SR50 Sonic Ranging Sensor

Maintenance Kit - part number C1251

The SR50's electrostatic transducer requires equal pressure on both sides. A vent hole in the transducer housing is used to equalize pressure. Desiccant is placed inside the transducer housing to prevent the possibility of condensing humidity. The desiccant must be inspected and, if required, replaced on a regular basis. If the SR50 is used in humid environments, the desiccant should be replaced more frequently. In general, annual replacement of the desiccant in both the transducer housing and the main body is sufficient. To inspect or replace the desiccant, follow the procedures outlined below.

The desiccant packet used in the enclosure is CSC part number L905. The desiccant packet used in the transducer body is CSC part number L4091.

Transducer replacement is recommended every 3 years.

Disassembly/Assembly Procedures

It is important to follow these instructions to disassemble the SR50. Disassembly is required to change the transducer and the Address/Option jumpers, and to inspect or replace the dessicant.

Before proceeding with any maintenance on a data acquisition system, always retrieve the data first. It is also recommended that the datalogger program be saved.

If the sensor is in operation, always disconnect the SR50 from the datalogger before disassembling.

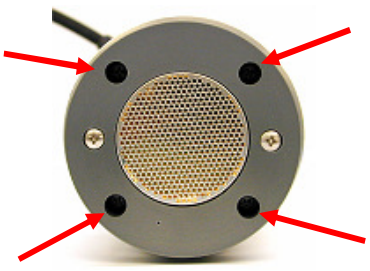
Transducer Replacement

SR50 Maintenance Kits, part number C1251, are shipped with the following items:

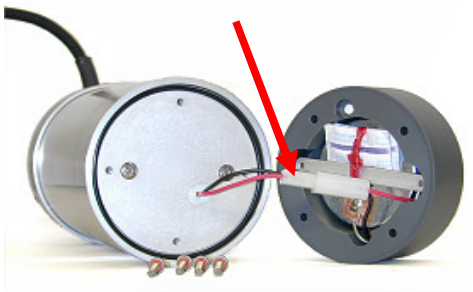
- one (1) small O-ring
- one (1) large O-ring
- one (1) large O-ring (Greased)
- one (1) transducer assembly
- two (2) mini dessicant packs
- two (2) ½ unit dessicant packs

Contact Campbell Scientific (Canada) Corp. immediately if any of these items are missing.

1. Remove the transducer housing by loosening and removing the four Phillips screws that are located at the bottom end of the sensor, as shown by arrows in the picture below. Put these screws aside for reassembly. Do not remove the two Phillips screws that are countersunk the least, as these screws hold the transducer assembly in place.



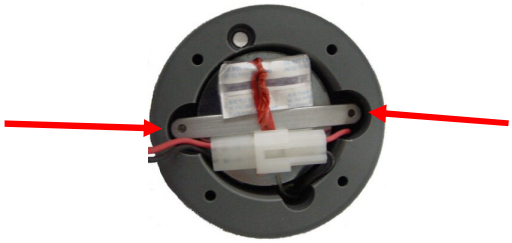
2. Remove the transducer housing from the main cylinder housing and unplug the white connector, as indicated below. Pull only on the connector and not the wires.



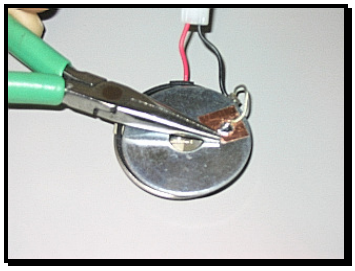
3. Remove the dessicant packs by undoing the twist tie that holds them in place and dispose of the packs appropriately.

   NOTE: These small packs of desiccant contain indicating silica gel which turns from blue to pink when they are unable to absorb any more moisture. Look through the small plastic window on the desiccant packs to inspect them.

4. Remove the 2 Phillips screws (as indicated in photo below) that hold the retaining bracket and set aside the screws for reassembly. This will release a washer, the transducer assembly and a small O-ring.



5. Remove the copper tape that connects the transducer to the washer, as shown in the photo below. Set aside the washer and dispose of the transducer assembly and small O-ring appropriately.



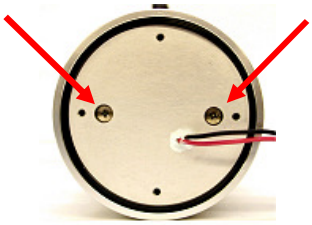
6. Remove the copper tape backing from the grounding wire of the new transducer assembly and apply it to the washer.

7. Insert the washer, the new transducer assembly and small O-ring in the reverse order of removal and re-attach the retaining bar with the 2 Phillips screws that were set aside in step 4.

   NOTE: Do not over tighten the screws when reassembling, as over tightening will cause the transducer to bend. Apply only enough torque to prevent the washer on the backside from moving. Ensure that the washer is centred properly over the backside of the transducer prior to tightening. Inspect the gold foil of the transducer when complete to ensure that it is not wrinkled from stress due to over tightening the screws.

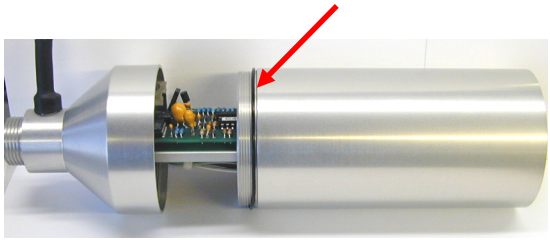
8. Use the twist tie to attach the 2 new mini dessicant packs to the transducer.

9. With a Phillips screwdriver remove the two screws that hold the aluminium end plate in place on the main cylinder housing. Set the screws aside for re-assembly.



10. Pull the end disk out and disconnect the attached wires at the connector, pulling only on the connector and not the wires. Remove and discard the large O-ring.

11. Unthread the cylinder body from the lid, and slide the two apart in order to expose the second greased large O-ring. Remove and discard the used greased O-ring.

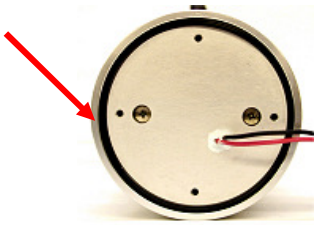


12. Slide the new greased O-ring over the threaded end of the cylinder and hand tighten the cylinder onto the lid. Check for component clearance from the cylinder.

13. Replace the ½ unit desiccant packs inside the cylinder, taking note of their exact location prior to removal. Make sure the desiccant pack is placed back into the cylinder on the side of the circuit board that doesn't have components.

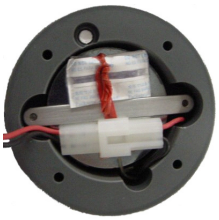
14. Re-connect the wires prior to attaching the aluminium end plate with the 2 Philips screws that were set aside in Step 9.

15. Insert the new large O-ring on the aluminium end plate, ensuring that it is properly seated in the SR50 housing as shown below.



16. Plug the new transducer into the white connector and attach it to the main housing with the four Phillips screws that were removed in Step 1.

    Warning: Damage may occur to the transducer wires if the transducer assembly and connector are not carefully oriented when fastening to the SR50 housing. The transducer assembly should be positioned in such a way that the connector lies flat and the wires remain within the inside wall of the housing, as shown in the photograph below.



Revised: March 14, 2013