TP-BC24-300

AC to DC24V UNINTERRUPTED POWER SUPPLY

User Manual

Specifications and Features:

- 300W Total Max.

  DC power output 8A Max.

  Charge current 12A Max.

- Net weight, only 4.63 lbs/2.1kg
- Dimensions 252*54*190 m/m (W*H*D)
- Over Voltage protection
- Over Current protection
- Quiet Internal Cooling Fan
- Input Voltage: Selectable AC input voltage

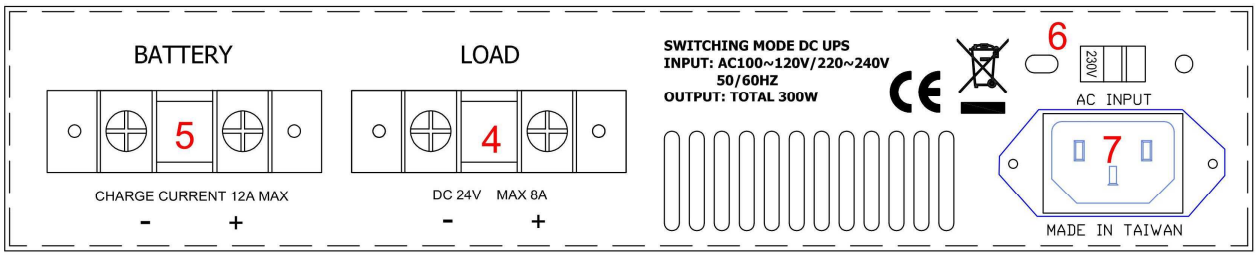
  -115 Vac at 50/60Hz

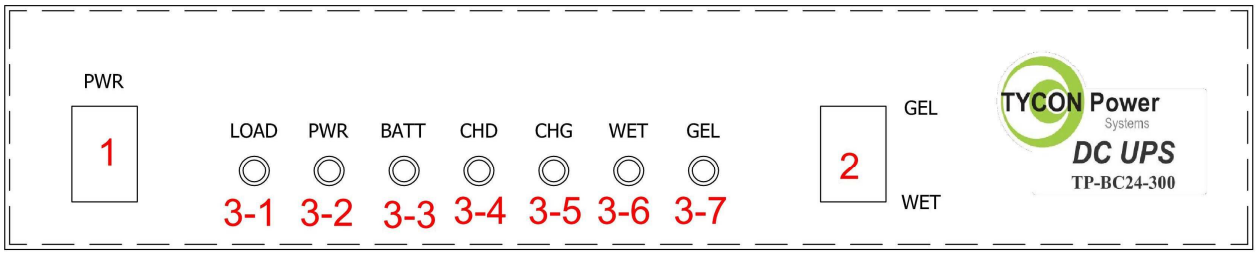
  -230 Vac at 50/60Hz

- Super Regulation:

  Works with AC input from 90 to 265Vac

- Back-up Power Supply System
- Compatible with Solar and Wind Charge Controllers





PANEL DESCRIPTION		
Item	Name	Description
1	Power Switch	Control AC power On or Off,
2	Battery Type Selector	WET Flooded battery GEL Gel battery
3	LED Indicators	
3-1	LOAD Load Indicator	Light GREEN when the LOAD is working
3-2	PWR AC Power Indicator	Light YELLOW when the model with AC input and power switch is on
3-3	BATT Battery Polarity Indicator	Light GREEN when BATTERY polarity connection is correct, light RED when connection is incorrect
3-4	CHD Floating Indicator	Light GREEN when battery is in floating mode.
3-5	CHG Charging Indicator	Light YELLOW when battery is in charging mode.
3-6	WET Battery Type Indicator	Green LED light on when battery type selector is set on WET position
3-7	GEL Battery Type Indicator	Yellow LED light on when battery type selector is set on GEL position
4	LOAD Output Terminal Block	For connection to load
5	BATTERY Output Terminal Block	For connection to battery
6	AC Voltage Selector	Select AC input voltage to be 115V (100V~120VAC) or 230V (220~240VAC) Factory Default 230V
7	AC Socket	For separate AC power cord connection

● INSTALLATION:

Before plugging in the model to an AC outlet, please make sure that the proper input voltage is selected on the rear of the unit. Select 115V for 100/110/120 AC operation or 230V for 200/220/240 AC operation. The factory default setting is 230V.

Then, connect your device to the LOAD terminal and connect a lead acid battery to the BATTERY terminal, make sure the polarity of battery is correctly connected, select WET for wet battery, GEL for GEL or AGM battery.

You may connect a solar panel or wind turbine to the BATTERY terminal at the same time by connecting a solar panel or wind turbine controller to the battery terminals, please make sure it is as the same polarity as battery.

Now, plug in the power cord to AC outlet, turn the PWR switch to the “ON” position. Turn on your device now.

● OPERATION:

The PS works as a DC UPS (Uninterruptible Power Supply) or as a backup power supply system. When AC power is applied normally, the model offers a regulated 24V DC output at LOAD terminal for devices and a charging current output on BATTERY terminal for charging a lead acid battery at the same time. Once AC fails, the battery will replace the AC to power the model immediately without interruption. The LOAD terminal will remain at 24VDC output for a while till the battery voltage reduces to lower than 21.5V, the duration time depends on the volume of the battery and the size of the load. When AC returns, AC takes over the battery to power the load automatically, and start to charge the battery.

If you connect a solar panel or wind turbine to the BATTERY terminal at the same time, if AC failed, when the battery voltage lower than 21.5V, the LOAD output will turn off, but if the output voltage of the solar panel or wind turbine is higher than the battery voltage, the battery will be charged by the solar panel or wind turbine, when the battery voltage is back to 25.2V, the LOAD output will recover automatically.

The maximum load of the PS is around 300W, which means 8A maximum DC output on LOAD and 12A maximum charge current on BATTERY. If the load draws 8A output, then the charge current will be limited to around 4.5A, if there is no load, then charge current may be up to 12A maximum.

The output voltage on LOAD terminal is regulated at 24V±0.5V, with over voltage protection, over current protection and short circuit protection.

The charge voltage for wet battery is 28.8V, floating voltage is 26.4V.
The charge voltage for gel battery is 28.4V, floating voltage is 27.0V

When the charger is in charging mode and charge current is more than 2.5A, the CHG indicator light will be YELLOW, when charge current is lower than 2.2A, the charger turns to maintenance mode, the CHG light is off and CHD light is GREEN.

All LED indicators will turn off when AC fails except BATT and battery type indicator (WET or GEL).

If no battery is connected on BATTERY terminal, then there will be no output on the terminal.

The cooling fan on the model will operate when the unit is turned on. The speed of the fan varies depending on the temperature control circuit.

- **NOTICE:**

1. **DON'T CONNECT THE PS TO 12V BATTERY.** The PS was designed for 24V system. Connection to the wrong battery will damage the PS.

2. **THE AC SWITCH MUST BE TURNED OFF AT ANY TIME WHEN THE BATTERY IS CHANGED.**

3. Select the correct battery type on the panel, wrong selection will damage the battery or it will not fully charge the battery. Do not change the battery type selector when charging.

4. The model has a 6 amp AC input fuse inside of the unit. To replace the fuse you should remove the old fuse by opening the case and replace it with a new 6 amp fuse.

5. The cables for battery connection or device to the PS should be 16AWG min. Please keeping the connect points clean to avoid spark or electrical leakage.

6. Use the proper voltage solar panel or wind turbine for the connection, no voltage of over 36V.

7. When connecting a solar panel or wind turbine controller to the PS, please make sure of the correct polarity.

● PROTECTION DESCRPTION:

Battery Polarity Reverse Protection: when the battery polarity is reversed, the BATT indicator light will display RED and the BATTERY and LOAD terminals will terminate output. Battery reverse will not damage the model if the AC power is off. The AC switch must be turned off at any time when the battery is changed. If AC is on and the battery is disconnected, the PS polarity reverse protection is disabled, and if the polarity is reversed, the fuse of the PS will be burnt, sometimes causing a spark.

Battery Low Voltage protection: When the AC is OFF or has failed, if the battery voltage is lower than 21.5V±0.2V, the model will turn off the output on LOAD. When AC returns or the battery voltage returns to 25.2V±0.2V, then the output on LOAD will recover automatically.

Load Over Current Protection: the model will automatically shut down if the load is over 8A. when the load is reduced, the PS will auto recover.

Load Over Voltage Protection: when the LOAD output is over 30V, the PS will turn off.

Load Short Circuit Protection: output terminal short circuit will not damage the PS, it will be simply stop the output. When the short circuit status is removed, the LOAD will recover immediately.