FISCHER MESS- UND REGELTECHNIK

Data sheet

DE21 | Differential Pressure Transmitter

The DE21 is a 2-wire transmitter.

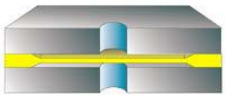
It is suitable for accurate measurement of lowest gauge, vacuum or differential pressure of non-conductive and non-corrosive gaseous media.

Examples of applications:

- Low pressure measurement for building automation and comfort control
- Flow measurement
- Filter monitoring

Principles of Operation

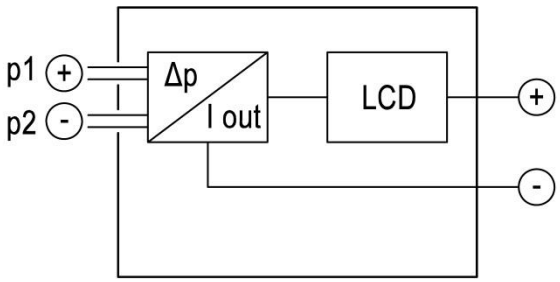
The transmitter is based on a capacitance sensor element with a micro machined differential capacitor using a patented silicon-on-glass technology. This ultra-thin single crystal diaphragm provides excellent sensor repeatability and stability.



Sensor cross section

The silicon diaphragm sensor has no glues or other organics to contribute a drift or mechanical degradation over time.

Functional diagram



Main Features

- high-precision and long-term stable capacitive sensor element
- measurement of lowest gauge, vacuum or differential pressure
- high over-pressure protection
- selectable units mbar, Pa, kPa and inWc

Typical Applications

- monitoring clean rooms, laboratories and computer rooms
- packing machines, filters und fans
- pharmaceutical industry

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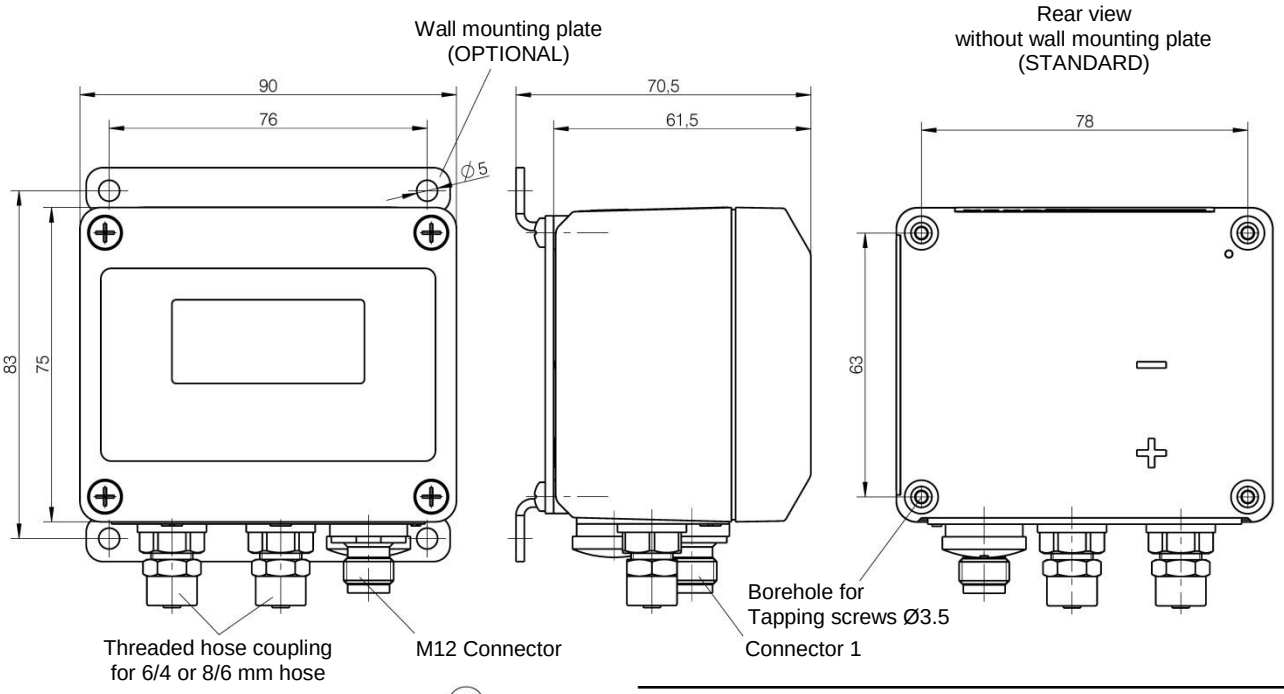
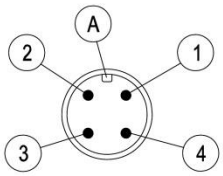
Technical specifications

	General
Perm. ambient temperature	-10 … +70 °C
Perm. media temperature	-10 … +70 °C
Perm. storage temperature	-20 … +70 °C
Compensated temp. range	2 ... 54 °C (10 … 90 % R.H. non condensing)
Temperature coefficient	± 0,06 %/K within 2…54 °C (ref. 25 °C)
Protection	IP65 according EN 60 529/IEC 529
	Measuring Range
Measuring principle	Differential Si-glass/aluminum capacitor with single crystal silicon diaphragm
Measuring ranges	see ordering code
Pressure type	Differential, gauge, vacuum and also bidirectional ranges
Proof pressure	1,0 bar
Burst pressure	1,7 bar
Static pressure	1,7 bar
	Electrical Data
Nominal voltage	24 VDC
Perm. Operating voltage U_b	19…36 VDC
Output signal	4 … 20 mA
Type of electr. connection	2-wire circuit
Max loop resistance	$R_L \leq (U_b - 19V)/0{,}022A$
Characteristic curve	Linear, rising
Accuracy	Optionally 0,5 % or 1,0 % FS
Adjustments	Zero ±5 % FS Span ±5 % FS
Long term stability	≤ 0,5 % FS / year
	Display
Type	4 digit LCD
Character height	11,5 mm
Screen dimension	46 x 20 mm
Unit	mbar, Pa, kPa und inWc; DIP-switch selectable
Decimal point	DIP-switch selectable
	Process Connection
Process connection	Aluminium screw connection for 6/4 or 8/6 mm hose
Electrical connection	M12 Connector (4 pole, male)
	Material
Medium	Clean and dry air, non-conducting and non-corrosive gases
Housing	Polyamid PA6.6
Cable connection socket	Polyamid 6
Front foil	Polyester
Process connection	Brass, Aluminium
Sensor element	Silicon, Aluminium, Glass
	Mounting
	Wall mounting or DIN rail types EN 60715

Dimensioned drawings (All units in mm unless otherwise specified)

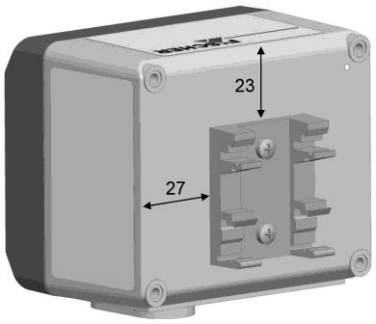


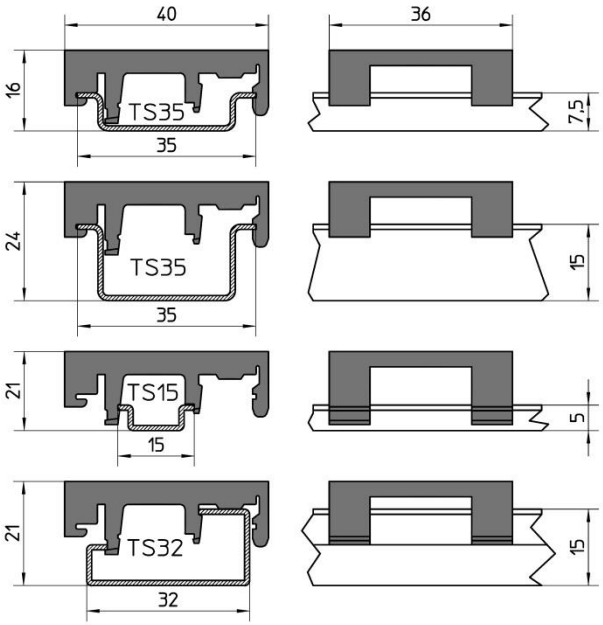


Pos	Signal			Colour
1	Power supply /output signal	$+U_b$	+Sig	brown
2	not connected			
3	Power supply /output signal	$-U_b$	-Sig	blue
4	not connected			
A	Coding			

Mounting on DIN Rail

Mounting device for installation on DIN Rail EN 60715





Ordering code

Differential Pressure Transmitter

Model DE21 | | | | | | | **B** | **R** | **0** | **F** | **M** | |

Measuring range

Unidirectional	0-0,10 inWC	0 1 A	0-25 Pa	0 1 B	0-0,25 mbar	0 1 C
	0-0,25 inWC	0 2 A	0-50 Pa	0 2 B	0-0,50 mbar	0 2 C
	0-0,50 inWC	0 3 A	0-60 Pa	0 3 B	0-0,60 mbar	0 3 C
	0-0,75 inWC	0 4 A	0-100 Pa	0 4 B	0-1,00 mbar	0 4 C
	0-1,00 inWC	0 5 A	0-125 Pa	0 5 B	0-1,25 mbar	0 5 C
	0-2,00 inWC	0 6 A	0-160 Pa	0 6 B	0-1,60 mbar	0 6 C
	0-2,50 inWC	0 7 A	0-200 Pa	0 7 B	0-2,00 mbar	0 7 C
	0-3,00 inWC	0 8 A	0-250 Pa	0 8 B	0-2,50 mbar	0 8 C
	0-5,00 inWC	0 9 A	0-300 Pa	0 9 B	0-3,00 mbar	0 9 C
	0-10,00 inWC	1 0 A	0-400 Pa	1 0 B	0-4,00 mbar	1 0 C
	0-15,00 inWC	1 1 A	0-500 Pa	1 1 B	0-5,00 mbar	1 1 C
	0-25,00 inWC	1 2 A	0-600 Pa	1 2 B	0-6,00 mbar	1 2 C
			0-1,0 KPa	1 3 B	0-10,00 mbar	1 3 C
			0-1,6 KPa	1 4 B	0-16,00 mbar	1 4 C
			0-2,0 KPa	1 5 B	0-20,00 mbar	1 5 C
			0-2,5 KPa	1 6 B	0-25,00 mbar	1 6 C
			0-4,0 KPa	1 7 B	0-40,00 mbar	1 7 C
			0-5,0 KPa	1 8 B	0-50,00 mbar	1 8 C
			0-6,0 KPa	1 9 B	0-60,00 mbar	1 9 C
Bidirectional	± 0,05 inWC	0 1 D	± 25 Pa	0 1 E	± 0,25 mbar	0 1 F
	± 0,10 inWC	0 2 D	± 50 Pa	0 2 E	± 0,50 mbar	0 2 F
	± 0,25 inWC	0 3 D	± 60 Pa	0 3 E	± 0,60 mbar	0 3 F
	± 0,50 inWC	0 4 D	± 100 Pa	0 4 E	± 1,00 mbar	0 4 F
	± 1 inWC	0 5 D	± 125 Pa	0 5 E	± 1,25 mbar	0 5 F
	± 2 inWC	0 6 D	± 160 Pa	0 6 E	± 1,60 mbar	0 6 F
	± 5 inWC	0 7 D	± 200 Pa	0 7 E	± 2,00 mbar	0 7 F
	± 10 inWC	0 8 D	± 250 Pa	0 8 E	± 2,50 mbar	0 8 F
			± 300 Pa	0 9 E	± 3,00 mbar	0 9 F
			± 400 Pa	1 0 E	± 4,00 mbar	1 0 F
			± 500 Pa	1 1 E	± 5,00 mbar	1 1 F
			± 600 Pa	1 2 E	± 6,00 mbar	1 2 F
			± 1,0 KPa	1 3 E	± 10,00 mbar	1 3 F
			± 1,6 KPa	1 4 E	± 16,00 mbar	1 4 F
			± 2,0 KPa	1 5 E	± 20,00 mbar	1 5 F
			± 2,5 KPa	1 6 E	± 25,00 mbar	1 6 F
			± 4,0 KPa	1 7 E	± 40,00 mbar	1 7 F
			± 5,0 KPa	1 8 E	± 50,00 mbar	1 8 F
			± 6,0 KPa	1 9 E	± 60,00 mbar	1 9 F

Accuracy
0,5 % FS ..... > **E**
1,0 % FS ..... > **M**

Process connection
Aluminium screw connection for 6/4 mm hose ..... > **4 0**
Aluminium screw connection for 8/6 mm hose ..... > **4 1**

Output signal
4 … 20 mA 2-wire circuit ..... > **B**

Power supply
24 VDC (19…36 VDC) ..... > **R**

Display
4 digit LCD ..... > **F**

Electrical connection
M12 Connector ..... > **M**

Mounting
Standard (boreholes on rear side) ..... > **0**
DIN Rail mounting ..... > **S**
Wall mounting ..... > **W**

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