

Thanks for purchasing this Hansen Hobbies **Micro Electronic Receiver Switch (MERS)**! The **MERS** is designed to allow **ON/OFF** control of onboard devices like lights, glow plug drivers, motors, smoke systems, rocket igniters, solenoids, relays, and whatever else you can think up. The **MERS** is not proportional, which means it is either fully-**ON** or fully-**OFF**. The **MERS** performs the operation equivalent to a servo moving a mechanical switch back and forth, but in a much smaller package, and with no moving parts.

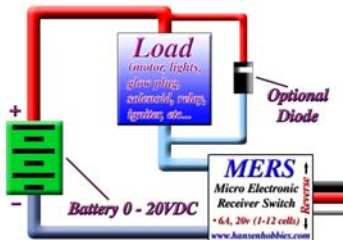
Using the **MERS**, you can safely power any load with a DC supply ranging up to **20V** at up to **6A** (up to **10A** for short periods <20s). The power source can be any battery, and can be the same battery being used to power your receiver (for high power devices we recommend against using your receiver battery). The **MERS**, unlike most speed controls, does not have a **Battery Eliminating Circuit (BEC)**, and should only be used with receivers powered by **4-cell** receiver packs (a **5-cell** pack could damage the **MERS**).

Operation: All modern RC systems send **1-2ms** pulses at **50Hz** to the servos to send positional data. The **MERS** switches from **OFF** to **ON** at **1.5ms** (mid-stick), so that it is always **OFF** below **1.5ms**, and always **ON** above **1.5ms**. The **MERS** includes a reverse switch to flip the **ON/OFF** zones (so that it is **ON** below **1.5ms** and always **OFF** above **1.5ms**). The **MERS** can be used on any receiver channel, but is best placed on the gear channel or any other auxiliary channel that allows you to flip a 2-position switch on your radio to control the **MERS**. Adjust the end-points of this channel to their full minimum and maximum positions.

Safety Features: The small red LED on the **MERS** lights up when the **MERS** turns the output on. The **MERS** has several safety features and will automatically turn the output off if any of the following occur:

- **MERS** stops receiving a signal from the receiver (occurs if there is any radio interference or if you turn off your transmitter).
- **MERS** is no longer getting power from the receiver (occurs if you turn off your receiver power or unplug the **MERS**).
- **MERS** receives bad pulses from the receiver (anything shorter than **.5ms** or longer than **2.5ms**).

Also note that the **MERS** will not turn the output on unless it first sees an **OFF** condition from the transmitter. This will prevent your device from turning on in case you accidentally turn on your radio with the switch in the **ON** position. If your application requires more security (like an igniter for a booster rocket), then a mechanical switch can be added in series with your load. You can then test the **MERS** for correct operation before flight by observing its LED, and then flip the mechanical switch right before takeoff. You can also put two or more **MERS**'s in series so that both must be switched on to allow current flow (using two separate channels you would have to flip two switches on your transmitter).



Hook up (see diagram to left): The **MERS** has two output wires (dark blue and light blue). Connect the negative terminal of your battery to the dark blue output wire. The positive terminal of your battery needs to be connected to your load. If your device needs to have special orientation make sure its positive terminal connects to the positive terminal of the battery. Lastly, connect the light blue output wire to the remaining terminal on your load. In this circuit, the **MERS** acts exactly like a mechanical switch; connecting the light and dark blue wires to complete the circuit and allow current to flow through the load.

Note: if your device is a motor, relay, solenoid, electromagnet, etc... a diode (included) should be connected across its terminals as shown in the connection diagram (pay special attention to its orientation). This will give protection from the reverse high-voltage spikes associated with inductive devices.

