

Installation Instructions

PTS-0-1.5PSI-01, PTS-0-3PSI-01, PTS-0-5PSI-01 Submersible Pressure Transducers



WARNING – Maretron submersible pressure transducers are **not** approved for use with gasoline. If you wish to use the FPM100 to monitor pressures or levels of gasoline, you must obtain a pressure transducer that is approved for use with gasoline.

Maretron's submersible pressure transducers are used for indicating tank levels and can be installed directly in the tank. Please follow these instructions to mount and connect a submersible pressure transducer to an NMEA 2000® network via a Maretron FPM100 Fluid Pressure Monitor. Maretron recommends one of two methods for mounting a submersible pressure transducer in a tank; 1) without a restraining tube (shown on left side of Figure 1) and, 2) with a restraining tube (shown on right side of figure 1).

1. The submersible pressure transducers are designed for a tank with a 5-Hole SAE J1810 fitting at the top. Install the mounting plate with cord grip onto the transducer cable, with the rounded hex section of the cord grip facing away from the transducer.
2. Lower the pressure transducer into the tank such that the transducer lies at the lowest point of the tank, and tighten the cord grip to secure the cable. On a tank with a flat bottom, the transducer may slide from side to side with the motion of the vessel, but will not rotate due to the stiffness of the cable. It is also possible to mount the pressure transducer inside a restraining tube or focus tube (sold separately, Maretron part number TFT-5H). Please refer to Figure 1 for examples.

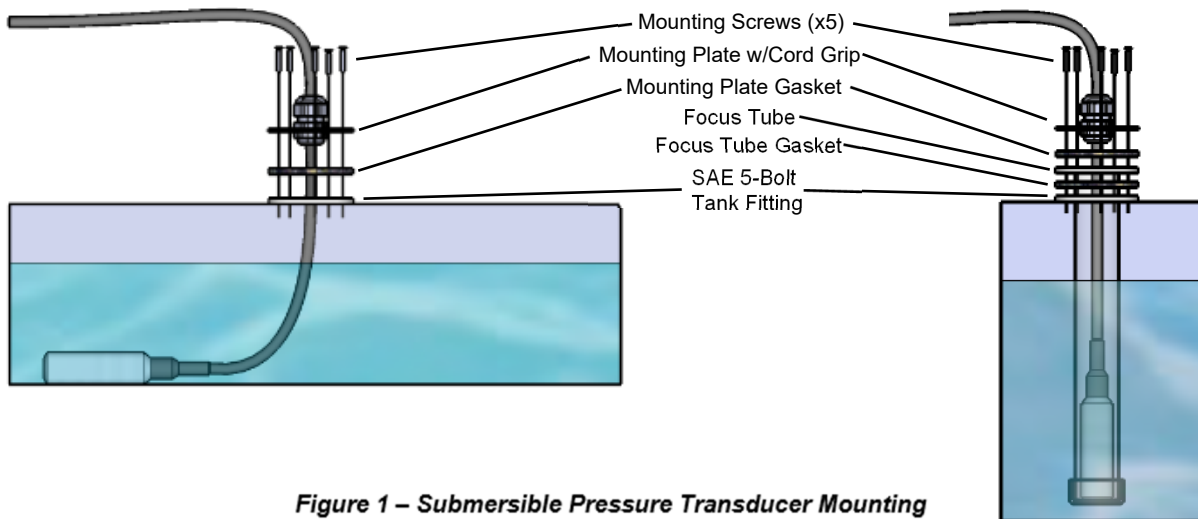


Figure 1 – Submersible Pressure Transducer Mounting

3. Connect the two wires of the pressure transducer to a free pressure monitoring channel as shown in Figure 2 below. The diagram shows a connection to FPM100 channel #0, but connections to other channels are similar. Connect the white wire from the pressure transducer to the positive (+) terminal of the channel and connect the brown wire from the pressure transducer to the negative (-) terminal of the channel. The example in Figure 1 shows the pressure transducer connected to switch channel 0 with the white wire connected to “P0+”, and the brown wire connected to “P0-”. Submersible pressure transducers have a small plastic vent tube in the connecting cable.

Care must be taken not to kink or block this tube or pressure readings will be inaccurate.

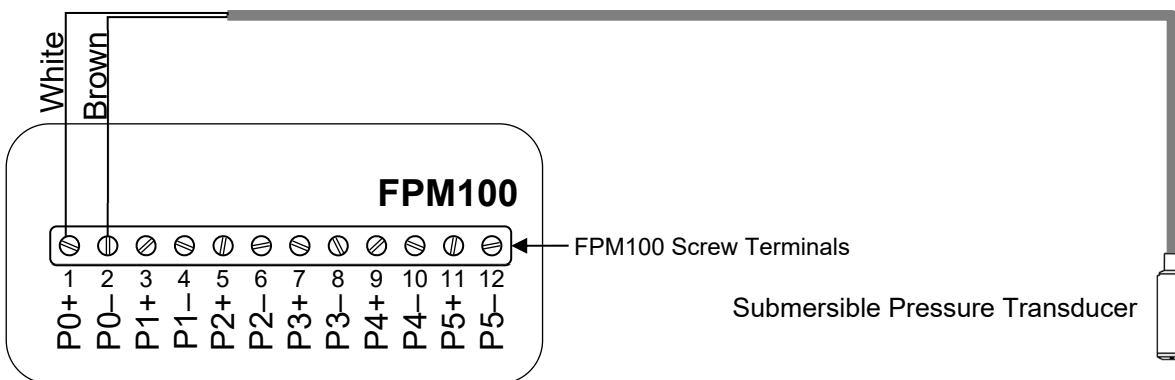


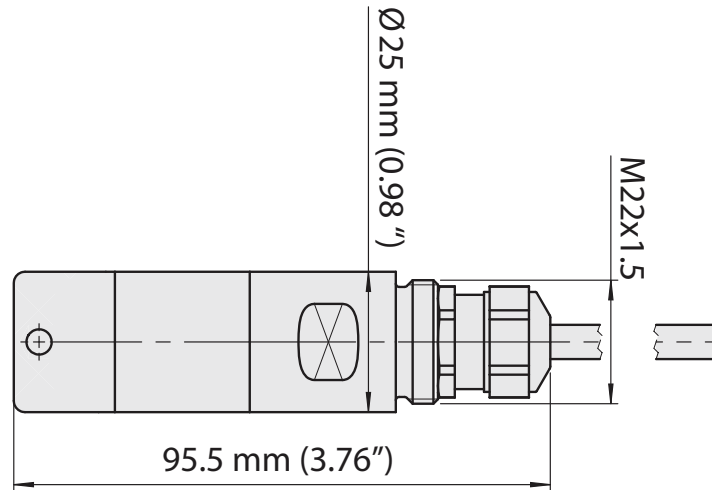
Figure 2 – Submersible Pressure Transducer Connection Diagram

4. Use a Maretron DSM Series Display (firmware 1.4.7 or higher) or a PC running Maretron's N2KAnalyzer software (version 1.4.19 or higher), to configure the connected channel(s) on the FPM100.

	PTS-0-1.5PSI-01	PST-0-3PSI-01	PST-0-5PSI-01
Value at 4mA:	0 PSI (0 bar)	0 PSI (0 bar)	0 PSI (0 bar)
Value at 20mA:	1.5 PSI (0.103 bar)	3.0 PSI (0.207 bar)	5.0 PSI (0.345 bar)

5. Supply power to the NMEA 2000 network and verify that the pressure channel indicates a valid pressure reading.

Mechanical Drawing



Pressure Transducer Specifications

Part Number	Operating Range	Depth Range		Cable Length
		Water (1,000 kg/m ³)	Diesel (820 kg/m ³)	
PTS-0-1.5PSI-01	0 to 1.5 PSI (0.103 bar)	41.5" (1.05 m)	50.7" (1.29 m)	16.4 ft (5 m)
PTS-0-3PSI-01	0 to 3 PSI (0.207 bar)	83.1" (2.11 m)	101.3" (2.57 m)	16.4 ft (5 m)
PTS-0-5PSI-01	0 to 5 PSI (0.345 bar)	138.4" (3.51 m)	168.9" (4.29 m)	23.0 ft (7 m)

Specification	Value
Sensor Type	Gauge (Vent Tube)
Output	4 – 20 mA current loop, loop powered
Excitation Voltage	9 VDC to 32 VDC
Compatible Fluids / Gases	Diesel, Diesel Exhaust Fluid (DEF), Hydraulic Fluid, Kerosene, Motor Oil, Fresh Water, Sea Water, Waste Water
Operating Temperature	14°F to 158°F (-10°C to 70°C)
Ambient Temperature	14°F to 158°F (-10°C to 70°C)
Accuracy	±0.3% Full Scale typ. at 25°C
Total Error Band (TEB)	±1.0% Full Scale typ. (-10°C to 70°C)
Non-Linearity, Hysteresis (NLH)	±0.2% Full Scale typ. Best Straight Line (BSL) at 25°C
Temperature Compensation Zero Point and Span	0.04% Full Scale/°F (0.02% Full Scale/°C)
Long Term Stability	0.2% Full Scale typ. 1 year at 25°C
Rise Time	1 ms typ. (10%-90% nominal pressure)
Switch-On Delay	100 ms
Over Pressure	15 PSI (1.03 bar)
Burst Pressure	30 PSI (2.07 bar)
Vibration	6 g (25 to 2000 Hz)
Shock	50 g / 8 ms
Construction	AISI316L stainless steel housing, pressure connection; Ceramic, Al ₂ O ₃ (96%) Sensor; FKM (FPM, Viton), EPDM (TPE) seals; PUR cable
Minimum Cable Bend Radius	1.57" (40 mm)
EMC Compatibility	EN/IEC 61000-6-3 / GL 2012, IV, Part 7 (Emission and Immunity)
Weight	12.6 oz (357 g)

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