EOS Sentry

Battery Pack Checker

User Guide and Manual

www.hyperion-world.com

HYPERION

English

1.0 INCLUDED IN THE BOX

- One EOS Sentry with built-in connector

2.0 GETTING STARTED USING THE EOS SENTRY

The Hyperion EOS Sentry is a clever device that can show you the condition of your battery packs.
It can be used with the most common battery types used for RC modeling, namely:

- LiIon (Lithium Ion)
- LiPo (Lithium Polymer)
- LiFe (Lithium Ferrite)
- NiCd (Nickel Cadmium)
- NiMH (Nickel Metal Hydrate)

For Lithium based types (LiPo, LiIon, and LiFe), it will work with pack sizes of 2S to 7S and for NiCd and NiMH packs it supports 4 to 7 cells.

There is no battery inside the EOS Sentry, it is powered from the battery pack you connect for testing.

When you connect a pack to either of the two connectors (only one at a time) the EOS Sentry will display the total voltage and an estimate in percentage and bar graph showing how full the pack is.

3.0 CONNECTING A BATTERY PACK

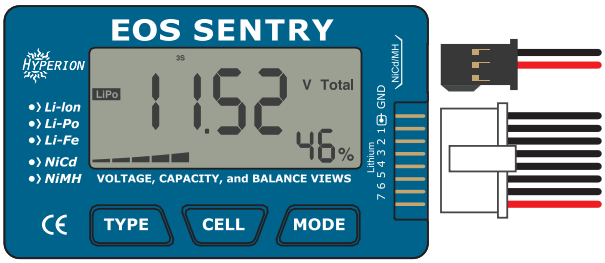
There are two connectors on the EOS Sentry where you can connect the pack you want to check. The connector for Lithium based packs is the 8 pin connector, that fits most balance connectors used for RC directly, though there are some exceptions, mentioned in section 6.0.

The negative lead on the balance connector should match the pin marked GND on the EOS Sentry (the pin closest to the 3 pin connector). The negative lead on the balance connector is usually the wire opposite the red one.

For NiCd and NiMH, there is a 3 pin connector (same as used on most servos) where only two pins are used.

The negative lead should match the pin farthest away from the 8 pin connector and the center pin is the positive lead.

In the next sections, we will explain the different modes of operation with either Lithium based packs or Nickel based ones.



Connecting a pack to the EOS Sentry. NiCd and NiMH packs are connected to the 3 pin connector, LiPo, LiIon and LiFe are connected to the 8 pin connector

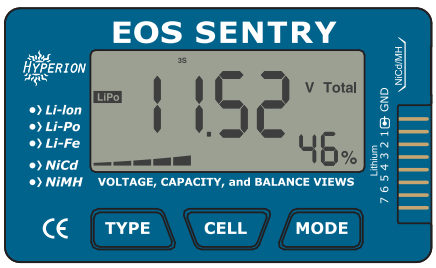
4.0 MODES OF OPERATION: Lithium based battery packs

When you connect a Lithium based pack (LiIon, LiPo or LiFe) to the 8 pin connector you will have a few options as to what the EOS Sentry shows.

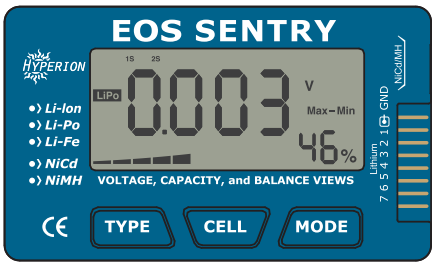
You change between the different information sets using the MODE button.

After power-up, the EOS Sentry shows the Total pack voltage and estimated remaining capacity in percent.

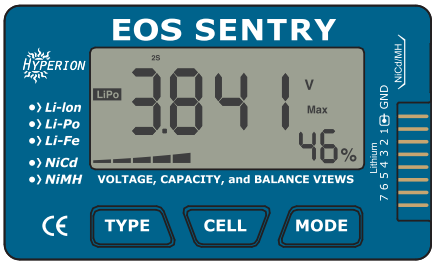
Before you move on, remember to select the correct pack type by clicking the TYPE button one or two times, until the correct chemistry is shown in the left side of the display.



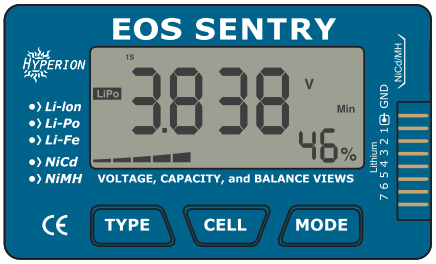
The voltage displayed will not change when you change the pack type, but the estimated capacity will, since the different chemistries have different nominal voltages.



Clicking the MODE button now will bring up the Cell Gap display, showing the voltage difference between the lowest and the highest cells, and shows the cell number of each at the top of the display.



Clicking the MODE button again shows the voltage of the Highest cell and it's number in the top.



Clicking the MODE button once more brings you to the voltage of the Lowest cell and the cell number in the top.

If you click the MODE button one last time, you will be taken back to the Totals again. The 4 screens in the loop are:

- Totals
- Maximum cell difference
- Highest cell
- Lowest cell

When you have the totals displayed, you can click the CELL button, which will start by showing the Voltage of cell 1, after another click, cell 2, and so on all the way to cell 7 and then back to the Totals.

5.0 MODES OF OPERATION: Nickel based battery packs

The possibilities for Nickel based types (NiCd and NiMH) are not as elaborate, as with the Lithium packs, here you can only see the Totals including the remaining capacity.

After connecting the pack to the 3 pin connector you must select the cell count using the CELL button, toggling between 4S, 5S, 6S and 7S (4.8V, 6.0V, 7.2V and 8.4V packs).

6.0 SPECIAL CASES

The 8 pin connector on the EOS Sentry is using 2.54mm spacing between the pins. This is a very common spacing for electronic connectors, but some battery manufacturers are using balance connectors with a different spacing, and in those cases, you will not be able to connect the pack directly to the EOS Sentry.

6.1 Connecting packs with Thunder Power/Flight Power balance connectors

This is for instance the case for packs using the Thunder Power/Flight Power connector, that has a smaller spacing and even two connectors for a single pack in some cases.

To connect this type of pack, you need an adapter. For Thunder Power/Flight Power packs, we recommend using HP-EOSLBA-7UFP-B adapter plate with an HP-EOSLBA-7UCBL cable to connect it to the EOS Sentry. This adapter and cable is the same as the one used with the Hyperion 7S EOS chargers. If you have one for the charger you can use that and vice versa.

6.2 Connecting split-packs

If you want to connect a split pack that has multiple balance connectors (usually one for each pack segment), you can measure the pack one part at a time. For Split packs 8S and higher, that is the only option. Hyperion 6S and 7S Split-packs do come with a "Y" adapter, however, which allow you to check all their cells via the EOS Sentry with single connection (the "series" wire set must also be connected in this case).

7.0 AUTOMATIC CELL BALANCING (Lithium based packs only)

From version 2 of the EOS Sentry, it's not only possible to see the status of your battery packs, it's also possible to ballance them, if one or more cells are a little higher than the others.

The balancing feature is automatic, and it only works with the Lithium based packs.

To see what's going on, use the MODE button and jump to the Cell Gap display (as described in section 4.0). When balancing, the LIFE icon in the left side will blink along with the cell numbers in the top of the display. The numbers that are blinking corresponds to the cells that are higher than the others and therefor needs to be pulled down a little.

8.0 BATTERY PACK CARE

For optimal performance and long life, there are a few things that you should remember when using LiPo batteries:

- Always follow the battery manufacturers guidelines regarding charging, discharging and storage.
- Be SURE that your LiPo packs never discharge more than 80% of rated capacity!
- Use a high quality balance charger when charging and preparing a pack for storage
- Be careful when handling the packs and make sure you don't drop them or in other ways make indentations.

More information at www.hyperion-world.com/batteries

9.0 HYPERION EOS CHARGERS

Hyperion carries a full line of high quality chargers which charge/discharge LiPo, LiIon, LiFe, NiCd, NiMH and Lead Acid batteries.

The EOS line starts with a 6S charger and goes all the way up to 14S chargers that can be networked to give a total of 28S balance charging at 1100W max.

All Hyperion EOS Chargers have built in cell balancers, to help you get top performance and life from your lithium battery packs.

10.0 MORE INFORMATION AND SUPPORT

For more information about Hyperion products or how to contact support, please visit

www.hyperion-world.com

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