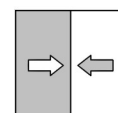




Datasheet

DE25

Digital differential pressure transmitter
for gaseous media



1 Product and functional description

1.1 Performance features

Typical applications

- Air conditioning and ventilation technology
- Filter equipment
- Construction and mechanical engineering

Important features

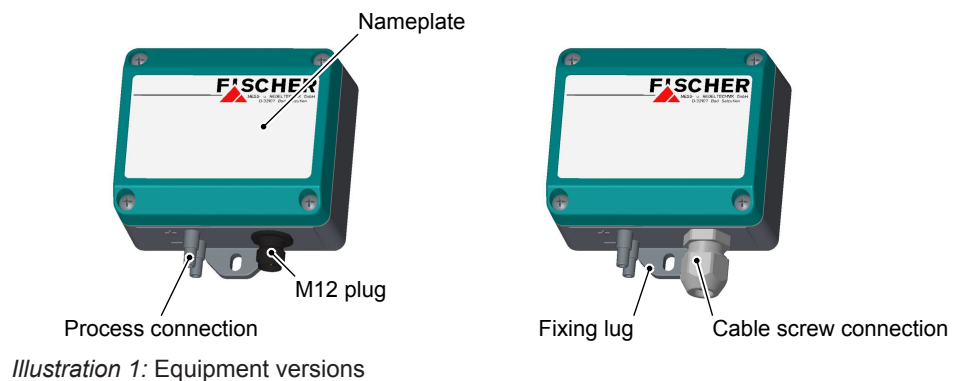
- High measuring accuracy
- Protection against polarity reversal, short circuits and over-voltage
- Installation-friendly, sturdy model
- Protection class IP65

1.2 Intended use

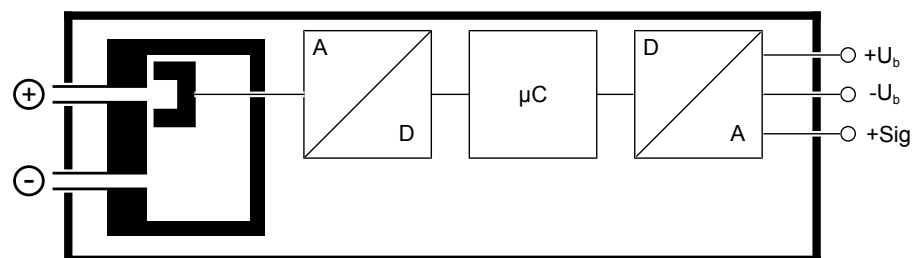
The DE25 is a differential pressure transmitter for measuring over-pressure, under-pressure and differential pressure in neutral, non-aggressive gaseous media.

1.3 Equipment versions

The appearance of the various models differs in terms of the electrical connection type.



1.4 Function diagram



1.5 Design and mode of operation

The basis of this transmitter is a piezo-resistive sensor element. The pressure that is to be measured acts directly onto a silicon diaphragm equipped with piezo-resistive resistors. The active pressure generates changes in resistance that are evaluated by the device's electronics and transformed into an analogue signal. The output signal is usually available as a current or voltage signal.

2 Technical Data

2.1 Generalities

Reference conditions (acc. to IEC 61298-1)		
Temperature	+15 ... +25 °C	
Relative humidity	45 ... 75 %	
Air pressure	86 ... 106 kPa	860 ... 1060 mbar
Installation position	User-defined	

2.2 Input variables

Measuring variable

Differential pressure, positive and negative over-pressure

Measuring ranges

Measuring range	Stat. operating pressure max.	Bursting pressure
mbar	mbar	mbar
0 ... 2.5	50	150
0 ... 4	50	150
0 ... 6	50	150
0 ... 10	100	300
0 ... 16	100	300
0 ... 25	250	750
0 ... 40	250	750
0 ... 60	500	1500
0 ... 100	500	1500
-2.5 ... +2.5	50	150
-4 ... +4	50	150
-6 ... +6	50	150
-10 ... +10	100	300
-16 ... +16	100	300
-25 ... +25	250	750
-40 ... +40	250	750
-60 ... +60	500	1500

2.3 Output sizes

	Electricity	Voltage
Output signal	0 ... 20 mA 4 ... 20 mA	0 ... 10 V
Admissible apparent ohmic resistance	$R_L \leq ((U_b - 10V) \cdot 50\Omega) + 300\Omega$	$U_b < 15 \text{ V} \rightarrow R_L \geq 100 \text{ k}\Omega$ $U_b \leq 15 \text{ V} \rightarrow R_L \geq 2 \text{ k}\Omega$

2.4 Measurement accuracy

Measuring range		2.5	4	6	10	16	25	40	60	100
Characteristic curve deviation ⁺⁾										
Max.	%FS					2.5 (1.0)				
Type	%FS					1.5 (0.5)				
TK span ^{x)}										
Max.	%FS	1.0	1.0	1.0	0.3	0.3	0.3	0.3	0.3	0.3
Type	%FS	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
Tk zero-point ^{x)}										
Max.	%FS / 10K	1.0	1.0	1.0	0.4	0.4	0.4	0.4	0.4	0.4
Type	%FS / 10K	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2

Measuring range		± 2.5	± 4	± 6	± 10	± 16	± 25	± 40	± 60
Characteristic curve deviation ⁺⁾									
Max.	%FS					2.5 (1.0)			
Type	%FS					1.5 (0.5)			
TK span ^{x)}									
Max.	%FS / 10K	1.0	0.5	0.3	0.3	0.3	0.3	0.3	0.3
Type	%FS / 10K	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
Tk zero-point ^{x)}									
Max.	%FS / 10K	1.0	0.5	0.4	0.4	0.4	0.4	0.4	0.4
Type	%FS / 10K	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2

⁺⁾ Characteristic curve deviation (non-linearity and hysteresis) at 25°C and rated voltage.

A smaller deviation can be realised in certain measuring ranges (values in brackets). Please contact our sales department in this case.

^{x)} with respect to the measuring range (FS).

2.5 Auxiliary energy

	Current output	Voltage output
Rated Voltage	24 V AC/DC	24 V AC/DC
Admissible operating voltage	12 ... 32 V AC/DC	12 ... 32 V AC/DC
Limits	ca. 23 mA	approx. 13 V

2.6 Application conditions

Increase ambient temperature	-10 ... +50 °C
Media temperature	-10 ... +50 °C
Storage temperature	-20 ... +70 °C
Enclosure protection class	IP65 as per EN 60529
EMC	EN 61326-1:2013 EN 61326-2-3:2013
RoHS	EN 50581:2012

2.7 Construction design

2.7.1 Process connection

2.7.2 Electrical connection

M12 plug connection	4-pin, male, Coding A
M12 connection cable (see accessories)	4 x 0.34 mm ² sheath PUR Ø 5.2 mm Bending radius (fixed) 5 x Ø Bending radius (mobile) 10 x Ø

Cable screw connection	M16 x 1.5
	min. terminal range 4.5 mm
	max. terminal range 10.0
Connection terminal	Single-wire (rigid) 0.2 ... 2.5 mm ²
	Fine wire (flexible) 0.2 ... 2.5 mm ²
	Fine-wire (flexible) with ferrules 0.2 ... 2.5 mm ²

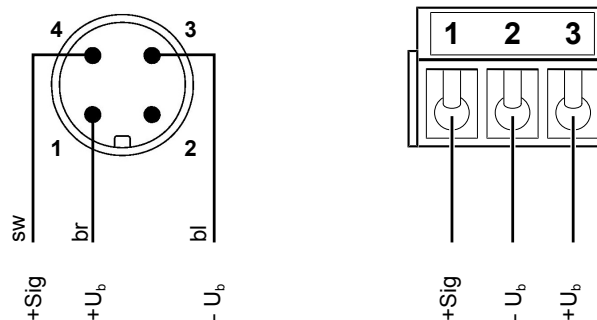


Illustration 3: Electrical connection

2.7.3 Materials

Housing	Polyamide PA 6.6
M12 plug	Polyamide PA 6, brass, gold
Cable screw connection	Polyamide PA 6
Materials in contact with media	Silicon, polyester glass-fibre reinforced, polyamide PA 6.6, 1.4310, Tygon [®] , aluminium, NBR

2.7.4 Assembly

Integrated wall mounting straps

2.7.5 Dimensional drawings

All dimensions in mm unless otherwise stated

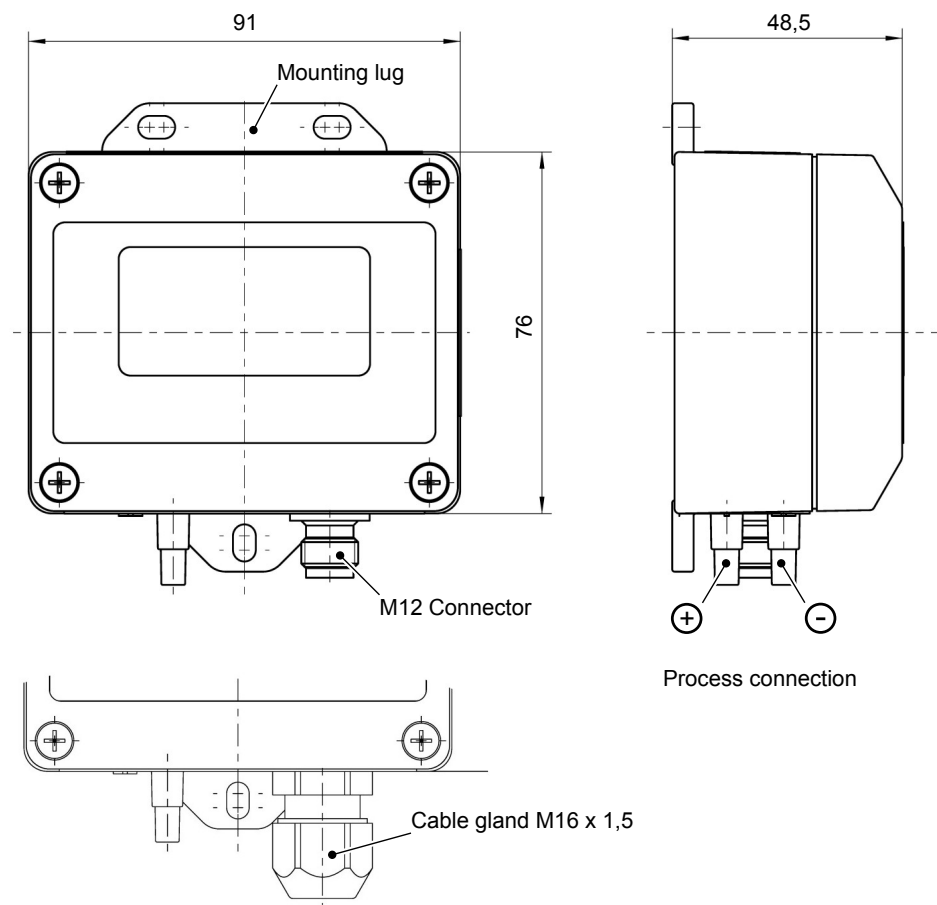


Illustration 4: Front view

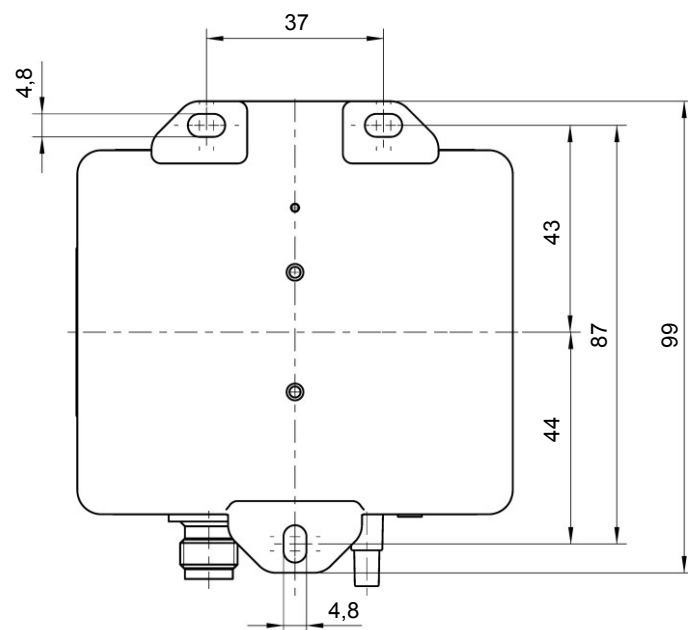
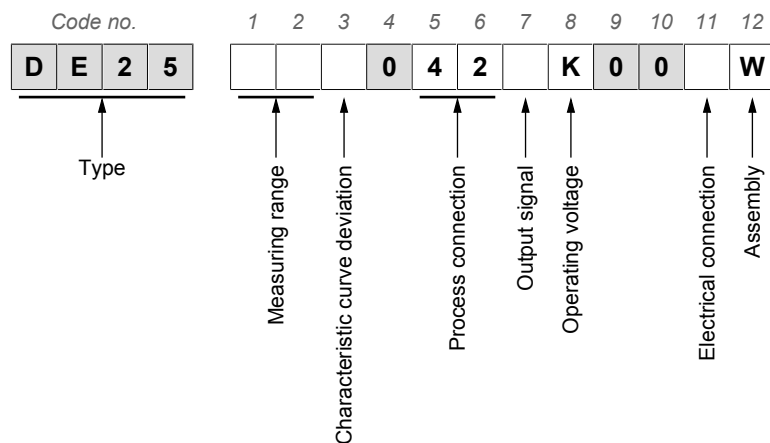


Illustration 5: Rear view

3 Order Codes



Measuring range

[1.2]	Measuring range	Static operating pressure
98	0 ... 2.5 mbar	50 mbar
52	0 ... 4 mbar	50 mbar
53	0 ... 6 mbar	50 mbar
54	0 ... 10 mbar	100 mbar
55	0 ... 16 mbar	100 mbar
56	0 ... 25 mbar	250 mbar
57	0 ... 40 mbar	250 mbar
58	0 ... 60 mbar	500 mbar
59	0 ... 100 mbar	500 mbar
A6	-2.5 ... +2.5 mbar	50 mbar
A7	-4 ... +4 mbar	50 mbar
A8	-6 ... +6 mbar	50 mbar
A9	-10 ... +10 mbar	100 mbar
B1	-16 ... +16 mbar	100 mbar
B2	-25 ... +25 mbar	250 mbar
C5	-40 ... +40 mbar	250 mbar
B3	-60 ... +60 mbar	500 mbar

Characteristic curve deviation (relative pressure)

[3]	
K	Characteristic curve deviation 2.5%
M	Characteristic curve deviation 1.0%

Process connection:

[5.6] (Code no.)	
42	Plug nipple for 6/4 mm or 8 /6 mm hose

Output signal:

[7] (Code no.)	
A	0 ... 20 mA
P	4 ... 20 mA

[7]	(Code no.)
C	0 ... 10 V

Operating voltage:

[8]	(Code no.)
K	24 V DC

Electrical connection

[11]	(Code no.)
M	M12 plug connection
E	Cable screw connection

Assembly:

[12]	(Code no.)
W	Wall-mounting

3.1 Accessories

Order no.	Planned measures	No. of Poles	Length
06401993	Connection cable with M12 connector	4-pin	2 m
06401994	Connection cable with M12 connector	4-pin	5 m
06401563	Connection cable with M12 connector	4-pin	7 m
06401572	Connection cable with M12 connector	4-pin	10 m

Connection set

Order no.	Planned measures	hose	Length
04005129	Plastic connection set	2 x 6/4 mm	1 m
04005148	Plastic connection set	2 x 6/4 mm	2.5 m
04005163	Plastic connection set	2 x 6/4 mm	5 m
04005216	Plastic connection set	2 x 6/4 mm	10 m
04005217	Plastic connection set	2 x 8/6 mm	1 m
04005218	Plastic connection set	2 x 8/6 mm	5 m

3.2 Information about the document

This document contains all technical data about the device. Great care was taken when compiling the texts and illustrations; Nevertheless, errors cannot be ruled out.

Subject to technical amendments.

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