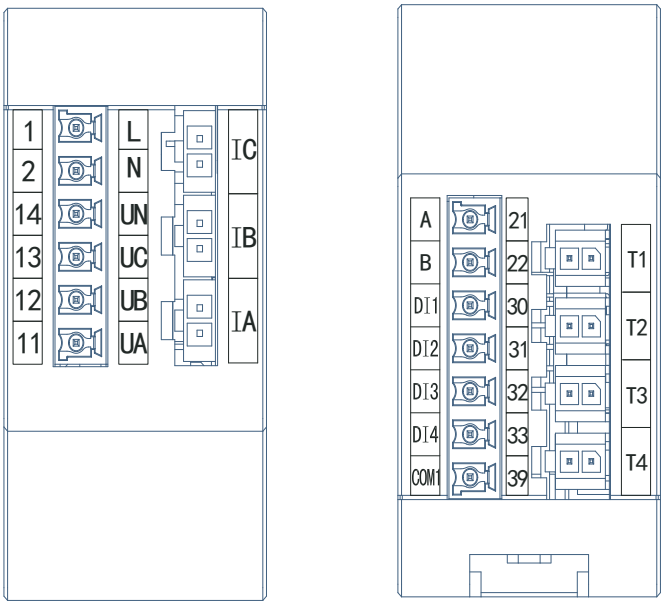
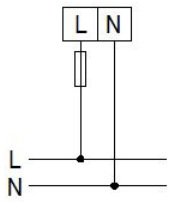


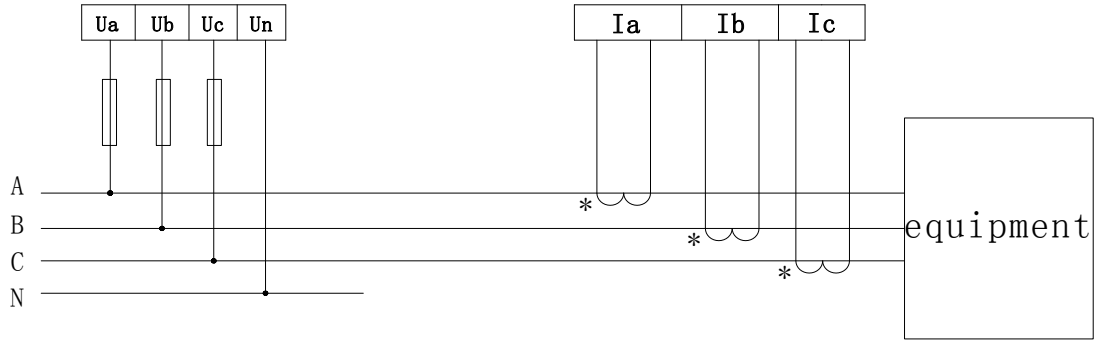
Figure 5 Main terminal

(1) Direct primary current access

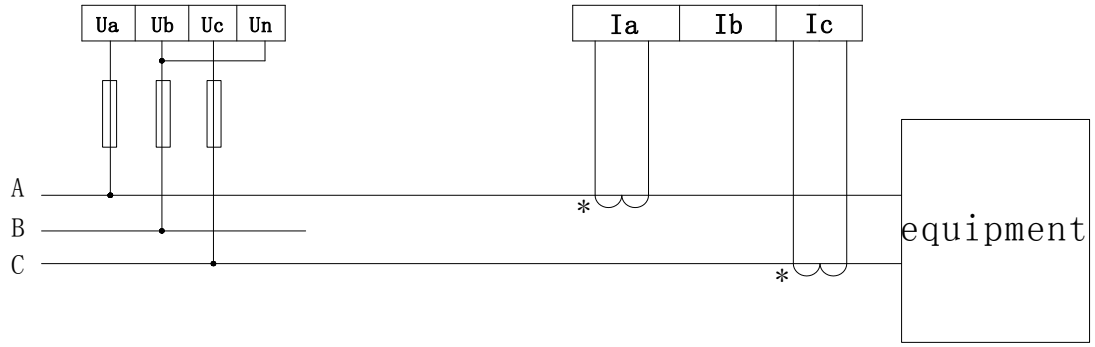


Auxiliary power supply

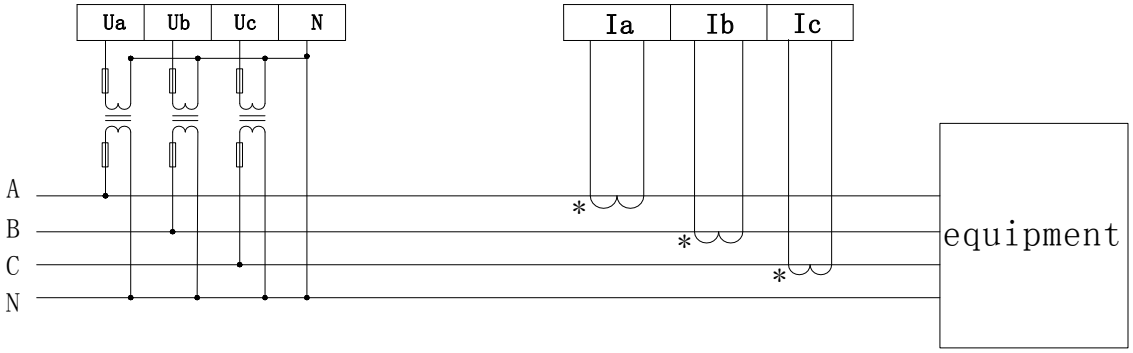
AC/DC 85V~265V



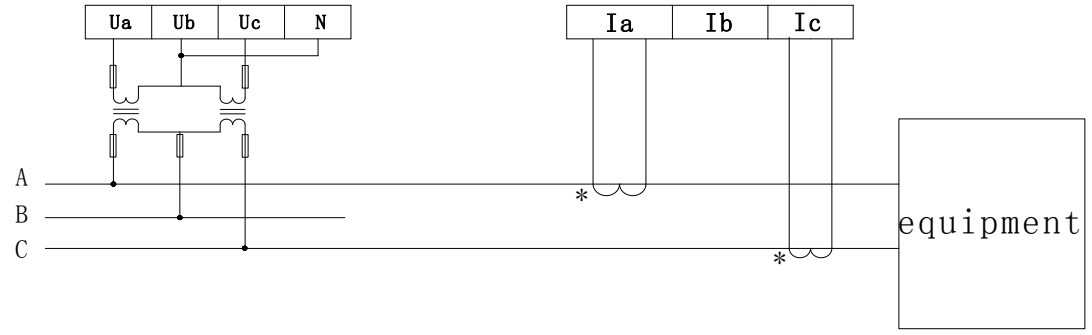
Three phase four wire



Three phase three wire

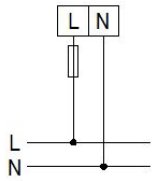


Three phase four wire(the voltage is connected through the transformer)



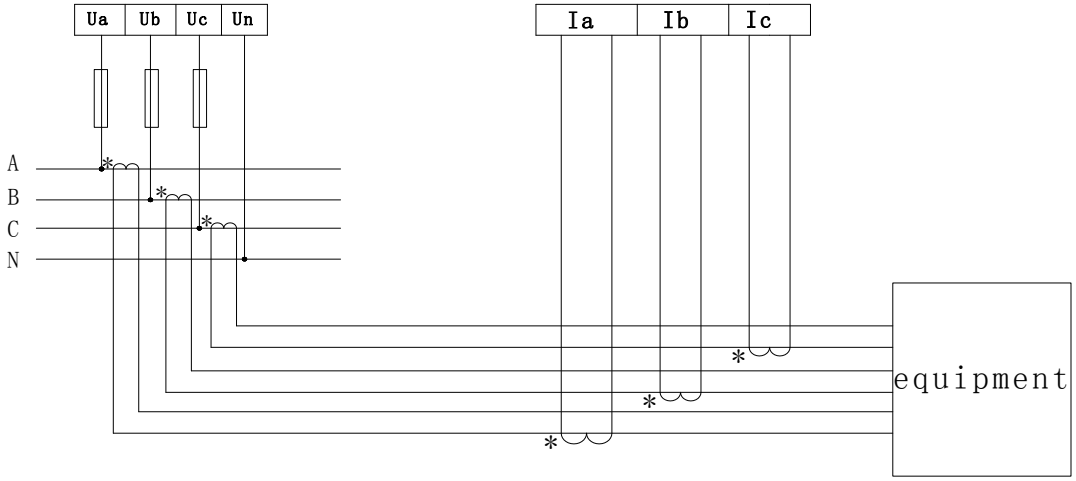
Three phase three wire(the voltage is connected through the transformer)

(2)Indirect secondary current access

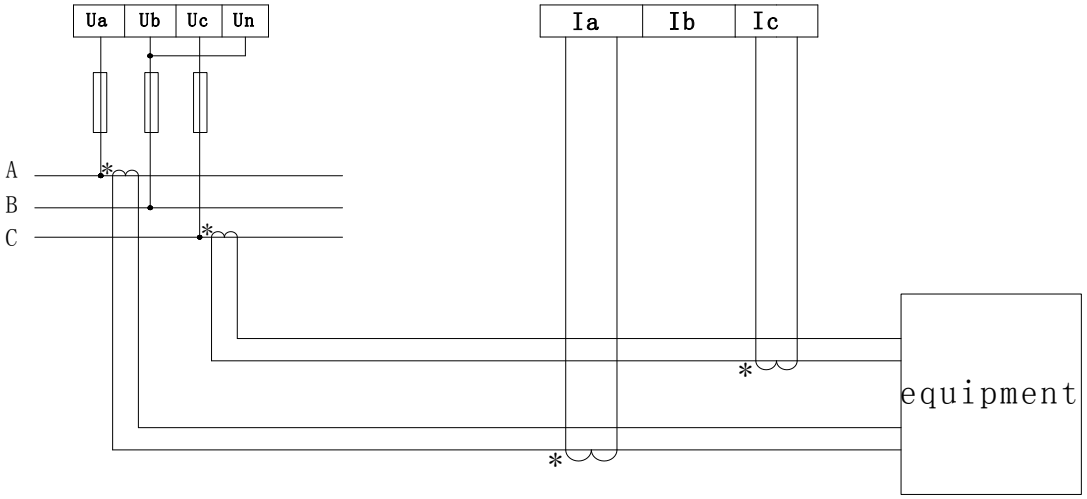


Auxiliary power supply

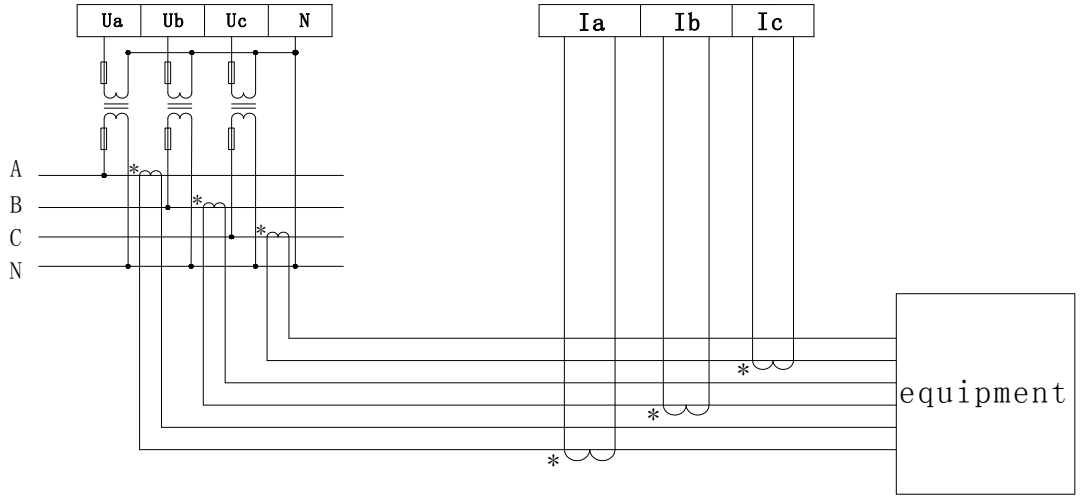
AC/DC 85V~265V



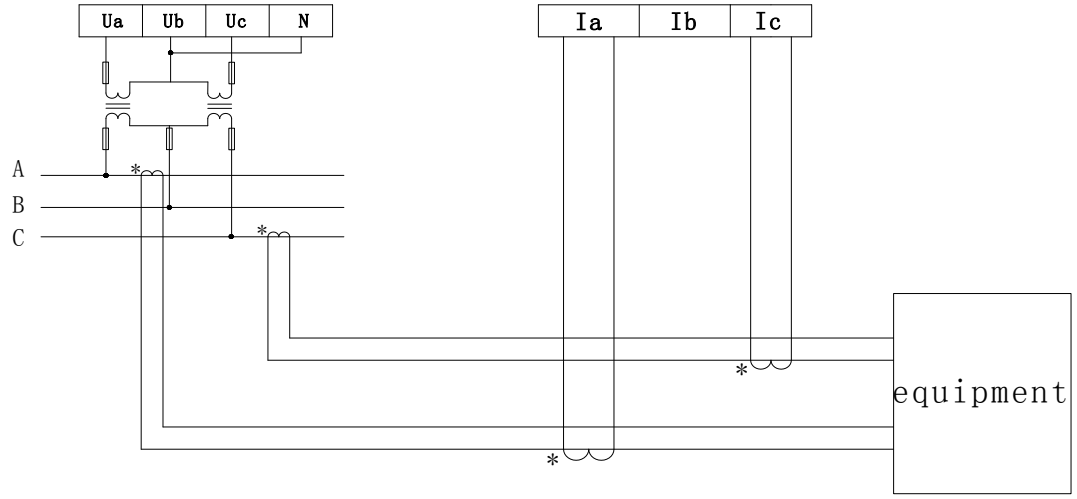
Three phase four wire



Three phase three wire



Three phase four wire(the voltage is connected through the transformer)



Three phase three wire(the voltage is connected through the transformer)

5 Operation and display

There are six LED Indicator lights on the front of ADW100 instrument,which is “L1”、“L2”、“L3”、“wireless”、“communication” and “pulse”.When the Auxiliary power supply terminals L and N are powered and RS485 communication is not carried out,the instrument communication light is always on;when there is external voltage input,the three indicator lights “L1”,“L2”and “L3” are on； when the power is accumulated, the “pulse” indicator light flashes；the “communication” indicator light flashes,it indicates that RS485 communication is in progress； when the“wireless” indicator light is on， it indicates that Lora communication is in progress.

6 Communication instructions

6.1 Appendix modbus register address

Initial address	Data item name	Length(bytes)	Read/ write	note

0000H	Mailing address	2	R/W	1～247
0001H	Baud rate	2	R/W	1：1200bps 2：2400bps 3：4800bps 4：9600bps
0002H	Spread spectrum factor	2	R/W	6~12
0003H	Channel settings	2	R/W	0-45(the master station with the same channel can communicate)
0004H	High bit：check mode,low bit：stop bit	2	R/W	High bit：0-no check、1-even check、2-odd check，low bit：0-1stop bit、1-2stop bit
0005H	Temperature measurement enable：0：turn off temperature measurement 1：turn on enable			
0006H	Pulse constant			
0007H	Demand period/slip time 0：15min/1min 1：30min/2min 2：45min/3min 3：60min/4min			
0008H	password			
0009H	High level system 0：3P4L 1：3P3L low eight bit reservation			
000AH~000CH	645 Form No（BCD code）			
000DH	Current specification 0：200A 1：400A 2：600A 3：6A			
000EH~0009H	reserve[3]			
0010H	N-line temperature,2020.11.10 add			
0011H~0013H	Time date(seconds、minutes、hours、days、months、years)			
0014H	Phase A voltage	2	R	Integer,Keep one decimal place,unit V （The actual data is divided by 10.The decimal places of the following data are processed with this method）
0015H	Phase B voltage	2	R	
0016H	Phase C voltage	2	R	
0017H	AB line voltage	2	R	
0018H	BC line voltage	2	R	
0019H	CA line voltage	2	R	
001AH	Phase A current	2	R	Integer,unit V Keep two decimal places
001BH	Phase B current	2	R	
001CH	Phase C current	2	R	
001DH	Three phase current vector sum	2	R	
001EH	Phase A active power	4	R	Integer signed,Unit kW Keep three decimal places
0020H	Phase B active power	4	R	
0022H	Phase C active power	4	R	
0024H	Total active power	4	R	
0026H	Phase A reactive power	4	R	Integer signed,Unit kVar Keep three decimal places
0028H	Phase B reactive power	4	R	
002AH	Phase C reactive power	4	R	
002CH	Total reactive power	4	R	
002EH	Phase A apparent power	4	R	Integer,Unit KVA Keep three decimal places
0030H	Phase B apparent power	4	R	
0032H	Phase C apparent power	4	R	

0034H	Total apparent power	4	R	
0036H	Phase A power factor	2	R	Integer Keep three decimal places
0037H	Phase B power factor	2	R	
0038H	Phase C power factor	2	R	
0039H	Total power factor	2	R	
003AH	One way DI status 0：no input 1：input			
003BH	Power frequency	2	R	Integer,Keep two decimal places
003CH	Total power consumption	4	R	Integer,Unit kWh Keep two decimal places
003EH	Positive active power consumption	4	R	
0040H	Reverse active power consumption	4	R	
0042H	Positive reactive power consumption	4	R	Integer,Unit kVarh Keep two decimal places
0044H	Reverse reactive power consumption	4	R	
0046H	Phase A total power consumption	4	R	Integer,Unit kWh Keep two decimal places
0048H	Phase A positive active power consumption	4	R	
004AH	Phase A reverse active power consumption	4	R	
004CH	Phase A positive reactive power consumption	4	R	Integer,Unit kVarh Keep two decimal places
004EH	Phase A reverse reactive power consumption	4	R	
0050H	Phase B total power consumption	4	R	Integer,Unit kWh Keep two decimal places
0052H	Phase B positive active power consumption	4	R	
0054H	Phase B reverse active power consumption	4	R	
0056H	Phase B positive reactive power consumption	4	R	Integer,Unit kVarh Keep two decimal places
0058H	Phase B reverse reactive power consumption	4	R	
005AH	Phase C total power consumption	4	R	Integer,Unit kWh Keep two decimal places
005CH	Phase C positive active power consumption	4	R	
005EH	Phase C reverse active power consumption	4	R	
0060H	Phase C positive reactive power consumption	4	R	Integer,Unit kVarh Keep two decimal places
0062H	Phase C reverse reactive power consumption	4	R	
0064H	Maximum positive active demand of current month	4	R	Integer,Unit KW Keep three decimal places
0066H~0067H	Occurrence time	4	R	minutes、hours、days、months
0068H	Maximum reverse active demand of current month	4	R	Integer,Unit kVar Keep three decimal places
006AH~006BH	Occurrence time	4	R	minutes、hours、days、months
006CH	Maximum positive reactive demand of current month	4	R	Integer,Unit kVar Keep three decimal places
006EH~006FH	Occurrence time	4	R	minutes、hours、days、months
0070H	Maximum reverse reactive demand of current month	4	R	Integer,Unit kVar Keep three decimal places
0072H~0073H	Occurrence time	4	R	minutes、hours、days、months
0074H	Phase A voltage total distortion rate	2	R	Total distortion rate of split phase voltage and current Integer Keep two decimal places
0075H	Phase B voltage total distortion rate	2	R	
0076H	Phase C voltage total distortion rate	2	R	
0077H	Phase A current total distortion rate	2	R	
0078H	Phase B current total distortion rate	2	R	

0079H	Phase C current total distortion rate	2	R	
007AH	Phase A voltage sub harmonic(2-31)	2×30	R	2-31th harmonic content of split phase voltage Integer Keep two decimal places
0098H	Phase B voltage sub harmonic(2-31)	2×30	R	
00B6H	Phase C voltage sub harmonic(2-31)	2×30	R	
00D4H	Phase A current sub harmonic(2-31)	2×30	R	2-31th harmonic content of split phase current Integer Keep two decimal places
00F2H	Phase B current sub harmonic(2-31)	2×30	R	
0110H	Phase C current sub harmonic(2-31)	2×30	R	
012EH	Phase A fundamental voltage	2	R	Integer,unit V Keep one decimal places
012FH	Phase B fundamental voltage	2	R	
0130H	Phase C fundamental voltage	2	R	
0131H	Phase A harmonic voltage	2	R	
0132H	Phase B harmonic voltage	2	R	
0133H	Phase C harmonic voltage	2	R	
0134H	Phase A fundamental current	2	R	Integer,unit A Keep two decimal places
0135H	Phase B fundamental current	2	R	
0136H	Phase C fundamental current	2	R	
0137H	Phase A harmonic current	2	R	
0138H	Phase B harmonic current	2	R	
0139H	Phase C harmonic current	2	R	
013AH	Phase A fundamental active power	4	R	Integer,unit KW Keep three decimal places
013CH	Phase B fundamental active power	4	R	
013EH	Phase C fundamental active power	4	R	
0140H	Total fundamental active power	4	R	
0142H	Phase A fundamental reactive power	4	R	Integer,unit kVar Keep three decimal places
0144H	Phase B fundamental reactive power	4	R	
0146H	Phase C fundamental reactive power	4	R	
0148H	Total fundamental reactive power	4	R	
014AH	Phase A harmonic active power	4	R	Integer,unit KW Keep three decimal places
014CH	Phase B harmonic active power	4	R	
014EH	Phase C harmonic active power	4	R	
0150H	Total harmonic active power	4	R	
0152H	Phase A harmonic reactive power	4	R	Integer,unit kVar Keep three decimal places
0154H	Phase B harmonic reactive power	4	R	
0156H	Phase C harmonic reactive power	4	R	
0158H	Total harmonic reactive power	4	R	
015AH	Current positive active demand	4	R	Integer,unit KW Keep three decimal places
015CH	Current reverse active demand	4	R	
015EH	Current positive reactive demand	4	R	Integer,unit kVar Keep three decimal places
0160H	Current reverse reactive demand	4	R	
0162H	Voltage unbalance	2	R	Integer Unit 0.01%
0163H	Current unbalance	2	R	
0164H	Phase A temperature	2	R	Integer Unit 0.1℃
0165H	Phase B temperature	2	R	

0166H	Phase C temperature	2	R	
0167H	Time zone time period table number/time zone date：day	2	R/W	Time zone table
0168H	time zone date：month/time zone time period table number	2	R/W	
0169H	time zone date：day/time zone date：month	2	R/W	
016AH	Time zone time period table number/time zone date：day	2	R/W	
016BH	time zone date：month/time zone time period table number	2	R/W	
016CH	time zone date：day/time zone date：month	2	R/W	
016DH	Rate number of period 1/start of period 1：minutes	2	R/W	1#time table
016EH	start of period 1：hours/Rate number of period 2	2	R/W	
016FH	start of period 2：minutes/start of period2：hours	2	R/W	
0170H	Rate number of period 3/start of period 3：minutes	2	R/W	
0171H	start of period 3：hours/Rate number of period 4	2	R/W	
0172H	start of period 4：minutes/start of period4：hours	2	R/W	
0173H	Rate number of period 5/start of period 5：minutes	2	R/W	
0174H	start of period 5：hours/Rate number of period 6	2	R/W	
0175H	start of period 6：minutes/start of period6：hours	2	R/W	
0176H	Rate number of period 7/start of period 7：minutes	2	R/W	
0177H	start of period 7：hours/Rate number of period 8	2	R/W	
0178H	start of period 8：minutes/start of period8：hours	2	R/W	
0179H	Rate number of period 9/start of period 9：minutes	2	R/W	
017AH	start of period9：hours/Rate number of period 10	2	R/W	
017BH	start of period 10：minutes//start of period 10：hours	2	R/W	
017CH	Rate number of period 11/start of period 11：minutes	2	R/W	
017DH	start of period 11：minutes/Rate number of period 12	2	R/W	
017EH	start of period 12：minutes/start of period 12：hours	2	R/W	
017FH	Rate number of period 13/start of period 13：minutes	2	R/W	
0180H	start of period 13：minutes/Rate number of period 14	2	R/W	
0181H	start of period 14：minutes/start of period 14：hours	2	R/W	
0182H	Rate number of period 1/start of period 1：	2	R/W	2#time table

	minutes			
0183H	start of period 1：hours/Rate number of period 2	2	R/W	
0184H	start of period 2：minutes/start of period2：hours	2	R/W	
0185H	Rate number of period 3/start of period 3：minutes	2	R/W	
0186H	start of period 3：hours/Rate number of period 4	2	R/W	
0187H	start of period 4：minutes/start of period4：hours	2	R/W	
0188H	Rate number of period 5/start of period 5：minutes	2	R/W	
0189H	start of period 5：hours/Rate number of period 6	2	R/W	
018AH	start of period 6：minutes/start of period6：hours	2	R/W	
018BH	Rate number of period 7/start of period 7：minutes	2	R/W	
018CH	start of period 7：hours/Rate number of period 8	2	R/W	
018DH	start of period 8：minutes/start of period8：hours	2	R/W	
018EH	Rate number of period 9/start of period 9：minutes	2	R/W	
018FH	start of period9：hours/Rate number of period 10	2	R/W	
0190H	start of period 10：minutes//start of period 10：hours	2	R/W	
0191H	Rate number of period 11/start of period 11：minutes	2	R/W	
0192H	start of period 11：minutes/Rate number of period 12	2	R/W	
0193H	start of period 12：minutes/start of period 12：hours	2	R/W	
0194H	Rate number of period 13/start of period 13：minutes	2	R/W	
0195H	start of period 13：minutes/Rate number of period 14	2	R/W	
0196H	start of period 14：minutes/start of period 14：hours	2	R/W	
0197H	Current total active tip energy	4	R	Integer,unit kWh Keep two decimal places
0199H	Current total active peak energy	4	R	
019BH	Current total active flat energy	4	R	
019DH	Current total active valley energy	4	R	
019FH	Current positive active tip energy	4	R	
01A1H	Current positive active peak energy	4	R	
01A3H	Current positive active flat energy	4	R	
01A5H	Current positive active valley energy	4	R	
01A7H	Current reverse active tip energy	4	R	
01A9H	Current reverse active peak energy	4	R	
01ABH	Current reverse active flat energy	4	R	
01ADH	Current reverse active valley energy	4	R	
01AFH	Current positive reactive tip energy	4	R	Integer,unit kVarh

01B1H	Current positive reactive peak energy	4	R	Keep two decimal places
01B3H	Current positive reactive flat energy	4	R	
01B5H	Current positive reactive valley energy	4	R	
01B7H	Current reverse reactive tip energy	4	R	
01B9H	Current reverse reactive peak energy	4	R	
01BBH	Current reverse reactive flat energy	4	R	
01BDH	Current reverse reactive valley energy	4	R	
01BFH	Wireless signal strength	2	R	
01C0H	Monthly freezing time	2	R/W	
01C1H~01C7H	Wireless meter reading serial number(14 bit ASCII code)		R/W	
01C9H	Total reactive energy	4	R	Unsigned integer,unit Kvarh，Keep two decimal places
01CBH	First quadrant reactive energy	4	R	
01CDH	Second quadrant reactive energy	4	R	
01CFH	Third quadrant reactive energy	4	R	
01D1H	Fourth quadrant reactive energy	4	R	
01D3H	Phase A power angle	2	R	signed integer Keep two decimal places
01D4H	Phase B power angle	2	R	
01D5H	Phase C power angle	2	R	
01D6H	Temperature in instrument	2	R	2020.11.10 add
200H-2003H	Reserved(maximum number of ADC samples)	2	R	
204H-205H	Unbalanced state of voltage and current	2	R	
206H-208H	Modify current phase sequence(A、B、C)	2	R/W	

Historical electric energy：historical electric energy of last December(monthly freezing time can be set).

6.2 Reading mode of electric energy in last December

the table as follows：

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

Interval first address(low byte)	Data type
00H	Record date time
03H	Historical combined total active electric energy
05H	Historical total positive active electric energy
07H	Historical total reverse active electric energy
09H	Historical total positive reactive electric energy
0BH	Historical total reverse reactive electric energy
0DH	Phase A combined total active electric energy
0FH	Phase A total positive active electric energy
11H	Phase A total reverse active electric energy
13H	Phase A total positive reactive electric energy
15H	Phase A total reverse reactive electric energy
17H	Phase B combined total active electric energy
19H	Phase B total positive active electric energy

1BH	Phase B total reverse active electric energy
1DH	Phase B total positive reactive electric energy
1FH	Phase B total reverse reactive electric energy
21H	Phase C combined total active electric energy
23H	Phase C total positive active electric energy
25H	Phase C total reverse active electric energy
27H	Phase C total positive reactive electric energy
29H	Phase C total reverse reactive electric energy
2BH	Current total active tip energy
2DH	Current total active peak energy
2FH	Current total active flat energy
31H	Current total active valley energy
33H	Current positive active tip energy
35H	Current positive active peak energy
37H	Current positive active flat energy
39H	Current positive active valley energy
3BH	Current reverse active tip energy
3DH	Current reverse active peak energy
3FH	Current reverse active flat energy
41H	Current reverse active valley energy
43H	Current positive reactive tip energy
45H	Current positive reactive peak energy
47H	Current positive reactive flat energy
49H	Current positive reactive valley energy
4BH	Current reverse reactive tip energy
4DH	Current reverse reactive peak energy
4FH	Current reverse reactive flat energy
51H	Current reverse reactive valley energy

6.3 Extreme value record of last March

Maximum record：

Interval first address(high byte)	Historical data type
04	Record of extreme value and occurrence time of the month
05	Record of extreme value and occurrence time of last month
06	Record of extreme value and occurrence time of last two month
07	Record of extreme

Interval offset address(low byte)	Data type
00	Maximum value of phase A voltage and record of occurrence time
03	Maximum value of phase B voltage and record of occurrence time
06	Maximum value of phase C voltage and record of occurrence time
09	Maximum value of AB line voltage and record

	value and occurrence time of last three month

	of occurrence time
0C	Maximum value of BC line voltage and record of occurrence time
0F	Maximum value of CA line voltage and record of occurrence time
12	Maximum value of phase A current and record of occurrence time
15	Maximum value of phase B current and record of occurrence time
18	Maximum value of phase C current and record of occurrence time
1B	Three phase current vector sum maximum and record of occurrence time
1E	Maximum active power of phase A and record of occurrence time
22	Maximum active power of phase B and record of occurrence time
26	Maximum active power of phase C and record of occurrence time
2A	Maximum total active power and record of occurrence time
2E	Maximum reactive power of phase A and record of occurrence time
32	Maximum reactive power of phase B and record of occurrence time
36	Maximum reactive power of phase C and record of occurrence time
3A	Maximum total reactive power and record of occurrence time
3E	Maximum apparent power of phase A and record of occurrence time
42	Maximum apparent power of phase B and record of occurrence time
46	Maximum apparent power of phase C and record of occurrence time
4A	Maximum total apparent power and record of occurrence time

Minimum record：

Interval first address(high byte)	Historical data type
04	Record of extreme value

Interval offset address(low byte)	Data type
4E	Minimum value of phase A voltage and

	and occurrence time of the month
05	Record of extreme value and occurrence time of last month
06	Record of extreme value and occurrence time of last two month
07	Record of extreme value and occurrence time of last three month

	record of occurrence time
51	Minimum value of phase B voltage and record of occurrence time
54	Minimum value of phase C voltage and record of occurrence time
57	Minimum value of AB line voltage and record of occurrence time
5A	Minimum value of BC line voltage and record of occurrence time
5D	Minimum value of CA line voltage and record of occurrence time
60	Minimum value of phase A current and record of occurrence time
63	Minimum value of phase B current and record of occurrence time
66	Minimum value of phase C current and record of occurrence time
69	Three phase current vector sum minimum and record of occurrence time
6C	Minimum active power of phase A and record of occurrence time
70	Minimum active power of phase B and record of occurrence time
74	Minimum active power of phase C and record of occurrence time
78	Minimum total active power and record of occurrence time
7C	Minimum reactive power of phase A and record of occurrence time
80	Minimum reactive power of phase B and record of occurrence time
84	Minimum reactive power of phase C and record of occurrence time
88	Minimum total reactive power and record of occurrence time
8C	Minimum apparent power of phase A and record of occurrence time
90	Minimum apparent power of phase B and record of occurrence time

94	Minimum apparent power of phase C and record of occurrence time
98	Minimum total apparent power and record of occurrence time

Notes：the record length of each extreme value and occurrence time is 3 words,and the specific data arrangement is shown in the table below：

Register address	Event name	Data type	remarks
0400H	Maximum value of phase A voltage and record of occurrence time	Extreme value specific data	Refer to 6.2 address table for specific data types and decimal places
0401H		The time of occurrence	The high byte is minute
0402H		Day and month of occurrence	The high byte is day

7 common troubleshooting

analysis and elimination of common faults

fault content	analysis	note
Poor power on	Check whether the power supply voltage is within the working voltage range	
Incorrect reading of voltage and current	Check whether the voltage and current ratio setting is correct Check whether the wiring mode setting is consistent with the actual situation Check whether the the voltage transformer and current transformer are in good condition	
Incorrect power or power factor	Check whether the wiring mode setting is consistent with the actual situation Check whether the voltage and current phase sequence is correct Check whether the wiring is correct	
Abnormal communication	Check whether the address ,baud rate and check bit in the communication setting are consistent with the upper computer Check whether the RS485 converter s normal Connect more than 120 ohm resistance in parallel at the communication terminal Check whether the wiring is correct	

manual revision record

date	old version	new version	modification content
2020.11		V1.0	1.write for the first time

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