At APG, our primary goal is to enrich lives by providing reliable solutions and products to our customers. We are dedicated to designing and manufacturing innovative level and pressure sensors to match your application needs. As part of that dedication, we recently released the MPXI-F/B and the MPXI-F/K, two new products that add flexibility to our long-lasting and dependable MPX probe series.

APG has specialized in matching application needs with the right sensing technologies since the early ‘70s. Our sensors are used in applications across a variety of industries including:

- Water / Wastewater
- Food / Beverage
- Chemical / Petrochemical
- Mining / Minerals
- Medical / Pharmacy
- Aerospace / Military
- Oil / Gas
- Car Wash
- Agriculture

As an ISO 9001:2015 certified manufacturer, quality is a commitment we make to our customers at APG. We firmly believe that we cannot succeed if our customers do not succeed. So, what pressure or level measurement and control problems can we help you solve?

Our Measurement Experts are available via phone, email, or web-chat Monday through Friday, from 7 AM to 5 PM Mountain Time, and our online store at store.apgsensors.com is available 24 hours a day. If you prefer, you can fill out the Contact Us form on our website, or find us on LinkedIn, Facebook, Twitter, YouTube, and Instagram.
APG’s level switches are contact level sensors used for point-level measurements of liquids and fluidized solids. They are also used for level indication, such as controlling pumps and alarms when a specific element must be maintained. APG’s level switches come in a variety of options, from singular float switches to multi-point level switches, and can be used in a variety of places, from small, tight corners to larger silo spaces. Their durability is unmatched, making them a reliable choice for your needs.

LIQUID LEVEL SOLUTIONS
- Float Switches
- Stem-Mounted Float Switches
- Cable Float Switches
- Pneumatic Level Switch

SOLID LEVEL SOLUTIONS
- Paddle Wheel Switch
- Vibrating Level Switch

COMMON APPLICATIONS
- Pump Control
- Alarm Configuration
- Tank Level
- Solids Processing/Handling
- Water and Wastewater
- Food and Beverage
- Agriculture
**FLOAT SWITCHES**

**WHERE THEY WORK**

An APG float switch can be found for almost every situation because of the variety of materials, arrangements, and capabilities they have. Whether complicated or straightforward, small vessels or large reservoirs, common liquids or really aggressive chemicals, there is an APG float switch fit for the job.

**FS-500**  
Stainless Steel Horizontal Float Switch

With reversible switch orientation, three mounting choices, and CSA & NSF 169 certifications, the FS-500 switch is go-anywhere, use-everywhere horizontal float switch.

**FS-410**  
Miniature Vertical Float Switch

Designed to measure small spaces, the FS-410 is less than 2.35” in total height and the float is just under 1.2” wide.

**FS-400**  
Vertical Stainless Steel Float Switch

All stainless steel wetted materials, operating temperatures up to 500°F, and capable of VDC or VAC operation.

**Stem-Mounted Float Switches**

**FLE/R**  
Custom Multi-Point Level Control

The FLE series delivers linear level measurement in tight spaces, with a single mount holding up to three (FLE) or seven (FLR) switch points customized to your needs. The FLE’s 5/16-inch diameter stem makes it perfect for small tanks and totes, while the FLR’s 1/2-inch diameter stem operates well in larger tanks and barrels.

**FLX**  
Explosion-Proof Point-Level Control

The FLX is THE float switch for use in Class I Division 1 or 2 hazardous locations in North America. Up to seven switch points can be placed along the stem, wherever you need them, making each FLX uniquely customized to its intended application.

**Cable-Limited Float Switches**

**KA**  
Single Float Switch

A single Kari float allows up to four switch points in a single float, saving you money by replacing four separate float switches. The sensors are durable, highly chemical compatible, and come in 25 configurations, most with built-in hysteresis.

**FT-100/300**  
Single-Point Float Switch

This inexpensive, traditional single-point switch is ideal for simple alarming applications. The sensors trigger immediately above or below horizontal, for a highly repeatable performance that you can count on.

**TLS**  
Dual-Point Float Switch with Hysteresis

The TLS series cable switches are dual-point switches with built-in hysteresis to provide high-and-low-level control that won’t wear out your pumps with frequent on/off cycles.

<table>
<thead>
<tr>
<th>Material</th>
<th>FS-400</th>
<th>FS-410</th>
<th>FS-500</th>
</tr>
</thead>
<tbody>
<tr>
<td>Max Power</td>
<td>100 W</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Temp. Range</td>
<td>-40°F up to 500°F</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Specific Gravity</td>
<td>0.6</td>
<td>0.7</td>
<td></td>
</tr>
<tr>
<td>Certifications</td>
<td>CSA Explosion-proof to 360°F; General Use to 500°F; All Models NSF 169</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**FS-500**

Max. Stem Length  
Up to 48 in

Switch Points  
Up to 3

Wetted Material  
316L SS

Certification  
NEMA 4X, IP68; IP65 — Flameproof/Explosion-proof - CSA

<table>
<thead>
<tr>
<th>Max. Stem Length</th>
<th>Switch Points</th>
<th>Wetted Material</th>
<th>Certification</th>
</tr>
</thead>
<tbody>
<tr>
<td>FLE</td>
<td>Up to 48 in</td>
<td>316L SS</td>
<td></td>
</tr>
<tr>
<td>FLR</td>
<td>Up to 153 in</td>
<td></td>
<td></td>
</tr>
<tr>
<td>FLX</td>
<td>Up to 7</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Where They Work**

All stainless steel wetted materials, operating temperatures up to 500°F, and capable of VDC or VAC operation.

**Certifications**

NEMA 4X, IP68; IP65 — Flameproof/Explosion-proof - CSA

**Certifications**

General Purpose - CSA

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**APGSensors.com**

store.apgsensors.com
**LEVEL SWITCHES**

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**NLS**

**Pneumatic Level Switch**

Viscous liquids can stop a float switch in its tracks. NLS pneumatic point-level sensors have no wetted moving parts—only a flexing diaphragm safely tucked inside the housing—so they provide long-lasting and reliable performance in your stickiest situations.

**Operation**

- 1 SPDT Switch

**Detection Range**

- 8 to 200 in.

**Operating Temperature**

- -4 to 158° F

**Enclosure Protection**

- IP42, NEMA 1

---

**PWS**

**Mini Level Paddle Wheel Switch**

With a paddle diameter of 3.15" and blade depths between 1.2 and 1.5", the PWS Mini Level Paddle Wheel switch is perfect for providing level-based on-off signals in small bins, hoppers, and any other small- to medium-grain piling solids.

**Operation**

- 1 SPDT Switch

**Detection Range**

- 8 to 200 in.

**Adjustable Torque Setting**

- 390 to 630 g/cm

**Enclosure Protection**

- IP40

---

**VBL**

**Vibrating Rod Level Switch**

The VBL allows you to adjust the sensitivity setting to accurately detect the presence of different types of solids, and for silos and bins of many shapes and sizes.

**Operation**

- 1 SPDT Switch

**Power Consumption**

- ≤ 15 VA

**Sensitivity Adjustments**

- High small particles, Low: large particles

**Enclosure Protection**

- IP65, NEMA 4
APG offers both contact and non-contact level transmitters that provide continuous level measurements. APG manufactures level transmitters that can be used to determine the level of both liquids and bulk solids at any given time. Many of the level transmitters can additionally be used for point-level detection.

LIQUID LEVEL SOLUTIONS
- Ultrasonic Level Sensors
- Magnetostrictive Liquid Level Probes
- Resistive Liquid Level Sensors
- Radar Level Transmitters
- Submersible Pressure Transducers

SOLID LEVEL SOLUTIONS
- Ultrasonic Level Sensors
- Radar Level Transmitters

OBJECT DETECTION
- Ultrasonic Level Sensors

COMMON APPLICATIONS
- Tank Level
- Open Channel Flow
- Water and Wastewater
- Food and Beverage
- Agriculture
- Minerals and Mining
- Chemical / Petrochemical
- Solids Processing / Handling
ULTRASONIC LEVEL SENSORS

WHERE THEY WORK

Ultrasonic sensors are our workhorse level sensors because they perform well in so many places and environments. Ultrasonics are great for almost all tank-level measurement applications, open channel flow calculations, and monitoring reservoirs, retention ponds, or dam tail-waters. They do well for object detection/profiling in car wash systems, and can be programmed to provide distance, level, or volume output readings.

MNU IS

Intrinsically Safe Modbus Sensor
Our MNU IS brings worry-free level monitoring and remote Modbus controls to hazardous locations with its intrinsically safe design.

MNU

Web-Enabled Modbus Sensor
Built for any situation that requires Modbus, the MNU is compatible with any Modbus controller, and can be monitored online via Tank Cloud.

LOE

Web-Enabled Sensor and Controller
Designed for remote measurement, the LOE series connects to the internet to provide online monitoring via Tank Cloud for up to 10 APG Modbus sensors.

<table>
<thead>
<tr>
<th>Range</th>
<th>MNU IS</th>
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<tbody>
<tr>
<td>4 in to 40 ft</td>
<td>4-20 mA</td>
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</tr>
<tr>
<td>Output</td>
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<tr>
<td>2 in NPT</td>
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<td>Certification</td>
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<td>Intrinsically Safe - CSA, IECEx, ATEX C1D2 - CSA</td>
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LPU-2127

Built-in Keypad and Display
The LPU-2127 features an LCD display for easy programming performed entirely through the built-in keypad.

LPU-2428

Intrinsically Safe, Loop-Powered
Made for highly configurable measurement in linear and non-linear tanks and channels, the LPU-2428 can internally calculate distance, level, open-channel flow, or volume.

IRU-2000

For Object Detection
The IRU-2000 mounts to a flat surface and is ideal for presence/absence detection, object profiling, and a variety of other applications.

IRU-2420, -3400, -5000

Mid-, Long-, and Short-Range Sensors
Designed with flexibility in mind, these series feature auto-sense software for quick, easy programming in a variety of applications.

IRU-6429

Datalogger Compatible
The IRU-6429 features auto-sense software for quick and easy programming, and an excitation input for datalogging.

IRU-9400

For Soft or Reflective Target Surfaces
The IRU-9400 is an indoor sensor with a more sensitive transducer to detect difficult targets such as reflective or soft surfaces.

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IRU-9400

For Soft or Reflective Target Surfaces
The IRU-9400 is an indoor sensor with a more sensitive transducer to detect difficult targets such as reflective or soft surfaces.
WHY IT WORKS: MPXI-F

The MPXI-F works because of the unique Class I, Zone 0/1 rating which allows for an Explosion Proof connection to a Zone 1-installed housing on top of a Zone 0-installed probe stem.

MPXI-F/K PVDF (Kynar) Flexible Stem
The MPXI-F/K features a proprietary PVDF-blend flexible stem and optional high-level float switch for simple installation in the tallest of tall tanks.

MPXI-F/B Stainless Steel Flexible Stem
The MPXI-F/B features a 316L SS flexible tubing braided stem that uncoils easily for simple installation in tall tanks.

MPXI-F/B "XP" Flexible Level Transmitter For Harsh Environments
An anti-corrosion stem coating, a chemically-resistant float, and Explosion-proof ratings allow the MPXI-F/B to handle big-time nasty chemicals in small scale containers and transport settings.

MPXI-F/K "XP" Flexible Level Transmitter For Small Spaces
With a 0.5"-diameter 316L SS stem that comes in lengths up to 12.75', the MPXI-F is built to handle tough environments in small spaces.

MPXI-F/B "XP" Flexible Level Transmitter For Harsh Environments
The MPXI-F/B uses a 3/8"-diameter 316L SS stem and 31.5' max length allow it to bring precision measurement to bigger tanks and thicker liquids.

MPXI-F/K "XP" Flexible Level Transmitter For Small Spaces
The MPXI-F/K features a proprietary PVDF-blend flexible stem and optional high-level float switch for simple installation in the tallest of tall tanks.

MPXI-F/B "XP" Flexible Level Transmitter For Small Spaces
With a 0.5"-diameter 316L SS stem that comes in lengths up to 12.75', the MPXI-F is built to handle tough environments in small spaces.

MPXI-F/B "XP" Flexible Level Transmitter For Harsh Environments
An anti-corrosion stem coating, a chemically-resistant float, and Explosion-proof ratings allow the MPXI-F/B to handle big-time nasty chemicals in small scale containers and transport settings.

MPXI-F/K "XP" Flexible Level Transmitter For Small Spaces
The MPXI-F/K features a proprietary PVDF-blend flexible stem and optional high-level float switch for simple installation in the tallest of tall tanks.

MPXI-F/B "XP" Flexible Level Transmitter For Small Spaces
With a 0.5"-diameter 316L SS stem that comes in lengths up to 12.75', the MPXI-F is built to handle tough environments in small spaces.

MPXI-F/B "XP" Flexible Level Transmitter For Harsh Environments
An anti-corrosion stem coating, a chemically-resistant float, and Explosion-proof ratings allow the MPXI-F/B to handle big-time nasty chemicals in small scale containers and transport settings.

MPXI-F/K "XP" Flexible Level Transmitter For Small Spaces
The MPXI-F/K features a proprietary PVDF-blend flexible stem and optional high-level float switch for simple installation in the tallest of tall tanks.

MPXI-F/B "XP" Flexible Level Transmitter For Small Spaces
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An anti-corrosion stem coating, a chemically-resistant float, and Explosion-proof ratings allow the MPXI-F/B to handle big-time nasty chemicals in small scale containers and transport settings.

MPXI-F/K "XP" Flexible Level Transmitter For Small Spaces
The MPXI-F/K features a proprietary PVDF-blend flexible stem and optional high-level float switch for simple installation in the tallest of tall tanks.

MPXI-F/B "XP" Flexible Level Transmitter For Small Spaces
With a 0.5"-diameter 316L SS stem that comes in lengths up to 12.75', the MPXI-F is built to handle tough environments in small spaces.

MPXI-F/B "XP" Flexible Level Transmitter For Harsh Environments
An anti-corrosion stem coating, a chemically-resistant float, and Explosion-proof ratings allow the MPXI-F/B to handle big-time nasty chemicals in small scale containers and transport settings.

MPXI-F/K "XP" Flexible Level Transmitter For Small Spaces
The MPXI-F/K features a proprietary PVDF-blend flexible stem and optional high-level float switch for simple installation in the tallest of tall tanks.

MPXI-F/B "XP" Flexible Level Transmitter For Small Spaces
With a 0.5"-diameter 316L SS stem that comes in lengths up to 12.75', the MPXI-F is built to handle tough environments in small spaces.

MPXI-F/B "XP" Flexible Level Transmitter For Harsh Environments
An anti-corrosion stem coating, a chemically-resistant float, and Explosion-proof ratings allow the MPXI-F/B to handle big-time nasty chemicals in small scale containers and transport settings.

MPXI-F/K "XP" Flexible Level Transmitter For Small Spaces
The MPXI-F/K features a proprietary PVDF-blend flexible stem and optional high-level float switch for simple installation in the tallest of tall tanks.

MPXI-F/B "XP" Flexible Level Transmitter For Small Spaces
With a 0.5"-diameter 316L SS stem that comes in lengths up to 12.75', the MPXI-F is built to handle tough environments in small spaces.

MPXI-F/B "XP" Flexible Level Transmitter For Harsh Environments
An anti-corrosion stem coating, a chemically-resistant float, and Explosion-proof ratings allow the MPXI-F/B to handle big-time nasty chemicals in small scale containers and transport settings.

MPXI-F/K "XP" Flexible Level Transmitter For Small Spaces
The MPXI-F/K features a proprietary PVDF-blend flexible stem and optional high-level float switch for simple installation in the tallest of tall tanks.

MPXI-F/B "XP" Flexible Level Transmitter For Small Spaces
With a 0.5"-diameter 316L SS stem that comes in lengths up to 12.75', the MPXI-F is built to handle tough environments in small spaces.

MPXI-F/B "XP" Flexible Level Transmitter For Harsh Environments
An anti-corrosion stem coating, a chemically-resistant float, and Explosion-proof ratings allow the MPXI-F/B to handle big-time nasty chemicals in small scale containers and transport settings.

MPXI-F/K "XP" Flexible Level Transmitter For Small Spaces
The MPXI-F/K features a proprietary PVDF-blend flexible stem and optional high-level float switch for simple installation in the tallest of tall tanks.

MPXI-F/B "XP" Flexible Level Transmitter For Small Spaces
With a 0.5"-diameter 316L SS stem that comes in lengths up to 12.75', the MPXI-F is built to handle tough environments in small spaces.

MPXI-F/B "XP" Flexible Level Transmitter For Harsh Environments
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The MPXI-F/K features a proprietary PVDF-blend flexible stem and optional high-level float switch for simple installation in the tallest of tall tanks.

MPXI-F/B "XP" Flexible Level Transmitter For Small Spaces
With a 0.5"-diameter 316L SS stem that comes in lengths up to 12.75', the MPXI-F is built to handle tough environments in small spaces.

MPXI-F/B "XP" Flexible Level Transmitter For Harsh Environments
An anti-corrosion stem coating, a chemically-resistant float, and Explosion-proof ratings allow the MPXI-F/B to handle big-time nasty chemicals in small scale containers and transport settings.

MPXI-F/K "XP" Flexible Level Transmitter For Small Spaces
The MPXI-F/K features a proprietary PVDF-blend flexible stem and optional high-level float switch for simple installation in the tallest of tall tanks.

MPXI-F/B "XP" Flexible Level Transmitter For Small Spaces
With a 0.5"-diameter 316L SS stem that comes in lengths up to 12.75', the MPXI-F is built to handle tough environments in small spaces.

MPXI-F/B "XP" Flexible Level Transmitter For Harsh Environments
An anti-corrosion stem coating, a chemically-resistant float, and Explosion-proof ratings allow the MPXI-F/B to handle big-time nasty chemicals in small scale containers and transport settings.

MPXI-F/K "XP" Flexible Level Transmitter For Small Spaces
The MPXI-F/K features a proprietary PVDF-blend flexible stem and optional high-level float switch for simple installation in the tallest of tall tanks.
Our RPE probes are designed around two technologies that excel in the ultra-tough environments of oil and gas exploration: resistive chains and large, buoyant floats. Inside each probe stem is a chain of resistors linked by reed switches, which are opened and closed by the magnet in the float traveling up and down the stem. No amount of physical shaking or bumping can change the state of a resistor, and the floats are designed to provide unimpeded movement in thick, viscous liquids.

**RPE**
1/2" Stem - Industrial Strength Level Probe

Designed with small spaces in mind, the RPE combines a 1/2" diameter stainless steel stem with unsinkable floats for long-lasting, dependable continuous level readings.

**RPX**
1/2" Stem - Hazardous Location Level Probe

From mud tanks to meat-processing plant waste sumps, and any hazardous location in between, the RPX doesn't flinch when called to action in challenging environments.

**RPM**
1.25" Stem - Explosion-Proof Liquid Level Probe

The RPM is made to work for you and is completely customizable for your needs including: probe length, float type, specific gravity and outputs.

### MPI Probes

<table>
<thead>
<tr>
<th>MPI-R</th>
<th>MPI-T</th>
<th>MPI-E</th>
<th>MPI-E Chemical</th>
<th>MPI-F/B</th>
<th>MPI-F/K</th>
</tr>
</thead>
<tbody>
<tr>
<td>Max Length</td>
<td>31.5 ft</td>
<td>25 ft</td>
<td>12.75 ft</td>
<td>32 ft</td>
<td>50 ft</td>
</tr>
<tr>
<td>Stem</td>
<td>1.0&quot; ø 316L SS</td>
<td>1.0&quot; ø Titanium</td>
<td>1.0&quot; ø 316L SS</td>
<td>1/2&quot; ø 316L SS with chemical resistant coating</td>
<td>1/2&quot; ø Flexible Tubing with Braid, 316L SS</td>
</tr>
<tr>
<td>Output</td>
<td>RS-485 Modbus</td>
<td>None; Up to 7 Digital</td>
<td>RS-485 Modbus</td>
<td>4-20 mA</td>
<td></td>
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<tr>
<td>Temperature Sensor</td>
<td>None; Up to 7 Digital</td>
<td>None; Up to 7 Digital</td>
<td>None; Up to 7 Digital</td>
<td>None; Up to 7 Digital</td>
<td></td>
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<tr>
<td>Mount</td>
<td>NPT, No Mount</td>
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**MPI Probes**

- **MPI-R**: IS Float Level Transmitter For Small Tanks
- **MPI-T**: IS Titanium Float Level Transmitter
  - With a 1.0" titanium stem, Class Div 1 and Class I Zone 0 approvals, and floats that just don't get stuck, the MPI-T is built to conquer corrosive chemicals and hazardous locations.
- **MPI-E**: IS Float Level Transmitter For Harsh Environments
  - With a coating to keep the probe safe in corrosive liquids, and Intrinsic Safety ratings, the MPI-E Chemical is perfect for small-scale measurements in big-time nasty environments.
- **MPI-F**: IS Flexible Float Level Transmitter
  - For easy installation and wiring in the tallest of tall tanks.
- **MPI-F/K**: IS Flexible Float For Very Tall Tanks
  - The MPI-F/K features a proprietary PVDF-blend flexible stem that uncoils easily for simple installation in tall tanks.

Our MPI probes carry Class I Division 1 / Class I Zone 0 Intrinsically Safe certifications that are accepted for easy wiring and quick installation nearly worldwide.

**MPI-E Chemical**

IS Float Level Transmitter For Harsh Environments

With a coating to keep the probe safe in corrosive liquids, and Intrinsic Safety ratings, the MPI-E Chemical is perfect for small-scale measurements in big-time nasty environments.

**MPI-RP**

- **RPX**: IS Float Level Transmitter For Large Tanks
  - The MPI-RP's 1.0" diameter 316L SS stem and 31.5' max length allow it to bring precision measurement to bigger tanks and thicker liquids.
- **MPI-F/B**: IS Flexible Float Level Transmitter
  - The MPI-F features a 316L SS flexible tubing braided stem that uncoils easily for simple installation in tanks.
**RADAR LEVEL TRANSMITTERS**

**WHY THEY WORK**

Instead of the physical sound waves used by ultrasonic sensors, radar sensors use electromagnetic waves to measure the distance between the transmitter and the surface of a substance. Thus, they are ideal for measuring difficult materials where there is foam, vapor, or dust that interferes with other noncontact-technology sensors. True Echo™ Radar Level Transmitters have a further advantage in their ability to ignore echoes from identified physical interferences, allowing them to generate a much clearer reading at a much lower power setting.

**PRS**

Dual-Frequency Radar for Solids
The True Echo™ PRS provides accurate level readings of difficult to measure solids: powders, pellets, grains, and granules.

**PRX**

Explosion-Proof
True Echo™ PRX makes getting dependable level readings in Class I, Division 1, and Class II/III, Division 1 hazardous locations simple.

**PRL**

Pulse Radar for Liquids
The True Echo™ PRL provides accurate level readings from all types of liquid level measurement, including oil-water interface measurement via additional firmware.

**WHERE THEY WORK**

APG’s submersible pressure transducers are incredibly versatile, often used in waste liquids. Their low current draw makes them popular for battery-powered applications. With our pressure transducers, you can get a pressure level reading inside a tank, well, containment vessel, or outside in areas prone to running or standing liquids.

APG’s PT-500 Series Submersible Pressure Transducers are the only transducers on the market with built-in lightning transience protection, Class 1, Division 1 certification, and field-adjustable zero. The PT-500 Series is Tank Cloud compatible for remote monitoring via the internet.

**PT-500-P1**

For Clean Liquids
The PT-500-P1 has a nose cone fitting and is designed for use in clean liquids.

**PT-500-P38/39**

For Mixed Fluids
The patented, welded cage on the PT-500-P38 and -P39 is designed to protect the sensitive diaphragm in turbulent and dirty liquids. The cage is either removable and reusable, or permanently welded to the PT-500.

**WHY THEY WORK**

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APG’s pressure sensors use piezoresistive technology to accurately measure the pressure of both liquids and gases. Popular throughout the oil and gas industry, APG’s pressure transducers are used in both process and storage environments. APG’s digital pressure gauges serve as a vital safety tool to control pressure in any process that uses pressurized vessels or lines. With their accurate, easy-to-read design, they are one of the most valuable instruments you can have. Our hammer union pressure transducers are used across the globe for monitoring mud pressure during the drilling process, along with our PT-400 and PT-405 pressure transducers.

PRESSURE SENSORS
Pressure Transducers
Hammer Union Pressure Transducers
Submersible Pressure Transducers
Digital Pressure Gauges

COMMON APPLICATIONS
Oil and Gas
Tank Level
Pump Control / Monitoring
Filter and Control Valve Monitoring
Hydraulic Weight / Force
Chemical / Petrochemical
Pharmacy
Minerals and Mining
Water and Wastewater
Food and Beverage
Agriculture
Medical
PT-400 is built for harsh environments, high vibration, high-pressure spikes, and even extended temperature compensation.

**PT-L1/L3/L10**
Amplified Output for General Use
These compact, inexpensive pressure transducers have an amplified output and are great for a wide variety of uses, including OEM applications.

**PT-L9/L13/L14**
Millivolt Output for General Use
These inexpensive, super compact pressure transducers have a millivolt output and fit just about anywhere.

The PT-405 pressure transducer offers high accuracy and reliability over a wide range of pressures with cCSAus approvals.

**WHERE THEY WORK**
APG’s Pressure Transducers are engineered and manufactured to provide accurate and reliable pressure measurements everywhere you need them. From protected pump houses to remote tank farms to exposed oil rigs, in commercial, industrial, or hazardous environments, you can depend on APG’s high-precision pressure transducers.

**PT-405**
Explosion-Proof
The PT-405 pressure transducer offers high accuracy and reliability over a wide range of pressures with cCSAus approvals.

**WHERE THEY WORK**
APG’s Hammer Union Pressure Transducers are built for extreme pressure, intense vibration, and rough handling. Designed with a wider top for easy connector access, these sensors also feature large drain holes to keep water from collecting around the electronics.

**HU-1502I**
Intrinsically Safe, Sour Gas Compatible
Combining the toughness you need with a recalibration port, the HU-1502I is field-proven and features corrosion-resistant material alongside welded construction built from the ground up.

<table>
<thead>
<tr>
<th>PT-400</th>
<th>PT-405</th>
<th>PT-L1/L3/L10</th>
<th>PT-L9/L13/L14</th>
</tr>
</thead>
<tbody>
<tr>
<td>Range</td>
<td>up to 30,000 psi</td>
<td>up to 10,000 psi</td>
<td></td>
</tr>
<tr>
<td>Output</td>
<td>4-20 mA, 0-5 V, 0-10 V, RS-485</td>
<td>4-20 mA, 0-5 V, 0-10 V</td>
<td>mV/V</td>
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<tr>
<td>Accuracy</td>
<td>0.1 % of f.s.</td>
<td>0.25 % of f.s.</td>
<td>0.1 % of f.s.</td>
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<tr>
<td>Enclosure Protection</td>
<td>—</td>
<td>IP65</td>
<td>—</td>
</tr>
<tr>
<td>Temperature Range</td>
<td>—</td>
<td>-40 to 180° F</td>
<td>—</td>
</tr>
<tr>
<td>Certification</td>
<td>Intrinsically Safe - CSA, ATEX, IECEx (4-20 mA only)</td>
<td>Explosion-proof - CSA</td>
<td>—</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>HU-1502I</th>
</tr>
</thead>
<tbody>
<tr>
<td>Range</td>
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<tr>
<td>Output</td>
</tr>
<tr>
<td>Accuracy</td>
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<tr>
<td>Enclosure Protection</td>
</tr>
<tr>
<td>Temperature Range</td>
</tr>
<tr>
<td>Certification</td>
</tr>
</tbody>
</table>
DIGITAL PRESSURE GAUGES

WHERE THEY WORK

Monitoring pumps is critical, and gauges installed on or near pumps must be able to handle the associated vibrations. Dial pressure gauges are full of moving parts and small gears easily damaged by over-pressure and vibration, not to mention the reading errors inherent to a dial display. In contrast, each of APG’s digital pressure gauges contain a flexible diaphragm as the sole moving part, so constant vibration hurts neither the gauge, nor the digital readout. Designed to withstand over-pressure, vibration, and even water hammer, our digital pressure gauges are accurate and readable in demanding conditions.

PG2
Low-Cost, Indoor/Outdoor Gauge
The PG2 digital gauge comes with auto-off and re-zeroing functions, user-selectable units of measure, and an easy-to-read display.

PG5
Full-Feature Indoor Gauge
Serving as the foundation to our PG series of gauges, this full-feature, general purpose gauge is designed for accurate indoor pressure measurements.

PG7
Rugged Full-Feature Gauge
The PG7 is a rugged full-feature gauge perfect for indoor and outdoor use.

PG10
Large Display Gauge
The PG10 is our feature gauge with a large, 5-digit display, 270° radial bar, and datalogging.

DIGITAL PRESSURE GAUGES

DISPLAYS AND CONTROLLERS

PG2 PG5 PG7 PG10

Range up to 5,000 psi up to 10,000 psi up to 30,000 psi up to 10,000 psi
Output — 4-20 mA, 0-2 V, 0-5 V 4-20 mA, 0-2 V, 0-5 V; Modbus RTU
Accuracy available 0.5 % of fs. available 0.1 % of fs.
Enclosure Protection IP65 — IP65

MND
Modbus Digital Display
Local display that works up to 10 sensors as a server, client, or power source on any Modbus network.

DDD/DBD
Din Mounted Digital Display
Din Mounted Digital/Bright Displays provide highly configurable, 2-line displays with NEMA 4X / IP65 front facing ratings.

DDL
Intrinsically Safe Modbus Display
Cl. Z1 display that can power and control a Cl. Z0 or Cl. Z1 sensor, with optional passive connection to external monitoring network.

LPD
Loop-Powered Display
Local display designed to be inserted into a 4-20 mA sensor current loop.

RST-5003
Web-Enabled Controller
Connects up to 10 daisy-chained Modbus sensors and one 4-20 mA sensor to Tank Cloud for remote viewing and control.

MND MND LPD RST-5003 DDD/DBD DDL DDL

Input Modbus RTU Modbus RTU 4-20 mA Modbus, 4-20 mA, 0-2 Switches 4-20 mA, 0-10 V DC 4-20 mA, 0-10 V DC
Output Modbus RTU 4-20 mA, 0-3 V, 1 SPDT Relay, 2 NO or NC Relays 4-20 mA Modbus, TCP/IP, 2 Relays, 0-2 Isolated SSR 0, 2, or 4 SPDT Relays, Isolated 4-20 mA
Mount Wall Handheld, Panel, Wall Din Rail Panel, Wall
Enclosure Protection IP66 IP67 IP67/IP68 — IP65

DDD/DBD
Din Mounted Digital Display

DDL
Large Digital Display
The DDL features 1-8” digits readable from 100 ft with high intensity LEDs for direct sun visibility, and a NEMA 4X/IP65 rated enclosure.

LPD
Loop- and line-powered explosion-proof display encased in a cast aluminum, FM-rated housing.

RST-5003
Web-Enabled Controller

DIGITAL PRESSURE GAUGES

DISPLAYS AND CONTROLLERS

MDI
Intrinsically Safe Modbus Display

DDL
Explosion-Proof Digital Display

DDD/DBD
Din Mounted Digital Display

MDI MND LPD RST-5003 DDD/DBD DDL DDL

Input Modbus RTU Modbus RTU 4-20 mA Modbus, 4-20 mA, 0-2 Switches 4-20 mA, 0-10 V DC 4-20 mA, 0-10 V DC
Output Modbus RTU 4-20 mA, 0-3 V, 1 SPDT Relay, 2 NO or NC Relays 4-20 mA Modbus, TCP/IP, 2 Relays, 0-2 Isolated SSR 0, 2, or 4 SPDT Relays, Isolated 4-20 mA
Mount Wall Handheld, Panel, Wall Din Rail Panel, Wall
Enclosure Protection IP66 IP67 IP67/IP68 — IP65

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The DDL features 1-8” digits readable from 100 ft with high intensity LEDs for direct sun visibility, and a NEMA 4X/IP65 rated enclosure.

LPD
Loop- and line-powered explosion-proof display encased in a cast aluminum, FM-rated housing.

RST-5003
Web-Enabled Controller
Connects up to 10 daisy-chained Modbus sensors and one 4-20 mA sensor to Tank Cloud for remote viewing and control.
Remote Vendor Managed Inventory System (VMIS)
Tank Minder remote vendor management system provides real-time tank inventory levels so you receive deliveries based on actual need. Tank Minder measures and transmits tank levels to a secure website, where you can view current and past level measurements, and set level-based delivery alerts.

View Remote Inventory
High performance level sensors are installed on each tank to measure inventory level that is monitored by a local Modbus RTU - Modbus TCP/IP controller so level measurements can be viewed online.

Define Delivery Alerts
With level-based alerts, you are guaranteed to receive inventory deliveries when you need them without having excess or running out. Simply log on to the secure website and use past readings to determine the alert levels you need to set for optimal business operations.

REMOTE TANK MONITORING

Tank Cloud
Allows you to view measurements from your sensors anywhere you have an internet connection.

1. Connect a Remote Sensor
Connect any 4-20 mA signal sensor or up to 10 daisy-chained APG Modbus sensors to a Tank Cloud controller.

2. Use the Internet Backbone
Connect the Tank Cloud controller to a pre-existing Internet connection via an Ethernet cable - landline, satellite, radio, or cellular.

3. View Measurements Online
Access sensor data online anytime through our secure Tank Cloud portal at levelandflow.com. Here you can see everything you need to know about your measurements and adjust the settings on your sensors.

4. Get Alerts and Long-Term Data
Become further connected to your measurements by programming custom alarms that can be received via email and text, and add datalogging for long-term decisions.

CONTROLLERS
- LOE p.11
- RST-5003 p.24

SENSORS
- MNU p.11
- MNU IS p.11
- MPX-F p.13
- MPX p.14
- MPI p.15
- PT-500 p.18
- PT-400 p.21
- PT-405 p.21
- PG7 p.23
- PG10 p.23

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Define Delivery Alerts
With level-based alerts, you are guaranteed to receive inventory deliveries when you need them without having excess or running out. Simply log on to the secure website and use past readings to determine the alert levels you need to set for optimal business operations.
With the mounting and range flexibility of the MNU, the MNU IS brings worry-free level monitoring and remote Modbus controls to hazardous locations.

**MPI Series**
Intrinsically Safe Level Probes
The MPI Series brings you everything you already love about our magnetostrictive liquid level probe line now with an intrinsically safe rating.

**MNU IS**
Intrinsically Safe Modbus Digital Display
Now you can get APG’s MND local display with an intrinsically safe rating. The display works as a sensor’s power source and display for a complete IS system.

**HOW THEY WORK**
Our Intrinsically Safe (IS) sensors perform on such a low current and voltage level that flammable material cannot possibly be ignited. By limiting the energy available within the defined hazardous area, electrical equipment can operate safely even amid hazardous mixtures of gases, dust, and metals.

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**MNU IS**
Intrinsically Safe Modbus Digital Display
Now you can get APG’s MND local display with an intrinsically safe rating. The display works as a sensor’s power source and display for a complete IS system.

**HOW THEY WORK**
The housing of our Explosion-Proof (XP) sensors is strong enough to contain an internal explosion without rupturing, preventing the explosion or flame inside the enclosure causing an explosion in the surrounding atmosphere outside the enclosure. This method is used where it’s impossible to reduce the electrical circuit energy.

**PT-405**
Explosion-Proof Pressure Transducer
The PT-405 pressure transducer offers high accuracy and reliability over a wide range of pressures with cCSAus approvals.

**EXPLOSION-PROOF**
Loop- and line-powered explosion-proof display encased in a cast aluminum, FM-rated housing.

**HOW THEY WORK**
The housing of our Explosion-Proof (XP) sensors is strong enough to contain an internal explosion without rupturing, preventing the explosion or flame inside the enclosure causing an explosion in the surrounding atmosphere outside the enclosure. This method is used where it’s impossible to reduce the electrical circuit energy.

**DDX**
Explosion-Proof Digital Display
Loop- and line-powered explosion-proof display encased in a cast aluminum, FM-rated housing.

**HOW THEY WORK**
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