

## The Innovative, Reliable Foxboro Pressure Transmitter Family



- Accuracy – Industry-leading 0.025% and best-in-class accuracy at turndown
- Functionality – Extensive product line to handle nearly every application
- Reliability – Proven in thousands of successful field applications
- Warranty – Backed by a new industry-best warranty
- Availability – Rocket delivery provides standard next day shipment on most popular models
- Value – Cost effective design provides you with savings on your transmitter purchases

Invensys®  
**FOXBORO**

## Your best response to pressure

*Pressure and Differential Pressure can be mission-critical variables, vital to your process. With Foxboro transmitters you get a full line of cost-effective transmitters with not only rock-solid reliability but also innovative technology to handle your most demanding applications.*



### **Comprehensive offering**

Choose from one of the broadest product lines available, including gauge, absolute, differential pressure and multivariable transmitters, with a range of process connections, corrosion resistant materials, performance levels, and digital communication protocols.

### **Innovative technology**

Ever since Foxboro invented the d/p Cell transmitter, technical innovation has been the hallmark of the Foxboro transmitter line. Recent advancements in accuracy, low profile structures, multirange transmitters, and multivariable transmitters for both flow and level demonstrate our commitment to providing you with the best technical solution for your application.

### **Unbeatable accuracy**

New accuracy improvements apply to standard high performance transmitters ( $\pm 0.060\%$  of span) and premium performance transmitters ( $\pm 0.025\%$  of span) with previously unheard of turndown performance. Both Premium Performance and Multirange transmitters now achieve industry-leading  $\pm 0.050\%$  of span accuracy at span adjustment turndowns of 80:1.

### **Guaranteed reliability**

We have field-proven reliability with hundreds of thousands of successful installations. This record of dependability is the cornerstone of our new best-in-class warranty coverage that provides a full five year warranty as standard. In addition, our premium performance and multirange transmitters are available with an industry-leading 17 year warranty.

### **Unmatched delivery**

Our standard free-of-charge Rocket program assures next day shipment on most of our popular models.

### **Exceptional value**

Design innovation coupled with advanced manufacturing techniques have been key parameters in our ability to provide transmitters with all of this functionality, performance, and reliability at some of the industry's lowest price levels. This makes Foxboro transmitters the exceptional value that they are today.



## High-performance transmitters

The Foxboro IAP10, IAP20, IGP10, IGP20, and IDP10 pressure transmitters form a complete family of high performance transmitters that furnish top-rated functionality, performance, and durability. Spans as low as 0.5 inH<sub>2</sub>O (0.12 kPa, 1.2 mbar) can be accommodated for absolute, gauge, and differential pressure measurement. Maximum measured pressures can be as high as 30000 psi (210 MPa, 2100 bar). Maximum measured differential pressures can be as high as 3000 psi (21 MPa, 210 bar) at static pressures as high as 5800 psi (40 MPa, 400 bar).

These models combine field-proven, reliable silicon strain-gauge sensor technology with famous Foxboro simplified, durable, modular packaging. They offer a wide choice of materials, process connections, and both analog and digital communications.

LCD indicators with configuration pushbuttons are also available along with many optional features including manifold valves, mounting brackets, application-specific bolting, inert fill fluid, and preparation for applications such as oxygen or chlorine.

## Low Profile Transmitter

These innovative low-profile structures use a vertical, in-line design so that their process connections face downward when the transmitter is in the upright position, as shown. They are offered in addition to the traditional Foxboro transmitters.

Choose the structure that best fits your installation requirements — Traditional or Low Profile.

Low Profile transmitter structures provide a compact sensor body, lower transmitter height, and a mounting arrangement that is similar to that of competitive Coplanar™ transmitters. This makes it easier and less expensive to replace existing transmitters and reuse existing installation designs without being limited to a single supplier

### NEW!

Accuracy of +/- 0.060% of span at turndowns up to 10:1 for popular models.

### NEW!

Based on proven dependability, the warranty has been increased to an industry-leading 5 years

- Greater installation flexibility
- Easy retrofit
- Compact sensor body
- Installation similar to/compatible with Coplanar transmitters (downward-facing process connections)
- Available with compact three- or five-valve manifolds
- Optional adapter plate for installation directly onto existing Coplanar manifold
- LP1 process cover for installation directly on supported process manifolds
- LP2 process cover for manifold mount or bracket mounting on either Foxboro or existing Coplanar bracket



## Premium-performance transmitters

Foxboro premium-performance transmitters utilize many parts common to other transmitters in the line, for familiarity, ease of use, and reduced cost. However, they employ advanced sensing technology as well as unique characterization and compensation techniques to achieve significant performance advantages.

Two versions are provided, both with excellent TPE (Total Probable Error) performance. TPE analysis uses statistical methods to combine individual effects and provide you with a realistic prediction of the overall performance of the transmitter.

The 25 Series focuses the benefit on very wide span turndown adjustment while the 50 Series focuses on achieving the best overall accuracy possible.

### Multirange

The IGP25 and IDP25 Multirange transmitters have 400:1 span turndown adjustment capability, making them outstandingly versatile. They are extremely easy to apply since the wide adjustment range is like having “two transmitters in one”, satisfying many applications with just one transmitter. Applications requiring large amounts of zero suppression or elevation are a snap. Also, the exceptionally wide adjustment range results in a “universal transmitter” that can be used as a backup or spare for many different transmitters within your plant.

Just two DP sensors cover spans from as low as 0.5 inH<sub>2</sub>O to as high as 1000 inH<sub>2</sub>O (0.12 kPa to 250 kPa) while two GP sensors cover spans from 0.5 to 2000 psi (3.5 kPa to 14 MPa).

### Premium Performance

The 50 Series IGP50 and IDP50 Premium performance transmitters have the same upper range limits as the 25 Series but are optimized for accuracy and lowest possible TPE.

This impressive performance makes the 50 Series premium performance transmitters ideal for applications such as wide ranging flow rate measurement where superb performance is needed over a very wide DP range.

### NEW!

Based on proven dependability, the warranty has been increased to an industry-leading 5 years with an option for a best-in-class 17 year warranty

### NEW!

Accuracy +/- 0.025% of span for turndowns up to 10:1 and a maximum of +/- 0.050% of span for turndowns all the way to 80:1.



**NEW!**

Versions now available for measured pressures as high as 5300 psia (36.5 MPa, 365 bar).

## Multivariable transmitters

Foxboro transmitters lead the way in multivariable technology, providing the most comprehensive offering in the industry. They provide measurements of pressure and differential pressure, sensor and electronics temperatures, and process temperature (from an external RTD).

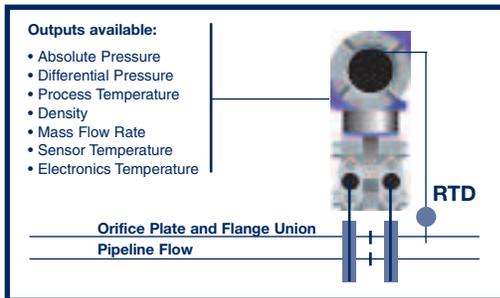
These intelligent transmitters let you replace three separate transmitters with one, meaning fewer transmitters, less wiring, fewer shutoff valves, and fewer process penetrations – it all helps you realize significant savings on purchase, installation, maintenance and inventory.

Whether you want to bring multiple measurements directly into your system or distribute sophisticated calculations of flow rate and liquid level to the transmitter, the Foxboro product line has you covered.



### IMV25 Multivariable transmitter

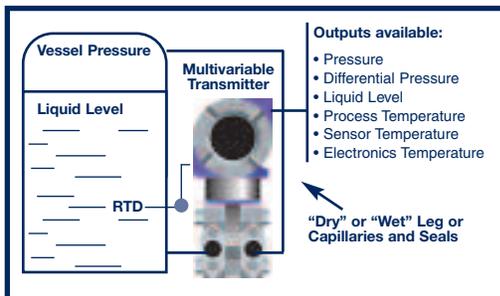
The IMV25 transmits digital process measurements of pressure, differential pressure, and process temperature, as well as internal sensor and electronics temperatures. It is an ideal solution when a number of individual measurements are to be brought into a system for monitoring, control, or calculation. The IMV25 is available with a choice of HART, Modbus, Foundation Fieldbus, or FoxCom digital communications. A single 4 to 20 mA analog output is also provided.



IMV30 Mass Flow Rate Application

### IMV30 Multivariable flow transmitter

Using measured process pressure and temperature, the IMV30 continuously calculates process fluid density. When used with any of a variety of differential pressure-producing primary flow devices, the transmitter calculates mass or standard volume flow rate. The transmitter provides full dynamic compensation for all variables affecting the flow rate calculation.



IMV31 Liquid Level Application

### IMV31 Multivariable level transmitter

Even when fluid density varies, the IMV31 provides accurate tank level measurement. It delivers that accuracy in both open (vented) or closed (pressurized) vessels. Used with fluids of known composition, it compensates for density changes in the liquid, the vapor above the liquid, and in the vapor or liquid in any external legs. The result is precise, density-compensated liquid level measurement. The IMV31 is ideal for applications such as boiler drum level where accurate, density-compensated measurement is critical.

## Communications

Foxboro transmitters employ a modular electronics design that allows you to select the communications protocol that you need for your facility and system. All single variable sensors can be used with 4-20 mA, 4-20 mA/HART, 4-20 mA/FoxCom, FOUNDATION Fieldbus, Profibus, or Low Power 1-5 V output electronic modules.

This provides you with exceptional design flexibility and even allows output changes to existing transmitters, such as upgrades from 4-20 mA to FOUNDATION Fieldbus.

Similarly, multivariable sensors can be supplied with a choice of a variety of modules, including 4-20 mA/HART, 4-20 mA/FoxCom, FOUNDATION Fieldbus, and Modbus. Product Specification Sheets define the exact versions available with each type of multivariable sensor.

**HART module** – Provides 4-20 mA analog output with HART digital signal for use with PC-based configurator, HART handheld communicator, HART system fieldbus module or any HART compatible master.

**FOUNDATION fieldbus module** – Compliant with FOUNDATION fieldbus F1 specifications, pressure transmitters using this module are interoperability-tested and FOUNDATION-registered.

**FoxCom module** – Configurable to deliver either 4-20 mA analog output with digital communications, or pure, high-speed communications with Invensys systems. Also compatible with Foxboro PC-based configurators.

**Analog 4-20 mA and low-power 1-5 V modules** – Transmitters with these modules combine ease of use with many intelligent transmitter features, including reranging without pressure. Having no digital output, they come with a standard built-in LCD indicator for display and pushbutton configuration.

**PROFIBUS module** – Registered with the PROFIBUS User Organization for ensured interoperability, transmitters with this module use multi-drop PROFIBUS digital communications to provide significant installation and wiring savings.

**Local LCD Indicator** – All digital output transmitters are available with an optional plug-in LCD indicator for measurement display. They have two pushbuttons to select modes and to input configuration changes. The pushbutton indicator is supplied as standard on analog output-only transmitters. In all cases, the indicator is digitally integrated with the electronics module.

### Electrical safety classifications

Foxboro transmitters may be specified with any of a wide range of agency certifications. These include intrinsic safety, non-incendive, explosionproof, and flameproof ratings for divisions and zones.

Certifications that meet ATEX, CSA, FM, SAA, and IEC requirements are available.

### Electronics housings

The topworks housing that encloses and protects the electronics is a two-compartment design with a rugged terminal block on one side for wiring terminations and the electronics and indicator located on the other side for additional protection from the elements.

The terminal block includes surge protection and convenient banana jack plug-in test points for monitoring both digital and analog signals.

The housing is available in either epoxy coated low copper aluminum or 316 ss material and is rated NEMA 4 and IEC IP66 weatherproof and corrosion-resistant.

## Optional features

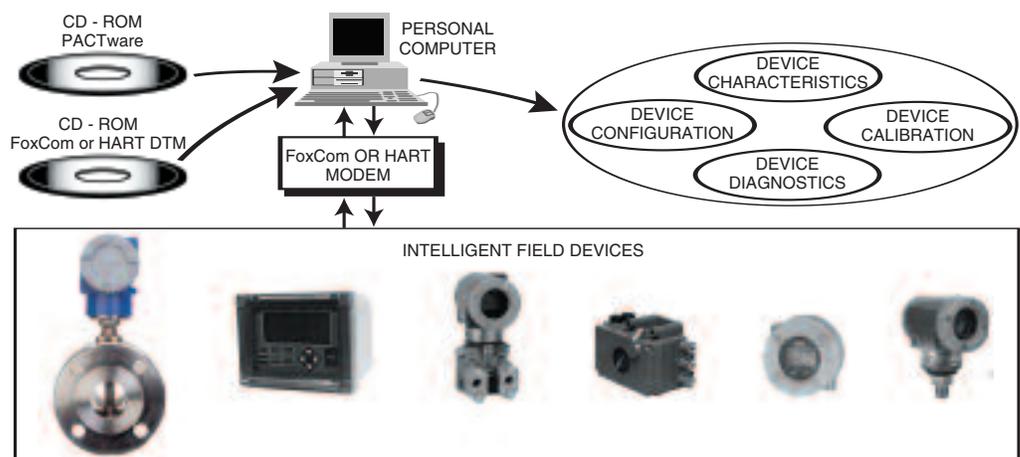
Many versions and options are available to make each transmitter suit your application requirements. A partial list includes such things as:

- LCD indicators
- Mounting bracket sets in various styles and in both steel and stainless steel materials
- Manifold valves
- Degreasing
- Oxygen and chlorine service preparation
- Inert sensor fill fluid
- NACE compliance
- Bolt materials of 316 ss, 17-4 ss, and B7M
- DIN 19213 compliance
- Pressure seals
- Primary flow elements, including orifice plates and flange unions, integral orifice assemblies, and compact orifice elements
- Low temperature operation (to -50 C)

Other optional features are shown in the detailed product specification sheets.

## Configuration software and modems

PC-based configuration software programs are available to provide communications and to configure digital-output transmitters. Both HART and FoxCom modems are offered to establish the communications interface with transmitters utilizing these protocols.



### Model PC50

*The Model PC50, a powerful Windows 2000 and Windows XP based software and hardware package with external modem(s), provides for intelligent field device life cycle management.*



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