

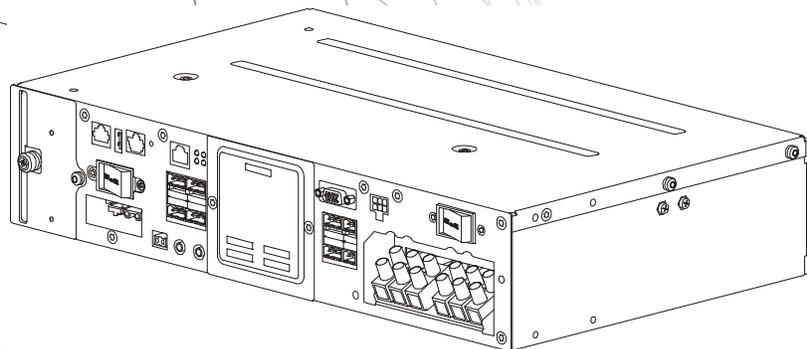
User Manual

Smart-UPS[™] Industrial UPS

XU2K0LLXXRCC

120 Vac

Rack-Mount 2U



Important Safety Messages

SAVE THESE INSTRUCTIONS - This manual contains important instructions that should be followed during installation and maintenance of the Smart-UPS Industrial UPS and batteries.

Read these instructions carefully and look at the equipment to become familiar with the device before trying to install, operate, service or maintain it. The following special messages may appear throughout this bulletin or on the equipment to warn of potential hazards or to call attention to information that clarifies or simplifies a procedure.



The addition of this symbol either to a “Danger” or “Warning” safety label indicates that an electrical hazard exists which will result in personal injury if the instructions are not followed.



This is the safety alert symbol. It is used to alert you to potential personal injury hazards. Obey all safety messages that follow this symbol to avoid possible injury or death.

DANGER

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

WARNING

WARNING indicates a hazardous situation which, if not avoided, could result in death or serious injury.

CAUTION

CAUTION indicates a hazardous situation which, if not avoided, could result in minor or moderate injury.

NOTICE

NOTICE is used to address practices not related to physical injury.

Product Handling Guidelines



<18 kg
<40 lb



18-32 kg
40-70 lb



32-55 kg
70-120 lb



>55 kg
>120 lb



Safety and General Information

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

- Adhere to all national and local electrical codes.
- All wiring must be performed by a qualified electrician.
- Do not work alone under hazardous conditions.
- Install the unit in a non accessible, securely locked enclosure.
- **Changes and modifications to this unit not expressly approved by Schneider Electric could void the warranty.**
- Do not remove the covers. There are no serviceable internal parts.
- Do not operate this unit in direct sunlight, in contact with fluids, or where there is excessive dust or humidity.
- The unit is capable of operating in environments up to 74° C.
The surface of the unit will be hot when ambient temperatures exceed 60° C.
- Be sure the air vents on the unit are not blocked. Allow adequate space for proper ventilation.
- The equipment is heavy. Always practice safe lifting techniques adequate for the weight of the equipment.

Deenergizing safety

- The unit may present a shock hazard even when disconnected from AC and DC power.
- The AC output connectors may be energized by remote or automatic control at any time.
- Before installing or servicing the equipment check that the:
 - Input power cables should not be connected to the input connector.
 - External batteries are disconnected.

Electrical safety

- Use tools with insulated handles.
- Do not handle any metallic connector before power has been disconnected.
- The protective earth conductor for the unit carries the leakage current from the load devices (computer equipment). An insulated ground conductor is to be installed as part of the branch circuit that supplies the unit. The conductor must have the same size and insulation material as the grounded and ungrounded branch circuit supply conductors. The conductor will typically be green, with or without a yellow stripe.
- This is a pluggable, Type A unit. The leakage current from the unit may exceed 3.5mA.
- Connect the unit input ground conductor to the protective earth screw located on the front of the chassis.
- If the unit input power is supplied by a separately derived system, the ground conductor must be properly bonded at the supply transformer or motor generator set.

Battery safety

- The Smart-UPS Industrial UPS utilizes external batteries. It is not necessary to ground the battery system. The user has the option of referencing the battery system to chassis ground at either a positive or negative battery terminal.
- When replacing batteries, replace with the same number and type.
- Batteries typically last for two to five years. Environmental factors impact battery life. Elevated ambient temperatures, poor quality utility power, and frequent short duration discharges will shorten battery life. Batteries should be replaced before end of life.
- The Smart-UPS Industrial UPS must be used with recommended battery types from Schneider Electric.
- CAUTION: Before installing or replacing the batteries, remove jewelry such as wristwatches and rings.
High short circuit current through conductive materials could cause severe burns.
- CAUTION: Do not dispose of batteries in a fire. The batteries may explode.
- CAUTION: Do not open or mutilate batteries. Released material is harmful to the skin and eyes and may be toxic.

General information

- The model and serial numbers are on a small label, located on the top cover.
The model and serial numbers can be accessed using the Display interface.
- Recycle the package materials or save them for reuse.

FCC Statement for Class A products

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

Product Overview

The APC™ by Schneider Electric Smart-UPS Industrial UPS provides power conversion for connected equipment.

When used with external batteries the double conversion on-line topology of the Smart-UPS Industrial UPS helps to protect connected electronics and low voltage signal lamps from utility power blackouts, brownouts, sags, surges, small utility power fluctuations and large disturbances.

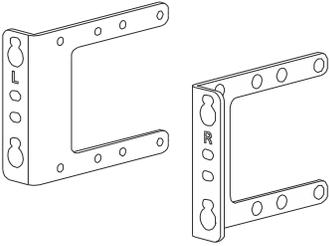
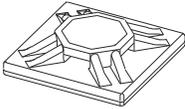
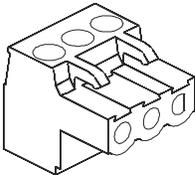
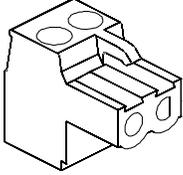
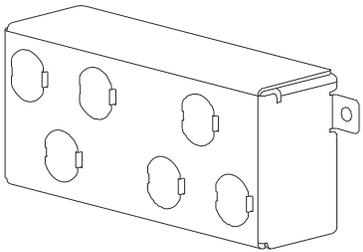
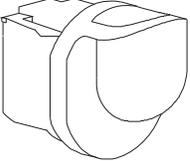
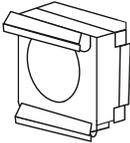
The Smart-UPS Industrial UPS helps to simplify cabinet design by providing regulated, uninterruptible AC Power to the cabinet components.

The high power battery charger in the Smart-UPS Industrial UPS enables agencies to add batteries that will help protect connected equipment during prolonged utility power outages.

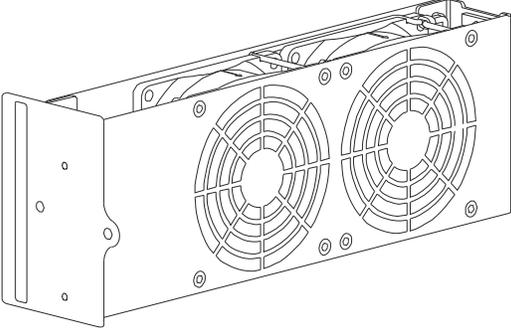
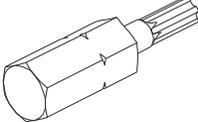
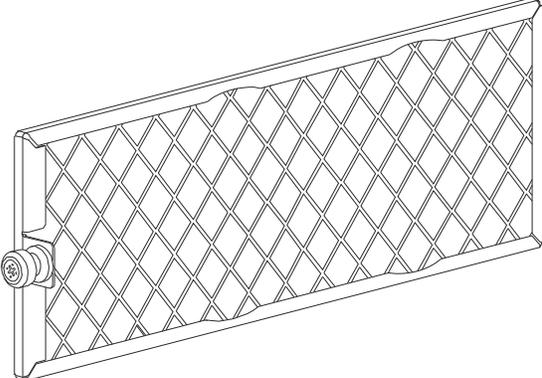
This user manual is available on the APC by Schneider Electric Web site, www.apc.com.

Package Contents

Inspect the contents upon receipt. Notify the carrier and dealer if the unit is damaged.

<p>Rack-Mount brackets 1 pair</p> 	<p>Cable tie mount x10</p> 	<p>Label x10</p> 	<p>Cable tie x10</p> 
<p>Flat head screws x8</p>  <p>Ornamental screws x4</p> 	<p>Relay output connector x6</p> 	<p>Relay input connector x2</p> 	<p>Cable tie x5</p> 
<p>Terminal block cover x1</p> 	<p>Strain relief x6 (spare x6)</p> 	<p>User manual</p> 	<p>Cage nut x4</p> 
<p>Temperature sensor kit x1</p>			

Field Replaceable Parts

Smart-UPS Industrial UPS Fan Assembly part number 0J-0N-3357A	Smart-UPS Industrial UPS Filter part number 0J-0M-83261A
 <p data-bbox="199 716 591 743">Fan assembly screw removal tool bit</p> 	

Accessory

Battery cables and harness kit.

Specifications

For additional specifications refer to the APC by Schneider Electric Web site, www.apc.com.

Environmental

Temperature	Operating	-40° C to 74° C (-40° F to 165° F)
	Storage (without batteries)	-40° C to 85° C (-40° F to 185° F)
Maximum Elevation	Operating	0 m - 3,000 m (0 ft - 10,000 ft)
	Storage	0 m - 15,000 m (0 ft - 50,000 ft)
Humidity	0% to 95% relative humidity, non-condensing	
Protection class	IP20	
Note: Environmental factors impact battery life. Elevated ambient temperatures, high humidity, poor quality mains power, and frequent short duration discharges will shorten battery life.		

Physical

Unit weight without packaging	10 kg (22 lb)
Unit weight with packaging	12 kg (26.5 lb)
Unit dimensions without packaging Width x Depth x Height	434 mm x 260 mm x 88 mm (17.1 in x 10.3 in x 3.5 in)
Unit dimensions with packaging Width x Depth x Height	535 mm x 370 mm x 186 mm (21.1 in x 14.6 in x 7.3 in)

Electrical

Input	
Nominal Input Voltage	120 Vac
Nominal Input Current	26.4 A
Input Voltage Range	100% load = 85 Vac - 155 Vac ± 2 Vac
Input Frequency	40 Hz - 70 Hz
Input Configuration	Single phase, 3 wire (Line, Neutral and Ground)

Output	
Output Topology	Double Conversion On-Line
Nominal Output Voltage	120 Vac
Output Power Rating	1800 W, 2000 VA
Output Voltage Regulation (static)	± 1%
Output Frequency (nominal)	50/60 Hz ± 3 Hz
Output Waveform	True Sine Wave

External Batteries

Battery type	VRLA
Nominal Battery String Voltage	48 Vdc
Battery Charger	15 A maximum, 870 W maximum. Derated for Smart-UPS Industrial UPS temperature > 45° C (113° F).

Installation

Rack-Mount

NOTICE

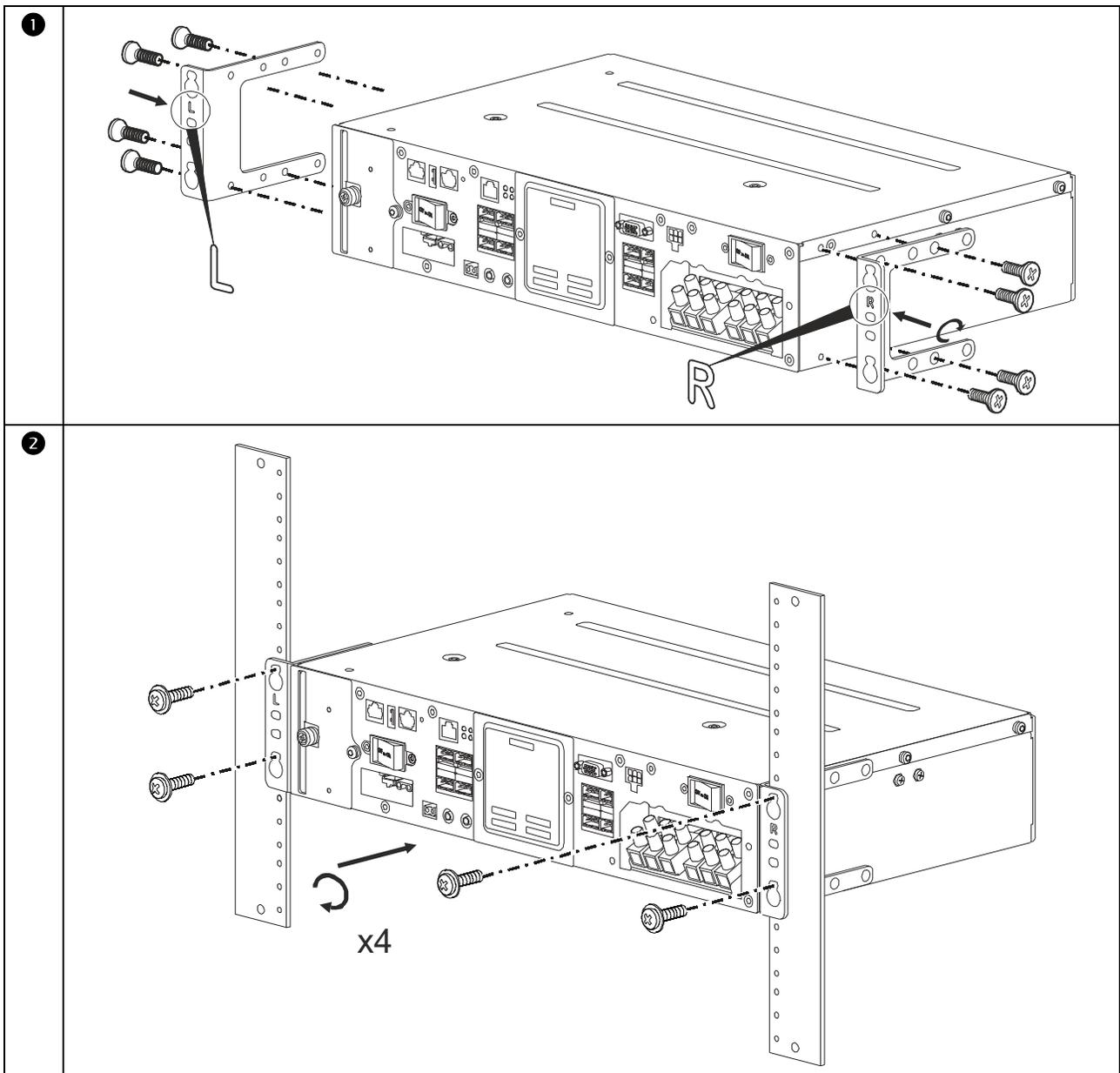
RISK OF FALLING EQUIPMENT

- Follow the installation instructions.
- Secure the rack-mount brackets to the unit using all the screws supplied for this purpose.
- Secure the unit in the rack using all of the screws supplied for this purpose.

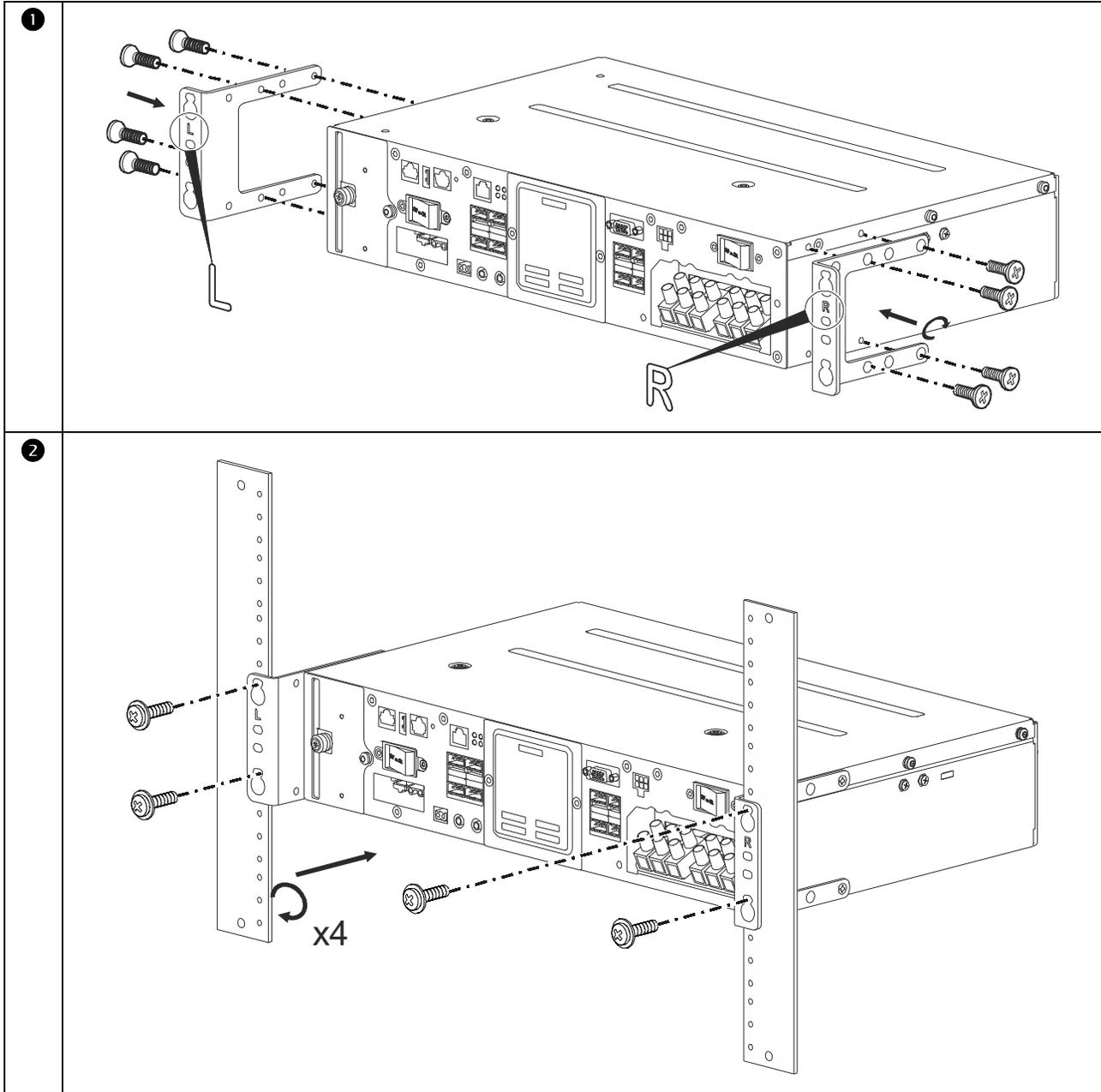
Failure to follow these instructions could result in equipment damage.

Note: Use the cage nuts when there are no threaded holes in the cabinet/rack.

Flush Rack-Mount Installation



Recessed Rack-Mount Installation



Display Rotation

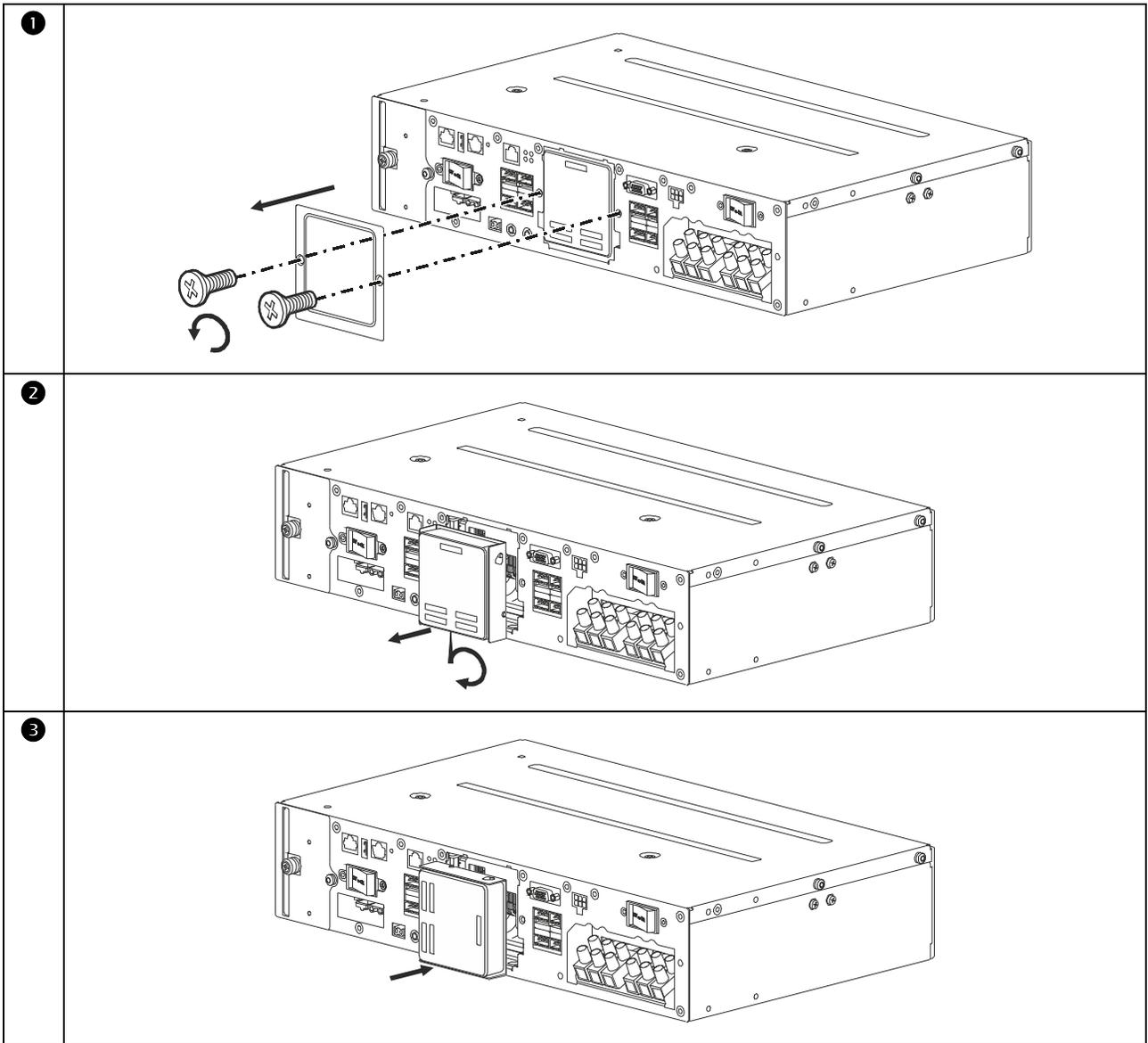
⚠ CAUTION

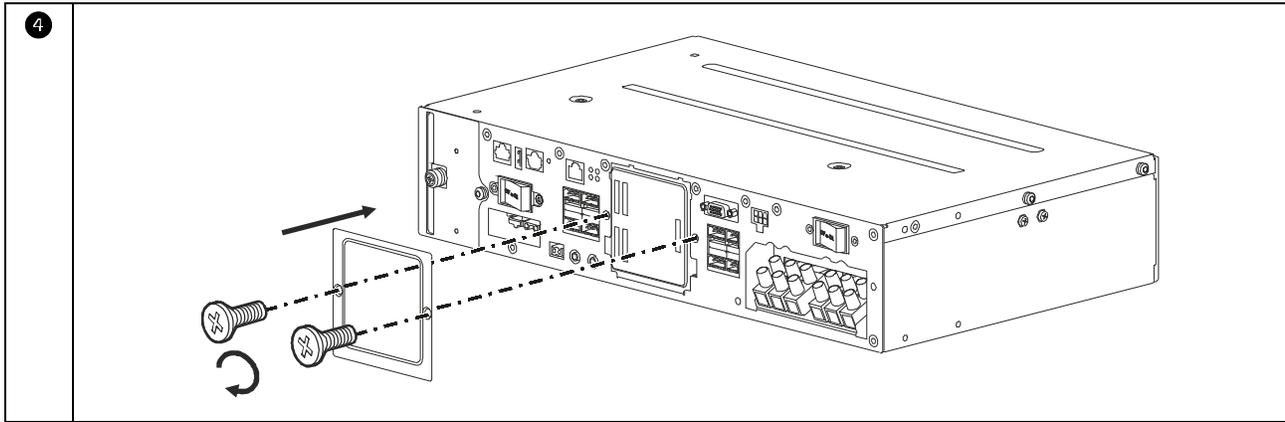
RISK OF ELECTRIC SHOCK

- All electrical work must be performed by a qualified electrician.
- The Smart-UPS Industrial UPS has live accessible parts behind the display module.
- Shut down the Smart-UPS Industrial UPS before rotating the display.

Failure to follow these instructions could result in minor or moderate injury.

Note: While mounting the unit vertically inside the cabinet, the fan tray unit should be on the bottom side of the cabinet and the air flow must be from bottom to top. The minimum clearance needed between unit and the cabinet should be **150 mm**.





Input/Output Hardwire

⚠ CAUTION

RISK OF ELECTRIC SHOCK

- Adhere to all national and local electrical codes.
- All electrical work must be performed by a qualified electrician.
- Turn off all power to this equipment before working on the equipment. Practice lockout/tagout procedures.
- Do not wear jewelry when working with electrical equipment.
- Ensure that line, neutral and ground cables of the input and output terminals are connected.
- Use Snap-In strain reliefs provided with the unit.
- The Smart-UPS Industrial UPS must be wired into a branch circuit, equipped with a circuit breaker rated as specified in the tables below.
- Actual wire size must comply with required amp capacity and national and local electrical codes.
- Recommended input terminal screw torque: 16 lbf-in (2 Nm).
- All openings that allow access to Smart-UPS Industrial UPS hardwire terminals must be covered.
- Select wire size and connectors according to national and local codes.

Failure to follow these instructions could result in minor or moderate injury.

Wiring Specifications

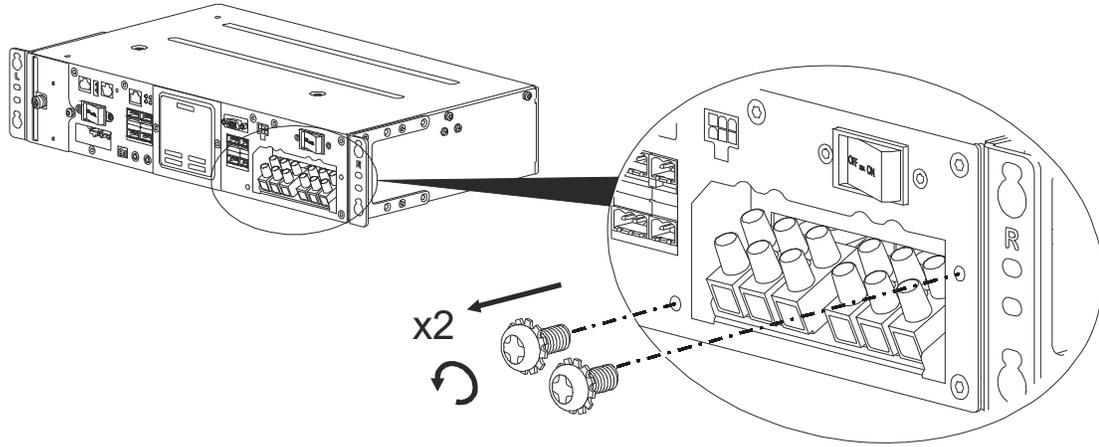
Note: For hardware connections, refer Installation and Operation of Service Bypass Panel manual.

CAUTION*: To reduce the risk of fire, connect the Smart-UPS Industrial UPS only to a circuit provided with recommended maximum branch circuit overcurrent protection in accordance with the National Electrical Code, ANSI/NFPA 70 and the Canadian Electrical Code, Part I, C22.1.

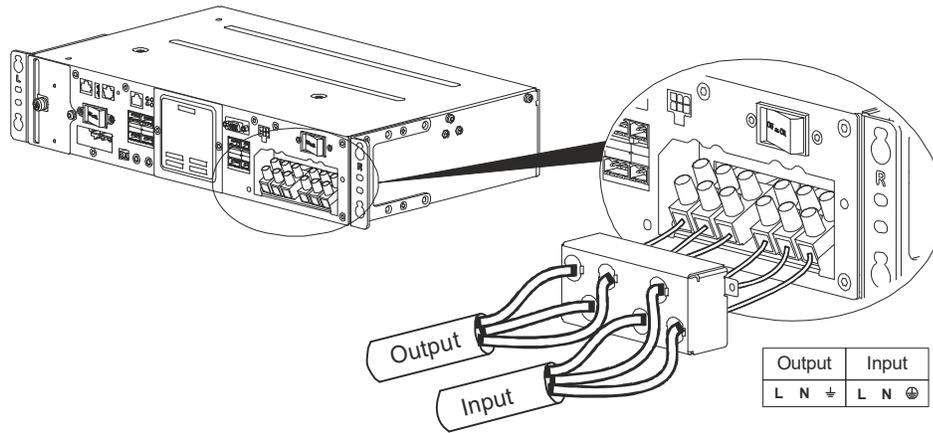
Input connections	Wire to L, N, 
Output connections	Wire to L, N, 

Wiring	Voltage	Current full load, nominal	External input circuit breaker, (typical)	Wire size, typical
Input	<ul style="list-style-type: none"> • 120 VAC nominal • 85 VAC to 155 VAC working range 	<ul style="list-style-type: none"> • 26.4 A @ nominal 120 VAC • 29 A @ low 85 VAC 	30 A* / 2 pole	10 AWG
Output	120 VAC	17 A		

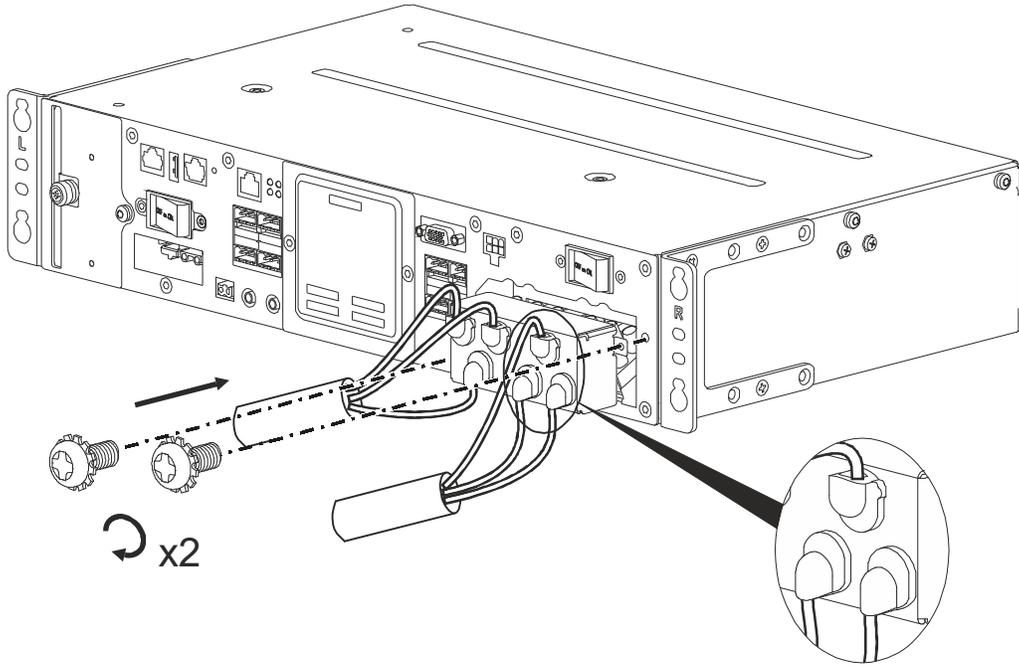
- ❶ Remove terminal cover screws from the Smart-UPS Industrial UPS.



- ❷
1. Remove the terminal cover knockouts.
 2. Sleeve the jacket of the input and output wires.
 3. Connect the line, neutral and earth/ground wires through the terminal block cover to the Smart-UPS Industrial UPS.



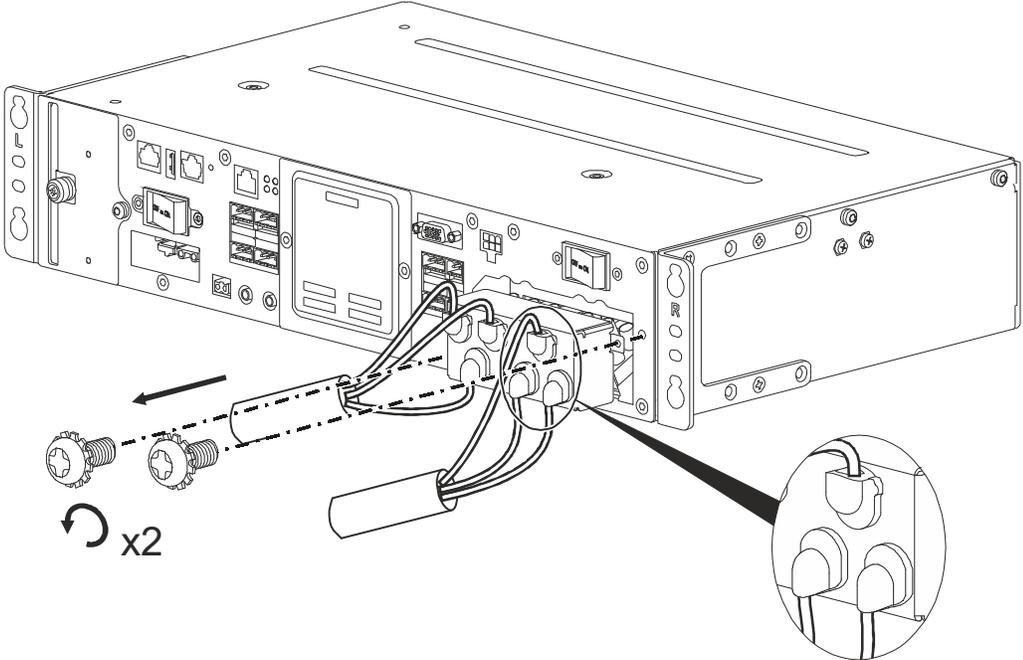
- 3
- Clamp the strain relief on to all the cables.
 - Install the terminal block cover with the screws removed in 1
 - Insert and lock the strain relief in the terminal block cover.



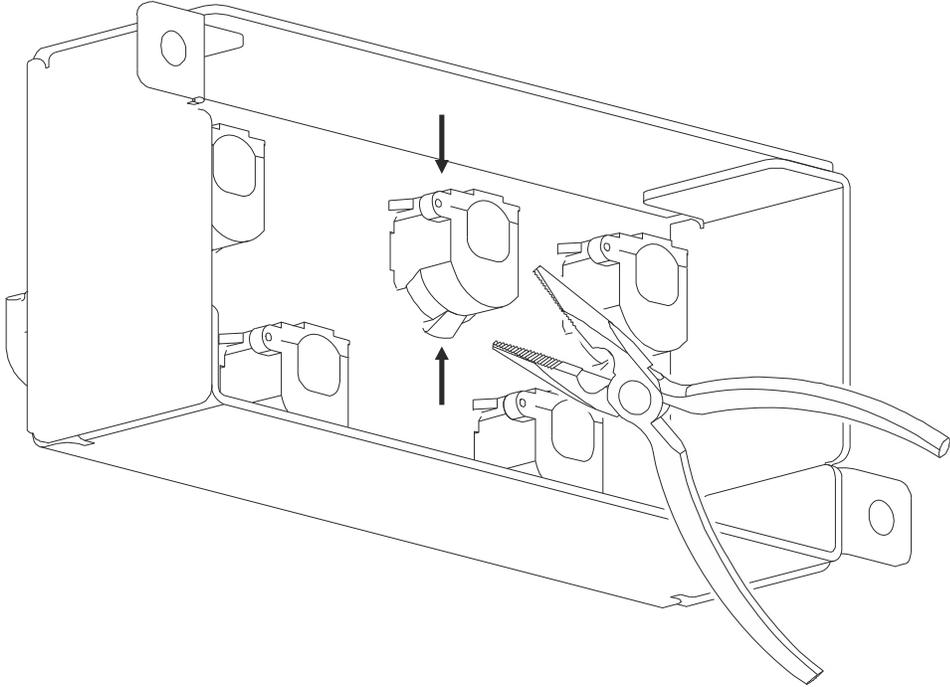
Note: The strain relief should be installed based on the routing of the input and output wires. The wires can be routed up or down from the strain relief.

Remove Strain Relief

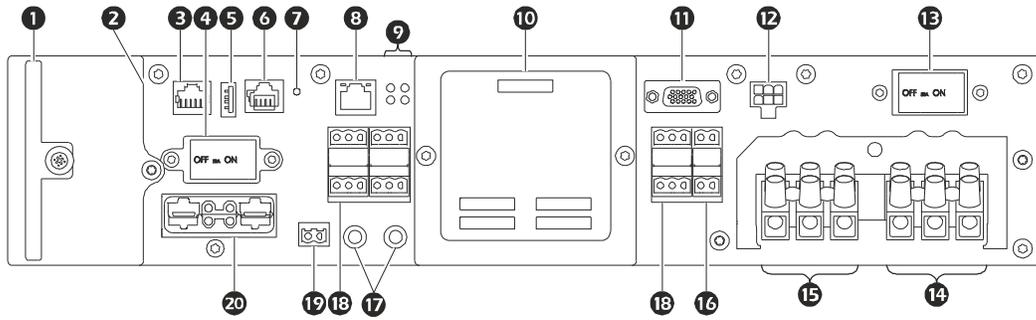
1 Remove terminal cover screws from the Smart-UPS Industrial UPS.



- 2
- Remove the cables from the terminal block.
 - Use a plier and press on the snaps of the strain relief inside the terminal cover.
 - Remove the strain relief.
 - Remove the cables from the terminal cover.



Front Panel Features



Key To Identify Front Panel Features

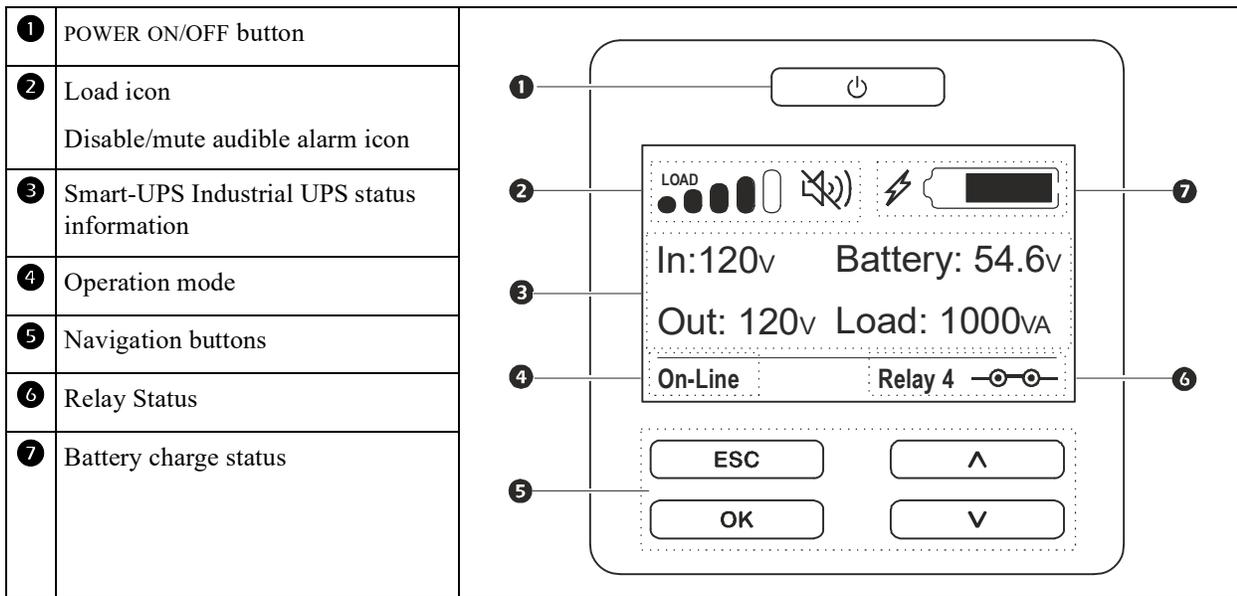
1	Replaceable Filter part number 0J-0M-83261	The filter can be cleaned of dust by gently blowing air or vacuuming the filter after removing it from the Smart-UPS Industrial UPS.
2	Replaceable Fan Assembly part number 0J-0N-3357A	The fan assembly for the Smart-UPS Industrial UPS can be replaced in the field.
3	Serial com port	Serial Com port is used to communicate with the Smart-UPS Industrial UPS. Note: Use only interface kits supplied or approved by APC by Schneider Electric. Any other serial interface cable will be incompatible with the UPS connector.
4	External Battery Circuit Breaker	The external battery circuit breaker connects/disconnects battery power to the Smart-UPS Industrial UPS.
5	USB Host Port	Connector for a USB flash drive.
6	Universal I/O (UIO) Port	The universal I/O port is used to connect temperature sensor AP9335T (supplied)
7	Reset Button	Use the reset button to restart the Network Management Interface. Note: A restart of the Network Management Interface does not affect Smart-UPS Industrial UPS operation.
8	Ethernet Port	Use for Smart-UPS Industrial UPS network communication.
9	Status LEDs	Green LED - Output ON Yellow LED - Notification Red LED - Unit needs attention Blue LED - Information (upon performing Self Test and RunTime calibration test).
10	LCD	The LCD provides access to the interface menu screens.
11	Battery Comm Connector	For future feature enhancement.
12	SBP Connector	For future feature enhancement.
13	Input AC Circuit Breaker	The input AC circuit breaker connects/disconnects AC power to the Smart-UPS Industrial UPS.
14	AC Input Connector (white)	Use the supplied cable to connect the AC input to the service panel.

Key To Identify Front Panel Features		
15	AC Output Connector (black)	Use the supplied cable to connect the AC output to the load.
16	Relay Input Connector	<p>Relay input connector status is available through the Status menu, from left to right:</p> <ul style="list-style-type: none"> • NO (Normally Open Contact) • C (Relay Common) <p>Relay input connector supports the following user configurable functions:</p> <ul style="list-style-type: none"> • Self Test • Ext. Alarm On • Ext. Alarm Off • Output Off • Output On
17	Battery Test Points	<p>To measure the battery voltage.</p> <p>Black - Negative Red - Positive</p>
18	Relay Output Connector	<p>Relays communicate Smart-UPS Industrial UPS status to cabinet equipment. Relay status is available through the Status menu. Check national and local electrical codes to select proper wire gauge for rated output. Relay contacts support maximum voltage of 250 V AC with a maximum current of 2 A. Mating connectors for relay output connectors are supplied with the Smart-UPS Industrial UPS, from left to right:</p> <ul style="list-style-type: none"> • NO (Normally Open Contact) • C (Relay Common) • NC (Normally Closed Contact) <p>Associated trigger events The relays have these user configurable functions</p> <ul style="list-style-type: none"> • On Battery • On Battery Peak • Low Battery • Notification • Alert • Output On • Output Off • On Line • In Bypass
19	Battery Temperature Sensor Connector	The sensor provides external battery temperature to Smart-UPS Industrial UPS. Sensor cable and mating connector are supplied with the battery harness kit.
20	High Current DC Output Connector	<p>This connector provides the high power charge and discharge path for the battery. Cables are not provided along with the UPS.</p> <p>Note: Recommended to use APC by Schneider Electric branded battery cables.</p>

LCD Interface

LCD layout

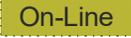
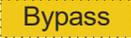
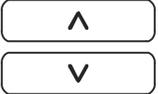
The icons on the LCD may vary depending on the installed firmware version.



LCD icon and button description

For detailed configuration information refer to “Configuration” on page 22.

Icon or Button Illumination	
POWER ON/OFF Button	
	<p>POWER ON/OFF button: Press and hold the ON/OFF button to turn the Smart-UPS Industrial UPS on/off.</p> <p>No Illumination: The Smart-UPS Industrial UPS and the output power are OFF.</p> <p>White Illumination: Smart-UPS Industrial UPS and the output power are ON.</p> <p>Red Illumination: Smart-UPS Industrial UPS is on and the output power is OFF.</p>
Battery Icons	
	<p>Battery Charge Status: Indicates the battery charge status by showing the percentage of remaining battery capacity.</p>
	<p>Battery Charge In Progress: Indicates the battery is charging.</p>
Smart-UPS Industrial UPS Status	
	<p>Smart-UPS Industrial UPS status information: The current AC input, output, battery voltages and load power are displayed.</p>

Information Icons	
	Load icon: The approximate load percentage is indicated by the number of load bar sections illuminated.
	Mute icon: Indicates the audible alarm is disabled/muted.
Operation Mode Information	
	On-Line mode: The Smart-UPS Industrial UPS is supplying conditioned AC power to connected equipment.
	Bypass mode: When the Smart-UPS Industrial UPS is in Bypass mode, connected equipment will receive AC mains power as long as the input voltage is available at the input terminals.
	Battery mode: The Smart-UPS Industrial UPS is operating on battery power to provide AC power to connected equipment.
Relay Information	
	Relay: There are 6 relays that are selectable for which are managed by the UPS status. The LCD will display the current status of all relays.
Navigation Button Functions	
	Use the UP/DOWN buttons to scroll through the Menu options.
	Press the OK or ESC button to access configuration menus.
	Press the OK button to accept a selected option.
	Press the ESC button to return to the previous menu.

Filter and Fan-Replacement and Care

Filter Care

Cleaning intervals

Frequency for filter replacement is dependent on the application and environment where the Smart-UPS Industrial UPS is installed.

The filter should be removed from the Smart-UPS Industrial UPS for routine cleaning at least once in every 90 days. When the filter is removed for cleaning the condition of the filter should be checked. If there is visible wear or damage the filter should be replaced.

The filter replacement part number is listed in the “Field Replaceable Parts” on page 5 of this manual.

Reinstall the filter immediately after cleaning.

Note: The absence of the filter, will lead to dust accumulation, impacting the performance of the Smart-UPS Industrial UPS.

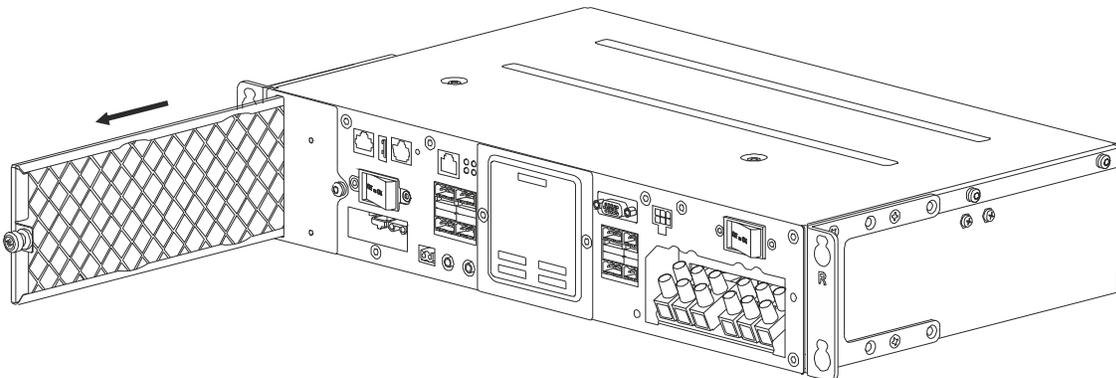
Cleaning methods

There are several acceptable ways to clean the filter.

- Vacuum - A few passes of a vacuum cleaner will remove accumulated dust and dirt.
- Blow with air compressor exhaust- If an air compressor is used be sure to point only the exhaust end of the hose toward the filter.
- Cold water rinse - Use a standard hose nozzle with water to rinse away accumulated dust and dirt. Allow the filter to dry completely before reinstalling.
- Immerse in warm water - In the case where stubborn dirt has accumulated, the filter can be immersed in a solution of warm water and mild detergent. Thoroughly rinse the filter in cool water. Allow the filter to dry completely before reinstalling.

Filter Removal/Replacement

1. Loosen the thumbscrew.
2. Use the thumbscrew on the filter to pull the used filter out of the chassis.
3. Slide the cleaned/replacement filter into the chassis.
4. Tighten the thumbscrew.



Fan Assembly Replacement

⚠ CAUTION

RISK OF ELECTRIC SHOCK

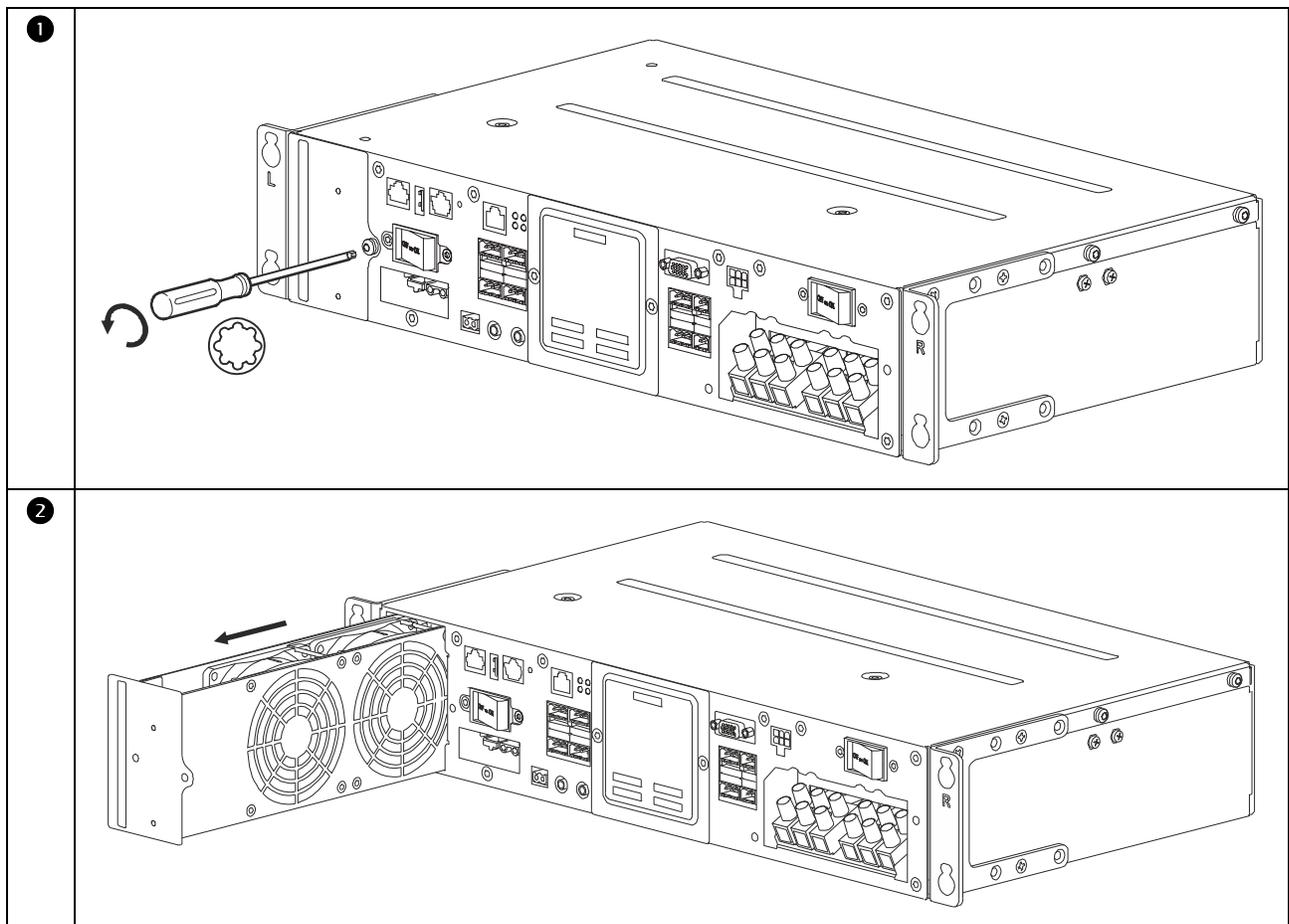
- All electrical work must be performed by a qualified electrician.
- The fan assembly enclosure has live parts.
- Shut down the Smart-UPS Industrial UPS before replacing the fan.

Failure to follow these instructions could result in minor or moderate injury.

Have the replacement fan assembly ready to install as soon as the original fan assembly is removed.

1. Loosen the thumbscrew of the filter, remove the filter and then remove the fan assembly.
2. To remove the fan assembly, use a Torx head screwdriver to loosen the screw.
3. Hold the top and bottom edges of the assembly and slide it out of the chassis.
4. Slide the replacement fan assembly into the chassis. Tighten the screw. Use torque 10 lb-in (1.1 Nm) maximum.
5. Perform a **Fan test**. Use the Smart-UPS Industrial UPS interface menu option Main Menu > Test and Diagnostics > Fan Test > Start.

Note: Install a new filter OR reuse it from the old fan assembly. See “Filter Removal/Replacement” on page 18 for instructions.



Connect Equipment

CAUTION

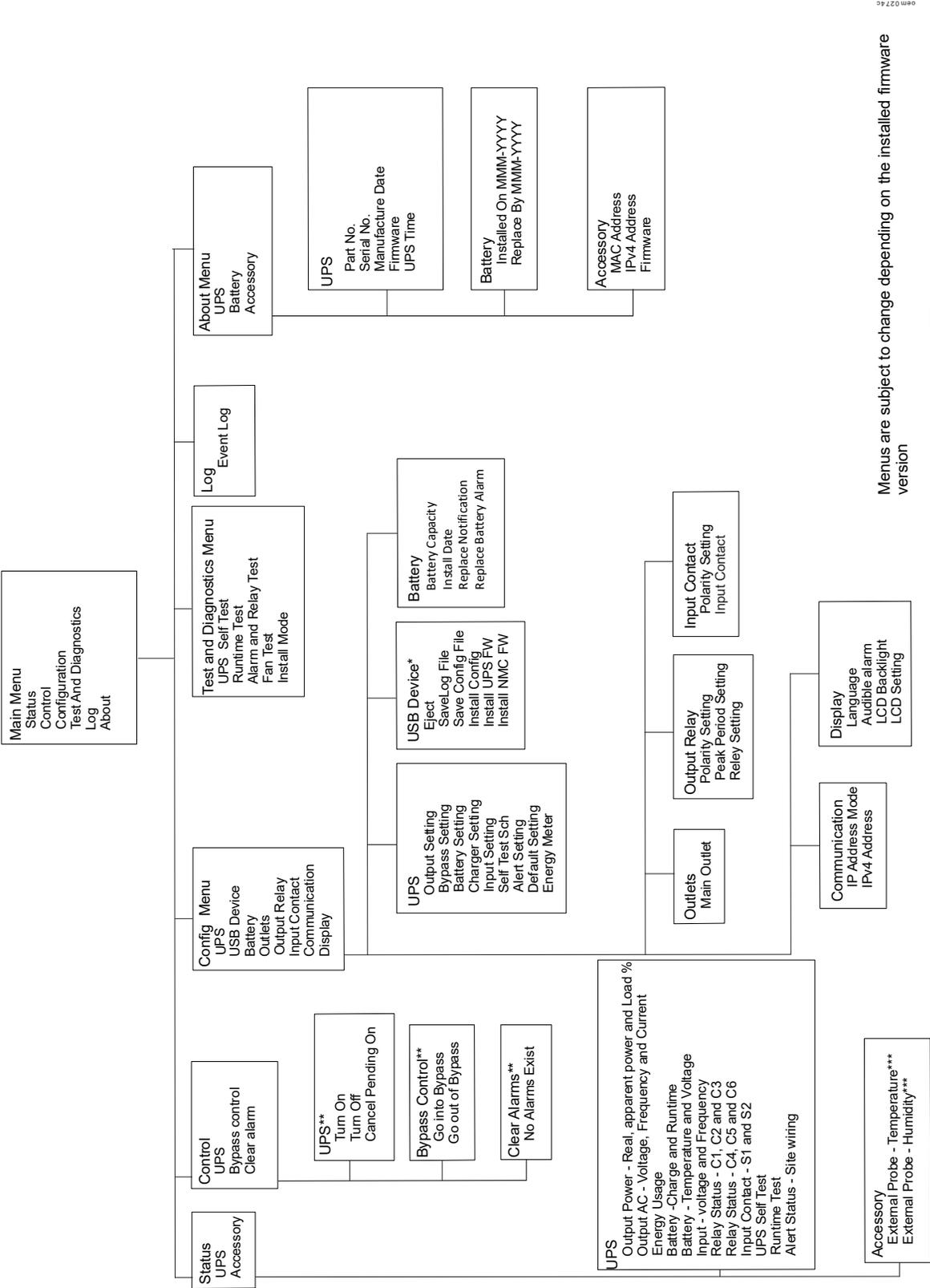
RISK OF ELECTRIC SHOCK

- Disconnect the cabinet circuit breaker before installing or servicing the Smart-UPS Industrial UPS or connected equipment.
- Disconnect equipment from the Smart-UPS Industrial UPS before servicing any equipment.
- Disconnect external batteries before installing or servicing the Smart-UPS Industrial UPS or connected equipment.
- The Smart-UPS Industrial UPS utilizes external batteries that may present a shock hazard even when disconnected from the mains.
- The Smart-UPS Industrial UPS AC output connectors may be energized by remote or automatic control at any time.

Failure to follow these instructions could result in minor or moderate injury.

1. Connect equipment to the Smart-UPS Industrial UPS.
2. Connect the Smart-UPS Industrial UPS to cabinet utility power.
3. Close the AC and battery circuit breakers.

Menu Overview



Menus are subject to change depending on the installed firmware version

* Available only when USB is connected
 ** Options displayed will vary based on UPS state.
 *** Options displayed will vary based on connected accessories.

Operation

Turn Smart-UPS Industrial UPS ON/OFF

CAUTION

RISK OF ELECTRIC SHOCK

- Disconnect the mains input circuit breaker before installing or servicing the UPS or connected equipment.
- The UPS contains external batteries that may create a shock hazards even when disconnected from the mains.

Failure to follow these instructions could result in minor or moderate injury.

To turn off the Smart-UPS Industrial UPS press and hold the ON/OFF button on the LCD.

Configuration

The Smart-UPS Industrial UPS must be turned ON before the unit can be configured.

Configure these settings at any time, using the Smart-UPS Industrial UPS LCD, or the Network Management web interface. Follow the prompts by using the OK button and the UP/DOWN arrow buttons.

UPS Settings

There are three ways to select UPS configuration options.

1. The first time the UPS is turned on the **Setup Wizard** screen will open. On each menu screen select the desired settings. Press OK after each UPS setting is selected.

Note: The UPS will not turn on until all of the settings have been configured.

2. **Main Menu/Configuration/UPS/Default Setting.** This screen allows the user to reset the UPS to factory default settings. Press OK after the UPS setting is selected.
Refer to “Configuration” on page 22.
Refer to “Menu Overview” on page 21”.
3. Configure settings using an external interface, such as the Network Management Web interface.

Startup configuration

Function	Description
<div style="border: 1px solid black; padding: 5px;"> <p>Language</p> <p>English</p> <p>Francais</p> <p>Espanol</p> <hr/> <p>Setup Wizard</p> </div>	<p>Select the language required for the display interface.</p> <p>Language options will vary by model and firmware version.</p> <p>Options:</p> <ul style="list-style-type: none"> • English • Francais • Espanol
<div style="border: 1px solid black; padding: 5px;"> <p>Charger Setting</p> <p>Temp Compensation:</p> <p>^ -3.3 mV v</p> <hr/> <p>Setup Wizard</p> </div>	<p>Temperature Compensation allows the user to configure the required value.</p>
<div style="border: 1px solid black; padding: 5px;"> <p>Battery Setting</p> <p>Battery Capacity:</p> <p>^ 100 Ahr v</p> <hr/> <p>Setup Wizard</p> </div>	<p>Battery capacity setting allows the user to configure the battery total ampere hour rating used for the Smart-UPS Industrial UPS.</p>
<div style="border: 1px solid black; padding: 5px;"> <p>Input Setting</p> <p>AC Qualification Time:</p> <p>30 s v</p> <hr/> <p>Setup Wizard</p> </div>	<p>AC qualification setting allows the user to configure the required time to qualify the AC input applied.</p>

Service Bypass Panel (SBP)

NOTICE

RISK OF LOAD DROP

Follow the SBP installation steps for configuring the UPS, if SBP is used.

Failure to follow this instruction could result in load drop.

See “Install/Service of UPS with SBP” on page 30 for details.

General settings

Configure these settings at any time, using the display interface, or the Network Management Web Interface.

	Parameters	Default Value	Options	Description
Config Menu UPS	Output Frequency	Auto (50/60 ± 3Hz)	Auto (50/60 ± 3 Hz) 50 ± 0.1 Hz 50 ± 3.0 Hz 60 ± 0.1 Hz 60 ± 3.0 Hz	Set the output frequency for the UPS.
	Output Frequency Slew Rate	1 Hz/Sec	0.5 Hz/Sec 1 Hz/Sec 2 Hz/Sec 4 Hz/Sec	Select the rate of change for output frequency in Hertz per second.
	Bypass Lower acceptable Voltage	90 V	86 V - 100 V	If the UPS input voltage is between the lower acceptable voltage and the higher acceptable voltage, the UPS can enter Bypass mode when enabled.
	Bypass Upper Acceptable Voltage	133 V	127 V - 148 V	
	Bypass Setting Acceptable Frequency	Wider Frequency 47 - 63 Hz	<ul style="list-style-type: none"> • Wider Frequency 47 - 63 Hz • Use Output Frequency Setting 	The setting Wider Frequency , enables Bypass mode operation for an input frequency range of 47-63 Hz.
	Low Runtime Alert	150 seconds	0 to 3600 seconds	The UPS will emit an audible alarm when the remaining runtime has reached below this threshold.
	Signal Flash Voltage	45 Vdc	43 - 48 Vdc	Select the voltage at which the configured relay will close, to trigger signal flash voltage during battery discharge.
Battery Temperature Compensation	-3.3 mV / Cell / °C	-2.5 mV to -4.0 mV	<p>Optimal battery charger voltage is dependent upon battery temperature.</p> <p>The UPS battery charger uses the battery temperature sensor to adjust the voltage and current by the compensation value.</p> <p>In the absence of external battery temperature sensor, the Smart-UPS Industrial UPS will consider the compensation values based on the internal ambient temperature sensor readings.</p> <p>The default value is normally adequate for lead acid batteries.</p> <p>Contact the battery supplier for more information.</p>	

	Parameters	Default Value	Options	Description
Config Menu UPS	Line Qualify Time	30 seconds	3 - 30 seconds	Time required to qualify the input line for UPS state transfer
	Self Test Schedule	Startup + every 14 days since last test	Never Startup Startup + 7 days Startup + 14 days	This is the interval at which the UPS will execute a Self Test .
	Site Wiring Fault	User Can Acknowledge	Disable Enable User Can Acknowledge	Allows the user to configure the behavior of the UPS in response to the site wiring fault alert which is generated due to wrong input AC mains connection with input phase and neutral reversed. Disable: The UPS never indicates site wiring fault to the user. Enable: UPS alerts the user about site wiring fault, when detected. The alert cannot be reset until the site wiring fault is corrected. User Can Acknowledge: UPS alerts the user about site wiring fault, when detected. The alert is active till the user acknowledges it by pressing OK.
	Default Setting	No	Yes/No	Allows the user to restore the UPS to the default factory settings.
	Reset Energy Meter	No	Yes/No	The Energy Meter stores information on UPS output energy usage. The Reset feature allows the user to reset the Energy Meter to 0 kWh.
	Install Choice	Don't install	Don't install Now Next off	Select the option to install firmware update in the UPS. This menu is only available when firmware is available for installation. Don't install: Use to this option to skip the firmware installation. Now: Install firmware immediately, irrespective of UPS state. Next off: Use this option to install the firmware the next time the output is turned off, OR when a shutdown happens with automatic turn on when AC mains returns. Note: When installing with output on, the UPS is providing power.

	Parameters	Default Value	Options	Description
Config Menu USB Device	Eject	No	No/Yes	Ejects the connected USB.
	Save Log File	No	No/Yes	Saves the log file in USB
	Save Config File	No	No/Yes	Saves the config file in USB
	Install Config	No	No/Yes	Reconfigures the configurations, if valid config file is available in the USB. Only few parameters are reconfigured.
	Install UPS FW	No	No/Yes	Installs the UPS firmware, if valid file is available in the USB.
	Install NMC FW	No	No/Yes	Installs the NMC firmware, if valid NMC firmware file is available in the USB.
Config Menu Battery	Battery Capacity	100 Ah	0 - 200 Ah	Total ampere hour rating for 48 Vdc battery string.
	Install Date	Battery Installation Date	Month-Year	Enter the installation date of the battery.
	Replacement Notification Time	183 days	<ul style="list-style-type: none"> • 0-730 days • -1 	<p>To set the Near End of Life alarm, select the number of days before the estimated battery end of life. When this date is reached the UPS will emit an audible alarm and a message will appear on the display interface screen.</p> <p>Example: Using the default value, the Near End of Life alarm will occur 183 days before the estimated end of life date.</p> <p>To disable the notifications select -1.</p>
	Replacement Battery Alarm Reminder	14 days	<ul style="list-style-type: none"> • 0-365 days • -1 	<p>The Near End of Life alarm can be muted.</p> <p>Enter the number of days between the time a Near End of Life alarm is acknowledged and the next Near End of Life alarm occurs.</p> <p>To disable the notifications select -1.</p>

	Parameters	Default Value	Options	Description
Config Menu Outlets	Power On Delay	0 seconds	0-1800 seconds	Select the amount of time the controllable outlet group will wait between receiving the command to turn on and actual startup.
	Power Off Delay	90 seconds	0-32767 seconds	Select the amount of time the controllable outlet group will wait between receiving the command to shutdown and actual shutdown.
	Reboot Duration	8 seconds	4-300 seconds	Select the amount of time the controllable outlet group will remain off before the UPS will restart.
	Minimum Return Runtime	0 seconds	0-32767 seconds	Select the amount of battery runtime that must be available before the controllable outlet group will turn on using battery power, after a shutdown.
	Loadshed Time On Battery	Disable	Disable Enable	To conserve battery power the UPS can disconnect power from controllable outlet group not in use. To configure the disconnect delay time for this feature use the Loadshed Time On Battery setting.
	Loadshed Time On Battery	32767 seconds	5-32767 seconds	Select the amount of time the controllable outlet group will be allowed to function on battery power before shutdown.
	Loadshed On Runtime	Disable	Disable Enable	To conserve battery power the UPS can disconnect power from controllable outlet group when the Loadshed Runtime threshold is reached.
	Loadshed Runtime	0 seconds	0-3600 seconds	When the selected runtime threshold is reached the UPS will shutdown the controllable outlet group.

	Parameters	Default Value	Options	Description
Config Menu Output Relay	Polarity setting	Energize	<ul style="list-style-type: none"> • Energize • De-Energize 	<p>Energize: Energizes the relay when configured function is valid. Relay contact changes from NC to NO position.</p> <p>De-Energize: De-energizes the relay when configured function is valid. Relay contact changes from NO to NC position.</p>
	Peak Period Setting	N	<ul style="list-style-type: none"> • N • Y 	<p>This setting allows the user to configure peak periods on each day of the week (Sunday to Saturday).</p> <p>Minimum configurable peak period is 30 min and user can select multiple peak periods in a day. This setting is applicable only for OnBatteryPeak output relay function. Relay is not activated during peak periods even when UPS is OnBattery.</p>
Config Menu Output Relay > Relay Setting *x value in Cx varies from 1 to 6	Relay Cx Function	No Action	<ul style="list-style-type: none"> • No Action • On Battery • On Battery Peak • Low Battery • Notification • Alert • Output On • Output Off • On Line • In Bypass 	Activates the selected relay when the configured function is valid.
	Relay Cx Timer	Disable	<ul style="list-style-type: none"> • Disable • Enable 	Enable/Disable the output relay timer
	Relay Cx Timer	HH:MM - 00:00	00:00 to 24:00	<p>Activates the relay after the set time is elapsed.</p> <p>If the time is configured to 00:00, the output relay is activated immediately after the function is valid.</p>

	Parameters	Default Value	Options	Description
Config Menu Input Contact *x value in Sx varies from 1 to 2	Polarity Setting	High to Low	<ul style="list-style-type: none"> • High to Low • Low to High 	<p>High to Low: Associated input function gets activated on shorting of input contact.</p> <p>Low to High: Associated input function get activated on input contact open</p>
	Input Sx Contact	No Action	<ul style="list-style-type: none"> • No Action • Self Test • Ext. Alarm On • Ext. Alarm Off • Output Off • Output On 	<p>User configurable input functions.</p> <p>Output Off: The connected load is not receiving the AC power.</p> <p>Output On: The connected load is receiving power in the On Battery / On Line mode through the Smart-UPS Industrial UPS.</p> <p>Ex: On configuring input contact to Self Test, and if polarity setting is set to High to Low, on shorting this input contact, self test is activated.</p> <p>Note: If Input Sx Contact is configured to Ext. Alarm On, then depending on low or high status of the Input Sx Contact, Relay Cx gets energized/ deenergized, if Relay Cx Function is configured to “Notification”.</p>
Config Menu Communication Network	IP Address Mode		Manual, DHCP, BOOTP	Refer to the Network Management Utility User guide.
	IPv4 Address		IP, Subnet, Gateway	
Config Menu Display	Language	English	<ul style="list-style-type: none"> • English • Francais • Espanol 	Select the language required for the display interface.
	Audible Alarm	Enable	<ul style="list-style-type: none"> • Disable • Enable 	When audible alarms are disabled, the UPS will never emit an audible alarm.
	LCD Back Light	Auto Dim	Always On Auto Dim Auto Off	<p>To conserve energy, the LCD back light illumination dims or turns off when no events are active.</p> <p>Full display interface illumination returns when the UPS changes status as a result of an event or when any button on the display interface is pressed.</p>
	LCD Setting	Optimal Values	Color Brightness Contrast	Adjust the brightness and contrast individually for each LCD back light color.

Install/Service of UPS with SBP

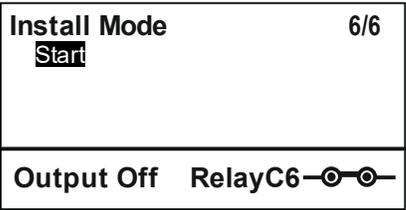
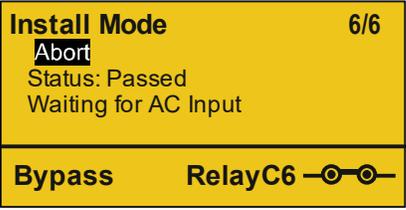
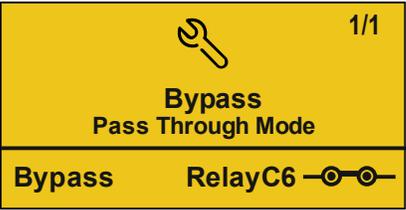
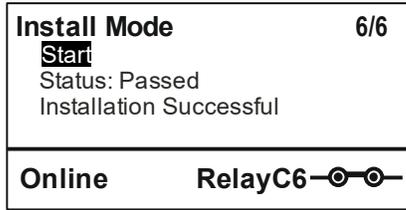
⚠ CAUTION

RISK OF ELECTRIC SHOCK

- Adhere to all national and local electrical codes.
- All electrical work must be performed by a qualified electrician.
- Turn off all power to this equipment before working on the equipment. Practice lockout/tagout procedures.
- Do not wear jewelry when working with electrical equipment.
- Ensure that line, neutral and ground cables of the input and output terminals are connected.
- The Smart-UPS Industrial UPS connected to SBP, utilizes external batteries that may present a shock hazard even when disconnected from the mains. Disconnect the batteries from the Smart-UPS Industrial UPS.

Failure to follow these instructions could result in minor or moderate injury.

Follow these steps to turn ON the Smart-UPS Industrial UPS.

1. Connect the batteries to the Smart-UPS Industrial UPS.	
2. Press and hold the POWER ON/OFF button to turn ON the UPS on the Smart-UPS Industrial UPS. Note: If unit is ON for the first time, UPS turn ON the setup wizard screen.	
3. Scroll down to the Menu/Test and diagnostics.	
	4. Select the install mode. Command the UPS to start the Bypass mode. Note: When UPS is in any other mode except Output Off with battery connected the command will be refused.
 	5. Turn ON the utility circuit breaker, when status shown as Waiting for AC input . 6. Toggle the switch to the UPS mode in SBP. Note: In case utility is not applied/not within the configured Bypass voltage range, UPS will transfer to Output Off mode after 5 minutes. Note: When unit is in Bypass mode, display reads as Bypass through mode . Note: Command the UPS to Abort to return to the Output Off mode.
	7. Installation will be completed successfully once UPS transferred to the Online mode.

Relay Input/Output (IO)

Overview

- The Relay Input/Output (IO) provides a number of **output relays** and **input contacts** which can be configured to various system functions in the UPS.
- The UPS has
 - Six single pole user configured **output relays, C1 to C6**.
Each relay can define different configuration.
 - Two isolated **input contacts, S1 and S2**.
- The relay IOs are connected through external switch panel. The configuration and the status of the relays are visible on Display User Interface and NMC web interface. Refer NMC user guide for details.
Note: The configuration in NMC web interface will be available from NMC version **sumx 664**.

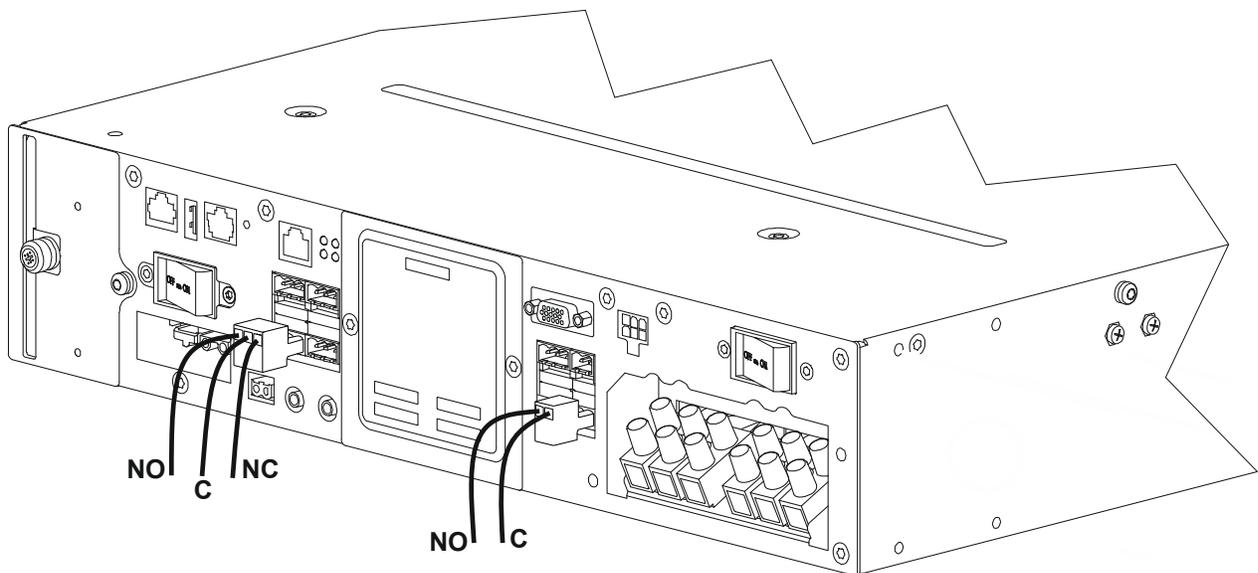
Connections

NOTICE

RISK OF Smart-UPS Industrial UPS MALFUNCTION

Do not connect external power to the Relay Input Contacts.

Failure to follow this instruction could result in equipment damage.



Input Contacts

There are two programmable isolated **input contacts**, **S1** and **S2**.

Support functions of input contacts

Self Test	Perform Self Test when unit is in Online mode, State of Charge (SoC) > 70% and the connected battery > 50.4 V.
Ext. Alarm On	The UPS notifies an occurred external visible alarm. The visible alarm can be routed through the output relay notification, if configured .
Ext. Alarm Off	Turn Off the external alarm.
Output Off	Turn Off the power output.
Output On	Turn On the power output.

Polarity setting

Default polarity setting is high to low.

High to Low	Configured function is triggered when there is a short at terminals.
Low to High	Configured function is triggered when the terminals are open .

Input contact configuration and test

Function 1: Self Test

• Go to Menu Configuration > Input Contact
• Choose Input Contact action setting for S1 as Self Test
• Go to Menu Status > UPS > Input Contact > Configurations S1 , set Self Test to High
• Create a short at Input Contact S1 , as per the user requirement.
• Remove short once the Self Test is performed.

Function 2: Ext. Alarm On and Ext. Alarm Off

• Go to Menu Configuration > Input Contact
• Choose Input Contact action setting for S1 as Self Test
• Go to Menu Status > UPS > Input Contact > Configurations S1 , set Ext. Alarm On to High
• Create a short at Input Contact S1 , as per the user requirement.
• The UPS will display an User External Error at Display User Interface.

Option 1: User acknowledgment and information

- Remove **short** at Input Contact, **S1**
- Choose Input Contact action setting for **S1** as **Ext. Alarm Off**.
- Perform a **short** at Input Contact, **S1**.
- The UPS will clear **User External Error** at Display User Interface.

Option 2: User acknowledgment and information

- Remove **short** at Input Contact, **S1**.
- Choose Input Contact action setting for **S2** as **Ext. Alarm Off**.
- Perform a **short** at Input Contact, **S2**.
- The UPS will clear **User External Error** at Display User Interface.

Other information

If any of the **output relays, C1 to C6** are configured to **Notification**, **output relay** will be activated when the input contacts detect an external error.

Function 3: Output On

• Go to Menu Configuration > Input Contact
• Choose Input Contact action setting for S1 as Output On
• Go to Menu Status > UPS > Input Contact > Configurations S1 , set Output On to High
• Create a short at Input Contact S1 , as per the user requirement.
• Remove short once the Output is On .

Function 4: Output Off

• Go to Menu Configuration > Input Contact
• Choose Input Contact action setting for S1 as Output Off
• Go to Menu Status > UPS > Input Contact > Configurations S1 , set Output Off to High
• Create a short at Input Contact S1 , as per the user requirement.
• Remove short once the Output is Off .

Note: Configure complimentary functions at Input Contact.

- If **S1** is configured to **Ext. Alarm On**, configure **S2** as **Ext. Alarm Off**.
- If **S1** is configured as **Output On**, configure **S2** as **Output Off**.

Note: Configure input contacts, **S1** and **S2** to any of the above programmable functions. If case the customer circuitry is configured for **Low to High**, perform **open** to trigger the function.

Output Relay

Supported functions of output relay

OnBattery	Relay will be activated when unit is in the OnBattery mode but not during Self Test, runtime calibration test and other states.
OnBattery Except Peak	Relay will be activated during non-peak hours. Refer “Function 2: OnBattery peak configuration” on page 35.
Low battery	Relay will be activated when battery voltage is less than the configured signal flash voltage. Note: User configurable voltage between 43 V to 48 V. Which can be configured from Menu configuration > UPS > Signal flash. Refer “Function 1: Low battery configuration” on page 34.
Notification	Relay will be activated when the following audible/visible alarms are detected by the unit. <ul style="list-style-type: none"> • Battery disconnected • Battery temperature sensor disconnected • Battery over temperature alert • Battery over temperature critical • Site warning fault • User external alarm
Alert	Relay will be activated when a fault is detected by the UPS.
Output On	Relay will be activated when UPS Output is ON .
Output Off	Relay will be activated when UPS Output is OFF .
Online	Relay will be activated when the UPS is in Online mode.
In Bypass	Relay will be activated when UPS is in Bypass mode.

Polarity settings

- Energize (Default)
- De-Energize

Timer settings

- Timer Enable / Disable (Default)
- Timer delay in HH:MM

Peak period settings

Note: Applicable only for the supporting function **OnBattery Except Peak**.

- Peak period is from Sunday to Saturday
 Sunday (S), Monday (M), Tuesday (T), Wednesday (W), Thursday (T), Friday (F), Saturday (S)
- Peak time setting of 24 hours, where each block has 30 minutes slot, total of 48 blocks.
 Yes (Y) selected as peak time
 No (N)

Note:

- User can select one day or multiple days. However, all the selected days will have the same peak periods.
- User cannot configure different peak periods for different days.
- Scroll UP/DOWN button to select days and time in each page and in each column.
- Relay will not be activated in peak period timings.

Output relay configuration

Function 1: Low battery configuration

- Got to Menu Configuration > Output Relay
- Choose Polarity Setting to **Energize**
- Select Relay setting > Relay C1

<div style="border: 1px solid black; padding: 5px;"> <p>Relay Function 1/3</p> <p>Relay C1: Low Battery</p> <hr/> <p>Online RelayC1 </p> </div>	<p>Select Output function to Low Battery.</p>
<div style="border: 1px solid black; padding: 5px;"> <p>Relay Timer 2/3</p> <p>Relay C1: Enabled</p> <hr/> <p>Online RelayC1 </p> </div>	<p>Select Relay Timer to Enable</p>
<div style="border: 1px solid black; padding: 5px;"> <p>Relay Timer 3/3</p> <p>Relay C1: HH:MM - 00:30</p> <hr/> <p>Online RelayC1 </p> </div>	<p>Select Relay Timer delay to 00:30 (HH:MM)</p>
<ul style="list-style-type: none"> • Check Menu status. Go to UPS > Output Relay, to check the configurations and status of the Relays. The user interface display shows: C1 - Low battery: NC 	
<ul style="list-style-type: none"> • Go to Menu Configuration > UPS > Battery Setting > Signal Flash Voltage. Set the voltage to 46 V. 	

Conditions to change the relay status

- UPS is in **OnBattery** mode
- Measured battery voltage < 46 V
- 30 minutes time has lapsed after the battery voltage has gone below 46 V

The Relay position changes from **NC** to **NO** when the above conditions are met.

Check relay status, if required.

Go to Menu status > UPS > Output Relay, for the configurations and status of the relay.

The user interface display shows: **C1 - Low battery: NO**

Case 1: Relay timer delay is 00:30 (HH:MM).

Assume load applied to UPS is 50% and UPS is in **OnBattery** mode. The measured battery voltage reaches 46 V, and estimated remaining run time is 35 minutes. Since the relay timer delay is set to 00:30 (HH:MM), relay gets energized only after 30 minutes. The UPS will remain in the energized state till the battery completely discharges which is approximately 5 minutes.

Case 2: Relay timer delay is 00:00 (HH:MM).

Assume load applied to UPS is 50% and UPS is in **OnBattery** mode. The measured battery voltage reaches 46 V, and estimated remaining run time is 35 minutes. Since the relay timer delay is set to 00:00 (HH:MM), relay gets energized immediately. The UPS will remain in the energized state till the battery completely discharges, which is approximately 35 minutes.

Function 2: OnBattery peak configuration

<ul style="list-style-type: none"> • Go to Menu configuration > Output Relay • Choose Polarity Setting to Energize • Select Relay setting > Relay C2 	
<div style="border: 1px solid black; padding: 5px;"> <p>Relay Function 1/3</p> <p>Relay C2: OnBattPeak</p> <hr/> <p>Online RelayC2 </p> </div>	Select Output function to OnBattery Peak
<div style="border: 1px solid black; padding: 5px;"> <p>Relay Timer 2/3</p> <p>Relay C2: Enabled</p> <hr/> <p>Online RelayC2 </p> </div>	Select Relay Timer to Enable
<div style="border: 1px solid black; padding: 5px;"> <p>Relay Timer 3/3</p> <p>Relay C2: HH:MM - 00:00</p> <hr/> <p>Online RelayC2 </p> </div>	Select Relay Timer delay to 00:00 (HH:MM)

<p>Peak Days 1/3</p> <table border="1"> <tr><td>S</td><td>M</td><td>T</td><td>W</td><td>T</td><td>F</td><td>S</td></tr> <tr><td>N</td><td>Y</td><td>N</td><td>N</td><td>N</td><td>N</td><td>N</td></tr> </table> <p>Online RelayC2 </p>	S	M	T	W	T	F	S	N	Y	N	N	N	N	N	<p>Select Peak Days setting to Monday (M)</p>													
S	M	T	W	T	F	S																						
N	Y	N	N	N	N	N																						
<p>Peak Times 2/3</p> <table border="1"> <tr><td>12A</td><td>N</td><td>N</td><td>N</td><td>N</td><td>N</td><td>N</td><td>N</td><td>N</td></tr> <tr><td>4A</td><td>N</td><td>N</td><td>N</td><td>N</td><td>N</td><td>N</td><td>N</td><td>N</td></tr> <tr><td>8A</td><td>Y</td><td>Y</td><td>N</td><td>N</td><td>N</td><td>N</td><td>N</td><td>N</td></tr> </table> <p>Online RelayC2 </p>	12A	N	N	N	N	N	N	N	N	4A	N	N	N	N	N	N	N	N	8A	Y	Y	N	N	N	N	N	N	<p>Select Peak Times setting: 8:00 A to 9:00 A ('A' represents AM, 'P' represents PM) which is a one hour slot.</p>
12A	N	N	N	N	N	N	N	N																				
4A	N	N	N	N	N	N	N	N																				
8A	Y	Y	N	N	N	N	N	N																				
<p>• Check Menu status. Go to UPS > Output Relay, to check the configurations and status of the Relays. The user interface display shows: C2 - OnBattery Peak: NC</p>																												

Conditions to change the relay status

- UPS is in **OnBattery** mode
- The current time should not match the peak time setting

The Relay de-energizes during peak hour (Monday, between 8:00 A to 9:00 A) and energizes during non peak hours. Relay position changes from **NC** to **NO**.

Check relay status, if required.

Go to Menu status > UPS > Output Relay, for the configurations and status of the relay.

The user interface display shows: **C2 - OnBattery Peak: NO**

Relay status is shown in “Function 2: OnBattery peak configuration” on page 35 as Relay function.

OnBattery peak configuration chart													
Time Slot	...	...	6:00 to 6:30 A	6:30 to 7:00 A	7:00 to 7:30 A	7:30 to 8:00 A	8:00 to 8:30 A	8:30 to 9:00 A	9:00 to 9:30 A	9:30 to 10:00 A	...	...
UPS Mode	...	...	Online			OnBattery				Online	...	...
Time Delay	NA								
Current Time	...	...	NPH			PH		NPH			...	...
Relay Status	...	...	NC		NO	NC		NO	NC	...	...

Case 1: Assume relay timer delay configured to 00:15 (HH:MM). Then relay energizes only after 15 minutes..

Case 1 relay status												
Time Slot	...	...	6:00 to 6:30 A	6:30 to 7:00 A	7:00 to 7:30 A	7:30 to 8:00 A	8:00 to 8:30 A	8:30 to 9:00 A	9:00 to 9:30 A	9:30 to 10:00 A	...	...
UPS Mode	...	...	Online			OnBattery				Online	...	...
Time Delay	...	...	NA		15 min		NA				...	...
Current Time	...	...	NPH			PH		NPH			...	...
Relay Status	...	...	NC		NO	NC		NO	NC	...	...

Case 2: Assume relay timer delay configured in HH:MM to 01:00 (1 Hour). Then relay will energize only after delay of 60 minutes, but the delay is overlapped with peak hours, relay continuous to stay in NC position and gets energizes only after peak hours.

Case 2 relay status													
Time Slot	...	...	6:00 to 6:30 A	6:30 to 7:00 A	7:00 to 7:30 A	7:30 to 8:00 A	8:00 to 8:30 A	8:30 to 9:00 A	9:00 to 9:30 A	9:30 to 10:00 A	...	...
UPS Mode	...	...	Online			OnBattery				Online	...	...
Time Delay	...	...	NA			60 min		NA			...	...
Current Time	NPH				PH		NPH		
Relay Status	...	...	NC						NO	NC	...	...

Case 3: Assume polarity setting is configured to De-Energize and relay timer delay configured in 00:00 (HH:MM).

Case 3 relay status													
Time Slot	...	...	6:00 to 6:30 A	6:30 to 7:00 A	7:00 to 7:30 A	7:30 to 8:00 A	8:00 to 8:30 A	8:30 to 9:00 A	9:00 to 9:30 A	9:30 to 10:00 A	...	...
UPS Mode	...	...	Online			OnBattery				Online	...	...
Time Delay	NA								
Current Time	NPH				PH		NPH		
Relay Status	...	...	NO			NC	NO		NC	NO	...	...

Network Management Interface

Introduction

The UPS has a network port that can be used to access the Network Management Interface. The Network Management Interface is very similar to an AP9630 Network Management Card (NMC) that is integrated into a UPS with one universal input/output port.

The Network Management Interface and the AP9630 NMC have the same firmware, operation modes and interaction with other APC products such as PowerChute Network Shutdown.

Features

The Network Management Interface allows the UPS to function as a web based, IPv6 ready product. The Network Management Interface can manage the UPS using multiple open standards such as:

Hypertext Transfer Protocol (HTTP)	Secure SHell (SSH)
Simple Network Management Protocol versions 1 and 3 (SNMPv1, SNMPv3)	Hypertext Transfer Protocol over Secure Sockets layer (HTTPS)
File Transfer Protocol (FTP)	Secure Copy (SCP)
Telnet	Syslog
RADIUS	Modbus Note: Limited UPS parameters are supported.

The Network Management Interface:

- Provides UPS control and **Self Test** scheduling features.
- Provides data and event logs.
- Enables you to set up notifications through event logging, e-mail, and SNMP traps.
- Provides support for PowerChute Network Shutdown.
- Supports using a Dynamic Host Configuration Protocol (DHCP) or BOOTstrap Protocol (BOOTP) server to provide the network (TCP/IP) values.
- Supports use of Remote Monitoring Service (RMS).
- Provides the ability to export a user configuration (.ini) file from a configured UPS, to one or more unconfigured UPS without conversion to a binary file.
- Provides a selection of security protocols for authentication and encryption.
- Communicates with StruxureWare Data Center Expert, StruxureWare Operations or EcoStruxure™ IT
- Supports one universal input/output port for connection to a:
 - Temperature probe, AP9335T (supplied)

Related Documents

- UPS Network Management Card 2 User's Guide
- Network Management Card Upgrade Utilities
- Security Handbook
- PowerNet Management Information Base (MIB) Reference Guide

IP Address Configuration

The default TCP/IP configuration setting DHCP, assumes that a properly configured DHCP server is available to provide TCP/IP settings to the Network Management Interface.

If the Network Management Interface obtains an IPv4 address from a DHCP server, use the UPS Display Interface menus About/Interface, to see the address.

To setup a static IPv4 address use the UPS Display Interface Config menu. Set the IP address Subnet Mask and Gateway from the Config menu.

See the User's Guide for user information about the Network Management Interface and for setup instructions.

Battery Management

Maintenance

- **Runtime Test (Calibration):** This should be performed any time the steady state load is changed significantly. For example, when an equipment is added to or removed from the Smart-UPS Industrial UPS load.
If case of no load change, it is recommended that the test should be run every 6 months, or when new batteries are installed.
- **Self test:** The Smart-UPS Industrial UPS can be configured to perform periodic, automatic **Self Tests**.

End of useful life

- **Near end of life notification:** A message will appear on the Smart-UPS Industrial UPS display when the batteries are approaching the end of useful life. For configuration details refer to **Replacement Notification Time** and **Replacement Battery Alarm Time**.
The estimated replacement date for the battery is available through the **About** menu.
- **Needs replacement notification:** The Smart-UPS Industrial UPS display shows when battery replacement is required. The battery must be replaced as soon as possible.
Continued operation after end of useful life notification may cause damage to the batteries.

Recommended actions after installing new external batteries

- Install the external batteries.
- Use the **Configuration/Battery** menu to update the **Install Date** and update the **Replacement Notification Time** to match the new batteries expected lifetime.
- Allow the system to charge for 24 hours to ensure full runtime capability.
- Use the **Test and Diagnostics/Runtime Test** to perform a runtime calibration test.

Troubleshooting

Use the table below to solve minor installation and operation problems.

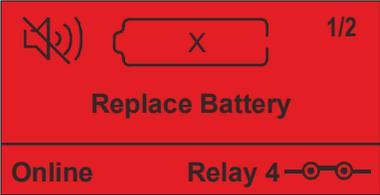
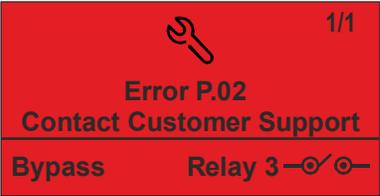
Refer to the APC by Schneider Electric Web site, www.apc.com for assistance with complex Smart-UPS Industrial UPS problems.

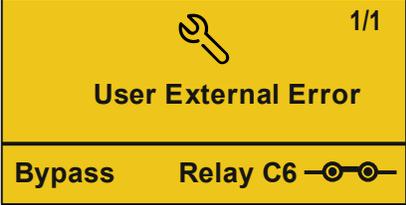
The Smart-UPS Industrial UPS features firmware that can be upgraded.

Go to the APC by Schneider Electric Web site, www.apc.com/Support, or contact your local Customer Care Center for more information.

Problem and Possible Cause	Solution
Smart-UPS Industrial UPS will not turn on or there is no output.	
The Smart-UPS Industrial UPS is not connected to AC mains power.	Be sure the AC input power cable is securely connected to the Smart-UPS Industrial UPS and to the cabinet AC power supply.
The charged batteries are not connected.	Be sure the batteries are connected.
The LCD indicates very low or no mains power.	Check the mains power supply to verify acceptable power quality. Check circuit breakers.
There is an internal Smart-UPS Industrial UPS alert or notification.	A message will be displayed on the LCD to identify the alert or notification and corrective action.
All of the possible issues above have been addressed and the Smart-UPS Industrial UPS will not turn on.	If the Smart-UPS Industrial UPS does not turn on when connected to AC power use the Cold Start feature. Follow the instructions below to perform a Cold Start. <ol style="list-style-type: none"> 1. Confirm that batteries are charged and connected to the Smart-UPS Industrial UPS. 2. Press the POWER ON button. The LCD will illuminate and the POWER ON button will illuminate red. 3. To turn on the output power press the POWER ON button again. Then select the prompt Turn ON with No AC and press OK. To turn output power OFF go to the Control menu and follow the prompts.
Smart-UPS Industrial UPS emits an audible alarm.	
Normal Smart-UPS Industrial UPS operation when running on battery power.	The Smart-UPS Industrial UPS is operating on battery power. Refer to the status of the Smart-UPS Industrial UPS as shown on the LCD. Press any key to mute audible alarms.
The Smart-UPS Industrial UPS emits an audible alarm and has a red or amber back light on the LCD.	An Alarm or Notification condition exists. Refer to the display interface screen for information. Contact Customer Care Center if the detected fault is not cleared.

Problem and Possible Cause	Solution
Smart-UPS Industrial UPS does not provide expected backup time.	
The Smart-UPS Industrial UPS batteries are weak due to a recent power outage or they are near the end of service life.	Charge the batteries. Batteries require recharging after extended outages and wear out faster when discharged often or when operated at elevated temperatures. If the batteries are near the end of service life, consider replacing the batteries even if the Replace Battery message is not displayed.
Smart-UPS Industrial UPS operates on battery power while connected to mains power.	
The Smart-UPS Industrial UPS input circuit breaker has tripped.	Reduce the load on the Smart-UPS Industrial UPS. Disconnect nonessential equipment and reset the circuit breaker. Check the input circuit breaker rating for the connected equipment.
There is very high, very low, or distorted input line voltage.	<p>Navigate to the Status/Smart-UPS Industrial UPS menu to verify that the input voltage is within specified operating limits.</p> <p>If no input voltage is indicated on the LCD, contact Customer Support through the APC by Schneider Electric Web site, www.apc.com.</p>
LCD Status displays Overload and the Smart-UPS Industrial UPS emits a sustained audible alarm.	
The Smart-UPS Industrial UPS is experiencing an overload condition.	<p>The connected equipment exceeds the maximum load rating for the Smart-UPS Industrial UPS.</p> <p>The Smart-UPS Industrial UPS will emit a sustained audible alarm until the overload condition is corrected.</p> <p>Disconnect nonessential equipment from the Smart-UPS Industrial UPS to correct the overload condition.</p>
LCD Status indicates Smart-UPS Industrial UPS is operating in Bypass mode.	
The Smart-UPS Industrial UPS has automatically switched to Bypass mode due to an internal Smart-UPS Industrial UPS alert or notification.	The LCD will display a message to identify the alert or notification and corrective action.
LCD is illuminated red or amber and displays an alert message. Smart-UPS Industrial UPS emits a sustained audible alarm.	
The Smart-UPS Industrial UPS has detected a problem during normal operation.	<p>Follow the instructions displayed on the LCD.</p> <p>Press any key to mute all audible alarms.</p>
<p>The LCD displays the message.</p> 	<p>Be sure the battery cables are securely connected.</p> <p>Be sure the battery circuit breaker is closed.</p> <p>Check the fuse in the battery harness.</p>

Problem and Possible Cause	Solution
<p>The LCD displays the message.</p> 	<p>Allow the battery to recharge for 24 hours.</p> <p>To perform a Runtime test use the Smart-UPS Industrial UPS interface menu option Test and Diagnostics.</p> <p>If the problem persists, replace the batteries.</p>
<p>LCD turns red or amber, displays an alert message, and emits a sustained audible alarm. Red illumination indicates a Smart-UPS Industrial UPS alarm that requires immediate attention. Amber illumination indicates a Smart-UPS Industrial UPS alarm that requires attention.</p>	
<p>There is an internal Smart-UPS Industrial UPS alert.</p> 	<p>Do not attempt to use the Smart-UPS Industrial UPS. Turn the Smart-UPS Industrial UPS off and have it serviced immediately.</p>
<p>The Smart-UPS Industrial UPS is experiencing an overload condition.</p> 	<p>Reduce the load on the Smart-UPS Industrial UPS. Disconnect nonessential equipment.</p>
<p>The Smart-UPS Industrial UPS has detected an internal over temperature alert.</p> 	<ul style="list-style-type: none"> • Check and clear blockages/obstructions of the fan vent holes. • Remove fan filter and clean. Follow the display instructions to clear the alert, after cleaning the fan filter. • Replace fan filter if problem persists.

Problem and Possible Cause	Solution
<p>The Smart-UPS Industrial UPS has detected an User External Alarm.</p>  <p>The image shows a yellow rectangular alarm display. At the top center is a wrench icon. To its right is the text '1/1'. Below the icon is the text 'User External Error'. At the bottom of the display, there are two labels: 'Bypass' and 'Relay C6', followed by a small icon of a relay switch.</p>	<ul style="list-style-type: none"> • Change the configuration settings to clear the User External Alarm. • Input Sx Contact is configured to Ext. Alarm On which is triggered from an external source/equipment, need to be cleared. • Goto Input Sx Contact to Ext. Alarm Off and trigger the contact.
Replace Battery alert is displayed.	
<p>The battery has a weak charge.</p>	<p>Allow the battery to recharge for at least eight hours. Then, perform a Smart-UPS Industrial UPS Self Test. If the problem persists after recharging, replace the battery.</p>
<p>The replacement battery is not properly connected.</p>	<p>Be sure the battery cable is securely connected.</p>

Transport

1. Shut down and disconnect all connected equipment.
2. Disconnect the unit from mains power.
3. Disconnect all external batteries (if applicable).
4. Follow the shipping instructions outlined in the *Service* section of this manual.

Service

If the unit requires service, do not return it to the dealer. Follow these steps:

1. Review the *Troubleshooting* section of the manual to eliminate common problems.
2. If the problem persists, contact APC by Schneider Electric Customer Support through the APC by Schneider Electric Web site, **www.apc.com**.
 - a. Note the model number and serial number and the date of purchase. The model and serial numbers are located on the top panel of the unit and are available through the LCD on select models.
 - b. Call APC by Schneider Electric Customer Support and a technician will attempt to solve the problem over the phone.
If this is not possible, the technician will issue a Returned Material Authorization Number (RMA#).
 - c. If the unit is under warranty, it will be repaired or replaced at no cost.
 - d. Service procedures and returns may vary internationally. Refer to the APC by Schneider Electric Web site for country specific instructions.
3. Pack the unit properly to avoid damage in transit. Never use foam beads for packaging. Damage sustained in transit is not covered under warranty.
4. Before shipping, always disconnect batteries connected to the Smart-UPS Industrial UPS.
5. Write the RMA# provided by Customer Support on the outside of the package.
6. Return the unit by insured, prepaid carrier to the address provided by Customer Support.

Limited Factory Warranty

Schneider Electric IT Corporation (SEIT), warrants its products to be free from defects in materials and workmanship for a period of three (3) years. The SEIT obligation under this warranty is limited to repairing or replacing, at its own sole option, any such defective products. Repair or replacement of a defective product or part thereof does not extend the original warranty period.

This warranty applies only to the original purchaser who must have properly registered the product within 10 days of purchase. Products may be registered online at warranty.apc.com.

SEIT shall not be liable under the warranty if its testing and examination disclose that the alleged defect in the product does not exist or was caused by end user or any third person misuse, negligence, improper installation, testing, operation or use of the product contrary to SEIT recommendations of specifications. Further, SEIT shall not be liable for defects resulting from: 1) unauthorized attempts to repair or modify the product, 2) incorrect or inadequate electrical voltage or connection, 3) inappropriate on site operation conditions, 4) Acts of God, 5) exposure to the elements, or 6) theft. In no event shall SEIT have any liability under this warranty for any product where the serial number has been altered, defaced, or removed.

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To obtain service under warranty you must obtain a Returned Material Authorization (RMA) number from customer support. Customers with warranty claims issues may access the SEIT worldwide customer support network through the APC by Schneider Electric Web site: www.apc.com. Select your country from the country selection drop down menu. Open the Support tab at the top of the web page to obtain information for customer support in your region. Products must be returned with transportation charges prepaid and must be accompanied by a brief description of the problem encountered and proof of date and place of purchase.

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- Visit the APC by Schneider Electric Web site to access documents in the APC by Schneider Electric Knowledge Base and to submit customer support requests.
 - **www.apc.com** (Corporate Headquarters)
Connect to localized APC by Schneider Electric Web site for specific countries, each of which provides customer support information.
 - **www.apc.com/support/**
Global support searching APC by Schneider Electric Knowledge Base and using e-support.
- Contact the APC by Schneider Electric Customer Support Center by telephone or e-mail.
 - Local, country specific centers: go to **www.apc.com/support/contact** for contact information.
 - For information on how to obtain local customer support, contact the APC by Schneider Electric representative or other distributor from whom you purchased your APC by Schneider Electric product.

User Documentation Link

Refer the link or scan the QR code to access the user documentation:
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