

## 5. Electrical parameters

In the initial display interface, use the "Up" and "Dn" keys to select the power interface, energy interface or other extended parameter interface that needs to be displayed. After the query is completed, use the "Bs" key to return to the first interface.

### 5.1 Power parameter query ▼

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|  | (1)<br>In the initial interface state, use the "Up" and "Dn" keys to select the power parameter interface that needs to be displayed. In the case of one-phase four-wire system, the three-phase voltage interface is the first interface. |
|  | (2)<br>Press the "Dn" key to display the three-phase line voltage, this interface is displayed by default in the case of three-phase three-wire system   |
|  | (3)<br>Press the "Dn" key to display the three-phase current.  |
|  | (4)<br>Press the "Dn" key to display the three-phase active power.   |
|  | (5)<br>Press the "Dn" key to display the three-phase reactive power.   |
|  | (6)<br>Press the "Dn" key to display the three-phase apparent power.   |
|  | (7)<br>Press the "Dn" key to display the three-phase power factor.   |
|  | (8)<br>Press the "Dn" key to display three-phase total active power, three-phase total reactive power, and three-phase total apparent power.   |
|  | (9)<br>Press the "Dn" key to display the three-phase total power factor and system frequency.  |
|  | (10)<br>Press the "Dn" key to display the three-phase average active power, three-phase average voltage, and three-phase average current.  |
|  | (11)<br>Press the "Dn" key to display the maximum three-phase active power, the maximum three-phase voltage, and the maximum three-phase current.  |

### 5.2 Energy parameter query ▼

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|  | (1)<br>In the interface of item 5-1 (11), press the "Dn" key to display the total active energy in the forward direction. |
|  | (2)<br>Press the "Dn" key to display the total reverse active energy.   |
|  | (3)<br>Press the "Dn" key to display the total reactive energy in the forward direction.                                  |
|  | (4)<br>Press the "Dn" key to display the total reactive energy in the reverse direction.                                  |

## 3. Product index

|                                 |                   |   |                                  |
|---------------------------------|-------------------|---|----------------------------------|
| Technical parameter             |                   |   |                                  |
| Applicable network              |                   | Three-phase three-wire, three-phase four-wire   |                                  |
| Power supply                    | voltage range     | AC/DC85~265V  |                                  |
|                                 | Power consumption | <5VA  |                                  |
| Power accuracy level            |                   | Reactive power level 1 other level 0.5  |                                  |
| Input                           | Voltage           | Rated value   | AC 100V, 220, 400V               |
|                                 |                   | Overload  | 1.2TimesContinuous, 2Times (10S) |
|                                 | Current           | Power consumption   | <0.4VA/Phase                     |
|                                 |                   | Impedance   | ≥200kΩ                           |
| Rated value                     |                   | AC5A(0.02A-5A)  |                                  |
| Output                          | Overload          | 1.2TimesContinuous, 10Times (10S)   |                                  |
|                                 | Power consumption | <0.2VA/Phase  |                                  |
| Environment                     | Temperature       | Operating temperature: -20°C~55°C, Store: -25°C~70°C  |                                  |
|                                 | Humidity          | ≤90%RH, No condensation, no corrosive gas place   |                                  |
| Switch input                    |                   | 45Hz~65Hz   |                                  |
| Switch input                    |                   | 4 dry contact inputs, photoelectric isolation   |                                  |
| Switch input                    | Switch input      | 4Relay output (capacity: 5A/250VAC, 5A/30VDC) ; Any battery alarm can be set, remote control by default |                                  |
|                                 | Analog output     | 1Analog quantity transmission output, 0~20mA/0~5V   |                                  |
| Digital communication interface |                   | RS485/Modbus(Baud rate:4800/9600/19200bps)  |                                  |
| Altitude                        |                   | ≤2500m  |                                  |

## 4. Display

### 4.1 Key Description ▼

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|  | Bs key: Return to the previous menu. In the parameter setting, if it is in the last level of the menu, it will be used as a shift key to move the blinking position.  |
|  | Up key: View the previous screen display of the battery level, and select the option on the same level menu when setting, or the value will increase when the value is entered.   |
|  | Dn key: View the next screen display of the battery level. When setting, select the next option in the same level menu or decrease the value when you enter a value.  |
|  | St key: Enter the next level menu. In the parameter setting, if it is in the last level menu, it will be regarded as "save and return to the previous level menu"; when the current menu is the password input menu, judge whether the password is correct, then enter the next level menu, otherwise, return to the previous level menu. |

### 4.2 Start interface ▼

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|  | (1)<br>The startup interface displays all segment codes in the full screen, and the interface remains for 1s to detect whether the LCD screen can display normally.                        |
|  | (2)<br>After the startup interface completes the self-check, it enters the three-phase voltage display interface and serves as the main interface to display the meter's power parameters. |

**KIM**  
ELECTRIC

## Multifunctional power instrument

**KMB000**



<http://kimelectric.kr>

## User Manual v1.1

- The company reserves the right to modify the product specifications described in this manual without notice.
- Before placing an order, please consult our company for the latest specifications of this product.

## 1. Product overview

This series of multifunctional power meters is an ideal device for power monitoring. The meter has the ability to detect the current, voltage, frequency, active power, reactive power, apparent power forward and reverse active energy, and forward and reverse reactive power in the grid. The function of simultaneous measurement of electric energy and power factor. It is suitable for distributed detection of transformer generator sets, capacitor banks and motors, and on-site monitoring and display of power grids and automation control systems.

This series of multifunctional power meters can replace many traditional analog or digital measuring instruments (such as ammeters, voltmeters, power meters, power factor meters, frequency meters, etc.), which can greatly reduce system costs, facilitate field wiring, and improve system reliability. The multi-function power monitor is equipped with a serial port, allowing to connect to an open structure computer network; the application of Modbus communication protocol is convenient for computer programming or reading data.

## 2. Product function

### 2.1 Measuring voltage ▼

- ◆ Phase voltage: Ua, Ub, Uc
- ◆ Line voltage: Uab, Ubc, Uca
- ◆ Current: Ia, Ib, Ic
- ◆ Frequency: F
- ◆ Active power: Pa, Pb, Pc, P
- ◆ Reactive power: Qa, Qb, Qc, Q
- ◆ Apparent power: Sa, Sb, Sc, S
- ◆ Power factor: PFa, PFb, Pfc, PF

### 2.2 Electric energy metering ▼

- ◆ Active energy: +Ep, -Ep
- ◆ Reactive energy: +Eq, -Eq

### 2.3 Measurement method ▼

- ◆ Optional 3-phase 3-wire, 3-phase 4-wire
- ◆ PT ratio: 1~5000
- ◆ CT ratio: 1~5000

### 2.4 Display mode ▼

- ◆ Segment LCD display
- ◆ Display mode is manual selection

### 2.5 Communication function ▼

- ◆ Protocol: MODBUS-RTU
- ◆ Parity bit: odd parity/even parity/no parity
- ◆ Communication method: RS485 wired communication
- ◆ Baud rate: 4800/9600/19200 bps
- ◆ Mailing address: 1-253

### 5.3 Other parameter query (optional function) ▼

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|  | (1)<br>The meter with binary input and binary output function displays DIDO at the bottom of any parameter interface, as shown on the left. |
|  | (2)<br>Under any parameter interface, the left figure shows the binary input, which means that the current 4-way binary input is valid.     |
|  | (3)<br>In any parameter interface, the left picture shows the opening, which means that the current 4-way opening is valid.                 |

After the query is completed, press the "Bs" key continuously to exit the query menu until the power parameter is displayed on the home page.

## 6. Parameter setting

In the initial display interface, press the "St" key continuously and press the "Dn" key continuously to find the user setting menu item, as shown in the figure below, press the "St" key to enter the user password input interface to complete the password input, Use the "Up" and "Dn" keys to increase or decrease the number, and use the "Bs" key to flash and shift the number. The factory default password is "0001".

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|  | (1)<br>In the initial interface, press the "St" key, and then press the "Dn" key continuously to find the user setting menu item, as shown in the left figure.   |
|  | (2)<br>Press the "St" key to display the password input interface, as shown on the left, enter the correct parameter setting to enter the parameter setting interface. The factory default password is 0001. |

### 6.1 Power parameter setting ▼

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|--|---|
|  | (1)<br>Enter the user setting parameter interface, press the "Dn" key, and find the power parameter setting menu item interface, as shown in the left figure.   |
|  | (2)<br>Press the "St" key to display the electrical parameter setting option interface, and use the "Up" and "Dn" keys to find the PT ratio setting menu item, as shown on the left.  |
|  | (3)<br>Press the "St" key to display the PT ratio parameter setting interface, as shown on the left, set the desired PT ratio value (setting value: 1-5000) through the number increase and decrease keys and the "Bs" shift key.                   |
|  | (4)<br>Press the "St" key to return to the electrical parameter setting option interface. Use the "Up" and "Dn" keys to find the CT ratio setting menu item, as shown in the left figure.   |
|  | (5)<br>Press the "St" key to display the CT ratio parameter setting interface, as shown on the left, set the desired CT ratio value (setting value: 1-5000) through the number increase and decrease keys and the "Bs" shift key.                   |
|  | (6)<br>Press the "St" key to return to the electrical parameter setting option interface, and use the "Up" and "Dn" keys to find the wire system setting menu item, as shown in the left figure.  |
|  | (7)<br>Press the "St" key to display the wire system parameter setting interface, as shown on the left, use the "Up" and "Dn" keys to set the required wire system value (setting options: 3P4L, 3P3L).   |
|  | (8)<br>After the setting is completed, press the "St" button to confirm the setting, press the "Bs" button continuously to select the "y" flashing, and press the "St" button to confirm the saving of the parameters, as shown in the left figure. |

### 6.2 Communication parameter setting ▼

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|  | (1)<br>Enter the user parameter setting interface, press the "Dn" key, and find the communication parameter setting menu item interface, as shown in the left figure.  |
|  | (2)<br>Press the "St" key to display the communication parameter option interface, and use the "Up" and "Dn" keys to find the communication address setting menu item, as shown in the left figure.  |
|  | (3)<br>Press the "St" key to display the communication address setting interface, as shown on the left, use the "Up" and "Dn" keys to set the required communication address value (setting value: 1-253).                                 |
|  | (4)<br>Press the "St" key to return to the communication parameter option interface, and use the "Up" and "Dn" keys to find the communication baud rate menu item, as shown in the left figure.  |
|  | (5)<br>Press the "St" key to display the baud rate setting interface, as shown on the left, use the "Up" and "Dn" keys to set the required communication baud rate (setting options: 4800/9600/19200).                                     |
|  | (6)<br>Press the "St" key to return to the communication parameter option interface, and use the "Up" and "Dn" keys to find the communication verification setting menu item, as shown on the left.  |
|  | (7)<br>Press the "St" key to display the calibration parameter setting interface, as shown on the left, set the required check digit through the "Up" and "Dn" keys (setting value: no/even/odd)   |
|  | (8)<br>After the setting is completed, press the "St" key to confirm the setting, press the "Bs" key continuously to select the "y" flashing, and press the "St" key to confirm the saving of the parameters, as shown in the left figure. |

### 6.3 Display valid bit setting ▼

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|  | (1)<br>Enter the user setting interface and press the "Dn" key to find the effective digit parameter menu item interface, as shown in the left figure.   |
|  | (2)<br>Press the "St" key to display the effective digit parameter option interface, and use the "Up" and "Dn" keys to find the voltage effective digit menu item, as shown in the left picture (setting options: U/P/Q/S/PF /FR).         |
|  | (3)<br>Press the "St" key to display the effective bit parameter setting interface, as shown on the left, use the "Up" and "Dn" keys to set the required effective bit value (setting value: 0-3).   |
|  | (4)<br>After the setting is completed, press the "St" key to confirm the setting, press the "Bs" key continuously to select the "y" flashing, and press the "St" key to confirm the saving of the parameters, as shown in the left figure. |

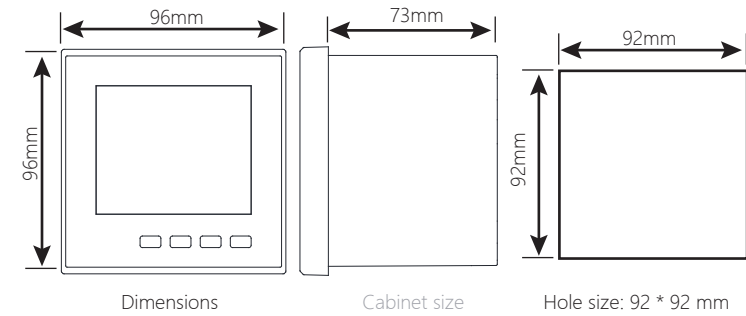
### 6.4 Energy zero setting ▼

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|  | (1)<br>Enter the user parameter setting interface, press the "Dn" key to find the system parameter setting menu item interface, as shown in the left figure.                 |
|  | (2)<br>Press the "St" key to display the system parameter setting interface, and use the "Up" and "Dn" keys to find the energy reset menu item, as shown in the left figure. |
|  | (3)<br>Press the "St" key to display the energy zero setting interface, as shown on the left, use the "Up" and "Dn" keys to switch between "yes" and "no", and select "yes". |

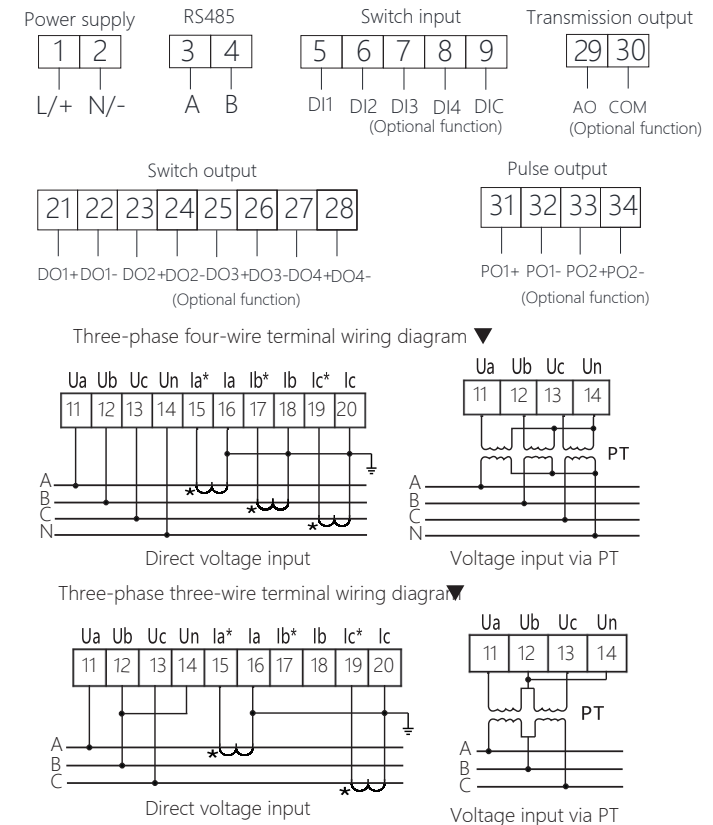
|  |   |
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|  | (4)<br>After the setting is completed, press the "St" button to confirm the setting, press the "Bs" button continuously to select the "y" flashing, and press the "St" button to confirm the saving of the parameters, as shown in the left figure. |
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After the query is completed, press the "Bs" key continuously to exit the query menu until the power parameter is displayed on the home page.

## 7. Outline dimension and installation diagram



## 8. Wiring diagram



## \*. Parameter setting

### 1 Backlight delay time setting ▼

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|  | (1)<br>Enter the user parameter setting interface, press the "Dn" key to find the system parameter setting menu item interface, as shown in the left figure.   |
|  | (2)<br>Press the "St" key to display the system parameter setting interface, and use the "Up" and "Dn" keys to find the backlight delay menu item, as shown in the left figure.  |
|  | (3)<br>Press the "St" key to display the backlight delay time setting interface, the default is 60S, through the "Up" and "Dn" keys, set the required backlight delay time, as shown on the left (when the time is set to At 0, the backlight is always on). |
|  | (4)<br>After the setting is completed, press the "St" button to confirm the setting, press the "Bs" button continuously to select the "y" flashing, and press the "St" button to confirm the saving of the parameters, as shown in the left figure.          |

After the query is completed, press the "Bs" key continuously to exit the query menu until the power parameter is displayed on the home page.

### 2 Bid output parameter setting ▼

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|  | (1)<br>Enter the user parameter setting interface, press the "Dn" key, and find the output parameter setting menu item interface, as shown in the left figure.   |
|  | (2)<br>Press the "St" key to display the output setting option interface. Use the "Up" and "Dn" keys to find the upper limit return difference parameter setting menu item, as shown in the left figure.   |
|  | (3)<br>Press the "St" key to display the upper limit hysteresis parameter setting interface, and use the "Up" and "Dn" keys to set the upper limit hysteresis value (default is 0.9; that is, the action value is 0.9 times the set value), as shown on the left Show. |
|  | (4)<br>Press the "St" key to return to the output setting option interface, and use the "Up" and "Dn" keys to find the lower limit hysteresis parameter setting menu item, as shown in the left figure.  |
|  | (5)<br>Press the "St" key to display the lower limit hysteresis parameter setting interface, and use the "Up" and "Dn" keys to set the lower limit hysteresis value (the default is 1.1: the action value is 1.1 times the set value), as shown on the left Show.      |

At this point, the alarm output hysteresis parameter setting is completed, and the DO1 parameter setting is as follows.

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|  | (6)<br>Press the "St" key to return to the output setting option interface. Use the "Up" and "Dn" keys to find the DO1 output setting menu item, as shown on the left.  |
|  | (7)<br>Press the "St" key to display the DO1 output parameter setting interface, the default is the DO1 output parameter channel selection menu item, as shown on the left.   |
|  | (8)<br>Press the "St" key to display the DO1 parameter channel setting interface, and set the required channel parameters through the "Up" and "Dn" keys (setting value: UH/UL/IH/IL, etc. optional; no means remote control Output). |
|  | (9)<br>Press the "St" key, this time DUI2 will become more important as shown in the picture on the left. "Dn" key, find the DO1 parameter magnification setting menu item, as shown on the left.                                     |
|  | (10)<br>Press the "St" key to display the magnification setting option interface. Use the "Up" and "Dn" keys to set the DO1 parameter magnification (setting value: 1, K (ie actual value = setting value × 1000), the default is 1). |
|  | (11)<br>Press the "St" key to return to the DO1 output parameter setting interface. Use the "Up" and "Dn" keys to find the DO1 parameter setting menu item, as shown on the left.   |

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|  | (12)<br>Press the "St" key to display the parameter setting option interface, and set the DO1 channel parameters through "Up" and "Dn" (setting value: change based on the default parameter value, such as the voltage upper limit defaults to 250V). |
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At this point, the DO1 alarm output parameter setting is completed, and the DO2 parameter setting is the same as above, as shown below.

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|  | (13)<br>Press the "St" and "Bs" keys to return to the output setting option interface. Use the "Up" and "Dn" keys to find the DO2 output setting menu item, as shown in the left figure.   |
|  | (14)<br>Press the "St" key to display the DO2 output parameter channel selection menu item, as shown in the left figure.   |
|  | (15)<br>Press the "St" key to display the DO1 parameter channel setting interface. Use the "Up" and "Dn" keys to set the required channel parameters (setting value: all power parameters are optional; no is remote control output).                                |
|  | (16)<br>Press the "St" key to return to the DO2 output parameter setting interface. Use the "Up" and "Dn" keys to find the DO2 parameter override setting menu item, as shown on the left.   |
|  | (17)<br>Press the "St" key to display the magnification setting option interface. Use the "Up" and "Dn" keys to set the DO2 parameter magnification (setting value: 1, K (ie actual value = setting value x1000), the default is 1).                                 |
|  | (18)<br>Press the "St" key to return to the DO2 output parameter setting interface. Use the "Up" and "Dn" keys to find the DO2 parameter setting menu item, as shown in the left figure.   |
|  | (19)<br>Press the "St" key to display the parameter setting option interface, and set the DO2 channel parameters through the "Up" and "Dn" keys (setting value: change based on the default parameter value, such as the lower limit of voltage is 150V by default). |
|  | (20)<br>After the setting is completed, press the "St" button to confirm the setting, press the "Bs" button continuously to select the "y" flashing, and press the "St" button to confirm the saving of the parameters, as shown in the left figure.                 |

After the query is completed, press the "Bs" key continuously to exit the query menu until the power parameter is displayed on the home page.

### 3 Transmission parameter setting ▼

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|  | (1)<br>Enter the user setting interface, press the "Dn" key, and find the transmission parameter setting menu item interface, as shown in the left figure.   |
|  | (2)<br>Press the "St" key to display the transmission setting option interface, and use the "Up" and "Dn" keys to find the transmission output channel setting menu item, as shown on the left.                          |
|  | (3)<br>Press the "St" key to display the transmission parameter channel setting interface, and use the "Up" and "Dn" keys to set the required channel parameters (setting value: all power parameters are optional).     |
|  | (4)<br>Press the "St" key to display the transmission volume setting option interface, and use the "Up" and "Dn" keys to find the transmission volume output upper limit setting menu item, as shown in the left figure. |
|  | (5)<br>Press the "St" key to display the transmission output upper limit setting interface. Use the "Up" and "Dn" keys to set the required upper limit parameter (setting value: 4-20; default 20).                      |
|  | (6)<br>Press the "St" key to return to the transmitter setting option interface, and use the "Up" and "Dn" keys to find the lower limit setting menu item of the transmitter output, as shown in the left figure.        |

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|  | (7)<br>Press the "St" key to display the lower limit setting interface of the transmitter output. Use the "Up" and "Dn" keys to set the required lower limit parameters (setting value: 4-20; default 4). |
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|  | (8)<br>Press the "St" key to return to the transmission setting option interface, and use the "Up" and "Dn" keys to find the transmission channel parameter upper limit multiplier setting menu item, as shown in the left figure. |
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|  | (9)<br>Press the "St" key to display the transmission upper limit magnification setting interface. Use the "Up" and "Dn" keys to set the required parameters (setting value: 1, K (ie actual value = setting value × 1000), default is 1). |
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|  | (10)<br>Press the "St" key to return to the "In" key in the washing item interface of the transmission volume setting, and find the menu item for setting the upper limit of the transmission volume channel parameter, as shown in the left figure. |
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|  | (11)<br>Press the "St" key to display the upper limit of the transmission parameter, and set the required parameters (setting value: change based on the default parameter value, for example, the upper limit of the transmission is 230V by default). |
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|  | (12)<br>Press the "St" key to return to the transmission setting option interface, and use the "Up" and "Dn" keys to find the lower limit multiplier setting menu item of the transmission channel parameter, as shown in the left figure. |
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|--|---|
|  | (13)<br>Press the "St" key to display the transmission lower limit magnification setting interface, and use the "Up" and "Dn" keys to set the required parameters (setting value: 1, K (ie actual value = setting value × 1000), default is 1). |
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|  | (14)<br>Press the "St" key to return to the transmission setting option interface, and use the "Up" and "Dn" keys to find the lower limit setting menu item of the transmission channel parameter, as shown in the left figure. |
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|  | (15)<br>Press the "St" key to display the lower limit setting interface of the transmission parameter, and set the required parameters through the "Up" and "Dn" keys (setting value: change based on the default parameter value, such as the lower limit of the transmission default is 0.0V). |
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|  | (16)<br>After the setting is completed, press the "St" key to confirm the setting, press the "Bs" key continuously to select the "y" flashing, and press the "St" key to confirm the saving of the parameters, as shown in the left figure. |
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After the query is completed, press the "Bs" key continuously to exit the query menu until the power parameter is displayed on the home page.

### 4 User password setting ▼

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|  | (1)<br>Enter the user parameter setting interface, press the "Dn" key to find the system parameter setting menu item interface, as shown in the left figure.   |
|  | (2)<br>Press the "St" key to display the system parameter setting interface, and use the "Up" and "Dn" keys to find the user password menu item, as shown on the left.   |
|  | (3)<br>Press the "St" key to display the user password setting interface. Use the "Up" and "Dn" keys to set the required new user password, as shown on the left.  |
|  | (4)<br>After the setting is completed, press the "St" key to confirm the setting, press the "Bs" key continuously to select the "y" flashing, and press the "St" key to confirm the saving of the parameters, as shown in the left figure. |

After the query is completed, press the "Bs" key continuously to exit the query menu until the power parameter is displayed on the home page.

\* Note: The electricity parameters corresponding to the binary output and the transmission output are both secondary values. That is, the voltage range is 0-400V; the current range is 0-5 A.