

### High Power Battery Charge Controller

#### Features

- 210W Total Power
- Regulated 12VDC or 24VDC or 48VDC Output Voltage
- Seamless Switchover From AC to Battery Power when AC Power Fails.
- Load Control to Prevent Battery Overdischarge. Automatic Recovery.
- Smart Charge program for GEL/AGM or WET type batteries
- Wide temperature operation



#### Applications

- Wireless Base Stations, Cellular Base Stations
- Surveillance Systems
- Battery Backup Systems



#### Description

The **TP-BC** series of smart battery chargers provide up to 210W of total power. Part of the power is allocated to the regulated load output and remaining power is allocated to battery charging. The smart battery charger is compatible with GEL/AGM type sealed lead acid batteries and also WET type lead acid batteries (like car batteries).

The load output is regulated so that output voltage does not exceed 12.5VDC on the 12V model and 24.5VDC on the 24V model and 48.5VDC on the 48V model. Also the load output will turn off when the battery voltage is low to prevent over discharge of the batteries which can shorten the useable life of the batteries. Load output will turn back on automatically when batteries have sufficient charge. The TP-BC series provides seamless switchover from AC power to battery power so there is no interruption which could reset a user's electronics. The charger auto-recovers from a power failure so no user action is necessary.

The charger has various protections for short circuit, overvoltage protection, overcurrent and reverse battery. It operates over a wide temperature range making it suitable for industrial applications.

The battery charger will not work without a battery connected.

A solar panel and solar charge controller can be added to the system if supplemental power from solar is desired. A Wind Turbine can be added if wind power is available.

There are various LEDS on the front panel to see status-at-a-glance of the Load Output, Charging Condition and AC Power Condition.

#### LED Indicators

- LOAD** (Load Power is Turned On = Green)
- PWR** (AC Power On = Yellow)
- BATT** ( Battery is Connected = Green)
- CHD** ( Battery is Fully Charged = Green)
- CHG** ( Battery is Charging = Yellow)
- WET / GEL** – Switch is positioned to WET(Green) or GEL(Yellow)

## Specifications

|  | TP-BC12-300  | TP-BC24-300  | TP-BC48-300   |
|--|--|--|---|
| <b>Total Power Available (for Load and Battery charging)</b> | 210W   | 210W   | 210W  |
| <b>Nominal Battery Voltage</b>                               | 12VDC  | 24VDC  | 48VDC   |
| <b>Load Output Min Current</b>                               | 1A   | 1A   | 1A  |
| <b>Load Output Max Current</b>                               | 12A  | 8A   | 4A  |
| <b>Battery Charge Max Current</b>                            | 5A   | 7.5A*<br>* with zero load. If load current is 5A then battery charge current is 3.75A. | 3.62A*<br>*with zero load. If load current is 2.5A then battery charge current is 1.9A. |
| <b>Suggested Max Load</b>                                    | ~10A (120W)  | ~5A (120W)   | ~2.5A (120W)  |
| <b>Battery Charger Voltage</b>                               | WET Equalize = 14.6V, Float = 13.2V<br>GEL Equalize = 14.2V, Float = 13.5V | WET Equalize = 28.8V, Float = 26.4V<br>GEL Equalize = 28.4V, Float = 27V               | WET Equalize = 58V, Float = 53V<br>GEL Equalize = 56.8V, Float = 54V                    |
| <b>Overdischarge Protection</b>                              | 10.7V Load off / 12.6V Load on   | 21.5V Load off / 25.2V Load on   | 40V Load off / 51V Load on  |
| <b>Load Regulation</b>                                       | 5%   |  |   |
| <b>Line Regulation / Ripple</b>                              | 1%   |  |   |
| <b>Noise</b>   | 2%   |  |   |
| <b>Efficiency</b>  | 75% Minimum  |  |   |
| <b>Self Consumption</b>                                      | <5W  |  |   |
| <b>Load and Batt Connections</b>                             | Screw Wire Terminal, 10 AWG MAXIMUM  |  |   |
| <b>EMC Standards</b>   | FCC Class A , NE55022 Class A  |  |   |
| <b>Safety Standards</b>                                      | UL1950, CSA 22.2, TUV EN60950  |  |   |
| <b>AC Power Input (+-10%)</b>                                | Selector Switch 120VAC / 240VAC , 50/60Hz                                  |  |   |
| <b>AC Input Current</b>                                      | 3.5A @ 115VAC / 1.8A @ 240VAC  |  |   |
| <b>Fuse</b>  | 250V 6A Internal SloBlow (Littlefuse #021306.3)                            |  |   |
| <b>Operating Temperature</b>                                 | -20 to +60C (-4 to +140°F)   |  |   |
| <b>Operating Humidity (RH)</b>                               | Up to 90% (non condensing)   |  |   |
| <b>Cooling</b>   | Temperature Controlled Fan   |  |   |
| <b>Storage Temperature</b>                                   | -25 to +85°C (-13 to +185°F)   |  |   |
| <b>Storage Humidity</b>                                      | Up to 90% (non-condensing)   |  |   |
| <b>MTBF (Mean Time Between Failure)</b>                      | 81,940 Hours   |  |   |
| <b>Dimensions (LxWxH)</b>                                    | 250 x 185 x 55mm (9.8 x 7.3 x 2.2")  |  |   |
| <b>Weight</b>  | 2.4kg (5.2lb)  |  |   |
| <b>Warranty</b>  | 1 Year   |  |   |

## System Ordering:

**TP-BC12-300** 210W Smart Battery Charger with regulated 12VDC load output with US Power Cord\*

**TP-BC24-300** 210W Smart Battery Charger with regulated 24VDC load output with US Power Cord\*

**TP-BC48-300** 210W Smart Battery Charger with regulated 48VDC load output with US Power Cord\*

\*Add an "E" suffix for Euro power cord

For further information contact:

[Tyconpower.com](http://Tyconpower.com)

