

pressure transmitter

CRESSTO

- **very high sensitivity**
- **overpressure endurance**
- **small dimensions**
- **protection IP65**
- **wide temperature range**
- **vibration endurance**
- **display fit-out possibility**



This transducer is designed for a wide application in a branch of measurement and regulation in a range of very small pressures, especially in air-conditioning, ventilation, combustion process control, appliance design, etc. Many applications are offered in a medical technology and in the laboratory measurements. This transducer is designed for measurement of the differential pressure and this fact also includes a requirement for measurement of the relative pressures. However, it is not determined for a high common pressure measurement, such as measurement on the orifice gauges in the pressure distribution systems. The version for measurement of the absolute pressure, consequently the barometric pressure, is worthy of a special attention. Changes of the barometric pressure are essential for many industrial processes, some medical indications, possibly for the objective automated recording of the laboratory conditions, etc. For the purpose of these measurements, there are produced transducers with a specially modified range with suppressed zero. The medium being measured may be a non-aggressive gas. Use of the non-aggressive liquid, which is permitted in the pressures higher than 2.5 kPa, should be consulted with manufacturer.

The whole transducer, i.e. a pressure sensor, supply, compensation and amplifying circuits as well as a filter for increase of the noise immunity, are placed in a small plastic box from polycarbonate, which may be installed on a panel or DIN strip. The pressure supplies are realized by the nickel-plated brass inlets with a diameter 5 mm, which are suitable for use of a small hose, possibly a quick coupling for higher pressures. In addition, the medium comes into contact with silicon, silicone rubber and a plastic substance polyetherimide.

Electric connection into the measuring circuit is realized by a sealing

arrested miniature connector type DIN 43650 - C with a cable outlet PG7, which enables to use a cable with a diameter max. 6.5 mm.

This type of transducer measures the pressure by means of a silicon diaphragm on a piezoelectric principle. Therefore this transducer attains a good overload endurance, is resistant against vibrations and may work in an arbitrary position. It is an advantage for some applications to measure both the positive and negative pressure with one transducer. Electronic circuitry is realized by a surface mount technology.

Output information about the input pressure is transmitted by a current or voltage. This current signal is used in either two-wire 4–20 mA or three-wire 0–20 mA variant, the voltage signal is used in a variant with a range 0–10 V. There may be as well set up different values, namely the voltage outputs. The transducers may be supplied by a d.c. voltage in a range 12–36 V. Change of the supply voltage within this range has not any practical impact on the measurement accuracy. This transducer is calibrated permanently to the specified range. Fine adjustment (approx. by 2 %) of the end points of the transfer characteristic may be carried out by means of the trimming resistors, which are accessible after removal of the transducer cover. Trimming resistor for the zero setup is marked in red. Under the cover, there are placed short-circuiting jumpers for selection of the damping time constant. It may be as well agreed that all the transducers should be fitted with the 3.5-digit LCD display, which shows an up-to-date value in arbitrary units.

We recommend to use the standardized pressure ranges, but it is possible to agree adjustment of an arbitrary range within the specified pressures and outputs, including the symmetrical and asymmetrical combinations of the positive-negative pressures.

Technical parameters:

Nominal pressure range	± 50 Pa to ± 300 kPa
Overpressure to 2 kPa	20 kPa
from 2 kPa to 20 kPa	50 kPa
from 20 kPa to 100 kPa	300 % nominal range
over 100 kPa	200 % nominal range
Error	max. 1% (0,5%) ± 2Pa
Zero temperature error	typ. 0,2 % max. 0,3%/10°C
Span temperature error	typ. 0,2 % max. 0,3 %/10°C
Compensated temp. range	0 ÷ 70°C
Operating temp. range	-20 ÷ +85°C *
Storage temperature	-25 ÷ +100°C *
Supply voltage	12 ÷ 36V ss **
Supply current – output H	< 4 mA ***
Output	4 ÷ 20mA two-wire 0 ÷ 20mA three-wire 0 ÷ 10 V three-wire
Operated position	arbitrary
Protection	min. IP 65
Weight	cca 100g
Common-mode pressure for differential version	max. 100kPa

* with display -20 ÷ 55°C
** with display for output F 19÷43V
*** with display for outputs G,H < 7mA

Barometric transmitters are produced with standard range 80 ÷ 120 kPa.

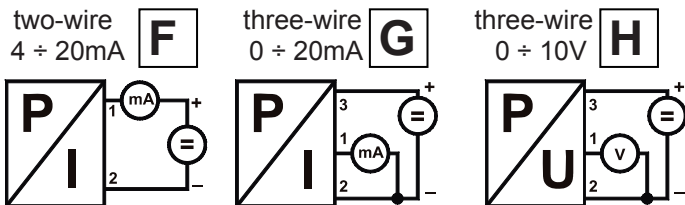
CE EMC – according to ČSN EN 61326-1

Based on customer request we can provide measurement of accredited test sensors centre and calibration services.

Operating instructions:

- Before connection of the transducer into the pressure circuit, it is necessary to verify that the pressure being measured corresponds to the nominal range of this transducer. Even a transient loading over the maximum allowable overpressure may cause a destruction of the measuring diaphragm!
- If you measure a pressure of such media which are not non-aggressive gases, it is necessary to verify the transducer material resistance.
- In case of the liquid media measurement, avoid its freezing – there is a danger of the measuring sensor destruction!

Electrical connection:



Pin assignments: valid for connector DIN 43650 C

	two-wire 4 ÷ 20mA	three-wire 0 ÷ 20mA	three-wire 0 ÷ 10V
+ supply voltage	1	3	3
- supply voltage	2	2	2
output		1	1
shielding	⊥	⊥	⊥

Legend:

T M G 3 3 8 N 4 F	
construction	
standard	T
with display	D
type of press. measure.	
differential	
underpressure	V
absolute	A
exponent of pressure range	
10 ² Pa (hundreds Pa)	2
10 ³ Pa (units kPa)	3
10 ⁴ Pa (tens kPa)	4
10 ⁵ Pa (hundreds kPa)	5
other, specify in order	0
multiplicand of pressure range	
1,0	1
1,6	2
2,5	3
4,0	4
6,0	6
other, specify in order	0
membrane material	
silicon	8
case material	
polycarbonat	N
electrical connection	
connector DIN 43650 C (micro)	4
electrical output	
current 4÷20mA	F
current 0÷20mA	G
voltage 0÷10V	H
other, specify in order	X
additional signs	

Dimensions:

