User Manual

Single-phase RS-485 PDU Meter

JSY1095

Three-phase RS-485 PDU Meter

JSY-MK-360

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1. Introduction

Professional-grade monitoring and management power supply system is the latest scientific research result obtained after years of dedicated research in the field of power distribution technology. This product is based on the development trend of future power distribution monitoring and management technology in the world and combines the technical requirements of modern data center application environment.

This device refers to the following standards:

Q/GDW 1354-2013 "Smart Electricity Meter Functional Specifications".

GB/T 17626.2-1998 Electromagnetic compatibility test and measurement technology - Electrostatic discharge immunity test. GB/T 17626.3-1998 Electromagnetic compatibility test and measurement technology -

Radio frequency electromagnetic field radiation immunity test .

GB/T 17626.4-1998 Electromagnetic compatibility test and measurement technology - Electrical fast transient pulse group immunity test .

GB/T 17626.5-1998 Electromagnetic compatibility test and measurement technology - Surge (impact) immunity test .

GB/T 17626.8-1998 Electromagnetic compatibility test and measurement technology - Power frequency magnetic field immunity test .

MODBUS-RTU communication protocol.

2. Product Introduction

2.1 Product Overview

Single-phase and three-phase PDU meters are based on the innovative SUM (Sustainable, Upgradable and Maintainable) design concept technology. As a key component of the metered cabinet power distribution unit (PDU), after being installed in the PDU body, it can provide active metering functions . User-set alarm thresholds can issue potential circuit overload warnings through real-time local alarms. Users can configure metered cabinet PDUs via RS485.

2.2 Function Introduction

<table>
<tr><th colspan="5">Performance parameters</th><th>Technical indicators</th></tr>
<tr><td rowspan="5">Electrical parameters</td><td rowspan="4">Input Optional</td><td rowspan="2">Single Phase</td><td colspan="2">Input voltage</td><td>176-264V</td></tr>
<tr><td colspan="2">Maximum total load current</td><td>63A</td></tr>
<tr><td rowspan="2">Three-phase</td><td>Input voltage</td><td>3*220V (Phase A power supply)</td></tr>
<tr><td>Maximum load current</td><td>3*63A</td></tr>
<tr><td></td><td colspan="3">Frequency</td><td>50/60HZ</td></tr>
<tr><td colspan="2" rowspan="4">User interface</td><td colspan="3">Display</td><td>Black and white dot matrix screen</td></tr>
<tr><td colspan="3">Operation buttons</td><td>Up, down, setting, reset button</td></tr>
<tr><td colspan="3">Communication interface</td><td>1-channel RS485(2 Interfaces)</td></tr>
<tr><td colspan="3">Temperature and humidity interface</td><td>2-channel</td></tr>
<tr><td colspan="2" rowspan="2">Electrical parameter measurement</td><td colspan="3">PDU measurement</td><td>Voltage, current, power, electric energy</td></tr>
<tr><td colspan="3">Customize alarm signal thresholds</td><td>Voltage and current adjustable</td></tr>
</table>

Monitoring function		Load current monitoring	
		Load power monitoring	
		Voltage monitoring	
		Power consumption monitoring (active power, reactive power)	
		Ambient temperature and humidity monitoring	
Setting the function		Load current upper limit setting	
		Voltage upper and lower limit settings	
		Chinese / English switch	
Alarm function	System Alarm	When the load current exceeds the rated value	
	Custom Alerts	When the load current exceeds the threshold value	
		When the voltage exceeds the threshold	
	Alarm method	Buzzer beeps	
Serial communication function	Port Definition	Two RJ45 interfaces (RS485 interfaces) are standard	
	Communication Protocol	Default MODBUS RTU protocol	
	Baud rate	Default: 9600bps, configurable 4800, 19200, 38400bps.	
	cascade	Support RS485 cascade	
Environment		Operating temperature	-10 ~ 50℃
		Extreme operating temperature	-20 ~ 60℃
		Relative humidity	10 ~ 90%
		Storage and transportation temperature limit	-30 ~ 70℃

2.3 Model selection

- JSY1095 represents single-phase RS485 communication PDU meter.
- JSY-MK-360 represents three-phase RS485 communication PDU meter.

3. Functional technical parameters

3.1 Real-time monitoring function

- The display screen displays the monitored load current, voltage, power, electric energy, power factor. Temperature/humidity sensor data and operating status.

3.2 Customized Alarms

- Load current/voltage over-limit threshold can be customized.
- The buzzer sounds.

3.3 Definition of key indicator light

- [Direction Keys] : Short press the direction keys to cycle through information such as current, temperature and voltage.
- [Settings] : Press and hold the Setting button for 3 seconds to enter the Setting interface. The system parameters can modify communication parameters, various thresholds, Chinese and English switching and other parameters.
- [Reset button]: Press it briefly to reset the system .
- [Alarm indicator light] : It is off under normal circumstances and stays on when there is an alarm signal.
- [Operation indicator] : After the device is successfully powered on, the operation indicator flashes .
- [Communication indicator light] : The indicator light flashes when the device is communicating , and the indicator light goes out when there is no communication.

3.4 Terminal Definition

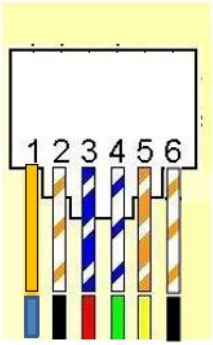
3.4.1 RS485 interface terminal

RS485 interface, Pin4 (blue) 485 A, Pin5 (blue and white) 485 B.

Note: The wiring color of RJ45 may be incorrect, it depends on the actual usage.

Color	Functional Description
1 Orange and white	NC
2 Orange	NC
3 Green and white	NC
4 Blue	RS485-A
5 Blue and white	RS485-B
6 Green	NC
7 Brown and white	NC
8 Brown	NC

3.4.2 Temperature and humidity interface terminals



HT1 interface	
No.	Functional Description
1	GND
2	NC
3	SCL1
4	SDA1
5	GND
6	DC 5V

HT2 interface	
No.	Functional Description
1	GND
2	NC
3	SCL1
4	SDA1
5	GND
6	DC 5V

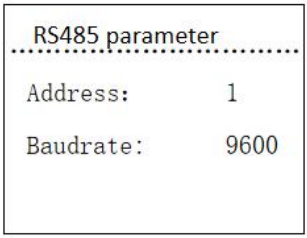
Note: The above wiring colors may be incorrect, please refer to the actual wiring situation .

3.5 User Interface and Parameters

<table>
<tr><th>Product Structure Diagram</th><th>No.</th><th>Item</th><th colspan="2">parameter</th></tr>
<tr><td rowspan="12"> 
</td><td rowspan="5">①</td><td rowspan="5">LCD display</td><td>Display Mode</td><td>LCD screen</td></tr>
<tr><td>Display content</td><td>Instrument information</td></tr>
<tr><td>Display Direction</td><td>Adjustable</td></tr>
<tr><td>Refresh Time</td><td>1 second</td></tr>
<tr><td colspan="2">When the button is pressed, the backlight lights up. If there is no operation for 3 minutes, the backlight will turn off.</td></tr>
<tr><td>②</td><td>Up key</td><td colspan="2">Turn the page, the flashing position moves right</td></tr>
<tr><td>③</td><td>Setting Key</td><td colspan="2">Set menu, confirm setting items, save</td></tr>
<tr><td>④</td><td>Down key</td><td colspan="2">Display page turning , flashing digit value decreasing</td></tr>
<tr><td>⑤</td><td>Reset button</td><td colspan="2">Short press to restart</td></tr>
<tr><td>⑥</td><td>Communication light</td><td colspan="2">Yellow, flashing during communication</td></tr>
<tr><td>⑦</td><td>Running light</td><td colspan="2">Emerald green, flashing when the system is running</td></tr>
<tr><td>⑧</td><td>Warning light</td><td colspan="2">Red, always on when in alarm</td></tr>
<tr><td>⑨</td><td>Temperature and humidity 1</td><td colspan="2">1-way temperature and humidity sensor detection port</td></tr>
<tr><td>⑩</td><td>Temperature and humidity 2</td><td colspan="2">2-way temperature and humidity sensor detection port</td></tr>
<tr><td>⑪</td><td>RS485</td><td colspan="2">Communication interface</td></tr>
<tr><td>⑫</td><td>RS485</td><td colspan="2">Communication interface</td></tr>
</table>

3.6 Display interface introduction

<table>
<tr><th colspan="2">LCD Display</th><th>Parameter Description</th></tr>
<tr><td>Voltage Current
A:220.00V 10.00A
B:220.00V 10.00A
C:220.00V 10.00A</td><td>Line Voltage 50.00Hz
A: 380.00V
B: 380.00V
C: 380.00V</td><td rowspan="4">Voltage
Resolution : 0.01V
Current
Resolution: 0.01A
Electricity
Resolution: 0.01KWh
power
Resolution: 1W
temperature
Resolution: 0.1℃
humidity
Resolution: 0.1%
Accuracy: ±1%
Response time: ≤1 s</td></tr>
<tr><td>Active Power +6600W
A: +2200W
B: +2200W
C: +2200W</td><td>Reactive P +6600Var
A: +2200Var
B: +2200Var
C: +2200Var</td></tr>
<tr><td>Apparent P +6600VA
A: +2200VA
B: +2200VA
C: +2200VA</td><td>Power factor 1.000
A: 1.000
B: 1.000
C: 1.000</td></tr>
<tr><td>Energy 0.00KWh
A: 0.00KWh
B: 0.00KWh
C: 0.00KWh</td><td>Temperature humidity
1: 0.0 ℃ 0.0 %
2: 0.0 ℃ 0.0 %</td></tr>
</table>

<table>
<tr>
<td> 
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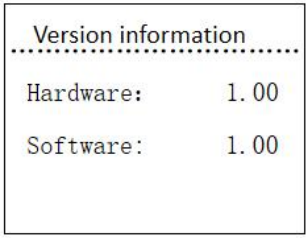
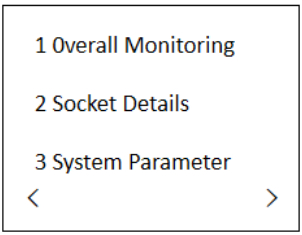
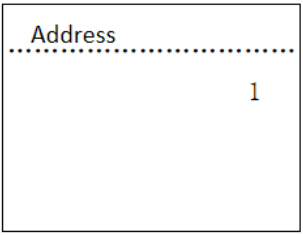
<td> 
</td>
<td>Hardware version number
Software version number
Correspondence address
Baud rate
You can search by turning the page</td>
</tr>
<tr>
<td colspan="3">System Information</td>
</tr>
<tr>
<td> 
</td>
<td></td>
<td>Press and hold the setting button for 3 seconds to enter.

Note (no 2 socket information function).</td>
</tr>
<tr>
<td colspan="3">3. System parameter modification</td>
</tr>
<tr>
<td> 
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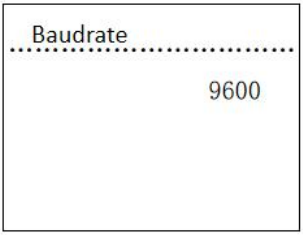
<td> 
</td>
<td rowspan="2">3. System parameters</td>
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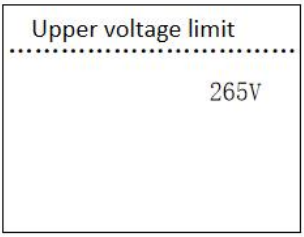
<td> 
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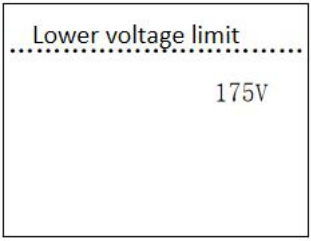
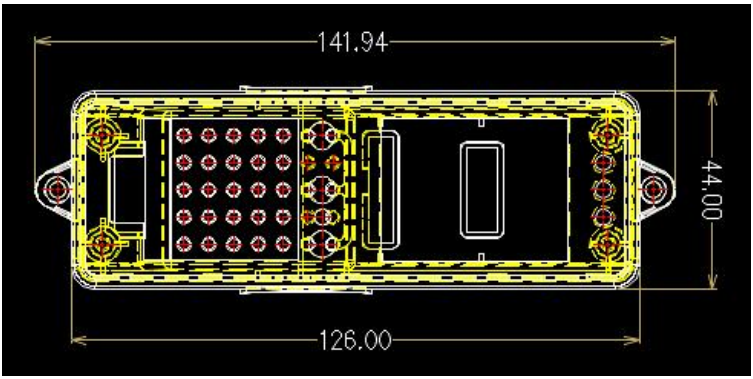
<td> 
</td>
</tr>
</table>

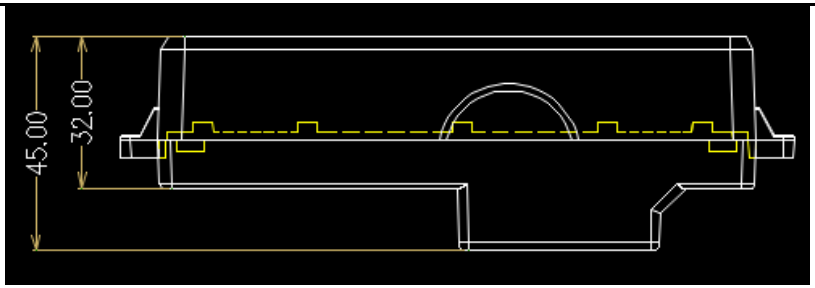
Current upper limit 63A	Sound Swith OFF	
Display direction 0°	Language 中文 English	

3.7 Product size

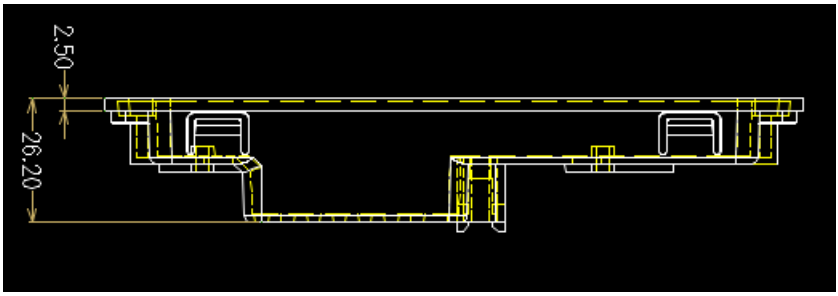
- Product front appearance dimensions



- Product side appearance dimensions



◆ Product bottom cover appearance dimensions



3.8 System parameter settings

3.81 Alarm Threshold Settings

Overvoltage alarm threshold range: 110-300VAC , default 265V .

Undervoltage alarm threshold range: 0 -300VAC , default 175V .

Overcurrent alarm threshold range: 0 -63A , default 63A (fill in an integer for the threshold).

Note: The alarm contents are overvoltage, undervoltage and overcurrent respectively.

The voltage/current threshold is used to set the upper and lower alarm thresholds of the current voltage/current. When the measured value is within the threshold range, it is "normal". When the measured value exceeds the threshold, an audible and visual alarm occurs.

Note: The equipment should be operated in a place without explosion, corrosive gas and conductive dust, and without significant shaking, vibration and impact.

4. transportation and storage

1. The product should not be subjected to severe impact during transportation and unpacking, and should be transported and stored in accordance with the national standard GB/T13384-2008 "General Technical Conditions for Packaging of Electromechanical Products".
2. This product is an electronic device, so try to avoid heavy impact and bump when transporting and placing it.
3. The ambient temperature of the storage location should be -30 ~ +70 ℃, the relative humidity should not exceed 85 % and there should be no corrosive harmful substances in the air .

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