SV

pressure **transmitter** with autozeroing

CRESSTO

- **excellent long-term stability**
- **very high sensitivity**
- **overpressure endurance**
- **uP signal processing**
- **users SW configuration**
- **analogue, digital and two-state outputs**
- **supply 5 ÷ 36 V**
- **robust construction**
- **protection IP65**
- **wide temperature range**
- **display fit-out possibility**

These pressure transducers are designed for low and very low pressures and pressure differences measuring. They may be used in wide application in a branch of air-conditioning, ventilation, combustion process control, clean rooms monitoring, equipment design, etc. These transmitters can measure positive and/or negative pressure differences or overpressure and/or underpressure against ambient atmosphere. The instrument is fitted with small additional solenoid valve, which is controlled by the internal program. This valve periodically disconnects pressure inputs of the pressure sensor for 300ms period, when offset correction is measured and recalculated. Autozeroing period can be set from 10 minutes up to 256 hours or can be switched-off. This principle is functional even in two-wire loop 4-20mA.

The medium being measured may be a non-aggressive gas; some exceptions must be consulted with producer. Measured media is in a contact directly with silicon diaphragm, nickel plated brass, silicone rubber, plastics polyetherimid. Pressure connections are optional.

All components of the transmitter are placed in robust box from aluminum alloy, which serves as a good mechanical and electrical protection. The box is fixed by two screws, which are accessible after disclosure the lid and are out of the sealed internal space, so that protection is IP65. For electrical connection serves internal terminal block with screws for cable with metal grommet PG-9.

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 output is independent on work position. Electronic circuitry is realized by a surface mount technology and for increasing protection is passivated by a coat.

Electric signal from sensor is after amplifying converted by 16bit ADC to digital format. By means of two-dimensional polynomial approximation of 3rd order transmitter is calibrated and temperature compensated. With special agreement it is possible to compensate down to -10°C. Output pressure value can be read directly via serial port RS485, RS 232 or USB. Transmitter has special output stage, which convert calculated value to analogue value 4-20mA (two-wire) or 0-20mA, 0-10V, 0-3V(three-wire). Particular analogue outputs can be switch by software and it is possible to change measuring pressure range and set other parameters, for example damping etc. In addition it is possible at analogue outputs to switch linear conversion characteristics to switching two-state one and realize logic levels with voltage output. Transmitters can be fitted with output switching module, which has small relay with one contact and two independent outputs with NPN transistors with open collector with LED indication. All switching parameters can be set only via software. Next option is 4 or 5 digit LCD with white LED back lighting. There is also place for FLASH memory, where can be stored measured data with desired period (without timestamps).

Transmitters can be supply with DC voltage with wide range from 5 to 35 Volts. Change in this range has no effect to measurement accuracy.

Software configuration is realized via special USB adapter with program for Windows. Transmitter can be supplied from USB and due to adapter totally DC isolation can be connected to PC whenever in the final application.

CRESSTO

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Technical parameters:

Nominal pressure range	± 50 Pa to ± 3 kPa
Overpressure	20 kPa
Common mode pressure	10x Pdif, max. 20kPa
Error	max. 1%
Zero temperature error	typ. 0,1 % max. 0,2%/10°C
Span temperature error	typ. 0,1 % max. 0,2 %/10°C
Operating temp. range	-10 ÷ +50°C
Storage temperature	-10 ÷ +50°C
Supply voltage	5 ÷ 36V DC
Supply current	typ 4 mA
Output	4 ÷ 20mA two-wire 0 ÷ 20mA three-wire 0 ÷ 10 V three-wire 0 ÷ 3 V three-wire RS232 four-wire RS485 four-wire USB four-wire open collector three-wire relay four-wire
Operated position	arbitrary
Protection	IP 65
Voltage endurance	min. 1000V DC
Weight	cca 280g

CE ČSN EN 61326-1

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.
- During the zeroing phase are disconnected pressure inputs of the transmit ter and pressure inputs of the sensor are connected together. For what small amount of measured media*(max. units of mm3)* can leak to the other side of diaphragm. Outwards it can look like a negligible leakage, which has no effect on accuracy of the transmitter.

Electrical connection:

Transmitters are connected into electrical circuit by common way. They are protected against supply reversing polarity by series diode. ATTENTION with more-wire connection, when for example changing output and supply wire may cause transmitter damage.
Detailed description all types of electrical connections, pin assignments and protocol description for series communication are in special document, which is a part of transmitter delivery. All information can be found on www.cressto.cz

How to order this device:

Such an order shall include a specification of transducer according following selection. Alternatively can be sent full description of all requested parameters
Pressure range, pressure unit, analogue output are set via software and must be specified explicitly in the order. This parameters are printed on type label, but user whenever can change them within allowed range.
As an option can be delivered USB configuration adapter including software for Windows, eventuallly various types of connection hoses. Calibration protocol from accredited laboratory also can be delivered.

Legend:

SV D 3 1 1 R 5 U B D M S

Pressure measurement											
differential	**D**										
Pressure range											
±300 Pa		**2**	**3**								
±1 kPa		**3**	**1**								
±3 kPa		**3**	**3**								
other		**0**	**0**								
Accuracy											
1%				**1**							
other				**0**							
Pressure connection											
quick-couple 5mm					**R**						
hose 6mm					**V**						
One Touch Fitting 4mm					**N**						
One Touch Fitting 6mm					**M**						
other					**X**						
Electrical connection											
cable 1m						**2**					
connector DIN 43650 C						**4**					
terminal block and grommet						**5**					
Analogue electrical output											
Analogue 4÷20mA, 0÷20mA, 0÷3V, 0÷10V							**U**				
other							**X**				
Digital electrical output											
series RS232								**A**			
series RS485								**B**			
series USB								**C**			
none											
other								**X**			
Display											
4 digit display									**D**		
Memory											
FLASH memory										**M**	
Switch											
realy contact, 2x open collector + LED											**S**

Dimensions: