



**INSTALLATION INSTRUCTIONS  
AND  
OPERATION MANUAL**

**PBU-150-11**

**AC Power Backup Unit**

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## **IMPORTANT INSTALLATION INSTRUCTIONS**

**WARNING** – To reduce the risk of death or serious injury to persons:

1. READ AND FOLLOW ALL INSTALLATION INSTRUCTIONS.
2. Make sure the available power supply to be connected to the device is of the same voltage, frequency and phase as indicated on the nameplate of the device.
3. Read and understand the wiring diagram of the device and any other equipment to be connected to the device.
4. A remote power breaker shall be installed and provided by installer.
5. Always disconnect power whenever installing or servicing the device.
6. All wiring must be permanent and comply with National Electrical Code (NEC) and local code requirements.
7. For “Indoor Dry” location use only.

### **WARNING**

**Disconnect powers before proceeding with any wiring.**

## **SPECIFICATIONS**

<b>Model</b>	<b>PBU-150-11</b>
Output Power (Continuous)	1500VA
Output Voltage	120VAC
Output Waveform	Pure Sine Wave
Output Frequency	60Hz
Input Voltage	120VAC
Input Frequency	60Hz
Nominal Battery Voltage	36VDC
Batteries	12VDC, 12Ah x 3
Applicable Door Operator Models	MGH/MGRL 3311E, 5011E MGH 7511E SGH 5011E, 7511E, 10011E, 15011E FS/FSML-31EP FS-51EP, 71EP FTS-51X FGH/FGRL 3311E FGH 5011E, 7511E, 10011E, 15011E
Net Weight (including batteries)	60.6lbs / 27.5kgs

### Notes:

1. This AC power backup unit is a 120VAC single phase power supply to maintain motor operator functionality during AC power loss and is intended to be used with the models shown in the specifications.
2. This device must be connected to power source for at least 12 hours to fully charge batteries.

## **INSTALLATION INSTRUCTIONS**

1. Structure supporting device must be adequate for weight of device.
2. Attach panel to wall using suitable fasteners for mounting conditions, such as
  - Expansion or sleeve anchors into concrete
  - Sleeve anchors into masonry
  - Self-tapping screws into steel framing
  - Lag screws into wood framing

On drywall construction, it may be necessary to bridge across studs with a suitable support system.

## **WIRING INSTRUCTIONS**

1. Do not install any wiring or attempt to run this device without checking the wiring diagram located on the inside of the control box cover.
2. Do not turn on power until you have finished making all power and control wiring connections.
3. Do not run power and control wiring in the same conduit.
4. Any wire connected to the control panel must be protected by conduit or other means to ensure the safety and permanency of the wiring.
5. Use copper wire inside the control panel.
6. A separate fuse line of adequate capacity is needed for the device.
7. A remote power breaker shall be installed and provided by installer.
8. The device must be properly grounded. The ground screw, painted green, is located inside the control panel.

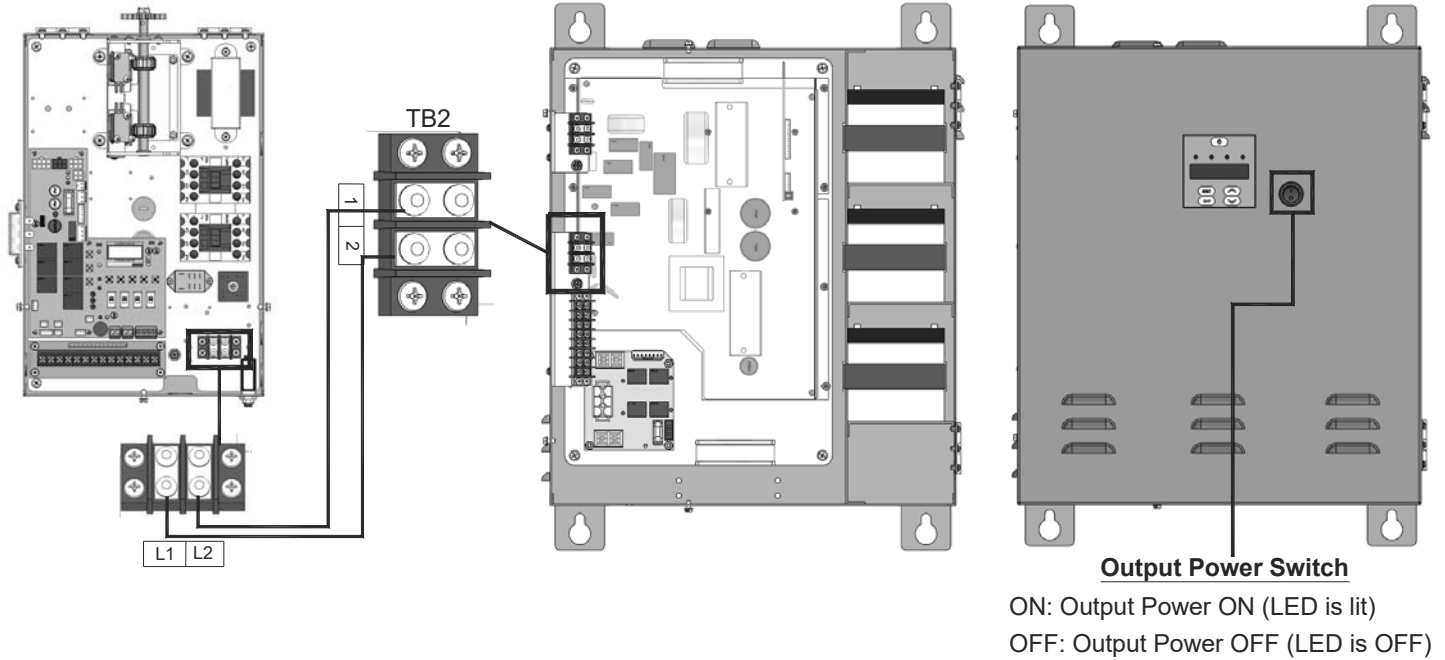
### **WARNING**

- **Disconnect powers before proceeding with any wiring.**
- **Failure to properly ground the device could result in electric shock and death or serious injury.**

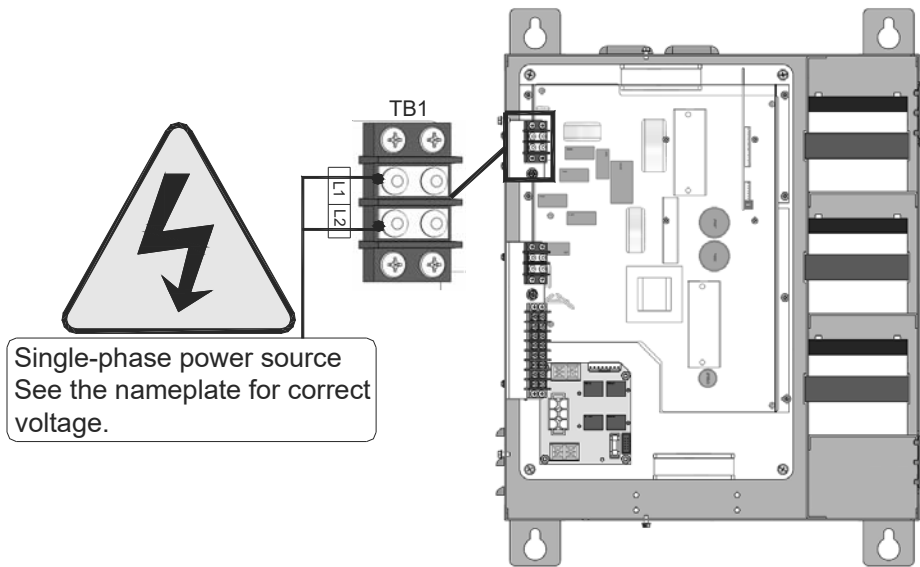
# POWER CONNECTIONS TO DOOR OPERATOR

DOOR OPERATOR  
CONTROL BOX

PBU



# INPUT POWER CONNECTIONS



## CAUTION

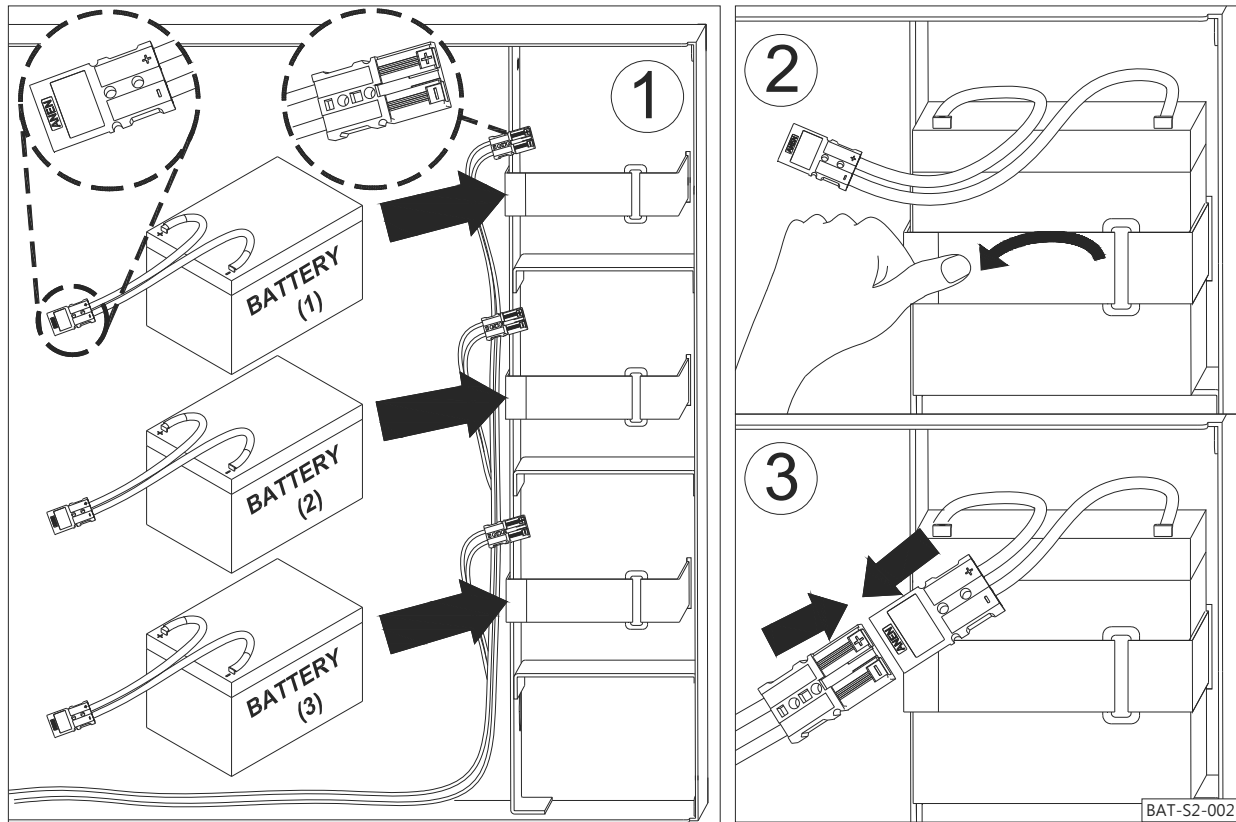
- Disconnect input (line) power to PBU and turn off output power switch before servicing PBU.
- Turn off output power switch to disconnect battery power from PBU to operator before servicing operator – Battery power will continue to be provided to operator even when line voltage to PBU is disconnected.

# BATTERY SPECIFICATION & CONNECTIONS

## 1. Specification:

Type	Battery Rating
Sealed Lead Acid Rechargeable Battery	Three (3) 12VDC, 12Ah

## 2. Connections:



Charging Voltage:	41.4VDC
Charging Current:	Max. 1.0A

- Low battery voltage warning output signal is provided when battery voltage drops below 31VDC.

# WIRING DIAGRAM

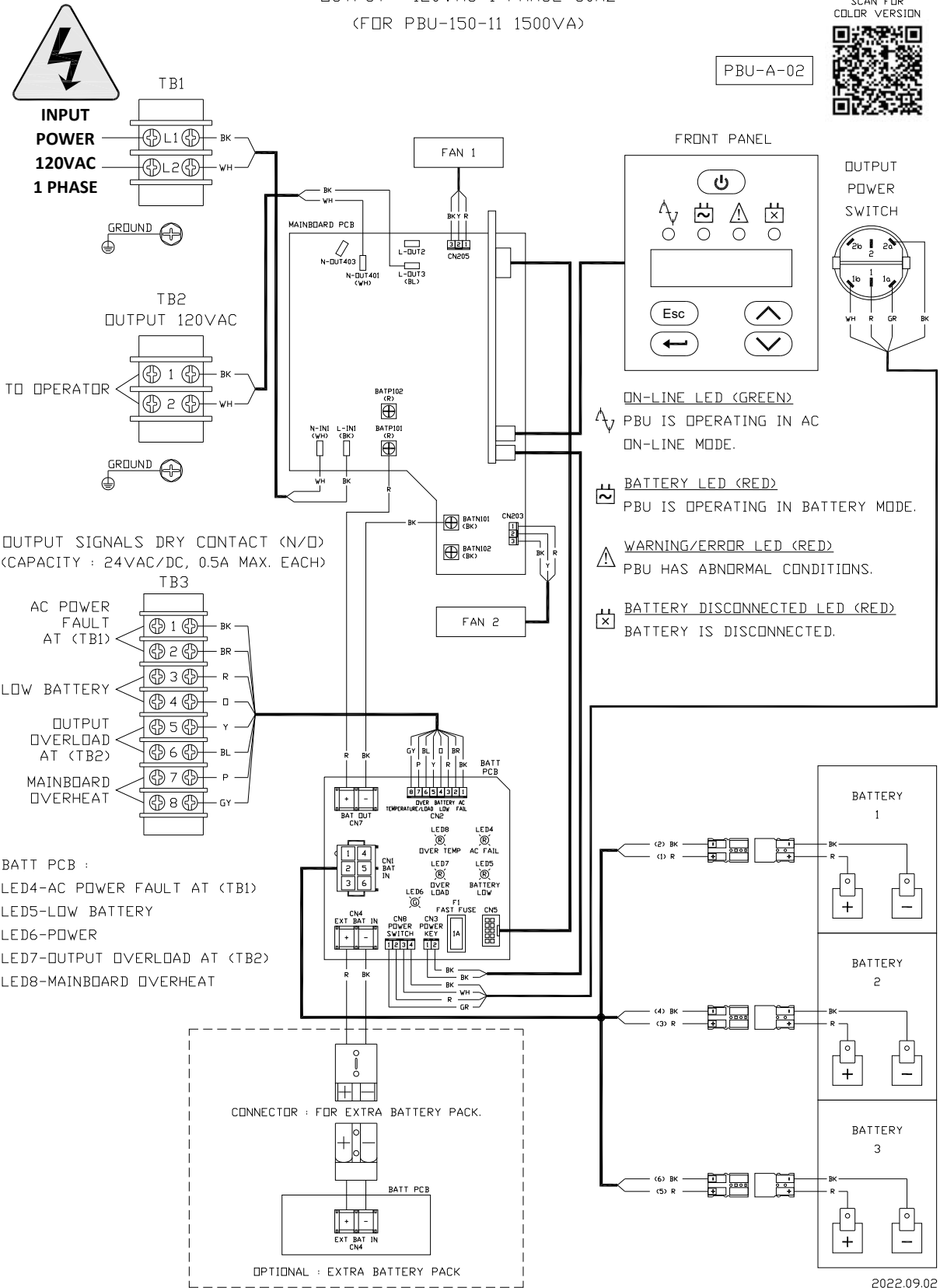
PBU

INPUT : 120VAC 1 PHASE 60HZ  
 OUTPUT : 120VAC 1 PHASE 60HZ  
 (FOR PBU-150-11 1500VA)

SCAN FOR  
 COLOR VERSION



PBU-A-02



2022.09.02



# TERMINAL CONNECTIONS

## TB1

L1	L2
Input Power 120VAC	

## TB2

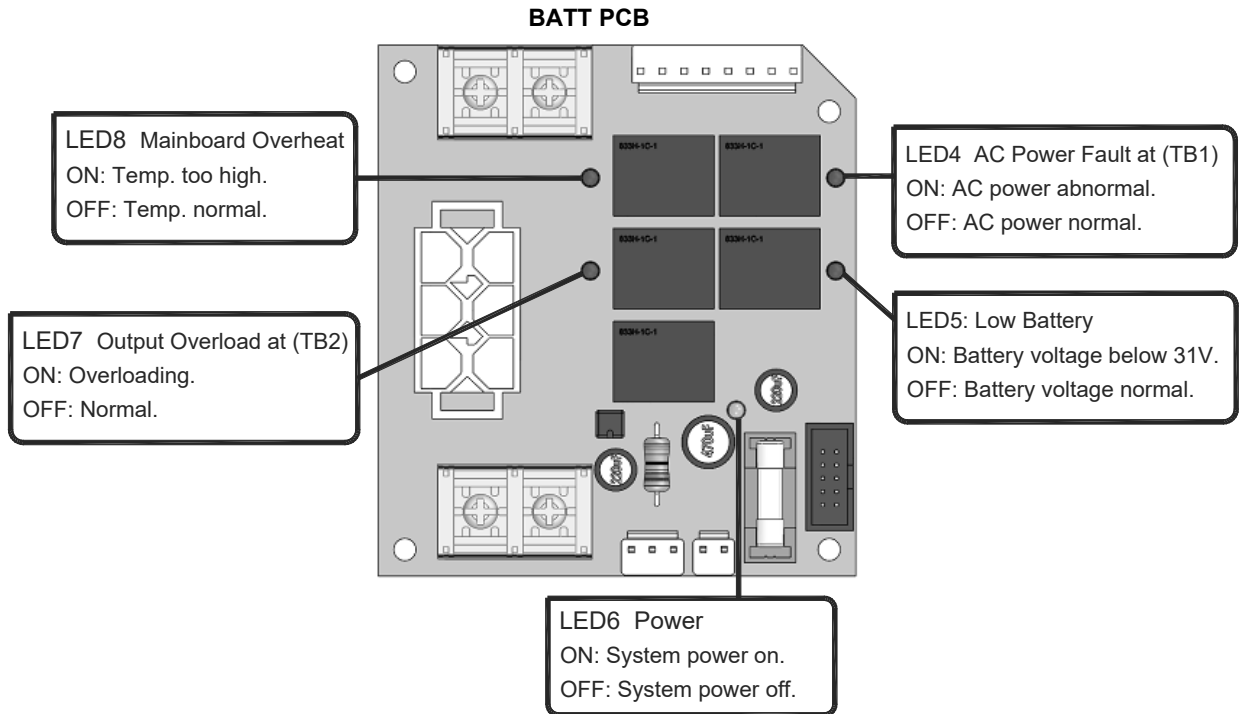
1	2
Output Power 120VAC	

## TB3 Output Signals Dry Contact (N/O)

1	2	3	4	5	6	7	8
AC Power Fault at (TB1)		Low Battery		Output Overload at (TB2)		Mainboard Overheat	

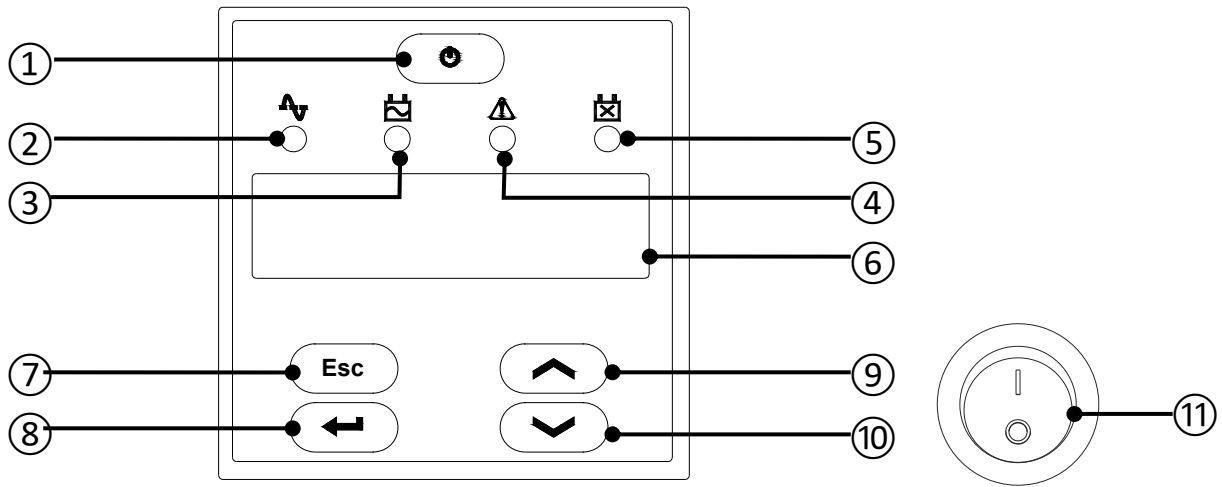
Dry contact capacity: 24VAC/DC, 0.5A max. each











# LIGHTS INDICATION



# OPERATION

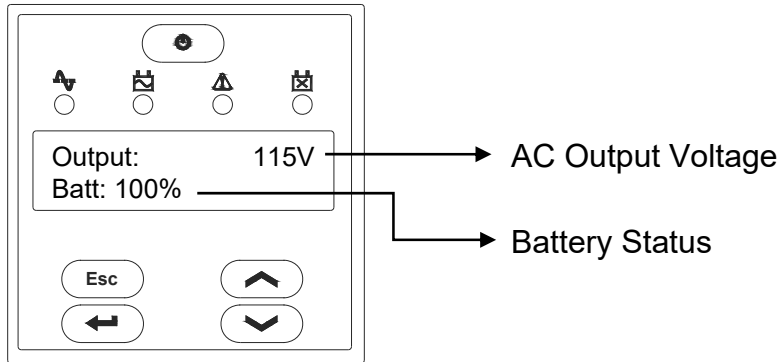
## FRONT PANEL AND SWITCH



No.	Item	Description
①	 On/Off Button	<b>DO NOT USE</b>
②	 On-line LED (Green)	PBU is operating in AC on-line mode.
③	 Battery LED (Red)	PBU is operating in battery mode.
④	 Warning/Error LED (Red)	PBU has abnormal conditions. (Refer to troubleshooting on page 12 for more information.)
⑤	 Battery Disconnected LED (Red)	Battery is disconnected.
⑥	Backlight LCD Display	Display the operating status.
⑦	 Esc ESC Button	Escape button
⑧	 Enter/Set Button	Save setting, or forward to next page.
⑨	 UP Button	Move the cursor up/down to select the page or function.
⑩	 Down Button	
⑪	 Output Power Switch with LED (RED)	ON: Output Power ON (LED is lit) OFF: Output Power OFF (LED is OFF)

# PANEL MENU

## 1. Standby Mode




## 2. Display Information and Functions

Press  to enter the Main Menu.


Main Menu	Submenu	Information / Functions
Status	Operation Mode	Normal or Battery Mode
	Batt	Battery Status
	Input	AC Input Power
	Output	AC Output Power
Configuration	Audio Alarm	On/Off Selectable
	Battery Install	Setting the installation date of the battery
	Output Voltage	120/125VAC Selectable
	Power Save Mode	On/Off Selectable
	Reset to Default	Yes/No Selectable
Event Log	Fault Log	Last 3 fault messages recorded and displayed by running text.
	Warning Log	Last 3 warning messages recorded and displayed by running text.
About	Serial No.	PBU Serial No.
	Firmware	PBU Firmware Code

## TURN ON THE OUTPUT POWER


### 1. AC On-Line Mode:

- The PBU automatically starts up after AC power connected. Followed by a beep sound, the PBU is starting.
- Turn on  output power switch to start AC power output at terminal (TB2).
- A 5-second self-diagnosis is performed automatically for having protection function ready.
- The batteries are charging once the AC power supplies to PBU.

### 2. Battery Mode:

Turn on  output power switch to start AC power output at terminal (TB2).

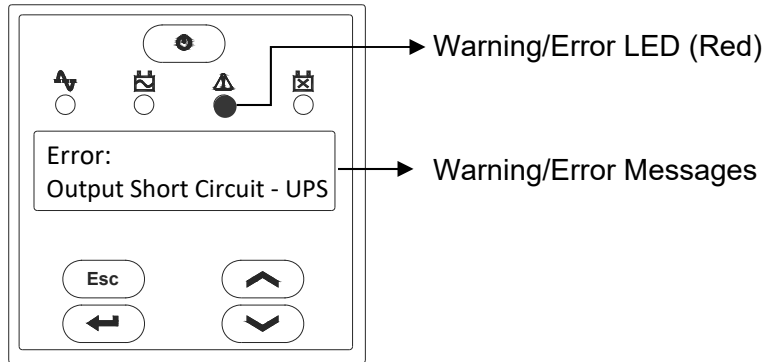
## TURN OFF THE OUTPUT POWER

Turn off  output power switch to stop AC power output at terminal (TB2).

### **WARNING**

**Disconnect both AC and DC power supplies to the device before servicing.**

# TROUBLESHOOTING




## WARNING MESSAGES

LCD Messages	Warning	Troubleshooting
UPS is overloaded – will be shut down	Overload Warning	Remove some unnecessary loads. If output power turned off, clear the warning message in the battery mode.
Low Battery –Shutdown imminent	Low Battery Warning	Check the batteries.
Battery Depleted – UPS has shutdown	Low Battery Cut-Off Warning	Check the batteries.
Batt Disconnect	Battery Disconnected Warning	Check the batteries connections. Charging the batteries for 8 hours, and then test the PBU again. If this warning remains, replacing the batteries is recommended.


## ERROR MESSAGES

LCD Messages	Possible Cause	Troubleshooting
Output Short Circuit – UPS has shutdown	Output Short Circuit	Remove all loads and restart the PBU. If this error remains, contact customer service.
Internal Bus Fault – UPS has shutdown	Internal Bus Fault	Remove all loads and restart the PBU. If this error remains, contact customer service.
Inverter / Output Failure – UPS has shutdown	Inverter Failure	Remove all loads and restart the PBU. If this error remains, contact customer service.
Charger Failure - PLS check charger	Charger not working	Check the battery capacity and line voltage.
Charger Failure - UPS has shutdown	Over Charger	Check the battery capacity and line voltage.
High Internal Temperature – UPS has shutdown	PBU or ambient temperature is too high	PBU or ambient temperature is too high.
Fan Failure - PLS replace fan	Fans might get damaged or stuck	Check or replace the fan.

## CLEARING AN OVERLOAD WARNING MESSAGES

1. When the PBU is overloaded and automatically shut down, the warning message will be kept after the system restarted. Turn off  output power switch to clear the warning messages.
2. Overloading capacity: 110% within 30 sec. or 200% within 5 sec.
3. Reduce loading and restart the PBU.

## CLEARING THE ERROR MESSAGES

1. Turn off  output power switch to clear the error messages after troubleshooting.
2. Shut down the PBU.

## MAINTENANCE INSTRUCTIONS

### **WARNING**

**Disconnect powers before servicing.**

Check the following items at the intervals listed:

CHECK LIST	DESCRIPTION	EVERY 6 MONTHS
Fasteners	Check & tighten as required	●
Battery	Check battery voltage (must be higher than 31VDC)	●

- ❖ Inspect and service whenever a malfunction of the device or equipment connected to it is observed or suspected.
- ❖ Before servicing, always disconnect powers to the device.
- ❖ Replace fuses only with those of the same type and rating.
- ❖ All replacement parts must be compatible with those originally provided. Consult manufacturer for replacement parts.
- ❖ Change batteries every 2 years or when they fail to charge, whichever comes first. The change procedure is shown in the battery specification & connections section.

### **WARNING**

**Do not place hands or tools in the device when the power is connected or when testing the device or equipment connected to it. Always disconnect power before servicing or adjusting the device or other equipment connected to it.**