Low Pressure Measurement with variety of Indumart Transmitters

There are several options to use for measuring the pressure of a system close to the atmosphereic pressure. In pressure measurement with piezoresistive sensors, which are made of naturally occurring crystals such as quartz, a change in pressure causes the diaphragm to deflect and their electrical output charge due to the applied strain will change. Piezoresistive pressure sensors are very rugged and withstand shocks and vibrations very well.

Indumart Inc. offers these strain gauge pressure transducers in several different varieties; suitable for low medium and high pressure applications and also according to the state of their applications, their electronics and enclosures would vary.

Indumart offers three class of low pressure transmitters: 1) A general purpose transmitter, available in various ranges, as low as 1 kPa (0.15 psi or 10 mbar) and with zero and span adjustments by the user to accommodate any pressure offset or the exact range setting. There are three models in this category. The first in this class is PTF116 Flush Diaphragm pressure transmitters suitable for the measurement of slurry, sludge, or high viscosity media. By avoiding dead area crystallization of the solid particles, they ensure trouble-free pressure measurement . These pressure transmitters have been carefully designed to cover the majority of industrial applications, such as, water and wastewater treatment, pulp and paper stock measurement, level measurements, chemical and petrochemical processes, food and pharmaceutical industries, and many other process control operations. The case and wetted parts of the PTF116 transmitters comprise stainless steel and are thus resistant to chemically aggressive media. The PTF116 transmitters operate in media temperature of up to 120°C and compensate for the errors due to temperature variations of up to 80°C. This 2-wire transmitter meets the requirements for a great level of electromagnetic compatibility (EMC) protection.

The other two pressure transmitters in this class are: PTF110 with the smallest range available of 10 in.H2O and PTF111 with various ranges, as low as 1 kPa (0.15 psi or 10 mbar). They have the same temperature compensation and EMC compatibility of the PTF116 transmitters.

They maybe specified a the instrictly safe version for potentially explosive environments or be accopanied by an indicator for local display and ON/OFF control of the process.

PTF116	PTF111	PTF110
		

EX version is also available.

With local indicator; available as option

EX version is also available.

With local indicator; available as option

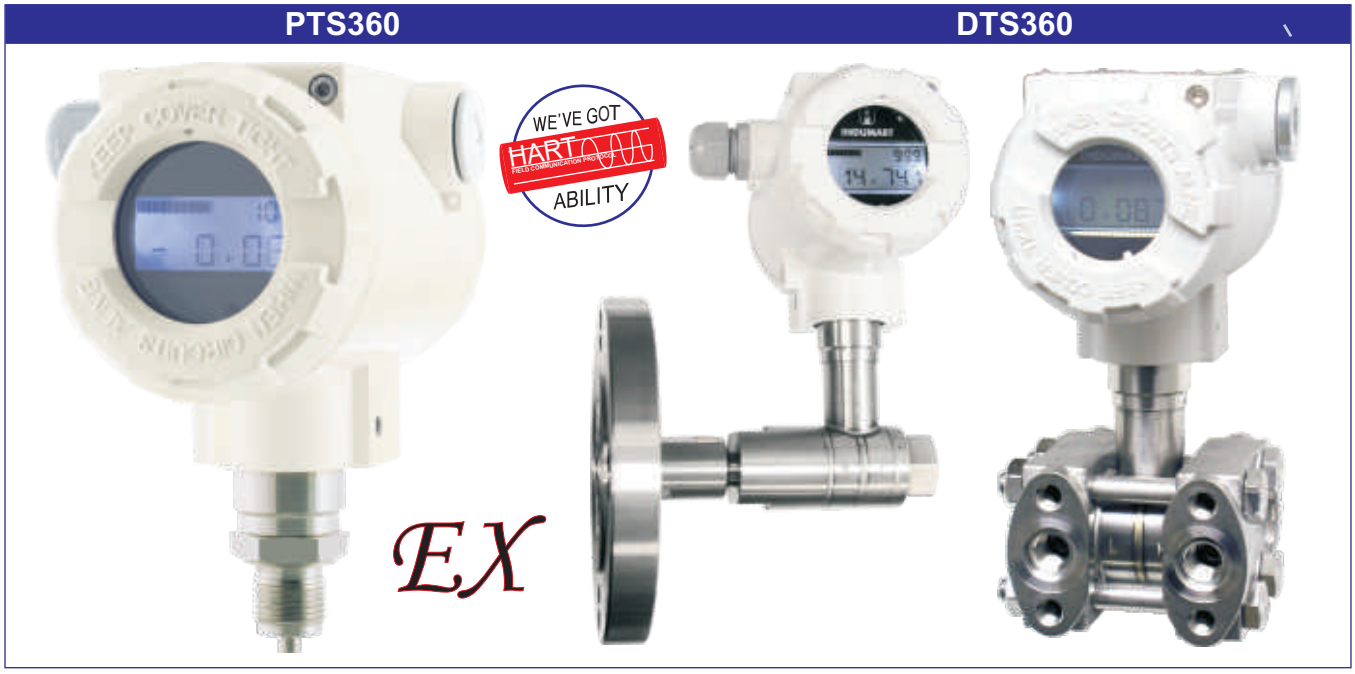
With local indicator; available as option

The second category of Indumart pressure transmitters used for low pressure applications are series 360 transmitters. The PTS360 and DTS360 Series of Smart Pressure transmitters are two-wire microprocessor-based instruments, which can receive one or two pressure lines, and indicate the value of the differential pressure from these lines on its wide LCD display, and generate a 4-20 mA output signal directly or inversely proportional to the pressure differential of the input lines. Digital communication for remote calibration and monitoring is also provided, superimposing a digital signal on the same pair of wires that carries the 4-20 mA signal. Thermal drift is automatically compensated using the signal from a thermistor integrated into the pressure sensor. The high accuracy sensor coupled with the temperature compensation feature give a measurement precision, which is more than adequate for even the most demanding applications. Due to the materials and technology used in the construction of these pressure transmitters, these instruments are excellent in reliability, resistance to corrosion against the majority of chemically aggressive media and withstanding mechanical shocks.

The electronic circuit boards are ATEX intrinsically safe for use in hazardous areas and the enclosure of the instrument is ATEX explosion proof type II 1/2 Exia/d IIC T5/T6

These transmitters can be configured utilizing any of the three following methods: **(1)** locally configuring the instrument (zero, range, shift, characteristics and damping ratio) by means of pushbuttons on the transmitter, **(2)** by a PC with a dedicated interface and the Indumart smart configuration software (STS306); **(3)** with having the capability of digital communication, they may be configured using Indumart hand-held terminal with HART protocol or other hand-held communicators*. The data interchange with the transmitter enables the user to identify the transmitter, calibrate the sensor, read the immediate measured value of the input and the current output of the transmitter. User may alter the measurement unit and the range, introduce zero elevation, apply measurement inversion, take a square root or squar the value of the measurement and set the damping time. Additionally the operator may force an output current with a set value.

The smallest available range for these transmitters is 100 Pa (0.015 psi or 1 mbar).

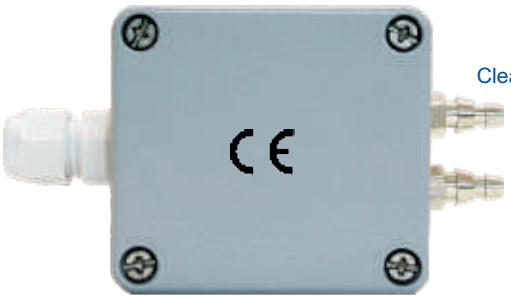


The Third category of Indumart pressure transmitters used for low pressure applications are models PTL35 and PTL45 transmitters. The PTL45 Series of Pressure Transmitters with piezoresistive sensors can measure differential, gauge or absolute pressure. The smallest pressure range specified for these models is 50 Pa (0.5 mbar or 0.02 in.H2O). They may be specified with square root output for measuring flow velocity of air and non-aggresive gases.

Due to the materials and technology used in the construction of these indicating pressure transmitters, these instruments are excellent in reliability and precision. Their response time is 0.01 second and their enclosures are sealed to IP65 protection class.

Switching output with display and LED for ON/OFF control and 60 seconds delay switching output are optional features of the PTL45 series.

PTL35



Applications:

Control of Air Blower
Supervision of Air Filters
Cleanrooms & Spray Chambers
Ventilation Systems
Medical Engineering
Liquid Level Control

LOOP POWERED
(4-20 mA)

PTL45

Conclusion

The PTF110, PTF11 and PTF116 transmitters are heavy-duty general purpose instruments with 0.2% or 0.5% accuracy and the smallest range of 1 kPa (0.15 psi or 10 mbar)

The PTS360 and DTS360 are very accurate (0.075%) transmitters with extensive rangeability (10:1 up to 50:1). They are HART® protocol instruments with programming ability. The smallest available range for these transmitters is 100 Pa (0.015 psi or 1 mbar).

The models PTL35 and PTL45 transmitters can measure differential, gauge or absolute pressure. The smallest pressure range specified for these models is 50 Pa (0.5 mbar or 0.02 in.H2O).