



Differential pressure transmitter



Pressure range

**-1.5 ... 1.5 mbar /
0 ... 3 – 100 mbar**

Huba Control

Relative and differential pressure transmitter

Type 450

The pressure transmitter type 450 is a robust sensor integrated in a compact housing for the use in various applications with air or neutral gases. Pollutions with small particles do not harm the function of this pressure transmitter. The type 450 is ideal for HVAC applications.

Additionally to the analogue output the pressure transmitter type has a digital output I²C. These output signals are temperature compensated, linear and reinforced. The transmitter is fitted directly on a PCB.

- + Suitable for low pressure measurements
- + Excellent accuracy and long term stability at whole measuring range
- + Output sensor signal temperature compensated from -10 °C ... +80 °C

Technical overview

Pressure range

Relative and differential -1.5 ... 1.5 mbar / 0 ... 3 - 100 mbar

Operating conditions

Medium		Air and neutral gases
Rupture pressure	< 50 mbar	100 mbar
	≥ 50 mbar	3 x FS
Temperature	Medium and ambient	-20 ... +85 °C
	Compensated	-10 ... +80 °C
	Storage	-40 ... +100 °C

Materials in contact with the medium

Case	Polyamid (PA)
Sensor	Ceramic Al ₂ O ₃ (96%)
Sealing	TPE
Membrane	Silicone

Electrical overview

3 wire	Output	Power supply	Current consumption
	0.5 ... 4.5 V	7 ... 33 VDC	< 5 mA
	ration. 10 ... 90%	2.7 ... 5.5 VDC	< 5 mA
4 wire	Digital ZACWire™ 10 ... 90% of 2 ¹⁴ digits	2.7 ... 5.5 VDC	< 5 mA
	Digital I ² C 10 ... 90% of 2 ¹⁴ digits	2.7 ... 5.5 VDC	< 5 mA
Polarity reversal protection			mechanically protected

I²C Specification

Clock- and Dataline Pull-up-Resistor ≥ 1 kΩ to VDD, Capacity ≤ 200 pF (user specification)

Clock frequency ≤ 100 kHz (Standard 100 kbit/s)

Dynamic Response

Response time	< 2ms
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Pressure connection

Tube connector

Electrical connection

PCB	Protection standard	Protection class
	IP 00	III

Adjusting position

Pressure connections lateral	Dependency on fitting position (≤ 10mbar)
	Pressure connections on top +4.5 Pa
Pressure connections on top	Pressure connections at bottom -4.5 Pa
	Pressure connections lateral -4.5 Pa
Pressure connections below	Pressure connections at bottom -9 Pa
	Pressure connections lateral +4.5 Pa
	Pressure connections on top +9 Pa

Mounting instruction

Mounting	PCB mounting
Soldering process	suitable for wave soldering (process time < 3 minutes, temperature peak top side PCB < 145°C)
	suitable for manual soldering
	not suitable for reflow soldering

Tests / Admissions

UL	UL 60730-1 acc. E334896
Electromagnetic compatibility	CE conformity acc. EN 61326-2-3

Weight

~ 12 g

Packaging

Multiple packaging in cardboard boxes with blister 70 pieces

Accuracy

Test conditions: 25 °C, 45% RH

Parameter Pressure < 5 mbar	Unit	
Characteristic line (-10 ... +80 °C) ^{1), 2)}	% fs	± 1.5
Long term stability acc. IEC EN 60770-1	max. % fs	± 0.25

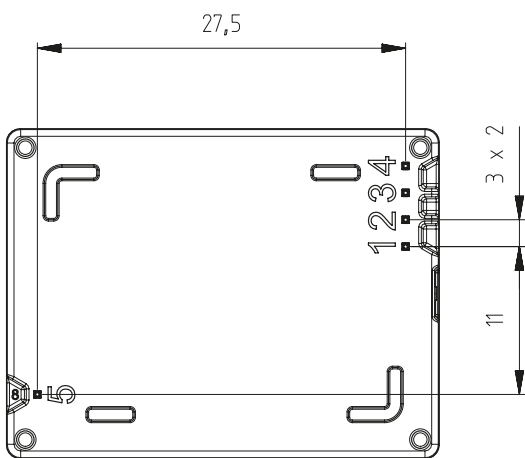
Parameter Pressure ≥ 5 mbar	Unit	
Characteristic line (-10 ... +80 °C) ^{1), 2)}	% fs	± 1.0
Long term stability acc. IEC EN 60770-1	max. % fs	± 0.25

¹⁾ incl. zero point, full scale, linearity, hysteresis and repeatability

²⁾ ratiom. 10 ... 90 %: Calibrated at 5VDC. Other power supplies may influence the accuracy.

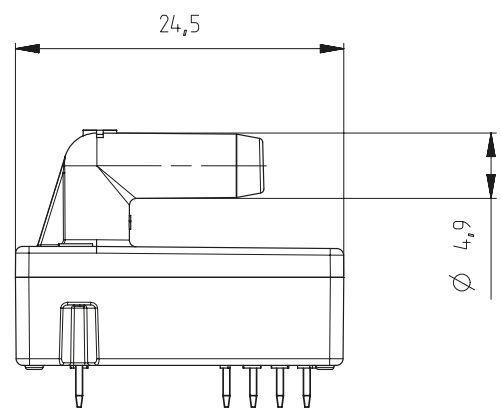
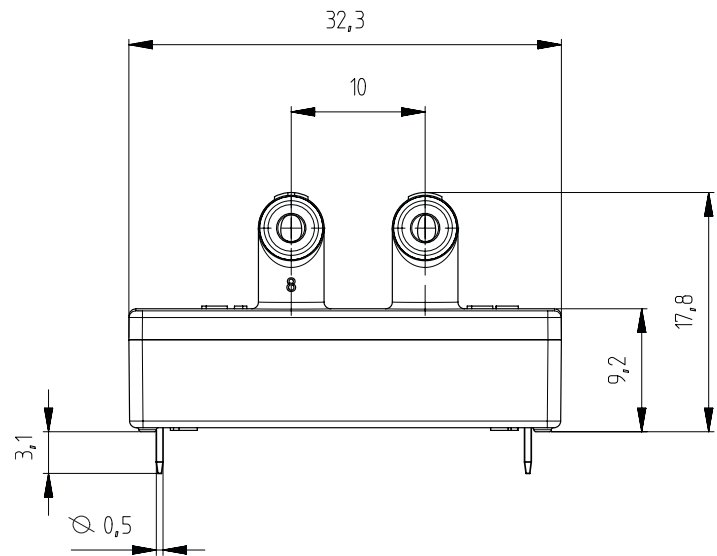
		1	2	3	4	5	6	7	8
Order code selection table		450. X X X X X X X X							
Pressure range	-1.5 ... 1.5 mbar	9	0						
	0 ... 3 mbar	9	1						
	0 ... 5 mbar	9	2						
	0 ... 10 mbar	9	3						
	0 ... 30 mbar	9	4						
	0 ... 50 mbar	9	5						
	0 ... 100 mbar	9	6						
Adjusting position	Pressure connections lateral			0					
	Pressure connections on top			1					
	Pressure connections below			2					
Diaphragm	Silicone				0				
	0.5 ... 4.5 V	7 ... 33 VDC				0			
Output / power supply	ration. 10 ... 90%	2.7 ... 5.5 VDC				1			
	Digital ZAC wire™ 10 ... 90% of 2 ¹⁴ digits	2.7 ... 5.5 VDC				3			
	Digital I ² C 10 ... 90% of 2 ¹⁴ digits	2.7 ... 5.5 VDC				4			
	Electrical connection	PCB					1		
Pressure connection	Tube connector							1	
Pressure range variation (optional)	Indicate W and state range on order (e.g.: W 0 ... +9 mbar/OUT 0.5 ... 4.5 V)								W

Dimensions in mm / Electrical connections



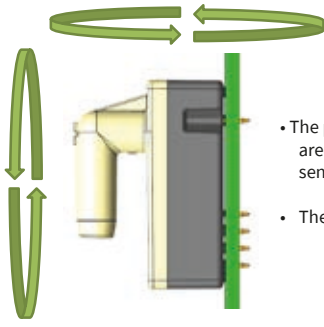
pin assignment

	Analog output / ZAC wire	Digital output
1:	GND	GND
2:	OUT	IN
3:	IN	SDA
4:	no pin	SCL
5:	NC	NC

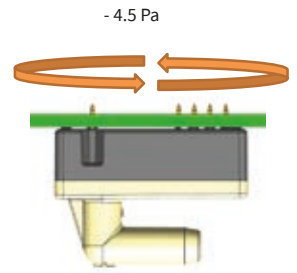
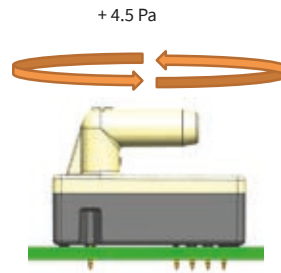


Adjusting position

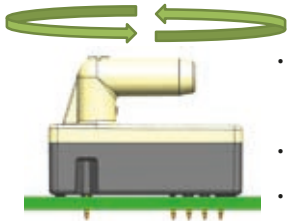
Pressure connections lateral



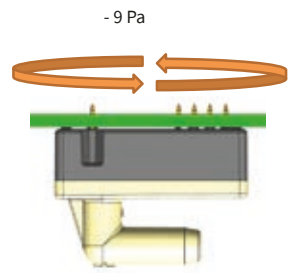
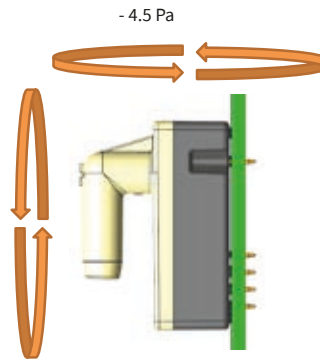
- The pressure connections are located lateral to the sensor body
- The PCB is vertical



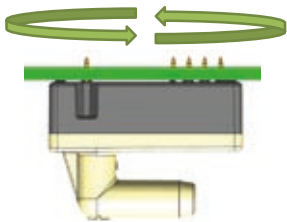
Pressure connections on top



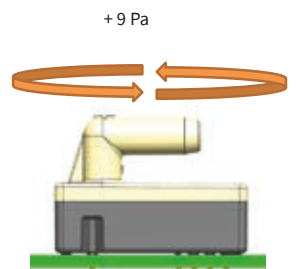
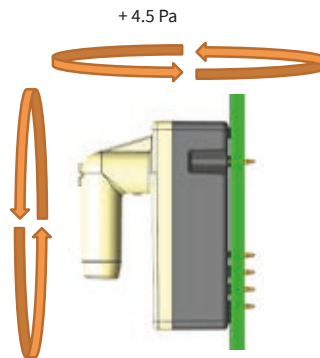
- The pressure connections are located on the top of the sensor body
- The PCB is horizontal
- The sensor is over the PCB



Pressure connections below



- The pressure connections are located at the bottom of the sensor body.
- The PCB is horizontal.
- The sensor is under the PCB.



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