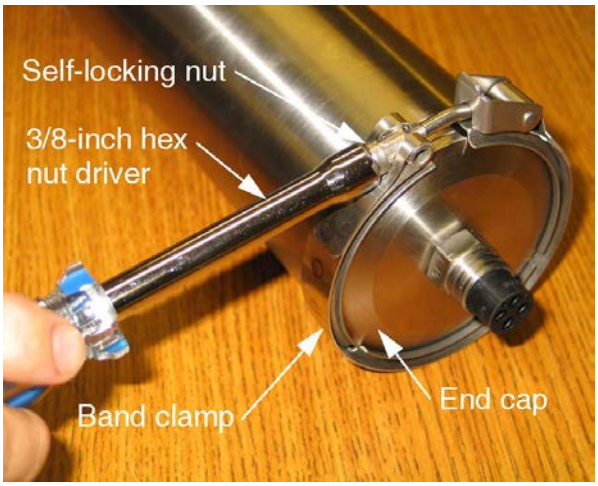
MEASURING THE CTD-N CPU BATTERY VOLTAGE



Loosening the Self-Locking Nut on the Band Clamp

Measuring the CPU coin-cell battery voltage requires removal and reinstallation of the end cap and the instrument housing.

To measure the CPU battery voltage:

1. Using a 3/8-inch hex nut driver, loosen the self-locking nut on the band clamp that secures the end cap as shown.

As with all high pressure instrumentation, observe caution while using the CTD-N or after exposing it to high pressures.

Releasing the Band Clamp Catch

2. Release the band clamp catch as shown, and then remove the band clamp by spreading the band slightly and sliding it over the end cap.

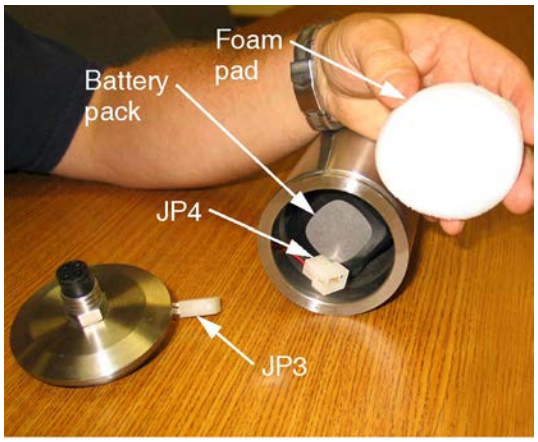
Teledyne RD Instruments
14020 Stowe Drive
Poway, CA 92064 USA
Tel: (858) 842-2600
Fax: (858) 842-2822
http://www.teledynemarine.com/rdi/

Information included herein is controlled by the Export Administration Regulations (EAR) and may require an export license, license exception or other approval from the appropriate U.S. Government agency before being exported from the United States or provided to any foreign person. Diversion contrary to U.S. law is prohibited.

Removing the End Cap

3. Carefully remove the end cap by grasping the housing in one hand and the end cap connector in the other as shown and pulling straight out. It may be necessary to twist the end cap slightly while pulling. If necessary, a flat plastic, nonmetallic tool can be used to pry the end cap from the housing.

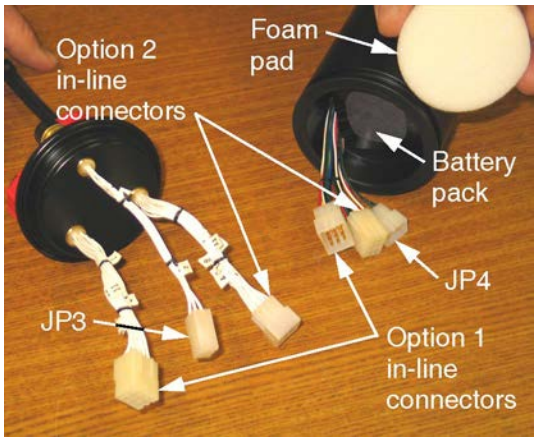
Do not use a sharp metallic object, such as a screwdriver or putty knife, to pry open the end cap as damage to the end cap, housing or O-ring could occur.



Disconnecting the JP3 and JP4 In-Line Connectors

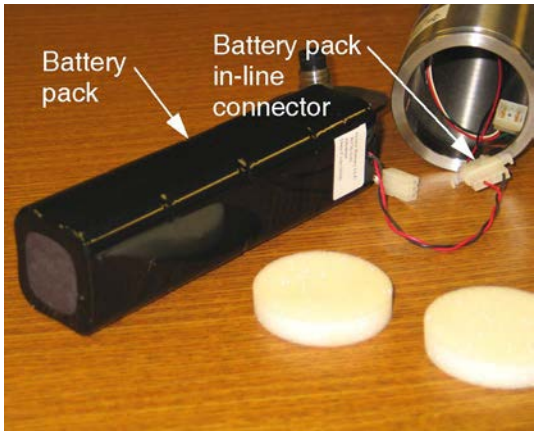
4. Disconnect the in-line connectors JP3 and JP4 and remove the foam pad as shown, exposing the battery pack.

If the Option 1 and Option 2 connectors are installed, refer instead to the next photo.



Disconnecting the JP3 and JP4 In-Line Connectors, with Options Connectors

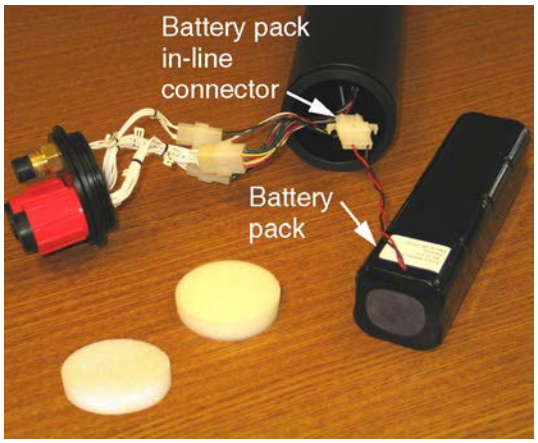
The Option 1 and Option 2 in-line connectors are shown disconnected for identification purposes.



Removing the Battery

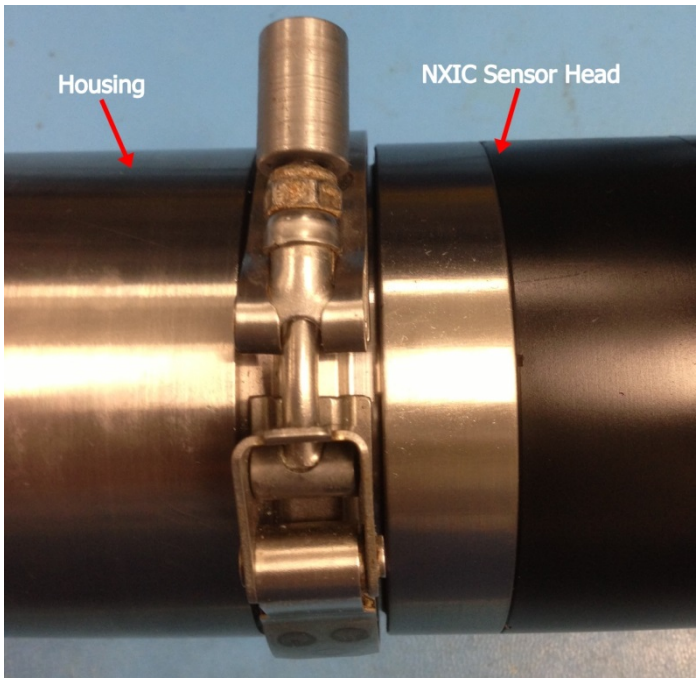
5. Remove the battery pack and another foam pad as shown.

6. Disconnect the battery pack in-line connector.



Removing the Battery, with Options Connectors

If the Option 1 and Option 2 connectors are installed, refer instead to this photo. Disconnect the three end-cap connectors.



Remove the Housing Band Clamp

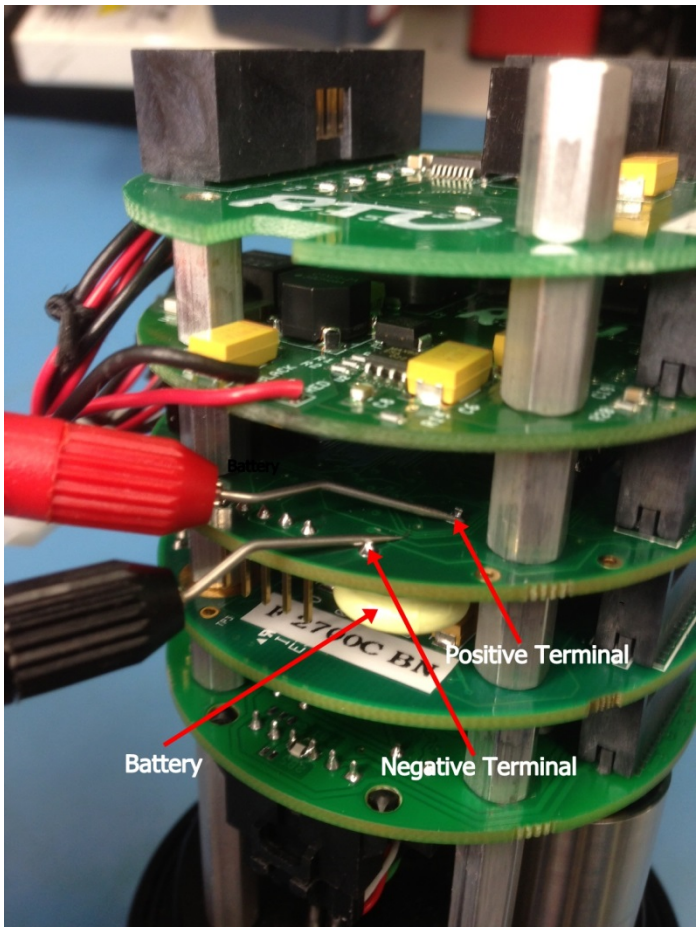
7. Disconnect the lower housing band clamp using the same procedure as step 1 above.

8. Carefully remove the housing by grasping the housing in one hand and the sensor head in the other and pull straight out. It may be necessary to twist the housing slightly while pulling. If necessary, a flat plastic, nonmetallic tool can be used to pry the end cap from the housing. Carefully slide the housing away from the sensor head assembly being careful to not damage the O-ring seals.

Do not use a sharp metallic object, such as a screwdriver or putty knife, to pry open the end cap as damage to the sensor head, housing or O-ring could occur.

Teledyne RD Instruments
14020 Stowe Drive
Poway, CA 92064 USA
Tel: (858) 842-2600
Fax: (858) 842-2822
http://www.teledynemarine.com/rdi/

EAR-Controlled Technology Subject to Restrictions Contained on the Cover Page.

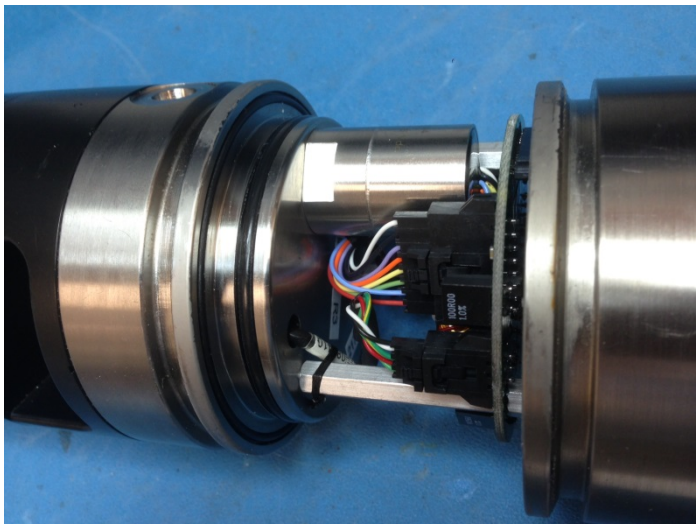


Measuring the Battery Voltage

9. Locate the CPU card (the third card above the pressure sensor) and find the coin-cell battery located on the lower (component) side.

10. Using a DVM, measure the battery voltage by connecting to the positive and negative terminals as shown.

11. The nominal battery voltage is 3.0 volts.



Attach Housing to the Sensor Head

12. Inspect, clean and lubricate the O-rings on the sensor head assembly.

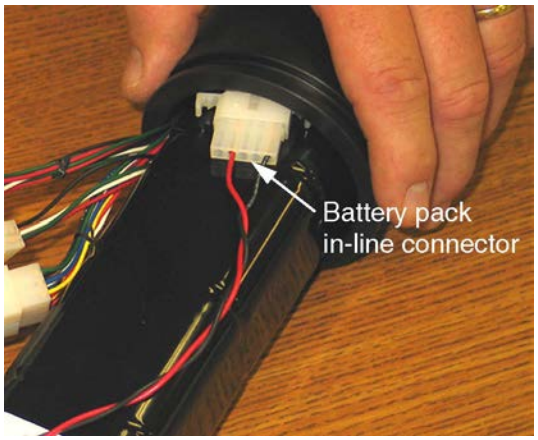
13. Carefully slide the housing back over the circuit cards and onto the sensor head assembly being careful to not damage the O-ring seals. It may be necessary to twist the housing slightly while pushing onto the sensor head.

14. Spread the band clamp slightly, and then install it over the sensor head and housing such that it straddles the grooves in the sensor head and housing while holding the housing together.

15. Latch the band clamp catch, and then tighten the self-locking nut until it is snug. Do not over-tighten.

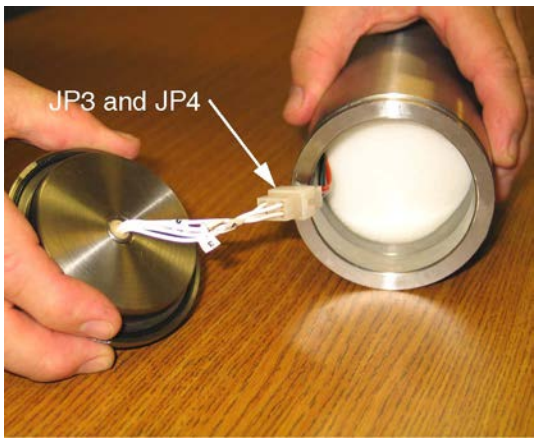
Inserting a Battery

16. Insert a foam pad followed by the battery pack, wire end first, part way into the housing. Then insert the battery pack in-line connector between the housing and the battery pack as shown.



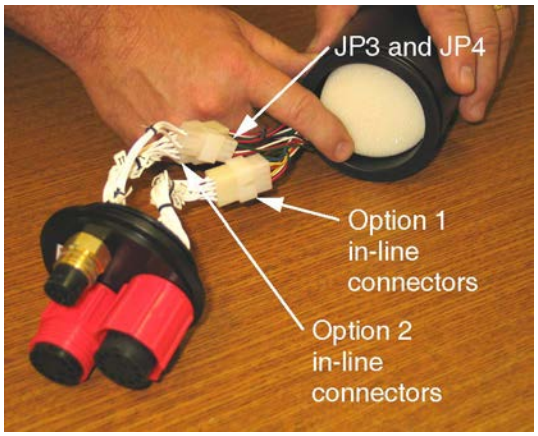
Inserting a Battery, with Options Connectors

If the Option 1 and Option 2 connectors are installed, refer instead to this photo.



Connecting the JP3 and JP4 In-Line Connectors

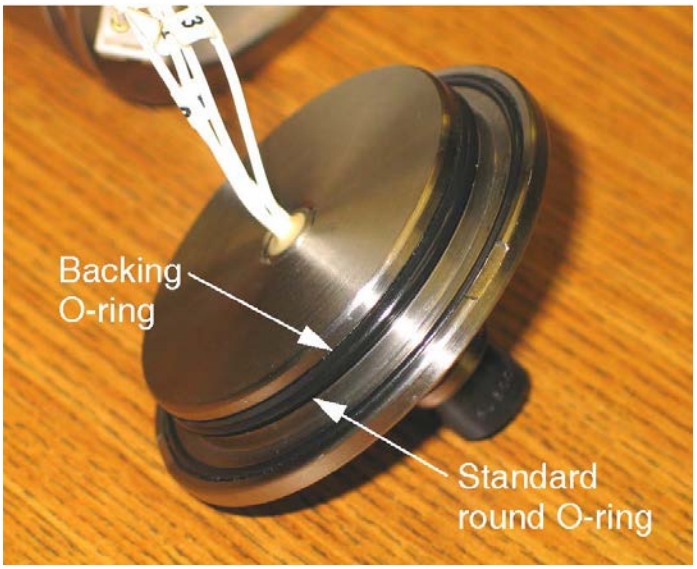
17. Push the battery pack into the housing as far as it will go, and then insert the second foam pad over the battery pack and connect the in-line connectors JP3 and JP4 as shown.



Connecting the JP3 and JP4 In-Line Connectors, with Options Connectors

If the Option 1 and Option 2 connectors are installed, refer instead to this photo.

There are two O-rings installed in the O-ring groove on the end cap: a backing O-ring, which has a flat side and a round side, and a standard round O-ring. As shown below, the backing O-ring is installed with the flat side facing toward the inside of the housing and the round side facing toward the outside of the housing. The round O-ring is installed against the round end of the backing O-ring.



Backing and Standard Round O-rings Installed in O-ring Groove in End Cap

18. If nicks or scratches are found on an O-ring, replace it. When replacing the O-ring, first clean the O-ring surface on the end cap with a lint-free cloth. Then lightly lubricate the new O-ring with silicone grease and install it onto the end cap.

19. Press the end cap into the housing, being careful not to pinch the wires.

20. Spread the band clamp slightly, and then install it over the end cap and housing such that it straddles the groove in the housing and the lip of the end cap, holding the housing and end cap together.

21. Latch the band clamp catch, and then tighten the self-locking nut until it is snug. Do not over-tighten.