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# Differential and Relative Pressure Transmitter TP-699

INSTRUCTION MANUAL V1.0x C

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**novus**  
We Measure, We Control, We Record

Product sold by NOVUS Automation Ltda.

## 1. PRESENTATION

The model **699 Differential and Relative Pressure Transmitter** is available in switchable pressure ranges and versions with or without display. Specific sensors have been developed for each pressure range that ensures accurate measurement and greater long term accuracy, offering effective measurement in medical and industrial environments.

Differentials of this product:

- Adjustable measurement range;
- Switchable output signals;
- Resettable Zero Point (Reset button);
- Application at over and low pressure range possible;
- Quick and easy mounting. The housing incorporates bracket for wall or ceiling mounting.

## 2. IDENTIFICATION

Attached to the equipment is the identification tag. Check if the characteristics described on this label match with were requested.

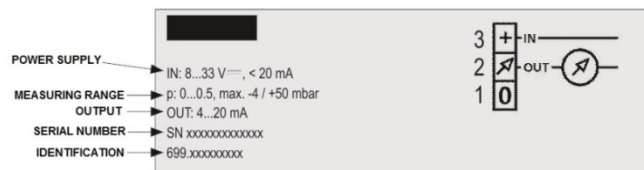


Fig. 01 – Identification Tag

## 3. ELECTRICAL CONNECTION

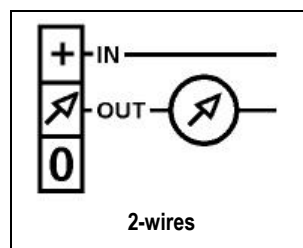


Fig. 02 – Electrical connections

## 4. MECHANICAL CONNECTION

It is recommended that the installation mode be vertical, with the pressure connections (**P1** and **P2**) down (Fig. 03).

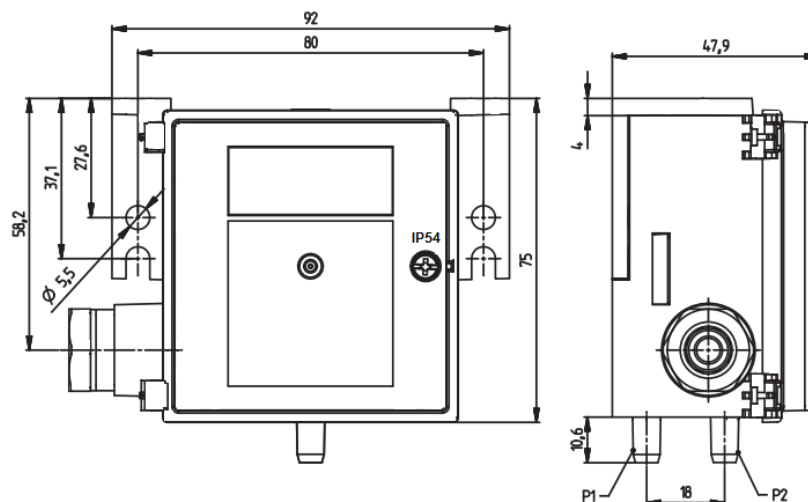


Fig. 03 – Dimension (mm)

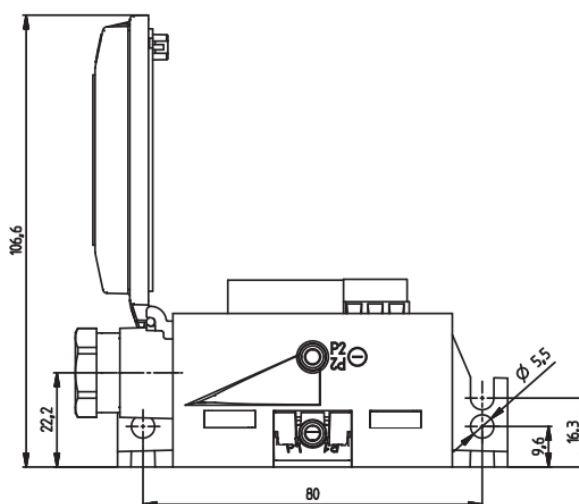


Fig. 04 – Dimension (mm)

## 5. ACCURACY

To calculate the maximum error values, the following sum must be performed:

$$\text{Maximum Error} = \text{Tolerance Full Scale Value} + \text{Linearity and Repeatability Error} + \text{Long-Term Stability Error}$$

Parameter	Unit	± 0,5 mbar	0 ... 1 mbar	0 ...3 mbar	0 ... 5 mbar	0 ... 10 – 50 mbar
Tolerance zero point (max.)	% FE	± 1.0	± 1.0	± 0.7	± 0.7	± 0.7
Tolerance full scale (max.)	% FE	± 1.0	± 1.0	± 0.7	± 0.7	± 0.7
Resolution	% FE	0.2	0.2	0.1	0.1	0.1
Total of linearity, hysteresis and repeatability (max.)	% FE	± 1.0	± 1.0	± 1.0	± 1.0	± 0.6
Long term stability (DIN EM 60770)	% FE	± 1.0				

Test Conditions: 25 °C, 45 % RH, Power supply 24 Vdc / TC z.p. / TC s. -15 ... +80 °C

Table 01 – Accuracy

## 6. TECHNICAL DATA

Operating Conditions	Air and neutral gases	
Tolerable overload on one side	Application at over pressure range	≤ 3 mbar ..... P1 = 50 mbar P2 = 4 mbar > 3 mbar ..... P1 = 100 mbar P2 = 4 mbar
	Application at under pressure range	≤ 3 mbar ..... P1 = -4 mbar P2 = -50 mbar > 3 mbar ..... P1 = -4 mbar P2 = -100 mbar
	Ambient temperature 2x overload	
	70 °C 1.5x overload	
Ranges of Adjustment	The zero point is adjustable by reset button.	
	The full scale is set by the internal DIP Switch and the fine adjustment is set by the trimmer. Refer to Table 1.	
Materials in contact with medium	Sensor: Ceramic Al <sub>2</sub> O <sub>3</sub> (96 %)	
	Diaphragm: Silicone	
	Housing: Polycarbonate (PC)	
Medium Temperature Operation and Conditions	0 to 70 °C	
Storage Temperature	-10 to 70 °C no condensation	

<b>Power Supply</b>	Output 4-20 mA (2 wires): 8 to 33 Vdc
	Output 4-20 mA (3 wires): 13.5 to 33 Vdc / 24 Vac $\pm$ 15 %
<b>Charge</b>	4-20 mA < (Supply Voltage – 8 V / 20 mA) [Ohm]
<b>Electrical Overview</b>	< 20 mA (8 to 33 Vdc) (2 wires)
	< 30 mA (13.5 to 33 Vdc / 24 Vac) (3 wires)
<b>Dynamic Response</b>	Suitable for dynamic measurements
	Response time: < 20 ms
	Load cycle: < 10 Hz
<b>Electrical Connection</b>	Screw terminals for wire and stranded conductors up to 1.5 mm <sup>2</sup>
	Cable gland with built-in strain relief PG11
<b>Polarity Reversal Protection</b>	Short circuit proof and protected against polarity reversal. Each connection is protected against crossover up to max. supply voltage.
<b>Protection Standard</b>	IP54
<b>Pressure Connection</b>	Connection pipe 6.2 mm
<b>Mounting</b>	Mounting bracket (integrated in case)
<b>Electromagnetic Compatibility</b>	CE-conformity acc. EN 61326-2-3
<b>Weight</b>	90 g (without display)
	100 g (with display)

**Table 02** – Technical Data

## 7. WARRANTY

Warranty conditions are available on our website [www.novusautomation.com/warranty](http://www.novusautomation.com/warranty).