



MARINE IMAGING SYSTEMS

## MARINE VSO FIELD SERVICE BULLETIN

<b>FSB Number</b>	1319340158
<b>FSB Title</b>	VSO Buoy Inverter Grounding
<b>Date</b>	June 21, 2016
<b>Originator</b>	Ross Dessauer
<b>Product Group</b>	VSO
<b>Product Name</b>	VSO Recording Buoy
<b>Product P/N</b>	VS9000-9011 VSO II BUOY VS8000-1494 RDI INVERTER VS8000-2578 NOVA INVERTER
<b>Distribution</b>	Ocean Geo

**Synopsis:**

This FSB applies to the unreliability of the VSO Buoy RDI Inverter, and also applies to the new VSO Buoy Nova Inverter.

**Affects:**

This problem affects all VSO Buoy Inverters in the field, especially the CE+T RDI Inverter (VS8000-1494 RDI Inverter w/ Cables). It may also affect the new Nova Inverter (VS8000-2578), so it is included in the scope of this TA.

**Problems/Symptoms:**

The VSO Buoy RDI Inverter has been a common failure point of the VSO Buoy. Inverter failure results in costly downtime and is often a hard failure that requires shipping the inverter to the manufacturer (CE+T) for repair. The most common hard failure which requires repair by CE+T is reported as a “charge failed” error on the front panel display. Fault analysis at CE+T has pinpointed IGBT failure, related to the input/output isolation of the inverter.

**Action Required:**

All VSO Buoy Inverters (RDI and Nova) shall have the DC Input (“BATT-”) grounded to the Seawater Ground Plate (VS8000-1495) terminal block at the rear of the Instrument Rack. This change shall be done whenever the rack is removed from the container for service, whether replacing the inverter or not.

**Tools Required:**

This list assumes the Instrument Rack has been removed from the container.

- Ferrule Crimping Tool
- Ring Terminal Crimping Tool

- Wire Strippers (16-20 AWG)
- Phillips #2 screwdriver
- Small cutters

**Parts Required:**

Per Buoy Inverter:  
1 EA VS8000-1505-4 ASSY CABLE GROUND INVERTER BATT-

OR the following materials to make the above ground cable assy.:

- 4 FT 16-20 AWG 600V Wire (preferably Green in color)
- 1 EA Ring Terminal #10 (or M5) for above wire (16-20 AWG)
- 1 EA Ferrule for above wire (16-20 AWG)

Qty. as needed: small cable (zip) ties

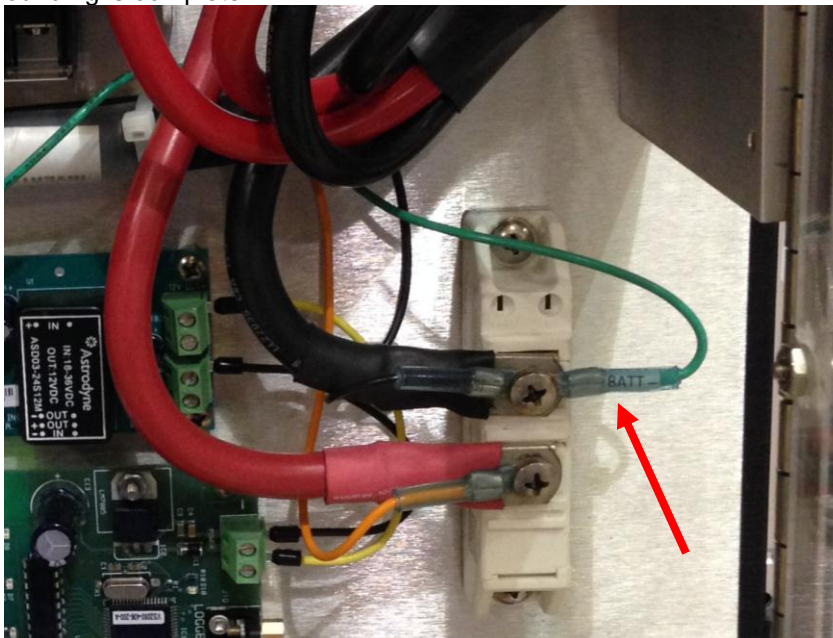
**Safety Issues:**

Ensure Instrument Rack is disconnected from all power sources.  
Follow standard safety precautions for work on the back deck.  
Follow recommended ESD safety precautions when working on VSO Buoy Electronics.

**Procedure:**

With the Instrument Rack removed from the container and in a clean working environment, perform the following steps.

1. Either locate the VS8000-1505-4 cable or make it by crimping a ferrule on one end of a 4FT length of Green (pref.) wire and a #10 (or M5) ring terminal on the other end.
2. Referring to the picture below, remove the top screw on the diode at the right side of the PDU.
3. Install the ring terminal underneath the screw with the existing wiring and securely tighten.
4. Route the cable across the PDU and to the rear of the rack. Tie down to existing wiring and/or cable tie mounts on the PDU using cable ties and cutters as needed.
5. Route the cable up the right rear of the rack and securely tighten to the terminal block on the Seawater Ground Plate Assy. at the top of the rack (right side). Secure with cable ties as needed.
6. The Inverter Grounding is complete.



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**Q. C. Process:**

Using a digital multimeter (DMM), check for continuity (less than 2 Ohms) from the BLACK "BATT-" Negative DC Input at the bottom of the fuse block on the PDU to the ground block on the Seawater Ground Plate at the rear of the Instrument Rack.

Perform standard test procedure for VSO Buoy prior to installing in the Instrument Container.

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**References:**

VSO TA 1319580060 VSO Buoy Nova Inverter Upgrade  
VS0100-1727 SCHEMATIC INSTRUMENT RACK WIRING CU JUMPER  
VS0100-1701 SCHEMATIC POWER DISTRIBUTION UNIT (PDU)

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United States - New Orleans, LA  
ION MISD  
Fax 504.734.8627  
Phone 504.733.6061

Website  
[www.iongeo.com](http://www.iongeo.com)

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