

# AMC300L AC Multi-loop Intelligent Power Collection and Monitoring Device

Installation and Operation Manual V1.4

## **Declaration**

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# 1 Overview

The AMC300L AC multi-loop intelligent power collection and monitoring device is mainly used for full electrical parameter measurement of multiple loops and can be connected to up to 6 three-phase loops or 18 single-phase loops with current input at the same time. It can measure voltage and current, power, power factor and other parameters.

## 2 Product Model Functions

### 2.1 Meter Model Functions

Table 1 Meter Model Functions

Meter Model	Basic Functions
AMC300L-4E3	Simultaneous access to 4 three-phase AC circuits, direct measurement of voltage, current, power, power factor, 6 switching inputs (2 active, 4 passive), 2 switching outputs, 1 RS485
AMC300L-6E3	Simultaneous access to 6 three-phase AC circuits, direct measurement of voltage, current, power, power factor, 6 switching inputs (2 active, 4 passive), 2 switching outputs, 2 NTC temperature measurement, 1 RS485

### 2.2 Product Specific Functions

- 1、 Up to 6 three-phase or 18 single-phase circuits with full electrical parameter measurement, external current transformer;
- 2、 Monitor the individual phase voltage/current, zero sequence current, frequency;
- 3、 Monitor the power of each phase, total power (active, reactive, apparent);
- 4、 Monitor the power factor of each phase, total power factor, and four quadrant electrical energy statistics;
- 5、 LCD display with storage of historical power data and historical alarm information:
  - a. History data is saved once a day at zero time by default, 1000 pieces storage of each data (total active energy, total active power, three-phase current).
  - b. The on-site storage interval for historical data is 15 minutes. 5000 pieces of each data (total active electric energy, total active power, three-phase current) stored in each circuit.
  - c. Monthly historical electricity data on meter reading days, with a storage quantity of 24 pieces.
  - d. Historical alarm information is stored in real-time, with a storage capacity of 500 pieces.
- 6、 Support alarm outputs such as overvoltage, overcurrent, phase failure, DI linkage, etc;
- 7、 Four passive switching inputs, two active switching inputs, and two switching outputs;
- 8、 Standard configuration with one RS485 communication channel, optional Modbus-RTU protocol or YD/T 1363 protocol;
- 9、 Supports 4G or NB communication;
- 10、 2-way NTC measurement;

## 3 Mating Transformers

The current transformer has a crystal head interface, the primary side current is 50A-600A, if the current transformer is different, users can modify the current ratio through the meter interface or communication according to the actual use. Transformer as shown in Figure 1, Figure 2; supporting current transformer as shown in Table 2.

The total length is 1+0.5M, and in the 0.5M section, it is divided into three lines: red, green, and yellow. Among them, yellow is phase A, green is phase B, and red is phase C. The connection terminal with the instrument adopts the network cable port, and the definition of the terminal is as follows:



Figure 1

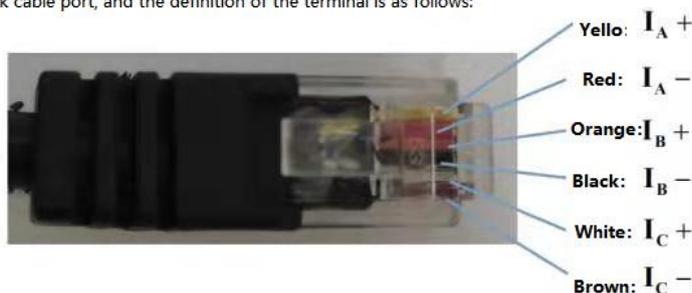


Figure 2

Table 2 AMC300L mating current transformers

Type	Ratio	Wire length	Accuracy	Installation method
AKH-0.66/W-9NY 50A/20mA	50A/20mA	(1+0.2) m	0.2 Class	Closed type, RJ interface
AKH-0.66/K-Φ10N 50A/20mA	50A/20mA	(1+0.2) m	0.5 Class	Split type, RJ interface
AKH-0.66 Z-3/*Φ15Y(1/0.5) 100A/50mA	100A/50mA	(1+0.5) m	0.2 Class	Closed type, trinity, RJ interface
AKH-0.66/W-12NY 100A/50mA	100A/50mA	(1+0.2) m	0.2 Class	Closed type, RJ interface
AKH-0.66/K-Φ16N 100A/50mA	100A/50mA	(1+0.2) m	0.5 Class	Split type, RJ interface
AKH-0.66/W-20Y 200A/50mA	200A/50mA	(1+0.5) m	0.2 Class	Closed type, RJ interface
AKH-0.66/K-Φ24N 200A/50mA	200A/50mA	(1+0.5) m	0.5 Class	Split type, RJ interface
AKH-0.66/W-20Y(1/0.5) 250A/50mA	250A/50mA	(1+0.5) m	0.2 Class	Closed type, RJ interface
AKH-0.66/W-30NY 250A/50mA	250A/50mA	(1+0.5) m	0.2 Class	Closed type, RJ interface
AKH-0.66/K-Φ24N 250A/50mA	250A/50mA	(1+0.5) m	0.5 Class	Split type, RJ interface
AKH-0.66-TD-Φ60-NY	400A/50mA	(1+0.5) m	0.2 Class	Closed type, RJ interface
AKH-0.66/K-Φ36N 400A/50mA	400A/50mA	(1+0.5) m	0.5 Class	Split type, RJ interface
AKH-0.66-TD-Φ60-NY	600A/50mA	(1+0.5) m	0.2 Class	Closed type, RJ interface
AKH-0.66/K-Φ36N 600A/50mA	600A/50mA	(1+0.5) m	0.5 Class	Split type, RJ interface

**Note: Special transformers can be specifically consulted and contacted.**

#### 4 Technical Parameter

Table 3 Technical Parameter

Technical Parameter		Indicators	
Input	Frequency	45~65Hz;	
	Voltage	Rated value: AC 3×220V/380V;	
		Overload: 1.2 times the rated value (continuous); 2 times the rated value/1 second;	
		Power consumption: ≤ 0.5VA (per circuit);	
	Current	Rated value: AC 100A;	
		Overload: 1.2 times the rated value (continuous); 10 times rated value/1 second;	
Power consumption: ≤ 0.5VA (per circuit);			
Function	Reserved pulse output	Output mode: optocoupler pulse with Open collector;	
	Communication	Modbus RTU protocol ; Baud 1200~38400	
	Switch-ing	input	4 dry contact inputs, 2 active (AC 220V input)
		output	Output method: relay normally open contact output; Contact capacity: AC 250V/3A DC 30V/3A;
	Temperature	Temperature: -20-100 °C (accuracy ± 2 °C)	
Measurement accuracy		Frequency 0.05Hz, voltage and current level 0.5, active energy level 1	
Auxiliary power supply		AC/DC 85 to 265V; power consumption ≤ 10VA;	
Security	power-frequency withstand voltage	>AC 2kV/1min;	
	insulation	Input and output terminals to casing>100M Ω;	

	resistance	
Environment		Working temperature:-20°C~+60°C; Storage temperature:-40°C~+70°C; Relative humidity:≤ 95% without condensation; Altitude: ≤ 2500m;
Electromagnetic compatibility		Surge (impact) immunity test level 4;
		Electrostatic discharge immunity test level 3
		Electrical fast transient pulse group immunity test level 3

## 5 Outline dimensions and Installation Instructions

### 5.1 Shape and Installation Opening Dimensions

(unit: mm)

Table 4 Meter Size

Type	Frame size		Shell size			Opening size	
	Width	Height	Width	Height	Depth	Width	Height
AMC300L	96	96	86.5	86.5	77.8	88	88

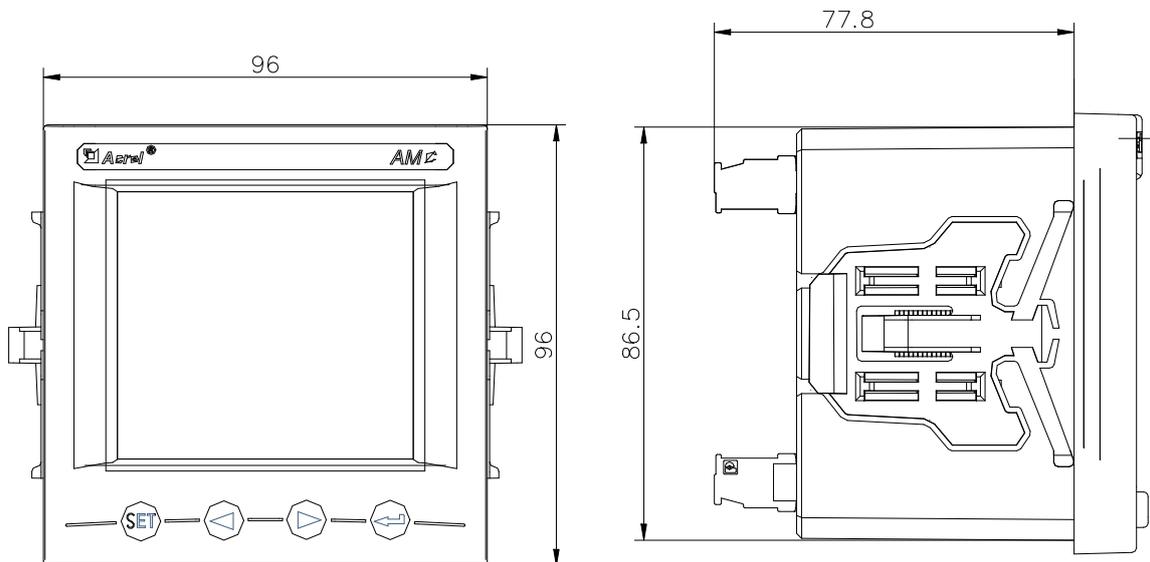


Figure 3 AMC300L Shape and Dimension

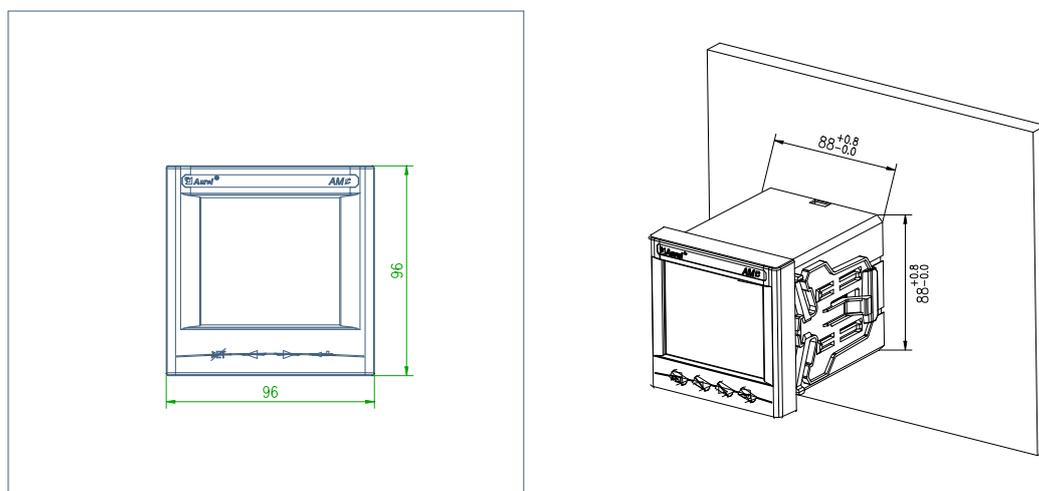


Figure 4 AMC300L Installation Size

### 5.2 Installation Method

- 1) Opening holes in fixed distribution cabinets;
- 2) Take out the instrument and remove the clip;
- 3) Install the meter into the installation hole from the front, as shown in Figure 5;
- 4) Insert the meter clip to secure the meter, as shown in Figure 6.

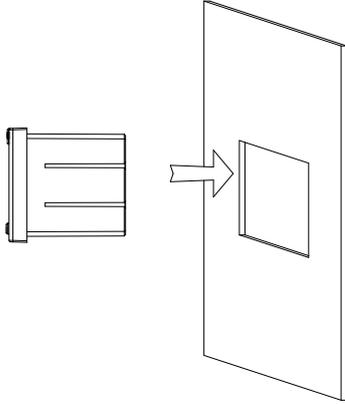


Figure 5

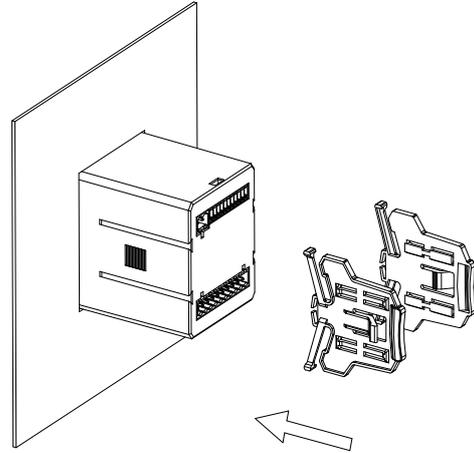


Figure 6

### 5.3 Wiring Instructions

The wiring terminals are shown in the following figure

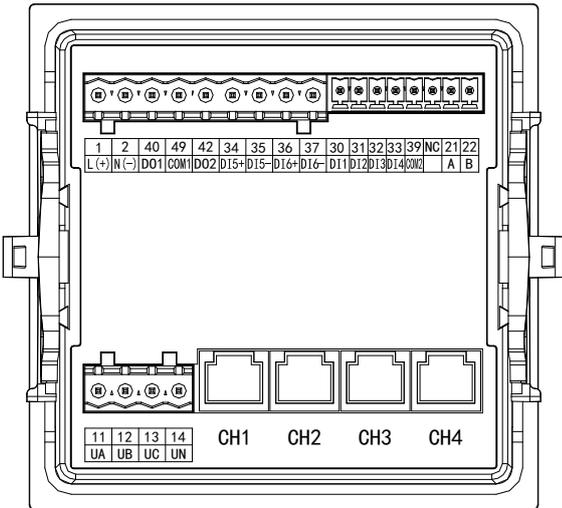


Figure 7 AMC300L-4E3 wiring terminal diagram

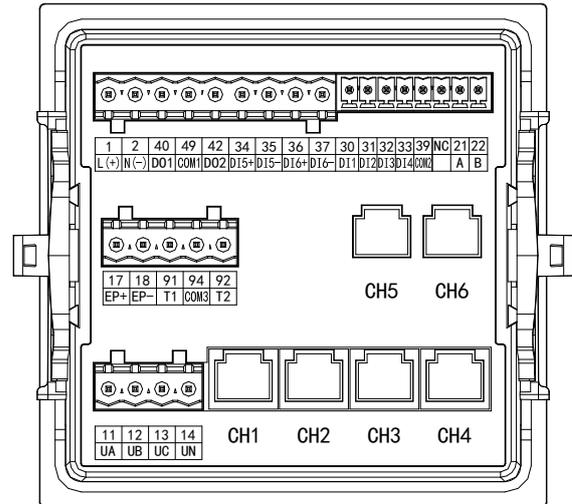


Figure8 AMC300L-6E3 wiring terminal diagram

Table 5 Terminal Description

Terminal number	Definition	Description	Remark
1	L(+)	Auxiliary power supply	AC/DC 85-265V
2	N(-)		
11	UA	Voltage input	AC 3*220V/380V
12	UB		
13	UC		
14	UN		
17	EP+	Pulse output	AMC300L-6E3 use
18	EP-		
21	A	Communication	RS485 communication

22	B		
34	DI5+	<b>Active switching input</b>	<b>Two AC 220V mains or oil engine signal connections</b>
35	DI5-		
36	DI6+		
37	DI6-		
30	DI1		
31	DI2	Switching input	Passive dry contact input
32	DI3		
33	DI4		
39	COM2		
40	D01		
42	DO2	Relay output	Normally open contact output; Contact capacity: AC 250V/3A DC 30V/3A;
49	COM1		
91	T1		
92	T2	NTC Temperature measurement	Temperature measurement range -20-100 °C (accuracy $\pm 2$ °C)
94	COM3		
	CH1-CH6	Number of current circuits	CHx represents a three-phase current circuit, AMC300L-4E3 connected to a maximum of four three-phase circuits; AMC300L-6E3 can be connected to up to 6 three-phase circuits

Wiring method (the diagram below shows the AMC300L-4E3 as an example, the same for the AMC300L-6E3)

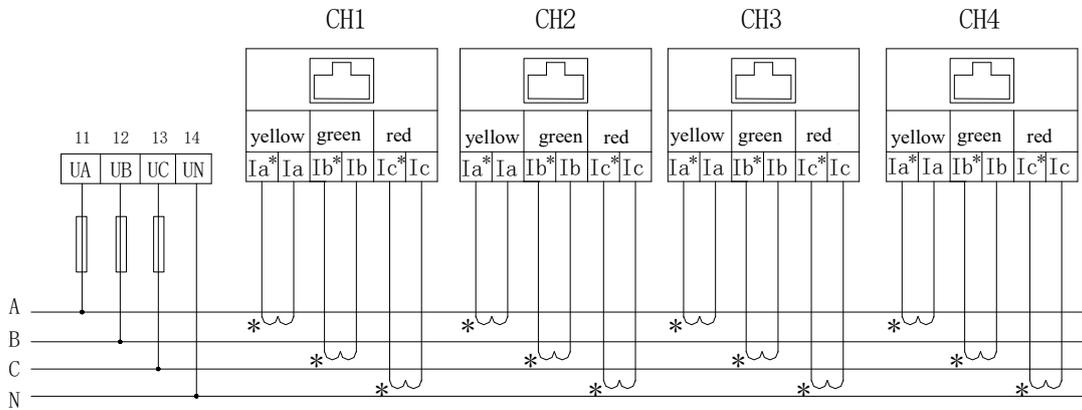


Figure 9 Direct connection of three-phase four wire voltage and current

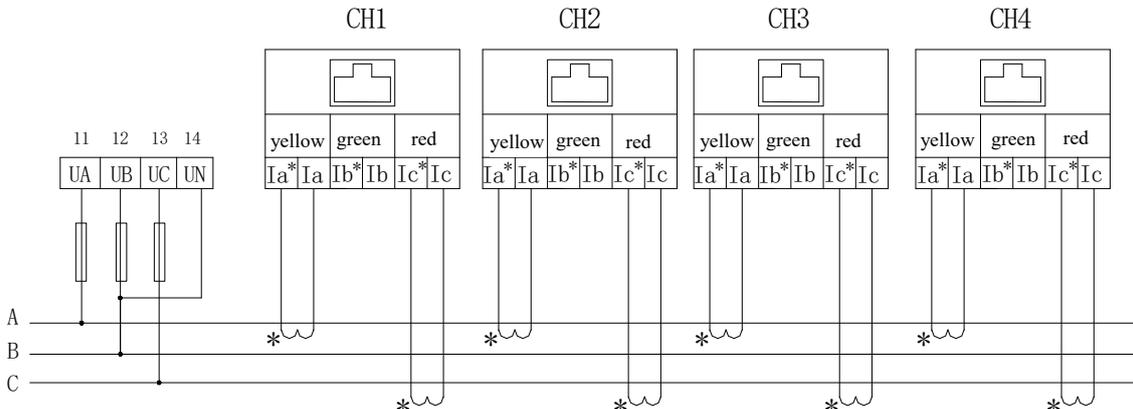


Figure 10 Direct connection of three-phase three wire voltage and current

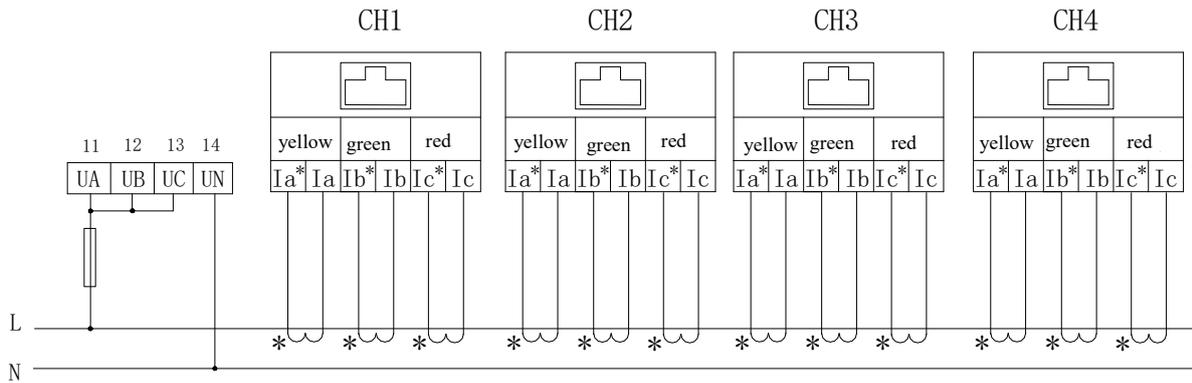
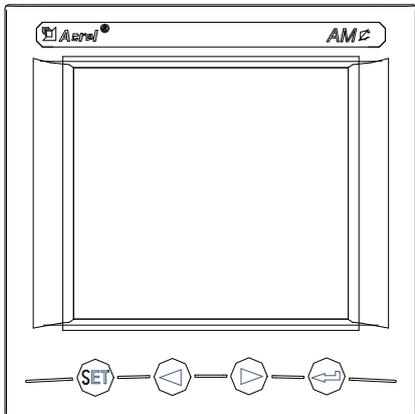


Figure 11 Direct connection of single phase voltage and current

## 6 Operation Instructions

### 6.1 Panel and Key Function Instructions

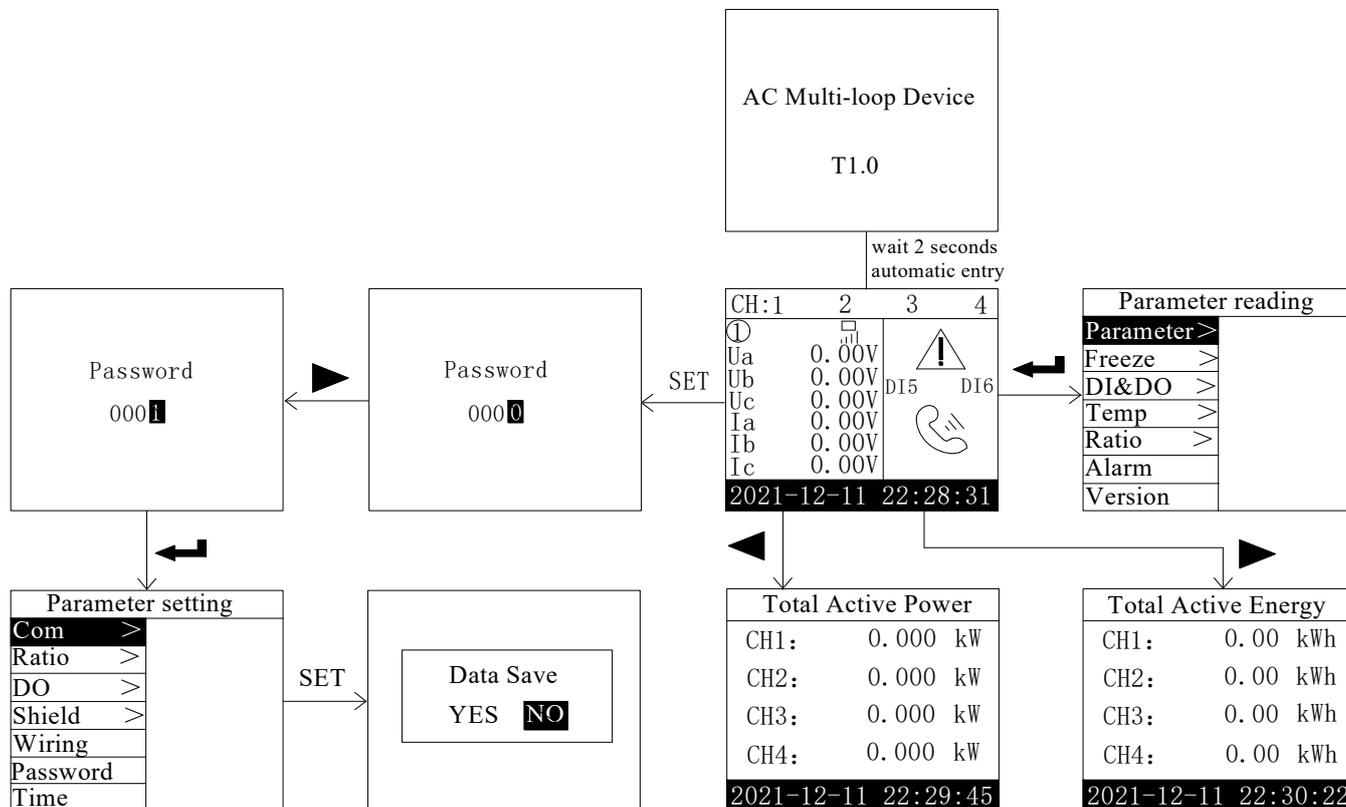
<b>Panel diagram</b>	
	
SET Key(SET)	In measurement mode, press this key to enter parameter setting mode. The instrument prompts for the password PASS. After entering the correct password (0001), parameter settings can be performed on the instrument; In parameter mode, pressing this key to save or not to save data can be used to return to the previous menu level;
Left click( ◀ )	In measurement mode, used to switch display items; In parameter setting mode, used for menu item selection and parameter digit switching selection
Right click( ▶ )	In measurement mode, used to switch display items; In parameter setting mode, it is used for selecting menu items and increasing the numerical values of each digit.
Enter key( ↵ )	In measurement mode, used for parameter viewing; In parameter setting mode, used for confirmation of menu item selection and parameter modification.

**Note:** The difference between the display interface of AMC300L-4E3 and AMC300L-6E3 is that the current circuit has 4 channels (CH1-CH4) and 6 channels (CH1-CH6). The following 6.2 to 6.4 instructions take the instrument of 4E3 as an example.

### 6.2 Power-up Operation And Display Instruction

After powering on, the startup interface displays as an AC Multi-loop Device; After waiting for 2s in the power-on interface, it will automatically enter the basic parameter display interface of the circuit: (1) Press SET to enter the

password interface, press the right key to enter the password "0001", press Enter key to enter the parameter setting interface (the parameter setting options will be specifically described in 6.4), press SET to enter the data saving interface, and you can switch the cursor to choose whether to save or not with the Left and Right keys; (2) Press the Left key to enter the parameter display interface of total active power; (3) Press the Right key to enter the parameter display interface of total active energy; (4) Press Enter key to enter the Parameter reading screen (the Parameter reading options will be specified in 6.3). The operation flowchart is shown in the following figure.



The basic parameter display interface of the circuit is explained in the following figure.

CH:1	2	3	4
①	□	!	
Ua	0.00V		
Ub	0.00V	DI5	DI6
Uc	0.00V		
Ia	0.00V		
Ib	0.00V		
Ic	0.00V		
2021-12-11 22:28:31			

- CH1-CH4: 4 circuits  
 (CH1: When displayed as white text on a black background, it indicates power display)  
 ①: First circuit  
 □: Platform connection (only available when the model is 4G or NB)  
 |||: Signal value (only available when the model is 4G or NB)  
 !: Alarm  
 DI5、DI6: Active input  
 (DI5: When displayed as white text on a black background, it indicates that active input has a signal)  
 ☎: RS485 communication

### 6.3 Parameter reading interface Instruction

#### 6.3.1 Parameter Instruction

Enter the main interface, and the cursor is on the parameter by default. Press the Enter key to enter the parameter interface to view information; The electric parameter column contains phase voltage, line voltage, current, active power, reactive power, apparent power, power factor, frequency, total active, total reactive, positive active, reverse active, positive reactive, reverse reactive (users can view the specific information of each parameter through the Enter key and the Left and Right keys, and the default display is the first circuit).

Parameter reading	
Parameter >	
Freeze >	
DI&DO >	
Temp >	
Ratio >	
Alarm >	
Version >	

SET ↗

Parameter reading	
Parameter >	Phase U
Freeze >	Line U
DI&DO >	I
Temp >	p
Ratio >	Q
Alarm >	S
Version >	PF

Phase Voltage	
Ua	0.00V
Ub	0.00V
Uc	0.00V

Parameter reading	
Parameter >	Phase U
Freeze >	Line U
DI&DO >	I
Temp >	p
Ratio >	Q
Alarm >	S
Version >	PF

Line Voltage	
Uab	0.00V
Ubc	0.00V
Uca	0.00V

Parameter reading	
Parameter >	Phase U
Freeze >	Line U
DI&DO >	I
Temp >	p
Ratio >	Q
Alarm >	S
Version >	PF

CH1 Current	
Ia	0.000A
Ib	0.000A
Ic	0.000A
Io	0.000A

Parameter reading	
Parameter >	Phase U
Freeze >	Line U
DI&DO >	I
Temp >	p
Ratio >	Q
Alarm >	S
Version >	PF

CH1 Active Power	
Pa:	0.000kW
Pb:	0.000kW
Pc:	0.000kW
Ps:	0.000kW

Parameter reading	
Parameter >	Phase U
Freeze >	Line U
DI&DO >	I
Temp >	p
Ratio >	Q
Alarm >	S
Version >	PF

CH1 Reactive Power	
Qa:	0.000kvar
Qb:	0.000kvar
Qc:	0.000kvar
Qs:	0.000kvar

Parameter reading	
Parameter >	Phase U
Freeze >	Line U
DI&DO >	I
Temp >	p
Ratio >	Q
Alarm >	S
Version >	PF

CH1 Apparent Power	
Sa:	0.000kVA
Sb:	0.000kVA
Sc:	0.000kVA
Ss:	0.000kVA

Parameter reading	
Parameter >	Phase U
Freeze >	Line U
DI&DO >	I
Temp >	p
Ratio >	Q
Alarm >	S
Version >	PF

CH1 Power Factor	
PFa:	0.000
PFb:	0.000
PFc:	0.000
PFs:	0.000

Parameter reading	
Parameter >	F
Freeze >	EPS
DI&DO >	EQS
Temp >	EPSP
Ratio >	EPSN
Alarm >	EQSP
Version >	EQSN

CH1 Reverse Reactive	
A:	0.00kvarh
B:	0.00kvarh
C:	0.00kvarh
Sum:	0.00kvarh

Parameter reading	
Parameter >	PF
Freeze >	F
DI&DO >	EPS
Temp >	EQS
Ratio >	EPSP
Alarm >	EPSN
Version >	EQSP

CH1 Positive Reactive	
A:	0.00kvarh
B:	0.00kvarh
C:	0.00kvarh
Sum:	0.00kvarh

Parameter reading	
Parameter >	S
Freeze >	PF
DI&DO >	F
Temp >	EPS
Ratio >	EQS
Alarm >	EPSP
Version >	EPSN

CH1 Reverse Active	
A:	0.00kwh
B:	0.00kwh
C:	0.00kwh
Sum:	0.00kwh

Parameter reading	
Parameter >	Q
Freeze >	S
DI&DO >	PF
Temp >	F
Ratio >	EPS
Alarm >	EQS
Version >	EPSP

CH1 Positive Active	
A:	0.00kwh
B:	0.00kwh
C:	0.00kwh
Sum:	0.00kwh

Parameter reading	
Parameter >	P
Freeze >	Q
DI&DO >	S
Temp >	PF
Ratio >	F
Alarm >	EPS
Version >	EQS

CH1 Total Reactive	
A:	0.00kvarh
B:	0.00kvarh
C:	0.00kvarh
Sum:	0.00kvarh

Parameter reading	
Parameter >	I
Freeze >	p
DI&DO >	Q
Temp >	S
Ratio >	PF
Alarm >	F
Version >	EPS

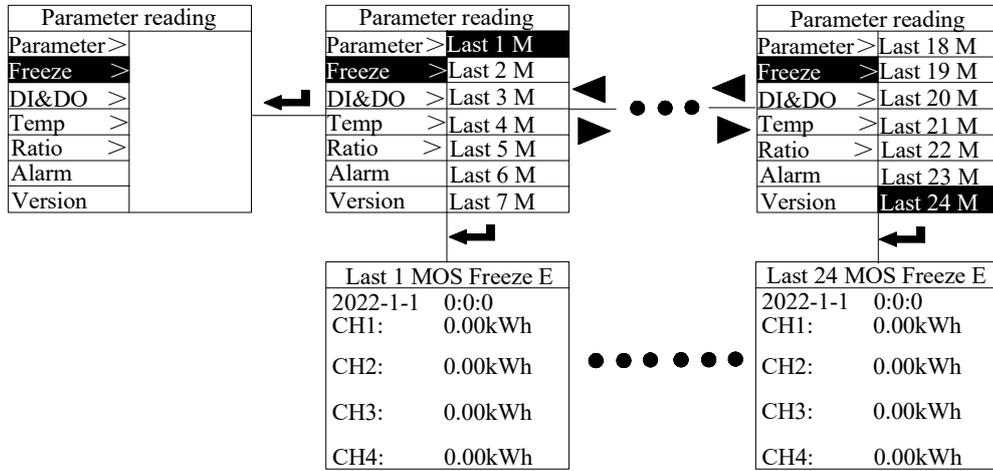
CH1 Total Active	
A:	0.00kwh
B:	0.00kwh
C:	0.00kwh
Sum:	0.00kwh

Parameter reading	
Parameter >	Line U
Freeze >	I
DI&DO >	p
Temp >	Q
Ratio >	S
Alarm >	PF
Version >	F

CH1 Frequency	
F:	0.0Hz

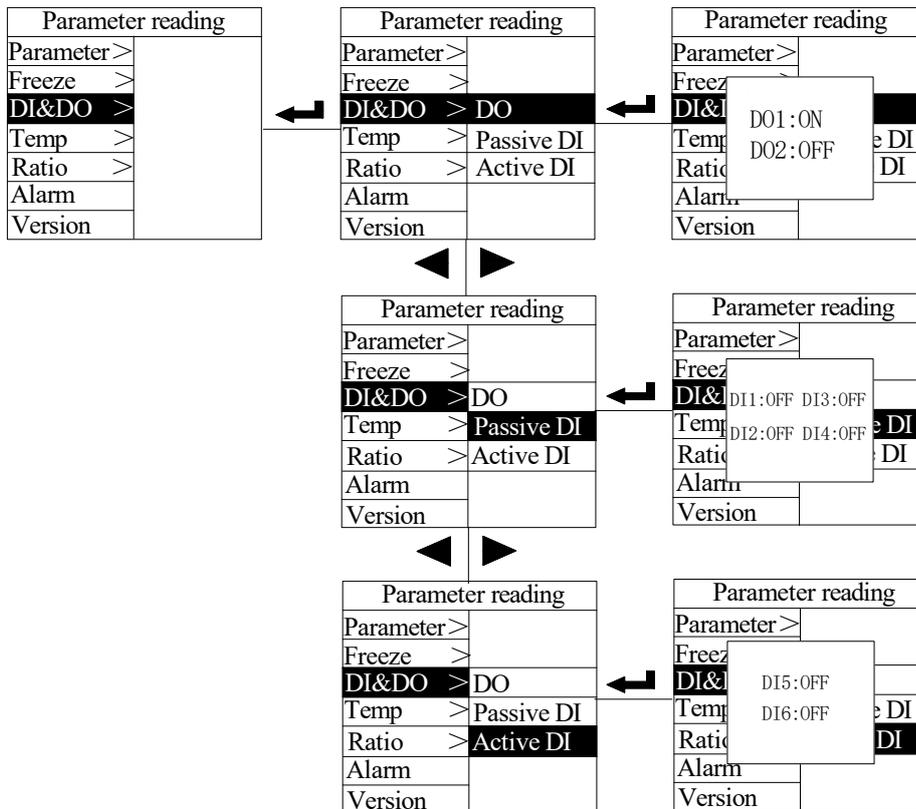
### 6.3.2 Freeze Instruction

Press the Left or Right key to move the cursor to the freeze interface, press the Enter key to enter the freeze interface to see the classification of the last January to the last 24 months, and press the Enter key to view the MOS freeze E records of each month. If there are records, the interface will display the records of the first to fourth circuits; if there are no records, the interface displays as No Records.



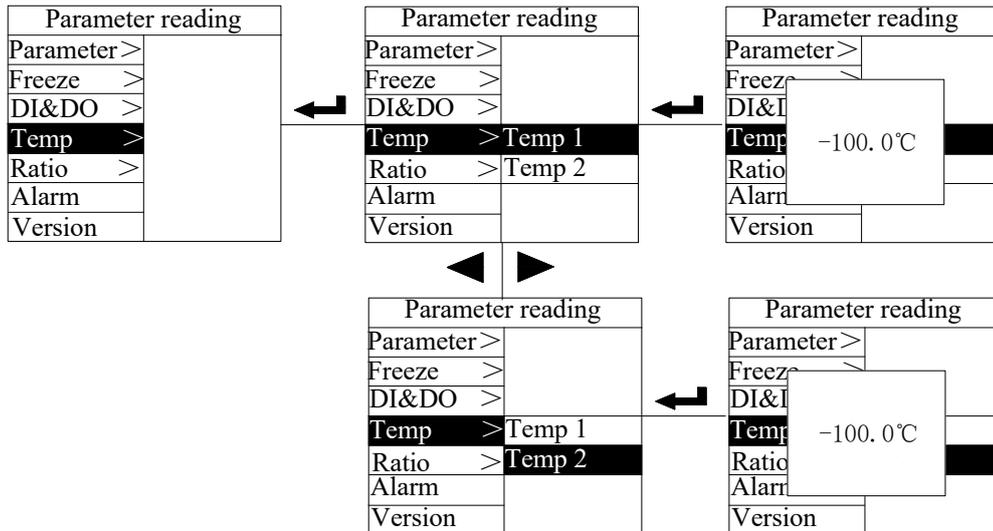
### 6.3.3 DI&DO Instruction

Press the Left or Right key, and the cursor will move to the DI&DO interface. Press the Enter key to see three categories: DO, passive DI, and active DI. Press the Left or Right key and the Enter key to see a pop-up window, which records the data of the DO1-DO2, DI1-DI4 and DI5-DI6.



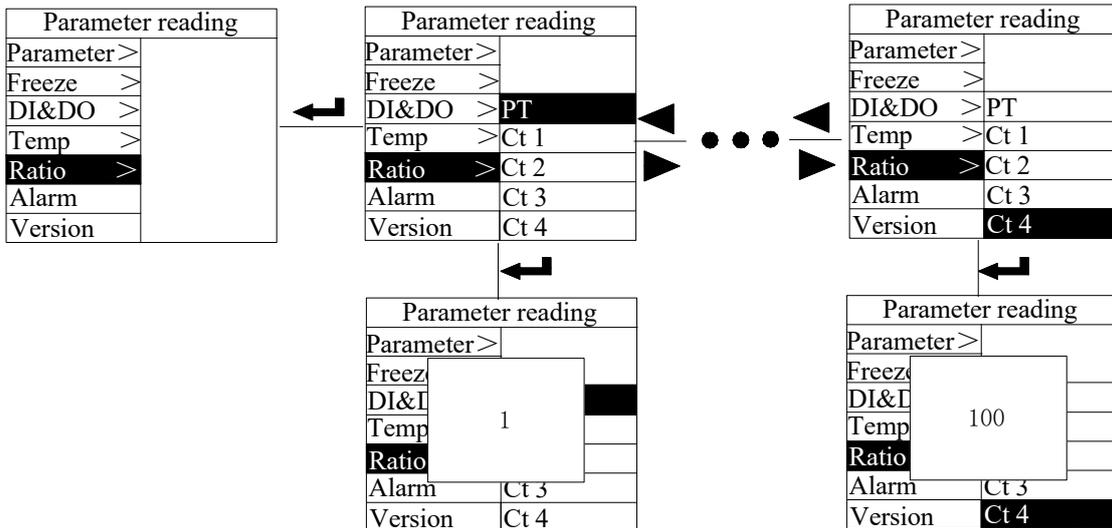
### 6.3.4 Temperature Instruction

Press the Left or Right key to move the cursor to the temperature interface. Press the Enter key to view the two classifications of temp 1 and temp 2. Press the Enter key again to view the specific temperature values. When the probe is not connected, the temperature is displayed as -100 °C, and when the probe is short circuited, the temperature is displayed as 200 °C.



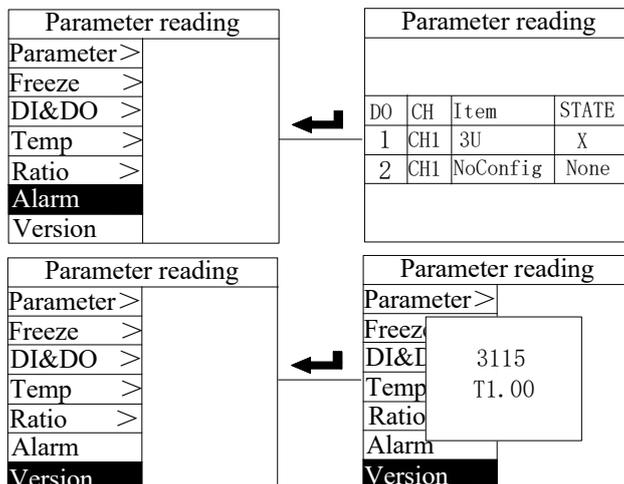
### 6.3.5 Ratio Instruction

Press the Left or Right key to move the cursor to the transformation ratio interface. Press the Enter key to see the five classifications: PT, CT1-CT4. Press the Enter key again to view the transformation ratios of each circuit. The default value is "1".



### 6.3.6 Alarm and Version Instruction

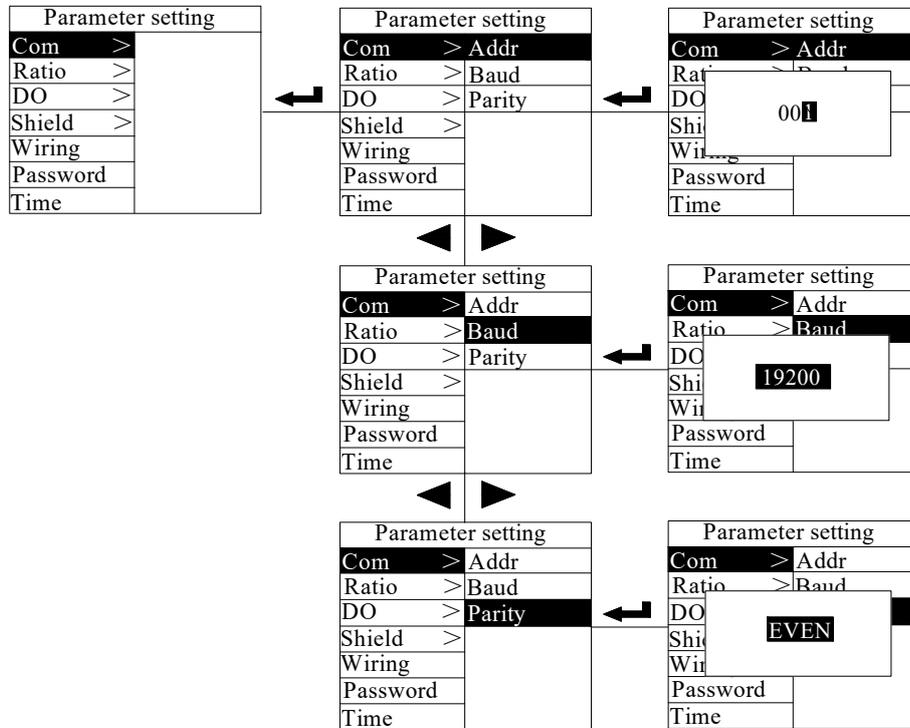
Press the Left or Right key to move the cursor to the alarm interface. Then Press the Enter key to directly view the alarm information. Press the Left or Right key to move the cursor to the version interface. Then Press the Enter key to view the program number and version number information directly.



## 6.4 Parameter Setting Instruction

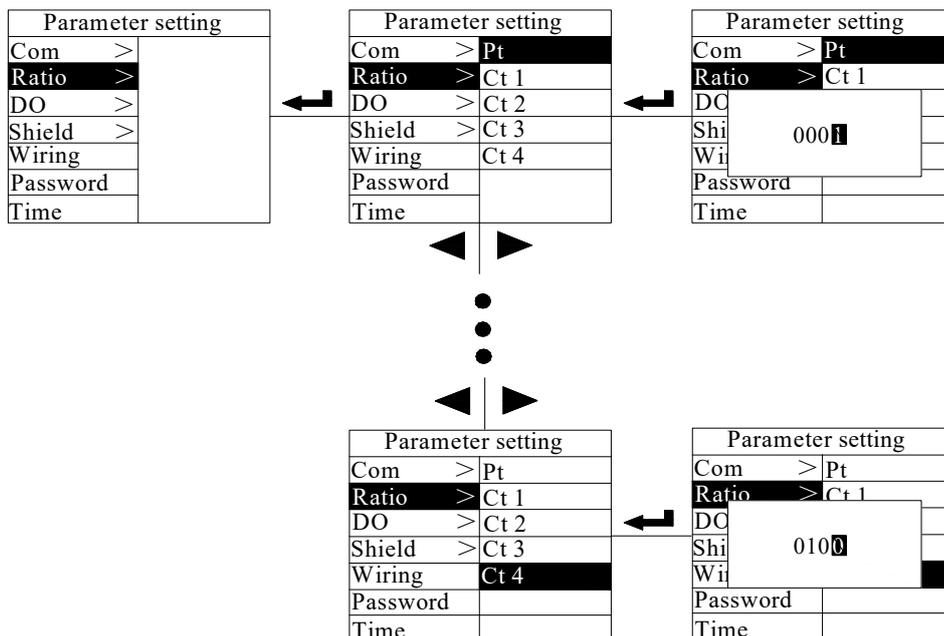
### 6.4.1 Communication Parameter Setting

Enter the parameter setting interface, the cursor stops at the communication setting by default, press the Enter key to see three types of address, baud and parity, and press the Enter key again to pop up various parameter interfaces that can be set; Press the Left and Right keys to switch the settings of address, baud and parity. The address can be set to 1-247; baud can be set to 1200, 2400, 4800, 9600, 19200, 38400; The parity can be set to EVEN (even parity), ODD (odd parity), or NONE (no parity).



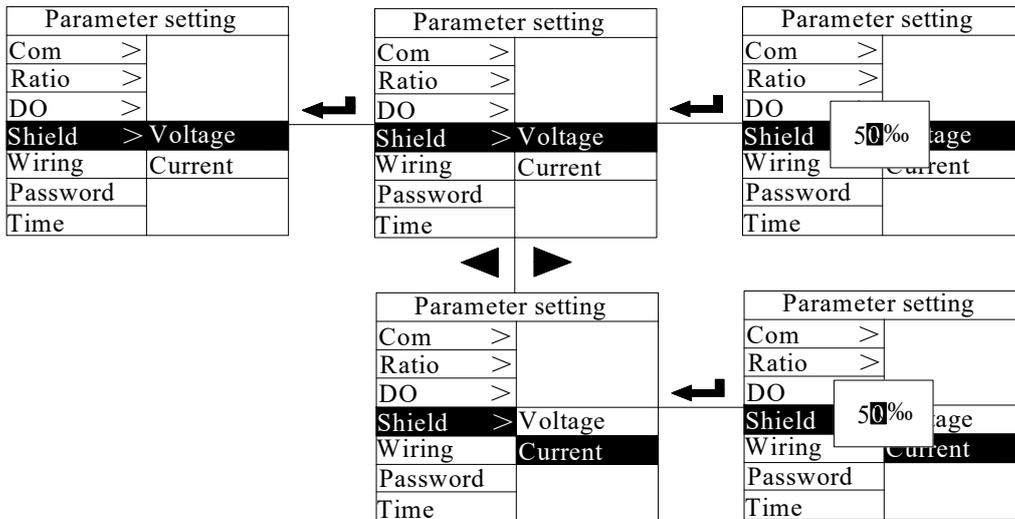
### 6.4.2 Ratio Parameter Setting

Press the Left or Right key to move the cursor to the ratio setting. Press the Enter key to view five types of ratio: Pt, Ct1-Ct4. Press the Enter key again to pop up various parameters that can be set. The default Pt ratio is 1, representing a phase voltage of AC 200V and a line voltage of AC 380V; The current ratio can be set according to the primary current method, for example, the transformer specification is 200A/50mA, the current transformation ratio is set to 200, the transformer specification is 50A/20mA, and the current transformation ratio is set to 125.



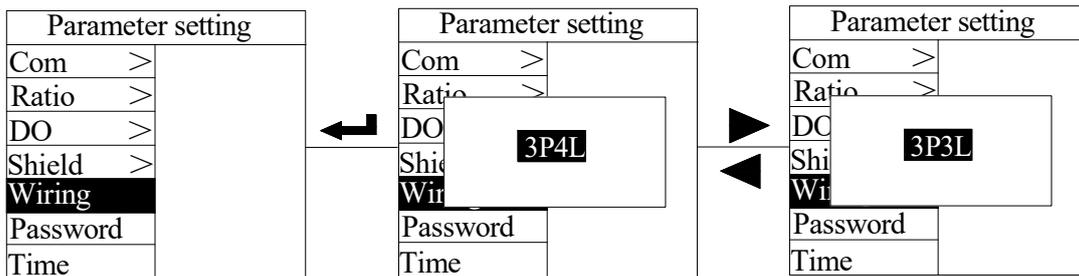
### 6.4.3 Shield Parameter Setting

Press the Left or Right key to move the cursor to the zero shield, press the Enter key to see the voltage and current, and then press the Enter key to set the voltage and current shield value to 50 % by default.



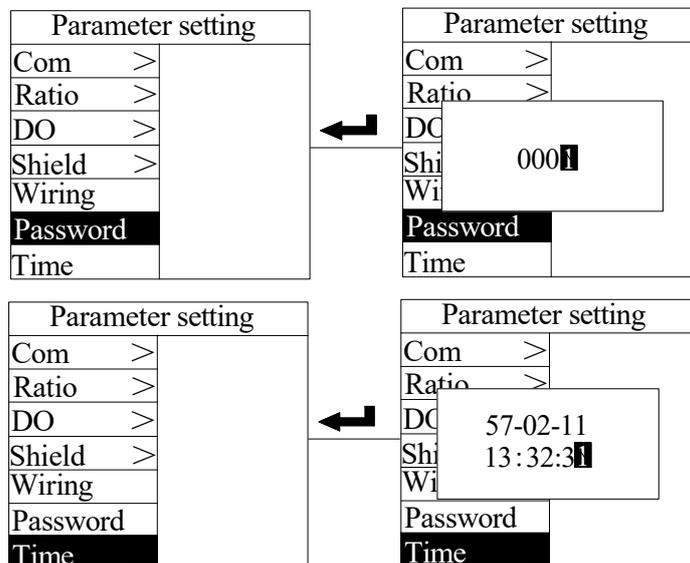
### 6.4.4 Wiring Method Setting

Press the Left or Right key to move the cursor to the wiring mode, press the Enter key to pop up the mode window that can be set, press the Left and Right key to switch the settings of 3P4L (three-phase four wire) and 3P3L (three-phase three wire) wiring modes.



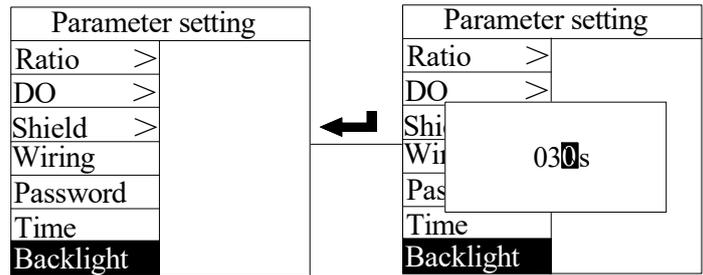
### 6.4.5 Password and Time Setting

Press the Left or Right key to move the cursor to the password setting or time setting. Press the Enter key to enter the password setting or time setting interface. The password can be set as 1-9999. The time can be set by using the Left and Right keys to set the year, month, day, hour, minute and second.



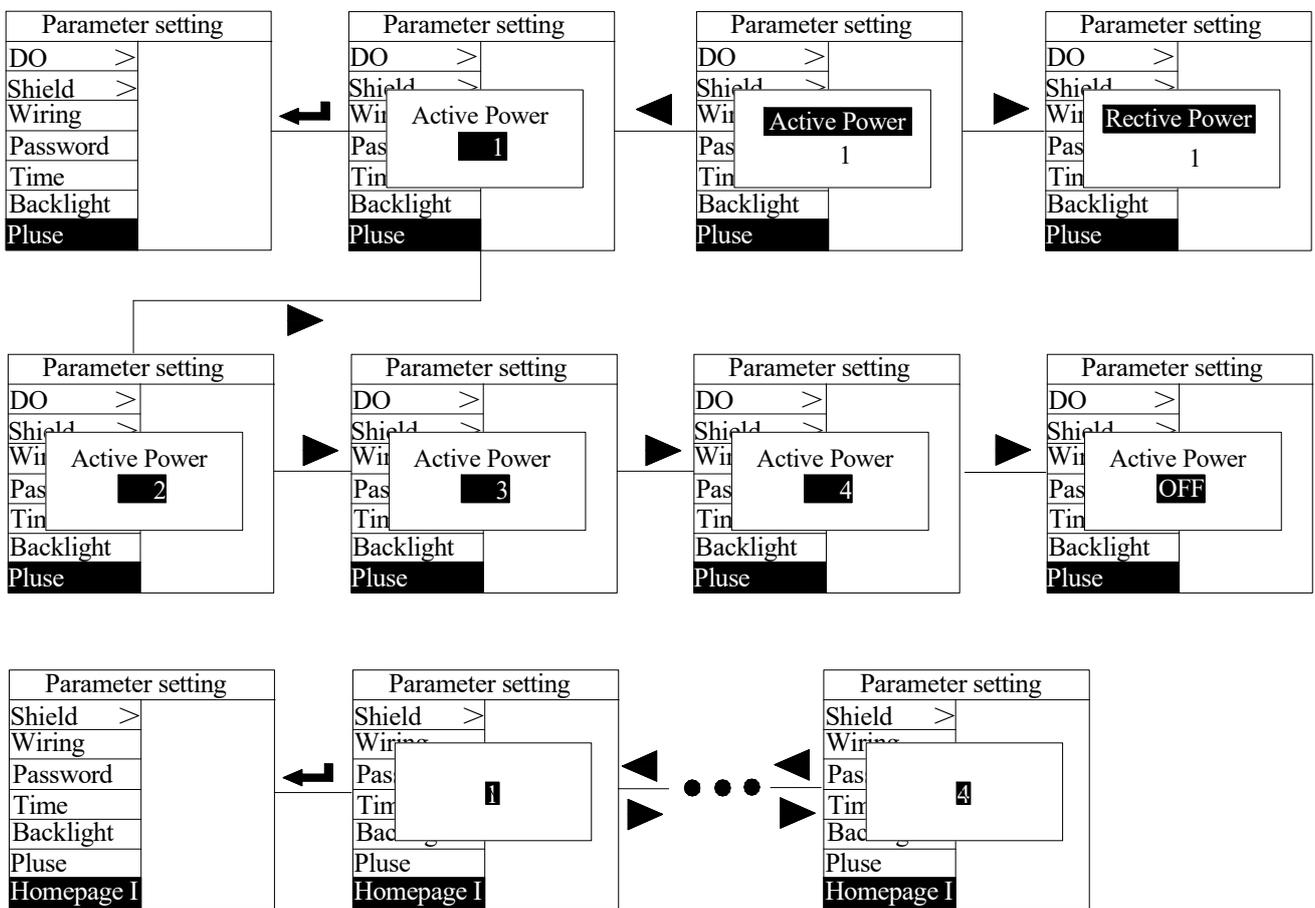
### 6.4.6 Backlight Time Setting

Press the Left or Right key to move the cursor to the backlight time. Press the Enter key to enter the backlight time setting interface. The backlight time can be set to 0-300s, and "0" means it is always on.



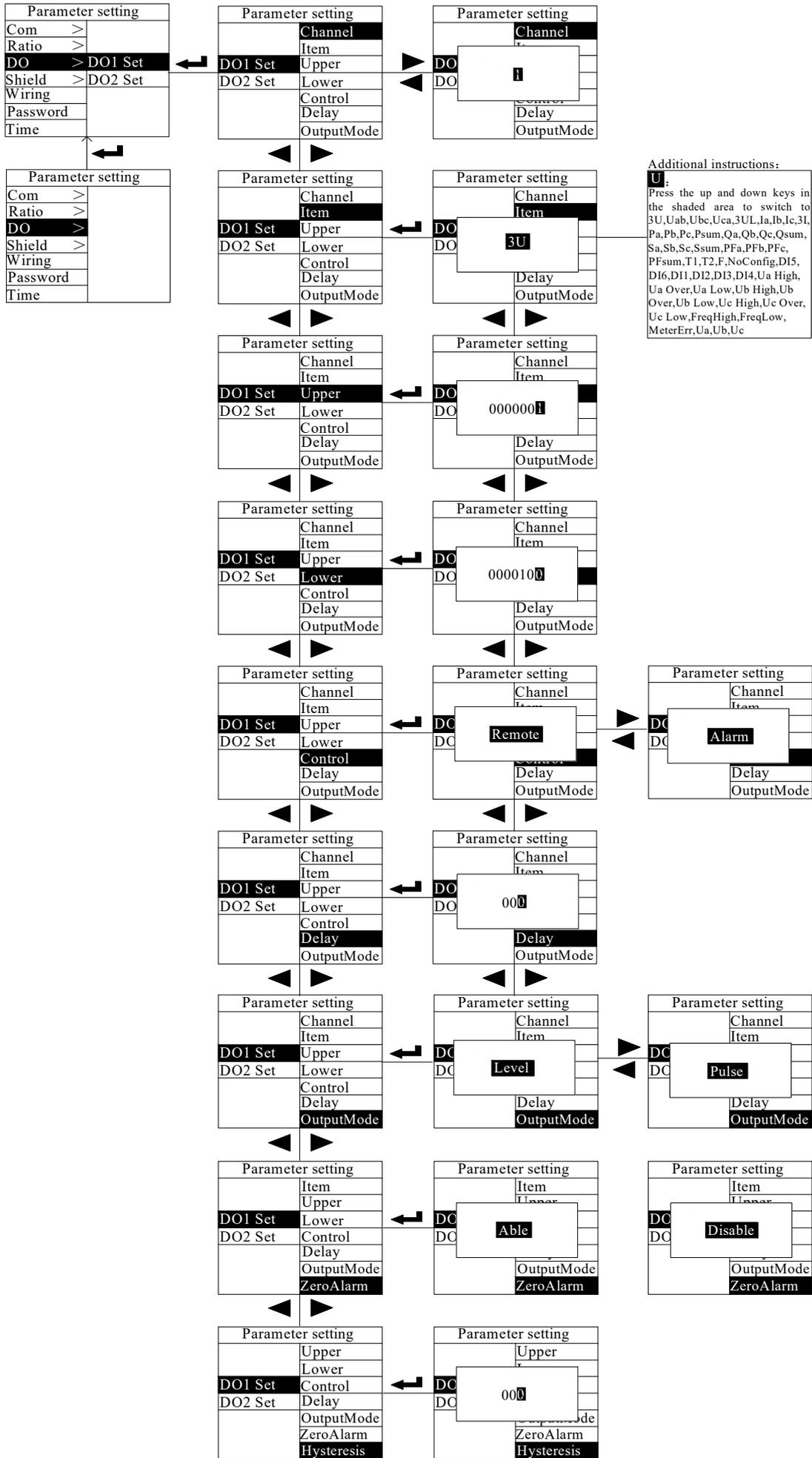
### 6.4.7 Pulse Selection Setting

Press the Left or Right key to move the cursor to pulse selection. Press the Enter key to enter the pulse setting interface, where users can set active pulse and reactive pulse. 1-4 represents the pulse of a circuit.



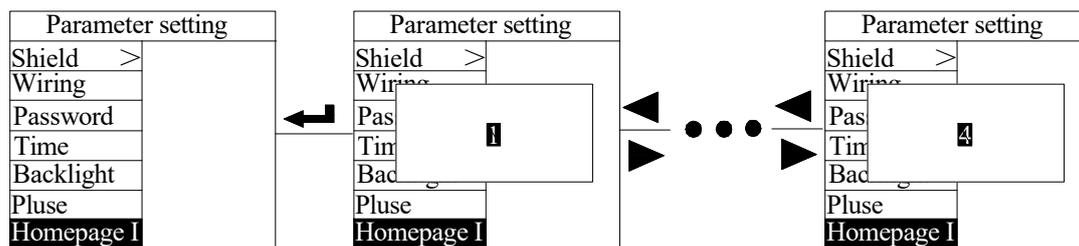
### 6.4.8 DO Parameter Setting

Press the Left or Right key to move the cursor to DO setting. Press the Enter button to see the DO1 set, DO2 set, press the Enter button to see nine types of alarm channel, alarm item, alarm upper limit, alarm lower limit, control, alarm delay, output mode, zero alarm enable, alarm hysteresis. Press the Enter key to pop up all kinds of settable parameters. The settable parameters of DO1 and DO2 are the same. The mode can be set to remote control and alarm; The output can be set to two types: level (0 or 1) and pulse ; Delay can be set to 1-999; The initial setting of the alarm is not configured, and other settable contents are supplemented and explained in the following figure.



#### 6.4.9 Home Page Current Setting

Press the Left or Right key to move the cursor to the homepage I, and press the Enter key to enter the current setting interface, which can be set as 1-4.



## 7 Communication Instructions

### Communication Address

Add	Decimal	Content	Data type	Bytes	Read/write	Unit	Remark
0	0	Address	uint16_t	2	R/W		1-247
1	1	Baud rate	uint16_t	2	R/W		0: 1200; 1: 2400; 2: 4800; 3: 9600; 4: 19200; 5: 38400;
2	2	check bit	uint16_t	2	R/W		0: No parity 1: Odd parity 2: Even parity
3	3	Meter type	uint16_t	2	R/W		0: AMC300L_4E3;1:AMC300L_4E3_4G 2:AMC300L_4E3_NB;3:AMC300L_6E3; 16: AMC200_4E3; 17: AMC200_4E3_4G; 18: AMC200_4E3_NB; 19: AMC200_8E3; 20: AMC200_8E3_4G; 21: AMC200_8E3_NB; 22: AMC200L_4E3; 23: AMC200L_4E3_4G; 24: AMC200L_4E3_NB; 25: AMC200L_8E3; 26: AMC200L_8E3_4G; 27: AMC200L_8E3_NB;
4	4	Wiring Method	uint16_t	2	R/W		0: 3P4L 1: reserve 2: 3P3L
5	5	Number of circuit	uint16_t	2	R		4: 4 circuits 6: 6 circuits
6	6	On site storage time interval	uint16_t	2	R	minute	Default: 15 minutes
7	7	Meter time	uint16_t	2	R/W		Hex for example: 0x00 0x15 ->0x00 Abandon year of 21
8	8		uint16_t	2	R/W		Hex for example: 0x01 0x03-> Jan. 3rd
9	9		uint16_t	2	R/W		Hex for example: 0x03 0x15->0x03 Abandon 21 o'clock
A	10		uint16_t	2	R/W		Hex for example: 0x01 0x03 -> 1min 3sec
B	11	Protocol selection	uint16_t	2	R/W		0: Modbus 1: Tower Default: Modbus
C	12	Page Countdown	uint16_t	2	R/W	second	Default: 180 sec Max 65536 sec
D	13	Voltage zero shielding value	uint16_t	2	R/W		Default: 50 represents 50 per thousand. The range is from 3 to 99 per thousand
E	14	Current zero shielding value	uint16_t	2	R/W		Default: 50 represents 50 per thousand. The range is from 3 to 99 per thousand

F	15	Home page current display	uint16_t	2	R/W		1:Display the first current on the homepage
10	16	DO1 Alarm upper limit value	uint32_t	2	R/W		DO1 Alarm upper limit value >0
11	17						
12	18	DO1 Alarm lower limit value	uint32_t	2	R/W		DO1 Alarm lower limit value $\geq$ 0
13	19						
14	20	System Password	uint16_t	2	R/W		1-9999
15	21	Meter reading day	uint16_t	2	R/W		Hex 如: 0x15 0x02 -> 21 日 02 时
16	22	Meter number	uint32_t	2	R/W		
17	23						
18	24	DO2 Alarm upper limit value	uint32_t	2	R/W		DO2 Alarm upper limit value >0
19	25						
1A	26	DO2 Alarm lower limit value	uint32_t	2	R/W		DO2 Alarm lower limit value $\geq$ 0
1B	27						
1C	28	Backlight time	uint16_t	2	R/W	second	30 seconds by default, the range is (0-300)
1D	29	Pulse constant	uint16_t	2	R		Default: 400
1E	30	Pulse selection	uint16_t	2	R/W		Low 8 bits: pulse selection; 0: Turn off pulse output 1-8, which specific pulse output channel High 8 bits: pulse mode selection; 0: Active pulse; 1: Reactive pulse
1F	31	Rated voltage	uint16_t	2	R	V	Default: 220V
20	32	Rated current	uint16_t	2	R	A	Default: 100A
21	33	Rated frequency	uint16_t	2	R	Hz	Default: 50Hz
22	34	DI1-6 state	uint16_t	2	R		1: on 0: off bit0:DI5 ;bit1:DI6 bit2:DI1 bit3:DI2 ;bit4:DI3 bit5:DI4
23	35	DO1-2 state	uint16_t	2	R		1: on 0: off bit0:DO1 ;bit8:DO2
24	36	DO1-2 control	uint16_t	2	W		1: on 0: off bit0:DO1 ;bit8:DO2
25	37	DO1_TOWER configuration	uint32_t	4	R/W		(Priority bit0 is the highest) Bit0: DI5; Bit1: DI6; Bit2: DI1; Bit3: DI2; Bit4: DI3; Bit5: DI4 Bit6: Ua voltage too high; Bit7: Ua voltage too high bit8: Ua voltage too low Bit9: Ub voltage too high; Bit10: Ub voltage too high bit11: Ub voltage too low Bit12: Uc voltage too high; Bit13: Uc voltage too high bit14: Uc voltage too low Bit15: Frequency too high; Bit16: Low frequency bit17: Intelligent meter failure Bit18: reserved; Bit19: output (0: pulse 1: level); Bit20: Remote control or alarm mode selection (0: Remote control 1: Alarm) bit21 bit30: Pulse width (s)
26	38						

27	39	DO2_TOWER configuration	uint32_t	4	R/W	(Priority bit0 is the highest) Bit0: DI5; Bit1: DI6; Bit2: DI1; Bit3: DI2; Bit4: DI3; Bit5: DI4 Bit6: Ua voltage too high; Bit7: Ua voltage too high bit8: Ua voltage too low Bit9: Ub voltage too high; Bit10: Ub voltage too high bit11: Ub voltage too low Bit12: Uc voltage too high; Bit13: Uc voltage too high bit14: Uc voltage too low Bit15: Frequency too high; Bit16: Low frequency bit17: Intelligent meter failure Bit18: reserved; Bit19: output (0: pulse 1: level); Bit20: Remote control or alarm mode selection (0: Remote control 1: Alarm) bit21 bit30: Pulse width (s)
28	40					
29	41	PT ratio	uint16_t	2	R/W	
2A	42	CT1	uint16_t	2	R/W	
2B	43	CT2	uint16_t	2	R/W	
2C	44	CT3	uint16_t	2	R/W	
2D	45	CT4	uint16_t	2	R/W	
2E	46	CT5	uint16_t	2	R/W	
2F	47	CT6	uint16_t	2	R/W	
30	48	CT7	uint16_t	2	R/W	Note: AMC200LA configuration
31	49	CT8	uint16_t	2	R/W	Note: AMC200LA configuration
32	50	Print Log Marks	uint16_t	2	R/W	1: on; 0: off
33	51	IP	uint16_t	2	R/W	Example: 0x23 0x70 0x1A 0x1E represents IP: 112.35.30.26
34	52					
35	53	PORT	uint16_t	2	R/W	Example, 0x1ADF represents port number: 6879
36	54	RSSI	uint16_t	2	R	Signal value
37	55	Link 1 marker	uint16_t	2	R	Connecting to Acrel Fire Cloud Platform Tag Bit 1: Link 0: Not Connected

**Circuit 1-2 telemetry data:**

Add	Decimal	Content	Data type	Bytes	Read/write	Unit	Remark
6A	106	1 <sup>st</sup> Circuit	AB line AC voltage Uab	float	4	R	V
6B	107						
6C	108		BC line AC voltage Ubc	float	4	R	V
6D	109						
6E	110		CA line AC voltage Uca	float	4	R	V
6F	111						
70	112		A-phase AC voltage Ua	float	4	R	V
71	113						
72	114		B-phase AC voltage Ub	float	4	R	V
73	115						
74	116	C-phase AC voltage Uc	float	4	R	V	

75	117						
76	118						
77	119	A-phase AC current Ia	float	4	R	A	
78	120						
79	121	B-phase AC current Ib	float	4	R	A	
7A	122						
7B	123	C-phase AC current Ic	float	4	R	A	
7C	124						
7D	125	Zero sequence current Io	float	4	R	A	
7E	126						
7F	127	Total power factor PF	float	4	R		
80	128						
81	129	A-phase power factor PFa	float	4	R		
82	130						
83	131	B-phase power factor PFb	float	4	R		
84	132						
85	133	C-phase power factor PFc	float	4	R		
86	134						
87	135	Frequency F	float	4	R	Hz	
88	136						
89	137	Total active power psum	float	4	R	kW	
8A	138						
8B	139	A-phase active power pa	float	4	R	kW	
8C	140						
8D	141	B-phase active power pb	float	4	R	kW	
8E	142						
8F	143	C-phase active power pc	float	4	R	kW	
90	144						
91	145	Total reactive power qsum	float	4	R	kvar	
92	146						
93	147	A-phase reactive power qa	float	4	R	kvar	
94	148						
95	149	B-phase reactive power qb	float	4	R	kvar	
96	150						
97	151	C-phase reactive power qc	float	4	R	kvar	
98	152						
99	153	Total apparent power ssum	float	4	R	kVA	
9A	154						
9B	155	A-phase apparent power sa	float	4	R	kVA	
9C	156						
9D	157	B-phase apparent power sb	float	4	R	kVA	
9E	158						
9F	159	C-phase apparent power sc	float	4	R	kVA	
A0	160	Total active energy eps	float	4	R	kWh	

A1	161						
A2	162	A-phase total active electrical energy epa	float	4	R	kWh	
A3	163	B-phase total active electrical energy epb	float	4	R	kWh	
A4	164	C-phase total active electrical energy epc	float	4	R	kWh	
A5	165						
A6	166						
A7	167	Total reactive energy eqs	float	4	R	kvarh	
A8	168						
A9	169	A-phase total reactive energy eqa	float	4	R	kvarh	
AA	170	B-phase total reactive energy eqb	float	4	R	kvarh	
AB	171	C-phase total reactive energy eqc	float	4	R	kvarh	
AC	172						
AD	173	Positive total active energy epsp	float	4	R	kWh	
AE	174						
AF	175	Positive A-phase total active energy of epap	float	4	R	kWh	
B0	176	Positive B-phase total active energy of epbp	float	4	R	kWh	
B1	177	Positive C-phase total active energy of epcp	float	4	R	kWh	
B2	178						
B3	179	Reverse total active energy epsn	float	4	R	kWh	
B4	180						
B5	181	Reverse A-phase total active energy epan	float	4	R	kWh	
B6	182	Reverse B-phase total active energy epbn	float	4	R	kWh	
B7	183	Reverse C-phase total active energy epcn	float	4	R	kWh	
B8	184						
B9	185	Positive total reactive power eqsp	float	4	R	kvarh	
BA	186						
BB	187	Positive A-phase total reactive power eqap	float	4	R	kvarh	
BC	188	Positive B-phase total reactive power eqbp	float	4	R	kvarh	
BD	189	Positive C-phase total reactive power eqcp	float	4	R	kvarh	
BE	190						
BF	191	Reverse total reactive power eqsn	float	4	R	kvarh	
C0	192						
C1	193	Reverse A-phase total reactive power eqan	float	4	R	kvarh	
C2	194	Reverse B-phase total reactive power eqbn	float	4	R	kvarh	
C3	195						
C4	196						
C5	197						
C6	198						
C7	199						
C8	200						
C9	201						
CA	202						
CB	203						
CC	204						

CD	205		power eqbn						
CE	206		Reverse C-phase total reactive	float	4	R	kvarh		
CF	207		power eqcn						
D0	208	2 <sup>nd</sup> Circuit	AB line AC voltage Uab	float	4	R	V		
D1	209								
D2	210			BC line AC voltage Ubc	float	4	R	V	
D3	211								
D4	212			CA line AC voltage Uca	float	4	R	V	
D5	213								
D6	214			A-phase AC voltage Ua	float	4	R	V	
D7	215								
D8	216			B-phase AC voltage Ub	float	4	R	V	
D9	217								
DA	218			C-phase AC voltage Uc	float	4	R	V	
DB	219								
DC	220			A-phase AC current Ia	float	4	R	A	
DD	221								
DE	222			B-phase AC current Ib	float	4	R	A	
DF	223								
E0	224			C-phase AC current Ic	float	4	R	A	
E1	225								
E2	226			Zero sequence current Io	float	4	R	A	
E3	227								
E4	228			Total power factor PF	float	4	R		
E5	229								
E6	230			A-phase power factor PFa	float	4	R		
E7	231								
E8	232			B-phase power factor PFb	float	4	R		
E9	233								
EA	234			C-phase power factor PFc	float	4	R		
EB	235								
EC	236		Frequency F	float	4	R	Hz		
ED	237								
EE	238		Total active power psum	float	4	R	kW		
EF	239								
F0	240		A-phase active power pa	float	4	R	kW		
F1	241								
F2	242		B-phase active power pb	float	4	R	kW		
F3	243								
F4	244		C-phase active power pc	float	4	R	kW		
F5	245								
F6	246		Total reactive power qsum	float	4	R	kvar		
F7	247								
F8	248		A-phase reactive power qa	float	4	R	kvar		

F9	249						
FA	250						
FB	251	B-phase reactive power qb	float	4	R	kvar	
FC	252						
FD	253	C-phase reactive power qc	float	4	R	kvar	
FE	254						
FF	255	Total apparent power ssum	float	4	R	kVA	
100	256						
101	257	A-phase apparent power sa	float	4	R	kVA	
102	258						
103	259	B-phase apparent power sb	float	4	R	kVA	
104	260						
105	261	C-phase apparent power sc	float	4	R	kVA	
106	262						
107	263	Total active energy eps	float	4	R	kWh	
108	264						
109	265	A-phase total active electrical energy epa	float	4	R	kWh	
10A	266						
10B	267	B-phase total active electrical energy epb	float	4	R	kWh	
10C	268						
10D	269	C-phase total active electrical energy epc	float	4	R	kWh	
10E	270						
10F	271	Total reactive energy eqs	float	4	R	kvarh	
110	272						
111	273	A-phase total reactive energy eqa	float	4	R	kvarh	
112	274						
113	275	B-phase total reactive energy eqb	float	4	R	kvarh	
114	276						
115	277	C-phase total reactive energy eqc	float	4	R	kvarh	
116	278						
117	279	Positive total active energy epsp	float	4	R	kWh	
118	280						
119	281	Positive A-phase total active energy of epap	float	4	R	kWh	
11A	282						
11B	283	Positive B-phase total active energy of epbp	float	4	R	kWh	
11C	284						
11D	285	Positive C-phase total active energy of epcp	float	4	R	kWh	
11E	286						
11F	287	Reverse total active energy epsn	float	4	R	kWh	
120	288						
121	289	Reverse A-phase total active energy epan	float	4	R	kWh	
122	290						
123	291	Reverse B-phase total active energy epbn	float	4	R	kWh	
124	292						
		Reverse C-phase total active	float	4	R	kWh	

125	293		energy epcn					
126	294		Positive total reactive power eqsp	float	4	R	kvarh	
127	295		Positive A-phase total reactive power eqap	float	4	R	kvarh	
128	296		Positive B-phase total reactive power eqbp	float	4	R	kvarh	
129	297		Positive C-phase total reactive power eqcp	float	4	R	kvarh	
12A	298		Reverse total reactive power eqsn	float	4	R	kvarh	
12B	299		Reverse A-phase total reactive power eqan	float	4	R	kvarh	
12C	300		Reverse B-phase total reactive power eqbn	float	4	R	kvarh	
12D	301		Reverse C-phase total reactive power eqcn	float	4	R	kvarh	
12E	302							
12F	303							
130	304							
131	305							
132	306							
133	307							
134	308							
135	309							

**Circuit 3-4 telemetry data:**

Add	Decimal		Content	Data type	Bytes	Read/write	Unit	Remark	
136	310	3 <sup>rd</sup> Circuit	AB line AC voltage Uab	float	4	R	V		
137	311		BC line AC voltage Ubc	float	4	R	V		
138	312		CA line AC voltage Uca	float	4	R	V		
139	313		A-phase AC voltage Ua	float	4	R	V		
13A	314		B-phase AC voltage Ub	float	4	R	V		
13B	315		C-phase AC voltage Uc	float	4	R	V		
13C	316		A-phase AC current Ia	float	4	R	A		
13D	317		B-phase AC current Ib	float	4	R	A		
13E	318		C-phase AC current Ic	float	4	R	A		
13F	319		Zero sequence current Io	float	4	R	A		
140	320		Total power factor PF	float	4	R			
141	321		A-phase power factor PFa	float	4	R			
142	322								
143	323								
144	324								
145	325								
146	326								
147	327								
148	328								
149	329								
14A	330								
14B	331								
14C	332								
14D	333								

14E	334		B-phase power factor PFb	float	4	R		
14F	335							
150	336		C-phase power factor PFC	float	4	R		
151	337							
152	338		Frequency F	float	4	R	Hz	
153	339							
154	340		Total active power psum	float	4	R	kW	
155	341							
156	342		A-phase active power pa	float	4	R	kW	
157	343							
158	344		B-phase active power pb	float	4	R	kW	
159	345							
15A	346		C-phase active power pc	float	4	R	kW	
15B	347							
15C	348		Total reactive power qsum	float	4	R	kvar	
15D	349							
15E	350		A-phase reactive power qa	float	4	R	kvar	
15F	351							
160	352		B-phase reactive power qb	float	4	R	kvar	
161	353							
162	354		C-phase reactive power qc	float	4	R	kvar	
163	355							
164	356		Total apparent power ssum	float	4	R	kva	
165	357							
166	358		A-phase apparent power sa	float	4	R	kVA	
167	359							
168	360		B-phase apparent power sb	float	4	R	kVA	
169	361							
16A	362		C-phase apparent power sc	float	4	R	kVA	
16B	363							
16C	364	Total active energy eps	float	4	R	kWh		
16D	365							
16E	366	A-phase total active electrical energy epa	float	4	R	kWh		
16F	367							
170	368	B-phase total active electrical energy epb	float	4	R	kWh		
171	369							
172	370	C-phase total active electrical energy epc	float	4	R	kWh		
173	371							
174	372	Total reactive energy eqs	float	4	R	kvarh		
175	373							
176	374	A-phase total reactive energy eqa	float	4	R	kvarh		
177	375							
178	376	B-phase total reactive energy eqb	float	4	R	kvarh		
179	377							

17A	378		C-phase total reactive energy eqc	float	4	R	kvarh	
17B	379							
17C	380		Positive total active energy epsp	float	4	R	kWh	
17D	381							
17E	382		Positive A-phase total active energy of epap	float	4	R	kWh	
17F	383							
180	384		Positive B-phase total active energy of epbp	float	4	R	kWh	
181	385							
182	386		Positive C-phase total active energy of epcp	float	4	R	kWh	
183	387							
184	388		Reverse total active energy epsn	float	4	R	kWh	
185	389							
186	390		Reverse A-phase total active energy epan	float	4	R	kWh	
187	391							
188	392		Reverse B-phase total active energy epbn	float	4	R	kWh	
189	393							
18A	394		Reverse C-phase total active energy epcn	float	4	R	kWh	
18B	395							
18C	396		Positive total reactive power eqsp	float	4	R	kvarh	
18D	397							
18E	398		Positive A-phase total reactive power eqap	float	4	R	kvarh	
18F	399							
190	400		Positive B-phase total reactive power eqbp	float	4	R	kvarh	
191	401							
192	402		Positive C-phase total reactive power eqcp	float	4	R	kvarh	
193	403							
194	404		Reverse total reactive power eqsn	float	4	R	kvarh	
195	405							
196	406		Reverse A-phase total reactive power eqan	float	4	R	kvarh	
197	407							
198	408		Reverse B-phase total reactive power eqbn	float	4	R	kvarh	
199	409							
19A	410		Reverse C-phase total reactive power eqcn	float	4	R	kvarh	
19B	411							
19C	412	4 <sup>th</sup> Circuit	AB line AC voltage Uab	float	4	R	V	
19D	413		BC line AC voltage Ubc	float	4	R	V	
19E	414							
19F	415		CA line AC voltage Uca	float	4	R	V	
1A0	416							
1A1	417		A-phase AC voltage Ua	float	4	R	V	
1A2	418							
1A3	419		B-phase AC voltage Ub	float	4	R	V	
1A4	420							
1A5	421							

1A6	422		C-phase AC voltage $U_c$	float	4	R	V	
1A7	423							
1A8	424		A-phase AC current $I_a$	float	4	R	A	
1A9	425							
1AA	426		B-phase AC current $I_b$	float	4	R	A	
1AB	427							
1AC	428		C-phase AC current $I_c$	float	4	R	A	
1AD	429							
1AE	430		Zero sequence current $I_o$	float	4	R	A	
1AF	431							
1B0	432		Total power factor PF	float	4	R		
1B1	433							
1B2	434		A-phase power factor $PF_a$	float	4	R		
1B3	435							
1B4	436		B-phase power factor $PF_b$	float	4	R		
1B5	437							
1B6	438		C-phase power factor $PF_c$	float	4	R		
1B7	439							
1B8	440		Frequency F	float	4	R	Hz	
1B9	441							
1BA	442		Total active power $p_{sum}$	float	4	R	kW	
1BB	443							
1BC	444		A-phase active power $p_a$	float	4	R	kW	
1BD	445							
1BE	446		B-phase active power $p_b$	float	4	R	kW	
1BF	447							
1C0	448		C-phase active power $p_c$	float	4	R	kW	
1C1	449							
1C2	450		Total reactive power $q_{sum}$	float	4	R	kvar	
1C3	451							
1C4	452		A-phase reactive power $q_a$	float	4	R	kvar	
1C5	453							
1C6	454	B-phase reactive power $q_b$	float	4	R	kvar		
1C7	455							
1C8	456	C-phase reactive power $q_c$	float	4	R	kvar		
1C9	457							
1CA	458	Total apparent power $s_{sum}$	float	4	R	kVA		
1CB	459							
1CC	460	A-phase apparent power $s_a$	float	4	R	kVA		
1CD	461							
1CE	462	B-phase apparent power $s_b$	float	4	R	kVA		
1CF	463							
1D0	464	C-phase apparent power $s_c$	float	4	R	kVA		
1D1	465							

1D2	466		Total active energy eps	float	4	R	kWh	
1D3	467							
1D4	468		A-phase total active electrical energy epa	float	4	R	kWh	
1D5	469							
1D6	470		B-phase total active electrical energy epb	float	4	R	kWh	
1D7	471							
1D8	472		C-phase total active electrical energy epc	float	4	R	kWh	
1D9	473							
1DA	474		Total reactive energy eqs	float	4	R	kvarh	
1DB	475							
1DC	476		A-phase total reactive energy eqa	float	4	R	kvarh	
1DD	477							
1DE	478		B-phase total reactive energy eqb	float	4	R	kvarh	
1DF	479							
1E0	480		C-phase total reactive energy eqc	float	4	R	kvarh	
1E1	481							
1E2	482		Positive total active energy epsp	float	4	R	kWh	
1E3	483							
1E4	484		Positive A-phase total active energy of epap	float	4	R	kWh	
1E5	485							
1E6	486		Positive B-phase total active energy of epbp	float	4	R	kWh	
1E7	487							
1E8	488		Positive C-phase total active energy of epcp	float	4	R	kWh	
1E9	489							
1EA	490		Reverse total active energy epsn	float	4	R	kWh	
1EB	491							
1EC	492		Reverse A-phase total active energy epan	float	4	R	kWh	
1ED	493							
1EE	494		Reverse B-phase total active energy epbn	float	4	R	kWh	
1EF	495							
1F0	496		Reverse C-phase total active energy epcn	float	4	R	kWh	
1F1	497							
1F2	498		Positive total reactive power eqsp	float	4	R	kvarh	
1F3	499							
1F4	500		Positive A-phase total reactive power eqap	float	4	R	kvarh	
1F5	501							
1F6	502		Positive B-phase total reactive power eqbp	float	4	R	kvarh	
1F7	503							
1F8	504		Positive C-phase total reactive power eqcp	float	4	R	kvarh	
1F9	505							
1FA	506		Reverse total reactive power eqsn	float	4	R	kvarh	
1FB	507							
1FC	508		Reverse A-phase total reactive power eqan	float	4	R	kvarh	
1FD	509							

1FE	510		Reverse B-phase total reactive power eqbn	float	4	R	kvarh	
1FF	511							
200	512		Reverse C-phase total reactive power eqbn	float	4	R	kvarh	
201	513							

### Circuit 5-6 telemetry data

Add	Decimal	Content	Data type	Bytes	Read/write	Unit	Remark
202	514	5 <sup>th</sup> Circuit	AB line AC voltage Uab	float	4	R	V
203	515						
204	516		BC line AC voltage Ubc	float	4	R	V
205	517						
206	518		CA line AC voltage Uca	float	4	R	V
207	519						
208	520		A-phase AC voltage Ua	float	4	R	V
209	521						
20A	522		B-phase AC voltage Ub	float	4	R	V
20B	523						
20C	524		C-phase AC voltage Uc	float	4	R	V
20D	525						
20E	526		A-phase AC current Ia	float	4	R	A
20F	527						
210	528		B-phase AC current Ib	float	4	R	A
211	529						
212	530		C-phase AC current Ic	float	4	R	A
213	531						
214	532		Zero sequence current Io	float	4	R	A
215	533						
216	534		Total power factor PF	float	4	R	
217	535						
218	536		A-phase power factor PFa	float	4	R	
219	537						
21A	538		B-phase power factor PFb	float	4	R	
21B	539						
21C	540		C-phase power factor PFc	float	4	R	
21D	541						
21E	542	Frequency F	float	4	R	Hz	
21F	543						
220	544	Total active power psum	float	4	R	kW	
221	545						
222	546	A-phase active power pa	float	4	R	kW	
223	547						
224	548	B-phase active power pb	float	4	R	kW	
225	549						
226	550	C-phase active power pc	float	4	R	kW	

227	551						
228	552						
229	553	Total reactive power qsum	float	4	R	kvar	
22A	554						
22B	555	A-phase reactive power qa	float	4	R	kvar	
22C	556						
22D	557	B-phase reactive power qb	float	4	R	kvar	
22E	558						
22F	559	C-phase reactive power qc	float	4	R	kvar	
230	560						
231	561	Total apparent power ssum	float	4	R	kVA	
232	562						
233	563	A-phase apparent power sa	float	4	R	kVA	
234	564						
235	565	B-phase apparent power sb	float	4	R	kVA	
236	566						
237	567	C-phase apparent power sc	float	4	R	kVA	
238	568						
239	569	Total active energy eps	float	4	R	kWh	
23A	570						
23B	571	A-phase total active electrical energy epa	float	4	R	kWh	
23C	572						
23D	573	B-phase total active electrical energy epb	float	4	R	kWh	
23E	574						
23F	575	C-phase total active electrical energy epc	float	4	R	kWh	
240	576						
241	577	Total reactive energy eqs	float	4	R	kvarh	
242	578						
243	579	A-phase total reactive energy eqa	float	4	R	kvarh	
244	580						
245	581	B-phase total reactive energy eqb	float	4	R	kvarh	
246	582						
247	583	C-phase total reactive energy eqc	float	4	R	kvarh	
248	584						
249	585	Positive total active energy epsp	float	4	R	kWh	
24A	586						
24B	587	Positive A-phase total active energy of epap	float	4	R	kWh	
24C	588						
24D	589	Positive B-phase total active energy of epbp	float	4	R	kWh	
24E	590						
24F	591	Positive C-phase total active energy of epcp	float	4	R	kWh	
250	592						
251	593	Reverse total active energy epsn	float	4	R	kWh	
252	594						
		Reverse A-phase total active	float	4	R	kWh	

253	595		energy epan					
254	596		Reverse B-phase total active energy epbn	float	4	R	kWh	
255	597		Reverse C-phase total active energy epcn	float	4	R	kWh	
256	598		Positive total reactive power eqsp	float	4	R	kvarh	
259	601		Positive A-phase total reactive power eqap	float	4	R	kvarh	
25A	602		Positive B-phase total reactive power eqbp	float	4	R	kvarh	
25B	603		Positive C-phase total reactive power eqcp	float	4	R	kvarh	
25C	604		Reverse total reactive power eqsn	float	4	R	kvarh	
25D	605		Reverse A-phase total reactive power eqan	float	4	R	kvarh	
25E	606		Reverse B-phase total reactive power eqbn	float	4	R	kvarh	
25F	607		Reverse C-phase total reactive power eqcn	float	4	R	kvarh	
260	608		AB line AC voltage Uab	float	4	R	V	
261	609		BC line AC voltage Ubc	float	4	R	V	
262	610		CA line AC voltage Uca	float	4	R	V	
263	611		A-phase AC voltage Ua	float	4	R	V	
264	612		B-phase AC voltage Ub	float	4	R	V	
265	613		C-phase AC voltage Uc	float	4	R	V	
266	614		A-phase AC current Ia	float	4	R	A	
267	615		B-phase AC current Ib	float	4	R	A	
268	616		C-phase AC current Ic	float	4	R	A	
269	617		Zero sequence current Io	float	4	R	A	
26A	618		Total power factor PF	float	4	R		
26B	619		A-phase power factor PFa	float	4	R		
26C	620							
26D	621							
26E	622							
26F	623							
270	624							
271	625							
272	626							
273	627							
274	628							
275	629							
276	630							
277	631							
278	632							
279	633	6 <sup>th</sup> Circuit						
27A	634							
27B	635							
27C	636							
27D	637							
27E	638							

27F	639						
280	640						
281	641	B-phase power factor PFb	float	4	R		
282	642						
283	643	C-phase power factor PFC	float	4	R		
284	644						
285	645	Frequency F	float	4	R	Hz	
286	646						
287	647	Total active power psum	float	4	R	kW	
288	648						
289	649	A-phase active power pa	float	4	R	kW	
28A	650						
28B	651	B-phase active power pb	float	4	R	kW	
28C	652						
28D	653	C-phase active power pc	float	4	R	kW	
28E	654						
28F	655	Total reactive power qsum	float	4	R	kvar	
290	656						
291	657	A-phase reactive power qa	float	4	R	kvar	
292	658						
293	659	B-phase reactive power qb	float	4	R	kvar	
294	660						
295	661	C-phase reactive power qc	float	4	R	kvar	
296	662						
297	663	Total apparent power ssum	float	4	R	kVA	
298	664						
299	665	A-phase apparent power sa	float	4	R	kVA	
29A	666						
29B	667	B-phase apparent power sb	float	4	R	kVA	
29C	668						
29D	669	C-phase apparent power sc	float	4	R	kVA	
29E	670						
29F	671	Total active energy eps	float	4	R	kWh	
2A0	672						
2A1	673	A-phase total active electrical energy epa	float	4	R	kWh	
2A2	674						
2A3	675	B-phase total active electrical energy epb	float	4	R	kWh	
2A4	676						
2A5	677	C-phase total active electrical energy epc	float	4	R	kWh	
2A6	678						
2A7	679	Total reactive energy eqs	float	4	R	kvarh	
2A8	680						
2A9	681	A-phase total reactive energy eqa	float	4	R	kvarh	
2AA	682						
		B-phase total reactive energy	float	4	R	kvarh	

2AB	683		eqb					
2AC	684		C-phase total reactive energy	float	4	R	kvarh	
2AD	685		eqc					
2AE	686		Positive total active energy epsp	float	4	R	kWh	
2AF	687							
2B0	688		Positive A-phase total active energy of epap	float	4	R	kWh	
2B1	689							
2B2	690		Positive B-phase total active energy of epbp	float	4	R	kWh	
2B3	691							
2B4	692		Positive C-phase total active energy of epcp	float	4	R	kWh	
2B5	693							
2B6	694		Reverse total active energy epsn	float	4	R	kWh	
2B7	695							
2B8	696		Reverse A-phase total active energy epan	float	4	R	kWh	
2B9	697							
2BA	698		Reverse B-phase total active energy epbn	float	4	R	kWh	
2BB	699							
2BC	700		Reverse C-phase total active energy epcn	float	4	R	kWh	
2BD	701							
2BE	702		Positive total reactive power eqsp	float	4	R	kvarh	
2BF	703							
2C0	704		Positive A-phase total reactive power eqap	float	4	R	kvarh	
2C1	705							
2C2	706		Positive B-phase total reactive power eqbp	float	4	R	kvarh	
2C3	707							
2C4	708		Positive C-phase total reactive power eqcp	float	4	R	kvarh	
2C5	709							
2C6	710		Reverse total reactive power eqsn	float	4	R	kvarh	
2C7	711							
2C8	712		Reverse A-phase total reactive power eqan	float	4	R	kvarh	
2C9	713							
2CA	714		Reverse B-phase total reactive power eqbn	float	4	R	kvarh	
2CB	715							
2CC	716		Reverse C-phase total reactive power eqcn	float	4	R	kvarh	
2CD	717							

### Circuit alarm information

Add	Decimal	Content		Data type	Bytes	Read/write	Unit	Remark
2CE	718	1 <sup>st</sup> circuit	A-phase AC voltage Ua+	uint16_t	1	R		Explanation of phase voltage alarm 00H: Normal 01H: Below lower limit 02H: Above upper limit
			B-phase AC voltage Ub					
2CF	719		C-phase AC voltage Uc+	uint16_t	1	R		
2D0	720		Input frequency	uint16_t	1	R		
			Lightning arrester failure + lightning	uint16_t	1	R		

			arrester circuit breaker disconnected					(too high)
2D1	721		Smart meter failure	uint16_t	1	R		03H: Above upper limit
2D2	722	2 <sup>nd</sup> circuit	A-phase AC voltage Ua+ B-phase AC voltage Ub	uint16_t	1	R		(super high) 04H: Phase loss
2D3	723		C-phase AC voltage Uc+ Input frequency	uint16_t	1	R		Frequency alarm description
2D4	724		Lightning arrester failure + lightning arrester circuit breaker disconnected	uint16_t	1	R		00H: Normal 01H: Below lower limit
2D5	725		Smart meter failure	uint16_t	1	R		02H: Above upper limit
2D6	726		A-phase AC voltage Ua+ B-phase AC voltage Ub	uint16_t	1	R		Lightning protection device alarm description
2D7	727	3 <sup>rd</sup> circuit	C-phase AC voltage Uc+ Input frequency	uint16_t	1	R		00H: Normal E2H: Lightning arrester failure
2D8	728		Lightning arrester failure + lightning arrester circuit breaker disconnected	uint16_t	1	R		Explanation of lightning arrester circuit breaker
2D9	729		Smart meter failure	uint16_t	1	R		disconnect alarm
2DA	730	4 <sup>th</sup> circuit	A-phase AC voltage Ua+ B-phase AC voltage Ub	uint16_t	1	R		00H: Normal 05H: Switch disconnected
2DB	731		C-phase AC voltage Uc+ Input frequency	uint16_t	1	R		Explanation of smart meter fault alarm
2DC	732		Lightning arrester failure + lightning arrester circuit breaker disconnected	uint16_t	1	R		00H: Normal E3H: Smart meter failure
2DD	733		Smart meter failure	uint16_t	1	R		
2DE	734	5 <sup>th</sup> circuit	A-phase AC voltage Ua+ B-phase AC voltage Ub	uint16_t	1	R		
2DF	735		C-phase AC voltage Uc+ Input frequency	uint16_t	1	R		
2E0	736		Lightning arrester failure + lightning arrester circuit breaker disconnected	uint16_t	1	R		
2E1	737		Smart meter failure	uint16_t	1	R		
2E2	738	6 <sup>th</sup> circuit	A-phase AC voltage Ua+ B-phase AC voltage Ub	uint16_t	1	R		
2E3	739		C-phase AC voltage Uc+ Input frequency	uint16_t	1	R		
2E4	740		Lightning arrester failure + lightning arrester circuit breaker disconnected	uint16_t	1	R		
2E5	741		Smart meter failure	uint16_t	1	R		

## 8 Common Troubleshooting

### Common fault analysis and troubleshooting

Fault content	Analysis	Remark
No display when powered on	Check if the power supply voltage is within the working voltage range	
Incorrect readings of voltage, current, energy, etc	Check if the voltage to current ratio setting is correct Check if the wiring mode setting is consistent with the actual situation	

	Check if the Voltage transformer and current transformer are in good condition	
Incorrect power or power factor	Check if the wiring mode setting is consistent with the actual situation Check if the voltage and current phase sequence is correct Check if the wiring is correct	
Abnormal communication	Check if the address, Baud, check bit, etc. in the communication settings are consistent with the upper computer Check if the RS485 converter is normal Check if the protocol used by the instrument is correct Communication terminal connected in parallel with a resistance of over 120 ohms Check if the wiring is correct	

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