

ABB MEASUREMENT & ANALYTICS

### **2600T Pressure transmitters**

Pressure measurement made easy



# Measurement made easy

'ABB offers the world's most comprehensive range of pressure measurement products. The 2600T family provides products specifically designed to meet the widest range of applications ranging from arduous conditions in offshore oil and gas to the laboratory environment of the pharmaceutical industry' 

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## **Expertise in technology** More than a century of experience

To operate any process efficiently, it is essential to measure, actuate, record and control. In selecting ABB you are choosing a partner who is offering the best measurement and analytical solution for your needs, enabling maximum return on your investment. When investing in ABB's measurement and analytical solutions you are receiving the best technology, reliability and service in the business.

Research and development is a vital source of ABB's technology leadership. ABB constantly builds on the foundation of existing technologies for new applications, and continues to develop the breakthrough technologies needed to meet the challenges of the future. ABB and its heritage companies have been leaders in innovation and technology for more than 100 years.



4



KTEK



Kent

Bush Beach Engineering
\_\_\_\_\_Limited

LGR



Pressductor®



SENSYCON

Hartmann & Braun





Spirit**=** 



# **Comprehensive measurement solutions** Serving your industry

### 01 Water & waste water

02 Power — 03 Chemical & petrochemical — 04 Oil & gas

- 05 Pulp & paper
- 06 Minerals

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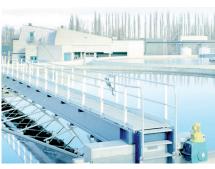
07 Metals

08 Food, beverage and pharmaceuticals

09 Marine

ABB's measurement and analytical products provide world-class measurement solutions for any industry, utility or municipality. Latest innovations deliver technological solutions to make it easier for you to run your plant. ABB's measurement and analytical products are based on common technology, providing a common look and feel and method of operation. This results in products that are easy to configure, easy to operate and easy to maintain.





04



















## **Services for measurement and analytics** Performance optimization solutions

Dedicated to optimizing your plant productivity and performance, ABB's services enable improved utilization and performance of your automation equipment, processes and personnel. ABB provides support from the planning phase right through to commissioning and servicing.

ABB offers a full range of services to help support your plant, including start-up services, project management, asset optimization, maintenance and training.

ABB's service specialists are strategically located to support all products and systems globally. ABB's broad scope of services lays the foundation for end-to-end support for your enterprise.

### ABB's performance optimization services:

- Consulting
- Installation and commissioning
- Maintenance and field services
- Asset management systems
- Fieldbus and wireless solutions
- Project execution
- Migration and upgrades
- Repairs and calibration
- Spare parts and consumables
- Support, remote service, and training
- Maintenance support agreements





odbus





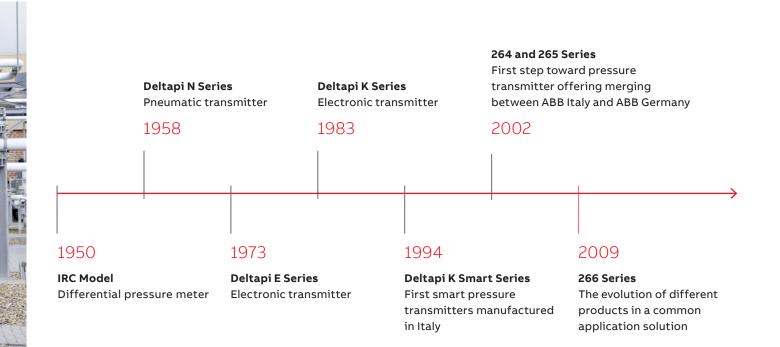


### **Pressure measurement expertise** Making measurement easy

For more than 80 years, ABB's pressure measurement products deliver reliability, accuracy, repeatability and easy maintenance to customers worldwide.

Getting the best levels of efficiency and performance from your production process requires reliable, accurate pressure measurement. Choosing ABB pressure measurement solutions for your application means to decide for high-quality measurement. ABB offers one of the world's largest and most innovative product ranges, unrivalled in its breadth and scope. A common human-machine interface (HMI) enables you to easily configure, integrate and maintain ABB measurement products.

For more information please visit abb.com/pressure



## **Information whenever you need it** Easy device management and industry standard communication protocols

ABB's instrumentation devices feature the latest diagnostics and intelligence to help you run your business more effectively. ABB gives you the choice to decide which communication protocols you want to use to access this information. You can choose from a family of tools and from different ways to manage the lifecycle of the devices in order to get the most out of your investment.

#### 01 DHH805 handheld terminal

02 Device management software Asset Vision

03 JDF200

### ABB's device management product range includes

- Fieldbus and wireless solutions
- Handheld terminals
- Device management software Asset Vision
- JDF200

### Digitalization and innovation

High level of productivity is offered by new technology like self-powered devices and Field Information Manager (FDI). The first FDI-based software for device management makes the configuration, commissioning, diagnostics and maintenance of fieldbus instruments easier and quicker than ever before. ABB's Field Information Manager software employs FDI technology and is equipped with high-performance and innovative graphical user interface that helps technicians to effectively work with process instrumentation.

01



02





# Discover all the innovative features of our broad portfolio

Unrivalled in its expertise and longstanding tradition in transmitter manufacturing, ABB offers the world's most comprehensive range of top quality pressure measurement products. The 2600T family provides products specifically designed to meet the widest range of applications ranging from arduous conditions in offshore oil and gas to the laboratory environment of the pharmaceutical industry.

### **Unique features**

The 2600T family has unique features as:

- Common intuitive HMI for guick commissioning
- Modular electronics easy to replace
- Reliable sensor technologies
- · Easier installation and configuration
- Multivariable version
- Taylor instrument's All-Welded technology for diaphragm seals
- · High long-term stability
- Low cost of ownership

### The communication you need

ABB pressure products are available with HART / 4-20 mA, PROFIBUS PA, FOUNDATION Fieldbus, MODBUS and WirelessHART communication protocols. The 266 series allows you to preserve your investment allowing an upgrade from HART to any other available communication protocol in minutes with no need to remove the device from its installation or to reconfigure it. The modular construction of the 266 series allows repairs to be carried out in-field so that the instrument is back in operation few minutes after failure detection.

### Unique ease of operation – innovative plug & play graphic display

The user friendly HMI allows simple and intuitive transmitter operation.

The 'Easy Setup' procedure allows the user to easily commission the instrument without the need for an expensive handheld terminal.

### Reliability in severe service with S26 diaphragm seals

ABB remote seals have a high-integrity All-Welded construction as standard. This construction is based on decades of experience in remote seal manufacturing inherited by Taylor Instruments. All-Welded manufacturing technic definitely ensures optimum solution even in high vacuum, high temperature applications. S26 diaphragm seals are completely designed and manufactured by ABB. The wide range of special materials (tantalum, SuperDuplex, Monel, Inconel 625, Hastelloy C-276 and unique from ABB Hastelloy C-2000) allows customers to easily find the best fit for their specific processes providing long lasting solutions for highly corrosive media while increasing overall instrument lifecycle. Diaphragm seal portfolio includes also different coatings such as antiabrasion gold plating, anti-stick and anticorrosion.

ABB also offer special designed remote seals for individual process solutions.

S26 seals repair is supported by the ABB pressure service centers worldwide.

### Working closely with customers

Our R&D department allows you to find the perfect solutions for your application, developing tailored solutions to approach the most critical applications successfully.

### **Pressure transmitters for any applications** The best product for your application

### Temperature and humidity considerations

High temperatures can have a detrimental effect, potentially causing premature component failure. Exceeding the device's parameters can have a significant effect on performance. Low temperatures can cause fill fluids to become more viscous, whilst high temperatures can cause them to vaporise. Variations in ambient temperature and pressure can also have an impact, particularly if the transmitter's calibrated span is a small proportion of its upper range limit. Atmospheric conditions such as direct sunlight or high winds can cause heating or cooling of transmitters, which can adversely affect their operation. Prolonged exposure to high humidity can also result in corrosion of the transmitter housing and mountings. Transmitter housings are designed to protect electrical components against the ingress of moisture caused by humidity.

### Wire, digital or wireless

For the majority of applications where power is readily available, the two-wire transmitter is often the most practical choice. Because the current is protected against the effects of changing resistance along the line, signals can be relayed over long distances. Where transmission of accurate data or large volumes of data is essential, the best choice may be to opt for digital transmitters. With wiring and installation costs accounting for almost 50 percent of the total cost of a device, it makes both financial and technological sense to use wireless devices wherever possible. Wireless devices are used to be largely confined to specialist applications in remote installations, such as water distribution or oil and gas. The WirelessHART protocol means industry now has an international standard that enables wireless instruments to communicate a wealth of standardised information throughout plant networks.

### Hazardous areas

An electronic instrument is a potential source of electrical energy which in certain conditions can discharged and ignite any accumulated mixtures of flammable gases, combustible dusts and ignitable fibres that may be present. Various international standards, such as ATEX, FM, IEC, INMETRO, EAC and NEPSI set out various measures for assessing the risk posed by hazardous environments and the steps that need to be taken to minimise the risk of ignition.

### Multivariable

For certain applications involving the measurement of gases or fluids subject to rapid density changes, advantages are provided by multivariable pressure transmitter. This device offers a three-in-one solution for the measurement of flows of liquids, steam or gas with absolute pressure and temperature compensation, ideal for calculating changes in flow density. Incorporating three different forms of measurement into one unit can also significantly reduce installation costs using fewer devices.

#### Diaphragm seals

Direct and remote seals are used to isolate pressure transmitters from conditions that will shorten their operational life and / or dramatically affect their performance. As such, they are ideal for a range of pressure measurement applications involving process fluids which operate at extreme temperature and are highly corrosive, dirty, viscous or laden with solids that can block, foul or solidify the impulse lines or the transmitter body. They also present a solution in applications where process wetted materials are required, such as Diaflex, PFA antistick and anti-corrosion coatings, or materials for highly corrosive fluids. Remote seal transmitters can also provide an ideal solution for hygienic processes, such as in the pharmaceutical and food & beverage industries, where it may be undesirable to have a pressure measurement device in direct contact with the product.

261	AC	AG	AJ	AM	AN	AR	AS	GC	GG	GJ	GM	GN	GR	GS
Measurement														
Gauge								•	•	•	•	•	•	٠
Absolute	•	٠	•	٠	•	•	•							
Diaphragm seals														
Yes as S26 model	•	•	•	•	•	•		•	•	•	•	•	•	
Not applicable							•							٠
Ex-approvals														
ATEX, IECEx, FM, CSA, NEPSI, EAC	•	٠	•	•	•	٠	•	•	٠	٠	•	•	•	٠
Accuracy														
Up to 0.1%	•	٠	•	•	•	•	•	•	•	•	•	•	•	٠
Temperature limits														
Process														
– 30 to 180 °C – 22 to 356 ° F	٠	٠	٠	٠	٠			٠	٠	٠	٠	•		
– 50 to 120 °C – 58 to 248 °F							•							٠
– 40 to 375 °C – 40 to 707 °F						٠							•	
Storage						– 50 t	o 85 °C	(– 58 to 1	85 °F)					

266	DSH	DRH	MST	MRT	RST	RRT	HSH	HRH	GST	GRT	NSH	NRH	AST	ART	CSH	CRH	сѕт	CRT	JSH	JRH	JST	JRT
Measurement																						
Differential pressure	•	•	•	•																		
Gauge							٠	•	•	•												
Absolute					•	•					•	•	•	•								
Multivariable															•	•	•	•	•	•	•	•
Diaphragm seals																						
Yes as S26 model		٠		٠		•		٠		٠		•		•		•		٠		٠		•
Not applicable	•		•		•		٠		٠		٠		•		•		•		٠		•	
Output signal																						
HART	•	•	•	•	•	•	•	•	•	٠	٠	•	٠	•	•	•	•	•	•	•	•	٠
HART + IEC61508 SAFETY	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
FOUNDATION Fieldbus	•	•	•	•	•	•	•	•	•	•	•	•	•	•								
PROFIBUS	•	•	•	•	•	•	•	•	•	•	•	•	•	•								
WirelessHART	•	•					•	•			٠	•										
Modbus															•	•	•	•	•	•	•	•
Ex-approvals																						
ATEX, IECEx, FM, NEPSI, EAC	•	٠	٠	•	٠	٠	٠	٠	٠	٠	•	٠	٠	•	٠	•	٠	•	٠	٠	٠	٠
Inmetro	•	•					•	•			•	•										
Kosha	•	•					•	•			•	•										
Accuracy																						
Up to 0.025%			•						•													
Up to 0.04%	•			•	•	•	•			•			•	•			•	•			•	•
Up to 0.075%		•						•			•				•	•			•	•		
Up to 0.1%												•										
Temperature limits																						
Process																						
– 40 to 121 °C – 40 to 250 °F	٠		٠		٠		٠				٠				•		٠		•		•	
– 50 to 121 °C – 58 to 250 °F									٠				٠									
– 100 to 375 °C – 148 to 707 °F		•		•		•		•		٠		•		•		•		•		•		•
Storage									- 5	0 to 8	5°C (	– 58 t	o 185	°F)								

## **266 pressure transmitters** Performance with intelligence

01 266DSH — 02 266HSH wireless

### 266 delivers previously unattainable operational benefits

From the design to the software functionality, the 266 series represents the latest evolutionary step in the wide ABB product portfolio. Users can easily find the right application solution for their measurement needs and select among different levels of accuracy.

The 266 is available with an high accuracy up to 0.025% of the top performance models. This allows the user to control their processes with an excellent precision for pressure, level and flow measurements. Accuracy is no longer a constraint.

Notable is also the choice of measuring ranges allowing to measure pressures from 0.05 kPa (0.2 inH2O) up 105 MPa (15000 psi). 266 is one of the few low range differential pressure transmitters offering an outstanding suitability draft range for measurements.

Pressure transmitter models are suitable for measurements up to 1050 bar (15000 psi), using Inconel 718 NACE compliant material for wetted parts.

One further highlight available with the 266 differential pressure transmitter is the version for high static pressure applications. This allows to measure differential pressure with a high accuracy in applications with maximum working pressure (MWP) up to 60 MPa (8700 psi). Naturally this version also includes Ex certifications, if required.

### Go for wireless with 266 Pressure transmitters

ABB WirelessHART 266 pressure transmitter enables the easy addition of pressure measurement points throughout your operation. You can now monitor hard-to-reach locations and keep your employees out of dangerous and hazardous areas.

266 WirelessHART has a battery life up to 10 years at 32 sec. update rate, delivering a very cost-effective and reliable solution to monitor your process assets.

Installation times and overall implementation costs of process measurements are significantly reduced by eliminating complex wired infrastructures.

### TTG Technology: no more barriers between users and instruments

ABB is the first instrumentation company able to offer on its HMI (Human Machine Interface) the Through-The-Glass technology (TTG). With this exclusive and innovative option, users can interact directly with the instrument without removing the windowed front cover, saving cost and time, especially in hazardous areas. Using ABB's proven four button HMI with intuitive menu navigation and Easy Set Up menu, configuration times can be greatly reduced. Moreover, expensive handheld configurators are no longer necessary since all the essential parameters can be set via the HMI with simplicity.





### **Simplicity and compactness** The key to the platform for pressure

### Easy to use... starting from the outside

The external non-intrusive zero and span push buttons allow users to rerange the transmitter safely in a few seconds.

An additional external write protection is also provided.

### The 266 series never lets you down:

**plug-in communication board and terminal block** The new design enables in-field maintenance operations.

Both terminal block and communication boards can be replaced in few minutes without the need to reconfigure the transmitter.

Failures due to lightening, wrong earth wiring, etc. are no longer an issue: 266 is protecting your plant productivity smartly.

### Most served industry segments

- Oil & gas
- Chemical
- Power
- Metals & minerals
- Water & wastewater

### PILD: Plugged Impulse Line Diagnostic as standard

Process diagnostics will continuously protect your 266 HART / 4-20 mA, PROFIBUS PA and FOUNDATION Fieldbus pressure transmitters from the risk of impulse line clogging or freezing. Once a process anomaly is detected, the PILD function will generate a warning on the local LCD as well as via the communication protocol.

### SIL2 and SIL3 TUV certified

The 266 series is certified by TUV NORD for use in safety instrumented systems as per the requirements of IEC61508.

The transmitters meet the requirements for SIL2 applications in a single transmitter configuration (1001) and for SIL3 applications in a redundant configuration (1002).



## **266 multivariable transmitters** Best performance on the market

01266CSH multivariable transimtter

02 266GRT multivariable transmitter with remote diaphragm seal

#### Performance characteristics

Differential pressure measurement with high accuracy of 0.075 % or also top accuracy 0.04 %. An optional accuracy of 0.025% is available. Useable for applications with static pressures up to 41 MPa. It is very suitable for draft range applications (for example: area average meters) due to the 1 kPa sensor range.

### Simple usability

The 266 multivariable transmitter can be delivered from factory fully configured according the customer specific application parameters. On site 'Easy Set-Up' possible with LCD, EDD or DTM. Only one instrument to install instead of 3, this means easy installation. Easy testing by simulation of the measured values.

#### **High security**

The multivariable model is covered by certification for intrinsically safe and/or flameproof applications, according to main international standards as ATEX, IECEx, FM, EAC and also SIL 2/3 certified.

#### Cost performance ratio, increase safety

Compared to single sensors the 266 multivariable transmitter save 30-40% of cost. One instrument instead of 3 means reduced connections and I/O modules, less valves and less replacement parts required and reduced maintenance. Furthermore less process penetrations means less potential leaking points and higher safety allowing push down ownership cost.

### Reliable solution for high pressure direct mass measurement

The unique combination of several sensor systems in a single device permits simultaneous measurement of differential pressure, absolute pressure and process temperature, via an external sensor. Used for DP flow measurement it calculates the mass flow of gas, steam and liquid with dynamic compensation. The measurement accuracy improves by 1 to 2%. Due to the available draft range, this transmitter is tailored for use with the cheap and easy to install averaging Pitot tubes. In level applications the multivariable transmitter calculates fluid density depending on temperature and pressure for dramatically increase of measurement accuracy even when using diaphragm seals.

#### Boost the availability

And in the seldom case of fault the smart selfconfiguration function of the changeable electronic enables field repairs to be carried out so that the instrument is back in operation within minutes. This short Mean Time To Repair (MTTR) combined with the high MTBF is the base for highest availability. The integrated "Plugged Impulse Line Detection" (PILD) function is another nice tool for an enhanced availability indicating a potential problem before it becomes a problem.



### **266 multivariable transmitters** Mass flow and level measurement

### Mass flow measurement

Mass flow of gas, steam, liquid and standard volume flow of gas are calculated in accordance with AGA3, ISO 5167 and standardized correction calculations GERG88, AGA8.

Highest accuracy is achieved through:

- Dynamic flow orrection with continuous calculation of Reynold's number and flow coefficient
- Correction of material-dependent thermal size changes
- Linearization of the primaries

### Shorten maintenance time

In case of changes in the process the "Easy Setup" feature, carried out with local indicator, handheld terminal or Device Type Manager (DTM) allows to adapt the instrument within shortest possible time.

### Level measurement

Improves the hydrostatic level measurement with or without diaphragm seals due to density correction for level measurement in open tanks, closed tanks, boiler drum measurement

### Features

- Mass flow measurement with dynamic compensation and level measurement with density compensation
- Calculation of energy flow for steam and water
- Binary output for flow impulse/frequency or status
- Integrated totalizer
- Plugged Impulse Line Detection (PILD)
- HART, FOUNDATION Fieldbus and Modbus
- EN/IEC61508 certification for SIL2 (1001) and SIL3 (1002)

### Benefits

- One 266 multivariable replace 3 separate transmitters
- Reduced costs for installation and maintenance
- Reduction of potential leaking points leads to savings for the plant.
- Increased plant availability by changeable electronic with automatic configuration capability
- Easy Set Up function for reduced on-site installation engineering with TTG technology for configuration without opening the transmitter housing
- Implementation in ABB compact primary elements (Orimaster) allowing to supply a fully compensated flow solution

### Target markets and applications

- Oil & gas: gas flow measurement and 3-phase measurements (OEM)
- Pulp & paper: steam flow measurement in the power plant or in dryer section of the paper machine
- Chemical Industry: process gas flow in refineries, petrochemical and chemical installations and liquid level in tanks
- Energy: combustion control and feed water control, flow measurements of combustion air, fuel, steam and feed water boiler drum level measurement
- Food & beverage: water and steam measurements in boiler houses and level measurement in tanks



## **261 pressure transmitters** The quality cost-effective solution

# The 261 series is the result of our focus on essential features for pressure and level measurement

- Base accuracy ± 0.1 %
- Compact and extremly robust housing of AISI 316 L ss
- Maintenance free due to ABB's reliable well-proven sensor technology
- Easy operation and set up via the graphic display with intuitive menu navigation
- Wide choice of process connections to suit multiple installations in various industry segments e.g.:
  - Threaded connections for the power or pulp/ paper industries
  - Flanged connections for the chemical industry
  - Hygienic connections for the pharmaceutical or food & beverage industries
  - Designed to meet both CIP and SIP applications
  - Output signal 4...20 mA with HART digital communication
  - Conforms to SIL2 according to IEC 61508 / IEC 61511

### Most served industry segments

- Water & wastewater
- Food, beverage and pharmaceutical
- Pulp & paper



### Wetted parts materials and coatings The best solutions for all applications

### AISI 316 L ss

The AISI 316 L ss is the standard material for the wetted parts of ABB 2600T family of transmitters. It has a good resistance to corrosion, including low concentrations of nitric acid and most salt solutions.

#### AISI 316 L ss Urea Grade

It is a AISI 316 L ss with extra-low silicon content and substantial higher molybdenum contents designed for improved corrosion resistance properties in urea-carbonate applications.

#### Monel

Monel has good resistance at ambient temperatures to most of the nonoxidizing acids.

### Hastelloy C-2000

HC-2000 is resistant to an extensive range of corrosive chemicals, including sulphuric, hydrochloric and hydrofluoric acids.

### Hastelloy C-276

HC-276 is a nickel-molybdenum-chromium superalloy with an addition of tungsten designed to have excellent corrosion resistance in a wide range of severe environments.

#### Inconel 625

It is an alloy with excellent corrosion resistance in a wide range of corrosive media, being especially resistant to pitting and crevice corrosion.

### Super Duplex ss

The higher chromium and molybdenum content of Super Duplex makes it extremely resistant to uniform corrosion by organic acids like formic and acetic acid.

#### Tantalum

Tantalum has proved to be a useful material in corrosive applications where AISI 316 L ss does not perform satisfactorily, like hydrochloric, hydrobromic, boiling hydrochloric, nitric, phosphoric and sulfuric acids.

### Diaflex

Diaflex is a nanostructured material with specific anti-abrasion physical characteristics.

### Gold plating diaphragm seals

Diaphragms with gold plating provide protection against hydrogen permeation in all cases of high process pressure and temperature, which increase the permeation rate.

### PFA

ABB provide two main coatings against corrosion and stickness. It consists of a PFA coating of an AISI 316 L ss or a Hastelloy C-276 remote seal transmitter.

### Conformities

- NACE MR0103 and MR0175
- 3A for food and sanitary applications
- Huey test for urea service
- Full material traceability

Materials	Power & utility	Metals & minerals	Upstream (offshore & onshore)	Water & wastewater	Downstream (refining, petrochemical & chemical)	Pulp & paper	Food & beverage
AISI 316 L ss	٠	•	•	•	•	•	•
AISI 316 L ss Urea Grade					•		
Monel	٠		٠	٠	•		
Hastelloy C-2000			٠		•		
Hastelloy C-276	٠		٠	٠	•	•	
Inconel 625			٠		•	•	•
Super Duplex ss	٠	٠	٠	٠	•	•	
Tantalum					•		
Coatings							
Diaflex		•			•	•	
Gold plating			٠		•		
PFA					٠		•

# **2600T All-Welded diaphragm seals** Performance and reliability over time

#### Flanged models

The ABB diaphragm seal portfolio includes rotating and fixed-flange models specifically designed to connect to flanged pipe fittings according to ASME, EN, ISO and JIS. Flushing rings available are available as option.



#### **Ring-joint construction**

This type of diaphragm seal, flanged according to ASME standard, has been designed for high pressure / high temperature conditions.



### Wafer / Pancake

Designed to connect to ASME and EN standard flanges the wafer diaphragm seal offers stable performance for a large number of applications. Flushing rings complete the offering. Wafer seals represent a cost-effective and reliable application solution.



### Off-line seal

Available with threaded or ASME/ EN flanged process connection, the Off-line model matches small process connections. Recommended for clean process fluid measurements.



### Sanitary models

Diaphragm seals developed according to the stringent 3-A requirements. Available with different process fittings (Triclamp, Cherry Burrel, Union Nut and Sanitary), this range demonstrates ABB's commitment to satisfy users needs by engineering solutions for the most demanding processes.



### Union connection

A screw thread process connection that provides a flush diaphragm for gauge pressure applications. Originally designed by Taylor Instrument this connection is combined with the 'All-Welded' technology to provide a high integrity solution for arduous applications.



#### **Chemical Tee**

Available only from ABB and designed for the chemical and oil & gas industries, the Chemical Tee remote seal is designed to connect to a Wedge Flow Element or to any process fitting with the matching dimensions.



#### Button

Button seals are designed for accurate high pressure measurement with a small diaphragm size. This type of connection is especially suitable for plastic and resins production processes, at high pressure and high temperature conditions.

#### In-line

In line seals are suitable for measuring the pressure of fluids in pipes. The pressure measuring diaphragm forms the pipe wall making this type of seal suitable for measuring the pressure of flowing fluids, particularly those that are highly viscous or contain solids.



### Pulp & paper

Designed especially for preventing process media from plugging the process connection, pulp & paper diaphragm seals can be manufactured with anti-abrasion coatings which extend the lifecycle and therefore reduce costs.

### Urea service

This specialized remote seal is manufactured from materials which match the aggressively corrosive conditions when urea is present in the process. The urea grade wetted materials ensure stable performances even in high temperature / high vacuum conditions. Huey test available as option.

### Socket & Saddle

These diaphragm seals have been developed to meet the requirements of users who require a directly welded process connection. They are suitable for highly viscous process fluids measurements.





ABB's Measurement & Analytics business unit is part of the Industrial Automation Division. Comprising 16 factories and 34 service support centers located around the world, it employs approximately 4,000 people including over 600 service personnel.

ABB Measurement & Analytics offers a world leading, full scope, digitally enabled portfolio of measurement and analytics products and systems.

Through highly accurate and reliable solutions, ABB Measurement & Analytics optimize measurement to deliver improved operational efficiency across a broad range of industries including: oil & gas, power, chemicals, pharmaceuticals, pulp & paper, food & beverage, metals & minerals, marine, water & wastewater and satellite-based remote sensing systems.

ABB Measurement & Analytics make instrumentation and analyzer technology, selection, purchasing, installation, operation, and ownership easy – so customers can focus on their business.



ABB Measurement & Analytics

For your local ABB contact, visit: **www.abb.com/contacts** 

For more product information, visit: **www.abb.com/pressure** 

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