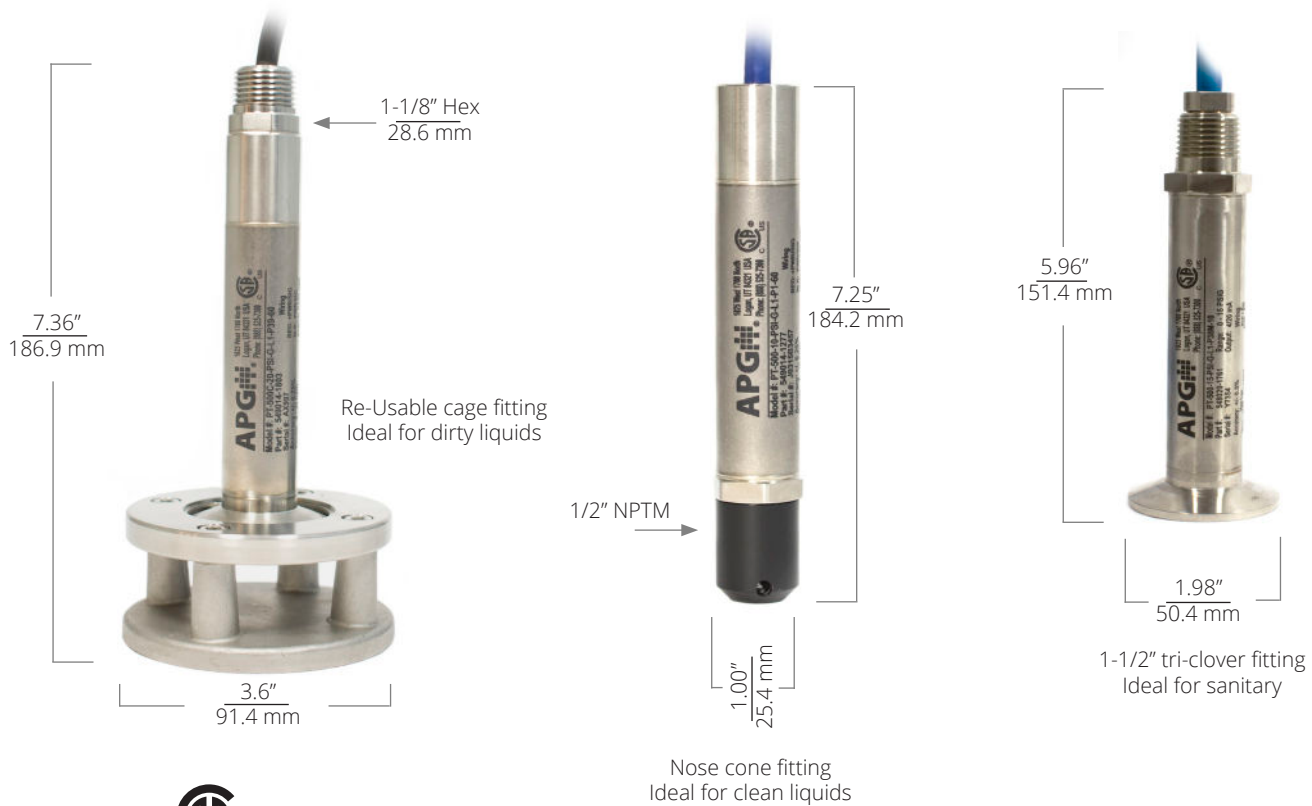


# SUBMERSIBLE LEVEL TRANSMITTERS FOR CLEAN AND DIRTY LIQUIDS

## SERIES: PT-500



The PT-500 is a rugged submersible pressure transmitter designed for tank liquid level measurement, water and wastewater applications, and well depth measurement.

### Features

- Simple to install
- High precision, solid state signal: 4-20 mA
- Exclusive, removable and reusable cage
- 1/2" NPTM option on cable end for use with conduit
- Durable transducer face
- Intrinsically safe for Class I, Div 1/Zone 0 (4-20mA only)
- Built-in lightning transient protection on every model
- Single seal for highest safety protection factor



# THE ONLY ONE IN ITS CLASS

## Built-In Lightning Transient Protection

Lightning strikes are always a threat to exposed electrical infrastructure - especially when it's 40 feet underground.

**That's why we've included built-in lightning transient protection as a standard feature for every model (including intrinsically safe version).**

So forget about buying a \$300 industrial surge protector. It's included.

## Class 1, Division 1/Zone 0

The PT-500 is built to handle tough applications - including hazardous locations. It's intrinsically safe design means it's suitable for even the most explosive environments.

## Field Adjustable Zero

Even the best submersible pressure transducers drift a little over time. Ours stands apart from the others because you can adjust the zero point in the field - bringing it back within spec.

All it takes is a simple magnet (included). It's easy to do and means you won't need to have it recalibrated as often.

## Re-Usable Cage

Need to protect your sensor? The cage is the ideal solution. But it costs extra no matter who you buy from. Ours can be removed and reused when it's finally time to replace your sensor - saving you money.

Tight budgets can be challenging. Why not save as much of it as you can.

## Low Power Consumption

The Modbus and voltage output versions use very little power and have a very fast response time - ideal for battery-powered installations.



# IMPRESSIVELY THOUGHTFUL DESIGN

At the end of the day, the PT-500 submersible pressure transducer is modeled after your needs. An accurate, robust sensor was the priority, then we simply thought of you and took it a few steps further!

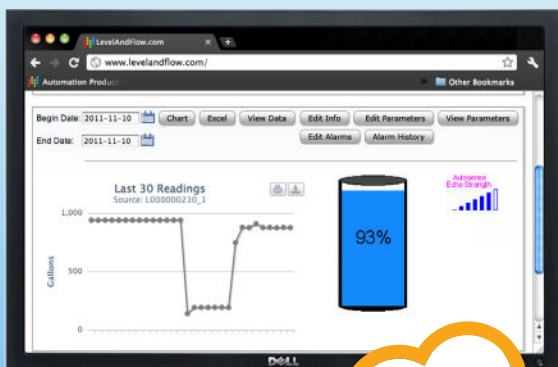
Visit our website at [www.apgsensors.com](http://www.apgsensors.com) to learn more. Contact us at [435-753-7300](tel:435-753-7300) to discuss your application and get a quote.

## Tank Cloud Compatible

As stated, the PT-500's low power consumption make it ideal for remote monitoring applications - especially when you're relying on solar or battery power. The Modbus version is compatible with our online remote monitoring software, Tank Cloud.

View level readings online for free on our Tank Cloud portal - [levelandflow.com](http://levelandflow.com). You can even add in low cost data logging and alarms. Tank Cloud means you can keep an eye on your remote tanks and wells from your office or your smartphone.

Contact us today to discuss how remote monitoring with Tank Cloud can help you save time and money!



# APPLICATIONS

The versatility and reliability of the PT-500 makes it a great multi-purpose level sensor. It excels in water and hydrocarbon-based liquids where the density of the liquid is consistent. Here are typical applications where you'll find our PT-500 submersible pressure transducer:

- Lift Stations
- Retainer Ponds
- Well Level Monitoring
- Process Tanks
- Remote Level Monitoring
- Chemical Tanks
- Water Storage
- Oil Storage

## Featured Configuration: PT-500 + MND Modbus Display

Our Modbus version expands the compatibility of PT-500. Specifically, it also makes it compatible with our Tank Cloud remote monitoring solution, and our various other Modbus products - including our MND display.

The MND is a powerful display that can be programmed as a master, a slave, or a snooter.

When combined in master mode with the PT-500 submersible pressure transmitter, the MND makes an accurate and easy-to-use "digital stick" level measurement tool. This setup is great for both a stationary installation or a mobile instrument.



This is made possible, largely, by the ability the MND has to power another sensor with its battery. The MND can both display the PT-500's reading and provide it power.

The wiring is also flexible. We can integrate the two by wiring them together in the factory, provide you with a connector on the display, or get you a wiring tee.

**Contact us to learn more about using the MND and PT-500 together. We can help you get both configured correctly and ordered together.**

Refer to the MND datasheet for more information.



# PT-500 SPECIFICATIONS



## Performance

- Accuracy (linearity, hysteresis, & repeatability):  
± 0.250% of span (BFSL) (1% for ≤ 1 psi)
- 1 Year Stability: 0-20,000 PSIS
- Temp Effects on Zero & Span:  
≤ 0.025% FS/°F @ 70°

## Connectivity

- Output:  
4-20 mA  
0-5, 1-5, 1-10 VDC  
mV/V

## Environmental

- Maximum Depth:  
Submersible up to 575 ft.
- Standard Compensated Temp.:  
≤ 10 psi: 0° - 60°C / 32° - 140°F  
> 10 psi: -10° - 70°C / 14° - 158°F
- Storage Temp: -40° - 82°C / -40° - 180°F
- Operating Temp: -40° - 85°C / -40° - 185°F

## Certification

- 4-20 mA Output Only  
CSA Intrinsically Safe:  
Class 1, Division 1; Groups C & D  
Ex ia IIB T4  
Class 1, Zone 0, AEx ia IIB T4  
Ambient: -40 - 85°C  
Single Seal

## Electrical

- Supply Voltage:  
4-20 mA, 0-5 VDC, 1-5 VDC: 9-28 VDC  
1-10 VDC: 14-28 VDC  
mV/V: 10 VDC
- Current Draw:  
4-20 mA: 3-30 mA  
0-5 VDC, 1-5 VDC, 1-10 VDC: 3 mA
- Electrical Connection:  
Vented watertight cable w/free ends  
Up to 200 lbs tensile strength
- Electrical Protection:  
Lightning Transient and Surge protection is built in.  
Protected against reverse polarity, surge per IEC  
61000-4-5

## Physical

- Sensor Housing: 316L SS
- Enclosure: 316L SS
- Seal Housing: 316L SS
- Seal: Viton ETP-s
- Protective Nose Cone: Delrin
- Cables: PVC, Polyurethane, Hytrel

# PT-500 COMMON MODEL CONFIGURATIONS

## Waste Water Configurations

Model Number	Model Description
PT-500C-5-PSI-G-L1-E0-P39-40-N0	4-20mA, <b>0-5 PSI</b> , Removable cage and 1-1/2" Tri-clover, <b>40 ft. PVC cable, 0° - 60°C</b>
PT-500C-10-PSI-G-L1-E0-P39-40-N0	4-20mA, <b>0-10 PSI</b> , Removable cage and 1-1/2" Tri-clover, <b>40 ft. PVC cable, 0° - 60°C</b>
PT-500C-15-PSI-G-L1-E0-P39-60-N0	4-20mA, <b>0-15 PSI</b> , Removable cage and 1-1/2" Tri-clover, <b>60 ft. PVC cable, -10° - 70°C</b>
PT-500C-20-PSI-G-L1-E0-P39-60-N0	4-20mA, <b>0-20 PSI</b> , Removable cage and 1-1/2" Tri-clover, <b>60 ft. PVC cable, -10° - 70°C</b>

## Clean Water Configurations

Model Number	Model Description
PT-500C-5-PSI-G-L1-E0-P1-40-N0	4-20mA, <b>0-5 PSI</b> , 1/2" NPTM and removable nose cone, <b>40 ft. PVC cable, 0° - 60°C</b>
PT-500C-10-PSI-G-L1-E0-P1-40-N0	4-20mA, <b>0-10 PSI</b> , 1/2" NPTM and removable nose cone, <b>40 ft. PVC cable, 0° - 60°C</b>
PT-500C-15-PSI-G-L1-E0-P1-60-N0	4-20mA, <b>0-15 PSI</b> , 1/2" NPTM and removable nose cone, <b>60 ft. PVC cable, -10° - 70°C</b>
PT-500C-20-PSI-G-L1-E0-P1-60-N0	4-20mA, <b>0-20 PSI</b> , 1/2" NPTM and removable nose cone, <b>60 ft. PVC cable, -10° - 70°C</b>

## PT-500 ACCESSORIES

Please order separately, by part number.

Description	Part Number
316L SS hex coupler, 1/2" NPTF to 1/2" NPTF	511414
Desiccant drying cartridge for breathing tube	122774-0028
Cage assembly	548001-8888
Gore filter*	511328

Note: \*Indicates this option is included with a vented sensor purchase unless a desiccant cartridge is ordered.

# MODEL CONFIGURATION OPTIONS

Model Number: PT-500 \_\_\_\_\_ - \_\_\_\_\_ - \_\_\_\_\_ - \_\_\_\_\_ - \_\_\_\_\_ - \_\_\_\_\_ - \_\_\_\_\_ - \_\_\_\_\_ - \_\_\_\_\_  
 A B C D E F G H I

## A. Cable Type

- ▲ Polyurethane - Blue
- B Hytrel .31" Ø - Black
- C PVC - Black
- D Hytrel .25" Ø - Black

## B. Pressure Range

- Specify range in desired unit of measure

\_\_\_\_\_ Max Water Depth  
 575 ft. (175.25 m), 250 psi

## C. Standard Units of Measure

- PSI
- FTH2O
- INH2O
- MMH2O

## D. Pressure Type (venting) Range Restrictions

- G Gauge (open vent tube) -- 0 - 250 psi
- A Absolute (sealed vent tube) -- 10 - 200 psi
- S Sealed (sealed vent tube) -- 4 - 20 psi

## E. Output

- L1▲ 4-20 mA, 2-wire
- L3 0-5V, 4-wire\*
- L9 10 mV/V, 4-wire\*
- L12 1-5V, 4-wire\*
- L21 1-10V, 4-wire\*
  
- L5 Modbus RTU, 4-wire RS-485\*†  
 Pressure reading only
  
- L31 Modbus RTU, 4-wire RS-485 \*†  
 Level calculations, tank volume

Note: \*Indicates this option does not yet have CSA Approvals.

Note: †Indicates Field Adjustable Zero feature is not included.

## F. NPTM

- E0▲ 1/2" NPTM fitting for conduit, with pigtail
- E5 Pigtail without conduit connection

## G. Process Connection

- P1▲ 1/2" NPTM with removable plastic nose cone
- P5 1/4" NPTF
- P37 Welded Cage (anti-snag 1 piece fitting)
- P38 1-1/2" tri-clover with 3/4" diaphragm
- P39 Reusable Cage (includes P38 fitting)

## H. Cable Length

- (specify length of cable needed in feet)

## I. Accuracy

### Greater than 1 PSI

- N0▲ ±0.25%
- N1 ±0.25% with NIST certification
- N2 ±0.1% with NIST certification

### 1 PSI and below

- N3 ±1%
- N4 ±1% with NIST certification

Note: ▲Indicates this option is standard.

# PT-500 Submersible Pressure Transducer



## Robust from Top to Bottom

This fully welded body is ready for the most demanding applications. And with its long list of features, the PT-500 from APG is in a class of its own.

Give us a call at (888) 525-7300 to learn more.

## 1/2" NPT Fitting

- Mount to a conduit pipe
- Hang from a steel wire
- Saves cable from wear
- Avoid interference with pumps

## CSA Class 1, Div 1

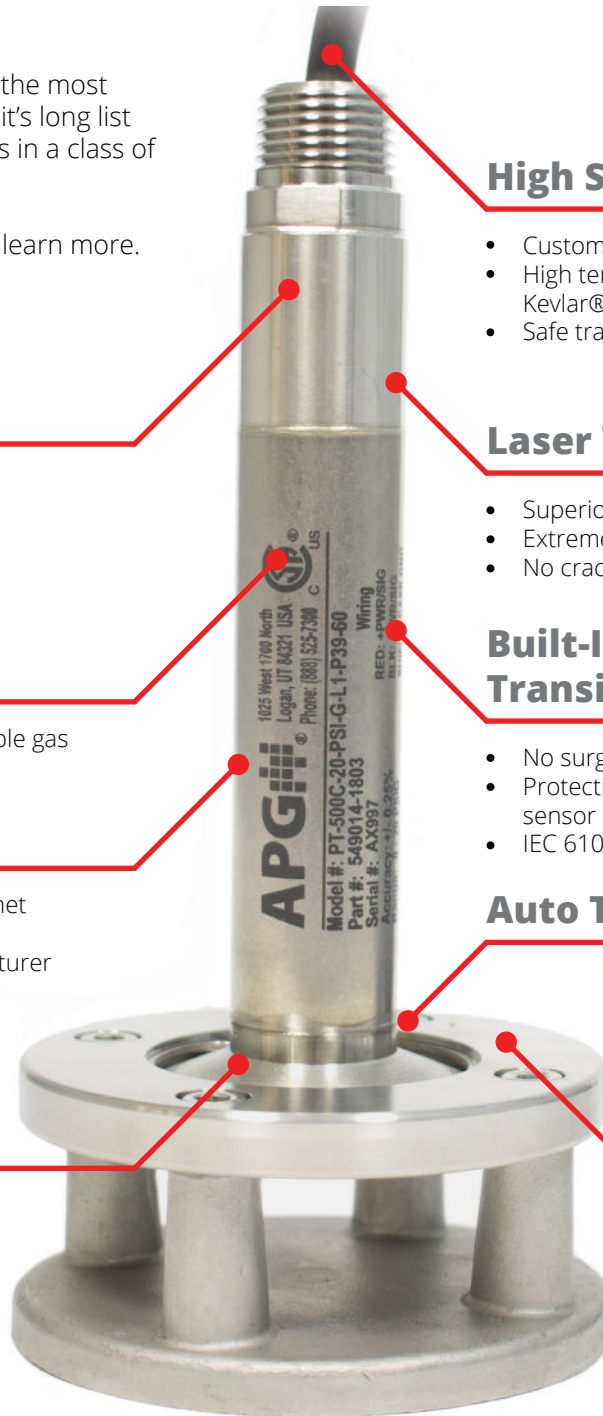
- Safe for operation around flammable gas

## Field Adjustable

- Adjust zero point with simple magnet
- Magnet provided with the sensor
- Don't have to send to the manufacturer for simple adjustments

## Durable Transducer Face

- Can be handled freely
- Will not be damaged from simple touch
- State-of-the-art MEMs transducer



## High Strength Cable

- Custom made to our spec
- High tensile strength with Kevlar® (200 lbs)
- Safe transducer ventilation

## Laser Welds

- Superior laser welds
- Extremely durable
- No cracks or leaks

## Built-In Surge and Lightning Transient Protection

- No surge protector necessary
- Protection built right into the sensor
- IEC 61000-4-5 compliant

## Auto Temp Compensation

- Embedded temperature sensor
- Automatic compensation

## Patented Re-Usable Cage

- Only re-usable cage on the market
- Keeping the cage saves money on replacement sensors

