ABB MEASUREMENT & ANALYTICS | DATA SHEET

PGS300, PGD300, PAS300, PAD300

Gauge and absolute pressure transmitters

ENGINEERED
TO OUTRUN



Measurement made easy
Engineered solutions for all applications

Base accuracy
- 0.05% of calibrated span

Proven sensor technology together with state-of-the-art digital technology
- Large turn down ratio of up to 100:1
- Digital Advanced Diagnostics feature

Comprehensive selection of sensors
- Optimized performance and stability

10–year stability
- 0.1 % of URL

New touch keypad technology
- Easy local configuration via keys on LCD indicator
- Backlit display

Bluetooth® technology
- Enables quick and easy remote operation

IEC 61508 certification (PENDING)
- For SIL2 (1oo1) and SIL3 (1oo2) applications

All Welded Diaphragm Seal Construction
- grant economically feasible and technically sound solutions
- ensuring total reliability at line pressure down to full vacuum
- wide range of diaphragm seal types, fill fluids, materials and options

Support Special Design to meet customer demand with ABB Tailored Solution

Product in compliance with Directive 2015/863/UE (RoHS III)

Unique technologies to resist hydrogen permeation and highly abrasive process fluids (H-Shield and Diaflex)

General description

PGS300/PAS300



Figure 1: PGS300/PAS300 pressure transmitter

Model PGS300/PAS300 are all-rounder gauge and absolute pressure transmitter suitable for measuring liquid, gas, or steam pressure as well as liquid level in an open tank. Thanks to its stability and reliability it works within stated performance even in extreme ambient and process conditions.
PGS300 achieved the Pre-Certified EPD Environmental Product Declaration (Type III Environmental Declaration according to ISO 14025).
See link EPD or scan this QR code:

EPD®
THE INTERNATIONAL EPD® SYSTEM

PGD300/PAD300



Figure 2: PGD300/PAD300 pressure transmitter with S26 diaphragm seal

Model PGD300/PAD300 is the all-rounder gauge and absolute pressure transmitter with S26 diaphragm seals suitable for measuring liquid, gas or steam pressure as well as liquid level in open tanks.
The combination of S26 diaphragm seal design according to ASME/EN standards with the unique ABB All-Welded technology eliminates leakage risks during operation while ensuring perfect fit to any process.

Diaphragm seals overview

The S26 diaphragm seals are used in combination with PGD300/PAD300 transmitters, allowing gauge or absolute pressure measurements. Connection of the diaphragm seal to the relevant transmitter can be achieved as follows:

- Directly mounted with a short capillary connecting the ‘integral’ diaphragm seal to the transmitter sensor.
- Remotely mounted through a capillary system which links the transmitter sensor to a ‘remote’ diaphragm seal of any version.

The PGD300/PAD300 transmitters have always one diaphragm seal only. The S26 series diaphragm seal system is a protective device used to isolate Pxx300 series transmitters from the process fluid.

The diaphragm seal system provides a flexible diaphragm between the process fluid and a liquid filled capillary tube connected to the body of the transmitter. The diaphragm isolates the process fluid while the filled capillary tube hydraulically transmits the process pressure to the transmitter sensor.

The capillary tube of the remote diaphragm seal is corrosion-resistant with robust construction in stainless steel with spiral armor protection, also PVC jacket; PVC protection is always recommended except for high temperature application, where stainless steel armor is suggested.

The all welded construction assures reliable operation over the widest range of operating temperatures and under vacuum conditions.
For certain applications, use of diaphragm seal is necessary to prevent the process fluid from leaving its enclosure, due to reasons such as:

- the process fluid has solids in suspension or is highly viscous and can foul impulse lines.
- the process fluid can solidify in impulse lines or in the process connections of the transmitter.
- the process fluid is too hazardous to enter the control area where the transmitter is located.
- the process temperature exceeds the recommended limits for the transmitter.
- the transmitter must be located away from the process for easier maintenance.

The S26 series is available with process connections for ASME, EN or JIS pipe flanges, and threaded pipe fittings. Extended remote diaphragm seal, suitable for connection to DN 50, 80 or 100 (2, 3 or 4 in) flanged tank nozzles or flanged tees, permit the diaphragm seal to be located flush with the inside of a tank or pipe.

Sanitary type diaphragm seals meet the stringent requirements of sanitary food, dairy, pharmaceutical and BioTech applications, offering FDA approved fillings and compliance with 3-A Sanitary Standards.

Fill fluids with FDA approval are defined as suitable for contact in the food and beverage related applications and are Generally Recognized As Safe (GRAS) by the US Food and Drug Administration (FDA).

Specification – physical

Please refer to chapter Ordering Information to check the availability of different versions of the relevant model.

Materials

Process isolating diaphragms*

AISI 316L (1.4435), Hastelloy® C276,
AISI 316L (1.4435) gold-plated, Inconel® 718
H-Shield

Process connection*

Stainless steel AISI 316L (1.4404), Hastelloy® C276, Inconel® 718

Sensor filling fluid***

Silicone oil, Inert fluid

Pressure sensor housing

Stainless steel AISI 316L (1.4404)

Electronics housing and cover

Aluminum alloy (copper content ≤ 0.3 %) with baked epoxy finish (color RAL9002); stainless steel AISI 316L (1.4404).

O-ring cover

Buna N® (Perbunan)

Mounting bracket**

Galvanized C steel with chromium passivation
Stainless steel AISI 316L (1.4404)

* Transmitter parts that come into contact with fluid

** U-bolt material: stainless steel AISI 400;
screw material: high-strength alloy steel or stainless steel AISI 316

*** For PXD300 refer to OI/DS/S26 datasheet for additional information on available filling fluids

External non-intrusive push buttons for local zero & span configuration and write protection.

Made of fiberglass reinforced polypropylene oxide with removable design

Plates

Transmitter nameplate

Stainless steel AISI 316 screwed to the electronics housing.

For stainless steel AISI 316 L housing it is mandatory to select option LES or LEW for plates in stainless steel AISI 316.

Certification plate and optional tag/calibration plate

Self-Adhesive Label attached to the electronics housing or stainless steel AISI 316 fastened to the electronics housing with rivets or screws.

Optional wired-on customer data plate

Stainless steel AISI 316. Laser printing on metal or thermal printing on Self-Adhesive Label.

The optional wired-on plate can be populated with customized data (4 lines of 32 characters 4 mm [0.16 in] high).
Customized data have to be provided separately:
in case of no data, the wired-on plate will be delivered blank.

Calibration

- Standard: 0 to Upper Range Limit (URL) at reference condition
- Optional: to specified measuring span

Optional extras

For detailed information see chapter Ordering Information.

Mounting bracket (order code Bx)

For 60 mm (2 in) pipe or wall mounting

Display (order code Dx)

- Communication board (No LCD) with 2-button keypad for zero and span. (default)
- Integrated digital LCD display with 2-button keypad for customized visualization and configuration. (order code D1)
- Integral backlit LCD display with 2-button keypad for customized visualization and configuration with enabled external (non-intrusive) pushbuttons. (order code D2)
- Smart backlit LCD display (4x90° rotable) with 4-buttons through the glass (TTG) and Bluetooth® for customized visualization and full configuration (order code D5)

Additional tag plates

- Order code LES: for tag and/or calibration details (up to 20 characters), in stainless steel, fastened to the transmitter housing.
- Order code LEW: for customer data (4 lines of 32 characters each), in stainless steel, wired to the transmitter housing

Internal surge protection (order code AS)

Order code AS: Up to 4 kV

- Voltage: 1.2 µs rise time / 50 µs delay time at half value
- Current: 8 µs rise time / 20 µs delay time at half value

Oxygen service cleaning (order code P1)

Oxygen service cleaning, (only available with inert fluid fill) P_{max} = maximum working pressure MWP, but not higher than 10 MPa; T_{max} = 60 °C (140 °F)

Certificates (order code Cx)

(test, design, characteristics, material traceability)

- A 4-points calibration report (0%, 50%, 100% and 50%) from 0 to URL is included by default within the instrument packing box.
- Optional order codes CF, CN provide inspection certificates of calibration EN 10204, respectively above 5 and 9 points from 0 to URL.
- The order code "SU" should be always selected for specific calibration range (different from 0 to URL).

Label, Display and operating instruction manual language

Option code LTx for label and display language.
Option code Mx for operating instruction manual language.
Default language English.

Plugs and Connectors for electrical connection (order code Ux)

Conduit plug, cable glands and connectors.

Valve manifold installation (order code A1)

Factory installation and pressure test of the ABB M26 valve manifold.

Process connections

- 1/2 in – 14 NPT female,
- 1/2 in 14 NPT male + 1/4 in – 18 NPT female.
- DIN EN 837-1 G 1/2 B,
- F250 Autoclave (High Pressure)
- 1/4 in – 18 NPT female (High Pressure)
- M20 x 1.5 male
- PXD300 diaphragm seals:
  Refer to data sheet OI/DS-S26.

...Specification – physical

Electrical connections

Cable entries

Two 1/2 in – 14 NPT or M20 × 1.5 threaded conduit entries, directly on housing.
One M20 × 1.5 for WirelessHART® devices with one conduit used for antenna.
Optional: conduit plugs, cable glands and connectors supplied loose.

Terminals block

HART® version: Three connections for signal / remote display, for wire cross-section of up to 2.5 mm^2 (14 AWG), and connection points for testing and communication purposes.

Grounding

Internal and external ground terminals are provided for 6 mm^2 (10 AWG) wire cross-section.

Mounting position

The transmitters can be installed in any position.
The electronic housing can be rotated into any position. A stop is provided to prevent overturning.

Weight

- Approx. 2 kg (4.4 lb); additional 1.5 kg (3.3 lb) for stainless steel housing.
- For packaging add 650 g (1.5 lb).

Take into account additional weight of up to 50 kg (110 lb) for diaphragm seals.

Packaging

- Carton with dimensions of approx. 25 × 20 × 14 cm (10 × 8 × 6 in) for PGS300 and PAS300

The PGD300 and PAD300 diaphragm seal dimensions might vary depending on the selected S26 model.

Specification – functional

Measuring range limits and span limits

Sensor Code	Measuring range upper limit (URL) PGS300 / PGD300 PAS300 / PAD300	Measuring range lower limit (LRL) PGS300 / PGD300***	Minimum measuring span					
			PGS300	PAS300	PGD300	PAD300	PGD300 with S26KN	PAD300 with S26KN
	6 kPa	−6 kPa	0.2 kPa	0.3 kPa	0.6 kPa	1.2 kPa		
C	60 mbar	−60 mbar	2 mbar	3 mbar	6 mbar	12 mbar	—	—
	24 inH2O	−24 inH2O	0.8 inH2O	2.25 mmHg	2.41 inH2O	9 mmHg		
	40 kPa	−40 kPa	0.4 kPa	0.67 kPa	0.67 kPa	2 kPa	2.0 kPa	4.0 kPa
F	400 mbar	−400 mbar	4 mbar	6.7 mbar	6.7 mbar	20 mbar	20 mbar	40 mbar
	160 inH2O	−160 inH2O	1.6 inH2O	5.02 mmHg	2.67 inH2O	15 mmHg	8 inH2O	30 mmHg
	250 kPa	−100 kPa	2.5 kPa	4.17 kPa	4.17 kPa	12.5 kPa	8.33 kPa	25.0 kPa
L	2500 mbar	−1 bar	25 mbar	41.67 mbar	41.67 mbar	125 mbar	83.33 mbar	250 mbar
	1000 inH2O*	−14.5 psi	0.36 psi	31.25 mmHg	16.73 inH2O**	93.8 mmHg	1.21 psi	187.5 mmHg
	1000 kPa	−100 kPa	10 kPa	16.7 kPa	16.7 kPa	50 kPa	33.3 kPa	100 kPa
D	10 bar	−1 bar	100 mbar	167 mbar	167 mbar	500 mbar	333 mbar	1.0 bar
	145 psi	−14.5 psi	1.45 psi	2.42 psi	2.42 psi	7.25 psi	4.8 psi	14.5 psia
	4000 kPa	−100 kPa	40 kPa	67 kPa	67 kPa	200 kPa	133 kPa	400 kPa
K	40 bar	−1 bar	0.4 bar	0.67 bar	0.67 bar	2 bar	1.33 bar	4 bar
	580 psi	−14.5 psi	5.8 psi	9.7 psi	9.7 psi	29 psi	19.3 psi	58 psi
	10000 kPa	−100 kPa	100 kPa	167 kPa	167 kPa	500 kPa	333 kPa	1000 kPa
R	100 bar	−1 bar	1 bar	1.67 bar	1.67 bar	5 bar	3.33 bar	10 bar
	1450 psi	−14.5 psi	14.5 psi	24.2 psi	24.2 psi	72.6 psi	48.3 psi	145 psi
	41400 kPa	−100 kPa	414 kPa	690 kPa	690 kPa	2070 kPa	1380 kPa	4140 kPa
T	414 bar	−1 bar	4.14 bar	6.9 bar	6.9 bar	20.7 bar	13.8 bar	41.4 bar
	6000 psi	−14.5 psi	60.9 psi	100 psi	100 psi	300 psi	200 psi	600 psi
	60000 kPa	−100 kPa	600 kPa	1000 kPa	1000 kPa	3000 kPa	2000 kPa	6000 kPa
V	600 bar	−1 bar	6 bar	10 bar	10 bar	30 bar	20 bar	60 bar
	8700 psi	−14.5 psi	87 psi	145 psi	145 psi	435 psi	290 psi	870 psi
	105000 kPa	−100 kPa	10500 kPa	10500 kPa	10500 kPa	10500 kPa		
Y	1050 bar	−1 bar	105 bar	105 bar	105 bar	105 bar	—	—
	15000 psi	−14.5 psi	1500 psi	1500 psi	1500 psi	1500 psi		
	138000 kPa	−100 kPa	13800 kPa	13800 kPa	13800 kPa	13800 kPa		
W	1380 bar	−1 bar	138 bar	138 bar	138 bar	138 bar	—	—
	20000 psi	−14.5 psi	2000 psi	2000 psi	2000 psi	2000 psi		

* Measuring range upper limit (URL) for PGD300 sensor L is 250 kPa, 2500 mbar or 36.13 psi

** Measuring span limit for PGD300 sensor L is 4.17 kPa, 41.67 mbar or 0.60 psi

*** Measuring range lower limit (LRL) for PAS300 and PAD300 refer to Overpressure Limit table notes

Span limits

Maximum span = URL

For optimum measuring accuracy, it is recommended that you select the sensor code which will provide the lowest turn down ratio (TD).

Zero position suppression and elevation

The zero position and span can be set to any value within the measuring range limits listed in the table if:

- adjusted span ≥ smallest span

Damping

Configurable time constant between 0 to 60 s.

This is in addition to the sensor response time.

Warm-up time

Ready for operation as per specifications in less than 10 s with minimum damping.

Insulation resistance

> 100 MΩ at 500 V DC (between terminals and ground).

Specification – Operating limits

Pressure limits

Overpressure limits

Without damage to the transmitter:

Sensor code	Fill fluid	Overpressure limits*
C, F	Silicone or Inert fluid	1 MPa, 10 bar, 145 psi
L	Silicone or Inert fluid	3 MPa, 30 bar, 435 psi
D	Silicone or Inert fluid	6 MPa, 60 bar, 870 psi
K	Silicone or Inert fluid	8 MPa, 80 bar, 1160 psi
R	Silicone or Inert fluid	30 MPa, 300 bar, 4350 psi
T	Silicone or Inert fluid	63 MPa, 630 bar, 9137 psi
V	Silicone or Inert fluid	90 MPa, 900 bar, 13053 psi
Y	None	157.5 MPa, 1575 bar, 22837 psi with F250C process connection
		135 MPa, 1350 bar, 19570 psi with ¼ in - 18 NPT process connection
W	None	206.8 MPa, 2068 bar, 30000 psi

* Lower limit for:

- Silicon oil: 0.07 kPa abs., 0.7 mbar abs., 0.5 mmHg
- Inert fluid: 0.135 kPa abs., 1.35 mbar abs., 1 mmHg

Note

The overpressure limits pressure limits can be lowered by means of the nominal pressure rating of the diaphragm seal flange.

Proof pressure

The transmitters can withstand a pressure test with the following line pressure without leaking:

- Overpressure limit of sensor (see table Overpressure limits);
- or twice the value the flange rating of diaphragm seal(s) S26, whichever is less.

Meets hydrostatic test requirements of ANSI / ISA–S 82.03.

Vacuum service for S26 diaphragm seals

Full vacuum subject to fill fluid limits.

Refer to table Fill fluid characteristics in data sheet OI / DS-S26.

The minimum pressure with tantalum diaphragm seal is 1 kPa abs, 10 mbar abs, 0.15 psia.

Temperature limits °C (°F)

Note

For hazardous atmosphere and ordinary location applications see the temperature range specified on the certificate / approval relevant to the aimed type of protection.

Ambient temperature

This is the operating temperature

PGS300, PGD300, PAS300, PAD300	Ambient temperature limits
Silicone oil for sensor C to V	−40 to 85 °C (−40 to 185 °F)
Inert fluid for sensor C to V	−40 to 85 °C (−40 to 185 °F)
LCD display readability	−20 to 70 °C (−4 to 158 °F)

Transmitters with ambient temperature limit of -50°C (-58° F) are available through special option

Process temperature

PGS300, PGD300, PAS300, PAD300	Process temperature limits
Silicone oil	−50 to 121 °C (−58 to 250 °F)[1]
Inert fluid	−40 to 121 °C (−40 to 250 °F)[1]
PGD300 / PAD300	Please refer to data sheet S26 for remote diaphragm seals[2]

1) 85 °C (185 °F) for application below atmospheric pressure

2) Refer to OI / DS-S26

Please always consider the most stringent condition as applicable operative limit.

Transport and storage

PGS300, PGD300, PAS300, PAD300	Storage temperature limits
Storage limits	−50 to 85 °C (−58 to 185 °F)
LCD integral display	−40 to 85 °C (−40 to 185 °F)

Limits for environmental effects

Electromagnetic compatibility (EMC)

The devices comply with the requirements and tests for EMC Directive 2014/30/EU to standards EN 61326-1 Table2 (industrial electromagnetic environment) concerning both emitted interference (CISPR11) and interference immunity.

Overvoltage strength

- Burst test: up to 2 kV at 5 kHz and 100 kHz
- Surge test: up to 1 kV line-line and 2 kV line-ground
- With optional (AS) surge protection: ±4 kV line-to-ground or line-to-line according to IEC 61000-4-5

Radiated emission: Group 1 - class B according to CISPR11

- FCC 47 CFR part 18.305
- ICES 005 - Issue 4

Conducted emission: group 1 - class A according to

- CISPR11 and to CISPR32
- ICES 005 -Issue 4

Pressure Equipment Directive (PED)

PGS300 comply with 2014/68/EU to ANSI/ISA S82.03

- Category III Module H for PS > than 20 MPa, 200 bar
- Sound Engineering Practice (SEP) for PS ≤ 20 MPa, 200 bar.

PGD300 comply with 2014/68/EU to ANSI/ISA S82.03

- Sound Engineering Practice (SEP)

Humidity

- Relative humidity: Up to 100 %
- Condensation, icing: Permissible

Vibration resistance

Acceleration up to 2g (displacement 0.15 mm) according to IEC62828-1 from 10 to 1000 Hz for typical application, i.e "Field with general application or pipeline with low vibration" (test according to IEC60068-2-6 : Fc). Acceleration limited to 1g for stainless steel housing.

Shock resistance

According to IEC 60068–2–27: Ea

- Acceleration: 50 g
- Duration: 11 ms

IP rating

The transmitter is dust and sand tight, and protected against immersion effects as defined by IEC 60529.

- IP 66, IP 67 and NEMA type 4x (IP 68 on request)
- IP 65 (devices with Harting Han plug connector)
- IP 66W, IP 67W, IP 68W as standard for Inmetro certification

Diaphragm seal system selection criteria

The application of an S26 system in direct mount or remote diaphragm seal configuration to PXD300 transmitters affects performances of original devices.
Effects are evident in:

- Accuracy
- Temperature effects
- Dynamic response

Accuracy is only marginally affected when diaphragm seal stiffness is relevant compared with sensor stiffness.
This is the only characteristic of the S26 system which has role on accuracy performance. High stiffness of diaphragm associated with low URL might produce increased errors of linearity, hysteresis, and long-term stability; when diaphragm stiffness is accuracy related also temperature effects are significantly affected.

Some basic considerations on diaphragm stiffness help understanding effects introduced by S26 system associated with transmitters. This is physically defined by the ratio between the pressure variation applied to the diaphragm and the corresponding volume variation. The stiffness is not linear along the whole diaphragm volumetric displacement, but the S26 design is such to maintain the system linear within the service conditions of the transmitter such as:

- Operating pressure range
- Ambient and process temperature limits

Diaphragm stiffness is a function of material and thickness (elastic coefficient), diameter (type), convolution shape and geometry (design defined).

The S26 system has effect on temperature performance of the complete transmitter. This effect is mostly on zero of the instruments and is produced by the expansion of the fill fluid into the closed volume formed by the transmitter flange cavity the capillary volume and the remote diaphragm seal volume. This volume filled with a fluid with specific expansion coefficient; change in temperature of the measuring device produce a volume variation which is absorbed by the remote diaphragm, whose stiffness produces a change in the fluid pressure: this is the zero error. In real application the transmitter/ diaphragm seal system is not the same and stable temperature. Therefore, the errors referred in this document for each type of diaphragm and different fluids should be taken as a reference for qualitatively evaluation and not a true behavior in normal application conditions. Should again be recognized that the stiffness of diaphragm and in this case, the thermal coefficient of fluid are the parameter to take into account.

The application of S26 diaphragm seal to transmitters increases the original time response. The amount of the increase depends on the number of elements and condition of the instrument as follow:

- transmitter sensor range
- physical configuration (i.e. direct or remote)
- fill fluid viscosity of the S26 system applied
- ambient temperature (affects the transmitter and the capillary) and process temperature on the diaphragm seal
- capillary length

The delay introduced by the diaphragm seal may be considered as an added constant time to the one of the associated transmitter.

For obtaining the best application solution:

- choose sensor code with URL closest to application SPAN
- select largest diameter diaphragm seal related to URL.
- keep the capillary length as short as possible
- select the fill fluid that suits the most extreme process conditions expected (highest temperature and lowest pressure) and it is compatible with the measuring medium.
- In vacuum application, choose always the all welded construction and mount the transmitter primary 30 cm (12 in) or more below the bottom diaphragm seal connection.

Ordering information

The transmitter and each diaphragm seal system are each identified by a product code number. These code numbers are stamped on the transmitter nameplate and each character identifies specific product features. Refer to ordering information for a detailed explanation of the product code numbers.

Industrial application in chemical, sanitary, food and any other process industries may require diaphragm seal configurations and/or process connection different from those reported in this document. Each ‘special’ should be evaluated by ABB to check the correctness and its level of functionality. Ask for the ‘S26 series diaphragm seal form’ to precisely define the challenging measurement application requirements.

ABB can also cooperate with you by developing a special remote diaphragm seal for problems requiring individual solutions.

PLEASE CONTACT YOUR LOCAL ABB OFFICE OR REPRESENTATIVE FOR ADDITIONAL INFORMATION, SPECIFIC DIAPHRAGM SEAL DATA AND APPLICABILITY.

Available remote diaphragm seals

The following table shows the available types of remote diaphragm seals. According to the combination DIAPHRAGM SEAL / TRANSMITTER SENSOR the table details the MAXIMUM CAPILLARY LENGTH. The mnemonic is a short reference for the diaphragm seal type. For further details please refer to operating instruction and data sheet OI/DS/S26.

Seal model	Seal type	Seal diaphragm size (thickness) [flange type]	One seal construction										Mnemonic
			SENSOR										
			C	F	L	D	K	R	T	V	Y	W	
S26WA S26WE	Wafer (ASME and EN standards)	1.5 in / DN 40	—	—	3	5	5	5	8	8	—	—	P1.5
		2 in / DN 50	—	2	6	8	8	8	8	8	—	—	P2
		3 in / DN 80	—	4	10	10	10	12	12	12	—	—	P3
		1.5 in / DN 40 (low)	—	—	4	6	6	6	6	6	—	—	F1.5
		2 in / DN 50 (low)	—	3	8	12	16	16	16	16	—	—	F2
		3 in / DN 80 (low)	—	6	10	16	16	16	16	16	—	—	F3
S26FA S26FE S26RA S26RE	Flanged flush diaphragm (ASME and EN standards)	2 in / DN 50	—	2	6	8	8	8	8	8	—	—	P2
		3 in / DN 80	—	4	10	10	10	12	12	12	—	—	P3
		4 in / DN 100	—	4	10	10	10	12	12	12	—	—	P3
		1 in / DN 25 (low)	—	—	3	3	3	3	—	—	—	—	F1
		1.5 in / DN 40 (low)	—	—	4	6	6	6	6	6	—	—	F1.5
		2 in / DN 50 (low)	—	3	8	12	16	16	16	16	—	—	F2
		3 in / DN 80 (low)	—	6	10	16	16	16	16	16	—	—	F3
		4 in / DN 100 (low)	—	6	10	16	16	16	16	16	—	—	F3
	Flanged extended diaphragm (ASME and EN standards)	2 in / DN 50	—	1	4	6	6	6	—	—	—	—	E2
		3 in / DN 80	—	3	8	10	10	10	—	—	—	—	E3
		4 in / DN 100	—	4	10	10	10	12	12	12	—	—	P3
		2 in / DN 50 [fixed]	—	—	4	6	6	6	6	6	—	—	F1.5
		3 in / DN 80 [fixed]	—	6	10	12	12	12	—	—	—	—	F2.5
		4 in / DN 100 [fixed]	—	6	10	12	12	12	—	—	—	—	F2.5
S26RH	Flanged to ISO 10423 flush diaphragm (API)	1 13/16 in	—	—	—	—	—	—	—	5	5	5	H1.5
		2 1/16 in	—	—	—	—	—	—	—	8	8	8	P1.5
S26RJ	Flanged flush diaphragm (JIS standards)	A 50	—	2	6	8	8	8	8	8	—	—	P2
		A 80	—	4	10	10	10	12	12	12	—	—	P3
		A 100	—	4	10	10	10	12	12	12	—	—	P3
S26RR	Flanged flush diaphragm (Ring Joint ASME standard)	1.5 in	—	—	3	5	5	5	8	8	—	—	P1.5
		2 in	—	2	6	8	8	8	8	8	—	—	P2
		3 in	—	4	10	10	10	12	12	12	—	—	P3
S26TT	Threaded off-line flanged	2½ in	—	3	8	8	8	8	8	8	—	—	T2.5
S26MA S26ME	Off-line flanged (ASME and EN standards)	2½ in	—	3	8	8	8	8	8	8	—	—	T2.5
S26SS	Union nut, Triclamp, Sanitary, Aseptic	2 in / F 50	—	1	3	6	6	6	—	—	—	—	S2
		3 in / 4 in / F 80	—	6	10	10	10	10	—	—	—	—	S3
	Cherry Burrell, Cherry Burrell Aseptic	2 in	—	1	3	6	6	6	—	—	—	—	S2.5
		3 in / 4 in	—	6	10	10	10	10	—	—	—	—	S3.5
S26BN	Button type	1 in	—	—	—	—	—	3	3	3	—	—	B1
S26PN	Urea service flanged	1½ in	—	—	5	5	5	5	5	5	—	—	U1.5
		2½ in	—	3	6	6	6	6	6	6	—	—	U2.5

Diaphragm seal system selection criteria

Available direct mount diaphragm seals

The following table shows the available types of direct mount diaphragm seals.
According to the combination DIAPHRAGM SEAL / TRANSMITTER SENSOR the table details the compatibility for one direct mount diaphragm seal construction and the MAXIMUM CAPILLARY LENGTH when a second diaphragm seal is selected as remote. The mnemonic is a short reference for the diaphragm seal type. For further details please refer to operating instruction and data sheet OI / DS / S26.

Seal model	Seal type	Seal diaphragm size (thickness) [flange type]	One direct mount seal										Mnemonic
			SENSOR										
			C	F	L	D	K	R	T	V	Y	W	
S26FA S26FE S26RA S26RE	Flanged flush diaphragm (ASME and EN standards)	DN 25	—	—	Y	Y	Y	Y	—	—	—	—	F1
		DN 25 (recessed diaphragm)	—	—	Y	Y	Y	Y	—	—	—	—	T2
		2 in / DN 50	Y	Y	Y	Y	Y	Y	Y	Y	—	—	P2
		3 in / DN 80	Y	Y	Y	Y	Y	Y	Y	Y	—	—	P3
		4 in / DN 100	Y	Y	Y	Y	Y	Y	Y	Y	—	—	P3
		1 in / DN 25 (low)	—	—	Y	Y	Y	Y	—	—	—	—	F1
		1.5 in / DN 40 (low)	—	—	Y	Y	Y	Y	—	—	—	—	F1.5
		2 in / DN 50 (low)	Y	Y	Y	Y	Y	Y	Y	Y	—	—	F2
		3 in / DN 80 (low)	Y	Y	Y	Y	Y	Y	Y	Y	—	—	F3
		4 in / DN 100 (low)	Y	Y	Y	Y	Y	Y	Y	Y	—	—	F3
	Flanged extended diaphragm (ASME and EN standards)	2 in / DN 50	—	Y	Y	Y	Y	Y	—	—	—	—	E2
		3 in / DN 80	Y	Y	Y	Y	Y	Y	—	—	—	—	E3
		4 in / DN 100	Y	Y	Y	Y	Y	Y	Y	Y	—	—	P3
		2 in / DN 50 [fixed]	—	—	Y	Y	Y	Y	—	—	—	—	F1.5
		3 in / DN 80 [fixed]	Y	Y	Y	Y	Y	Y	—	—	—	—	F2.5
		4 in / DN100 [fixed]	Y	Y	Y	Y	Y	Y	—	—	—	—	F2.5
S26RH	Flanged to ISO 10423 flush diaphragm (API)	1 13/16 in	—	—	—	—	—	—	—	—	Y	Y	H1.5
		2 1/16 in	—	—	—	—	—	—	—	—	Y	Y	P1.5
S26RJ	Flanged flush diaphragm (JIS standards)	A 50	Y	Y	Y	Y	Y	Y	Y	Y	—	—	P2
		A 80	Y	Y	Y	Y	Y	Y	Y	Y	—	—	P3
		A 100	Y	Y	Y	Y	Y	Y	Y	Y	—	—	P3
S26RR	Flanged flush diaphragm (Ring Joint ASME standard)	1.5 in	—	—	Y	Y	Y	Y	Y	Y	—	—	P1.5
		2 in	Y	Y	Y	Y	Y	Y	Y	Y	—	—	P2
		3 in	Y	Y	Y	Y	Y	Y	Y	Y	—	—	P3
S26TT	Threaded off-line flanged	2½ in	Y	Y	Y	Y	Y	Y	Y	Y	—	—	T2.5
S26MA S26ME	Off-line flanged (ASME and EN standards)	2½ in	Y	Y	Y	Y	Y	Y	Y	Y	—	—	T2.5
S26SS	Union nut, Triclamp, Sanitary, Aseptic	2 in / F50	—	Y	Y	Y	Y	Y	—	—	—	—	S2
		3 in / 4 in / F80	Y	Y	Y	Y	Y	Y	—	—	—	—	S3
	Cherry Burrell, Cherry Burrell Aseptic	2 in	—	Y	Y	Y	Y	Y	—	—	—	—	S2.5
		3 in / 4 in	Y	Y	Y	Y	Y	Y	—	—	—	—	S3.5
S26KN	Pulp & Paper application specific (ONLY DIRECT MOUNT WITH PAD300 / PGD300)	1 in ball valve (PGD300 only)	—	—	Y	Y	Y	Y	—	—	—	—	Y1
		1 in (gasketed)	—	—	Y	Y	Y	Y	—	—	—	—	M1
		1 in (NPT, Gas)	—	—	Y	Y	Y	Y	Y	Y	—	—	M1
		1½ in (gasketed)	—	Y	Y	Y	Y	Y	—	—	—	—	M1.5
		1½in (NPT - Gas)	—	Y	Y	Y	Y	Y	Y	Y	—	—	M1.5A
		1½ in (M44 thread)	—	Y	Y	Y	Y	Y	—	—	—	—	M1.5B

Specification – measuring accuracy

Reference conditions

According to IEC 62828-1

- Ambient temperature constant in the range 15 to 25 °C (59 to 77 °F)
- Relative humidity constant in the range 50 to 70 %
- Ambient pressure constant in the range 860 to 1060 mbar
- Measuring span based on zero position
- Transmitter with AISI 316 L or Hastelloy C276 process isolating diaphragm
- Filling fluid: Silicone oil
- Supply voltage: 24 V DC ±1 %
- Load with HART: 250 Ω
- Transmitter not grounded
- Characteristic setting: linear, 4 to 20 mA.

Dynamic response time

According to IEC 61298-2 / IEC 62828-1

Sensor code	Total Response Time
C to V	≤ 90 ms
Y, W	≤ 110 ms

Total Response Time = reaction time + time constant

Reaction time for all sensors ≤ 40 ms (PGS300 only).
Time constant = 63.2 % of total step response.

Between −40 °C (−40 °F) and −25 °C (−13 °F) the device response time might be influenced.

For PXD300 the Total Response Time depends by S26 diaphragm seal system selection and application conditions.

Accuracy rating (Elin)

% of calibrated span, consisting of terminal-based non-linearity, hysteresis, and non repeatability.
In the case of fieldbus devices, SPAN refers to the analog input function block output scaling.

Model	Sensors	for TD range	Accuracy rating
PGS300	C	from 10:1 to 30:1	±(0.055 + 0.005 x TD - 0.05) %
	C,F,D,R,T,V	from 1:1 to 10:1	±0.055%
	C,F,D,R,T,V	from 10:1 to 100:1	±(0.055 + 0.005 x TD - 0.05) %
	L,K	from 1:1 to 10:1	±0.05%
	L,K	from 10:1 to 100:1	±(0.05 + 0.005 x TD - 0.05) %
	Y,W	from 1:1 to 5:1	±0.15 %
	Y,W	from 5:1 to 10:1	±(0.03 x TD) %
PGD300 and with diaphragm seal(s) Mnemonic P3, F3, E3, S3, F2	C	from 1:1 to 5:1	±0.055 %
	C	from 5:1 to 10:1	±(0.011 x TD) %
	F to V	from 1:1 to 10:1	±0.055 %
	F to V	from 10:1 to 60:1	±(0.055 + 0.005 x TD - 0.05) %
	Y to W	from 1:1 to 5:1	±0.15 %
	Y to W	from 5:1 to 10:1	±(0.03 x TD) %
PGD300 and with diaphragm seal(s) Mnemonic different from above	C	from 1:1 to 5:1	±0.065 %
	C	from 5:1 to 10:1	±(0.013 x TD) %
	F to V	from 1:1 to 10:1	±0.065 %
	F to V	from 10:1 to 60:1	±(0.0065 x TD) %
	Y to W	from 1:1 to 5:1	±0.20 %
	Y to W	from 5:1 to 10:1	±(0.04 x TD) %

Model	Sensors	for TD range	Accuracy rating
PAS300	C	from 10:1 to 30:1	±(0.055 + 0.005 x TD - 0.05) %
	C,F,D,R,T,V	from 1:1 to 10:1	±0.055%
	C,F,D,R,T,V	from 10:1 to 100:1	±(0.055 + 0.005 x TD - 0.05) %
	L,K	from 1:1 to 10:1	±0.05%
	L,K	from 10:1 to 100:1	±(0.05 + 0.005 x TD - 0.05) %
	Y,W	from 1:1 to 5:1	±0.15 %
	Y,W	from 5:1 to 10:1	±(0.03 x TD) %
PAD300 with diaphragm seal(s) Mnemonic P3, F3, E3, S3, F2	C	from 1:1 to 5:1	±0.055 %
	F to V	from 1:1 to 10:1	±0.055 %
	F to V	from 10:1 to 20:1	±(0.055 + 0.005 x TD - 0.05) %
	Y to W	from 1:1 to 5:1	±0.15 %
	Y to W	from 5:1 to 10:1	±(0.03 x TD) %
PAD300 with diaphragm seal(s) Mnemonic different from above	F to V	from 1:1 to 10:1	±0.065 %
	F to V	from 10:1 to 20:1	±(0.0065 x TD) %
	C	from 1:1 to 5:1	±0.065 %
	Y to W	from 1:1 to 5:1	±0.20 %
	Y to W	from 5:1 to 10:1	±(0.04 x TD) %

Note

FOR OPTIMUM MEASURING ACCURACY, IT IS RECOMMENDED THAT YOU SELECT THE SENSOR CODE WHICH WILL PROVIDE THE LOWEST TD VALUE.

Ambient Temperature Effect

Temperature effect according to IEC 62828 / 1.

EΔTZ = Effect of the ambient temperature on zero
EΔTS = Effect of the ambient temperature on span

Error in temperature for ±35 °C (±63 °F) changes within the limits of −10 to 60 °C (−14 to 140 °F), reference temperature 25 °C (77 °F)

Model	Sensors	for TD up to	
PGS300 and PAS300	C	10:1	±(0.06 % URL + 0.100 % span)
	F to V	10:1	±(0.03 % URL + 0.045 % span)
	Y to W	10:1	±(0.06 % URL + 0.100 % span)
PGD300 and PAD300	C and F	10:1	±(0.06 % URL + 0.100 % span)
	L to V	10:1	±(0.03 % URL + 0.045 % span)
	Y to W	10:1	±(0.06 % URL + 0.100 % span)

For temperature changes higher than 35 °C, additional error should be considered.
Please contact your ABB representative for additional information on performance.

For PGD300 / PAD300, please refer to S26 diaphragm seal(s) errors in the S26 datasheet OI / DS-S26 for temperature additional effects of remote / direct mount diaphragm seal(s).

Unless otherwise specified, errors are quoted as % of calibrated span.

Some performance referring to the Upper Range Limit are affected by the actual turndown (TD) as ratio between Upper Range Limit (URL) and calibrated span.

Power supply

Within the limit values for the voltage / load, the total influence is less than 0.005 % of the upper measuring range limit per volt.

Load

Within the load / voltage limits, the total influence is negligible.

Electromagnetic field

Meets all requirements of EN 61326-1.

Common-mode interference

No influence from 100 V rms @ 50 Hz, or 50 V DC

Mounting position

Rotations in the plane of the diaphragm have a negligible effect. A tilt from the vertical of up to 90° causes a zero point shift of up to 0.35 kPa (3.5 mbar, 1.4 inH_2O), which can be corrected by making an appropriate zero position adjustment. There is no effect on the measuring span.

In applications where a dynamic inclined installation is required (e.g. naval applications with maximum vessel inclination of ±22.5°), the maximum error can be up to 0.5 mbar.

Such error might be resulting in a deviation from the standard accuracy with percentual magnitude depending on the range of the selected device.
In case of non-dynamic inclined installations, this effect can be eliminated by performing a zero calibration in the field.

Please contact ABB to assess more in details on the installation effects.

Stability (all standard operating conditions)

±0.1 % of URL over a 10 years period
(± 0.05 % URL over a 1 year period)
±0.45 % of URL over a 3 years period for sensors Y, W

Use in potentially explosive atmospheres

Ex marking

With or without integral display.

Intrinsic Safety Ex ia

ATEX Europe (code HAA) approval	
Type Examination Test Certificate	FM24ATEX0035X
II 1 G Ex ia IIC T6...T4 Ga	
II 1/2 G Ex ia IIC T6...T4 Ga/Gb	
II 1 D Ex ia IIIC T85 °C..135°C Da	
II 1/2 D Ex ia IIIC T85 °C… 135°C Da/Db; IP66, IP67	

IECEx (code HJA) approval	
IECEx certificate of conformity	IECEx FMG 24.0039X
Ex ia IIC T6…T4 Ga	
Ex ia IIC T6…T4 Ga/Gb	
Ex ia IIIC T85°C...T135°C Da	
Ex ia IIIC T85°C...T135°C Da/Db	

NEPSI China (code HNA) approval	
Certificate	NEPSI GYJ25.1114X
Ex ia IIC T4/T5/T6 Ga	
Ex ia IIC T4/T5/T6 Ga/Gb	
Ex iaD 20 T85/T100/T135	
Ex iaD 20/21 T85/T100/T135	

INMETRO Brazil (code HBA) approval	
Certificate	DNV 25.0256 X/00
Ex ia IIC T6/T5/T4 Ga	
Ex ia IIC T6/T5/T4 Ga/Gb	
Ex ia IIIC T85/T100/T135°C Da	
Ex ia IIIC T85/T100/T135°C Da/Db; IP66W, IP67W, IP68W	

Explosion proof

ATEX Europe (code HAD) approval	
Type Examination Test Certificate	FM24ATEX0034X
II 1/2 G Ex db IIC T6 Ga/Gb Ta=–50 °C to +75 °C	
II 1/2 D Ex tb IIIC T85°C Da/Db Ta = –50 °C to +75 °C; IP66, IP67	

IECEx (code HJD) approval	
IECEx certificate of conformity	IECEx FMG 24.0038X
Ex db IIC T6 Ga/Gb Ta=–50 °C to +75 °C	
Ex tb IIIC T85 °C Da/Db Ta = –50 °C to +75 °C; IP66, IP67	

NEPSI China (code HND) approval	
Certificate	NEPSI GYJ25.1113X
Ex db IIC T6 Gb	
Ex tD A21 IP67 T85 °C	

INMETRO Brazil (code HBD) approval	
Certificate	DNV 25.0255 X/00
Ex db IIC T6 Ga/Gb Ta=-50 °C a +75 °C ;	
Ex tb IIIC T85°C Da/Db ; IP66W, IP67W, IP68W	

Intrinsic Safety Ex ic, Ex ec, Ex tc

ATEX Europe (code HAC) approval	
Type Examination Test Certificate	FM24ATEX0036X
II 3 G Ex ic IIC T6...T4 Gc	
II 3 G Ex ec IIC T6...T4 Gc	
II 3 D Ex tc IIIC T85 °C…T135°C Dc; IP66, IP67	

IECEx (code HJC) approval	
IECEx certificate of conformity	IECEx FMG 24.0040X
Ex ic IIC T6...T4 Gc	
Ex ec IIC T6…T4 Gc	
Ex tc IIIC T85°C...T135° Dc; IP66, IP67	

NEPSI China (code HNC) approval	
Certificate	NEPSI GYJ25.1115X
Ex ic IIC T4...T6 Gc	
Ex nA IIC T4...T6 Gc	
Ex tD A22 IP67 T85 °C	

INMETRO Brazil (code HBC) approval	
Certificate	DNV 25.0257 X/00
Ex ic IIC T6/T5/T4 Gc;	
Ex tb IIIC T85°C Da/Db ;	
Ex ec IIC T6/T5/T4 Gc	
Ex tc IIIC T85/T100/T135°C Dc; IP66W, IP67W, IP68W	

Note

- COMBINED IECEx for all HJx available methods (code HJM)
- COMBINED ATEX, FM and IECEx Approvals for all available methods (code HMM)
- NEPSI (China), Inmetro (Brazil), UKCA (United Kingdom), PESO (India), EAC (Kazakhstan), KOSHA (South Korea).

Use in potentially explosive atmospheres

FMus and caFM approvals

FMus approvals caFM approvals	
FMus certificate (USA)	FM24US0265X
caFM certificate (Canada)	FM24CA0068X
Explosionproof (US):	
Class I, Division 1, Groups A, B, C, D; T5	
Explosionproof (Canada):	
Class I, Division 1, Groups B, C, D; T5	
Dust Ignition Proof :	
Class II, Division 1, Groups E, F, G, Class III, Division 1; Groups E, F, G; T5	
Flameproof (US):	
Class I, Zone 1 AEx db IIC T4 Gb	
Flameproof (Canada):	
Class I, Zone 1 Ex db IIC T4 Gb	
Non-Incendive :	
Class I, Division 2, Groups A, B, C, D T6...T4	
Energy limited (US):	
Class I, Zone 2 AEx nC IIC T6...T4	
Energy limited (Canada):	
Class I, Zone 2 Ex nC IIC T6...T4	
Intrinsically safe:	
Class I, II, III, Division 1, Groups A, B, C, D, E, F, G T6...T4	
Class I, Zone 0 AEx ia IIC T6...T4 (US)	
Class I, Zone 0 Ex ia IIC T6...T4 (Canada)	
Increased safety:	
Class I, Zone 2, AEx ec IIC T6…T4 (US)	
Class I, Zone 2, Ex ec IIC T6…T4 (Canada)	
Type 4X, IP66, IP67 for all above markings	

Note

- COMBINED FMus Approvals for all HUx available methods (code HUD)
- COMBINED caFM Approvals for all HCx available methods (code HCD)
- COMBINED ATEX, FM and IECEx Approvals for all available methods (code HMM)
- NEPSI (China), Inmetro (Brazil), UKCA (United Kingdom), PESO (India), EAC (Kazakhstan), KOSHA (South Korea).

Temperature data

The permissible ambient temperature ranges (within the limits of −50 to 85 °C) are specified in the type examination certificates dependent upon the temperature class.

Refer to certificates documents for ambient temperature ranges related to the different temperature classes.

Specification – Electrical data and options

HART® communication and 4 to 20 mA output

Power supply

The transmitter operates from 10.5 to 42 V DC with no load and is protected against reversed polarity.
Additional loads enable operation above 42 V DC (with bridge connection between terminals).
For sustainable operation and use, a power supply of max 24 V DC is recommended at transmitter's terminals.

Deviations on operating voltage	
12.3 V DC	Minimum voltage for device with the option AS – overvoltage protection
30 V DC	Maximum voltage for use in Ex ia zones and other intrinsically safe applications

Disconnecting or removing the connection link from the terminals of the connection board requires an increase of the minimum supply voltage by 5 V DC and, in case of option AS, the minimum voltage increases from 12.3 V DC to 17 V DC.
Minimum operating voltage increases to 14 V DC with optional backlit LCD display.
Minimum operating voltage increases to 15.8 V DC with optional backlit LCD display and overvoltage protection option AS.

Ripple

The DC power supply ripple must be lower than 0.5 V.
The transmitter output noise is in compliance with HART specifications.

Load limitations

Total loop resistance at 4 to 20 mA and HART communication:

$$R\ (k\Omega) = \frac{\text{Supply voltage} - \text{Minimum operating voltage (V DC)}}{22\ \text{mA}}$$

A minimum resistance of 250 Ω is required for HART communication.

Overvoltage protection (optional, code AS)

Up to 4 kV

- Voltage: 1.2 µs rise time / 50 µs delay time at half value
- Current: 8 µs rise time / 20 µs delay time at half value

Output signal

Two–wire output 4 to 20 mA, selectable by the operator:

- linear or square root output signal,
- characteristic curve with the exponents 3/2 or 5/2,
- square root for bidirectional flow,
- linearization table with 22 points (i.e. for level measurements in lateral, cylindric containers and spherical containers).

HART® communication

The HART communication provides the digital process variables which are superimposed on the 4 to 20 mA signal (protocol in accordance with Bell 202 FSK standard).

HART protocol	
Profile	HART revision 7 (standard, as default)
Device-ID	0x1A84 (listed with HCF)

Alarm current

Adjustment range	
Minimum alarm current (low alarm current)	3.6 mA (according to NAMUR NE 43 standard) (configurable from 3.6 to 4 mA)
Maximum alarm current (high alarm current)	21 mA (according to NAMUR NE 43 standard) (configurable from 20 to 23 mA)
Standard setting	High alarm current

NAMUR NE 43 defines as alarm limits the lower ≤ 3.6 mA and the upper ≥ 21 mA.
Risk connected to any deviation from NAMUR NE43 thresholds of the alarm current limits falls under Customers' responsibility.

...Specification – Electrical data and options

LCD display

Three LCD display options are available. The transmitter is supplied without any integral display as standard.

Integral LCD display, order code D1

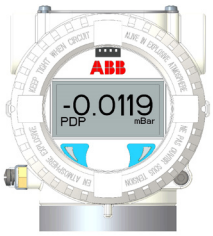


Figure 3: LCD indicator

Properties

Transmitter-controlled graphic (alphanumeric) LCD display

- Wide screen display, 128 × 64 pixel, 52.5 × 27.2 mm (2.06 × 1.07 in) dot matrix.
- Two operating buttons for zero/span and 'Easy Set-up' menu access for quick commissioning.

Integral backlit LCD display, order code D2

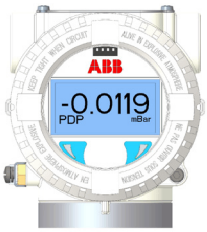


Figure 4: LCD indicator

Properties

Transmitter-controlled graphic (alphanumeric) LCD display

- Wide screen display, 128 × 64 pixel, 52.5 × 27.2 mm (2.06 × 1.07 in) dot matrix.
- Backlit display
- Multi-language support
- Two internal and external (non-intrusive) operating buttons for zero/span and 'Easy Set-up' menu access for quick commissioning.
- Bluetooth® configuration capability selectable with order code NE.
  - Configuration with the ABB My Device Manager mobile app on smart phone via Bluetooth.
  - Configuration with ABB Ability™ Field Information Manager on PC/laptop via Bluetooth.

Smart backlit LCD display, order code D5 – Modbus, WirelessHart protocols



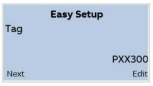
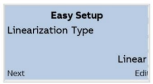
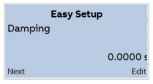
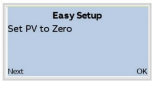
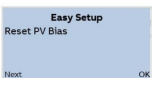
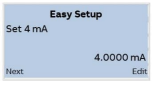
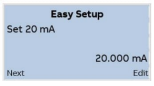
Figure 5: LCD indicator

Properties

Transmitter-controlled graphic (alphanumeric) LCD indicator

- Wide screen display, 128 × 64 pixel, 52.5 × 27.2 mm (2.06 × 1.07 in) dot matrix.
- Backlit display
- Multi-language support
- TTG (Through-The-Glass) keypad technology. Four operating buttons allowing the activation of the configuration and device's management menus without the need of removing the transmitter housing cover. The TTG keypad is protected against accidental activations.
- 90° rotation available

Configuration menus on "Easy set-up" menu

Menu Item	Command / Operation	Description
1		Select Language
2		Enter Tag
3		Select Engineering Units
4		Set LRV
5		Set URV
6		Linear
7		Select Seconds
8		Set Primary Variable to Zero
9		Reset Primary Variable
10		Set 4 mA to Current Output
11		Set 20 mA to Current Output
14		- Pressure - Scaled output - Current Output - Output Percent - Sensor temperature - HMI Scaled Output

Specification – Configuration

HART® communication and 4 to 20 mA output

Standard configuration

Transmitters are calibrated at factory from 0 to URL. Optional calibration setting to customers specific range is available selecting the digit code "SU". The required calibrated range will be printed on Tag Plate.

If a calibration range and tag is not required, the transmitter will be supplied as follows:

Parameter	Factory setting
Physical unit	kPa
4 mA	Zero
20 mA	Measuring range upper limit (URL)
Output	Linear
Damping	1 s
Transmitter failure mode	High alarm - Default 21 mA
Software tag (max. 8 characters)	Blank
LCD display	- 1 line - PV (PDP*) in kPA - Output in percent as bargraph

* PDP is the Pressure value before transfer function / linearization

Any or all of the configurable parameters listed above - including the lower and upper range values (with the same unit of measurement) - can easily be changed using a portable HART handheld communicator or a PC running the configuration software with the FDI for Pxx300 models.

For the HART protocol, the following physical units are available for pressure measurements:

Unit	Description
Pa, kPa, MPa	Pascal, Kilopascal, Megapascal
inH2O @ 4 °C	Inches of water (4 °C)
inH2O @ 20 °C	Inches of water (20 °C)
ftH2O @ 20 °C	Foot of water (20 °C)
psi	Pound-force per square inch
Bar, mbar	Bar, Millibar
Atm	Standard atmosphere
mmHg, Torr	mm of mercury
inHg	Inch of mercury
g / cm^2, kg / cm^2	Grams, kilograms per square centimetre

Specifications concerning the flange type and materials, O-ring and vent / drain valve materials, and additional device options are stored in the transmitter database.

Tag and Calibration

Tag and / or specific calibrated span can be requested when configuring the device. Two tag types are available: Short Tag and Long Tag.

See below table for details about tag type applicability / presence:

Type	Max Length	On Display	On Certification	On Device Label
Short Tag	8 digits	YES	YES	NO
Long Tag	32 digits	NO	YES	YES

In case no specific indication will be given about the tag type, data will be considered as Long Tag by default.

In case tag is required on the optional wired-on customer data plate (order code LES, LEW) specific indication needs to be given.

Other configurations (option Nx)

The reference engineering units of LRL and URL can be changed on product nameplate and calibration range (if not defined) as follows:

- Standard – Pressure = inH2O / psi at 68 °F; Temperature = deg. F (option N2)
- Standard – Pressure = inH2O / psi at 4 °C; Temperature = deg. C (option N5)

The following information can be specified in addition to the standard configuration parameters (option N6):

Parameter	
Description	16 alphanumeric characters
Supplementary information	32 alphanumeric characters
Date	Day, month, year

When special design out of standard feature is needed (requiring special code number SRxxx), NK digit option has to be selected for traceability purpose.

Dimensions

PGS300

Not design data – dimensions in mm (in)

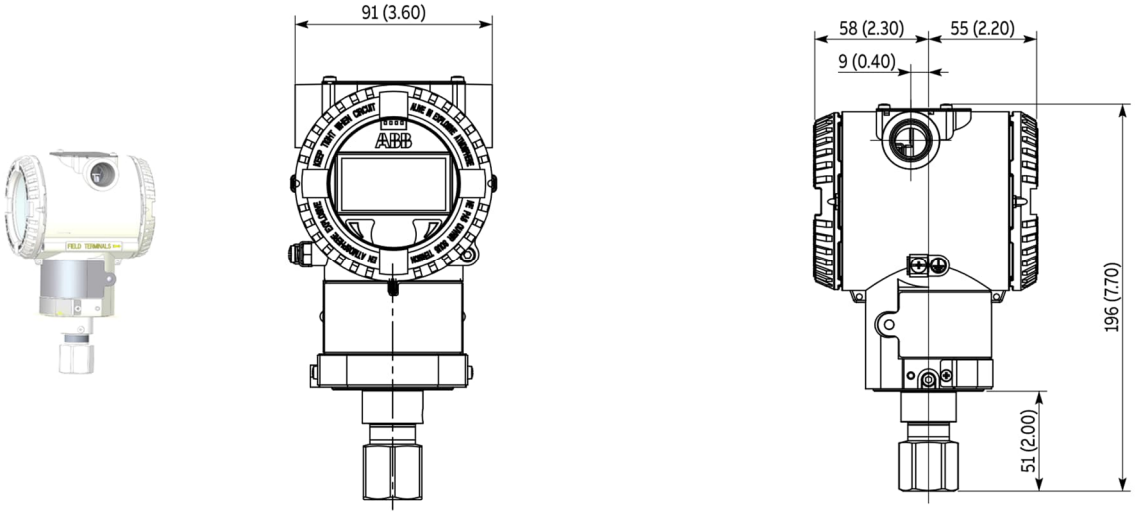


Figure 6: Barrel housing - Process Connection 1/2 in 14 NPT female thread

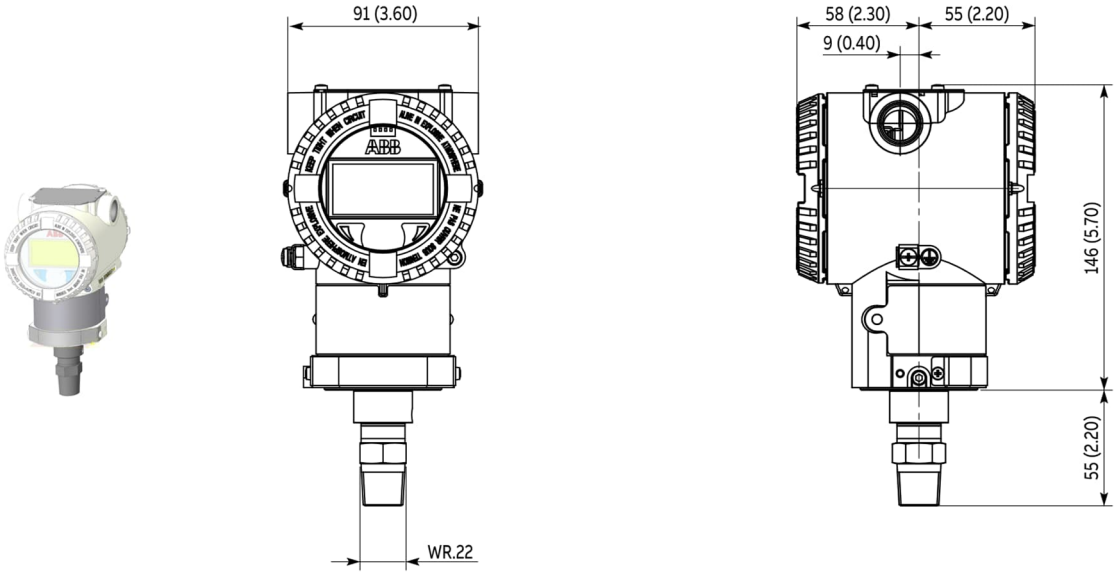


Figure 7: Barrel housing - Process Connection 1/2 in 14 NPT male thread

... Dimensions

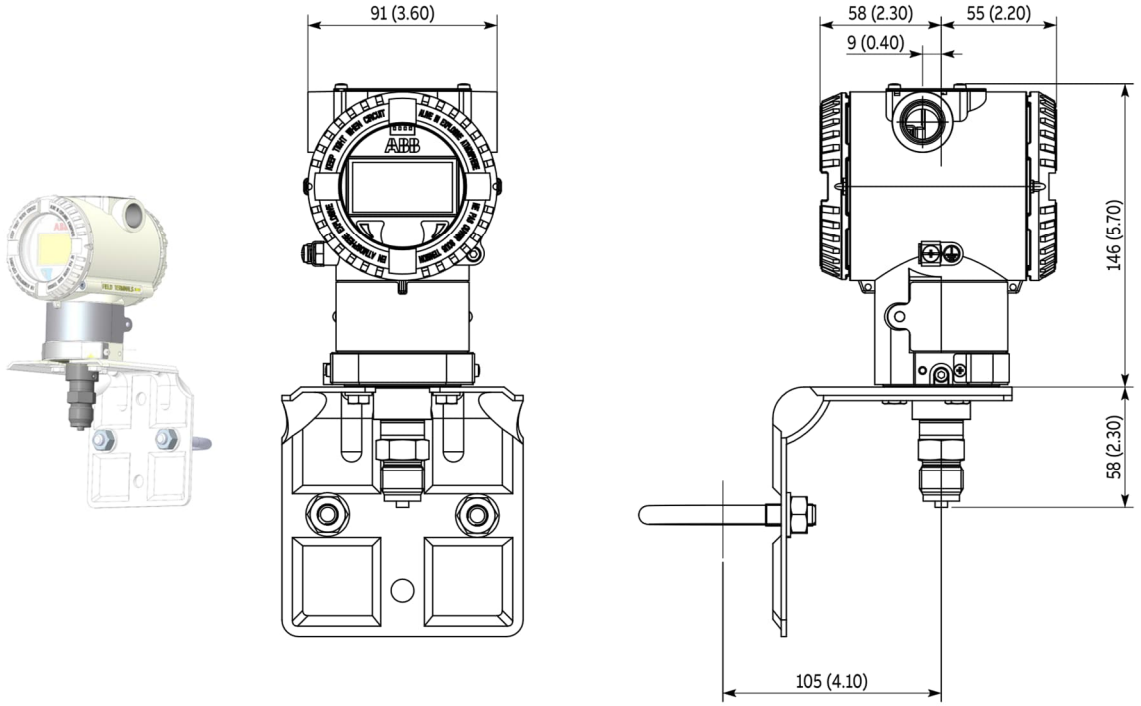


Figure 8: Barrel housing - Process Connection G 1/2 in male with universal mounting bracket for pipe or wall mounting

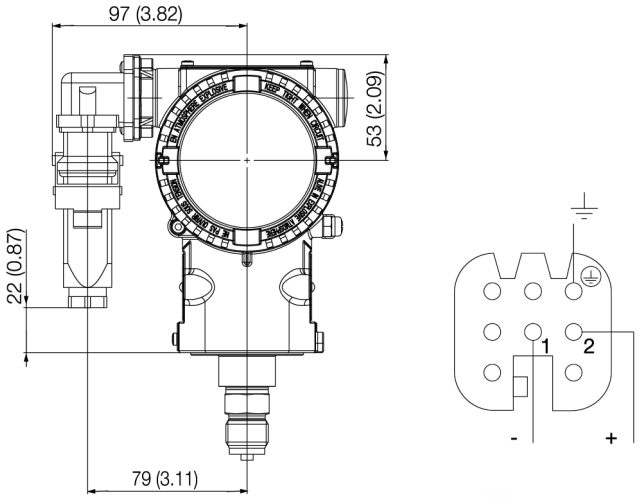


Figure 9: Barrel housing with Harting Han 8D (8U) angle connector (supplied loose) - Process Connection G ½ in male – PENDING

PXD300

Not design data – dimensions in mm (in)



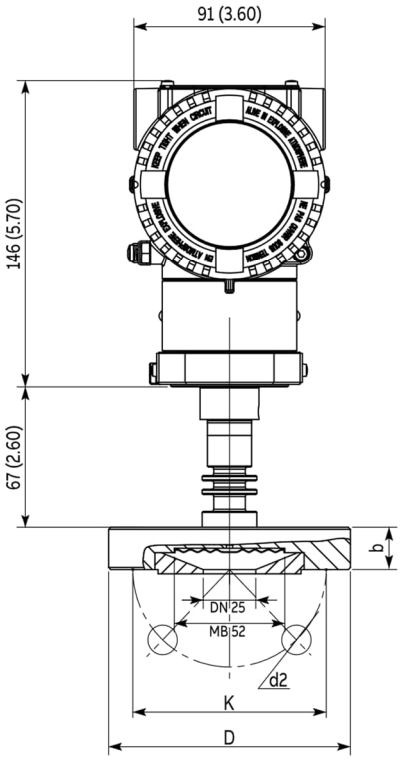


Figure 10: Barrel housing - Process Connection Diaphragm Seal S26FE with recessed diaphragm

Note

For more information on S26 diaphragm seal versions and dimensions, refer to operating instruction and data sheet OI/DS/S26.

... Dimensions

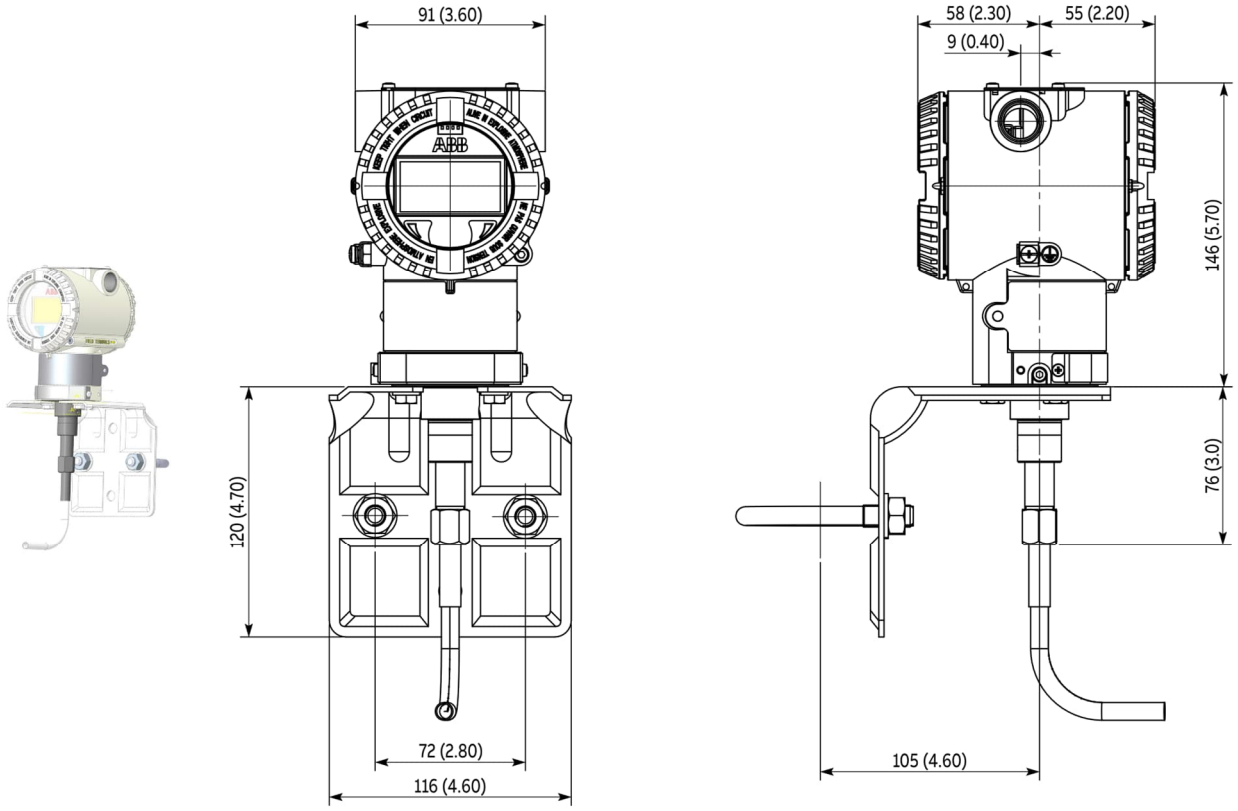
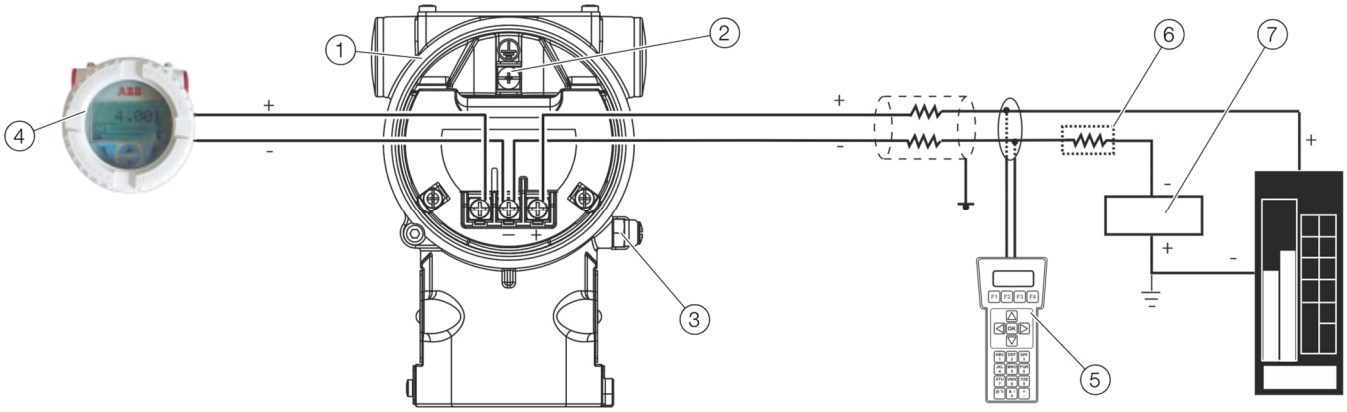


Figure 11: Barrel housing - Process Connection Remote Diaphragm Seal S26 with universal mounting bracket for pipe or wall mounting

Note
For more information on S26 diaphragm seal versions and dimensions, refer to operating instruction and data sheet OI / DS / S26.

Electrical connections

HART® communication and 4 to 20 mA output



1 Digital output
2 Internal ground connection
3 External ground connection
4 Remote display
5 HART® Handheld terminal
6 Additional load resistance
7 Power supply

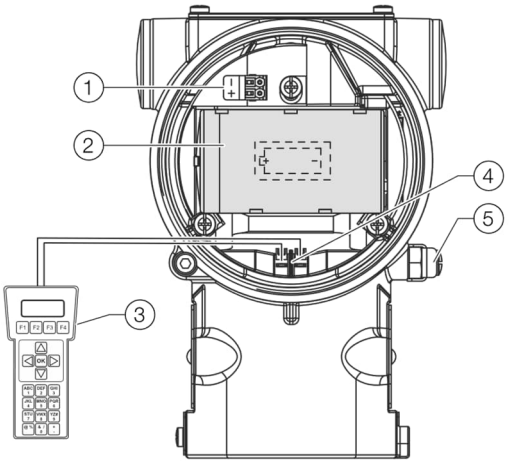
Figure 12: Electrical connections - HART® communication, 4 to 20 mA current output

Note

The screw terminals are suitable for wire cross sections of up to 2.5 mm^2 (AWG 14).

The HART® Handheld terminal may be connected at any wiring termination point in the loop, providing the minimum resistance is 250 Ω. If this is less than 250 Ω, an additional load resistance should be added to allow HART communication.
The HART Handheld terminal is connected between the resistor and transmitter, not between the resistor and power source.

WirelessHART® version



1 Fast connection for harvesting unit
2 Battery
3 HART® Handheld terminal
4 Internal HART connection for handheld terminal
5 External ground termination point

Figure 13: Wireless HART Version - Pending

Ordering Information

Main ordering information for models PGS300 and PAS300 gauge and absolute pressure transmitter

Select one or more characters from each category and enter the complete catalog number.
Enter one or more codes for additional order information if you are purchasing optional extras for each transmitter.

Base model				X	XX	X	X	X	X	X	X	X
All-Rounder gauge pressure transmitter – Base accuracy 0.05 %			PGS300									
All-Rounder absolute pressure transmitter – Base accuracy 0.05 %			PAS300									
Sensor Span Limits (PAS300 Min Span) / Overpressure												
0.2 (0.3) and 6 kPa	2 (3) and 60 mbar, 0.8 (2.25 mmHg) and 24 inH2O	1MPa(10 bar, 145 psi)		C								
0.4 (0.67) and 40 kPa	4 (6.7) and 400 mbar, 3 (5.02) and 300 mmHg	1MPa(10 bar, 145 psi)		F								
2.5 (4.17) and 250kPa	25 (41.67) and 2500 mbar, 18.75 (31.25) and 1875.15 mmHg	3 MPa(30bar, 435psi)		L								
10 (16.7) and 1000 kPa	100 (167) and 10000 mbar, 1.45 (2.42) 145 psi	6MPa (60bar,870psi)		D								
40 (67) and 4000 kPa	0.4 (0.67) and 40 bar, 5.8 (9.7) and 580 psi	8 Mpa(80bar,1160 psi)		K								
100 (167) and 10000 kPa	1 (1.67) and 100 bar, 14.5 (24.2) and 1450 psi	30MPa (300bar, 4350 psi)		R								
414 (690) and 41400kPa	4.14 (6.9) and 414 bar, 60.9 (100) and 6000 psi	63 MPa(630bar,9137psi)		T								
600 (1000) and 60000kPa	6 (10) and 600 bar, 87 (145) and 8700 psi	90 MPa(900bar, 13050psi)		V								
10500 (10500) and 105000kPa	105 (105) and 1050 bar, 1500 (1500) and 15225 psi	157.5 Mpa(1575 bar,22837 psi)	PENDING	Y								
13800 (13800) and 138000kPa	138 (138) and 1380 bar, 2000 (2000) and 20000 psi	200Mpa (2000bar,29000psi)	PENDING	W								
Maximum Working Pressure												
Standard Static					S9							
Diaphragm Material												
AISI 316L SST (1.4435) / NACE			1)			A						
Hastelloy C-276 / NACE			1)			H						
AISI 316L SST gold-plated / NACE			1)			G						
H-Shield (AISI 316L SST)			31)			S						
Inconel 718			3)			L						
Filling fluid												
Silicon oil							1					
Inert fluid			1), 4), 6)				2					
No filling			3)				N					
Process Connection material												
AISI 316L SST (1.4404) / NACE			1), 21)					A				
Hastelloy C-276 / NACE			1), 5)					H				
Inconel 718			3)					L				
Process Connection Size												
1/2 in -14 NPT female			1)						A			
1/2 in -14 NPT male + 1/4 in -18 NPT female (adapter-compatible)			1)						B			
DIN EN 837-1 G 1/2 in Type B			1)						C			
F250 Autoclave			3)						F			
M20 female (PENDING)			1)						M			
1/4 in-18 NPT female			3)						H			
Gasket Material												
None										Y		
Housing Material / Electrical Connection												
Aluminium alloy (Barrel type) / 1/2-14 NPT											A	
Aluminium alloy (Barrel type) / M20 x 1.5											B	
AISI 316L SST (Barrel type) / 1/2-14 NPT (LES digit mandatory)											S	
AISI 316L SST (Barrel type) / M20 x 1.5 (LES digit mandatory)											T	
Output												
HART digital communication and 4 to 20 mA - Including Easy Set up (Options requested by 'Additional ordering code')												H
Modbus RS 485 - Includes External push buttons (to be ordered by "Additional ordering code") (PENDING)												M
Low-power consumption 1 to 5 V DC - Includes External push buttons (Options requested by "Additional ordering code") (PENDING)								1)				V
WirelessHART- Includes External push buttons (Options requested by 'Additional ordering code') (PENDING)								25)				W

Additional ordering information for models PGS300 and PAS300 gauge and absolute pressure transmitter

Add one or more 2-digit code(s) after the basic ordering information to select all required options.

Additional ordering information				
PGS300 / PAS300 gauge and absolute pressure transmitters with remote diaphragm seal		XX	XXX	XX
Display				
Integrated digital LCD display / 2-button keypad	26)	D1		
Integrated digital LCD display with backlight / 2-button keypad (external pushbuttons enabled)	26)	D2		
Integrated digital LCD display with backlight / 4-button keypad (PENDING)	27)	D5		
Explosion Protection Certification				
ATEX Intrinsic Safety Ex ia	28)		HAA	
ATEX Explosion Proof Ex db_tb	18)		HAD	
ATEX Intrinsic Safety Ex ic_ec_tc			HAC	
Combined ATEX for all HAx available methods			HAM	
Combined FMus Approvals (XP, DIP, IS, NI, Ex ec) for all HUx available methods			HUD	
Combined caFM Approvals (XP, DIP, IS, NI, Ex ec) for all HCx available methods			HCD	
Combined usFMca for all HCx and HUx available methods			HCM	
IECEx Intrinsic Safety Ex ia	28)		HJA	
IECEx Explosion Proof Ex db_tb	18)		HJD	
IECEx Intrinsic Safety Ex ic_ec_tc			HJC	
Combined IECEX for all HJx available methods			HJM	
Combined ATEX FM IECEX for all available methods			HMM	
NEPSI IIC Ex ia	28)		HNA	
NEPSI IIC Ex d	18)		HND	
NEPSI IIC Ex ic			HNC	
Combined NEPSI for all HNx available methods			HMN	
KOSHA Ex ia (PENDING)	28)		HSA	
KOSHA Ex d (PENDING)	18)		HSD	
Combined KOSHA for all HSx available methods (PENDING)			HSM	
INMETRO Intrinsic Safety Ex ia	28)		HBA	
INMETRO Explosion Proof Ex db, Ex tb	18)		HBD	
INMETRO Intrinsic Safety Ex ic, Ex ec, Ex tc			HBC	
Combined INMETRO for all HBx available methods			HMB	
UKCA Ex ia (PENDING)	28)		HKA	
UKCA Ex c (PENDING)			HKC	
UKCA Ex d (PENDING)	18)		HKD	
Combined UKCA for all HKx available methods (PENDING)			HKM	
EAC Ex ia (PENDING)	28)		HEA	
EAC Ex d (PENDING)	18)		HED	
Combined EAC or all Hex available methods (PENDING)			HME	
Approvals (PENDING)				
Metrologic certificate for Kazakhstan	7)			G2
CRN - Canadian Registration Number				GC
EU-RO 10 Mutual Recognition (Naval)				GE
CSA ordinary location				GO
DNV Naval approval	1)			GV
American Bureau of Shipping Naval approval	1)			GR
Lloyd's Register Naval approval	1)			GL
Combined Naval approval (DNV+ABS+LR)	1)			GN
Korean Register Naval approval	1)			GK
SIL2	29)			GS

...Ordering Information

...Additional ordering information for models PGS300 and PAS300 gauge and absolute pressure transmitter

...Add one or more 2-digit code(s) after the basic ordering information to select all required options.

Additional ordering information											
PGS300 / PAS300 gauge and absolute pressure transmitters with remote diaphragm seal		XX	XX	XX	XX	XX	XX	XXX	XXX		
National radio frequency licence (PENDING)											
Basic countries (Europe, USA, Canada)	23)	FB									
Argentina	23)	FA									
United Arab Emirates	23)	FG									
India	23)	FI									
Mexico	23)	FM									
Physical Application											
Oxygen service cleaning - Pmax = 10 MPa (100 bar, 1450 psi) or sensor overpressure (lower value) Tmax = 60 °C / 140 °F	11)		P1								
Installation for ambient temperature from -40°C to -50°C (PENDING)			P7								
Accessories											
Battery included (supplied loose) (PENDING)	23)			AB							
Manifold assembly	2), 12)			A1							
Internal surge protection	18)			AS							
Mounting Bracket											
For horizontal or vertical mounting on pipe and wall / AISI 316L (1.4401)					BA						
For horizontal or vertical mounting on pipe and wall / carbon steel (Not suitable for AISI housing)					BC						
Software Application											
Calibration parameter characteristic (PENDING)						SP					
Calibration Range and / or Tag adjusted to customer specification						SU					
Low Alarm setting to 3.6 mA	29)					SA					
Easy Set Up Enabled on External Push-Buttons (PENDING)	13)					SE					
CRC (Configuration signature) (PENDING)	29)					SS					
Safety Loop Test (PENDING)	29), 30)					ST					
Digital Access Diagnostics - Dynamic QR Code	17)					SD					
Inspection Certificates											
Inspection certificate EN 10204–3.1 of calibration (5-point)	14), 15)						CF				
Inspection certificate UNI EN 10204 3.1 (9 points calibration)	14), 15)						CN				
Inspection certificate EN 10204–3.1 of cleanliness stage							CC				
Inspection certificate EN 10204–3.1 of helium leakage test of the sensor module							CL				
Inspection certificate EN 10204–3.1 of the pressure test							CH				
PMI test on wetted parts (FOR SENSORS Y AND W, APPLIES ONLY FOR PROCESS CONNECTION)							CP				
Certificate of compliance with the order EN 10204–2.1 of instrument design							CD				
Inspection certificate EN 10204–3.1 of process wetted parts (not for gaskets)							CM				
Test report EN 10204-2.2 of the pressure bearing and process wetted parts							CW				
Nameplate and Display language											
Nameplate and HMI visualization in Italian								LTI			
Nameplate and HMI visualization in German								LTG			
Nameplate and HMI visualization in French								LTF			
Nameplate and HMI visualization in Spanish								LTE			
Nameplate and HMI visualization in Chinese								LTS			
Label Material											
Label for TAG and certification in SST with laser printing										LES	
Supplemental wired–on stainless SST (4 lines, 32 characters each)										LEW	

Additional ordering information				
PGS300 / PAS300 gauge and absolute pressure transmitters with remote diaphragm seal		XX	XX	XX
Manuals				
German	16)	M1		
Italian	16)	M2		
Spanish	16)	M3		
French	16)	M4		
English	16)	M5		
Chinese	16)	M6		
Portuguese	16)	MA		
Configuration				
Standard Pressure = in H2O / psi at 68 °F			N2	
Standard pressure = in H2O / psi at 4 °C			N5	
Custom			N6	
Special Design Configuration			NK	
Safety Parameters Declaration			NL	
Modbus Pressure (PENDING)	18), 27)		NP	
Modbus Pressure + Temperature (PENDING)	18), 27)		NT	
Bluetooth (PENDING)	29)		NE	
Plugs and Connectors				
One plastic plug Ex e (supplied loose)	22)			UA
One stainless steel plug dual grade 316 / 316L (supplied loose)	8)			UN
One stainless steel plug dual grade 316 / 316L Ex d (supplied loose)	19)			UP
One plastic cable gland plus plug Ex e (supplied loose)	22)			UE
One stainless steel cable gland Ex d (supplied loose)				UW
One Harting HAN 8D angled connector (supplied loose)	20), 22), 29)			UD
One Harting HAN 8D straight connector (supplied loose)	20), 22), 29)			UF

...Ordering Information

Notes for PGS300 and PAS300 gauge and absolute pressure transmitter

1) Not available with Sensor Span Limits / Overpressure code digits Y, W
2) Not available with Process Connection code C
3) Not available with Sensor Span Limits / Overpressure code C, F, L, D, K, R, T, V
4) Not available with Diaphragm Material code G
5) Not available with Diaphragm Material code A, G, L and Process Connection Size code C, F, M, H
6) Suitable for oxygen service code P1
7) The ambient temperature lower limit is -55 °C
8) Not available with Hazardous Area Approval code HUA, HUD, HUC, HCA, HCD, HCC, HMM, HNA, HND, HNC, HMN, HSA, HSD, HSM, HBA, HBD, HBC, HMB
9) Not available with surge protector code AS
10) Not applicable
11) Not available with Fill Fluid code 1
12) Not available with Physical Application code P1
13) Only available with Display code D1
14) Option code CF, CN provides an inspection certificates of calibration 0 to URL - Option code SU should be also selected if the inspection certificate is required for calibration different from 0 to URL
15) Mutually exclusive with Inspection certificate code CF or CN
16) Shipped in the box
17) Only available with Display code D2, D5
18) Not available with Outputs code V, W
19) Supplied loose with thread according to housing entries - M20 Hex type plug, 1/2 in NPT Allen key type plug
20) Not available with Housing Material / Electrical Connection code S, T
21) Not applicable
22) Not available with any Hazardous area certification codes HxD, HxM
23) Not available with Outputs code V, M, H
24) Not applicable
25) Not available with Housing Material / Electrical Connection code A, S
26) Not available with Outputs code W, M
27) Not available with Outputs code H, V
28) Not available with Outputs code M
29) Not available with Outputs code V, W, M
30) Only available with Approval code GS
31) Only available with Sensor Span Limits / Overpressure code L, D, K, R, T, V

Standard delivery scope

(changes possible with additional ordering code)

- For standard applications (without explosion protection)
- No LCD Display
- No mounting bracket
- No surge protection
- Multilanguage short-form operating instruction and English labeling
- Configuration with kPa and °C units
- No test, inspection, or material certificates
- Calibration report from 0 to URL

Unless otherwise specified prior to manufacture, the customer shall be responsible for selecting suitable wetted parts and an appropriate filling fluid in order to ensure compatibility with the measuring fluid.
Compliance with the NACE regulation is based on recommendations MR0175 / ISO 15156. Additionally, stainless steel AISI 316, AISI 316L and Hastelloy C-276 automatically meet the criteria of MR0103, provided that they also meet the criteria of MR0175.

Ordering Information

Main ordering information for models PGD300 and PAD300 gauge and absolute pressure transmitter with diaphragm seal(s)

Overpressure limit dependent upon diaphragm seal / pressure sensor limits.
Select one or more characters from each category and enter the complete catalog number.
Enter one or more codes for additional order information if you are purchasing optional extras for each transmitter.

Base model				X	XX	X	X	X	X	X	X	X
All-Rounder gauge pressure transmitter with diaphragm seal – Base accuracy 0.05 %			PGD300									
All-Rounder absolute pressure transmitter with diaphragm seal – Base accuracy 0.05 %			PAD300									
Sensor Span Limits / Overpressure												
0.6 (1.2) and 6 kPa	6 (12) and 60 mbar, 2.41 (9 mmHg) and 24 in H2O	1 MPa (10 bar, 145 psi)		C								
0.67 (0.2) and 40 kPa	6.7 (20) and 400 mbar, 2.67 (15 mmHg) and 160 in H2O	1 MPa (10 bar, 145 psi)		F								
4.17 (12.5) and 250 kPa	41.67 (125) and 2500 mbar, 16.73 (93.8 mmHg) and 1000 in H2O	3 MPa (30 bar, 435 psi)		L								
16.7 (50) and 1000 kPa	167 (500) and 10 bar, 2.42 (7.25) and 145 psi	6 MPa (60 bar, 870 psi)		D								
67 (200) and 4000 kPa	0.67 (2) and 40 bar, 9,7 (29) and 580 psi	8 Mpa (80 bar, 1160 psi)		K								
167 (500) and 10000 kPa	1.67 (5) and 100 bar, 24.2 (72.6) and 1450 psi	30 MPa (300 bar, 4350 psi)		R								
690 (2070) and 41400 kPa	6.9 (20.7) and 414 bar, 100 (300) and 6000 psi	63 MPa (630 bar, 9137 psi)		T								
1000 (3000) and 60000 kPa	10 (30) and 600 bar, 145 (435) and 8700 psi	90 MPa (900 bar, 13050 psi)		V								
10500 (10500) and 105000 kPa	105 (105) and 1050 bar, 1500 (1500) and 15225 psi	157.5 Mpa (1575 bar, 22837 psi)		Y								
		PENDING										
13800 (13800) and 138000 kPa	138 (138) and 1380 bar, 2000 (2000) and 20000 psi	200 Mpa (2000 bar, 29000 psi)		W								
		PENDING										
Maximum Working Pressure												
Standard Static					S9							
Diaphragm Material*												
Diaphragm seal (direct or remote) (One diaphragm seal to be quoted separately)						R						
Filling fluid												
Silicon oil			1)				1					
Inert fluid			1)				2					
No Filling			3)				N					
Process Connection material*												
Diaphragm seal (direct ore remote) (One diaphragm seal to be quoted separately)								R				
Process Connection Size*												
Diaphragm seal (direct ore remote) (One diaphragm seal to be quoted separately)									R			
Gasket Material												
None										Y		
Housing Material / Electrical Connection												
Aluminium alloy (Barrel type) / 1/2-14 NPT											A	
Aluminium alloy (Barrel type) / M20 x 1.5											B	
AISI 316L SST (Barrel type) / 1/2-14 NPT (LES digit mandatory)											S	
AISI 316L SST (Barrel type) / M20 x 1.5 (LES digit mandatory)											T	
Output												
HART digital communication and 4 to 20 mA - Including Easy Set up (Options requested by "Additional ordering code")												H
Modbus RS 485 - Includes External push buttons (to be ordered by "Additional ordering code") (PENDING)												M
Low-power consumption 1 to 5 V DC - Includes External push buttons (Options requested by “Additional ordering code”) (PENDING)								1)				V
WirelessHART - Includes External push buttons (Options requested by “Additional ordering code”) (PENDING)								25)				W

* Refer to OI/DS-S26 for diaphragm seal options

...Ordering Information

...Additional ordering information for models PGD300 and PAD300 gauge and absolute pressure transmitter

...Add one or more 2-digit code(s) after the basic ordering information to select all required options.

Additional ordering information				
PGD300 / PAD300 gauge and absolute pressure transmitters with remote diaphragm seal		XX	XXX	XX
Display				
Integrated digital LCD display / 2-button keypad	26)	D1		
Integrated digital LCD display with backlight / 2-button keypad (external pushbuttons enabled)	26)	D2		
Integrated digital LCD display with backlight / 4-button keypad (PENDING)	27)	D5		
Explosion Protection Certification				
ATEX Intrinsic Safety Ex ia	28)		HAA	
ATEX Explosion Proof Ex db_tb	18)		HAD	
ATEX Intrinsic Safety Ex ic_ec_tc			HAC	
Combined ATEX for all HAx available methods			HAM	
Combined FMus Approvals (XP, DIP, IS, NI, Ex ec) for all HUx available methods			HUD	
Combined caFM Approvals (XP, DIP, IS, NI, Ex ec) for all HCx available methods			HCD	
Combined usFMca for all HCx and HUx available methods			HCM	
IECEx Intrinsic Safety Ex ia	28)		HJA	
IECEx Explosion Proof Ex db_tb	18)		HJD	
IECEx Intrinsic Safety Ex ic_ec_tc			HJC	
Combined IECEX for all HJx available methods			HJM	
Combined ATEX FM IECEX for all available methods			HMM	
NEPSI IIC Ex ia	28)		HNA	
NEPSI IIC Ex d	18)		HND	
NEPSI IIC Ex ic			HNC	
Combined NEPSI for all HNx available methods			HMN	
KOSHA Ex ia (PENDING)	28)		HSA	
KOSHA Ex d (PENDING)	18)		HSD	
Combined KOSHA for all HSx available methods (PENDING)			HSM	
INMETRO Intrinsic Safety Ex ia	28)		HBA	
INMETRO Explosion Proof Ex db, Ex tb	18)		HBD	
INMETRO Intrinsic Safety Ex ic, Ex ec, Ex tc			HBC	
Combined INMETRO for all HBx available methods			HMB	
UKCA Ex ia (PENDING)	28)		HKA	
UKCA Ex c (PENDING)			HKC	
UKCA Ex d (PENDING)	18)		HKD	
Combined UKCA for all HKx available methods (PENDING)			HKM	
EAC Ex ia (PENDING)	28)		HEA	
EAC Ex d (PENDING)	18)		HED	
Combined EAC or all Hex available methods (PENDING)			HME	
Approvals (PENDING)				
Metrologic certificate for Kazakhstan	7)			G2
CRN - Canadian Registration Number				GC
EU-RO 10 Mutual Recognition (Naval)				GE
CSA ordinary location				GO
DNV Naval approval	1)			GV
American Bureau of Shipping Naval approval	1)			GR
Lloyd's Register Naval approval	1)			GL
Combined Naval approval (DNV+ABS+LR)	1)			GN
Korean Register Naval approval	1)			GK
SIL2	29)			GS

Additional ordering information											
PGD300 / PAD300 gauge and absolute pressure transmitters with remote diaphragm seal		XX	XX	XX	XX	XX	XX	XXX	XXX
National radio frequency licence (PENDING)									
Basic countries (Europe, USA, Canada)	23)	FB							
Argentina	23)	FA							
United Arab Emirates	23)	FG							
India	23)	FI							
Mexico	23)	FM							
Physical Application									
Installation for ambient temperature from -40°C to -50°C (PENDING)			P7						
Accessories									
Battery included (supplied loose) (PENDING)	23)			AB					
Internal surge protection				AS					
Mounting Bracket									
For horizontal or vertical mounting on pipe and wall / AISI 316L (1.4401)					BA				
For horizontal or vertical pipe and wall mounting / carbon steel (Not suitable for AISI housing)					BC				
Software Application									
Calibration parameter characteristic (PENDING)						SP			
Calibration Range and / or Tag adjusted to customer specification						SU			
Low Alarm setting to 3.6 mA	29)					SA			
Easy Set Up Enabled on External Push-Buttons (PENDING)	13)					SE			
CRC (Configuration signature) (PENDING)	29)					SS			
Safety Loop Test (PENDING)	29), 31)					ST			
Digital Access Diagnostics - Dynamic QR Code	30)					SD			
Inspection Certificates									
Inspection certificate EN 10204–3.1 of calibration (5-point)	14), 15)						CF		
Inspection certificate UNI EN 10204 3.1 (9 points calibration)	14), 15)						CN		
Inspection certificate EN 10204–3.1 of cleanliness stage							CC		
Inspection certificate EN 10204–3.1 of helium leakage test of the sensor module							CL		
Inspection certificate EN 10204–3.1 of the pressure test							CH		
PMI test on wetted parts (For sensors Y and W, applies only for process connection)							CP		
Certificate of compliance with the order EN 10204–2.1 of instrument design							CD		
Inspection certificate EN 10204–3.1 of process wetted parts (not for gaskets)							CM		
Test report EN 10204-2.2 of the pressure bearing and process wetted parts							CW		
Nameplate and Display language									
Nameplate and HMI visualization in Italian								LTI	
Nameplate and HMI visualization in German								LTG	
Nameplate and HMI visualization in French								LTF	
Nameplate and HMI visualization in Spanish								LTE	
Nameplate and HMI visualization in Chinese								LTS	
Label Material									
Label for TAG and certification in SST with laser printing									LES
Supplemental wired–on stainless SST (4 lines, 32 characters each)									LEW

...Ordering Information

...Additional ordering information for models PGD300 and PAD300 gauge and absolute pressure transmitter

...Add one or more 2-digit code(s) after the basic ordering information to select all required options.

Additional ordering information				
PGD300 / PAD300 gauge and absolute pressure transmitters with remote diaphragm seal		XX	XX	XX
Manuals				
German	16)	M1		
Italian	16)	M2		
Spanish	16)	M3		
French	16)	M4		
English	16)	M5		
Chinese	16)	M6		
Portuguese	16)	MA		
Configuration				
Standard Pressure = in H2O / psi at 68 °F			N2	
Standard pressure = in H2O / psi at 4 °C			N5	
Custom			N6	
Special Design Configuration			NK	
Safety Parameters Declaration			NL	
Modbus Pressure (PENDING)	18), 27)		NP	
Modbus Pressure + Temperature (PENDING)	18), 27)		NT	
Bluetooth (PENDING)	29)		NE	
Plugs and Connectors				
One plastic plug Ex e (supplied loose)	22)			UA
One stainless steel plug dual grade 316 / 316L (supplied loose)	8)			UN
One stainless steel plug dual grade 316 / 316L Ex d (supplied loose)	19)			UP
One plastic cable gland plus plug Ex e (supplied loose)	22)			UE
One stainless steel cable gland Ex d (supplied loose)				UW
One Harting HAN 8D angled connector (supplied loose)	20), 22), 29)			UD
One Harting HAN 8D straight connector (supplied loose)	20), 22), 29)			UF

Notes for PGD300 and PAD300 gauge and absolute pressure transmitter

1) Not available with Sensor Span Limits / Overpressure code digits Y, W
2) Not applicable for PGD300 / PAD300
3) Not available with Sensor Span Limits / Overpressure code C, F, L, D, K, R, T, V
4) Not applicable for PGD300 / PAD300
5) Not applicable for PGD300 / PAD300
6) Not applicable for PGD300 / PAD300
7) The ambient temperature lower limit is -55 °C
8) Not available with Hazardous Area Approval code HUA, HUD, HUC, HCA, HCD, HCC, HMM, HNA, HND, HNC, HMN, HSA, HSD, HSM, HBA, HBD, HBC, HMB
9) Not available with surge protector code AS
10) Not applicable for PGD300 / PAD300
11) Not applicable for PGD300 / PAD300
12) Not applicable for PGD300 / PAD300
13) Only available with Display code D1
14) Option code CF, CN provides an inspection certificates of calibration 0 to URL - Option code SU should be also selected if the inspection certificate is required for calibration different from 0 to URL
15) Mutually exclusive with Inspection certificate code CF or CN
16) Shipped in the box
17) Not applicable for PGD300 / PAD300
18) Not available with Outputs code V, W
19) Supplied loose with thread according to housing entries - M20 Hex type plug, 1/2 in NPT Allen key type plug
20) Not available with Housing Material / Electrical Connection code S, T
21) Not applicable for PGD300 / PAD300
22) Not available with any Hazardous area certification codes HxD or HxM
23) Not available with Outputs code V, M, H
24) Not available with Diaphragm Material code A, H, G
25) Not available with Housing Material / Electrical Connection code A, S
26) Not available with Outputs code W, M
27) Not available with Outputs code H, V
28) Not available with Outputs code M
29) Not available with Outputs code V, W, M
30) Only available with Display code D2, D5
31) Only available with Approval code GS

Standard delivery scope

(changes possible with additional ordering code)

- For standard applications (without explosion protection)
- No LCD Display
- No mounting bracket
- No surge protection
- Multilanguage short-form operating instruction and English labeling
- Configuration with kPa and °C units
- No test, inspection, or material certificates
- Calibration report from 0 to URL

Unless otherwise specified prior to manufacture, the customer shall be responsible for selecting suitable wetted parts and an appropriate filling fluid in order to ensure compatibility with the measuring fluid.
Compliance with the NACE regulation is based on recommendations MR0175 / ISO 15156. Additionally, stainless steel AISI 316, AISI 316L and Hastelloy C-276 automatically meet the criteria of MR0103, provided that they also meet the criteria of MR0175.

Trademarks

Buna-N is a registered trademark of DuPont Dow Elastomers.

Bluetooth is a registered trademarks of Bluetooth Special Interest Group (SIG)

HART is a registered trademark of FieldComm Group, Austin, Texas, USA

Hastelloy is a registered trademark of Haynes International, Inc.

Inconel is a registered trademark of Special Metals Corporation

Viton is a DuPont de Nemours trademark

ABB Measure ment & Analytics

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For more product information, visit:
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