

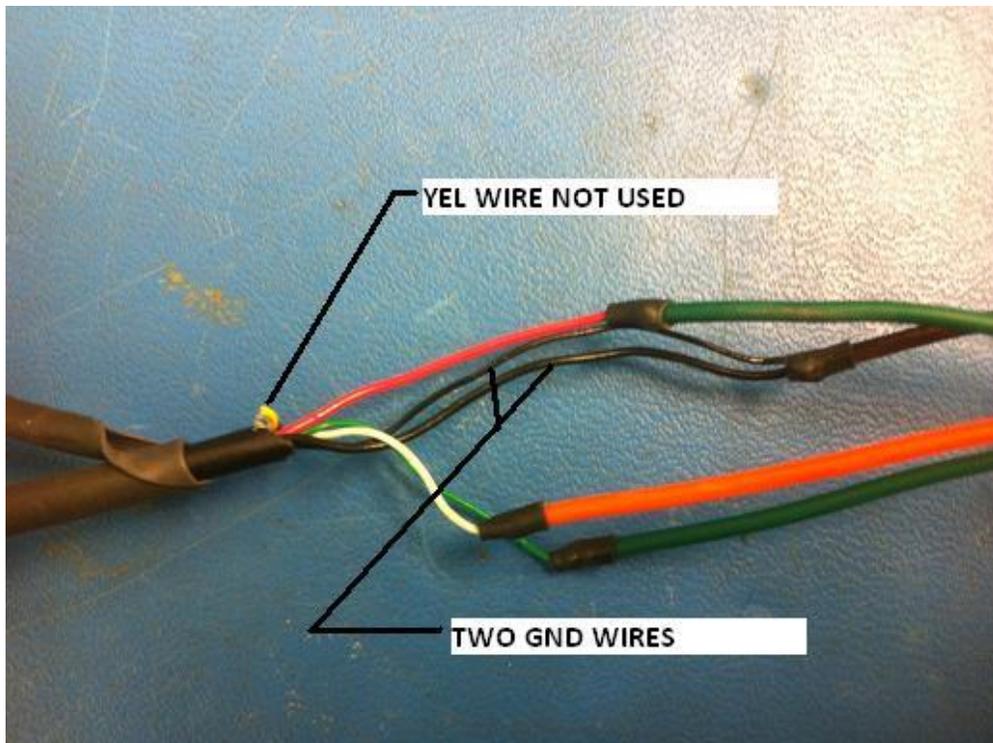
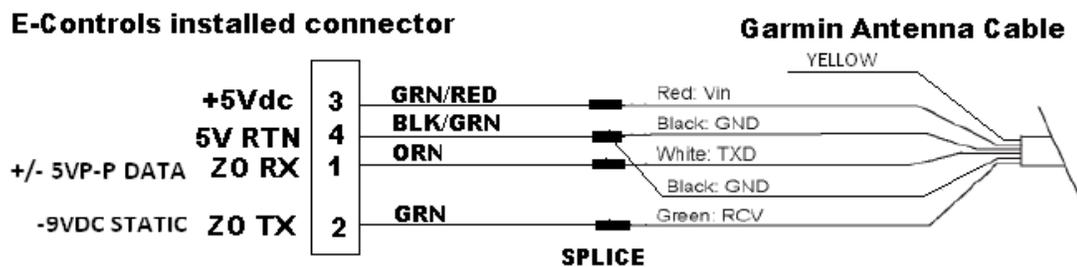
## Zero Off Round Antenna Troubleshooting

If the Zero Off reports GPS1 or GPS2 Fail in the diagnostic screen that indicates the ZO is not communicating with the antennas. Do not confuse this with No GPS which relates to the antennas inability to receive satellite signals.

Zero Off 3-Event systems utilize two round style Garmin antennas that plug into the main harness connectors C4 and C6. Only one antenna is required for the system to work. The Zero Off unit supplies 5Vdc power to the antennas and they transmit GPS data back to the ZO over RS232 serial data lines.

The round Garmin antennas are terminated with a Deutsch 4 pin connector with the pinout shown below. There is a wire splice @6" away from the connector under the heat shrink.

### GARMIN ANTENNA TO E-CONTROLS CONNECTOR WIRING



## **Troubleshooting**

This list will assist in determining if the issue is with the antenna, ZO display, or wiring harness.

Reference the harness diagram located on the ZeroGPS web page:

<https://www.zerogps.com/sites/default/files/pdfs/Zero-Off-Wiring-Harness-Schematic-Diagram.pdf>

- 1) Review the list of error codes in the ZO diagnostic display, see page 59 of the owners manual.
- 2) Verify all the pins are fully seated in the connector.
- 3) Unplug both antennas and verify there is 5Vdc power between pin 3 and pin 4 coming from the ZO on connectors C4 and C6. If there is no voltage then the Zero Off has failed. There should also be a VE5 failure message in the diagnostic screen.
- 4) Verify Antenna is broadcasting data on pin 1 using a multimeter. Set the multimeter to Vac and measure voltage between pin 1(data) and pin 4(gnd). Voltage will vary but should be around 2.5Vac- 5Vac. When using an auto-ranging meter you must manually set the range to about 20V.
- 5) Verify wiring in the ZO harness has continuity from C4 and C6 back to the main connector C1.
- 6) If power and data signals are correct the antenna most likely has failed.
- 7) The antenna cable wire splices may be checked by removing the heat shrink and verifying each wire is properly soldered.