

## VSM 422 Ultrasonic Tank Sender PN 1810 / PN 1811

### Features

- **Accurate**—can be precisely calibrated for each tank
- **Reliable**—no moving parts that can wear and cause intermittent or complete signal loss
- **Digital filtering**—eliminates errors due to liquids sloshing in mobile tanks

### Specifications

Electrical Interface:	Three Wires
Supply Voltage:	10–32 Volts DC
Maximum Depth (PN 1810):	32.00" (812.8mm)
Maximum Depth (PN 1811):	24.00" (609.6mm)
Distance Accuracy:	+/- 0.125" (3.81mm)
Operating Temperature Range:	-40 to 85° C
Mounting:	SAE 5 Bolt Pattern
SAE 5 Bolt Maximum Torque:	15 in-lbs (1.7 N-m)
Maximum Dead Band—top only	2.00" (50.8mm)

### Regulatory

Ignition protected and tested to ABYC H-24 for fuel system components

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## Installation

Blue Sea Systems VSM 422 Ultrasonic Tank Sender PN 1810 is used for water, waste, and diesel fuel tanks. Blue Sea Systems VSM 422 Ultrasonic Tank Sender PN 1811 is used for gasoline tanks.

When connecting the tank senders to ground, it is important to connect them as directly as possible to the main negative bus. Do not ground directly to the fuel tank. This will prevent high loads such as battery chargers from affecting the tank readings.

The Blue Sea Systems VSM 422 Ultrasonic Tank Senders require an external power source. When power to the sender is lost, the VSM 422 will read the tank as full, and may trigger the tank's high level alarm.

## Warning

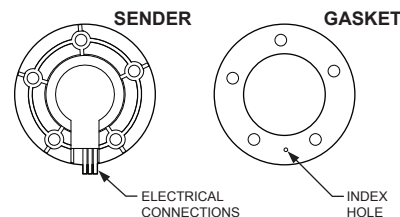
- ✓ If you are not knowledgeable about electrical systems, have an electrical professional install this unit. The diagrams in these instructions pertain to the installation of the VSM 422 Ultrasonic Tank Senders and not to the overall wiring of the vessel.
- ✓ Ensure that gasoline tanks are completely empty and free of any vapors before beginning installation.
- ✓ For safe installation, turn off battery switch or remove the negative battery cable. Alternatively remove branch circuit fuse feeding the sender circuit.

### Guarantee

Any Blue Sea Systems product with which a customer is not satisfied may be returned for a refund or replacement at any time.

## Mounting

**NOTE:** The gasket is designed to fit only one way on the tank sender. Carefully note its position and orientation with index hole aligned with the electrical connections, and screw holes precisely aligned with the mounting holes in the sender. If the holes do not exactly align, flip the gasket over. Ensure that the gasket is fully seated in the sender recess.



Gasket Alignment Diagram

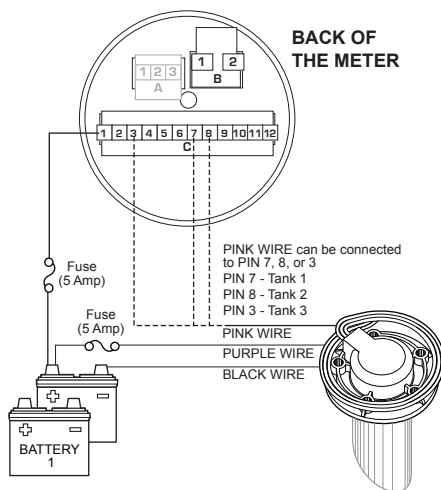
1. An existing SAE 5 bolt pattern mounting hole may be used to mount the tank sender. Ideally, the sender should be located at least 3.00" (76.2mm) from any edge, baffle, dip tube or other obstruction to avoid sound reflections. If the tank has a tapering shape, the sender should be mounted over the deepest part of the tank. If the tank is rectangular, mount the sender as close to the center of the top of the tank as possible.

2. Before drilling for a new installation, place rags, plastic film, or other material to prevent any debris from entering the tank. Cut center hole in tank. PN 1810 requires a 1-5/8" hole saw and PN 1811 requires a 1-1/2" hole saw.
3. Using the sender as a template, mark and drill the first mounting hole, and install a screw to hold the sender in place. Mark and drill a second hole as nearly opposite the first one as possible, and install a second screw. Mark and drill the remaining holes.
4. When all holes are drilled, remove any rags or plastic film placed to catch debris in step 2. Carefully remove any loose debris, especially if it might contaminate fuel or water systems. Remove the screws, align the gasket on the sender, and install the sender and gasket on the tank. The use of #10 panhead screws is recommended. Hand tighten the screws firmly to a maximum torque of 15 in-lbs.

## Reference

### Other Innovative Products from Blue Sea Systems

- 360 Panel System
- Battery management panels and switches
- AC and DC circuit protection devices
- WeatherDeck™ waterproof circuit breaker and fuse panels
- Fuses and fuse blocks
- BusBars and connectors
- Analog and digital meters



3 Wire VSM 422 Ultrasonic Sender  
Installation Diagram  
PN 1810 and PN 1811