

Sonex Universal Fuel Level Probe

Sonex Universal Fuel Level Probes are compatible with both Resistance and Capacitive type instruments.

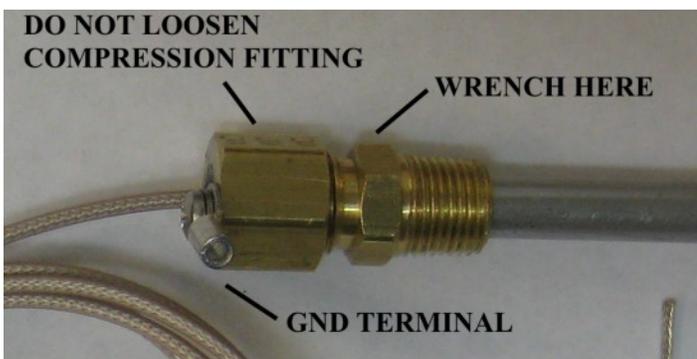
The Sonex Fuel Level Probe screws into existing provisions in the Sonex fuel tank (1/8" NPT). The length is ready to install in the Sonex/Waiaex/Xenos. **Onex customers must trim and re-calibrate the probe.**

CAUTION: Do not test the fuel tank for leaks with water. Water will cause the probe to read full and fail calibration. The probe must be removed and left to dry under a heat lamp at no more than 150 °F to remove the water.

Voltage Requirements: The probe requires 12 to 28 Volts DC and draws a maximum current of 0.1A. Use 22 ga wire with a 1 to 3 Amp fuse or breaker.

Output: There are two output wires. The green wire is for all MGL equipment and is a resistive type. The green wire will not work with resistive analog gauges. The yellow wire is for GRT, Dynon, Garmin, and 0-5V analog gauges. Only use one of the output wires.

Probe Calibration and Configuration: The probe comes configured and calibrated for the MGL, GRT EFIS, Dynon, and Garmin instruments using the 1S mode (Single point calibration). The probe does not require any further calibration. Fuel level calibration will be done on the instrument being used. Refer to your instruments manual on how to calibrate the fuel level. **Note: The probe will only need to be reconfigured to the 5S calibration mode when using a 0 to 5 volt analog gauge or the GRT EIS without an EFIS. Instructions are on the back of this page.**

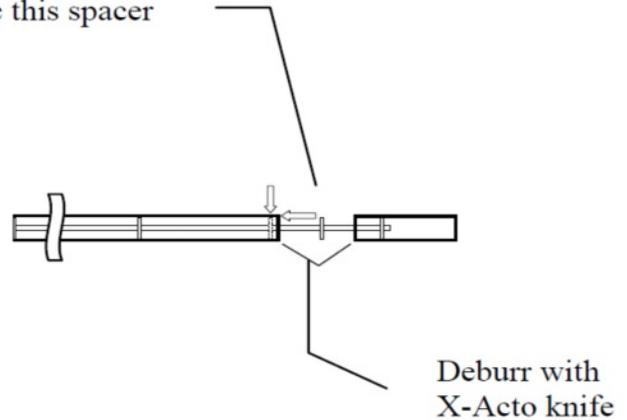


Ground the probe at the same place as the electronics module using the grounding terminal supplied with the probe. **NOTE:** The probe will not operate properly without this ground connection.

Trimming the probe for Onex:

- The Onex requires the probe to be shortened by 2 inches.
- Measure 2 inches from the tip of the probe and mark with a felt tip marker. **Check your measurements. Cut probes cannot be exchanged or returned for credit.**
- Use a pipe cutter to cut the outer aluminum tube. **Do not clamp or hold the brass fitting while cutting the tube. Hold the aluminum tube.** This will keep you from cutting too aggressively. **Do not pull on the cut piece of aluminum before removing the burr with a sharp X-Acto blade. The cut piece should just fall off.**
- Deburr the remaining probe end using the X-Acto blade being careful that the material removed falls away from the probe opening.
- Use needle nose pliers to flatten the brass rod just inside the aluminum tube. This will keep the spacer from sliding into the tube from vibration after installation.
- Slide the exposed plastic spacer into the aluminum tube. Hold the brass while using the needle nose pliers to push the spacer. Use side cutters to cut off the brass rod. Do not cut the brass flush with the spacer. Leave 1/16 to 1/8" of material. The side cutter will flatten the brass and lock the spacer in place.

Slide this spacer



Calibrating the Module after Onex trimming (1S):

- Remove the four screws holding on the cover of the electronics module.
- Plug the probe into the connector on the electronics module. Connect power and ground. Ground the probe's ring terminal. The probe does not have to be installed in the tank.
- While holding down the button, turn the power on. Light 1 will be flashing while 2 and 3 will be on solid.
- Release the button. Light 1 will be flashing, 2 and 3 will be off.
- Press and release the button. Light 1 will stay solid while calibrating and testing. It should not take more than 1 minute. When complete light 2 (center) will flash quickly for a few seconds then once every couple of seconds. **If all 3 lights are flashing, refer to the trouble shooting section.**

Stratomaster calibration:

- If the RDAC has setting switches, pull-ups should be on for the fuel sender input.
- Refer to the MGL manual for fuel level calibration.
- With the tank empty the raw sensor reading should be 1100 to 1300

Configuring the Output for GRT EIS or 0-5 Volt Analog Gauge (5S Mode):

- Power off the module.
- Remove the four screws from the cover of the electronics module.
- Temporarily connect the yellow wire to ground.
- While holding down the button, turn the power on.
- After 10 seconds the lights will turn off. Keep the button pressed.
- Light 1 will turn on, and then cycle between each light. (1-2-3-off, 1-2-3-off, ...) This will repeat until the button is released.
- Release the button when light 3 is on (Selects 5S mode).
- Turn the module off and remove the ground from the yellow wire.

Configuring the Output back to Factory Default for MGL, GRT EFIS, Dynon, and Garmin (1S Mode):

- Power off the module.
- Remove the four screws holding on the cover of the electronics module.
- Temporarily connect the yellow wire to ground.
- While holding down the button, turn the power on.
- After 10 seconds the lights will turn off. Keep the button pressed.
- Light 1 will turn on, then cycle to light 2, light 3, then all off. This will repeat until the button is released.
- Release the button when light 1 is on (Selects 1S mode).
- Turn the module off and remove the ground from the yellow wire.

Calibrating the Probe for the GRT EIS or 0-5 Volt Analog Gauge (5S Mode):

- Start with the power turned off and the tank empty.
- While holding down the button, turn the power on. All three Lights will be on solid. **If all three lights are not on you have the wrong mode configured.**
- Release the button. Light 1 will be flashing, 2 and 3 will be off. The module is ready to set the empty calibration.
- Press and release the button to set the empty calibration. Light 1 will stay solid while calibrating and testing. It should not take more than 1 minute. When complete light 1 (left) and light 2 (middle) will be flashing indicating that the ¼ tank calibration is next. **If all 3 lights flash, refer to the trouble shooting section.**
- You can turn power off and the module will continue where it left off.
- Fill the tank to the ¼ level. **If you left the module power on wait a couple minutes for the reading to settle and the fuel to stop sloshing.** Press and release the button to set the ¼ tank calibration. After a second or two light 2 (middle) start flashing indicating ½ tank calibration is next.
- Fill the tank to the ½ level. Press and release the button. Light 2 (middle) and light 3 (right) will be flashing indication ¾ calibration is next.
- Fill the tank to the ¾ level. Press and release the button. Light 3 (right) will be flashing indication Full calibration is next.
- Fill the tank to Full. Press and release the button. When complete light 2 (center) will flash quickly for a few seconds then once every couple of seconds. The out put on the yellow wire will be 5 volts.

Configuring the EIS:

- You must configure the aux input for the EIS. Refer to the EIS manual

Trouble Shooting:

Call Princeton Electronics for help. 616-243-8800

 Flashing	 Off
	EMPTY SET POINT
	¼ SET POINT
	½ SET POINT
	¾ SET POINT
	FULL SET POINT

Table 1 Set point modes

 ON	 OFF
 / 	DATA ERROR
 / 	CAL ERROR
 / 	UNSTABLE

Table 2 Error codes