

Explanation: P=(Px-12)×Pe×CT×PT/8, Px is the actual analog measured value, the unit is mA;

Pe is the corresponding rated power, unit W, PE value varies under different voltage levels, as follows:

220V/5A:Pe=3300W 220V/1A:Pe=660W
100V/5A: Pe=1500W 100V/1A: Pe=600W

Note: When transmitting single-phase power, Pe = rated voltage × rated current.

4. Operating instructions

4.1.Interface display

1	Meter	AB	888888	kV	MkW	20
2	PQM	—	888888	Mkvar		
3	History	—	888888	Mkvar		
4	HD	BC	888888	Mkvar		19
5	MIN	CA	888888	MkVA		
6	MIN	CA	888888	MkVA		
7	MIN	CA	888888	MkVA		
8	MIN	CA	888888	MkVA		18
9	MIN	CA	888888	MkVA		
10	MIN	CA	888888	MkVA		
11	MIN	CA	888888	MkVA		
12	MIN	CA	888888	MkVA		17
13	MIN	CA	888888	MkVA		
14	MIN	CA	888888	MkVA		
15	MIN	CA	888888	MkVA		16

index	Display content	Detailed Description
1	Real-time data	contain basic electrical parameters, total power data, time, etc.,
2	Power Quality	contain demand, harmonics, voltage and current imbalance and so on.
3	Historical data	Contains Multi-rate electric energy freeze data, daily freeze data , maximum and minimum value, etc.
4	Phase sequence indication	Indicated A, B, C-phase value, AB, BC, CA three-line value and Σ three-phase sum, such as three-phase total active power, total reactive power, total apparent power and so on, N represents zero line
5	Measurement data type	Identifies the parameter name displayed in the current measurement data display area in alphabetical form : Voltage 'U' Current is 'I' Active power 'P' Reactive power 'Q' Apparent power 'S' Power factor 'PF' Frequency 'F' Demand 'DM' Harmonic 'HD' Unbalance 'UNB' Maximum 'Max' Minimum 'Min', Temperature 'T' Meter operation time 'RTime' Load time 'LTime' Two months ago 'B Mon' Last month 'L Mon' This month 'T Mon'Yesterday 'L Day' Today is 'T Day' The day before yesterday "B Day", Peak Pingou "FPSV" Inductance symbol light: Indicates that it is an inductive load at this time, now, Q>0; Capacitance symbol light: Indicates that it is a capacitance load at this time, now, Q<0;
6	Each phase of the load nature indication	Capacitance symbol light: Indicates that it is a capacitance load at this time, now, Q<0;
7	Negative sign	Display when the measured data is negative
8	Alarm	Display when there is alarm signal
9	Total load property indicindication	Inductance symbol light: Indicates inductive load at this time, ΣQ>0; Capacitance symbol light: Indicates capacitive load at this time, ΣQ<0;
10	Load quadrant indication	The quadrant of the system power is displayed in quadrant diagrams. The first quadrant ΣP>0 and ΣQ>0, the second quadrant ΣP<0 and ΣQ>0, the third quadrant ΣP<0 and ΣQ<0, the fourth quadrant ΣP>0 and ΣQ<0.
11	average value	Data show average
12	Electrical type indication	Imp : Forward electrical metric ; Exp : reverse electric metric ; Total : Absolute value , the sum of the absolute values of the forward electrical and reverse electrical metric ; Net : net electrical degrees , The absolute value of the difference between Forward electrical metric and reverse electric metric.
13	Communication indication	If two small computers sign are all faded, it means there is no communication message; two small computers sign all show means the communication transeiver is proper functioning.
14	Clock indication	When this sign light, it indicates area 17 displays time data.
15	Switch input status	When there is a digital display, it indicates that the corresponding loop switch is closed.
16	Relay output status	When there is a digital display, it indicates that the corresponding loop relay is closed.
17	Power and time area	Display a variety of electrical measurement data, real-time clock, parameter settings, etc.
18	Measurement data display area	Display the main measurement data: voltage, current, power, power factor, frequency, temperature, harmonic data, demand, maximum, minimum, parameter setting data, etc.
19	Each phase load histogram	Load : Load size display ; Directly indicate the percentage of the load current relative to the rated current in the form of a histogram.
20	Electrical parameter unit symbol	voltage : V , kV, Current : A , kA, Activepower : W , kW , MW, Reactive power,var, kvar, Mvar, Apparent power : VA , kVA , MVA, Frequency : Hz, Active electricity kWh,Reactive electricitykvarh ;

5:Current imbalance rate



In the harmonic display interface, when "HD" is on, you can use the down key or up key to see the three-phase voltage and current harmonic total distortion rate and 2 ~ 31 harmonic content, The 32~51 harmonic content are read by the background. The upper left corner shows "U", for this parameter indicates a three-phase harmonic voltage, when display "I", for this parameter indicates a three-phase harmonic current, the first three lines show the total harmonic distortion and fractional harmonic content, the fourth line represents the current harmonic data type, the total harmonic distortion is displayed when "THd" is displayed, when "HR" is displayed, the data indicates the fractional harmonic content, 2 ~ 31 corresponds number of harmonics.

In "History" interface, press to enter daily freezing data display interface, then continuously press down or up turn to display the electrical parameter freezing data for today, yesterday and the previous day every 2 hours. The "T" "Day" light indicates today's data, "L" "Day" light indicates yesterday's data, and "B" "Day" light indicates the previous day's data.

In the maximum and minimum value query display interface, press the down button or use the button to rotate display the screen as shown below. At the same time, when the data is the maximum value, the character "MAX" is displayed on the left side, and when the data is the minimum value, the character "MIN" is displayed on the left side.

5.3 Parameter setting

In parameter measurement interface, press ENTER key to enter the password input interface, the default password is 6666. Press the ENTER key again for confirmation after the password input. If input action is correct, the system will enter the parameter setting interface. If the input is wrong, it will return to the parameter measurement display interface.

In parameter measurement interface, Press UP key or DOWN key to switch the modifying parameters. Press the 'ENTER' key to enter the parameter value modify state, and accompanied with flashing for modification of the characters. After the setting is completed, press the 'ENTER' key to confirm the parameters changing. Then you can modify the next parameter, or you can also press button to exit the parameters modifying state, return to the measurement interface. When the user has no operation in 60 seconds in the parameters modifying state, the system will automatically return to the electrical parameter measurement display interface.

1:Wiring method SYSS	2:Rated voltage Un	3:4:Rated current Pt_U In	4:Voltage Ratio_U
5:Current Ratio CL_I	6:Meter AdrESS Adr	7:Baud rate bAUd bAUd	8:Data format dATA
9:Backlight time BLt	10:Demand sliding window time dnnnd	11:Transmitting An	12:Date dATE

5.2 Operation display

There are five touch buttons on the front panel, the five keys are marked as key left , key up , key down , right key , key enter . Through the operation of five keys can be achieved in different measurement data display and parameter settings.



Buttonname	Functional description
Left key	Switch the three major functions display interface: "Meter", "PQM", "History", in the parameter setting state as "return" key.
Up key Down key	In different function display interface, press the up or down key to cycle through all the parameters of present function. In the parameter setting mode , press "up" to increase the value of the modified bit in the parameter setting state. Press "down" to decrease the value of the modified bit.
Right key	During "Meter" display, press this key to cycle the energy data; In the "PQM" power quality display, pressing this button cycles display demand, the harmonics, voltage and current imbalance. Under "History" display, press this button to show the Multi-rate electric energy freeze data, daily freeze data, maximum minimum value. In parameter setting state, it is used to move the bits to be modified. Confirm to enter the programming state; in the parameter setting state, it is used to enter the menu, programming parameters and confirmation.
ENTER	

Measurement display menu structure as follows

Press left button, the screen shows cyclically as following FIGS.

1:Meter measurement interface	2:PQM Power quality measurement interface	3:History data interface
4:Three phase voltage average voltage	5:Three phase and total reactive power	6:Three phase and total apparent power
7:Three phase and total power factor	8:Frequency	9:TEMP

In "Meter" interface, press up key or down key to display real-time measurement data in turn, as shown.

In the "Meter" interface, right-click to enter the electric energy and time query interface, press the right button continuously to display the interface as the following FIG shown. When the time and date are displayed, the clock pattern is displayed in the lower left corner of the screen. When the energy accumulated more than 99999999.9, the hexadecimal representation of the floating point number of the energy accumulated value is displayed, F indicates that the maximum display value is exceeded.

1:Import active energy	2:Export active energy	3:Absolute active energy	4:Net active energy
5:Import reactive energy	6:Export reactive energy	7:Absolute reactive energy	8:Net reactive energy
9:Phase A Import active energy	10:Phase A Export active energy	11:Phase A Import reactive energy	12:Phase A Import reactive energy
13:Phase B Import active energy	14:Phase B Export active energy	15:Phase B Import reactive energy	16:Phase B Import reactive energy
17:Phase C Import active energy	18:Phase C Export active energy	19:Phase C Import reactive energy	20:Phase C Import reactive energy
21:Time	22:Date	23:Operation time	24:Load time

In the "PQM" interface, press right key, the screen will display electric energy quality cyclically , as shown below:

1:Power demand	2:Voltage harmonics	3:Current harmonic	4:Voltage imbalance rate
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6. Common malfunction Analysis

- Nothing is displayed after the unit is powered on
 - Check if the supply voltage and other wiring are correct, also the supply voltage should be within the operating range
 - Turn off the device and the host computer, and then reboot
- The device is not working properly after power on
 - Turn off the device and the host computer, and then reboot
- Voltage or current readings incorrect
 - Check if the wiring mode setting matches the actual wiring mode
 - Check whether the voltage transformer (PT) and current transformer (CT) ratio are set correctly
 - Check if GND is grounded properly.
- Check if the shield is grounded
- Check if the voltage transformer (PT) and current transformer (CT) are intact
- The power or power factor reading is incorrect, but the voltage and current readings are correct
 - Compare the voltage and current input of the actual wiring and wiring diagram, and check if the phase relationship is correct.
- RS-485 communication is not working properly
 - Check whether the communication baud rate, ID and communication protocol settings of the host computer are consistent with the meter
 - Please check the data bits, stop bits, parity settings and the host computer is consistent
 - Check if the RS-232 / RS-485 converter is working properly

- Check if there are the problems in the entire communications network lines (Such as short circuit, open circuit, grounding, if the shield is properly grounded at one end, etc.)
- Turn off the device and the host computer, and then reboot
- If the communication line is longer, it is recommended to parallel connect a 100 ~200Ω matching resistors at the end of the communication line.

Note: If there are any unsolved problems, please contact our company's after-sales service department.

8 Contact Details

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The final interpretation of this manual is owned by Henan Compere Smart Technology Co.,Ltd.

6. Communication

KPM73 multifunction meter provides MODBUS-RTU communication protocol, 1 start bit, 8 data bits, 1/0 parity, 1/2 stop bits. Each byte length is 11 bits.

Supported baud rates: 1200, 2400, 4800, 9600, 19200, 38400.

Factory default communication parameters: 9600, no parity, 1 stop bit.

RTU mode format for each byte:

1 start bit + 8 data bits + 1 parity bit + 1 stop bit

The format of the data frame is as follows:

Address field + Command field + Data field + CRC check area

Supported function codes			
DEC	HEX	definition	Operation description
01	0x01	Read relay output	Read one or more relay outputs
02	0x02	Read switch input	Read one or more switch input
03	0x03	Read register data	Read the value of one or more registers
05	0x05	Write a single relay output	Control all the way to close or disconnect the relay
16	0x10	Write multiple registers	Write multiple register data at a time