

SCAD part number: 10021  
Internal Tank Sensor Probe



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Instructions V1.1 9/23/2019

## Installation Instructions for SCAD Internal Sensor

### Introduction

This instruction manual is for the SCAD internal solid state liquid level sensor. The sensor is used in metal tanks, wood-cored fiberglass tanks, or if the walls of a plastic tank are inaccessible and the SCAD external sensor cannot be used.

Included Parts	Required Tools and Materials
<ol style="list-style-type: none"><li>1. Plastic sensor probe</li><li>2. Sensor cap</li></ol>	<ol style="list-style-type: none"><li>1. If your tank does not have a 1" NPT port or an SAE-5 flange, you will need a:<ol style="list-style-type: none"><li>a. Drill</li><li>b. 1 3/8" hole saw</li><li>c. If the tank wall is thick enough, a 1" NPT tap is needed. If the wall is thin, make a flange or buy SCAD's SAE-5 to 1" NPT adapter plate (part number 10029)</li></ol></li><li>2. If your tank has an SAE-5 hole pattern, use SCAD's SAE-5 to 1" NPT adapter</li><li>3. An adjustable wrench capable of 1 3/8" wide</li><li>4. Wire cutters and strippers.</li><li>5. Three 22-18 gauge waterproof butt splices</li><li>6. PVC cement (available at most hardware stores)</li></ol>

## Installation

### Cutting the Sensor to Length

1. Measure the height of your tank.
2. Mark the cut location on the sensor approximately one inch from the bottom of the tank taking into account that the threads will move approximately 1/2 inches into the tapped hole.
3. Cut the sensor tube with a hacksaw across the copper strips as in Figure 1. Check that the copper strips remain adhered to the inside wall of the tube.

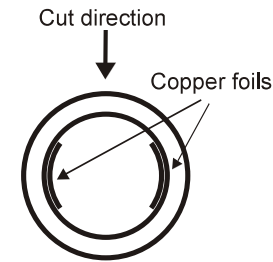


Figure 1

### Glue Cap on End of Rod

1. The end cap must seal the end of the tube. Glue the PVC cap to the end of the rod per glue manufacturer's instructions.

### Mount the Sensor

Locate the sensor at least two inches from the wall of the tank. If your tank has a:

1. 1" NPT port: Screw the sensor in and tighten.
2. Larger NPT port: Buy a threaded PVC reducer adapter from a hardware store.
3. 5-hole SAE mount: Use SCAD's SAE-5 to 1" NPT adapter. Use RTV silicone sealant to create a seal between the adapter and the tank.
4. Tank with no hole: Consider the following options.
  - a. If the tank wall is thick enough and made of a suitable material that threads can be created and seal properly, drill and tap a 1" NPT hole.
  - b. If the tank wall is thin, there are three options:
    - i. Make a mounting plate with a 1" NPT hole
    - ii. Buy a 1" PVC FPT (female pipe thread) flange
    - iii. Use SCAD's SAE-5 to 1" NPT adapter plate.
  - c. Cut a hole (approximately 1 3/8") in the tank to clear the sensor threads under the mounting plate. Use RTV silicone sealant to create a seal between the adapter and the tank. Secure the plate with sheet metal screws or other fasteners as required.