

KPM33B

Three Phase DIN Rail Smart Energy Meter

User Manual V3.4

Danger and Warning

- The device can only be installed by professionals.
- The manufacturer will not take responsibility for failures caused by non-compliant operation not following this manual.

Electric shock, burning and explosion

- Device should only be installed and maintained by qualified personnel.
- Before carrying out any operation on the device, isolate the voltage input and power supply, and short-circuit the secondary windings of all current transformers.
- Confirm that the voltage has been cut off before operation.
- All mechanical parts and covers, etc. should be restored to their original positions before the device is powered up.
- The device should be supplied with the correct rated voltage during use.

Note: Please pay attention to these precautions. Or it will cause serious danger.

1 Overview

1.1 Function introduction

KPM33B three-phase DIN rail smart energy meter is designed with three-phase electrical parameter measurement, display, energy accumulation, and network communication, etc. It's with strong anti-interference ability, and can work stably even in serious electromagnetic interference.

1.2 Application

- Measure and monitor electric energy parameters in the distribution system.
- Energy eficiency management system
- Statistical analysis of internal power consumption and basis for charging statistics
- Automatic meter reading system for electric energy measurement
- Intelligent power distribution management system

1.3 Function features

- Measure three-phase voltage, current, active power, reactive power, apparent power, active / reactive energy, power factor, frequency, etc..
- High accuracy Class 0.5S bidirectional four-quadrant power statistics.
- Multi-rate energy metering, 4 time zones, 8 time periods, 4 rates.
- 1 * RS485 port with Modbus-RTU protocol.
- Optional 4G for MQTT protocol.
- 12-month historical energy statistics.
- Rated current 0.2-100 A for direct wiring and rated 5A for indirect wiring.
- Rated voltage 380VAC.
- LED pulse indicator.
- 1 channel passive optocoupler collector active pulse output.
- Built-in relay for remote control for prepaid function.
- 35mm standard rail installation.

2 Technical Parameters

2.1 Environmental Conditions

Working temperature: -25℃+70℃
Relative humidity: 5%~95% non-condensing
Storage temperature: -30℃+75℃
Altitude: Below 3000 meters

2.2 Rated Parameters

Input voltage: Rated AC 3*220V
Input current: 0.2-1(100)A
Power consumption: Whole set power consumption < 2VA

Overload capacity:

AC voltage loop: 1.2 times rated voltage, continuous work
2 times rated voltage, allow 10s
AC current loop: 1.2 times rated current, continuous work
20 times rated current, allow 1s

2.3 Measurement Accuracy Index

Parameters	Accuracy	Parameters	Accuracy
U	±0.2%	PF	±0.5%
I	±0.2%	kWh	0.5s
P	±0.5%	kVar	Class 2
Q	±2%	F	±0.02HZ

2.4 Electrical insulation Performance

Medium strength:

Comply with GB/T13729-2002 regulations,
Power frequency voltage 2KV, time 1 minute

Insulation resistance:

Comply with GB/T13729-2002 regulations,
500V megger test, insulation resistance not less than 50MΩ

Impulse voltage:

Comply with GB/T13729-2002 regulations,
Withstand the impact of 1.2/50US peak 5KV standard lightning wave

2.5. Mechanical properties

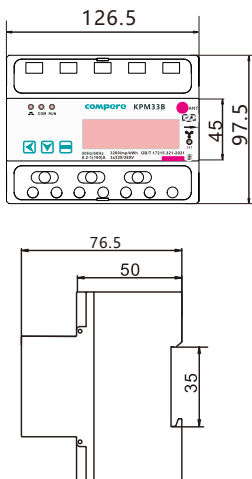
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Vibration durability: GB/T11287-2000, level 1
Impact: Impact response: GB/T14537-1993, level 1
Impact durability: GB/T14537-1993, level 1
Collision: GB/T14537-1993, level 1

2.6 Electromagnetic compatibility

Electrostatic discharge immunity : IEC61000-4-2, level 4
Fast pulse group immunity : IEC61000-4-4, level 4
Surge immunity : IEC61000-4-5, level 4
Power frequency magnetic field immunity :IEC61000-4-8, level 4

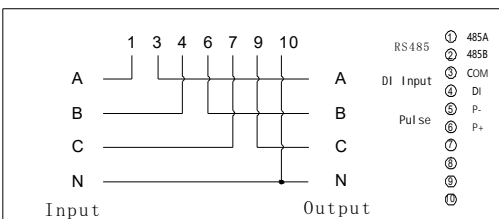
3 Installation and Wiring

3.1 Product size



3.2 Installation and Wiring

3.2.1 Direct wiring



3.3 Terminal definition

No.	Terminals	Definition	Remark
1	Ain	Phase A power/current input	When the current is indirectly connected, this terminal is only a current sampling terminal.
3	Aout	Phase A power/current output	
4	Bin	Phase B power/current input	
6	Bout	Phase B power/current output	
7	Cin	Phase C power/current input	
9	Cout	Phase C power/current output	
10	N	Voltage sampling public terminals	
①	485A	RS485A	
②	485B	RS485B	
③	COM	DI common port	
④	DI	DI input	
⑤	P-	Pulse output +	
⑥	P+	Pulse output -	
⑦			
⑧			
⑨			
⑩			

4 Function Description

4.1 Energy Measurement

KPM33B records historical total active energy, total reactive energy, import/export active/reactive energy, active energy and reactive energy consumption for last 12 months(0:00 on the 1st of each month). KPM33B also provides multi-rate electric energy, provides 4 rates for sharp, peak, flat and valley time. It can set up to 8 time periods in 24hours a day and record the total active/reactive energy for four rates.

Example: The daily electricity metering is calculated in 5 time slots. The details are as follows:

Period	Start time point	Tariff
1#Period	6	1
2#Period	10	2
3#Period	12	1
4#Period	15	3
5#Period	23	4

Description

1# Period: from 6 to 10, the tariff is 1;
2# Period: from 10 o'clock to 12 o'clock, the tariff is 2;
3# Period: from 12 o'clock to 15 o'clock, the tariff is 1;
4# Period: From 15:00 to 23:00, the tariff is 3;
5# Period: From 24 o'clock to 6 o'clock the next day, the tariff is 4.
Remark: The electricity kWh of the same tariff will be calculate together.

1. Modbus RTU address setting

The meter address is for standard Modbus RTU communication.

On the same Rs485 line, the meter address can't be the same.

Note: Setting range 001-247. The default address is 001.

Adr:001

☒ Select the bit to modify
☒ Change in value
☐ Confirmation key. After modification, press ENTER key. The bit won't flash and the modification is completed.

2. Baud rate setting

The baud rate of Rs485 port can be set according to your system. But the parity of each device should be the same.

Note: Optional 1200bps, 2400bps, 4800bps, 9600bps, 19200bps. Default: 9600bps

BPS: 9600

☒ Change the option
☐ Confirmation key. After modification, press ENTER key to complete the modification

3. Data format

Rs485 data format can be set based on your system.

Note: 81O (Odd parity), 81E(Even parity), 81N (No parity)

BAtA: 81E

☒ Change the option
☐ Confirmation key. After modification, press ENTER key to complete the modification

4. Clear energy data

Clear current, historical and multi-rate active and reactive energy.

The default is No. You can switch to YES to clear.

CWnY:no

☒ Change the option
☐ Confirmation key. After modification, press ENTER key to complete the modification

5. Change Password

Initial password: 6666, users can set by themselves.

Note: When setting the password, please save the password in advance and set it carefully.

PASS:6666

☒ Select the bit to modify
☒ Change in value
☐ Confirmation key. After modification, press ENTER key. The bit won't flash and the modification is completed.

6. Reconfigure MQTT's configuration

Reconfigure the configuration of the MQTT.

Default no, you can switch YES to reconfigure

rCFg:no

☒ Change option
☐ Confirmation key. After modification, press ENTER key to complete the modification

7. Restart the communication module

After reconfigured the wireless communication, users need to restart the communication module.

Note: no means no need to restart, yES means restart.

rStC:no

☒ Change option
☐ Confirmation key. After modification, press ENTER key to complete the modification

8. Clear paid energy

Used to clear the left paid power.

Note: no means no need to clear, yES means clear.

C_SE:no

☒ Change option
☐ Confirmation key. After modification, press ENTER key to complete the modification

4.2 Pulse

Pulse output: KPM33B provides active/reactive energy metering, 1 active energy pulse output function, using optocoupler open collect or output. The method of energy accuracy inspection refers to the national measurement regulations:

Measurement procedures: Pulse error comparison methods for standard meters.

Electrical characteristics: Open collector voltage VCC ≤ 48V, current Iz ≤ 50mA

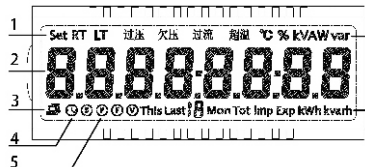
Pulse constant: 3200imp/kWh

4.3 Relay

Relay on/of f status can be read and set by Modbus RTU or MQTT.

5 Operation Instructions




5.1 Interface display






NO.	Content displayed	Detailed description
1	Settings	Display when setting parameters
2	Display indication	Digital tube display UA (Phase A voltage), Ub (Phase B voltage), Uc (Phase C voltage), IA (Phase A current), Ib (Phase B current), Ic (Phase C current), P (total active power), q (total reactive power), S (total apparent power), PF (average power factor), F (frequency), bd (baud rate), Ad (address), active energy, reactive energy, relay status
3	Communication indication	Two small computers at the bottom left of the screen during communication
4	Time indication	When the enter key is pressed, the time and electrical parameters are switched and displayed
5	Sharp, peak, flat, valley display	Multi-rate power display
6	Power display	Display active power and reactive power
7	Electric parameter unit symbol	Voltage V, kV; Current: A, kA; Active power: W, kW; Reactive power var, kvar; apparent power:VA, kVA

5.2 Operation and display

Measurement and setting display flow chart

Three touch buttons on the front panel, they are labeled from left to right as  key,  key,  key. The display of different measurement data and the setting of parameters can be realized through the operation of three buttons.

Name of key	Functional description
 Down key	Switching power parameters display. (Last one)If it is in the parameter setting state, it is used to move the bit to be modified.
 Left key	Switching power parameters display. (Next one) If it is in the parameter setting state, it is used to increase the parameter values
 ENTER/Enter key	In the power parameter measuring state, it is used to enter the parameter setting interface. In the parameter setting state, it is used to enter the parameter setting state and confirm the parameter setting.

9. Control mode setting

Used to change the control mode of the meter relay.

Note: rMod (remote control), LMod (local control)

CTrM: rMod

☒ Change option
☐ Confirmation key. After modification, press ENTER key to complete the modification

10. Relay on/of f setting

Used to set the relay open or closed mode (only in local control mode, it will take ef fect from next time), and the status after the last relay action is displayed at the same time.

Note: on (relay close), oFF (relay open)

rELY: on

☒ Change option
☐ Confirmation key. After modification, press ENTER key to complete the modification

11. Forced power on/of f setting

Displays the current forced power-of f mode of the meter, which cannot be changed locally.

Note: n-P (non-forced mode), f-b (forced mode), f-P (mandatory power on mode)

Fmod: n_P

12. Wiring direction setting

Used to the meter's wiring direction.

Note: PoS (positive), nE (reverse)

LinE: PoS

☒ Change option
☐ Confirmation key. After modification, press ENTER key to complete the modification

13. Display SN number

Displays the meter's 13-digit SN number in two screens.

Sn_33Bxx

XXXXXXXXXX

14. Current version

Displays the current software version.

2.6.24.07.26

5.4 Parameter settings


Parameter setting menu structure menu is as follows
Factory default value:




No	Display	Default	Definition
1	Adr	001	Meter address(1~247)
2	bPS	9600	Baud rate (1200-19200bps)
3	dAtA	81E	Data format, 8 data bit, 1 parity bit, 1 stop bit
4	CENy	no	Used to clear energy data
5	PASS	6666	Avoid non-staff people to change meter settings
6	rCFg	no	Used to reconfigure MQTT configuration
7	rStC	no	Used to restart wireless module
8	C_SE	no	Used to clear paid left energy data
9	CTrM	rMod	Used to change relay control mode
10	rELY	on	Used to control relay on/ of f
11	FMod	n_P	Used to display forced power on/off mode
12	LinE	PoS	Used to set wiring direction
13	Sn_33Bxx		Displays the first 5 digits of the meter SN number
14	xxxxxxx		Displays the last 8 digits of the meter SN number
15	2.4.24.07.26		Display current firmware version:V2.4Build20240726




! 0000:Connection to module broken ;
! 0001: MQTT mode,disconnected;
! 0101: MQTT mode,connection normal;
! 0002: Debug mode,disconnected;
! 0102: Debug mode,connection normal
! Note:The first number represents the signal strength (0-5), with 5 being the strongest.

5.3 Parameter settings

Before starting the measurement, please make the settings.

When entering the setting screen, you need to press and hold  for 3s to enter the password input interface, the default password:

6666. Press the  key to enter the parameter setting interface, then press the  key to select the parameters to be set. After pressing the  key, the leftmost digit of the set value starts to flash.

Press the  key to select the digit to be modified, and press the  key to increase the value of the modified digit. After all modifications are completed, press the  key to confirm. In the setting interface, if no key is pressed for 30s, it will return to measurement display screen.

6 Communication

KPM33B supports MODBUS-RTU communication protocol, 1 start bit, 8 data bits, 1 parity bit, 1 stop bits. Supported baud rates: 1200, 2400, 4800, 9600, 19200. Default parameters: 9600bps, Even parity bit
Format for each byte in RTU mode:
1 start bit + 8 data bits + 1 parity bit + 1 stop bit
Data frame format:
Address field + command field + data field + CRC check

Supported function code			
DEC	HEX	Definition	Description
01	0X01	Read relay output	Read 1 or more relay output status
03	0X03	Read register data	Read 1 or multiple register
05	0X05	Write 1 relay output	Control 1 relay close or open
16	0X10	Write multiple registers	Write multiple register data

6.1 Digital output control and status reading
This area stores relay status. Users can read it through function code 01H and control relay by 05H function code.

Adr	Parameter	Data	Data format	Attribute
0001H	Relay1 (DO1)	1=ON, 0=OFF	Bit	R/W

6.1.1 Read relay status (function code 01H)
Request data frame: read Relay1 status.

Addr	Fun	StartReg hi	StartReg lo	RegNum hi	Reg Num lo	CRC16 hi	CRC16 lo
01H	01H	00H	01H	00H	01H	xxH	xxH

Response data frame: The slave responds to the data frame of the master. Contains slave address, function data byte, relay status data and CRC error checking.
The status of each relay in the data packet occupies one bit (1=ON, 0=OFF), the 1st bit (lowest bit) of the first byte is the status value of the load control relay of phase A, and the 2nd bit of the first byte is the state value of load control relay of phase B, and the 3rd bit of the first byte is the state value of the load control relay of phase C.

Addr	Fun	Bytecount	Data	CRC16hi	CRC16lo
01H	01H	01H	01H	90H	48H

Data byte content (three-phase load control relay is closed)

Bit7	Bit 6	Bit 5	Bit 4	Bit 3	Bit 2	Bit 1	Bit 0
0	0	0	0	0	1	1	1

6.1.2 Relay control (function code 05H)
Note that the data 0x0000 in the relay control message is the load control relay open, and the data 0xFF00 is the load control relay close.

Addr	Fun	DOaddr hi	DO addr lo	Value hi	Value lo	CRC16 hi	CRC16 lo
01H	05H	xx	xx	FFH	00H	xxH	xxH

Response data frame:

Addr	Fun	DOaddr hi	DO addr lo	Value hi	Value lo	CRC16 hi	CRC16 lo
01H	05H	xx	xx	FFH	00H	xxH	xxH

Relay control: 0x0000, open load control relay.
0xFF00, close load control relay.
6.2 Basic measurement parameters Area
This area stores system parameters related to equipment operation, including communication parameters, current ratio, etc., which can be read by using the Modbus protocol 03H function code or using the 10H function code setting.

0118H	Peak active energy of the previous 10 settlement day	Floating point	kWh
011AH	Peak active energy of the previous 11 settlement day	Floating point	kWh
011CH	Peak active energy of the previous 12 settlement day	Floating point	kWh
011EH	Peak reactive energy of this month	Floating point	kvarh
0120H	Peak reactive energy of the previous 1 settlement day	Floating point	kvarh
0122H	Peak reactive energy of the previous 2 settlement day	Floating point	kvarh
0124H	Peak reactive energy of the previous 3 settlement day	Floating point	kvarh
0126H	Peak reactive energy of the previous 4 settlement day	Floating point	kvarh
0128H	Peak reactive energy of the previous 5 settlement day	Floating point	kvarh
012AH	Peak reactive energy of the previous 6 settlement day	Floating point	kvarh
012CH	Peak reactive energy of the previous 7 settlement day	Floating point	kvarh
012EH	Peak reactive energy of the previous 8 settlement day	Floating point	kvarh
0130H	Peak reactive energy of the previous 9 settlement day	Floating point	kvarh
0132H	Peak reactive energy of the previous 10 settlement day	Floating point	kvarh
0134H	Peak reactive energy of the previous 11 settlement day	Floating point	kvarh
0136H	Peak reactive energy of the previous 12 settlement day	Floating point	kvarh
0138H	Flat active energy for this month	Floating point	kWh
013AH	Last month flat active energy	Floating point	kWh
013CH	The month before last month flat active energy	Floating point	kWh
013EH	The month before 2 month flat active energy	Floating point	kWh
0140H	The month before 3month flat active energy	Floating point	kWh
0142H	The month before 4 month flat active energy	Floating point	kWh
0144H	The month before 5 month flat active energy	Floating point	kWh
0146H	The month before 6 month flat active energy	Floating point	kWh
0148H	The month before 7 month flat active energy	Floating point	kWh
014AH	The month before 8 month flat active energy	Floating point	kWh
014CH	The month before 9 month flat active energy	Floating point	kWh
014EH	The month before 10 month flat active energy	Floating point	kWh
0150H	The month before 11 month flat active energy	Floating point	kWh
0152H	Flat reactive energy for this month	Floating point	kvarh
0154H	Flat reactive energy for last month	Floating point	kvarh
0156H	The month before last month flat reactive energy	Floating point	kvarh
0158H	The month before 2 month flat reactive energy	Floating point	kvarh
015AH	The month before 3month flat reactive energy	Floating point	kvarh
015CH	The month before 4 month flat reactive energy	Floating point	kvarh
015EH	The month before 5 month flat reactive energy	Floating point	kvarh
0160H	The month before 6 month flat reactive energy	Floating point	kvarh
0162H	The month before 7 month flat active energy	Floating point	kvarh
0164H	The month before 8 month flat reactive energy	Floating point	kvarh
0166H	The month before 9 month flat reactive energy	Floating point	kvarh
0168H	The month before 10 month flat reactive energy	Floating point	kvarh
016AH	The month before 11 month flat reactive energy	Floating point	kvarh
016CH	Valley active energy for this month	Floating point	kWh
016EH	Valley active energy for last month	Floating point	kWh
0170H	The month before last month valley reactive energy	Floating point	kWh
0172H	The month before 2 month valley reactive energy	Floating point	kWh
0174H	The month before 3month valley reactive energy	Floating point	kWh
0176H	The month before 4 month valley reactive energy	Floating point	kWh

Adr	Parameter	Data range	Format
0000H	Password	0~9999	Word
0001H	Modbus address	Modbus-RTU address: 1~247	Word
0002H	Baud rate & Parity	Baud rate (BIT0~7) 0: 1200, 1: 2400, 2: 4800, 3: 9600, 4: 19200 Data format (BIT8~15): 0: 81E 1: 81o 2: 81n	Word
000CH	Clear energy data	Command 0x5578, clear immediately Command 0x5579, clear left prepaid energy	Word
000DH	Spare		Word
000EH	Prepaid energy	Prepaid energy data(4bytes Float)	Word
0012H	Sn serial No. Read only	14 consecutive bytes, the first 13 bytes are the serial number	Word
0019H	Spare		Word
001AH	Wireless module networking status issuance	0000:Disconnect to the module; 0001: MQTT mode, disconnected; 0101: MQTT mode, connected; 0002: Debug mode, disconnected; 0102: Debug mode, connected The first number represents the signal strength (0-5), with 5 being the strongest.	Word
001BH	Remote forced power on/off	Command 0xAADD+Word(forced power off time min) Remote forced power off command 0xB8DD+Word(forced power off time min) Remote forced power on command 0xB8DD+Word(clear forced power on/off status)	Word
001DH	Load control continued time	0-65535(s)	Word
001EH	Local, remote control	Command 0xDD11 local control Command 0xDD22 remote control	Word
001FH	Spare		Word
0020H	Overdraft amount	Overdraft amount (4bytes float)	Word
0023H	Time	Year Month Day Hour Minute Second (6 byte)	Word
0026H	Load power threshold value	0~65535kW , Judge single-phase load	Word

6.3 Basic measurement area
Basic measurement area mainly measures basic voltage, current, power, power factor, etc..
All parameters in this area are read using the Modbus protocol 03H function code. They are read-only data. The data format is Short floating point,big-endian.And the data is the primary data.

Address	Parameter	Data type	Unit
0030H	Phase A voltage	Floating point	V
0032H	Phase B voltage	Floating point	V
0034H	Phase C voltage	Floating point	V
0036H	Phase A current	Floating point	A
0038H	Phase B current	Floating point	A
003AH	Phase C current	Floating point	A
003CH	AB Line voltage	Floating point	V
003EH	BC Line voltage	Floating point	V
0040H	CA Line voltage	Floating point	V
0042H	Phase A active power	Floating point	W
0044H	Phase B active power	Floating point	W

0178H	The month before 5 month valley reactive energy	Floating point	kWh
017AH	The month before 6 month valley reactive energy	Floating point	kWh
017CH	The month before 7 month valley active energy	Floating point	kWh
017EH	The month before 8 month valley reactive energy	Floating point	kWh
0180H	The month before 9 month valley reactive energy	Floating point	kWh
0182H	The month before 10 month valley reactive energy	Floating point	kWh
0184H	The month before 11 month valley reactive energy	Floating point	kWh
0186H	Valley reactive energy for this month	Floating point	kvarh
0188H	Valley reactive energy for last month	Floating point	kvarh
018AH	The month before last month flat reactive energy	Floating point	kvarh
018CH	The month before 2 month flat reactive energy	Floating point	kvarh
018EH	The month before 3month flat reactive energy	Floating point	kvarh
0190H	The month before 4 month flat reactive energy	Floating point	kvarh
0192H	The month before 5 month flat reactive energy	Floating point	kvarh
0194H	The month before 6 month flat reactive energy	Floating point	kvarh
0196H	The month before 7 month flat active energy	Floating point	kvarh
0198H	The month before 8 month flat reactive energy	Floating point	kvarh
019AH	The month before 9 month flat reactive energy	Floating point	kvarh
019CH	The month before 10 month flat reactive energy	Floating point	kvarh
019EH	The month before 11 month flat reactive energy	Floating point	kvarh

6.5 Wireless communication
KPM33B supports optional WIFI /4G wireless communication through MQTT protocol.
Configuration steps are as follows:

Step 1: Set the meter to debug mode
Enter the setting interface, enter the rCFG page and set it to "YES".

rCFG: YES

Note: The system only stays in YES status for a few seconds then it will go back to NO. Once u changed to YES status and pressed ENTER key, the reconfigure step is finished.
At this time, the device will connect to the Compere maintenance platform. Then use the KPM Config APP to configure.
Note:If it is WIFI wireless communication, you need to turn on the mobile hotspot and set the account to compere-debug and the password to kpm-debug. Then the device will connect to the default hotspot and connect to the Compere maintenance platform for configuration.
Step 2: KPM Config APP meter setting
1. Download ' KPM Config ' from Google play or Apple APP store.
2. Click ' Smart meter ' to enter the code search page. As Fig 1.
Note:The account to 'kpmconfig' and the password to 'kpmconfig'.
Step 3: Search for devices: As Fig 2
Input the production number to search
If the number is wrong, the search button will be grayed and cannot be clicked.
If the number is correct, click the Code search to identify the device.

0046H	Phase C active power	Floating point	W
0048H	Three phase active power	Floating point	W
004AH	Phase A reactive power	Floating point	var
004CH	Phase B reactive power	Floating point	var
004EH	Phase C reactive power	Floating point	var
0050H	Three phase reactive power	Floating point	var
0052H	Phase A apparent power	Floating point	VA
0054H	Phase B apparent power	Floating point	VA
0056H	Phase C apparent power	Floating point	VA
0058H	Three phase apparent power	Floating point	VA
005AH	Phase A power factor	Floating point	
005CH	Phase B power factor	Floating point	
005EH	Phase C power factor	Floating point	
0060H	Three phase power meter	Floating point	
0062H	Frequency	Floating point	Hz
0200H	Phase A apparent demand	Floating point	VA
0202H	Phase B apparent demand	Floating point	VA
0204H	Phase C apparent demand	Floating point	VA

6.4 Multi rate area
All data in this area are primary cumulative energy consumption data, which can be read using the Modbus protocol 03H function code.The data format is Short floating point,big-endian.And the data is the primary data.

Address	Parameter	Data type	Unit
0068H	Phase A forward active energy	Floating point	kWh
006AH	Phase B forward active energy	Floating point	kWh
006CH	Phase C forward active energy	Floating point	kWh
006EH	Phase A reverse active energy	Floating point	kWh
0070H	Phase B reverse active energy	Floating point	kWh
0072H	Phase C reverse active energy	Floating point	kWh
0074H	Phase A forward reactive energy	Floating point	kvarh
0076H	Phase B forward reactive energy	Floating point	kvarh
0078H	Phase C forward reactive energy	Floating point	kvarh
007AH	Phase A reverse reactive energy	Floating point	kvarh
007CH	Phase B reverse reactive energy	Floating point	kvarh
007EH	Phase C reverse reactive energy	Floating point	kvarh
0080H	Total active energy	Floating point	kWh
0082H	Forward active energy	Floating point	kWh
0084H	Reverse active energy	Floating point	kWh
0086H	Total reactive energy	Floating point	kvarh
0088H	Forward total reactive energy	Floating point	kvarh
008AH	Reverse total reactive energy	Floating point	kvarh
008CH	Total sharp active energy	Floating point	kWh
008EH	Total peak active energy	Floating point	kWh
0090H	Total flat active energy	Floating point	kWh
0092H	Total valley active energy	Floating point	kWh
0094H	Total sharp reactive energy	Floating point	kvarh
0096H	Total peak reactive energy	Floating point	kvarh
0098H	Total flat reactive energy	Floating point	kvarh
009AH	Total valley reactive energy	Floating point	kvarh
009CH	Total combined active energy for this month	Floating point	kWh
009EH	Total combined active energy of the previous 1 settlement day	Floating point	kWh
00A0H	Total combined active energy of the previous 2 settlement day	Floating point	kWh
00A2H	Total combined active energy of the previous 3 settlement day	Floating point	kWh
00A4H	Total combined active energy of the previous 4 settlement day	Floating point	kWh
00A6H	Total combined active energy of the previous 5 settlement day	Floating point	kWh
00A8H	Total combined active energy of the previous 6 settlement day	Floating point	kWh
00AAH	Total combined active energy of the previous 7 settlement day	Floating point	kWh

00ACH	Total combined active energy of the previous 8 settlement day	Floating point	kWh
00AEH	Total combined active energy of the previous 9 settlement day	Floating point	kWh
00B0H	Total combined active energy of the previous 10 settlement day	Floating point	kWh
00B2H	Total combined active energy of the previous 11 settlement day	Floating point	kWh
00B4H	Total combined active energy of the previous 12 settlement day	Floating point	kWh
00B6H	Total combined reactive energy for this month	Floating point	kvarh
00B8H	Total combined reactive energy of the previous 1 settlement day	Floating point	kvarh
00BAH	Total combined reactive energy of the previous 2 settlement day	Floating point	kvarh
00BCH	Total combined reactive energy of the previous 3 settlement day	Floating point	kvarh
00BEH	Total combined reactive energy of the previous 4 settlement day	Floating point	kvarh
00C0H	Total combined reactive energy of the previous 5 settlement day	Floating point	kvarh
00C2H	Total combined reactive energy of the previous 6 settlement day	Floating point	kvarh
00C4H	Total combined reactive energy of the previous 7 settlement day	Floating point	kvarh
00C6H	Total combined reactive energy of the previous 8 settlement day	Floating point	kvarh
00C8H	Total combined reactive energy of the previous 9 settlement day	Floating point	kvarh
00CAH	Total combined reactive energy of the previous 10 settlement day	Floating point	kvarh
00CCH	Total combined reactive energy of the previous 11 settlement day	Floating point	kvarh
00CEH	Total combined reactive energy of the previous 12 settlement day	Floating point	kvarh
00D0H	Sharp active energy for this month	Floating point	kWh
00D2H	Sharp active energy of the previous 1 settlement day	Floating point	kWh
00D4H	Sharp active energy of the previous 2 settlement day	Floating point	kWh
00D6H	Sharp active energy of the previous 3 settlement day	Floating point	kWh
00D8H	Sharp active energy of the previous 4 settlement day	Floating point	kWh
00DAH	Sharp active energy of the previous 5 settlement day	Floating point	kWh
00DCH	Sharp active energy of the previous 6 settlement day	Floating point	kWh
00DEH	Sharp active energy of the previous 7 settlement day	Floating point	kWh
00E0H	Sharp active energy of the previous 8 settlement day	Floating point	kWh
00E2H	Sharp active energy of the previous 9 settlement day	Floating point	kWh
00E4H	Sharp active energy of the previous 10 settlement day	Floating point	kWh
00E6H	Sharp active energy of the previous 11 settlement day	Floating point	kWh
00E8H	Sharp active energy of the previous 12 settlement day	Floating point	kWh
00EAH	Sharp reactive energy for this month	Floating point	kvarh
00ECH	Sharp reactive energy of the previous 1 settlement day	Floating point	kvarh
00EEH	Sharp reactive energy of the previous 2 settlement day	Floating point	kvarh
00F0H	Sharp reactive energy of the previous 3 settlement day	Floating point	kvarh
00F2H	Sharp reactive energy of the previous 4 settlement day	Floating point	kvarh
00F4H	Sharp reactive energy of the previous 5 settlement day	Floating point	kvarh
00F6H	Sharp reactive energy of the previous 6 settlement day	Floating point	kvarh
00F8H	Sharp reactive energy of the previous 7 settlement day	Floating point	kvarh
00FAH	Sharp reactive energy of the previous 8 settlement day	Floating point	kvarh
00FCH	Sharp reactive energy of the previous 9 settlement day	Floating point	kvarh
00FEH	Sharp reactive energy of the previous 10 settlement day	Floating point	kvarh
0100H	Sharp reactive energy of the previous 11 settlement day	Floating point	kvarh
0102H	Sharp reactive energy of the previous 12 settlement day	Floating point	kvarh
0104H	Peak active energy for this month	Floating point	kWh
0106H	Peak active energy of the previous 1 settlement day	Floating point	kWh
0108H	Peak active energy of the previous 2 settlement day	Floating point	kWh
010AH	Peak active energy of the previous 3 settlement day	Floating point	kWh
010CH	Peak active energy of the previous 4 settlement day	Floating point	kWh
010EH	Peak active energy of the previous 5 settlement day	Floating point	kWh
0110H	Peak active energy of the previous 6 settlement day	Floating point	kWh
0112H	Peak active energy of the previous 7 settlement day	Floating point	kWh
0114H	Peak active energy of the previous 8 settlement day	Floating point	kWh
0116H	Peak active energy of the previous 9 settlement day	Floating point	kWh

➤ Power or power factor is incorrect while the voltage and current is correct.
• Compare the voltage and current input of the actual wiring and the wiring diagram, and check whether the phase wiring is correct. Rs485
➤ communication is abnormal
• Check whether the communication baud rate, ID and communication protocol settings of the host computer are consistent with the device.
• Check whether the settings of data bits, stop bits and parity bits are consistent with those of the host computer.
• Check if the RS-232/RS-485 converter is normal.
• Check whether there is any problem with the entire communication network line (short circuit, open circuit, grounding, whether the shielded wire is properly grounded, etc.).
• Turn off the device and the host computer, and then turn it on again. It is recommended to connect a 100-200Ω in parallel at the end of the communication line.
➤ Wireless communication is abnormal
WIFI wireless communication
• Check whether the WIFI hotspot account and password are correct.
• Check if the WIFI can be connected to the Internet normally
4G wireless communication
• Check 4G antenna placement, server is normal, if SIM card is in arrears, etc.
➤ The wireless connectivity status (MSTA)
If you find that the wireless connection is abnormal, please check the meaning corresponding to the status code, you need to check whether the communication parameters, traffic card is abnormal, and whether the communication antenna is installed abnormally.
0000:Connection to module broken ;
0001: MQTT mode,disconnected;
0101: MQTT mode,connection normal;
0002: Debug mode,disconnected;
0102: Debug mode,connection normal
Note:The first number represents the signal strength (0-5), with 5 being the strongest.

8. Contact information
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