



## DIFFERENTIAL PRESSURE TRANSMITTER

---

The KONGSBERG GT420, GT422 and GT423 is a series of type approved differential pressure transmitters, specially designed for maritime applications, and suitable for submerged installations or installations in potentially wet areas. Typical applications are level measurements in tanks, leakage measurements, density measurements of a fluid and/or filtration monitoring.

### Principle of operation

The pressure sensing element is a silicon sensor with stainless steel separating diaphragm. The sensor can be used for the majority of fluids and gases as the high-quality stainless steel process connection is resistant to most chemicals. An all welded mechanical assembly provides a high integrity pressure seal for pressure and vacuum applications. The long term stability of the sensor offers an excellent choice for use in applications where the location of sensor makes maintenance difficult due to limited access.

The transmitter comes with an overload capacity of more than six times for nominal ranges less than 25 bar, and with respective burst pressure of ten times the range (see Order Code). Overload capacity is important when measuring on small ranges where pressure peaks can occur.

### Installation

The transmitter consists of a sensing element together with a signal converter unit encapsulated in a body made of stainless steel. All the mechanical parts exposed to the media are of same material.

Process connection is by two female connectors ISO228-G1/4A threads.

The electrical connection differ between the transmitter type:

- GT420: DIN EN 17301 power connector
- GT422: Connection box with cable gland
- GT423: Flanged PUR cable for watertight connection

Minimum cable requirement from the transmitter to monitoring system is 2 x 0.5 mm<sup>2</sup> twisted pair cable with Cu-screen. The Cu-screen shall be grounded at the transmitter side. On the monitoring side, the screen shall be grounded as near to the input channel in the monitoring cabinet/system as possible (see Figure 1).

Power supply to the transmitter is 24 VDC nominal, but the transmitter will tolerate a variation from 12 VDC to 32 VDC from the power source. When used in hazardous areas as Intrinsic Safe apparatus, the power supply is restricted to 28VDC. The allowable load is determined by the minimum power supply.

The KONGSBERG DZ-120 Transmitter Barrier matches the GT42x pressure transmitters perfectly, and allows for use in hazardous areas (for connection details, see Figure 2).

Kongsberg Maritime can deliver detailed installation instructions and necessary installation material for various applications.

# DRAWINGS AND INSTALLATION

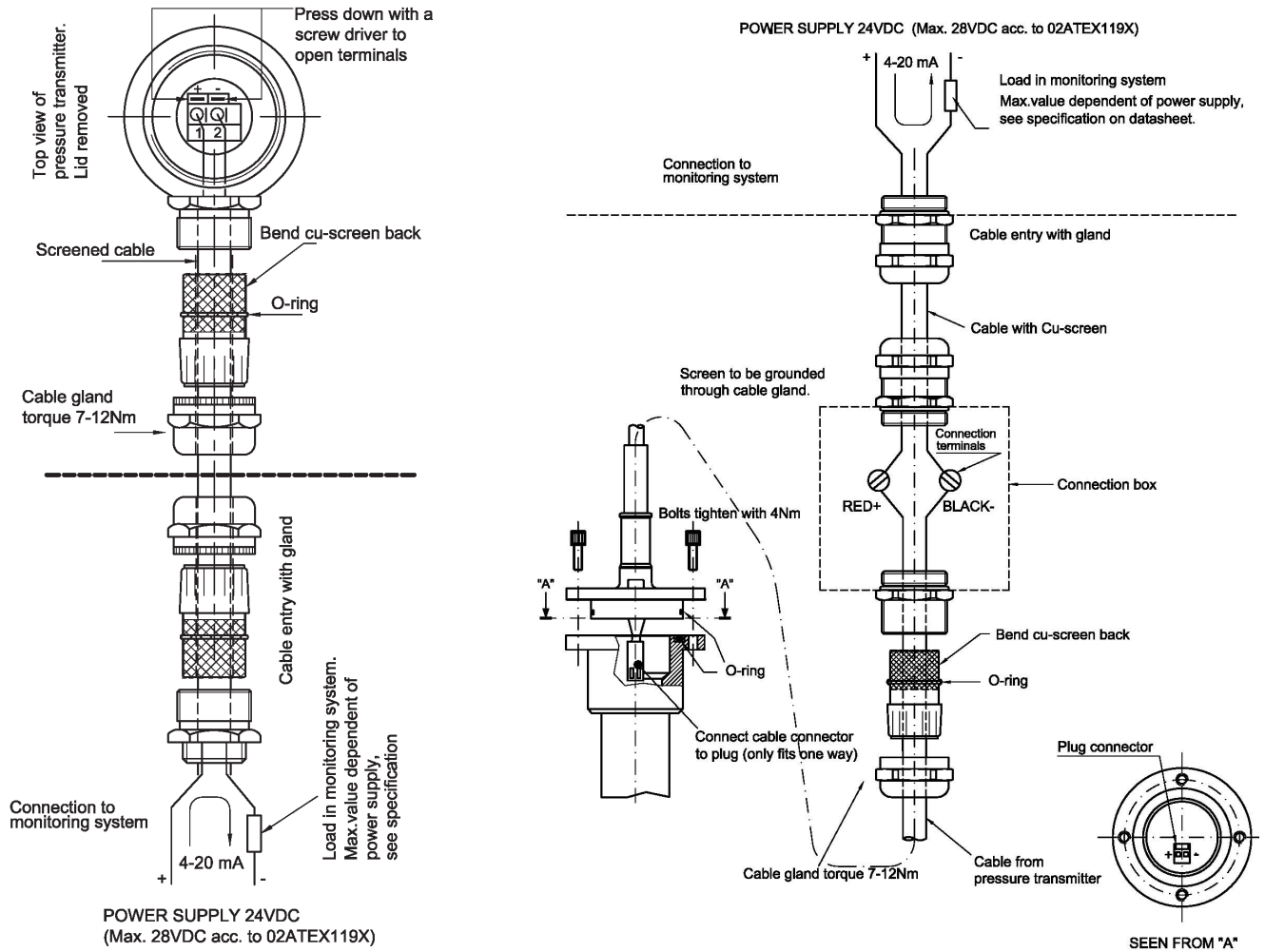


Figure 1: Electrical and mechanical installation of GT422 and GT423

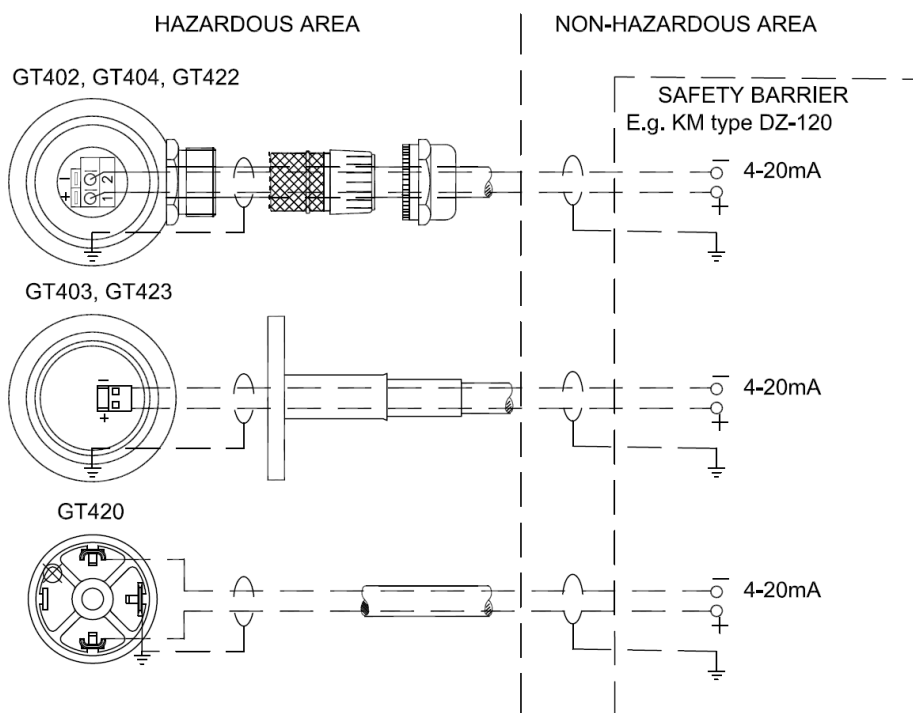


Figure 2. Connection diagram for Ex area installation

# SPECIAL CONDITIONS FOR SAFE USE

The system must be depressurized before assembly of the pressure transmitters.



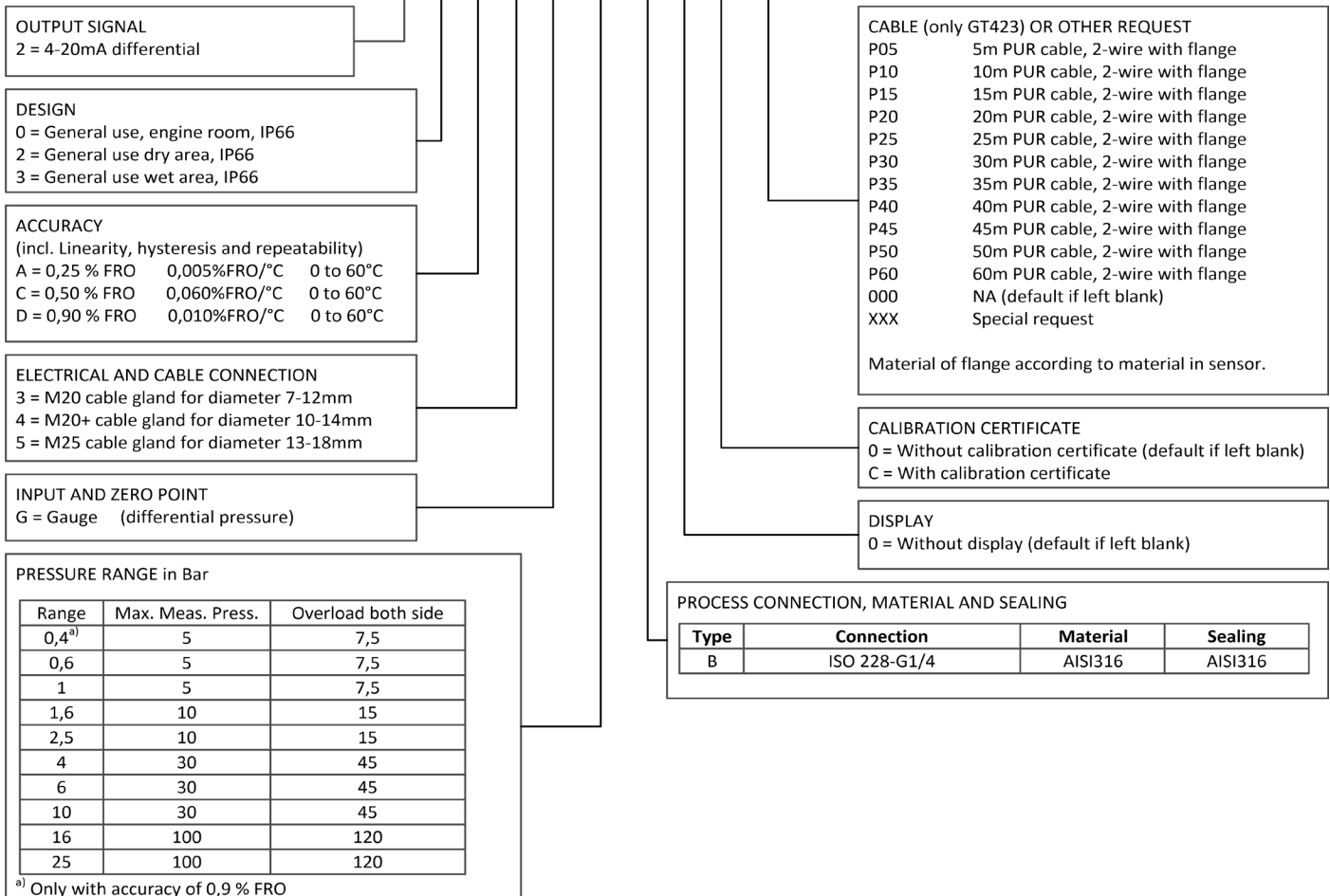
Compliance with the Essential Health and Safety Requirements has been assured by compliance with:  
CENELEC EN 60079-0 : 2012 and CENELEC EN 60079-11 : 2012

- The stated input values  $U_i$ ,  $I_i$  and  $P_i$  are to be regarded as individual maximum values. It is a precondition that the diode safety barrier in the supply circuit has a linear resistive output characteristic.
- When installing titanium sensors, special caution must be taken to avoid ignition hazard due to impact or friction.
- GT423 is delivered with a PUR-cable end up to 60 meters, with up to 102  $\mu\text{H}$  inductance and up to 7.2 nF capacitance. The inductance of the cable length that comes with the transmitter shall be added to the  $C_i$  and  $L_i$  of the transmitter.

For details about safe installation and various solutions for different applications, see the GT400 Series Pressure Sensor Applications Guidelines 369048.

## ORDER CODE

GT4 2 x x x x xxx x x x xxx



## FEATURES

- Accuracy of 0.25 % FRO
- Pressure ranges up to 25 Bar
- HART compatible
- Body of AISI 316
- Rugged construction
- Ex certification II 1 G Ex ia IIC T5

## TECHNICAL SPECIFICATIONS

Measuring range:	0.1 to 25 bar
Accuracy*:	See order code
Temperature drift:	See order code
Long term drift:	< 0.3% /year as % of nom. range
Output signal:	4 to 20 mA
Output current:	3.8 mA < $I_o$ < 21.6 mA
Output current at fault:	$I_o \leq 3.6$ mA
Power supply:	24 VDC (12 to 32 VDC depending on load resistance)
Load resistance:	0 to 1150 ohm depending upon power supply
Ex classification:	Ⓜ II 1 G Ex ia IIC T5
Certificate reference:	02ATEX119X IECEX NEM 12.0008X
Environmental standards:	IACS E10 CISPR 22
Operating temperature:	-45°C to +85 °C
Storage temperature:	-50°C to +100 °C

### Materials

Body:	AISI 316
Membrane:	AISI 316
Gasket:	No gasket

Protection grade:	IP66
Weight:	0.45 kg

### Safety data:

Max. input voltage:	$U_i = 28$ VDC
Max. input power:	$P_i = 0.85$ W
Max. input current:	$I_i = 150$ mA
Max. internal capacitance:	$C_i = 22$ nF
Max. internal inductance:	$L_i = 4$ $\mu$ H

### Safety data PUR-cable (only GT423):

Max. internal capacitance:	$C_i = 120$ nF/km
Max. internal inductance:	$L_i = 1.7$ mH/km

Type approvals	MR (EU mutual recognition), NK, CCS, ABS
----------------	--

\* Accuracy included non-linearity, hysteresis and reliability at 22°C.

Specifications subject to change without any further notice.

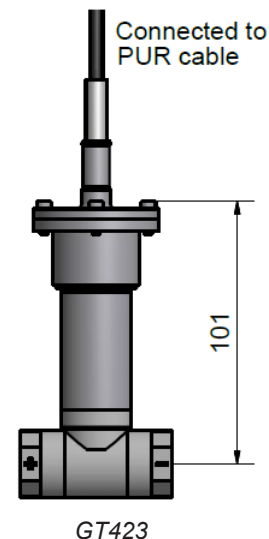
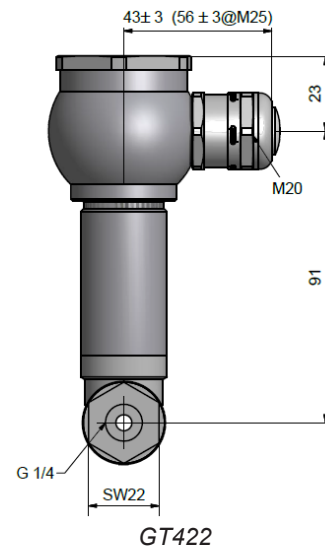
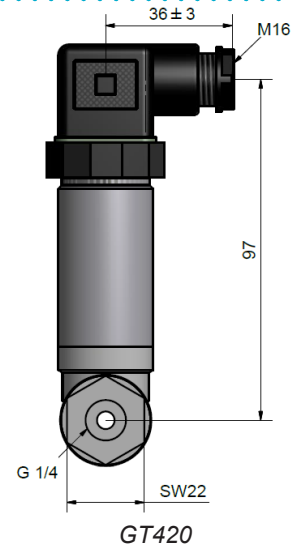


Figure 3. Dimensional sketches of the GT420, GT422 and GT423 with PUR cable differential pressure transmitters.