In-Situ Inc.

Innovations in Water Monitoring

Instruction Sheet

Antenna Conversion Kit

Part number 0094140

Kit Contents

The Antenna Conversion Kit contains the following components.

Number	Description	Part Number
1	5 m (20 ft) low loss N-male cable	0098460
2	RP-SMA type surge suppressor	0094150 BWC-LMRSFRPB
3	Flat washer	0090130
4	Sealing washer	0090120
5	RP-SMA to RP-SMA female cable	0090580
6	N-female to RP-SMA converter cable	0098450
	Grounding wire (not shown)	0058220

Ensure all parts are included before proceeding.

Required Materials

- Vise grips
- Crescent wrench (2.54 cm / 1 in. or larger)
- Small flathead screwdriver (approximately 4 mm / 0.125 in. head)
- Rubber splicing tape
- Electrical tape

Removing Power from the Radio

Remove power before altering any connections.

1. Remove the white (positive) wire of the solar panel or external battery pack from the enclosure screw terminal. Refer to the wiring diagram on the enclosure lid.
2. Disconnect the black (negative) lead from the black terminal on the battery.
3. Disconnect the red (positive) lead from the red terminal on the battery.
4. Remove the battery from the enclosure to provide more room to work.

Installing the Converter Cable

1. On the inside of the enclosure, grip the locking nut of the front-left dome connector using the vise grips. This dome connector is directly in front of the dome connector with the tube desiccant installed in it.

12/2012 | Rev. 003 | 0094142

2. Use the crescent wrench to unscrew the dome connector from the outside of the enclosure. **Save the bulkhead and locking washer.**

3. Unscrew the nut from the N-female to RP-SMA connector. Remove the star washer.

4. Install the sealing washer on the N-connector side, with the rubber side facing away from the cable. It may need to be screwed on.

5. Insert the N-connector through the open hole of the enclosure. Ensure the connector is centered in the hole.

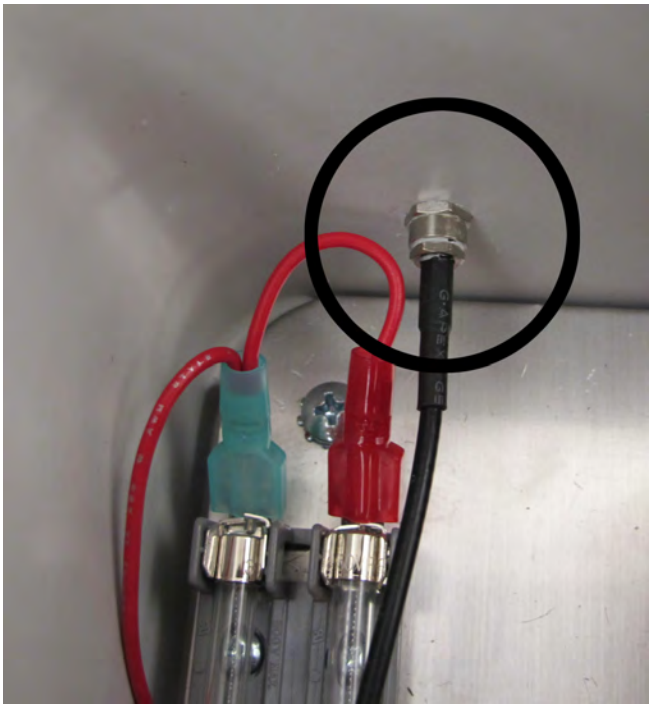
> Connectors that are not centered can allow in moisture that will damage internal components. Reinstall the star washer to help act as a guide if you are having difficulty centering the connector.

6. Insert the flat washer over the portion of the N-connector that is now outside of the enclosure.
7. Screw on the nut you removed in step 3. Use the crescent wrench to tighten the nut.

Connecting the Surge Suppressor

> A surge suppressor **MUST** be connected to the radio when installing an alternative antenna. The radio warranty is void if an alternative radio is installed without a surge protector.

1. Screw the RP-SMA female connector of the converter cable onto the male end of the surge suppressor.
2. Screw the RP-SMA to RP-SMA female cable on to the suppressor (it connects only one way).
3. Remove the existing antenna cable from the radio module.
   DO NOT REMOVE THE CABLE FROM THE - ENCLOSURE. The connection at the top of the enclosure (shown below) provides a water-tight seal. Removing this connection voids your warranty on this enclosure.



4. Connect the open end of the suppressor assembly to the radio antenna connector.
5. Attach the stripped end of the grounding wire to the small screw on the side of the suppressor. It can be attached by crimping the wire to the open ring terminal, or by loosening the screw, wrapping the wire around the screw, and then retightening. Attach the other end of the grounding wire to the enclosure ground terminal. Refer to the wiring diagram on the enclosure lid.

Installing the Antenna

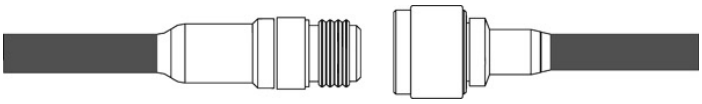
Antenna installation procedures vary depending on the type of antenna. Follow the manufacturer's instructions for installing the antenna. If no instructions are included with the antenna, contact the antenna manufacturer or In-Situ Inc.

Once the antenna is properly installed, connect it to the radio enclosure using the low loss N-male cable. ***Weatherproof the antenna connections as shown in the next section before reapplying power***.

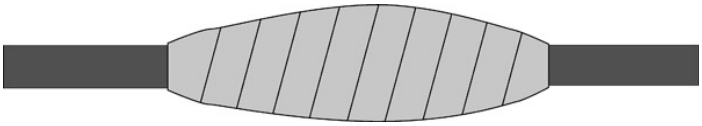
Reconnect the white (positive) wire from the solar panel or external battery pack to the screw terminal. Refer to the wiring diagram on the enclosure lid. Reinstall the battery and reconnect the leads to the battery terminals.

Weatherproofing the Antenna Connections

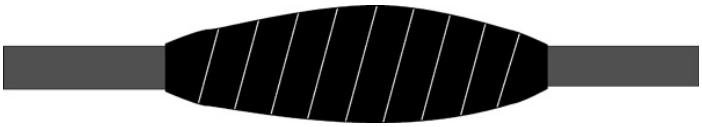
1. Verify both connections are clean and dry. Connect the antenna cable to the antenna or other cable and hand-tighten the connection.



2. Tightly wrap the entire connection with rubber splicing tape. Begin wrapping the rubber splicing tape 2.5 cm (1 in.) away from the connection and continue wrapping until the tape is 2.5 cm (1 in.) past the other end of the connection. Overlap each new round of tape about half the previous round.



3. Protect the rubber splicing tape from UV damage by tightly wrapping electrical tape over the rubber splicing tape. The electrical tape should completely cover the rubber splicing tape and overlap the rubber tape by 2.5 cm (1 in.) on each side of the connection.



Enclosure Desiccant

It is **extremely important** to use a properly-sized desiccant for your deployment, and to **change desiccant before the entire volume has turned pink**. Use enough desiccant to effectively keep electronics dry until your next scheduled maintenance. Desiccant life span is dependent on site conditions.

The enclosure contains one tube of desiccant that absorbs moisture as it enters the enclosure through the vent tube. Keep the vent tube clear of obstructions. Replace as needed. An additional desiccant pack may be located at the top of the enclosure. Replace or dry as needed.