

User Operation Manual

UPS6910C-24

DC 24V-60W



Publication List

Product model	Company
UPS6910C-24	Shanghai Panelmate Electronics Co., LTD

Review/Approval

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other

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Declaration Of Conformity

These restrictions are for system operation in a commercial environment from harmful interference in the operation of the system in a commercial environment. This device generates, uses and transmits radio frequency energy. If not properly installed and used correctly to the manual instructions, it may cause harmful interference to radio communications. However, even if the installation and use of the manual instructions are followed, there is no guarantee that there will be no interference. If this device will cause harmful interference with radio or television signal reception, the user can confirm by turning the device on and off. When the device produces harmful interference, the user can take the following measures to solve the interference problem:

1. Adjust the direction or position of the receiving antenna.
2. Increase the distance between this device and the receiver.
3. Plug the power connector of this device into a power socket with different circuit from the receiver.
4. For technical support, consult your dealer or an experienced radio technician.

Technical Support And Service

1. For the latest information and documentation of this product, please visit our official website www.panelmate.cn
2. If you need technical support, please contact your local distributor, sales representative customer service center. Before technical consultation, the user must collect the following product information:
 - Product name and serial number
 - Description of peripheral additional devices
 - Description of the user software (operating system, version, application software, etc.)
 - A complete description of the problem with the product
 - The full content of each error message

Safety Instruction

1. Before installing, wiring, operating, and checking the product, it is necessary to carefully read this manual and related manuals introduced in the manual, and operate the product correctly with full attention to safety.
2. Please keep this user manual for future reference.
3. Please unplug the power cord from the socket before cleaning the device with a damp rag. Do not use liquid or decontamination sprays to clean the equipment.
4. For devices that use power cords, there must be an easily accessible power socket around the device.
5. Ensure that the device is placed on a reliable surface before installation. An unexpected fall may damage the device.
6. Before you connect the device to the power socket, make sure that the power socket voltage meets the requirements.
7. Please place the power cord in a position where people cannot easily trip, and do not cover any debris in the power line.
8. Please pay attention to all warnings and attention signs on the device.
9. If you do not use the device for a long time, please disconnect it from the power socket to avoid the device being damaged by excessive voltage fluctuations.
10. Do not allow any liquid to flow into the equipment, you must disconnect to avoid fire or short circuit.
11. Please do not turn on the device by yourself. To ensure your safety, disconnect all external power supplies used by the system before turning on the device. Turn on the device by a certified professional engineer with sufficient electrical knowledge.

In case of the following situations, please be repaired by professional personnel:

- The power cord or plug is damaged
- There is liquid flowing into the equipment
- The device does not work properly, or you cannot make it work properly through the user manual
- Equipment falls or is damaged
- The equipment has obvious appearance damage

Please do not store the device in an environment beyond our recommended temperature range, that is, not lower than -40 °C or higher than 80°C, otherwise it may damage the device.

Disclaimer

All components are provided with specific hardware and software configurations are suitable for application software. Unauthorized modification and alteration of hardware or software configuration beyond the scope of the document is prohibited, otherwise Shanghai Panelmate Electronics Co., Ltd. shall not be liable for any resulting liability arising therefrom.

The following actions are not within the scope of responsibility of the Company:

- Failure to comply with the provisions of this document
- Improper use
- Operated by untrained personnel
- Unauthorized replacement of parts

Employee Qualifications and Responsibilities

All operations involving software and hardware should only be performed by qualified personnel with knowledge of control and automation engineering. Qualified personnel must understand the management of control teams and related networks.

All interventions must have knowledge of control planning, and qualified personnel must be familiar with existing standards and guidelines for automated environments.

The operator must ensure that:

- Products are used only as intended
- The product runs in good condition and works normally
- Products are operated, maintained and repaired only by qualified and authorized personnel
- Regularly receive guidance from personnel on safety and be familiar with the operating manual, especially the safety instructions contained in this document
- The operating manual is in good condition, complete and always available for reference at the product location

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Chapter 1 Overview

1.1 File Content

This document contains the information you need to use the product at the appropriate stage of its life cycle, as follows:

- Specification and model
- Product size
- Interface definition
- Installation mode
- Safety statement

1.2 Safety Notice

For security purposes, the following ICONS are used in this document to provide you with more security information.

Icon	Description
	Warning: Indicates a potentially dangerous situation that, if not avoided, will result in death, serious injury, or major property damage
	Danger: indicates an imminent hazardous situation that, if not avoided, will result in death, serious injury, or significant property damage
	Info: Indicates important information

Chapter 2 Product Introduction

2.1 Product Overview

UPS6910C-24 is a 24V DC power supply, all industrial computers can be configured with 24V UPS power supply, equipped with UPS6920C-24 industrial computer can make the computer work for a period of time when the main power supply is not off, and during this period of time notify the industrial computer to save the current status and data into the hard disk and other memory. The continuous power supply time of the UPS to the industrial computer after power failure can be set and controlled through the USB port of the UPS connected to the industrial computer. The UPS DC power module based on the supercapacitor effectively prevents the loss of important data after a power failure and ensures stable operation throughout the system.

UPS6910C-24 has the characteristics of small size, high reliability, low output ripple, strong anti-interference ability, voltage regulation and safety protection. It also provides rich IO interfaces and standard communication protocols, and can be flexibly deployed in industrial environments.



2.2 Product Features

- Compact aluminium-magnesium alloy profile housing, dust-proof design
- Single side connection, DIN rail wall mount
- DC 24V power supply, industry standard design
- With USB control, set UPS parameters and extend shutdown time
- Rated load supports 60W
- UPS can supply power for more than 12 minutes at 60W load

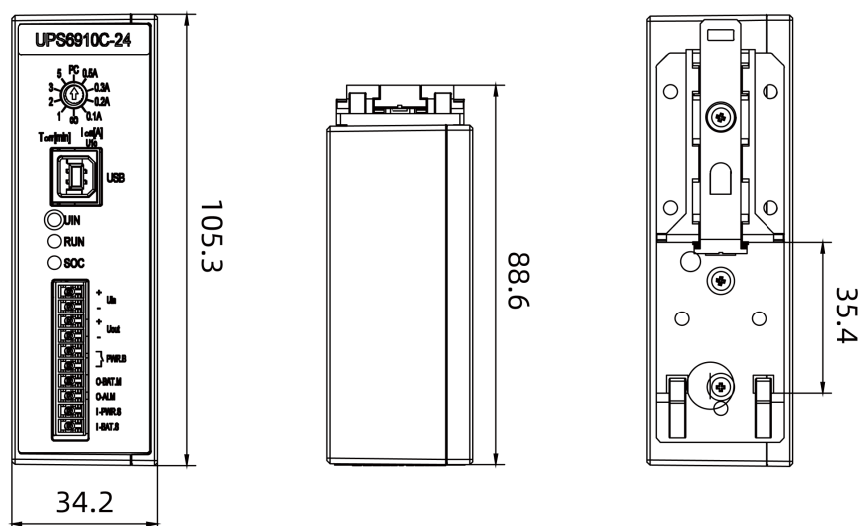
2.3 Product Specifications

Description	UPS6910C-24		
Power DC input DC_IN	Voltage	DC24V(+15%~-20%)	
	Electric current	Max(4A)	
	Defense	Anti-reverse connection/Overvoltage protection/Pulse group 2KV/ Surge 2kV/ electrostatic contact 4kV, air 8kV/ClassA	
Power DC output DC_OUT	Voltage	DC24V(<UIN-1V)	
	Electric current	Max(3.5A)	
	Power	Max:80W@24V	
	Defense	Overcurrent and overload protection	
Electrical parameter	No-load power consumption	<3W	
	Battery charging parameter	When the battery voltage less than 6V, the trickle is 50mA; greater than 6V, the constant current is 1.2A; greater than 8.4V, the maximum charging power is 10W	
	Battery output parameter	The starting voltage is 6V, the boost voltage is closed when it is lower than 6V, and the battery output is restored when it is higher than 6.5V	
	Full of time	Operating voltage	Full of time (h)
		DC24V(+15%~-20%)	4
	Discharge time	Load power (W)	On-load hold time (min)
		30	25
		60	10
		80	2

Description	UPS6910C-24	
Electrical parameter	capacity	5200F(2 strings)
	Service life	Charge and discharge 50,000 times
IO parameter	IO voltage	DC24V(+15%~-20%) (Uout)
	Isolation mode	optocoupler
	Environmental parameter	3.75kV
	Signal specification	DC24V/3mA
IO function	PWR.B(PowerButton)	Force power button, passive switch signal input
	BAT.M(BatteryMode)	Battery operated mode, PNP output
	ALM(Alarm)	Alarm status, PNP output
	PWR.S(PowerStatus)	Power receiving equipment operating status, PNP type input
	BAT.S(BatteryStart)	Forced battery powered, PNP type input
	Remote	Remote switch signal, signal relay output (custom function, default without this interface)
Communication interface	Communication interface	USB-COM
	Communication protocol	Modbus-RTU
Environmental parameter	Operating temperature	-20~60°C
	Storage temperature	-40~80°C
	Working humidity	5~95% (non-condensing)
	Installation mode	DIN-Rail Install
	Net product weight	0.5kg

2.4 Product Size

UPS6910C-24 Dimensions:



2.5 Product Interface Definition

The interface definition is shown in Figure 2-5-1:

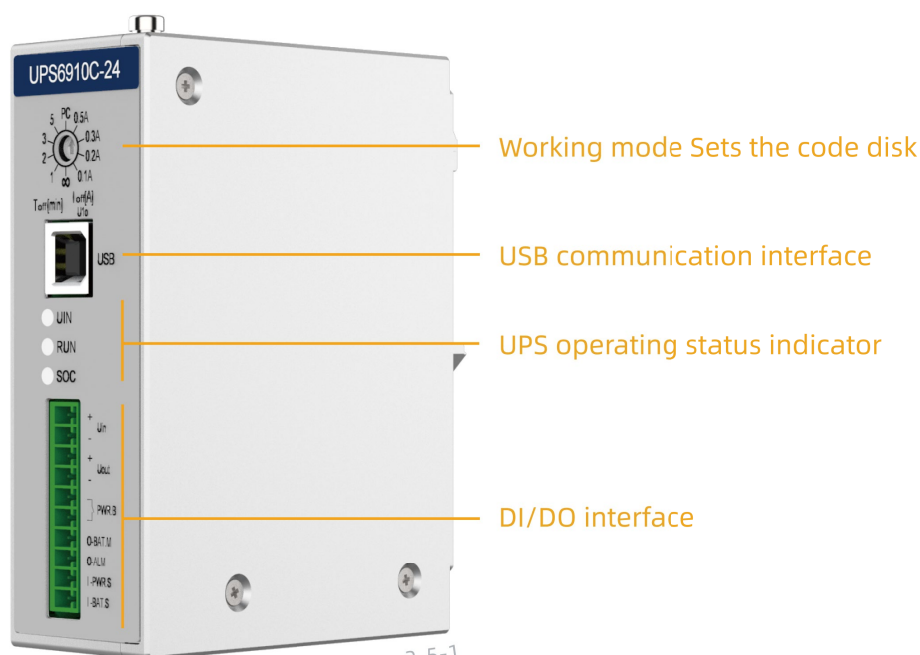


Figure 2-5-1

2.5.1 Port Function Description

Pin	Signal	Name	Function
1	Uin+	Power Input Positive Pole	DC24V(+15%~-20%)
2	Uin-	Power Input Negative Pole	
3	Uout+	Power Output Positive Pole	UPS External Power Output Positive (<Uin-1V)
4	Uout-	Power Output Positive Pole	UPS Provides External Power To The Negative Terminal
5	PWR.B	Force The Power Button To Enter	① When The Uin Is Powering On: Short Switch For 1 Second. If The PC Is Powered Off, Disconnect The Uout Output For 5 Seconds And Then Power It On Again. ② When The UPS Is Shut Down: Short Switch For 3 Seconds, Force The UPS To Start And Output, And Set The Forever Mode Until The Uin Input Is Normal Or The Power Level Is Lower Than The Alarm, And Shut Down The UPS In The Current Mode. If There Is No Power Alarm After Normal Startup, Output For At Least One Minute.
6			
7	BAT.M	Battery Mode Signal Output (PNP)	① When The Uin Is Powered, The Signal Is Disconnected And The Output Level Is Low. ② When The Uin Is Disconnected, The Signal Is On And The Output Level Is High.
8	ALM	Battery Alarm Output (PNP)	① Battery Is Lower Than 40015 Register Value ② No Battery Is Installed ③ Battery Output Is Not Turned On When The Above Faults Occur, The Alarm Is On And Outputs A High Level. Otherwise, The Alarm Is Disconnected And Outputs A Low Level
9	PWR.S	Input The Working Status Of The Power Receiving Device(PNP)	① Register 40008=0: The Falling Edge Is Valid (It Changes From On-On To Off, Indicating That The Device Is Powered Off). After The Uin Is Disconnected, If The PWR.S Falling Edge Is Triggered, The UPS Will Turn Off The Uout Output After Delaying The Set Time Of Register 40011, And Then Delay The UPS To Shut Down For 5 Seconds ② Register 40008=1: The Rising Edge Is Valid (From Off To On, Indicating That The Device Is Powered Off). After The Uin Is Disconnected, If The PWR.S Falling Edge Is Triggered, The UPS Will Turn Off The Uout Output After Delaying The Set Time Of Register 40011, And Then Delay The UPS To Shut Down For 5 Seconds
10	BAT.S	Forced Battery Status Input (PNP)	When The Uin Is Powered, BAT.S Inputs A High Level To Force The UPS To Work Forever

2.6 Indicator Function Description

2.6.1 Power-on indication

After 2 seconds of power-on, turn on the green, blue, yellow, and red indicators for 1 second respectively, and then turn off all the indicators.

2.6.2 Functional indication

UIN

- ① Blue light: Input voltage is out of range
- ② Green light: The input voltage is normal
- ③ Yellow light: The input voltage is off and the battery is powered on

RUN

- ① Red light: Operation failure
 - 1) Input and output voltage and current sampling failure
 - 2) Battery output is not started/faulty;
- ② Yellow light: Alarm
 - 1) the battery is low 2) battery is not installed 3) battery output is not enabled
- ③ Blue light: Charging failure
 - 1) The temperature is above 75 degrees to turn off the charge (below 70 degrees to restore the charge)
 - 2) Charging failure (undervoltage or hardware failure)
 - 3) The battery voltage is unbalanced
- ④ Green light: Normal operation

SOC

- ① Red light: No battery is installed or the battery is in poor contact
- ② Yellow light: The battery is lower than the Alarm value
- ③ Blue light: The power level is between Alarm and Ready
- ④ Green light: The battery is higher than the Ready value

2.7 Equipment Control

2.7.1 Knob gears

2.7.1.1 Forever (∞)

When the knob is in Forever gear and the Uin is powered off, the UPS maintains output until it runs out of power.

2.7.1.2 Current

The knob can be set to Ioff=0.1A/0.2A/0.3A/0.5A. After the Uin is powered off, the UPS has the following two operating policies according to the parameters:

- 1) If 40009 register is set to 0, the UPS maintains output until the power is lower than the Ready value, and then outputs SW pulse signal (optional), the industrial computer shuts down, waits for the Uout output current to be lower than the shutdown current set value, and then delays the delay time set by the 40011 register to disconnect the Uout output, and the UPS shuts down 5 seconds later.
- 2) If 40009 register is set to 1, the UPS immediately outputs the SW pulse signal (optional), and the industrial computer shuts down until the Uout output current is lower than the shutdown current set value, and then delays the delay time set by the 40011 register to disconnect the Uout output, and the UPS shuts down 5 seconds later.

2.7.1.3 Time

Knob can be selected Toff=1min/2min/3min/5min a total of 4 stalls. After Uin is powered off, UPS maintains output until the time stall delay is set, and then outputs SW pulse signal (optional), the industrial computer shuts down, and then waits for delay 40011 register to set the delay time before disconnecting Uout output. The UPS shuts down after 5 seconds.

2.7.1.4 PC

The UPS executes the Forever/ current/time policy based on the 40005 register. In time mode, the Toff executes the Forever/ current/time policy based on the 40006 register. In current mode, the Ioff executes the Forever/ current/time policy based on the 40007 register.

2.7.2 SW pulse signal

※ Note: The signal is a customized optional signal, the default version does not have this function. If this function is available, the SW pulse signal output logic is executed according to the following parameter Settings:

- 1) When 40012 register is set to 0: SW output positive pulse, Uin normal input, SW is disconnected (low level), Uin is disconnected, SW output on (high level), according to 40013 register output time completed, restore the disconnected state
- 2) When 40012 register is set to 1: SW output negative pulse, Uin normal input, SW is on (high level), after Uin is disconnected, SW output is off (low level), according to 40013 register output time is completed, restore the on-state

2.7.3 The Uin recovers power when the UPS is shut down

1) Time control strategy:

① If the Uin recovers power before the 40006 register Toff ends, the countdown is automatically canceled, Uout output is normal, and the UPS runs normally.

(2) If the Uin recovers power after the countdown of the 40006 register Toff ends, the UPS continues the subsequent shutdown process until the Uout is disconnected, and executes subsequent policies according to the 40014 register value. If the value is 0, the Uout recovers power after 5 seconds, and the PC is powered on again. If the value is 1, the UPS keeps the Uout disconnected until the Uin is disconnected and the UPS is powered on again.

2) Current control strategy:

① If the 40009 register is 0: when the battery level is higher than the 40010 register, the Uin recovers power supply, automatically cancel the shutdown, maintain the normal output of the Uout, and the UPS runs normally. If the Uin recovers power after the power is lower than 40010 register, the UPS continues the subsequent shutdown process until the Uout is disconnected, and executes subsequent policies based on the 40014 register value. If the value is 0, the Uout recovers power after 5 seconds, and the PC is powered on again. If the value is 1, the UPS keeps the Uout disconnected until the Uin is disconnected and the UPS is powered on again.

(2) When the 40009 register is 1: Uin recovers power supply, the UPS continues the subsequent shutdown process until Uout is disconnected, and executes subsequent policies based on the 40014 register value. If the value is 0, Uout recovers power supply 5 seconds later, and the PC is powered on again. If the value is 1, the UPS keeps the Uout disconnected until the Uin is disconnected and the UPS is powered on again.

2.7.4 Battery output control

1) Battery output is enabled by default when the UPS is powered on.

2) During Uin power supply, if the battery voltage is lower than 6V, turn off the battery output and report an Alarm. In this case, the Uin power off and Uout function cannot be maintained. When the battery output is off, the battery voltage recovers to more than 6.5V, and the output is enabled again.

3) When the Uin is powered off, do not judge the battery voltage and keep the UPS running. If the UPS is not powered off, shut down the UPS by hardware protection until the battery runs out.

4) When the battery output is enabled, if the difference between the output voltage and the set voltage exceeds 10%, an Alarm is reported.

2.7.5 Battery charging control

1) In the charging enabled state, if the temperature of the UPS is detected to be higher than 75 °C, turn off the charging until the temperature is lower than 70 °C and resume the charging.

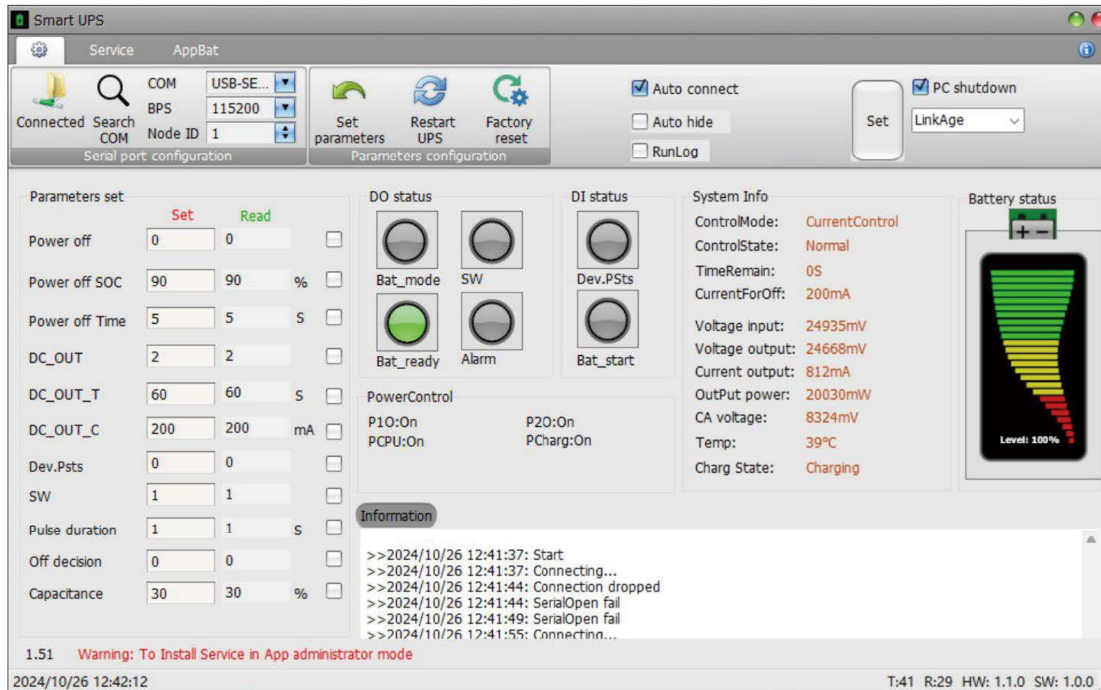
2) When the hardware charging is detected, turn off the charging, and re-enable the charging when the power is below 95%.

3) Because the battery voltage is lower than 6V, trickle charging is slow, in order to ensure normal charging, when the battery voltage is lower than 6V, turn off the battery output until the charging battery voltage is higher than 6.5V to restore the battery output function.

2.7.6 Battery imbalance judgment

The hardware has automatic battery balancing, but the balancing current is limited. It should be ensured that the voltage error of each installed battery does not exceed 0.1V. If a battery balancing failure is reported or the battery is not fully charged, the battery should be replaced in time.

2.8 PC Control Software

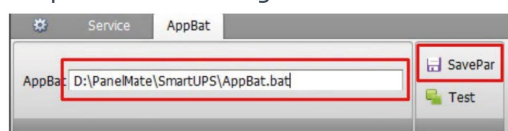


When using a Windows industrial computer, you can use our Smart UPS host computer software to update and view UPS device data in real time and configure parameters, and you can also use the Uin power-off automatic shutdown function (please use the "LinkAge mode" by default).

※Note: Microsoft .NET Framework 4.8 and above are required to run this software; after starting the software, if the "Warning" prompt is displayed in the lower left corner, you need to run this software as an administrator, and the first run requires "Install" to install the driver and "Start" to start the background service, so that you can connect and communicate with the device, the software starts automatically when it is turned on, and the Uin power-off shutdown function can be realized.



In addition, you can run a customized script. The software executes this script before shutting down the Uin.



Number	Disposition	Function Description	Remark
1	Power Off (40009)	Shutdown Strategy After Uin Power Failure In Current Mode 0: Shutdown Based On Ready Power (40010) 1: Shutdown Immediately After Uin Power Failure	UPS Parameters
2	Power Off SOC (40010)	Ready Power Threshold % For Shutdown Strategy 0 (40009). If It Is Lower Than This Value, The PC Will Be Shut Down (SW Signal).	UPS Parameters
3	Power Off Time (40011)	After Triggering PC Shutdown (SW Signal), Uout Power-Off Delay Time	UPS Parameters
4	DC_OUT (40005)	Device Shutdown Judgment Policy 0: Forever Mode, Continuous Output Until The Battery Runs Out 1: Time Mode, With The Same Function As The Toff Gear 2: Current Mode, Same Function As Ioff Gear	UPS Parameters
5	DC_OUT_T (40006)	(40005) Time Value Toff (Seconds) Of Time Mode	UPS Parameters
6	DC_OUT_C (40007)	(40005) Current Value Of Current Mode Ioff (MA)	UPS Parameters
7	Dev.Psts(PWR.S) (40008)	0: From High To Low, It Means The Powered Device Is Turned Off 1: From Low To High, It Means The Powered Device Is Turned Off	UPS Parameters
8	SW (40012)	SW Pulse Signal: 0: Off By Default, On When In Action 1: On By Default, Off When In Action	UPS Parameters
9	Pulse Duration (40013)	SW Pulse Duration Configuration (Seconds)	UPS Parameters
10	Off Decision (40014)	Shutdown Process Call Policy: 0: After Shutdown Is Completed, Delay 5 Seconds For Uout To Re-Output 1: After Shutdown Is Completed, Uout Remains Disconnected	UPS Parameters
11	Capacitance (40015)	Alarm Power Threshold	UPS Parameters
12	Auto Boot	Selecting This Option Means That The Host Computer Will Be Started Together With The Computer.	Host Computer Parameters

Number	Disposition	Function Description	Remark
13	Auto Hide	Selected Means The Host Computer Is In Hidden State After Startup	Host Computer Parameters
14	Auto Connect	Selecting This Option Means That The Host Computer Will Automatically Connect To The Device Again After Startup Until It Succeeds.	Host Computer Parameters
15	PC ShutDown	Select To Start The Host Shutdown Function Through The Host Computer	Host Computer Parameters
16	Time	If Selected, It Means That The Host Computer Will Issue A Shutdown Command After A Specified Number Of Seconds After Determining That The Power Is Off.	Host Computer Parameters
17	SOC	If Selected, It Means That The Host Computer Will Issue A Shutdown Command After Judging That The Power Is Lower Than The Set Value.	Host Computer Parameters
18	LinkAge	Selecting This Option Means That The Host Computer Will Execute The Shutdown Command Based On The Current UPS Mode And Status (Default)	Host Computer Parameters

2.9 Communication Protocol

2.9.1 Register specification

Register address	Instructions
40000	Device type, xx.xx(hexadecimal)
40001	Hardware version x.x.xx(hexadecimal)
40002	Software version x.x.xx(hexadecimal)
40003	Communication parameters OxPMRB:P:01 NoCheck 02 ODD 03 EVEN M:O RTU R:Rev B:01-6 9600/19200/38400/57600/76800/115200, default value: 1 start bit, 1 stop bit, 8 data bits, no check bit, 115200 baud rate
40004	Device address, default value: 1
40005	PC gear mode: 00: Forever 01: Time mode, 02: Current control (default)

Register address	Instructions
40006	PC gear, time mode Time length unit: s Default value: 60
40007	PC gear, current mode Current value unit: mA Default value: 200
40008	PWR.S signal monitoring mode: 0: falling edge 1: rising edge Default value: 0
40009	Current mode trigger SW output dependent condition: 0: Ready power 1: Delay Default value: 0
40010	Ready power threshold 0-100% Default value: 90%
40011	Uout power off delay time after SW output Default value: 5
40012	SW pulse type: 0: disconnected by default, on when output; 1: on by default, disconnected when output, default: 0
40013	SW pulse length: s Default value: 1s
40014	Incoming call policy during shutdown: 0: Delay 5 seconds after shutdown to re-output Uout; 1: Keep Uout disconnected after shutdown, default 0
40015	Alarm power alarm value: 0-100% default value 30%
40016	Uin input voltage mv
40017	Uin input current ma
40018	Uin output voltage mv
40019	Uin output current ma
40020	Uout output power, x10mw
40021	Total battery voltage mv
40022	UPS current working mode 0: Forever 1: Time mode 2: Current mode
40023	The current UPS power-off shutdown delay configuration in time mode is the configuration value during normal output, and the shutdown countdown is displayed after the shutdown process

Register address	Instructions
40024	The current power-off current of the UPS is set to mA. The default value is 200
40025	UPS current working status 0: Start 1: Normal 2: Waiting to send SW signal 3: Send SW signal 4: Waiting for the device to shut down 5: The device is shut down 6: Waiting to start again after external call
40026	Energy storage unit power%
40027	Charge and discharge status: 1 charging 2 discharging (0 not charged, 3 charging failure, 4 equalization failure, 5 no battery)
40028	Converter unit status: 0: Off 1: On (2 Fault), 3: Alarm
40029	Power supply mode: 0: External power supply 1: Battery power supply
40030	Battery status: 0: Fully charged (higher than Ready) 1: Partially charged (lower than Ready)
40031	SW signal status: 0: valid 1: invalid (default status)
40032	Reserve 0
40033	BAT.S input status, 0 is invalid, 1 is valid
40034	PWR.S input status, 0 is invalid, 1 is valid
40035	UPS internal temperature, T°C+1000
40036	Fault code (reserved)

Chapter 3 Installation Instructions

Follow the following installation instructions when installing and using the network and software.

3.1 Product Overview

This product is UPS 24V DC power supply, installation mode is Din-Rail rail installation, please note before installation:

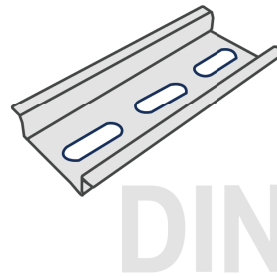
- Comply with the relevant accident prevention regulations for your machine (e.g. BGVA3, electrical systems and equipment).
- Ensure that connections meet standards to avoid risks to personnel. Ensure that data and power cables are laid in a standard manner and ensure correct pin allocation.
- Follow the relevant EMC guidelines for your application.
- Avoid polarity reversal of data and power cables, which may damage the device.
- Devices, including electronic components, may be damaged by electrostatic discharge upon contact. Comply with DINEN61340-5-1/-3 Safety measures against electrostatic discharge.

Installation mode

Din-Rail rail mounting

Matters needing attention

- Strictly follow the steps above to install the product!



3.2 Transportation And Storage

Transport

Despite the robust design of this product, these components are sensitive to strong vibrations and shocks. During transportation, the product must be protected from excessive mechanical stress and should be in its original packaging.

Store

This product needs to be stored in a dry environment in its original packaging at a temperature between -40°C and 80°C.

Package

Follow these steps to deploy the device:

1. Remove the package.
2. Keep the original packaging for future relocation.
3. Compare with your order to check that the delivery is complete.
4. Keep relevant documents. It contains important information used to process the product.
5. Inspect the product for visible transportation damage.

* If you notice any shipping damage or inconsistencies between the contents and your order, please notify Shanghai Panelmate Electronics Co., Ltd. for after-sales service.

Chapter 4 Safety Prevention And Maintenance

4.1 Safety Precautions

Please follow the following safety precautions.

4.1.1 General Safety Precautions

- Always follow the electrostatic precautions outlined below with UPS6910C-24 turned on.
 - Whenever it is necessary to install, move or modify the UPS6910C-24, ensure that the power supply is turned off and the power cord is disconnected.
 - Do not apply voltage levels that exceed the specified voltage range. Failure to do so may result in fire or electric shock.
 - UPS6910C-24 is in the running state, and once the UPS6910C-24 chassis is opened, an electric shock may occur.
 - Do not drop or insert any object into the ventilation opening of UPS6910C-24.
 - Once a large amount of dust, water or liquid enters the UPS6910C-24, the power should be turned off immediately, unplug the power cord, and then contact Panelmate.
 - The following activities are prohibited:
 - Do not drop the device onto hard ground.
 - Do not tap or exert excessive force on the LCD panel.
- It is prohibited to use UPS6910C-24 in places where the ambient temperature exceeds the rated temperature.

4.1.2 ESD Preventive Measures

Warning:

Failure to take ESD precautions during installation of UPS6910C-24 may result in permanent damage to this product and serious injury to the user.

Electrostatic discharge (ESD) may cause serious damage to the electrical components of this product. Dry climates are more likely to produce ESD. Therefore, once this product is opened and any electrical parts need to be handled, the following anti-static precautions must be strictly followed:

- Wear an ESD wrist strap: Wear a simple ESD wrist strap to prevent ESD damage to electrical components.
- Self-grounding: Any grounding conductive material should be touched before handling any electrical parts. During handling of electrical parts, any conductive substance that is grounded should always be touched.
- Use an ESD mat: When you configure electrical components or perform related operations, place them on an ESD mat. This reduces the likelihood of ESD damage.
- Only touch the edge of the electrical parts: In the case of handling electrical parts, hold the electrical parts by holding the edge.

4.1.3 The Product Is Not Applicable

This product is not suitable for operation in the following areas:

- Areas with aggressive environments, such as aggressive gases or chemicals.

4.2 Maintenance And Cleaning

Please maintain and clean the product as follows.

4.2.1 Maintenance And Cleaning

Please read the following details before cleaning any parts or components of the product. Do not spray or spray the liquid directly on any other parts.

- No internal cleaning required. Avoid liquid entering the interior.
- Care must be taken to avoid damaging the small, detachable components inside.
- Please turn off the power before cleaning.
- Do not drop any object or allow any liquid to enter the product through the opening.
- When cleaning, be careful of any allergic reactions your body may have to solvents or chemicals.
- Avoid eating, drinking and smoking near work areas.

4.2.2 Cleaning Tool

Only special products of special design can be used to clean certain parts. In such cases, such products are clearly noted in the cleaning instructions. Here is a list of items that can be used for cleaning:

- Cloth - Although paper towels or kleenex can be used, soft, clean cloths are recommended.
- Water or rubbing alcohol - A cloth dampened with water or rubbing alcohol should be used.
- Use solvents - It is recommended not to use solvents as they may cause damage to plastic parts.
- Vacuum cleaners - Using vacuum cleaners designed for computers is one of the best cleaning methods. Dust and dirt can restrict airflow and cause corrosion of the circuit.

- Cotton swabs - Cotton swabs dipped in rubbing alcohol or water are an excellent tool for wiping hard-to-reach product areas.
- Foam labels - Where possible, it is best to use foam labels and other non-lint labels for cleaning.

Chapter 5 FAQ

5.1 Technical Support And Service

Please visit the official website of Shanghai Panelmate Electronics www.panelmate.cn and wechat official account Panelmate Electronics to download the documents and related driver software, or contact the company directly for support and service.

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