

Pressure transmitter DS 1

• for small pressure, vacuum and differential pressure values

In addition to differential pressure, the **DS 1** pressure sensor also measures positive or negative overpressure, and optionally also volume flow.

The measured values are output as voltage (0...10 V) or current (4...20 mA), optionally also as a frequency signal (0...10 kHz). The version with current output (4...20 mA) is designed in two-wire technology.

The **DS 1** pressure transmitter can be supplemented with a square root output for flow measurements. In this case, the user must have an orifice plate or a Prandtl tube available.

The **DS 1** uses piezoresistive precision measuring cells and is suitable for measuring very low pressures. The influence of the mounting position on the zero point is very low. The robust die-cast aluminum housing ensures high mechanical stability and good EMC properties.

The DS 1 has electronic signal damping. This can be omitted as an option, in which case the response time is approx. 50 ms (instead of 2.5 s).



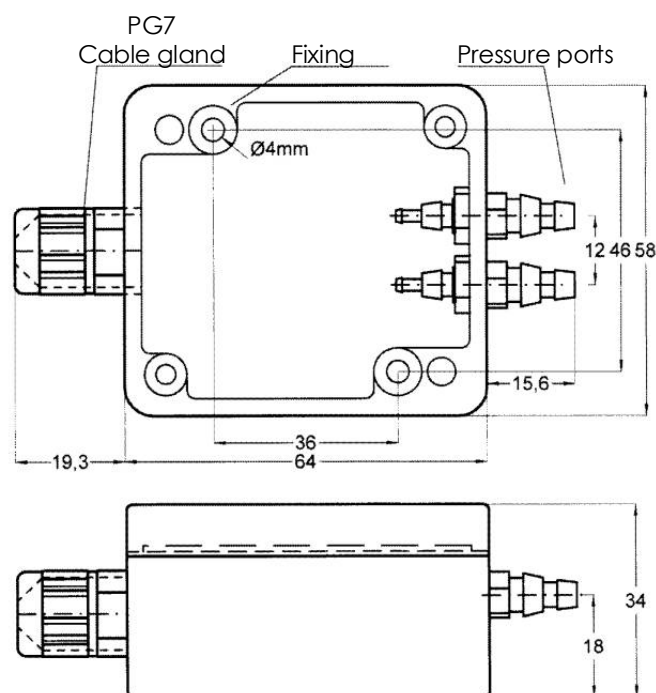
Technical data:

Typical applications:	Control of blowers Supervision of airfilters Mechanical and system engineering Environmental technology Liquid level control Pressure control in pressure chambers Monitoring of air flows Medical engineering
Operating temperature range:	0...50°C
Hysteresis:	0.1%
Suitable pressure media:	Air and all non-aggressive gases
Electrical connections:	Screw clamps for 0.14...1.5 mm ²
Pressure ports (pneumatic):	2 connections for tube with 4 or 6 mm inner diameter
Cable gland:	PG 7
Weight:	approx. 170 g
Protection degree:	IP 65
Response time (with damping):	2.5 s (optional without damping: approx. 50 ms)
Version with voltage output	
Output signal and power supply:	0...10 V ($R_L \geq 2k\Omega$; 24 VDC/AC $\pm 10\%$)
Pin connections:	Plug 1: +24 VDC Plug 2: Output 0...10 V Plug 3: GND (Masse)
Version with current output	
Output signal and power supply:	4...20 mA ($R_B \leq 400\Omega$; 15...30 VDC)
Pin connections:	Plug 1: +24 VDC *) Plug 2: Output 4...20 mA *)
Options:	
(extra charge)	<ul style="list-style-type: none"> • Frequency output 0...10 kHz • Square root output for flow measurement • Power supply 230 VAC (with larger housing 160 x 80 x 37 mm)

Standard pressure ranges:

Pressure range [mbar]	Pressure range [kPa]	Over pressure [mbar]	Max. error of linearity [±% FS]	Max. error of temperature [±% FS] 0-50°C	Longtime stability [% FS]/year	Repeatability [% FS]
0...2,5	0...0,25	250	0.8	2	2	0.3
0...5	0...0,5	250	0.8	1	1	0.3
0...10	0...1	350	0.8	1	0.5	0.2
0...25	0...2,5	350	0.8	1	0.5	0.1
0...50	0...5	350	0.8	1	0.5	0.1
0...100	0...10	350	0.2	1	0.1	0.1
0...250	0...25	4-fold	0.2	1	0.1	0.1
0...500	0...50	4-fold	0.2	1	0.1	0.1
0...1000	0...100	2-fold	0.2	1	0.1	0.1

Other pressure ranges available on request.



*) Versions DS1-420 with current output:

A special additional circuit prevents damage to the sensor due to incorrect pin assignment. The two connections can therefore be interchanged. A load resistor $R_b \leq 400 \Omega$ must be connected between connection 2 and the ground connection (GND) of the power supply at a voltage of +24 VDC.