

# R/C Reporter-E™

## Multi-Function System Monitor

### External Voltage Version

The *R/C Reporter-E* differs from the standard *R/C Reporter* in its ability to make external voltage measurements. This is particularly useful for electrically-powered models in that it allows monitoring of the motor battery (the standard *R/C Reporter* measures the receiver battery). To achieve this external voltage capability, a thin input wire must be soldered to the voltage source.



acoustic characteristics of your particular installation can influence the apparent volume of the sound in surprising ways. For example, pointing the speaker toward a hard surface (as close as ½ inch from the surface) can sometimes result in louder output.

### INSTALLATION

- Connect the red voltmeter wire to your Electronic Speed Control's (ESC) positive (+) battery wire. See the accompanying instruction sheet for diagrams and details on making this connection.
- Mount the device to the inside floor or side of your aircraft's fuselage using double-sided mounting tape or Velcro®. Alternatively, drill a 12mm hole in the fuselage and insert the device so that the top of the black speaker is flush with the outside surface.
- You might want to experiment with different locations before permanently installing the unit. The
- Plug the connector into any unused channel (like the retract gear, flap, or AUX channel) on your receiver. If you don't have a free channel, use a Y-harness to share a channel with a servo. The rudder channel is a good choice, as are the ailerons or elevator channels. The throttle channel can be used, but is less desirable.

#### Connector Note:

The *R/C Reporter-E* is supplied with a "universal" connector. It will work with JR, Hitec, Futaba, Airtronics-Z, and most other brands of receivers.

Futaba users: The keying tab is not present. It is possible to plug the connector in backwards, but this will not cause any damage. Simply reverse the connector if the unit does not operate.

#### WARRANTY

We want you to be happy with your purchase. If you are not satisfied with any product purchased directly from us, return it within 30 days for a full refund of your purchase price. We also provide a one-year replacement warranty on any device that stops working properly - regardless of cause (even crash damage).

Now Available!

The ultimate accessory for your *R/C Reporter-E*:

### Computer Interface

Customize your *R/C Reporter-E* from your Windows® Computer

Modify over 20 parameters including:

- Beep Frequency & Duration
- Turn-On Position
- Low-Battery Warning Threshold
- Report Speed & Activation

Change the Horning Melody

Choose from over a dozen supplied sample tunes, or download an RTTTL ringtone file from the web. Give your plane its own theme song!

[www.WingedShadow.com](http://www.WingedShadow.com)

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Multi-Function System Monitor

#### SPECIFICATIONS

- Works with 4-cell (4.8V), 5-cell (6V), and BEC (5V) systems
- External Voltage: 70.0V Max
- Measurement: 0.1V resolution, +1.0% + 1 count accuracy
- Weight: 6 grams
- Dimensions: 0.75 X 1.00 X 0.50 inches
- Supply Current: 2.5mA idling, 25mA beeping (typ. @ 5V)
- Sound Pressure Level: 85db min, 92db typ, (10 cm) @ ~2300Hz
- Programmable (with optional Computer Interface). Modify over 20 device settings including melody.

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### R/C Reporter-E™

Multi-Function System Monitor

#### Special E-Flight Version

- Voltmeter - with External Battery Connection
- Lost Plane Locator
- Glitch Counter
- Minimum Voltage Capture

## OPERATION

**Power Up** – When you turn on the receiver the *R/C Reporter-E* will beep twice\* to let you know it is on.

**Play the Melody\*** – Control the *R/C Reporter-E* by moving the transmitter stick (or switch) associated with the channel that the device is plugged into. Move the stick beyond 70%\* of travel to turn the feature ON. After a 2½ second\* delay, the tune will play. It will play over and over until the control is returned to the OFF position.

**Lost Signal Alert** – If the transmitter signal is not detected for 2 seconds\*, the melody will play. On a FM or AM (PPM) system, this means that turning off your transmitter will force the melody to play (and remind you to turn off your receiver).

### PCM and Spread-Spectrum (SS) Systems

On PCM and SS radios, the receiver continues to send pulses to the servos even when the transmitter is off. However, you can still have the *R/C Reporter-E* play its tune when you switch off the transmitter by using your radio's fail-safe feature:

1. Most fail-safe systems will send the last good position to the servos if the radio signal is lost. Activate the melody by moving the *R/C Reporter-E* channel stick or switch to the ON position before turning off the transmitter. The tune will continue to play.
2. If your radio allows you to set fixed fail-safe servo positions, set the *R/C Reporter-E* channel to 100% ON. This will force the tune to play when the transmitter signal is lost.

## REPORTS

Using commands from your transmitter, you can activate the voltage, glitch, and minimum voltage reports. In each case, a unique report prefix is followed by a series of beeps that provide detailed information.

**Volt Meter** – To activate the voltage report, use the transmitter stick or switch (not the power switch) to input two\* ON-OFF sequences within 2½ seconds\* (ON-OFF-ON-OFF). The *R/C Reporter-E* will respond with the Morse Code letter “V” (for volts) – “dit-dit-dit-dah”. It will then output a three-digit value using beeps (with a pause between each digit). Count the beeps to decode the value. For example:

**beep beep-beep-beep-beep-beep beep-beep-beep**

... represents 15.3V. A decimal point is assumed between the second and third digit. Digits 1 through 9 are represented by 1 to 9 beeps. Zero is presented as a two-tone\* sound similar to the voice sound for the word “ZE-ro”. Since three digits are always reported, voltages less than 10.0V will always have a zero as the first digit (e.g. 7.8V = 07.8V). External voltages as high as 70 Volts can be measured.

**Glitch Count** – To output the glitch count, input three\* ON-OFF sequences within 2½ seconds\* (ON-OFF-ON-OFF-ON-OFF). The *R/C Reporter-E* will respond with the Morse Code letter “G” (for glitch) – “dah-dah-dit”. It will then output a three-digit value using beeps, similar to the voltage output. Zero to 999 glitches will be reported. (More than 999 glitches will report as 999.)

### What's A Glitch?

Approximately 50 times per second your receiver sends a pulse to each servo. Missing pulses can indicate an interruption of the radio signal (due to interference, noise, antenna placement, or other cause). The *R/C Reporter* counts each time there is an interruption in this regular string of pulses. These missing pulses are commonly called “glitches”.

After a typical R/C airplane flight, a count less than 20 is normal. Counts above 100 (or counts much larger than you have had in the past) indicate a potential control problem. Note: Most PCM and SS receivers self-generate servo pulses even when the transmitter signal is lost. These systems should always report glitch counts near zero. Higher counts indicate a serious problem with the receiver. The glitch counter is reset to zero when receiver power is switched off.

**Minimum Voltage Capture** – Activate the minimum voltage report by inputting four\* ON-OFF sequences within the 2½ second\* command window. The *R/C Reporter-E* will respond with the Morse Code letter “L” (for Low) – “dit-dah-dit-dit” (We didn't use “M”, dah-dah, since it might be confused with the digit 2.) It will then output a three-digit value as described in the volt meter section. This value represents the lowest voltage encountered since turning on the receiver. A 100mS\* capture time is used to filter out noise spikes. Capturing the minimum voltage during flight provides insight into the battery that cannot be achieved through on-the-ground measurements.

**Low Voltage Alert\* (Option)** – Using the optional Computer Interface (available separately) a low-voltage warning threshold can be set. Any time the battery voltage falls below this threshold the *R/C Reporter-E* will repeatedly emit an alert sequence of three\* beeps. The threshold range is 0.0 to 70.0V. By default this feature is turned off.

Quick Reference		
Report	ON-OFF Pulses*	Prefix
Volt Meter	2	'V' (dit-dit-dit-dah) •••–
Glitch Count	3	'G' (dah-dah-dit) ––•
Minimum Voltage	4	'L' (dit-dah-dit-dit) •–••
Play Melody	ON	[Keep control channel ON or turn transmitter OFF]

\* Note: All items marked with an asterisk are customizable using the optional Computer Interface (info on back page). Default values are shown.

# R/C Reporter-E

## Wiring Addendum

### Wiring the R/C Reporter-E

The R/C Reporter-E has a separate input wire for its voltmeter. This configuration allows for voltage measurements of the motor battery in electrically-powered models. Connecting the wire requires soldering. If you are unfamiliar with soldering techniques please seek help. Perhaps a fellow modeler or someone at your local hobby shop can lend a hand.

It is advisable to attach the red input wire to the electronic speed control (ESC) battery input wiring rather than the battery itself. This allows for removal and replacement of the battery pack. Figures 1-3 illustrate alternative methods for making this connection. Choose the connection method that is best for your particular model.

#### Method 1

In figure 1, the red wire from the R/C Reporter-E is soldered to the positive connector pin of the ESC battery connector. This is often the most convenient method for larger, high-current connectors -- especially if the connectors are user installed.

#### Method 2

Figure 2 shows a second method. For simplicity, only the area highlighted by the dashed circle of figure 1 is replicated in this view. Here the red wire is spliced into the ESC positive battery wire. The ESC wire may be cut and soldered together with the red wire. Or, a segment of insulation can be removed from the ESC lead (using a razor blade) and the red wire soldered to the exposed conductor. In either case, cover the exposed splice with heat-shrink tubing or electrical tape to prevent shorting the battery.

- Disconnect the motor battery while making connections.
- Insulate any exposed wire with heat-shrink tubing or electrical tape. Make sure that there is no possibility of a conductor shorting against any other conductor.
- Perform a ground range check of your radio after completing installation.

#### Work Safely!

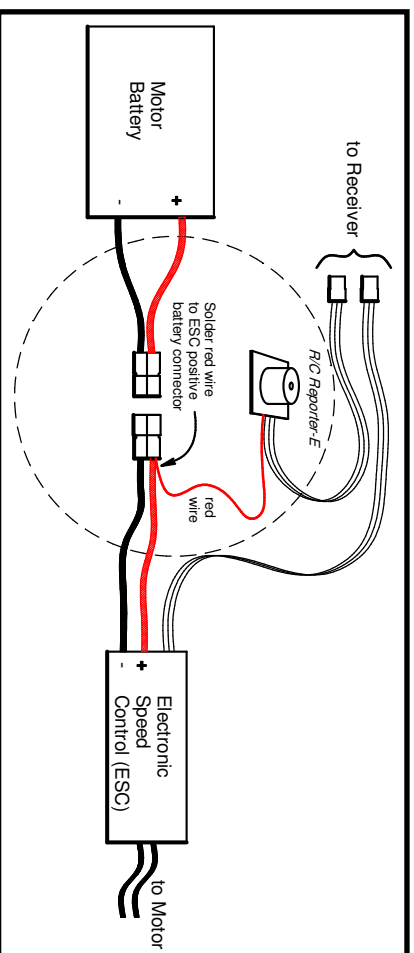


Figure 1

#### Method 3

In figure 3, the red wire is soldered to an additional mating pair of connectors. This method has the advantage of easy plug-in installation and removal. However, since battery power flows through an additional set of contacts, power losses can occur (especially with lower-performance connectors).

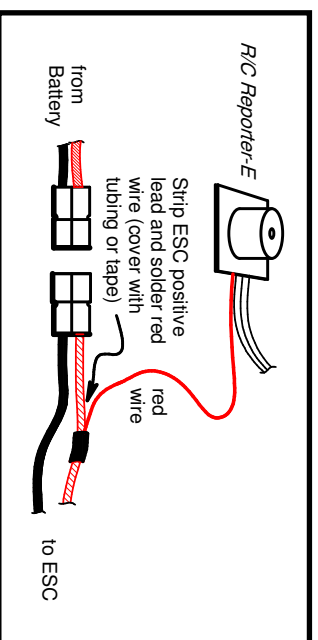


Figure 2

If your model has a fuse or a switch in line with the ESC positive supply line, connect the R/C Reporter-E on the ESC side of the fuse or switch.

Once the red wire is connected, refer back to the main instruction sheet for information on mounting the device and plugging it into your receiver.

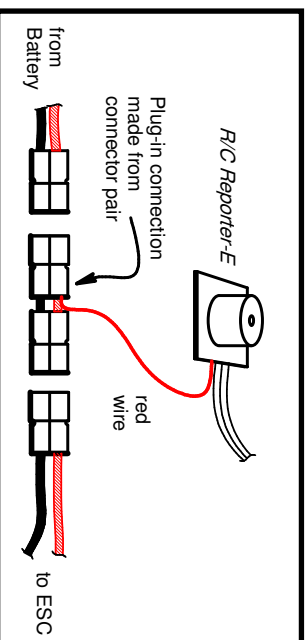


Figure 3