

# Fluid Pressure Monitor (FPM100)

- Monitor Up to Six Pressure/Vacuum Channels
- Uses Industry Standard 4-20mA Sensors
- Output Channels are Short Circuit Protected
- Sensors Powered Directly from NMEA 2000® Network
- Configurable for Fluid Pressure and Vacuum
- Many Applications – Water Pressure, Hydraulic Pressure, Pump Suction or Vacuum (Clogged Filters)
- Configurable for Tank Level Monitoring
- 11 Accessory Probes (Pressure/Vacuum Transducers)

## FPM100 Fluid Pressure Monitor



Maretron's Fluid Pressure Monitor is used to adapt up to six pressure transducers to the NMEA 2000® network (pressure transducers sold separately). This allows you to observe fluid pressures and tank levels anywhere on the vessel where there are NMEA 2000® compatible displays. With the appropriate transducer, the FPM100 reports either pressure or vacuum for a variety of applications including water pressures, oil pressures, hydraulic pressures, or system vacuum for detecting clogged filters.

The FPM100 also has a tank level mode, so that fluid levels in a tank can be monitored via a pressure transducer mounted at the bottom of the tank and transmitted over the NMEA 2000® network. This allows you to monitor the fluid levels in tanks that are extremely deep, have internal structures, or are otherwise not suited for other tank level sensing technologies. In this mode, the FPM100 can be calibrated for irregular tank shapes so that you know the true level of the tanks.

The Maretron FPM100 has the following features:

- NMEA 2000® interface
- Adapts up to six pressure transducers to the NMEA 2000® network
- Each channel independently programmed to match pressure transducer characteristics
- Each channel independently programmed in pressure/vacuum mode or tank level mode



### Products

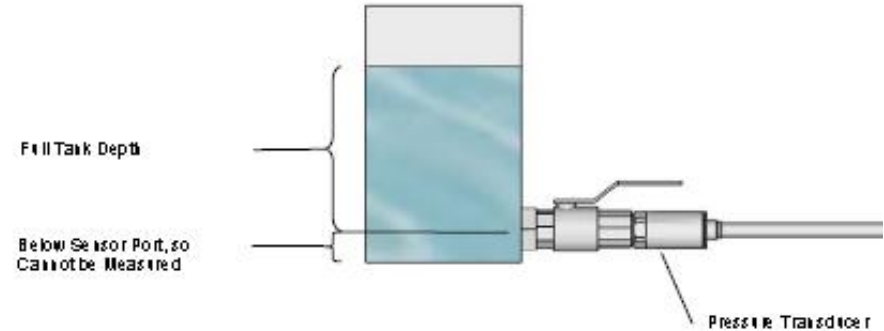
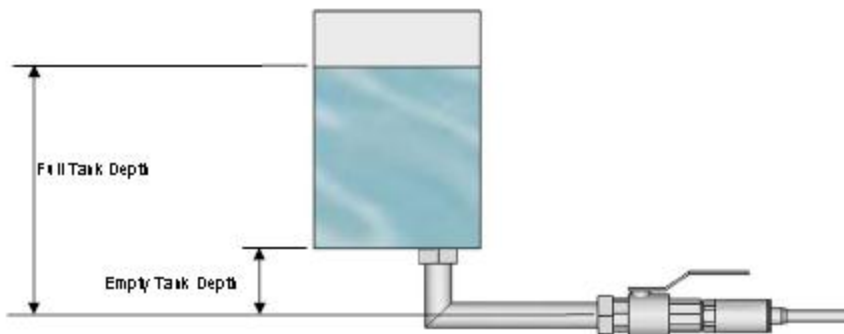
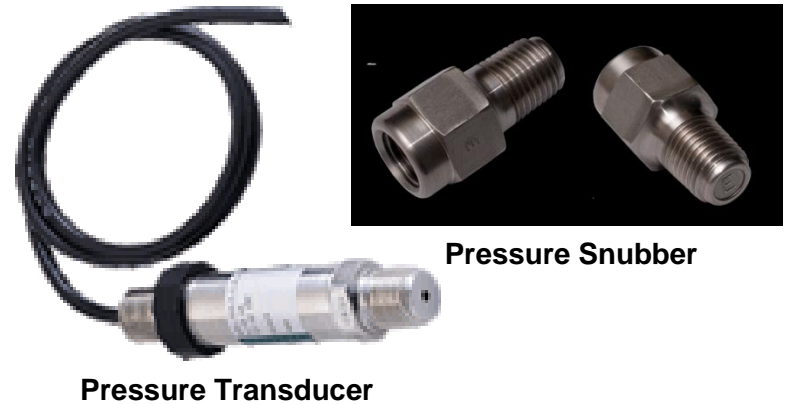
PART NUMBER	DESCRIPTION
FPM100-01	Fluid Pressure Monitor
PT0-3PSI-01	Pressure Transducer (0 to 3 PSI)
PT0-5PSI-01	Pressure Transducer (0 to 5 PSI)
PT0-10PSI-01	Pressure Transducer (0 to 10 PSI)
PT0-50PSI-01	Pressure Transducer (0 to 50 PSI)
PT0-100PSI-01	Pressure Transducer (0 to 100 PSI)
PT0-200PSI-01	Pressure Transducer (0 to 200 PSI)
PT0-300PSI-01	Pressure Transducer (0 to 300 PSI)
PT0-500PSI-01	Pressure Transducer (0 to 500 PSI)
PT0-1000PSI-01	Pressure Transducer (0 to 1000 PSI)
PT0-3000PSI-01	Pressure Transducer (0 to 3000 PSI)
PTSHB-01	Pressure Switch
PT40-100-01	Pressure Transducer Vacuum to 1 Bar

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# FPM100 Accessories/Installation Examples

Part #	FPM100 Accessory	MSRP
PT-0-3PSI-01	Pressure Transducer 0 to 3 PSI	\$ 149.00
PT-0-5PSI-01	Pressure Transducer 0 to 5 PSI	\$ 149.00
PT-0-10PSI-01	Pressure Transducer 0 to 10 PSI	\$ 149.00
PT-0-50PSI-01	Pressure Transducer 0 to 50 PSI	\$ 149.00
PT-0-100PSI-01	Pressure Transducer 0 to 100 PSI	\$ 149.00
PT-0-300PSI-01	Pressure Transducer 0 to 300 PSI	\$ 149.00
PT-0-500PSI-01	Pressure Transducer 0 to 500 PSI	\$ 149.00
PT-0-1000PSI-01	Pressure Transducer 0 to 1000 PSI	\$ 149.00
PT-0-3000PSI-01	Pressure Transducer 0 to 3000 PSI	\$ 149.00
PT-0-5000PSI-01	Pressure Transducer 0 to 5000 PSI	\$ 149.00
PT-SNUB-01	Pressure Snubber	\$ 62.00
PT-V-0-1BAR-01	Pressure Transducer Vacuum to 1 Bar	\$ 199.00



# Tank Level Monitor TLM100

- Ultrasonic Tank Sender with NMEA 2000® Interface
- All Fluid Types Except Gasoline
- 1/8" Depth Accuracy (-25°C to 55°C)
- Up to 40" Depth Tanks
- 2" Dead Band (2" Air Gap Required Between Sender and Fluid)
- Can be Calibrated for Irregular Shaped Tanks
- 16 Point Calibration
- Supports All Tank Types
  - ✓ Fuel, Fresh Water, Waste Water, Live Well, etc
- Non-Displacement Hulls Require Focus Tubes
- Empty Tanks Require Flat bottom

## TLM100 Tank Level Monitor (40" Depth)



Maretron's TLM100 is used to sense fluid levels of tanks by using ultrasonic technology. Ultrasonic, or sound waves, are transmitted via the TLM100 mounted at the top of the tank and the flight times of the sound waves to and from the fluid are measured much like a depth sensor. What this means for you is that there are no difficult to handle long probes protruding into the tank, which often foul and/or corrode. Once the TLM100 calculates and transmits the fluid level over the NMEA 2000® network, you can observe tank levels anywhere on the vessel where there is an NMEA 2000® compatible display such as the Maretron DSM250.

The TLM100 is capable of sensing fluid levels in tanks up to 40" (1.02m) in depth. It can be used for diesel, fresh water, waste water, black water, and oil tanks (see TLM150 for gasoline tanks or TLM200 for deeper tanks). Unlike most tank senders that only work with rectangular tanks, the TLM100 can be calibrated for irregular tank shapes so you can know the true fluid level in your tanks.

The TLM100 is mounted directly to the top of tanks using the industry standard SAE J1810 5-hole mounting pattern.

The TLM100 can also be mounted to tanks with threaded tank openings using optional adapters that included both a 1.5" NPT and a 1.25" BSP adapter. There are other important TLM100 optional accessories including an airtight for black water applications, which keeps the face of the ultrasonic transmitter from fouling and an optional focus tube to permit use on boats with planing hulls, which is required if the vessel spends a significant amount of time with the bow pitched up.

Most importantly, the TLM100 is NMEA 2000® certified so you can view any and all tank levels anywhere on the vessel when using a compatible NMEA 2000® display. The TLM100 is another key component of Maretron's N2KView® vessel monitoring and control system.

**Products**

PART NUMBER	DESCRIPTION
TLM100-01	Tank Level Monitor (40" Depth) Tank
TA-9H-1.25BSP	1.25" BSP Non-Displacement Hull Tank Adapter
TA-9H-1.5NPT	1.5" NPT Displacement Hull Tank Adapter
TA-9H	SAE 5 Bolt Pattern Hull Tank Adapter
TL-1.25BSP	1.25" BSP Black Water Airtight
TL-1.5NPT	1.5" NPT Black Water Airtight
FT-5H	SAE 5 Bolt Pattern Non-Displacement Hull Focus Tube
FT-1.25BSP	1.25" BSP Non-Displacement Hull Focus Tube
FT-1.5NPT	1.5" NPT Non-Displacement Hull Focus Tube





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# Tank Level Monitor TLM150

- Ultrasonic Tank Sender with NMEA 2000® Interface
- Only Gasoline
- 1/8" Depth Accuracy (-25°C to 55°C)
- Up to 24" Depth Tanks
- 2" Dead Band (2" Air Gap Required Between Sender and Fluid)
- Can be Calibrated for Irregular Shaped Tanks
- 16 Point Calibration
- Non-Displacement Hulls Require Focus Tubes
- Empty Tanks Require Flat bottom

## TLM150 Tank Level Monitor (Gasoline)



Maretron's TLM150 is used to sense gasoline fluid levels of tanks using ultrasonic technology. Ultrasonic, or sound waves, are transmitted via the TLM150 mounted at the top of the tank and the flight times of the sound waves to and from the fluid are measured much like a depth sensor. What this means for you is that there are no difficult to handle long probes protruding into the tank, which often foul and/or corrode. Once the TLM150 calculates and broadcast the fluid level over the NMEA 2000® network, you can observe tank levels anywhere on the vessel where there is an NMEA 2000® compatible display such as the Maretron DSM250.

The TLM150 is capable of sensing gasoline levels in tanks up to 24" (0.61m) in depth (see TLM100 for fluid types other than gasoline in tanks up to 40" or the TLM200 for tanks up to 104"). Unlike most tank senders that only work with rectangular tanks, the TLM150 can be calibrated for irregular tank shapes so you can know the true fluid level in your tanks.

The TLM150 is mounted directly to the top of tanks using the industry standard SAE J1810 5-hole mounting pattern. The TLM150 can also be mounted to tanks with threaded tank openings using optional adapters that include both a 1.5" NPT and a 1.25" BSP adapter. The other important optional accessory for the TLM150 is the focus tube to permit use on boats with planing hulls, which is required if the vessel spends a significant amount of time with the bow pitched up.

Most importantly, the TLM150 is NMEA 2000® certified so you can view any and all tank levels anywhere on the vessel when using a compatible NMEA 2000® display. The TLM100 is another key component of Maretron's N2KView® vessel monitoring and control system.

### Products

PART NUMBER	DESCRIPTION
TLM150-01	Tank Level Monitor (24" Depth Gasoline Tanks)
TR-6H-1.25BSP	1.25" BSP Displacement Hull Tank Adapter
TR-6H-1.5NPT	1.5" NPT Displacement Hull Tank Adapter
TF-6H	9/16" SAE Pattern Non-Displacement Hull Focus Tube
TF-1.25BSP	1.25" BSP Non-Displacement Hull Focus Tube
TF-1.5NPT	1.5" NPT Non-Displacement Hull Focus Tube





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# Tank Level Monitor TLM200

- Ultrasonic Tank Sender with NMEA 2000® Interface
- All Fluid Types Except Gasoline
- 1/8" Depth Accuracy (-25°C to 55°C)
- Up to 104" Depth Tanks
- 6" Dead Band (6" Air Gap Required Between Sender and Fluid)
- Can be Calibrated for Irregular Shaped Tanks
- 16 Point Calibration
- Supports All Tank Types
  - ✓ Fuel, Fresh Water, Waste Water, Live Well, etc
- Not Used on Non-Displacement Hulls
- Empty Tanks Require Flat bottom

**TLM200 Tank Level Monitor (104" Depth)**

Maretron's TLM200 is used to sense fluid levels of tanks using ultrasonic technology. Ultrasonic, or sound waves, are transmitted via the TLM200 mounted at the top of the tank and the flight times of the sound waves to and from the fluid are measured much like a depth sensor. What this means for you is that there are no difficult to handle long probes protruding into the tank, which often foul and/or corrode. Once the TLM200 calculates and broadcast the fluid level over the NMEA 2000® network, you can observe tank levels anywhere on the vessel where there is an NMEA 2000® compatible display such as the Maretron DSM250.

The TLM200 is capable of sensing fluid levels in tanks up to 104" (2.64m) in depth. It can be used for diesel, fresh water, waste water, black water, and oil tanks (see the TLM100 for a lower cost solution for tanks up to 40" and the TLM150 for gasoline tanks). Unlike most tank senders that only work with rectangular tanks, the TLM200 can be calibrated for irregular tank shapes so you can know the true fluid level in your tanks.

The TLM200 is mounted directly to the top of tanks using the industry standard SAE J1810 5-hole mounting pattern. The TLM200 can also be mounted to tanks with threaded tank openings using optional adapters that include both a 1.5" NPT and a 1.25" BSP adapter.

Most importantly, the TLM200 is NMEA 2000® certified so you can view any and all tank levels anywhere on the vessel when using a compatible NMEA 2000® display. The TLM100 is another key component of Maretron's N2KView® vessel monitoring and control system.

**Products**

PART NUMBER	DESCRIPTION
TLM200-01	Tank Level Monitor (104" Depth Tank)
TA-AM-1.25BSP	1.25" BSP Displacement Inboard Tank Adapter
TA-SH-1.5NPT	1.5" NPT Displacement Inboard Tank Adapter

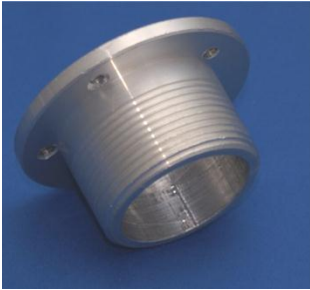
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# Tank Level Monitor Accessories



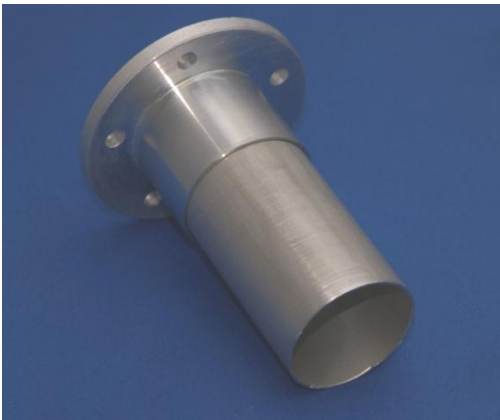
## Adapters Suitable for TLM100, TLM150, and TLM200

- TA-5H-1.5NPT 1.5" NPT Displacement Hull Tank Adapter
- TA-5H-1.25BSP 1.25" BSP Displacement Hull Tank Adapter



## Focus Tubes Suitable for TLM100, TLM150

- TFT-5H SAE 5-Bolt Pattern Non-Displacement Hull Focus Tube
- TFT-1.5NPT 1.5" NPT Non-Displacement Hull Focus Tube
- TFT-1.25BSP 1.25" BSP Non-Displacement Hull Focus Tube



## Airlocks Suitable for TLM100, TLM150

- TAL-5H SAE 5-Bolt Pattern Black Water Airlock
- TAL-1.5NPT 1.5" NPT Black Water Airlock
- TAL-1.25BSP 1.25" BSP Black Water Airlock

# Tank Level Adapter

- Adapts Resistive Tank Senders to NMEA 2000® (Royce, WEMA, etc.)
- American (240-30 ohm) or European (10-180 ohm) Standard Compatible
- Can be Calibrated for Irregular Shaped Tanks
- Can be Used With or Without Analog Gauges
- 16 Point Calibration
- Supports All Tank Types
  - ✓ Fuel, Fresh Water, Waste Water, Live Well, etc

**TLA100 Tank Level Adapter**

The TLA100 is used to adapt commercially available resistive tank senders to the NMEA 2000® network. This allows you to observe tank levels anywhere on the vessel where there are NMEA 2000® compatible displays such as the Maretron DSM250 or DSM200.

The TLA100 is compatible with both the American standard (240-30 ohm) and the European standard (10-180 ohm) resistive senders. In fact, the TLA100 can be calibrated for any resistance between 0 and 300 ohms.

Unlike most tank senders that only work with rectangular tanks, the TLA100 can be calibrated for irregular tank shapes so you know the true level of the tanks. You can also use the TLA100 with analog gauges at the same time as NMEA 2000® so you don't have to give up existing analog gauges to enjoy the advantages of digitally networked information.

The Maretron TLA100 has the following features:

- NMEA 2000® Interface
- Adapts American standard (240-30 ohm) resistive senders to NMEA 2000® Network
- Adapts European standard (10-180 ohm) resistive senders to NMEA 2000® Network
- Calibrated for any Resistance Range from 0 to 300 Ohms or 300 to 0 Ohms
- Accommodates Irregularly Shaped Tanks with 16 Point Calibration
- 16 Programmable Tank Types Including Fuel, Fresh Water, Waste Water, Live Well
- Programmable Tank Number(s) Up to 16 per Tank Type
- Programmable Tank Capacity
- Works Alongside of Analog Gauges
- Can be Used Standalone without Analog Gauges

PART NUMBER	DESCRIPTION
TLA100-01	Tank Level Adapter

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