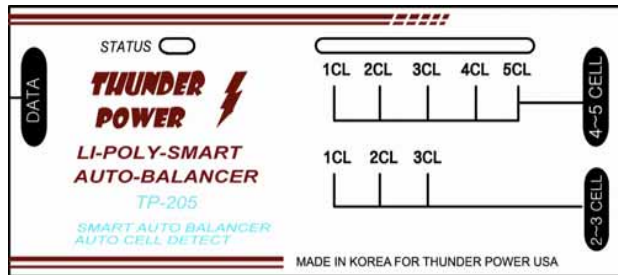


# TP-205V LITHIUM POLYMER BALANCER

## User's Guide

TP-205V advance balancing technology provides active balancing and safer charging for your Li-Poly batteries, it is important to read the manual and use the balancer correctly. Use this balancer for 2 to 5 cell pack **ONLY** (for 6 to 10 cell pack, please use TP-210V balancer)



### Features:

1. Auto cell detect for any 2 to 5 cells pack
2. Check & display battery conditions ( LEDs)
3. Low discharge warning (yellow LED flashing)
4. Over voltage warning (continuous beeps)
5. Full charge alert (yellow status "on" + multi-tone)
6. Red LEDs display each cell in bleeding/balancing
7. Provided data port to interface to TP -1010C charger or other options

### Auto Checking battery pack conditions:

1. Plug Li-poly Pack into the Balancer connector( 4 or 6 pins)  
(Allows only one connector plug-in either 4pin or 6pins)
2. Wait 4-5 sec until the balancer displays battery pack conditions as below:

**A: Imbalance under 0.03V:** yellow status LED "on", red LED(s) "on" for 5 seconds  
Proceed with normal charging  
If yellow status LED "flashes", pack average voltage is below 3.6V

**B: Imbalance 0.03 to 0.2V:** yellow status LED"off", red LED(s) flash for 5 seconds  
Charge at 0.3A to balance the pack or proceed carefully with 0.5C charge.  
If yellow status LED "flashes", pack average voltage is below 3.6V  
Proceed with normal charging

**C: Imbalance over 0.2V:** yellow status LED "off", red LED(s) flash for 60 seconds  
**Battery may require repair (Keep battery plug into the balancer for auto self balance, do not charge battery until bleeding/balancing stop)**  
If imbalance remain >0.2V, balancer continues beeping every minute for 10 seconds.

If yellow status LED begins flashing, pack average voltage has dropped to below 3.6V  
You may charge the battery at 0.3A and monitor charging for one hour, if the beeping stop but bleeding continue, unplug the charger and balancer to retest the pack with balancer.  
If beeping continue, you need professional help.

### Additional audio alert:

Cell voltage below 3.2V, audio beeps for 5 seconds

### <Charging battery pack>

1. After checking the battery condition, connect the battery power lead to the charger, select charge rate according to battery capacity and battery condition (see previous page)
2. \*\*Full charge alerts: Multi Tone beeps 6 times, repeats 2times for the first 30 seconds, "STATUS LED" solid on (you may unplug the battery for ready to use)
3. Over charge warning (Any cell voltage over 4.3V): Double beep continue and "STATUS LED" flash (**Stop charging immediately**)
4. Imbalance over 0.2V while charging: Cell LED(s) are flashing and beeping for 10sec, this will be repeated every minute until conditions change(reduce charge rate to 0.3A and carefully monitor charging condition)

### <Charging with pulse charger (Astro 109)>

1. Charge completion alerts may be activated during phase 3 (double beeps 6 times)
2. Verify the cell count setting, if correct, you may continue charging until charge finish

### <Auto self Balancing>

1. Plug balancer connector to balancer- do not charge battery
2. Balancer will bleed/balance if balancing is needed (LEDs flashing)

### <Precautions>

1. **Do not connect 4 pin and 6 pin connectors at a same time**
2. **Do not connect 2 balancers to a single pack**
3. Do not use in a vehicle
4. Do not use in direct sun light
5. Do not use when ambient temperature is extremely high
6. Use and store in a dry environment
7. Un-plug balancer from the Li-poly pack when not in use.

### <Specifications>

1. 0.1% reference voltage controlled by micro-computer chip
2. Balance cells: 2 to 5 cells in series
3. Bleeding current: Max 420mA
4. Deep discharge warning (3.6Vaverage)
5. Imbalance control voltage: +/- 0.005V
6. Under voltage warning: 3.2V +/- 0.01V
7. Over voltage warning: 4.3V
8. Full charge indicator: One or more cell 4.2V and all others within 0.01V
9. Size: 1.5" x 3.52" x 0.54"(38mm x 90mm x 14mm)
10. Auto self balance +/- 0.005V(cell voltage >4.1V/cell)
11. Auto self balance +/- 0.015V(cell voltage <4.1V/cell)

### Pack connection diagram

