

# Pressure

Sales Brochure

Field Devices for Measurement & Instrumentation



**Foxboro**<sup>®</sup>

by **Schneider** Electric

Next to temperature, pressure is the second most common measurement in industrial plants; pressure and differential pressure are mission-critical variables, vital to running your process. Foxboro® Field Devices have over 50 years of experience and have made significant advances in accuracy, stability, smart electronics, built-in diagnostics and a host of connectivity options. We offer pressure transmitters that perform in the toughest applications, supplying the pressure market with the most reliable and robust devices, offering sigma quality that is approaching 5-sigma. One-hundred percent of the Pressure Transmitters undergo electronics stress testing prior to shipping.

## **Technology with a Proven Track Record**

Absolute, Gauge, and Differential pressure measurement.

**Accuracy** – Industry-leading 0.025% and best-in-class accuracy at high turndowns

**Reliability** – Proven in thousands of successful field applications

**Value** – Cost effective design and manufacturing lowers total cost of ownership

**Functionality** – Easy configuration, diagnostics and local display configuration

**Delivery** – Rocket Delivery provides standard next day shipment on most popular models

**Warranty** – Backed by industry-best warranty

**Support** – 24 hour 7 days a week Technical Assistance Center wherever you are in the world

# Foxboro Pressure Transmitters

Ever since Foxboro invented the d/p cell transmitter, technical innovation has been the hallmark of the Foxboro transmitter line. More 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.

## High-Performance – IAP10, IAP20, IGP10, IGP20, IDP10

Unsurpassed functionality, performance, and durability for Absolute, Gauge, and Differential pressure measurement.

## Extended Ranges – IGP25 and IDP25

Multirange capability offers 400:1 turndown with reference accuracy of 0.05%.

## Premium Performance – IGP50 and IDP50

Multirange capability with 80:1 turndown and enhanced reference accuracy of 0.025%.

## FoxCal™ Pressure Transmitters – IGP10S and IAP10S

Multiple calibration curves stored in device firmware with reference accuracy of 0.05%.

## Multivariable Transmitters – IMV25, IMV30, IMV31

Intelligent transmitters replace three separate transmitters with one.

## Choice of Mounting and Easy Retrofit – Low Profile Offering

Low Profile – offering in addition to traditional structure.

Offers a direct drop in replacement for Emerson Process coplanar™ design.

## Communications

All 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 range\* transmitters are offered with Analog, HART, FOUNDATION Fieldbus, or Low Power 1-5 V output electronic modules.

\*Single range includes:

IGP10  
IGP20  
IAP10  
IAP20  
IDP10



# FoxCal Technology

“A totally unique patented technology which contributes to precise reliable measurement, high performance and excellent stability.”

## Improve Process Accuracy

Our unique FoxCal™ technology eliminates the need for traditional single span curve calibrations at application specific pressure ranges. The device can automatically transition to the most appropriate calibration curve based on the transmitter input therefore increasing measurement accuracy.

## Increased Plant Efficiency

'Time in Service' meter tracks both total number of days powered up over a device lifetime, and since the last 'time in service' meter reset. This enables accurate tracking of time in service which allows for effective predictive maintenance.

## Reduced Inventory Cost

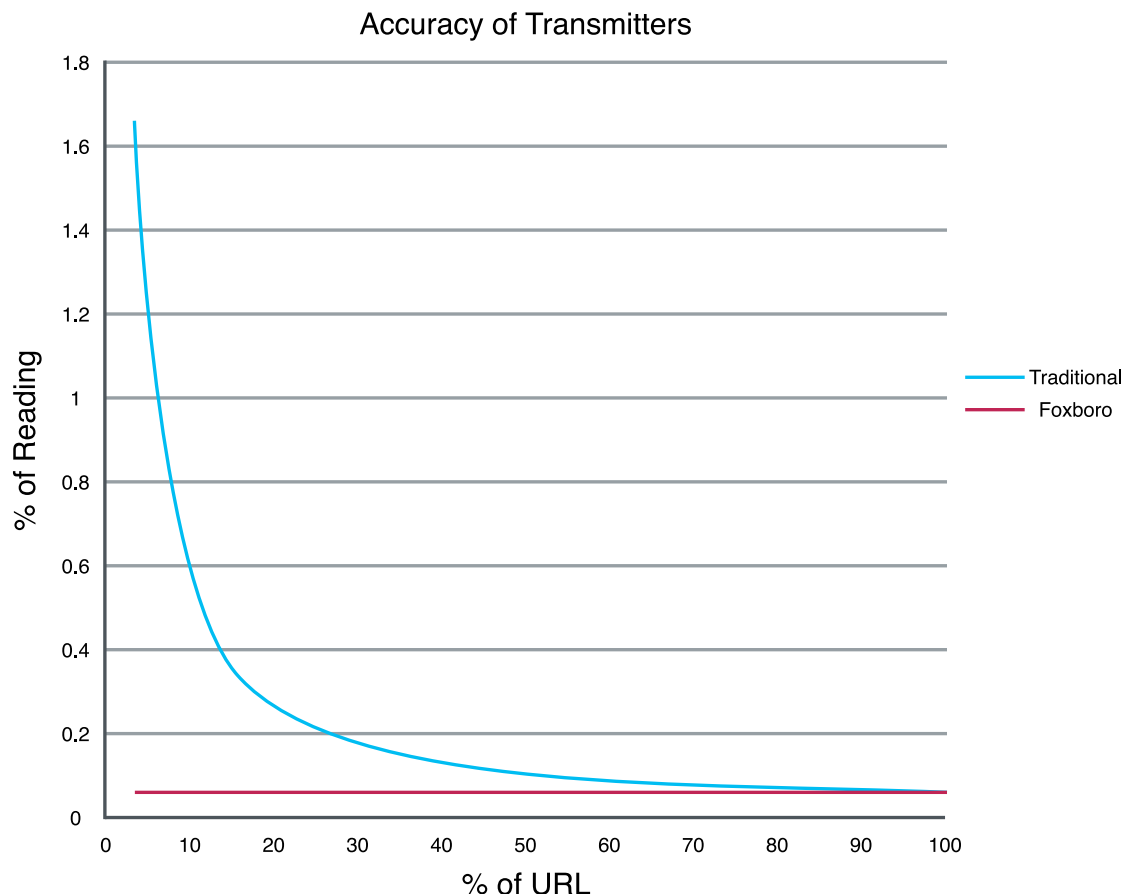
A wide range of applications that normally would use multiple separate transmitters now only need one.

## Cut Spare Part Cost

Fewer types of transmitter are required which means less spare parts are needed.

## Key 'S' Series Features

- FoxCal technology - 11 calibration curves stored internally
- Time in Service
- 100 msec Response Time
- 5 year warranty as standard
- Local Display configuration capability
- 400:1 Turndown capability



# IGP10S and IAP10S

Intelligent, two-wire transmitters provide precise, reliable measurement of absolute or gauge pressure, and transmit a 4 to 20 mA output signal with a superimposed HART digital signal for remote configuration and monitoring.

## Innovative Technology

So what are the benefits for you?

- Increase accuracy with the patented Foxboro multiple calibration technology (FoxCal™)
- Reduce inventory costs with a wide range of applications that traditionally require multiple separate transmitters
- Time in Service for advanced diagnostics
- Easy to use with LCD indicator and on board push buttons for simple configuration
- 5 year warranty as standard.
- Industry leading 400:1 turndown capability

## Multiple Calibrations

Unique patented multiple calibration technology feature eliminates the need for a traditional single span calibration at an application-specific pressure range.

- Uses multiple calibrated ranges stored in the onboard memory.
- 11 calibration ranges are pre-set in the factory
- Maintains accuracy as a percentage reading from 2.5% to 100% of the upper range limit (URL).

Multiple Calibration Points as % URL	Example 2000 psi 11 Calibration Curves
2.5	0 to 50 psi
5	0 to 100 psi
10	0 to 200 psi
20	0 to 400 psi
30	0 to 600 psi
40	0 to 800 psi
50	0 to 1000 psi
60	0 to 1200 psi
70	0 to 1400 psi
85	0 to 1700 psi
100	0 to 2000 psi

## Time in Service

Enables customers to accurately track time in service, which allows for predictive maintenance.

Similar to how an odometer allows an automobile owner to track the total number of miles driven and a trip odometer tracks the number of miles driven since a user-defined starting point, the IAP10S and IGP10S transmitters allow you to keep track of the number of days the transmitter has been in service.

- Tracks total number of days the transmitter has been powered up in the field over its lifetime (total days),
- Tracks the number of days the transmitter has been powered up since the last Time in Service meter reset (user days).

## Wide Turndown Ranges

Excellent performance is maintained over an industry leading wide turndown range, meaning that an IAP10S/IGP10S transmitter performs better than two to three separate transmitters designed to cover the same turndown range.

## What our customers say...

### A Partner you can Trust with Experience and Expertise

“ Our veteran maintenance engineer recently retired and his replacement needed help with configuring a Foxboro pressure transmitter. ”

Our Foxboro Technical Assistance Center (TAC) is staffed 24 hours a day 7 days a week with experts across all our measurement devices and applications and can be easily accessed from our website or by phone.



### Super Fast Delivery

“ We recently had a fire that destroyed several of our pressure transmitters. Our supplier quoted 4 to 6 weeks to replace these which would have severely impacted our waiting customers. ”

Foxboro was able to replace the transmitters in a few days and the plant was able to get back on line in a week. This is because the Foxboro factory provides shipment within 24 hours for many of our field devices, known as ‘Rocket Delivery’. This service is provided free of charge to all our customers.



### The Best Instrument for Your Application

“ We were having problems controlling boiler drum level using traditional pressure transmitters which were giving major level measurement errors. We were very concerned about the outages this was causing and the possibility of damage to the equipment. ”

The Foxboro IMV31 Boiler Drum Level Multivariable Pressure Transmitter uses differential pressure, absolute pressure, and temperature measurements to compensate for liquid and vapour density changes that would otherwise cause level measurement errors. For more information go to our web pages on multivariable transmitters.



### Improved Safety also means Cost Saving

“ Our insurance company will provide us a significant discounted premium if we implement a Safety Instrument System (SIS) at our facility. ”

Foxboro offers a complete line of certified TUV (SIL2 Safety Integrity Level 2) pressure transmitters which help make up a SIS. We can work with you and in conjunction with Triconex by Schneider Electric safety systems, to ensure optimum risk reduction is achievable in your plant.



### Optimize your Resources Now, and for the Future

“ We were ready to modernize our FOXCOM plant and migrate to HART or FF and came to Foxboro for some expert advice about the right products to make the modernization programme as painless as possible. ”

Working in conjunction with the I/A Systems group ensures satisfactory plant modernization. With Foxboro I/A series® comprehensive range of electronic pressure transmitters, you can select the electronic module you need to provide just the right level of intelligence for your application and budget. If your needs change, the modular design allows easy migration to other protocols including HART, FOUNDATION Fieldbus and analog versions.

### Reliable and Adaptable Technologies Designed to Minimize Your Cost of Ownership

“ Our maintenance department keeps losing or damaging our very expensive handheld device for configuring the plant as they go through the factory. ”

Foxboro pressure transmitters have a choice of remote communication and database configuration using a handheld communicator, a PC based configurator, or an I/A Series System so you can decide on the best choice for your facility.







## Success stories commercial benefits

### China National Petroleum Corporation operates efficient Seawater Desalination System

*"The first phase of the project has been completed, with CNPC having successfully desalinated thousands of tons of seawater." They believe that Foxboro Field Devices and the after sales support were a big part of this success.*

#### Customer Challenge

- We needed to make seawater usable for industry which requires removal of salt in a precise distillation sequence that involves highly accurate measurement

#### Solution

- Foxboro Pressure Flow and Analytical sensors – our differential and gauge pressure sensors balance and regulate pressure in steam, water and lithium bromide at CNPC

#### Customer Benefits

- Successfully desalinated thousands of tons of seawater
- Reduced cost of seawater desalination
- Reduced maintenance time and cost of desalination equipment



Hydro Carbon industry

### Foxboro performs under pressure to provide Transmitters in 11th hour for Energy Equipment Maker

*"Invensys (now Schneider Electric) really pulled out the stops to work with us and even worked with their supplier of seals to expedite delivery to accommodate our timeframe. They truly came through as a strong link in our supply chain."*

**Scott Pickens Electrical Engineer Hanover Compressor Company**

#### Customer Challenge

- Install new custom pressure transmitters to complete and ship a multi-million dollar international order before the deadline date, while avoiding substantial penalties

#### Solution

- The Foxboro pressure transmitters selected for this application - IDP10 differential transmitter and the IGP10 gauge pressure transmitter

#### Customer Benefits

- Allowed on-time delivery of multi-million dollar international order
- Avoided substantial missed-deadline penalty
- Provided single-source for custom specified pressure transmitters



Upstream OIL & GAS industry

### Veris Turns to Schneider Electric to Help Meet Demanding Customer Flow Measurement Requirements

*"We were so confident it would meet our customer's stringent requirements that Veris and Invensys (now Schneider Electric) jointly took performance responsibility and gave the customer a five-year performance warranty. This is unheard of in this industry, but, until now so was obtaining accurate flow measurement in the operating ranges we have here."*

**Jerry Gallo National Sales Manager, Veris**

#### Customer Challenge

- Measuring LNG flow measurement at the extremes of high and low flow rates throughout the year is difficult using standard flow measurement technologies

#### Solution

- Foxboro IDP50 Premium Performance d/p Cell® Transmitter
- Foxboro IMV30 Multivariable Flow Transmitter

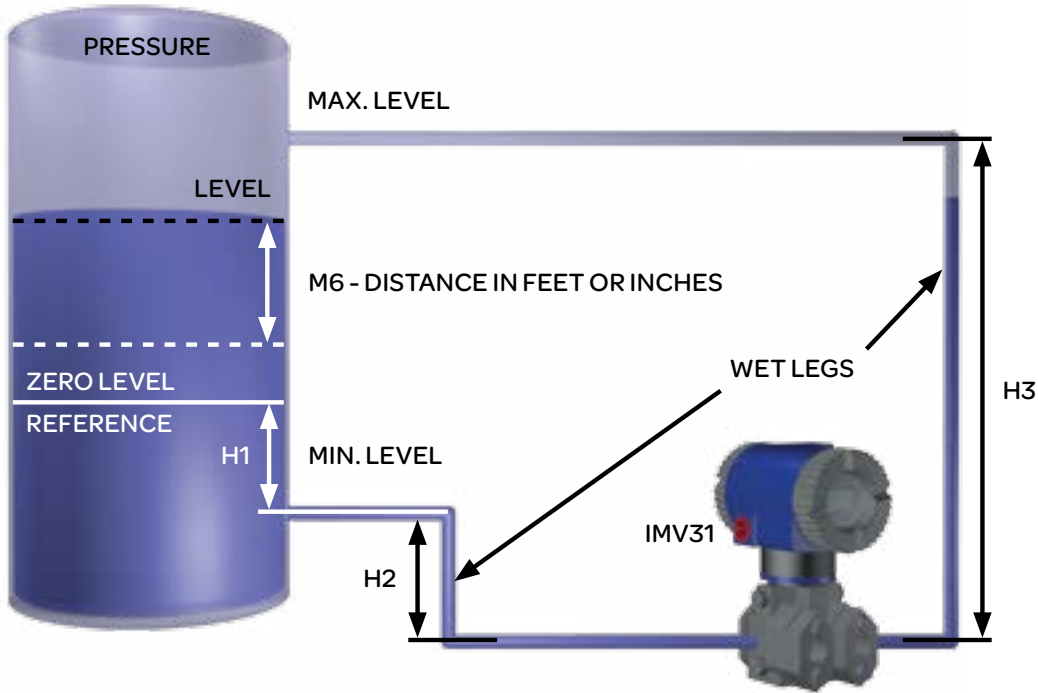
#### Customer Benefits

- Unprecedented flow measurement accuracy at extreme high and low flow rates ("turndown" ratios of 60:1)
- Improved accountability of gas usage and inventory
- Reduced equipment and maintenance costs in harsh environments



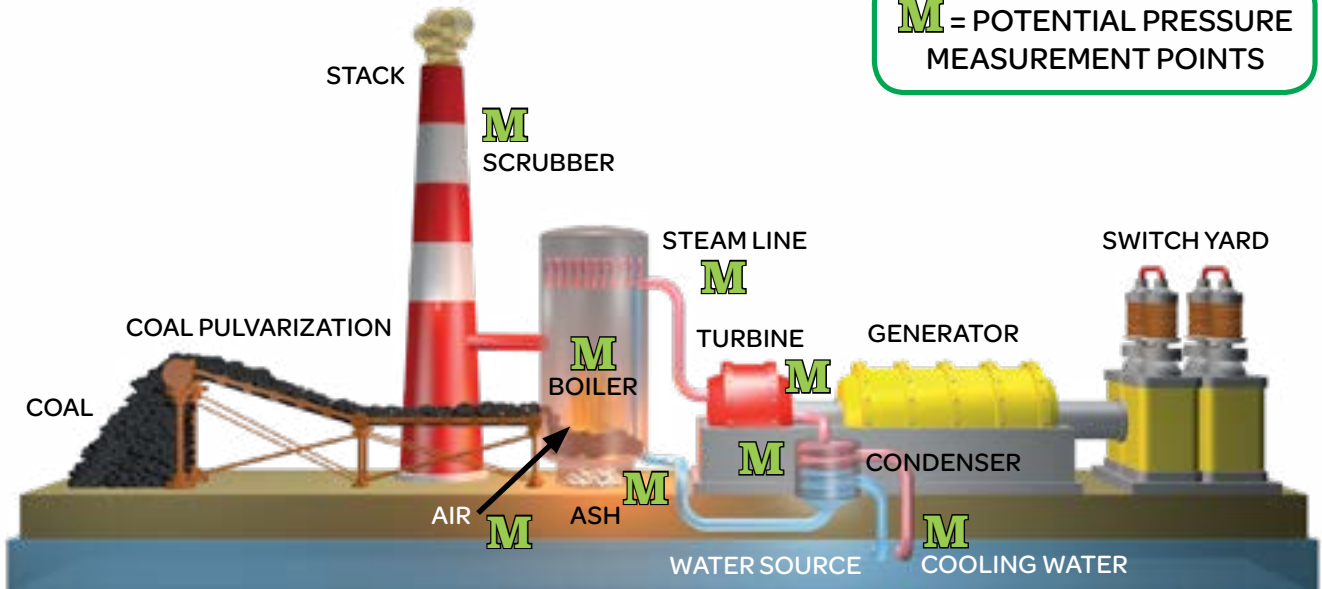
Natural Gas Processing industry

## Real-world applications



### Multiple industries: Boiler level control

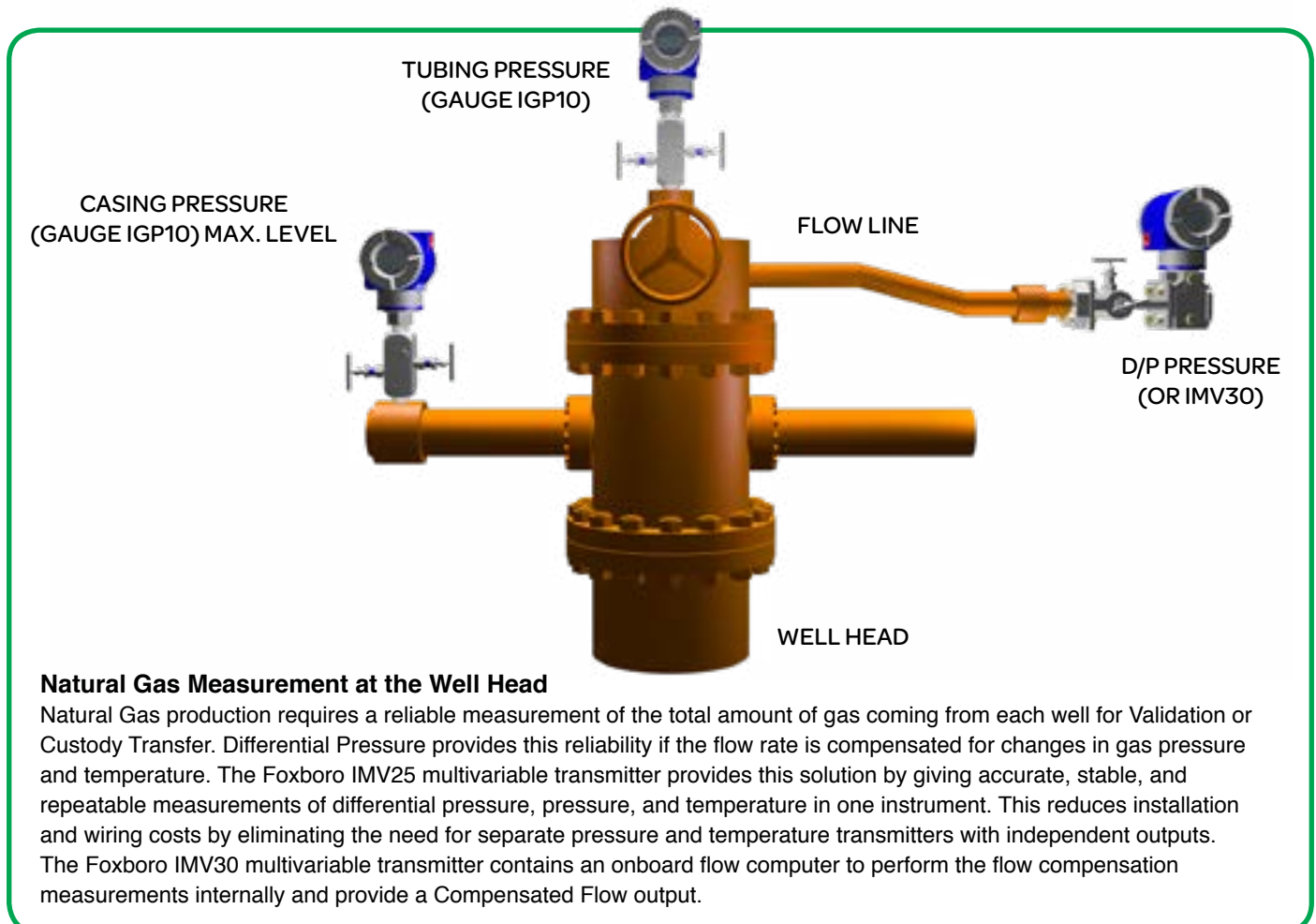
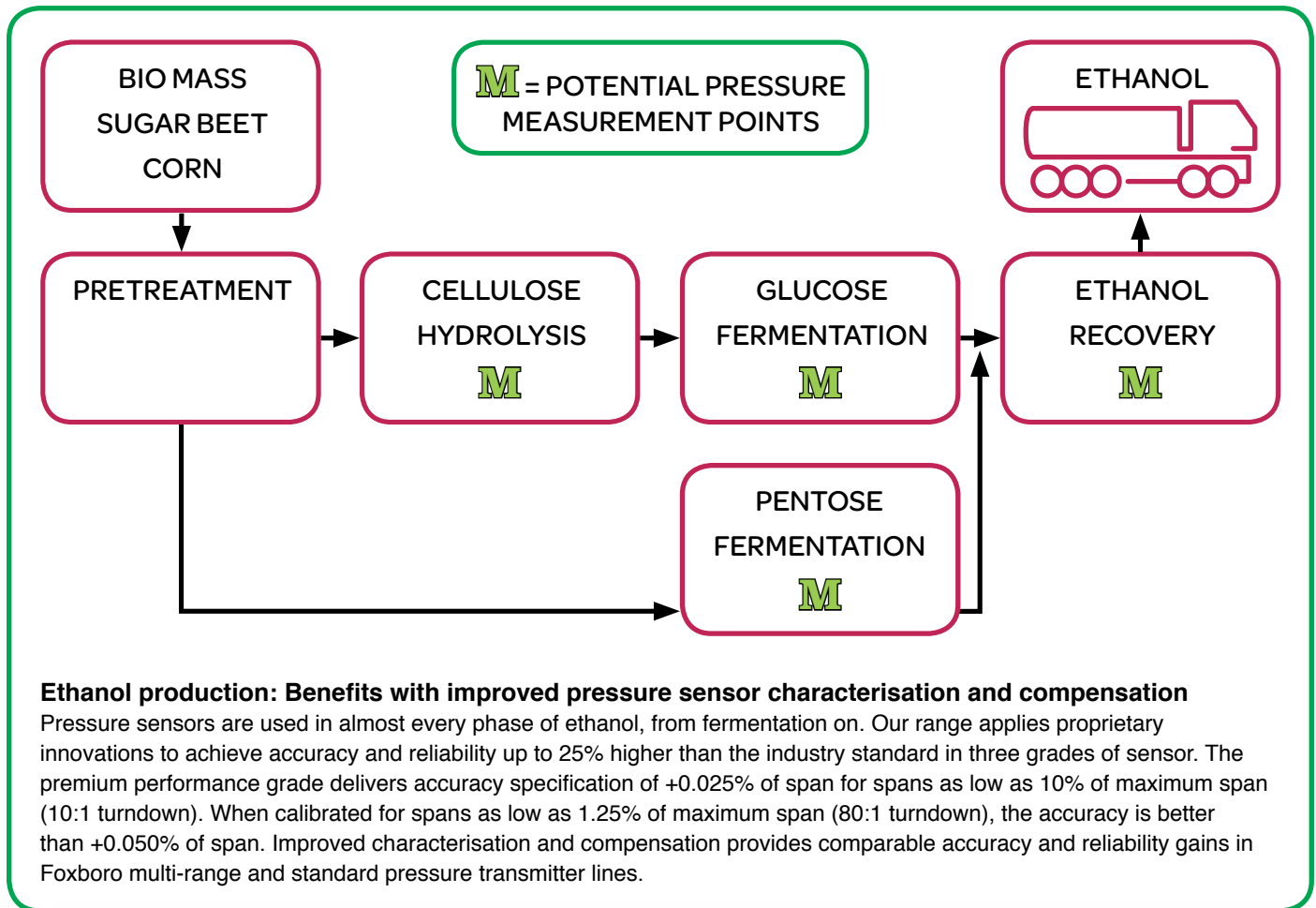
The use of DP/Multivariable transmitters for drum level is ideal because of their low cost, ease of installation, and high reliability. The Foxboro IMV31 density-compensated level transmitter provides a new approach to drum level measurement. With all the advantages of DP transmitters, it uses multiple measurements and on-board level calculations to provide a more accurate measurement. It has the unique ability to self compensate for static pressure effects on the DP measurement. The IMV31 improves the accuracy of drum level measurement over conventional DP transmitters and automatically provides dynamic compensation for varying pressures and temperatures.



### Coal Industry: Intelligent transmitters reduce costs and improve performance

Effective profitable power plant operations need precise balance for expensive assets like combustion equipment. Reliable readings of pressure, temperature and other variables are critical to success. Foxboro digital DP and gauge pressure ranges give high performance, expand versatility and with industry standard mounting, serve as a universal replacement for all competitive models allowing a power utility to change transmitters without having to replace the entire manifold and gives greater flexibility for future replacements. The Foxboro solution also offers a true preventative maintenance benefit, allowing plant operators to be more confident that all instruments are operating at peak performance once the system starts up.

## Real-world applications



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