

# 4. INSTALLATION

## 4.1 Unpacking and Inspection

Before installation, please remove the unit from its box carefully since the UPS is heavy. Follow the below guidelines to unpack and inspect the unit.

1. Select a suitable area for unpacking and be sure that nothing inside is damaged.
2. Store all the packing materials and boxes for possible equipment returns.
3. Inspect the package contents and make sure all standard items as well as purchased options are included.

Standard Items		
Item	Contents	Quantity
UPS	UPS Unit	1
	Manual	1
	Temperature sensor cable	1
	Mounting bracket	2
	Screws for Mounting bracket	8
SNMP card (optional)		1
PTS (optional)	PTS Unit	1
	Fasteners	4

4. Compare the listed parts with the items you received. If the listed parts on your package does not match the items you received, or any items appear damaged, please immediately notify your carrier agent and the supplier who prepared your shipment.

## 4.2 Mounting the UPS

The UPS unit can be placed on a shelf with no other parts needed. It can be rack mounted or secured to a shelf such as in an outdoor cabinet, with the mounting brackets shown in the following figure. The brackets and the screws to attach them to the UPS case are available as part of the standard packaging.

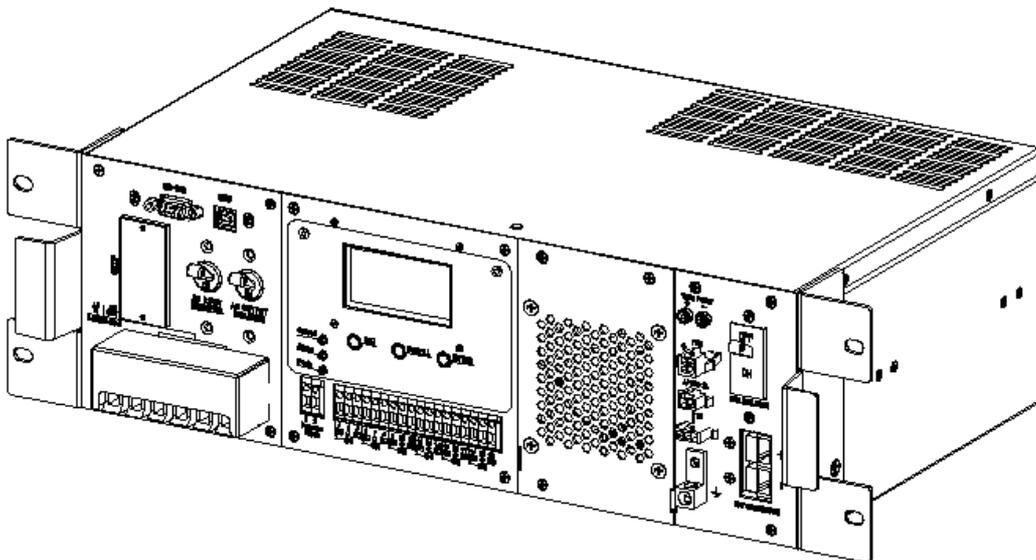


Figure 4: UPS with Bracket for rack mounting

## 4.3 Mounting the PTS (Optional)

The power transfer switch is designed and factory-installed with a 19" rack mounting bracket accessory shelf. It can be rack mounted or placed on a shelf. The fixing screws and washers are packaged as accessories of PTS.

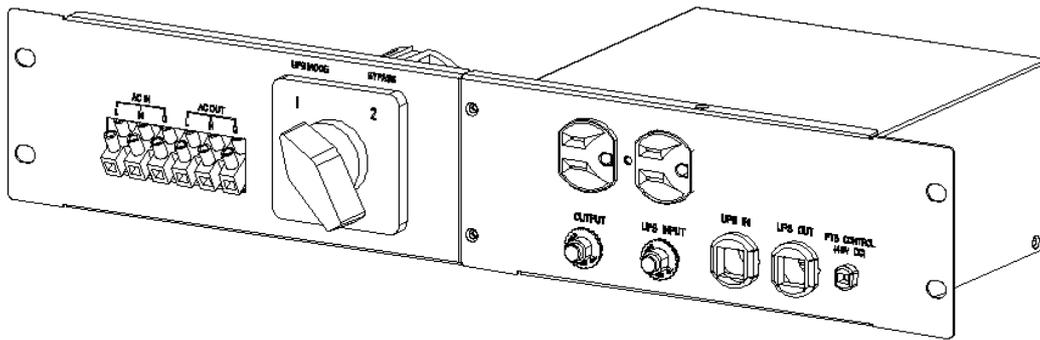


Figure 5: PTS with Bracket for rack mounting

## 4.4 Wiring

### WARNING!

All electrical wiring must be performed by a qualified electrician or trained personnel. Make sure the line power is off. Switch off all input and output circuit breakers on the UPS unit before making any electrical connections.

#### 4.4.1 Wiring the UPS

1. Connect the temperature sensor to the UPS unit (Battery Temperature connector ⑪). The other end is connected to the batteries later in the procedure.
2. Refer to Figure 1 & 2, connect the following ports if used.
  - USB Connector ⑲.
  - RS-232 Connector ⑳.
  - Dry contacts ⑥.
  - Program input ⑤.
  - Intelligent Slot (optional) ㉑.
  - External FAN Connector ⑫.

#### 4.4.2 Wiring the PTS to the UPS

Wire the PTS to the UPS according to the schematic shown in Figure 6.

1. The PTS is pre-wired with 2 cables marked as "UPS IN" and "UPS OUT". Connect these cables from PTS to the respective connectors on the UPS.
2. Connect the AC input wires to the AC input terminal blocks on the PTS. Ensure proper polarity (Line, Neutral and Ground to the respective terminal).
3. Connect AC output wires to the AC output terminal blocks on the PTS. Ensure proper polarity (Line, Neutral and Ground to the respective terminal).

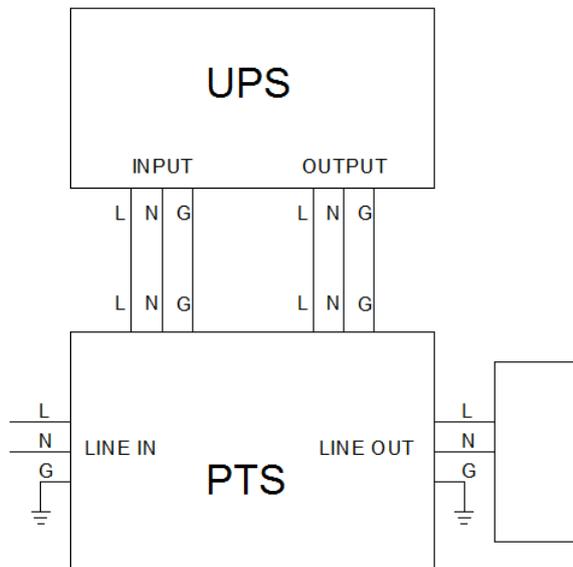


Figure 6: Wiring the PTS to the UPS

**4.4.3 Wiring External Batteries**

Unit supports 48Vdc battery. Connect all battery packs as below chart. It's suggested to connect at least 100Ah capacity battery.

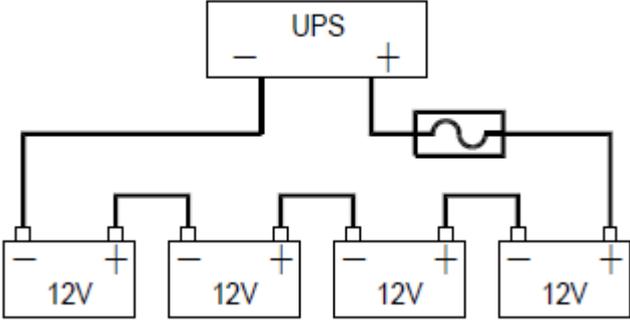


Figure 7: Battery Connection Chart

## 5. OPERATION

To power up the UPS, ensure the switch on PTS is in "UPS Mode" position. Before commissioning, make sure batteries are fully charged and line power is qualified.

### 5.1 Switch on UPS in Line mode

1. Switch on battery circuit breaker. All LEDs will be on and LCD will display Startup page, and fan will be on.
2. Switch on AC input breaker. After line power is qualified, the LCD will display **normal**, **buck** or **boost** according to line voltage range and line threshold setting.

**Note:** AVR function default setting is disabled. You may activate it via LCD panel or USB/RS232/SNMP communication.

### 5.2 Switch the UPS from line mode to battery mode

UPS will operate in battery mode if manually switch the input circuit breaker off. The LCD will display **Battery** and output LED will flash to show the UPS is running on backup battery power.

### 5.3 Switch from battery mode to line mode

After switching on the input circuit breaker, if line input is qualified, UPS will transfer to line mode with output LED on to show UPS is running from utility power.

**Note:** If UPS keeps switching between inverter and line mode because of a noisy line, the setting of "UPS Sense type" should be changed from Normal to Generator.

### 5.4 Switch off procedure

For any reason you need to switch off UPS, please follow below procedure.

1. Switch off output circuit breaker.
2. Switch off input circuit breaker.
3. Switch off battery circuit breaker. The output LED will turn off and LCD display will shut off.

## 5.5 Operation the Control panel

The control panel includes four-line LCD display, three indicators, three function keys, input contacts and six sets of dry contacts. It can be rotated 90 degree for vertical installation.

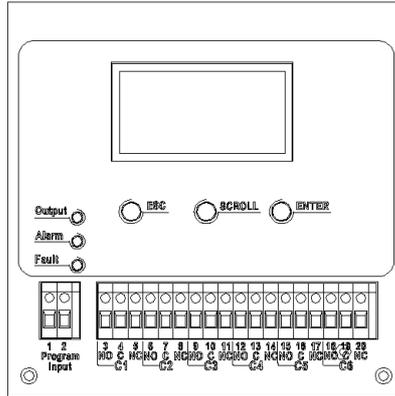


Figure 8: Control Panel

### 5.5.1 LED Indicator

LED Indicator		Messages	
Output	Green	Solid On	Output is available in line mode
		Flashing	Output is available in battery mode
		Off	Output is not available
Alarm	Yellow	Solid On	Alarms occur in the system, indicating a condition not serious enough to stop it from providing output power.
Fault	Red	Solid On	Faults occur in the system, indicating a condition where backup power is not available.

### 5.5.2 Function Keys

Function Key	Description
ESC	Back to previous menu/page
SCROLL	Jump to next page or next selection
ENTER	Enter submenu or confirm selection