

Low Range Differential Pressure Transducer

Accuracy 0.25%

Standard 0...1/1.5/2 mV/V - 4-wire
 or 4...20 mA - 2-wire
 or 0...10 VDC - 3-wire



Description

Low range differential pressure transducers provide the user with the perfect solution for the measuring task at hand.

High line pressure, long-term stability, peak pressure resistance, corrosion resistance and a high level of mechanical safety make them suitable for the most demanding measuring tasks.

The graduated measurement ranges cover from 0 ... 0.04 bar to 0 ... 2 bar. The case and wetted parts are made from stainless steel to make them resistant to aggressive media. Both pressure chambers are hermetically sealed and the membranes are welded.

Features

- High line pressure
- High peak pressure resistance
- High long-term stability
- Mechanically safe design
- Corrosion resistant stainless steel housing and wetted parts

Measuring ranges

Differential pressure
0 ... 0.04 bar to 0 ... 2 bar

Line pressure
up to 100 bar

Applications

Test stands
 Flow measurement
 Pressure drop across filters
 Pump monitoring

| Measurement range ΔP (bar) | Max. overload either side P_{max} (bar) | Max. line pressure $line_{max}$ (bar) |
|-----------------------------------------|------------------------------------------------|--------------------------------------------|
| 0... 0.04 | 100 | 100 |
| 0... 0.08 | | |
| 0... 0.40 | | |
| 0... 0.80 | | |
| 0... 1.0 | | |
| 0... 1.5 | | |
| 0... 2.0 | | |

Other ranges and units on request

Model: P3314

Technical data

| Low Range Differential Pressure Transducer | | | | | | | | | | | | | | | | | | | | | |
|---------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------|----------------|----------|-------------|------------|----------|----------|----------------|-----------|----------|----------|----------------|--|--|-------------------------------|--|--|--|----------|--|
| Model | P3314 | | | | | | | | | | | | | | | | | | | | |
| Execution | Differential Pressure | | | | | | | | | | | | | | | | | | | | |
| Process Connection standard optional | 2x G1/8 female 2x 1/8 NPT female | | | | | | | | | | | | | | | | | | | | |
| Measuring principle | Bonded foil strain gauge | | | | | | | | | | | | | | | | | | | | |
| Measurement range (ΔP) | 0 ... 0.04 bar to 0 ... 2 bar $\Delta P = P_1 - P_2$ | | | | | | | | | | | | | | | | | | | | |
| Max. overload¹⁾ (either side) | 100 bar | | | | | | | | | | | | | | | | | | | | |
| Max. Line pressure¹⁾ | 100 bar | | | | | | | | | | | | | | | | | | | | |
| Materials Housing Wetted parts | Stainless steel 1.4542 Stainless steel 1.4542 | | | | | | | | | | | | | | | | | | | | |
| Output signal mV/V 4..20 mA 0..10 VDC | Span <table border="0"> <tr> <td><0.04 bar</td> <td>1.0 mV/V</td> <td>4 – wire</td> <td>zero signal</td> </tr> <tr> <td>< 0.30 bar</td> <td>1.5 mV/V</td> <td>4 – wire</td> <td>0 ± 1% of F.S.</td> </tr> <tr> <td>< 2.0 bar</td> <td>2.0 mV/V</td> <td>4 – wire</td> <td>0 ± 1% of F.S.</td> </tr> <tr> <td></td> <td></td> <td>2 – wire (optional: 3 – wire)</td> <td></td> </tr> <tr> <td></td> <td></td> <td>3 – wire</td> <td></td> </tr> </table> others on request | <0.04 bar | 1.0 mV/V | 4 – wire | zero signal | < 0.30 bar | 1.5 mV/V | 4 – wire | 0 ± 1% of F.S. | < 2.0 bar | 2.0 mV/V | 4 – wire | 0 ± 1% of F.S. | | | 2 – wire (optional: 3 – wire) | | | | 3 – wire | |
| <0.04 bar | 1.0 mV/V | 4 – wire | zero signal | | | | | | | | | | | | | | | | | | |
| < 0.30 bar | 1.5 mV/V | 4 – wire | 0 ± 1% of F.S. | | | | | | | | | | | | | | | | | | |
| < 2.0 bar | 2.0 mV/V | 4 – wire | 0 ± 1% of F.S. | | | | | | | | | | | | | | | | | | |
| | | 2 – wire (optional: 3 – wire) | | | | | | | | | | | | | | | | | | | |
| | | 3 – wire | | | | | | | | | | | | | | | | | | | |
| Power Supply mV/V 4..20 mA 0..10 VDC | 10 VDC 12 – 40 VDC 15 – 28 VDC | | | | | | | | | | | | | | | | | | | | |
| Bridge Resistance | 350 Ω (1/1.5/2 mV/V) | | | | | | | | | | | | | | | | | | | | |
| Accuracy²⁾ | ± 0.25 % of F.S. others on request | | | | | | | | | | | | | | | | | | | | |
| Repeatability | ≤ ± 0.05 % of F.S. | | | | | | | | | | | | | | | | | | | | |
| Temperature ranges storage media ambient compensated range TK _N TK _S | 0..85°C 0..85°C 0..85°C 0..50°C (others on request) ± 0.009% of F.S./K ± 0.009% reading/K | | | | | | | | | | | | | | | | | | | | |
| Electr. connection standard optional | Bayonet 6-pin DIN EN 175301-803, Form C | | | | | | | | | | | | | | | | | | | | |
| Protection type PTIH-10-6P DIN 175301-803 | IP68 IP65 | | | | | | | | | | | | | | | | | | | | |
| Weight | 1.9 kg | | | | | | | | | | | | | | | | | | | | |

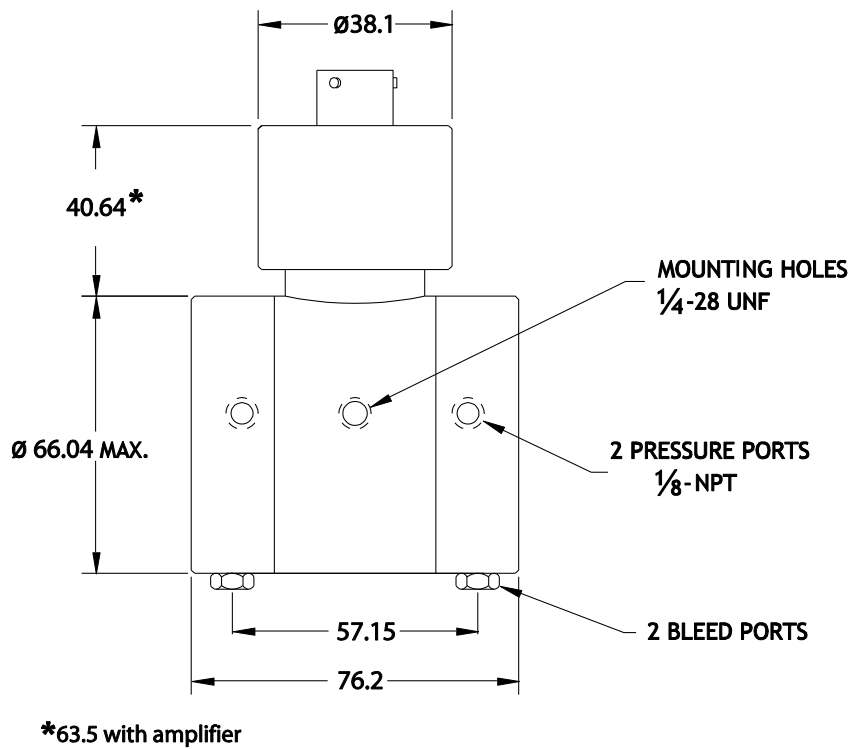
of F.S.= of full scale value
 P_1 = pressure 1
 P_2 = pressure 2 = line pressure
 ΔP = differential pressure
 $line_{max}$ = max. line pressure
 P_{max} = max. overload

¹⁾ The maximum pressure is the pressure that is permitted simultaneously on both ports of a differential pressure transducer. The line pressure is the lower absolute value seen on either side. The result of adding the line pressure to the pressure to be measured must also not exceed the maximum value.
 Example: measuring range 0 .. 1.0 bar differential pressure
 a) $P_1=100$ bar / $P_2 = 99.0$ bar or b) $P_1= 0$ bar / $P_2 = 1.0$ bar
 If the measuring range is exceeded by more than 50%, the membrane presses against a stop. If overloading does occur, the zero point will move; a change in precision or damage is prevented. Damage will only be caused by frequent or sudden overload. When the line pressure changes, the zero point moves. The shift in zero point is reproducible. It is normal and is compensated for a line pressure of 100 bar.

²⁾ Terminal point adjustment includes non-linearity and hysteresis.

Dimensions (mm)

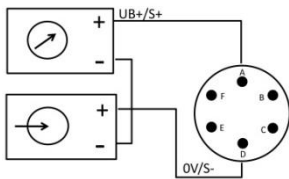
Housing



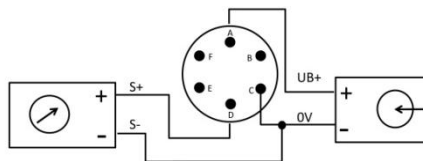
Electrical connection

Bayonet 6-pin

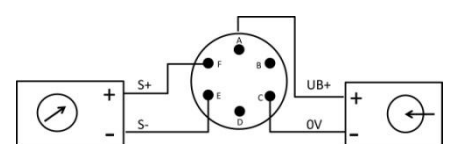
2 – wire



3 – wire



4 – wire



| Analogue output Electrical connection | 4...20 mA 2-wire pin | 0...10 V/4...20 mA 3-wire pin ¹⁾ | mV/V 4-wire pin ²⁾ |
|------------------------------------------|----------------------------|---------------------------------------------------|-------------------------------------|
| Supply: $UB+$ | A | A | A |
| Supply: $0V$ | D | C | C |
| Signal: $S+$ | A | D | F |
| Signal: $S-$ | D | C | E |

¹⁾ Pin C and B are connected internally.

²⁾ Pin A and B are connected internally./Pin C and D are connected internally