Li-Polar

Li-Polar LS 3.2

Quick Guide High-End LiPo-Saver

CONTENT

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INTRODUCTION

Get rid of your stopwatch: Be independent from your style, wind and load or temperature, age, capacity and internal resistance of your battery packs!

The only saver on the market supporting load and idle voltage thresholds including different signals for warning and alarming. Based on the proven micro system kernel, the intelligent control unit for RC models monitors voltage level of individual cells like a LiPo saver does but offers even more! The revised third generation supports extra loud beepers, comfortable setup by PC tool and offers constant current drivers for external LEDs: Scale model lights maybe connected here. Of course, a lost model alarm is available as well as BEC voltage monitoring.

On-board key and LED support an easy setup in the field. Alternatively, adjustments can be done by using PC tool and well-known BEASTX USB2SYS interface. A powerful beeper will signal permanent undershot of first threshold: For small models, signaler can be mounted on Li-Polar LS 3.2 directly. Bigger models may use an extra powerful external one. An alarm will occur once a given load threshold is touched.

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WARNING

By using the Li-Polar LS the warnings listed here have to be considered:

- Li-Polar LS is no warning or supervising system in terms of safety equipment and must be used in models only!
- Li-Polar LS must not be connected to batteries continuously!
- Li-Polar LS must be protected against humidity, heat and impurities!
- Li-Polar LS must be checked for defects and proper function before use!
- Connectors must not be shortened or connected to power output of battery back!
- Given voltage range must not be exceeded!
- Li-Polar LS beeper must be used only!
- Keep beeper away from ear: Sound intensity may damage hearing!
- Do not look straight into LED: Light intensity may damage sight!
- BEC voltage monitoring and second voltage threshold are enabled by PC setup only!
- Delay of lost model alarm can be changed by PC tool only!
- External powerful beeper is to be used for bigger models!

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MOUNTING

Mount the Li-Polar LS 3.2 by glue pad next to battery pack.

The top beeper is pre-assembled considering polarity: Imprinted labeling marks plus terminal directing towards Li-Polar LS 3.2 key (included in Li-Polar LS shipment).
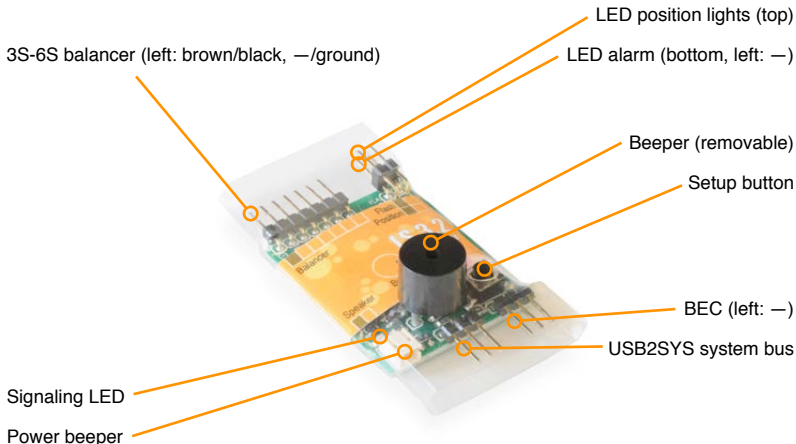
Optionally available: Powerful external Li-Polar beeper (about 12 g, 14 cm cabling) to be mounted by glue pad and connected according to polarity to speaker plug (insert carefully by using e.g. BEASTX adjustment tool, see figure).

Optionally available: Bright Li-Polar signaling LED (about 1 g, 20 cm cabling) to be mounted by using provided holder and connected to flash plug according to polarity (see figure).

CONTROLS

NOTE: Li-Polar LS BEC connector must not be attached to receiver/servo voltage in case optical flight controllers are used or BEC ground pin potential differs to the one from battery pack: Li-Polar LS 3.2 connects BEC and battery pack grounds.

LED position lights (top)

LED alarm (bottom, left: —)

3S-6S balancer (left: brown/black, —/ground)

Beeper (removable)

Setup button

BEC (left: —)

USB2SYS system bus

Signaling LED

Power beeper

STARTUP

Li-Polar LS 3.2 factory preset is a threshold of 3.3 V. Depending on used battery pack, cell age and flight style it is recommended to adapt this value accordingly.

Startup:

- Optional: Connect top beeper and/or external beeper according to polarity (see figures)
- Optional: Connection of LEDs according to polarity (alarm and/or position lights, see figures)
- In case enabled by PC tool: Connect Li-Polar LS 3.2 to BEC supply
- Attach Li-Polar LS 3.2 to balancer connector of battery pack
- Wait for monitoring sound (in case beeper connected) and signaling: Start off!

CHECK SETTING

NOTE: Li-Polar LS 3.2 does not support a setup check by key and LED in case PC tool was used: Pressing setup key will result in a fast flash/signal sequence notifying that re-programming by setup key is possible only.

Check-up steps:

- Attach Li-Polar LS 3.2 to balancer connector of battery pack
- Monitoring sound (in case beeper connected) and signaling takes place
- Press Li-Polar LS 3.2 key shortly
- Confirmation sound (in case beeper connected) and signaling takes place
- Number of signals x corresponds to threshold voltage position after decimal point 3.x V per cell (Example: 2 short signals reflect a threshold value of 3.2 volts)
- Wait for monitoring sound (in case beeper connected) and signaling

CHANGE PROGRAMMING

NOTE: Programming Li-Polar LS 3.2 by using key will reset all settings done by PC tool (second voltage threshold and BEC monitoring are disabled).

Setup steps:

- Keep key on Li-Polar LS 3.2 pressed
- Connect Li-Polar LS 3.2 to balancer connector of battery pack
- Confirmation sound (in case beeper connected) and signaling takes place
- Keep Li-Polar LS 3.2 key pressed still as long as favored threshold voltage position after decimal point 3.x V is signaled
- Release key on Li-Polar LS 3.2
- Confirmation sound (in case beeper connected) and signaling takes place
- Wait for monitoring sound (in case beeper connected) and signaling: Start off!

DETAILED SETUP USING PC TOOL

BEC voltage monitoring including different values for upper warning thresholds (idle voltage) and lower alarming threshold (load voltage) with different signal sequences can be enabled by PC tool only.

The PC software Li-Polar PC is available for download at: www.li-polar.com. After installation, the USB2SYS driver setup has to be triggered manually (Li-Polar program group).

Idle cell voltage threshold:

3,30 V

Warning if battery never above idle threshold for some time
(Different from load threshold in PC SW only; Granularity: 0.03 V)

Load cell voltage threshold:

3,30 V

Alarm if battery once below load threshold
(Granularity: 0.03 V)

BEC voltage threshold:

3,30 V

Alarm if BEC supply once below load threshold
(Enabled if saved by PC SW only; Granularity: 0.03 V)

Lost model alarm timer:

30 minutes

Alarm if operation time above threshold

Serial port connected to bus: COM3

Bus address of module PC: 20 LS: 10

Scan Load Save Exit

The following steps allow you to program the Li-Polar LS 3.2:

- Connect USB2SYS interface to free PC USB port
- During first connection: Wait for completion of USB driver installation from Silicon Labs
- Connect Li-Polar LS 3.2 to balancer of battery pack
- Wait for monitoring sound (in case beeper connected) and signaling
- Connect Li-Polar LS 3.2 by patch cable to USB2SYS interface
- Start PC tool Li-Polar PC
- During first start: Chose language and accept user terms
- During first start: Ignore communication error (caused by not selected serial connection) and press *OK* button
- Chose correct serial port
- Press load key in Li-Polar PC
- Check/change settings
- Press save key in Li-Polar PC

DECLARATION OF CONFORMITY

It is hereby confirmed that Li-Polar LS complies to given norms. EAR WEEE-REG. Nr.: DE 72549415.

SPECIFICATIONS

Latest news are available on: www.li-polar.com. Specifications:

- 3S to 6S LiPo/LiFePO
- Single cell monitoring (2.4 to 4.5 V per cell)
- BEC monitoring enabled by PC tool (up to 9 V)
- Optional mounted or powerful external beeper (85 dB or 105 dB)
- Alarming by 1-5 LEDs (automatic voltage adjustment at 20 mA)
- Position lights up to 8 LEDs (automatic voltage adjustment at 20 mA)
- Threshold setup in steps by on-board key (3.0 to 3.6 V per cell)
- Load and idle thresholds fine adjustment by PC tool (up to 4.50 V per cell)
- Lost model alarm (delay adjustment by PC tool)
- Size about 32x56 mm
- Weight about 8 grams (without beeper)

DISCLAIMER AND COPYRIGHTS

EXTENSIONS

Li-Polar LS 3.2 (order number LPAA300008) must be used with original parts only. In addition to the free PC tool the following options are available:

USB2SYS interface (order number BXA76007)

External power beeper (order number LPAA300016)

External bright signal LED (order number LPAA300017)