SPM6KL/SPM10KL
Online UPS
Installation and User Manual

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Contents

Important Safety Information

Meaning of UPS Safety Signs

Read these instructions carefully to investigate and become familiar with the equipment before installing, operating, servicing or maintaining the device.

The following safety messages may be used throughout this manual or printed on the device to warn of potential hazards or to hint information for clarifying or simplifying operations.

For any “Danger" or "Warning" safety message that comes with this sign, it indicates that there is an electrical hazard here, and failure to comply the message may result in personal injury.

This is a safety alert symbol to alert you the potential personal hazards here. Please observe all safety information coming with this symbol to eliminate any risk of personal injury or death.

⚠ DANGER

DANGER indicates a hazardous situation which, if not avoided, **will result in** death or serious injury.

Failure to follow the instructions hereof may result in serious consequences such as personal injury or death.

⚠ WARNING

WARNING indicates a hazardous situation which, if not avoided, **could result in** death or serious injury.
Failure to follow the instructions hereof may result in serious consequences such as personal injury or death.

⚠ CAUTION

CAUTION indicates a hazardous situation which, if not avoided, **could result in** minor or moderate injury.
Failure to follow the instructions hereof may result in serious consequences such as personal injury or death.

NOTICE

NOTICE is used to address practices not related to physical injury. Such safety messages should be offered without any safety warning symbol.

Failure to follow directions may result in equipment damage and other serious consequences

Please note: Only qualified personnel shall be allowed to perform the installation, operation, and maintenance of electrical equipments. Schneider Electric assumes no responsibility for any consequences of non-compliance with this manual.
The qualified personnel mentioned herein are those who have the skills and knowledge of the construction, installation, and operation of electrical equipment, have received safety training, and are able to identify and avoid the associated risks.

Safety and General Information

SAVE THESE INSTRUCTIONS

This manual contains important instructions that should be followed during installation and maintenance of the UPS and batteries.

Inspect the package contents upon receipt. Notify the carrier and dealer if there is any damages.

- This UPS is for indoor use only.
- Do not operate this UPS in direct sunlight, in contact with fluids, or where there is excessive dust or high humidity.
- Do not operate the UPS near open windows or doors.
- Be sure the air vents on the UPS are not blocked. Allow adequate space for proper ventilation.

  Note: Allow a minimum of 20 cm clearance on all four sides of the UPS.
- Environmental factors impact battery life. Elevated ambient temperatures, poor quality utility power, and frequent discharges will shorten battery life. Follow the battery manufacturer recommendations.
- Connect the UPS power cable directly to a wall outlet. Do not use surge protectors or extension cords.

Safety Precautions

⚠ DANGER

BE AWARE OF ELECTRIC SHOCKS, EXPLOSIONS OR ARCS.

All safety instructions in this document must be carefully read, thoroughly understood, and strictly observed.

Failure to follow the instructions may result in serious consequences such as personal injury or death.

⚠ DANGER

BE AWARE OF ELECTRIC SHOCKS, EXPLOSIONS OR ARCS.

Please read all instructions mentioned in the installation manual before installing or using the UPS system.

Failure to follow the instructions may result in serious consequences such as personal injury or death.

⚠ DANGER

BE AWARE OF ELECTRIC SHOCKS, EXPLOSIONS OR ARCS.

- The specifications and requirements established by Schneider Electric must be observed when installing this product. Special attention should be paid to internal and external protection (upstream circuit breakers, battery circuit breakers, cables, etc.) and environmental requirements. Schneider Electric assumes no responsibility for the consequences of non-compliance with the requirements mentioned hereof.
- Once the UPS system is connected to the power cable, do not turn on the system. Start-up operations must be performed by Schneider Electric engineers.

Failure to follow the instructions may result in serious consequences such as personal injury or death.

⚠DANGER

BE AWARE OF ELECTRIC SHOCKS, EXPLOSIONS OR ARCS.

- Install the UPS system in a temperature-controlled, conductive-debris-free, and ventilated environment.
- Install UPS systems on a surfaces that are non-flammable, horizontal, and strong (such as concrete) enough to withstand the weight of the system.

Failure to follow the instructions may result in serious consequences such as personal injury or death.

⚠DANGER

BE AWARE OF ELECTRIC SHOCKS, EXPLOSIONS OR ARCS.

UPS is not suitable for and therefore shall not be installed in the following abnormal operating environments:

- Full of hazardous smoke.
- Full of moisture, dust, floating particles, steam or extremely humid air.
- Prone to mold, insects, parasites.
- Full of salty air or cooling water, or impurities like fumes, acids, etc.
- Whose pollution level is above Level 2, according to IEC 60664-1.
- Subject to abnormal vibrations, shocks, rocking or earthquakes
- Exposed to direct sunlight, heat or strong electromagnetic

Failure to follow the instructions may result in serious consequences such as personal injury or death.

⚠DANGER

BE AWARE OF ELECTRIC SHOCKS, EXPLOSIONS OR ARCS.

- Do not drill or cut the sealed plates that have cables or conduit installed on them. Do not perform any drilling or cutting operation in the surrounding of the UPS.

Failure to follow the instructions may result in serious consequences such as personal injury or death.

⚠WARNING

BE AWARE OF ELECTRIC ARCS.

- Do not mechanically modify this product (including removing cabinet components or drilling/cutting on it) unless so required in the Installation Manual.

Failure to follow the instructions may result in serious consequences such as personal injury or death.

⚠WARNING

BE AWARE OF OVERHEAT.

- Observe the minimum clearance requirements regarding the UPS system allocation and do not cover the product vents while the UPS is operating.

Failure to follow the instructions may result in serious consequences such as personal injury or death.

Electrical Safety

⚠ DANGER

BE AWARE OF ELECTRIC SHOCKS, EXPLOSIONS OR ARCS.

- Installation, operation, repair, and maintenance of electrical equipments must be performed by qualified personnel.
- Make sure above-mentioned qualified personnel wearing appropriate personal protective equipment and observing electrical safety practices when performing above-mentioned operations.
- When operating or maintaining the device, turn off all power connected to the UPS system.
- Before operating the UPS system, perform a check between all terminals (including protective grounding) for dangerous voltages.
- The UPS contains internal power. Even when disconnected from its utility power, there may still be hazardous voltages. So, before installing or repairing the UPS system, make sure that the equipment is OFF and disconnect the utility power and battery connections. And, wait five more minutes before opening the UPS to allow the capacitors to discharge.
- The UPS system must be isolated from its upstream power source using isolation devices (disconnectors, switches) that comply with local regulations. The isolation devices must be set at a conspicuous and easy to operate locations.
- The UPS must be properly grounded, and due to the large leakage current, the ground wire must be connected first.

Failure to follow the instructions may result in serious consequences such as personal injury or death.

⚠ DANGER

BE AWARE OF ELECTRIC SHOCKS, EXPLOSIONS OR ARCS.

If the system's standard design does not include backfeed protection, an automatic isolation device (backfeed protection option or any other device that complies with IEC/EN 62040-1 or UL 1778 Release 4 – depending on local applicable standards) is required in order to isolate the system from any possible hazardous voltage or energy on the input terminals. The isolation device must be able to response within 15 seconds after the failure of upstream power supply and must match the specification requirements.

Failure to follow the instructions may result in serious consequences such as personal injury or death.

When the UPS input is connected through an external isolator – which isolates the neutral line when becoming opened- or when the provided automatic backfeed isolation appliance is an external one or is connected to an IT system, the UPS input terminals shall be labeled with following information (or equivalent in the language acceptable in the country or area where the UPS system is installed), while users must label by themselves all main power isolators that are installed away from the UPS area and all external access points between those isolators and the UPS accordingly. The following text appears on the label:

⚠ DANGER

BE AWARE OF ELECTRIC SHOCKS, EXPLOSIONS OR ARCS.

Risk of voltage feedback. Before handling this circuit, isolate the UPS and check all terminals and protective earth for hazardous voltages.

Failure to follow the instructions may result in serious consequences such as personal injury or death.

Battery Safety

⚠DANGER

BE AWARE OF ELECTRIC SHOCKS, EXPLOSIONS OR ARCS.

- The battery circuit breaker must be installed in accordance with Schneider Electric□s specifications and requirements.
- The battery maintenance can only be performed by or under the supervision of qualified personnel familiar with the battery operations, and be preceded with cautions.
- Do not allow non-qualified personnel to operate the battery.
- Disconnect the charging power before connecting or disconnecting the battery terminals.
- Do not throw the batteries into a fire as they may explode.
- Do not disassemble, modify, or damage the batteries. The electrolyte flowing from the battery is harmful to your skin and eyes. The electrolyte may be toxic.

Failure to follow the instructions may result in serious consequences such as personal injury or death.

⚠DANGER

BE AWARE OF ELECTRIC SHOCKS, EXPLOSIONS OR ARCS.

Batteries may cause a risk of electric shock and high short-circuit currents. When operating the batteries, the following precautions must be strictly observed:

- Take off watches, rings, or other metal objects.
- Use tools with insulated handles.
- Wear safety glasses, gloves and rubber shoes.
- Do not rest tools or metal parts on top of the batteries.
- Disconnect the charging power before connecting or disconnecting the battery terminals.
- Make sure the batteries are not inadvertently grounded. If any battery is inadvertently grounded, remove the ground. Contact with any part of a grounded battery may cause a risk of electric shock. During installation and maintenance, removing grounded batteries can immediately reduce the risk of electric shock (which applicable to devices and remote batteries without a grounded supply circuit).

Failure to follow the instructions may result in serious consequences such as personal injury or death.

⚠DANGER

BE AWARE OF ELECTRIC SHOCKS, EXPLOSIONS OR ARCS.

When replacing batteries, use the same type and number of batteries or battery packs.

Failure to follow the instructions may result in serious consequences such as personal injury or death.

⚠CAUTION

BE AWARE OF EQUIPMENT DAMAGE.

- Install the battery only after the system is ready to be powered. It is recommended to power on the UPS in less than 72 hours after installing the battery to the UPS.
- According to the charging requirements, the battery storage time must not exceed 6 months. If the UPS system is off for a long time, it is recommended that you charge the UPS system's batteries at least once a month for 24 hours. This charging prevents irreversible damage.

Failure to follow the instructions may result in serious consequences such as personal injury or death.

Product Description

The Schneider Electric SPRM6KL/SPRM10KL UPS is a high performance, uninterruptible power supply (UPS). The UPS provides protection for electronic equipment from utility power blackouts, brownouts, sags, and surges and small utility fluctuations and large disturbances. The UPS also provides battery backup power for connected equipment until utility power returns to normal levels or the batteries are fully discharged.

This user manual is available on the enclosed Documentation CD and on the Schneider Electric website, www.apc.com.

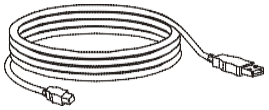
Package Content

The packaging is recyclable; please keep it safe for reuse or disposal.

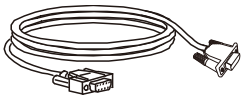
(1)
UPS

(1)
User manual

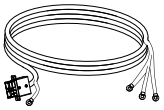
(1)
Software, User documentation CD



(1)
USB cable

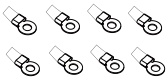


(1)
RS232 cable

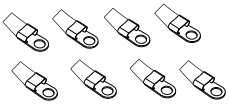


(1)
Battery cable

(2 x M5 screws and 4 x M6 screws)
Screws



(8 x #10-M5)
OT terminals only for 6K series



(8 x #8-5.3)
OT terminals only for 10K series

Note: The model and serial numbers can be found on the rear panel.

Optional Accessories

For optional accessories, please refer to the following table or visit the Schneider Electric website: www.apc.com.

Name	Model No.	Description
Environmental Interface card	VGL9601	The environment monitoring card needs to be used together with a SNMP card. The environment detection device (EMD) can remotely detect the temperature and humidity through the SNMP interface, and provide two dry contact signals to receive up to two compatible devices, such as security and Alarm system.
MODBUS card	VGL9701	It supports MODBUS RTU communication protocol, reads and writes data through registers, provides RS-485 interfaces, and provides surge protection.
SNMP card	VGL9801	It provides SNMP interfaces and management software for data exchange, enabling you to monitor and manage UPS through the management software.
Dry contact card	VGL9901	It expands the UPS dry contact feature by providing 7 extra dry contacts.

Specifications

Environmental specifications

NOTICE

RISK OF EQUIPMENT DAMAGE.

- The UPS must be used indoors.
- The installation location should be strong enough to support the weight of the UPS.
- Do not use the UPS in an environment where there is full of excessive dust or where the temperature or humidity is out of specification.

Otherwise, the equipment may be damaged.

Temperature	**Working**	For 0℃ -40℃, rated load For 40℃ -45℃, output capacity is derated linearly to 85% of the maximum load capacity as temperature increasing. For 45℃ -50℃, output capacity is derated linearly to 75% of the maximum load capacity as temperature increasing.	The UPS must be used indoors. The installation location should be strong enough to support the weight of the UPS. Do not use the UPS in an environment where there is full of excessive dust or where the temperature or humidity is out of specification. **Note:** Charge the battery module once every six months during storage. (If applicable)
	Storage	-15℃ -60℃	
Altitude	**Working**	0 - 1000 m：Normal operation 1000 - 3000 m：Derate power by 1% per 100m increased > 3000 m：Unsuitable for operation	
	Storage	0 - 15000 m	
Humidity		0 ~ 95%, non-condensing	

Physical specification

UPS Model	**SPM6KL**	**SPM10KL**
Dimensions with package Width x Height x Depth	290 mm x 460 mm x 491 mm	290 mm x 460 mm x 570 mm
Dimensions without package Width x Height x Depth	190 mm x 336mm x 374 mm	190 mm x 336 mm x 447mm
Weight with package	16kg	19.5kg
Weight without package	13kg	16.5kg
Lifting guidelines	< 18 kg 	18- 32 kg 

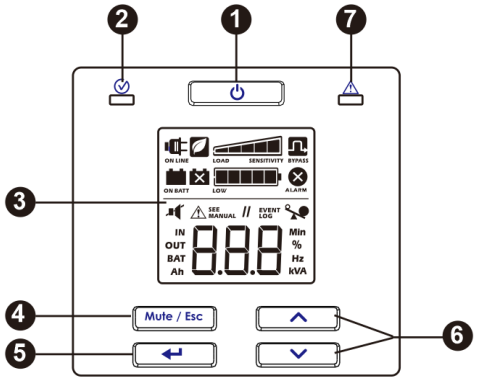
Input/Output

UPS Model		SPM6KL	SPM10KL
Input	Voltage	220 Vac rated	
	Frequency	50 Hz / 60 Hz	
	Input voltage range (at 100% RCD load)	176 Vac – 300 Vac ± 3%	
	Input voltage range (at 60% load)	110 Vac – 176 Vac ± 3%	
	Input power factor	≥ 0.99	
	Input protection	Input circuit breaker	
Output	UPS capacity	6000 VA / 6000 W	10000 VA / 10000 W
	Rated output voltage	220 Vac	
	Other programmable voltage	230 Vac、240 Vac	
	Rated load efficiency	Max. 94%	
	Output voltage regulation	± 1% Static	
	Output voltage distortion	• Max. 1% when fully linear load • Max. 4%(100% VA, 0.8 PF) when fullly RCD load	
	Frequency - Battery Mode	50 Hz ± 0.1 Hz / 60 Hz ± 0.1 Hz	
	Frequency - AC mode	50 Hz ± 4 Hz / 60 Hz ± 4 Hz	
	Crest factor	3:1Max	
	Waveform	Sine wave	
	Output connection	Terminals	
	Bypass	Internal bypass	
	Bypas voltage range	187 Vac - 253 Vac（default）+/-1%	

Battery

UPS Model	SPM6KL	SPM10KL
Configuration	External battery	
Type	N/A	
Battery Bank Voltage	Default 240V (default), 192V/204V/216V/228V is available. (CAUTION: It MUST contact Schneider for help, otherwise battery may be damaged.）	

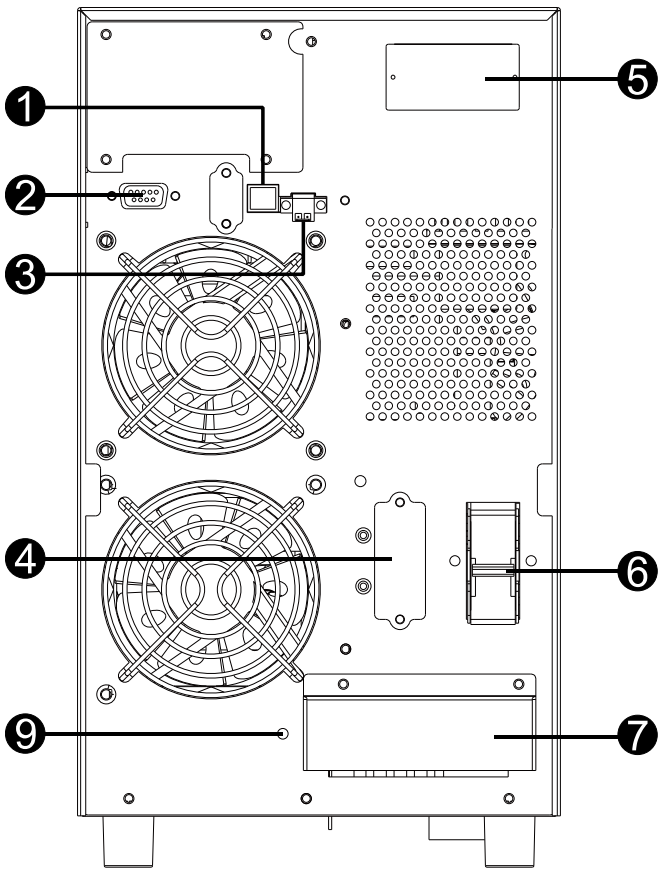
Front Panel Display



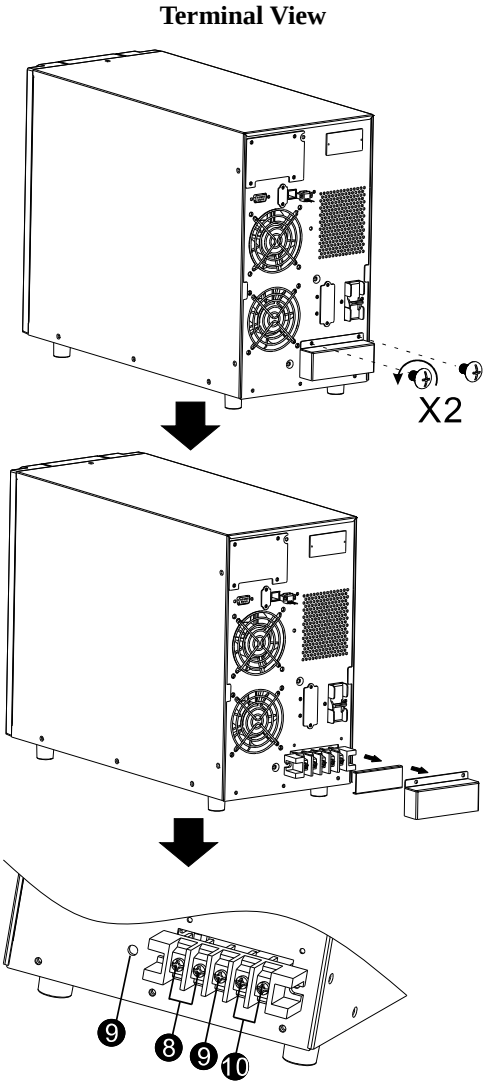
1. UPS power on/off button
2. Status indicator
3. LCD display
4. Mute/Esc button
5. Enter button
6. Up/down button
7. Alarm LED

Rear Panel Feature

SPM6KL/SPM10KL

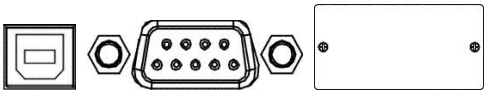


Terminal View



1	USB port	7	Input/output terminal block (Refer to "Terminal View" for details.)
2	RS232 port	8	Output terminal
3	Emergency Power Off (EPO)	9	Ground terminal
4	External battery connector	10	Input terminal
5	Intelligent card slot		
6	Input circuit breaker		

Basic Connectors

 **USB RS232 Intelligent card slot**	There are power management software and interface kits available for the UPS. **Use only interface kits supplied or approved by Schneider Electric. See page 6 for available optional accessories.**

Start Up Settings

Hard wiring

Installation and wiring must comply with local electrical regulations and the following instructions and must be performed by professional electricians:

1) Verify that the building electrical wiring and circuit breakers are sufficient to support the UPS capacity to avoid electric shock or fire accidents.

Note: Do not use a wall outlet as the UPS input power (its rated current is supposed to be less than the maximum input current of the UPS), or the outlet may be burned.

2) Before installation, turn off the indoor power switch.

3) All load devices must be powered off before connecting to the UPS system.

4) Prepare the wires according to the following table:

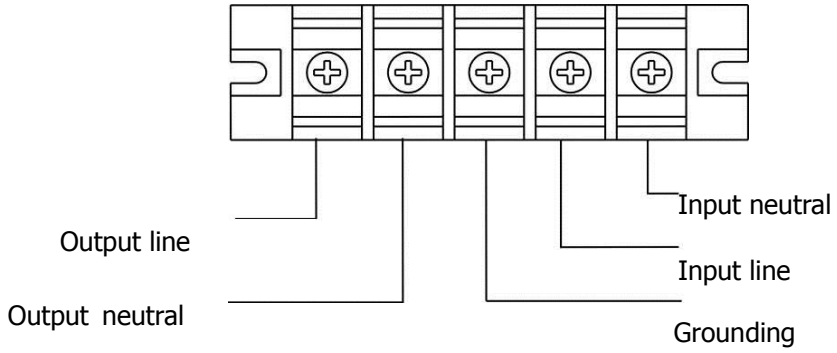
Model No.	Wiring specifications (mm^2)			
	Input	Output	Battery	Grounding
SPM6KL	8	8	8	8
SPM10KL	10	10	10	10

Note 1: The wires used for the 6KL model must be able to withstand more than 50A. Therefore, it is recommended to use $8mm^2$ or above wires to balance between safety and cost efficiency.

Note 2: The wires used for the 10KL model must be able to withstand more than 63A. Therefore, it is recommended to use $10mm^2$ or above wires to balance between safety and cost efficiency.

Note 3: The colors of the wires must comply with local electrical regulations.

5) Remove the terminal block cover on the rear panel of the UPS. Then, follow the wiring diagram below: (When wiring, please connect the grounding wire first. When removing the wiring, keep the grounding wire till the end!)



Terminal wiring diagram

Note 1: Make sure all the wires on the terminals are locked and fixed.

Note 2: Please set output breakers between the output terminals and the load devices, and confirm that the breakers all are the ones with leakage protection feature.

6) Put the terminal block cover back, and make sure the plastic transparent insulation plate of the terminal block has been installed back to it.

Connect external battery

Battery Safety Information

Read and follow all safety requirements when installing an external battery pack.

Failure to comply with safety regulations can result in damage to the equipment and even serious personal injury.

	• Do not attempt to install an external battery pack yourself. The external battery pack must be connected by a professional electrician.
Operation safety	• Always wear goggles or masks, acid-resistant insulated gloves, protective aprons, protective boots or rubber boots • Be sure to use insulating tools, rubber pads/rubber mats and/or rubber racks used to cover the battery during operation, suitable lifting devices. • Remove watches, rings, and other metal objects from the operators
Precautions	• Do not place tools or metal parts on the battery packs. • Lead-acid batteries contain hazardous toxic substances. • Do not open, modify, or damage the battery packs. The internal material of battery can easily damage the skin and eyes. • Never put batteries into a fire. Or, they may explode. • Batteries shall be disposed, transpotted, and recycled in accordance with local laws and regulations.

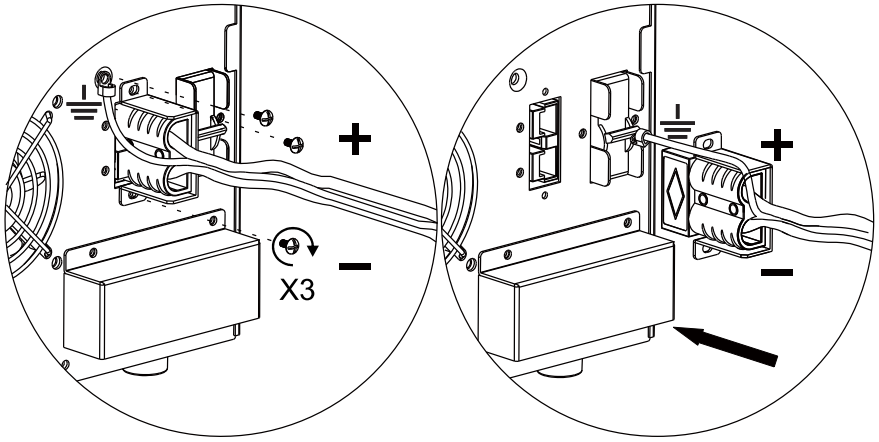
Sealed lead-acid batteries must be used. The recommended maximum number of battery packs in parallel is 5.

The battery pack uses 50A, 440VDC (more than 300V) fuses or circuit breakers with breaking current greater than 10,000A.

● Connect the batteries according to the battery voltage indicated on the back panel. If the connected battery voltage is incorrect, the UPS may be damaged and cannot be repaired. Therefore, be sure to confirm that the battery voltage complies with the UPS specifications.

● Connect the positive (red) and negative (black) wires to the positive and negative terminals of the external battery system. The ground wire (green) shall be grounded correctly.

● Plug the battery cable into the battery connector of the UPS back panel.



Turn on UPS

Push the ⏻ button can be found on the UPS front panel.

- Normally, the battery will be charged to 90% after five hours from your initial start.
- Do not expect the battery to perform its full capacity during this initial charge.

Cold start UPS

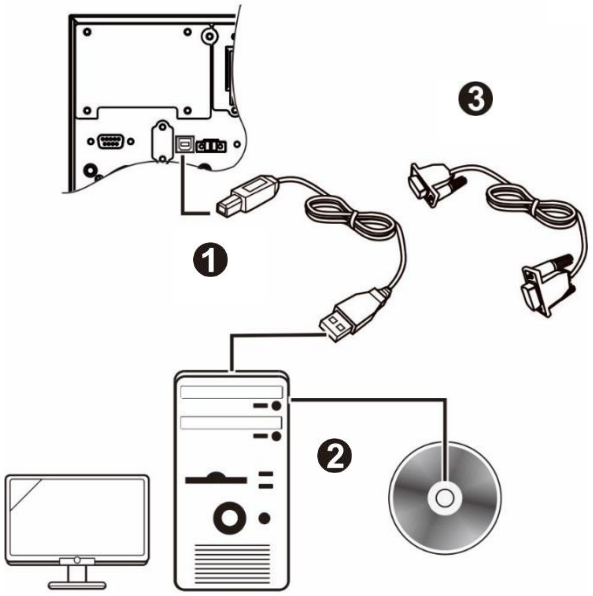
Do not switch on the input switch after the hard wiring and batteries are connected.

By the cold start feature, you can make the connected devices being powered by the UPS batteries. Press the ⏻ button for 0.5S. Then, when the display panel lights up, press the ⏻ button one more time. Then, the connected devices become powered by the UPS battery.(For more details, please see the " Operation" section)

Connect and install management software

This **SPM6KL/SPM10KL** UPS comes with Schneider UPS management software for unattended operating system shutdown, UPS monitoring, UPS control and energy reporting. The following figure shows a typical server installation.

1. Connect the protected device, such as a server, to the ▭ on the back of the UPS using a USB cable.
2. Insert the Schneider UPS CD to the device (a server or other device running on a operating system). Follow the instructions displayed on the screen to finish the installation.
3. The built-in serial port ⬭ can also be used for additional communication options via a serial cable.
4. Even more communication options are available via the built-in intelligent card slot. Refer to www.apc.com for more information.
   Note: The USB port and DB9 port (RS232) cannot be used together at the same time.



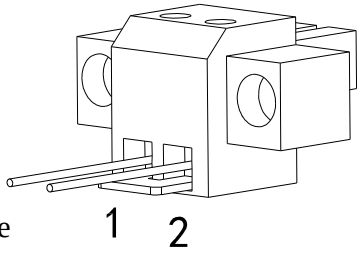
Emergency Power Off

The Emergency Power Off (EPO) feature is a safty feature that immediately shuts off power to all connected devices. After the EPO button is pressed, all connected devices are immediately turned off and cannot switch to battery power.

Observe all national and local electrical regulations. Must be wired by qualified electricians.
The EPO switch is internally powered by the UPS in order to be used with non-power switch breakers or zero potential contacts.

Normally Closed (N/C) contacts

1. Remove the EPO connector screws for pins 1 and 2.
2. Disconnect the metal connection between pins 1 and 2.
3. Connect the N/C relay contacts between pins 1 and 2 of the EPO terminal block. Use the wire whose diameter is 0.5 to 1 mm^2..
4. Tighten the EPO connector screws for pins 1 and 2.



If N/C becomes open, the UPS will shut down and the power supply to the load will be cut off.

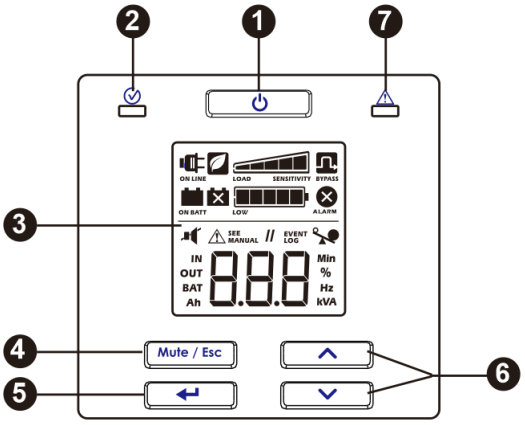
This EPO interface is of a Safety Extra Low Voltage (SELV) circuit, and can only be connected and used with SELV circuits. This type of closed circuit can be a switch or relay that is completely isolated from the utitlity power. To avoid any damage to the UPS, do not connect the EPO interface to any circuit other than a Safety Extra Low Voltage (SELV) circuit.
Use one of the following cable to connect the UPS to the EPO switch.

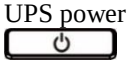
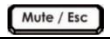
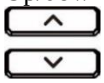
- CL2: Commonly used Category 2 cable.
- CL2P: High-voltage cable used in conveying pipelines, high-pressure ventilation systems, and other ambient ventilation areas.
- CL2R: Vertical cable used to route vertically along the pipe between floors.
- CLEX: Limited-use cable for residential and cable ducts.

Operation

Display Operation

The **SPM6KL/SPM10KL** UPS models come with an LCD display for intuitive configuration. Like a secondary software interface, the display can used to send software information and also to configure your UPS settings.
The display contains following buttons and indicators:



1	UPS power on/off button 	• To power on the UPS, press down this button and immediately release it when a beep sound is heard. • To power off the UPS and switch to bypass mode, press down this button and immediately release it when a beep sound is heard. • To rest an alarm, press this button.
2	Status LED 	When the power is on, this **status LED** lights in green. The LED can show two different output power states: • The LED blinks.The UPS operates without output, or in bypass or battery self-test mode. • The LED lights in solid green. The UPS operates in inverter mode (eg, online mode, battery mode)
3	LCD display	The LCD display shows the interface options. If the display does not turn on, press the  or  button to wake up the LCD.
4	Mute/Esc button 	• Temporarily confirm and mute the sound alarm. • Exit a submenu and return to the main menu.
5	Enter button 	Press this button to enter a menu or select a menu item/value during navigation.
6	Up/down button 	Press these two buttons to scroll through the main menu options and display screen.
7	Alarm LED 	When the UPS detects an error and makes a UPS notification by blinking in red, this alarm LED lights in red. See "Alarms and system errors" on page 18 of this manual for more details.

Icons on LCD screen

	**Online mode**: The UPS connects to utility power and performs a two-way conversion to power the connected devices.
	**Battery mode:** The UPS uses the battery to power the connected devices.
	**Replacing battery**: The battery is not firmly connected or the battery has reached the end of its useful life and shall be replaced.
	**Bypass**: The UPS is in the bypass mode and transfers the utility power directly to the connected devices. The bypass mode is triggered by a UPS internal events or overload conditions. The battery cannot be used when the UPS is in the bypass mode. See "Alarms and system errors" on page 18 of this manual. When this icon and the green mode icon appear, it indicates that the UPS is operating in the green mode.
	**System alarm:** An internal failure is detected. See "Error code" on page 16 of this manual.
	**Overload:** The total power consumption of the connected devices exceeds the rated range allowed.
	**Battery Charging:** Shows the battery charge amount. When there shows five blocks, the UPS is fully charged. Each block stands for about 20% of battery charge capacity.
	**Load Level:** Displays the load percentage. Each block stands for about 20% of the maximum load capacity.
	**Mute:** If there is a straight line across the speaker icon, it means that the sound alarm is disabled.
	**Green mode:** An energy saving mode. When the input voltage and frequency are within the configured range, the UPS operates in an energy-saving mode.
	**Alert or notification:** The UPS detects an error or the UPS is in configuration mode. See “Error code” on page 16 and "Alarms and system errors" on page 18 of this manual.
	**Event:** This icon lights up when the user views the event log.

Alarms and System Errors

Status indicator and buzzer

One beep per second Blinking in red	**Alarm event** – UPS alarming, please note
Two beeps per second Blinking in red	**Overload event** – The total power consumed by the connected devices on the UPS exceeds the allowable rated range.
Four beeps per 30 seconds	**Battery powering** – The UPS is operating in battery mode.
Continuously beeping Lighting on in solid red	**Error event** – The UPS has detected an error. Please refer to "Error code" on page 16.
One beep every 120 seconds	**Bypass event** – The UPS is operating in bypass mode.

Error Code

Code	Description	Solution
	The UPS detected a short circuit event on the output side. The device will try to recover itself automatically from this state.	Check if the UPS output is short-circuited. After resolving the short circuit, wait for the device to automatically recover itself, or reboot the UPS. **Note:** When this alarm happens, the UPS stops powering all connected devices.
	The UPS is overloaded and cannot operates in bypass mode.	Disconnect unnecessary devices from the UPS to decrease the loal, and restart the UPS..
	The UPS detected a DC voltage error and is trying to recover automatically from this state.	If UPS fails to recover automatically after a restart, please contact Schneider Electric.
	The temperature of the unit exceeds the limit.	Disconnect unnecessary devices from the UPS to decrease the load. Make sure that the ambient temperature is within the limit. Make sure enough clearance is around the unit. Restart the UPS.
	The UPS detected a charger error.	Check if the UPS's battery terminals are short circuited. Restart the UPS.
	Bus soft start failed.	Please contact Schneider Electric.
	Low bus voltage	Please contact Schneider Electric.
	Bus voltage imbalance	Please contact Schneider Electric.

Code	Description	Solution
	Inverter soft start failure detected	Please contact Schneider Electric.
	High inverter voltage	Please contact Schneider Electric.
	Low inverter voltage	Please contact Schneider Electric.
	Inverter negative power protection	Please contact Schneider Electric.
	Inverter overcurrent	Please contact Schneider Electric.
	SPS voltage abnormal	Please contact Schneider Electric.
	Battery SCR short-circuited	Please contact Schneider Electric.
	Inverter relay short-circuited	Please contact Schneider Electric.
	Parallel CAN communication failed	Please contact Schneider Electric.
	Communication between control board and communication board failed	Please contact Schneider Electric.
	Battery soft start failed	Please contact Schneider Electric.
	PFC current failure detected in battery mode	Please contact Schneider Electric.
	Bus voltage changes too fast	Please contact Schneider Electric.
	Current DC component detection alarm	Please contact Schneider Electric.

Alarm and Notification

Alarms	Description	Solution
	Batteries not connected.	Connect the batteries to the UPS. Please refer to “Startup settings” on page 12 to connect the external battery packs.◦
	Batteries overcharged.	Please contact Schneider Electric.
	The UPS was overloaded. And the the connected devices is powered through bypass.	Remove excess load from the UPS output.
	Fan failure detected	Please contact Schneider Electric.
	EPO has been activated.	After solving the problem device, set the EPO将 in closed position to deactivate the EPO function.
	Battery low.	Remove the load. The UPS is about to turn itself off.
	The temperature is too high. If continue to powering the same load, an overheat failure will occur.	Remoce any excess load and check the UPS ventilation.
	Charger failure detected.	Please contact Schneider Electric.
	In the parallel system, the utility power inputs are not consistent.	Please check the utility power inputs.
	In the parallel system, the bypass inputs are not consistent.	Please check the bypass inputs.
	After three connsective overload events in 30 minutes, the UPS has been locked in bypass mode.	After the UPS being stabilized in bypass mode, please press the power button to hear a beep. By doing this, the lock will be canceled.
	Maintenance bypass mode has been activated.	Please contact Schneider Electric.
	Bypass instability	Please provide stable utiliyu power.

UPS Parameters

The following table shows the operating data displayed in the display panel. Use the ^ or v button to navigate.

Parameter	Unit	Icon
Output voltage	Vac	OUT, V
Output frequency	Hz	OUT, Hz
Input voltage	Vac	IN, V
Input frequency	Hz	IN, Hz
Battery voltage	V DC	BAT, V
Charging current	A	BAT, A
Ambient temperature	° C	NUMBER, C
Battery charging status	%	BAT, %
Load level percentage(Maximum wattage or VA)	%	OUT, %
Load level (kVA)	kVA	OUT, kVA
Total capacity in Ah of all connected batteries	Ah	BAT, Ah
Remaining battery runtime	Min	BAT, min
Capacity in Ah of connected batteries	Ah	BAT, AH

Configuration

Configure UPS parameters

Follow the steps below to configure the UPS parameters:

1. Press the ↵ button to open the menu screen.
2. Press the ^ or v button to navigate to “Set”.
3. Press the ↵ button to open the Set screen.
4. Using the ^ or v button to navigate and find the desired item.
5. Press the ↵ button to confirm your selection. When the icon starts blinking.
6. Press the ^ or v button to browse the available options for the selected parameter.
7. Press the ↵ button to confirm your selected parameter, or press the Mute / Esc button to exit the current item. Then, the icon will stop blicking.
8. Press the ^ or v button to navigate and find the next desired item.
9. Press Mute / Esc button to exit from the menu screen.

UPS settings

Configure the UPS settings using the display interface. See the "Configuring UPS Parameters" section to edit parameters.

Function	Factory default	Available options	Decription
Output voltage	220 Vac	220、230、240 VAC	Allows the user to select the output voltage while the UPS is operating in online mode.
Audio alarm	Enabled	Enabled, Disabled	When it is set to "**Disabled**", the UPS's audible alarm is muted.
Minimum bypass voltage	Output voltage value -15%	-15%, -20%, -25%, -30%	The minimum voltage provided to the connected devices when the UPS is in bypass mode.
Maximum bypass voltage	Output voltage value +15%	+5%, +10%, +15%,+20%	The maximum voltage provided to the connected devices when the UPS is in bypass mode.
Green mode/ High-efficiency mode	Disabled	Enabled/Disabled	When this mode is enabled, the connected devices will be powered by utility input power through the bypass relay when the input voltage is within ± 5% of the configured output voltage and ± 2 Hz of the configured output frequency. If the utility input power becomes out of range, the load is transferred to online mode or battery mode. The power interruption to all connected devices is no more than 10 milliseconds.
Battery capacity in Ah	9 Ah	7~200 Ah	Allows the user to set the capacity in Ah for each battery connected to the UPS
Charging current	4A	1 ~ 4 A	Allows you to set the charging current.
Output voltage adjustment	220 Vac	220 ±0~9 V 230 ±0~9 V 240 ±0~9 V	Uou can use the  or  button to adjust the output voltage. The parameter adjustment is available in online mode and battery mode.
Inverter voltage adjustment	Add 0	Add 000~09.9V Sub 000~09.9V	You can select Add or Sub to adjust the inverter voltage. The adjustable range is from 0V to 9.9V. The default is 0V. This adjustment is available in online mode and battery mode.

Advanced display navigation

On the UPS display, there are five options and two sub-menu options in the main menu. In the home screen, a press on the ↵ button can open and access these menu options. Then, use the ^ or v button to navigate through the menu options.

Menu option	Description
	**Configure UPS** Use this menu option to configure UPS parameters. Press the ↵ button to see the configuration options. See "Configuring UPS Parameters" on page 15 for more information. Press the Mute / Esc button to return to the home screen.
	**Event log** Use this menu option to view the UPS event log. UPS records the last 10 events with their event code. Press the ↵ button to view the log. Use the ^ or v button to view the recorded events. The v button navigates you to the old events and the ^ button navigates you to the latest event. Each log entry is numbered and includes its event codes. At the end of the log, a word "End" will be displayed. Press the Mute / Esc button to return to the home screen.
	**UPS information** Use this menu to inspect the UPS information. Press ↵ to check the UPS capacity. Press ^ to check the UPS firmware (control and communication boards). Press Mute / Esc to return to the home screen.
	**Manual bypass command** Use this menu option to set the UPS operation into bypass mode or switch the UPS operation from bypass mode to online mode. Press ↵ button:  **Put**: Set the UPS operation into bypass mode. **Note:** If the utility power voltage is not within the threshold limits , the power supply for the connected devices will be cut off.  **Out:** Set UPS operation out of bypass mode, and restore the clean power supply to the connected devices.
	**Battery self test** Use this menu option to perform the self test to determine the battery status. Press the ↵ button to start the test. If the test command is accepted by the system, the UPS will start self-testing and start counting down 10 seconds on the display. The result Information will be displayed at the end of the test.  The test was rejected because the output is off or the battery is not charging.  Test failed  Test passed  Test was terminated because of internal problems Press Mute / Esc button to return to home screen.

Troubleshooting

Use the following table to troubleshoot minor glitches arising from installation and operation. For help on more complex UPS issues, please visit the Schneider Electric Information Technology website at www.apc.com.

Problems and/or possible causes	Solution
The utility power input is available, but the UPS does not turn on or there is no power output	
The UPS is not powered on.	Press ⏻ button to power on the UPS.
The UPS is not connected to the utility power.	Check if the security of the both ends of the power cables between the UPS and the utility power. See section "Start up settings" on page 12 of this manual.
The input thermal breaker on the UPS is not closed.	Close the input circuit breaker on the rear panel.
When connected to the utility power, the UPS switches into battery mode.	
The input voltage or frequency is too high, too low, or unstable.	By connecting the UPS to other outlets of other circuits, test the utility power to ensure that the connected devices receive the input power. If the display is on, navigate and check the input voltage and frequency.
The UPS connected to the battery did not supply power to the connected devices.	
The UPS is not powered on.	If the UPS is off (the display is not on), follow the steps in “Cold Start the UPS” on page 8.
Insufficient battery capacity. Maybe because of a power failure, the battery has been discharged or depleted and stopped outputting.	Wait for the utility power to recover and charge the battery. To turn on the power output after the utility power restores, press the ⏻ button.
UPS keeps beeping for a long time	
The UPS operates normally in battery mode.	The UPS detected an error. See "Alarms and system errors" on page 16 of this manual.
Alarm LED lights up. The UPS displays an alarm message and beeps continuously.	
An UPS failure detected.	See “Error code” on page 16 and "Alarms and Notifications" on page 18 of this manual.
The UPS does not make a sound even if the alarm LED is lit.	
The audio alarm feature has been disabled.	Change the UPS configuration to enable the feature.
The UPS cannot provide enough delay time.	
The UPS battery has been discharged due to a recent power failure.	The battery needs to be charged after a long power failure. If the battery is used frequently and not charged correctly, or it is often operated at a higher temperature, it wears out quickly.
The service life of the battery is about to end.	If the battery is near the end of its life, consider replacing the battery even if the replacement battery indicator is not yet lit. See "Startup settings" on page 8 of this manual.

Problems and/or possible causes	Solution
Cannot power off the UPS	
Did not press the shutdown button properly.	To turn off the UPS, hold down the ⏻ button and release it after you hear a beep.
The UPS is in bypass mode and the LED is not lit red.	
The UPS is in Green mode.	You can choose to disable the green mode.
The UPS is configured to remain in bypass mode.	Change the configuration to exit bypass mode.
The UPS is still in bypass mode even after the overheat alarm is resolved.	Reduce the connected load to <70% to allow the UPS to switch to online mode.
The UPS detected an error and switched to bypass mode.	See “Error code” on page 16 and "Alarms and Notifications" on page 18 of this manual.

Transportation

1. Turn off and disconnect all connected devices.
2. Disconnect the UPS from the utility power.
3. Disconnect all internal and external batteries (if applicable).
4. Follow the shipping instructions listed in the service section of this manual.

After-sales Service

Schneider Electric guarantees that its products will not suffer from material and process problems within two years from the date of purchase. Schneider Electric will repair or replace the faulty product to which this warranty applies. This warranty does not apply to damage caused by accident, negligence, or misuse, or in any way altered or modified. The repair or replacement of a defective product or part will not extend the original warranty period. Any parts provided under this warranty may be new or may be factory refurbished.

If UPS needs repair, follow these steps:

1. Frequently asked questions can be found in "Troubleshooting" section in this manual.
2. If the problem persists, consult the Schneider Electric UPS Knowledge Base on the Schneider Electric Information Technology website (www.apc.com) and submit a customer support request by contacting the Schneider Customer Support Center via (+86) 4008101315.
    a. Be sure to note the UPS model number, the serial number (which can be found on the UPS), and the purchase date. If you call the Schneider Customer Support Center, the technician will ask you to describe the problem and try to resolve it through phone. If the problem still persists, the technician will issue you a “Return Merchandise Authorization (RMA#)”.
    b. If the UPS is covered by the warranty, it can be repaired for free.

Limited Warranty

Schneider Electric guarantees that its products will not have material and process problems within two years from the date of purchase. This warranty stipulates that Schneider Electric's liability is limited to the sole discretion of repairing or replacing such defective products based on specific circumstances. The repair or replacement of a defective product or part will not extend the original warranty period.

If Schneider Electric finds that the defect claimed by the buyer does not exist or is due to misuse, negligence, improper installation, test, handle of the end user or any third party, or is because that the product has not been used in accordance with Schneider Electric recommendations or specifications , no warranty service is available. In addition, Schneider Electric does not provide warranty service for defects caused by: 1) attempting to repair or modify the product without authorization, 2) insufficient voltage or incorrect connection, 3) unsuitable on-site operating conditions, 4) natural causes, 5) exposure to natural environment or 6) theft. In the event that the serial number is changed, smeared or erased during this warranty period, Schneider Electric will not provide warranty service.

Except as described above, the products sold, repaired or provided under this agreement and its related terms are not provided with any express or implied warranty to the extent permitted by law or relevant regulations. Schneider Electric does not provide any implied warranty of any kind with regard to the merchantability, satisfaction, and suitability of this product for any particular purpose.

Schneider Electric's express warranties shall not be extended, reduced or affected by the obligations and obligations. Schneider Electric only provides product-related technology or other advice or services.

The above guarantees and remedies are exclusive and replace all other guarantees and remedies. For any case involving any breach of warranty, the above warranty stipulates Schneider Electric's sole responsibility and the buyer’s full compensation. The warranty provided by Schneider Electric is only granted to the original purchaser of this product, and any third party may not enjoy the essential warranty service.

Schneider Electric and its officials, supervisors, subsidiaries or employees are not responsible for any indirect, special or punitive damages that may occur during the use, repair or installation of the product, regardless of whether such damages are caused by contract or tort, whether or not they are due to fault, negligence or strict liability, or whether Schneider Electric has been previously informed of the possibility of such damages. Especially, Schneider Electric assumes no responsibility for any costs, such as lost profits or revenue (whether directly or indirectly), equipment damage, inability to use equipment, software damage, lost data, costs of substitutes, third-party claims or otherwise cost.

This limited warranty does not exempt or limit the liability of SEIT as stipulated by relevant laws for casualties resulting from negligent or fraudulent statements.

To obtain warranty service, you must obtain a Return Merchandise Authorization (RMA) number from our customer support center. Customers with warranty claims can refer to the Schneider Electric Worldwide Customer Support Network, which can be found on the Schneider Electric website at www.apc.com. Please select your country or region from the options provided in the drop-down menu. Open the Support tab at the top of the page to get customer support information for your region. All freight on the returned product must be prepaid, and a brief description of the problem encountered and proof of the date and place of purchase shall be enclosed along with the return product.

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