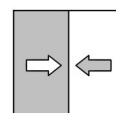




Data sheet

DE40

Differential pressure transmitter



1 Product and functional description

1.1 Delivery scope

- Differential pressure transmitter DE40
- Operating Instructions

1.2 Performance characteristics

Important features

- Very versatile
- Small and compact
- Variable connection technology

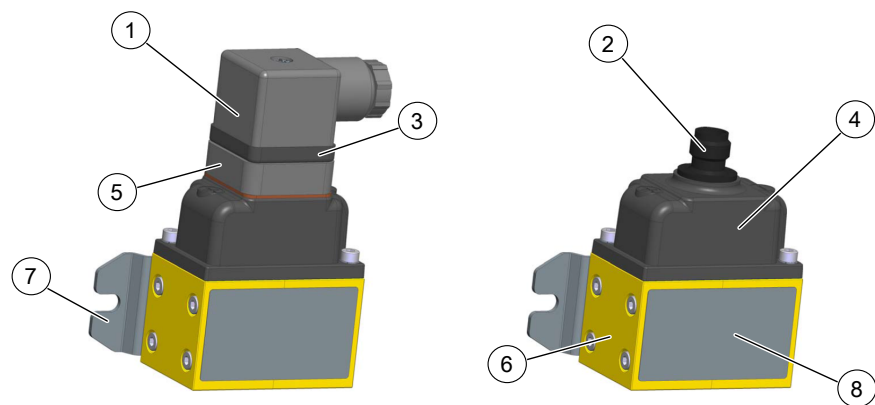
Typical applications

- Differential pressure measurements between the supply and return on heating systems
- Monitoring of filters, fans and compressors

Application areas

- Industrial measuring equipment
- Sanitary measuring equipment

1.3 Product overview



Standard plug DIN EN 175301-803 A

M12 plug DIN EN 61076-2-101

Fig. 1: Overview

1	Line socket (4-pin)	2	M12 flanged connector (5-pin)
3	Profile seal	4	Closing lid
5	Flanged connector (4-pin)	6	Pressure chamber
7	Wall mount	8	Type plate

Design of the measuring system

The pressure chamber of the DE40 can be made of brass or stainless steel. There are also several options for the process connection. Please note that the version with the process connection at the rear cannot be mounted to a wall.

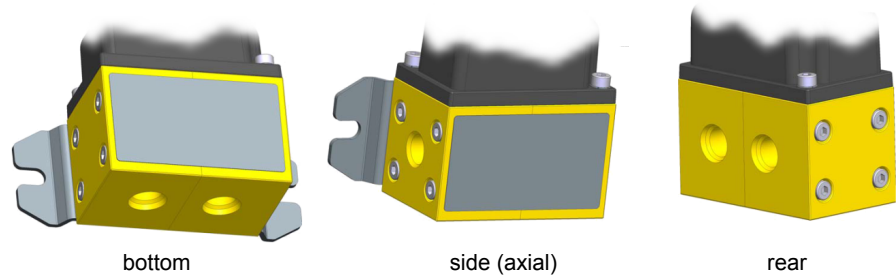


Fig. 2: Process connection

1.4 Use as intended

The differential pressure transmitter DN 40 is suitable for measuring over-pressure, under-pressure and differential pressure in basically neutral fluids and gases. It is suitable for all measuring tasks in industrial or sanitary sectors.

Please check with the manufacturer first before using with aggressive or dirty media. Please note the technical data of the materials used.

1.5 Function diagram

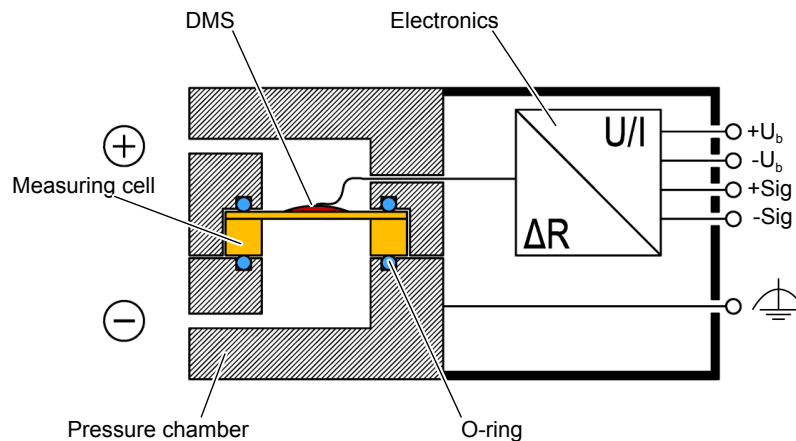


Fig. 3: Function diagram

1.6 Design and mode of operation

The differential pressure transmitters of this type series DN40 are equipped with a non-sensitive ceramic pressure measuring cell. The measuring bridge is pressed directly onto the ceramic membrane by means of a thick layer technology.

The measuring pressure acts on the membrane which in turn deforms. In turn, the bridge resistors change and a voltage signal that is proportional to the measuring pressure is created. The electronics integrated into the transmitter housing convert this signal into a uniform signal 0...10V or 4...20mA.

2 Technical data

2.1 Generalities

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

2.2 Input variables

The unit is designed for the pressure level PN16 in all measuring ranges.

Measuring range		Pressure safety		
	<i>SI unit</i>	<i>(+) side</i>	<i>(-) side</i>	<i>Bursting pressure on both sides</i>
0...0.6 bar	0 ... 60 kPa	10 bar	5 bar	64 bar
0...1 bar	0 ... 100 kPa	10 bar	5 bar	64 bar
0...1.6 bar	0 ... 160 kPa	10 bar	5 bar	64 bar
0...2 bar	0 ... 200 kPa	10 bar	5 bar	64 bar
0...2.5 bar	0 ... 250 kPa	10 bar	5 bar	64 bar
0...4 bar	0 ... 400 kPa	21 bar	15 bar	64 bar
0...6 bar	0 ... 600 kPa	21 bar	15 bar	64 bar
0...10 bar	0 ... 1000 kPa	25 bar	25 bar	64 bar

2.3 Output parameters

Output signal		4 ... 20 mA	0 ... 10 V
Limits		Max. 21 mA	Max.. 10.5V
Apparent ohmic resistance	24 V DC	≤ 700 Ω	> 2 kΩ
	24 V AC	≤ 400 Ω	
Connection type		3-Conductor	3-Conductor

2.4 Measurement accuracy

Characteristic curve deviation ^(*)	≤1%
Deviating from this measuring range 0 ... 0.6 bar	≤1.6%

^(*) incl. non-linearity and hysteresis in the entire temperature range 10 ... 70 °C

2.5 Auxiliary energy

Rated Voltage	24 V AC (50...60 Hz) or 24 V DC
Admissible operating voltage	19.2 ... 28.8 V AC/DC (24V AC/DC ±20%)
Power consumption	< 1.5 W (VA)

2.6 Application conditions

Ambient temperature range	-20 ... +80 °C
Storage temperature range	-20 ... +90 °C
Medium temperature range (for non-freezing media)	-20 ... +80 °C
EMV	EN 61326-1:2013 EN 61326-2-3:2013
RoHS	EN 50581:2012
Type of protection	IP65 as per DIN EN 60529

Materials of the parts that come into contact with the surroundings

Closing lid	Zamak3 ZL0400 (GD-ZnAL4)
Pressure chamber	Brass CW614N (formerly 2.0401) or stainless steel 1.4305
Wall mount	Stainless steel 1.4301
Process connection	Nickel-plated brass or stainless steel (1.4571)
Electrical plug	Polyamid

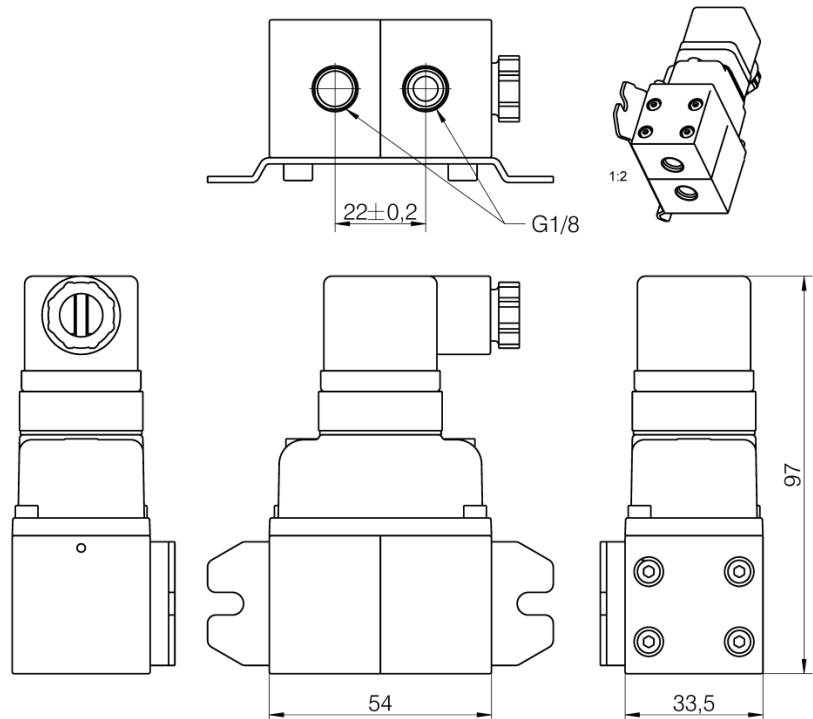
Materials of the parts that come into contact with the measuring medium

Pressure chamber	Brass 2.0401 or stainless steel 1.4305
Sensor membrane	Ceramic (Al ₂ O ₃) with a Parylene coating
- O-ring	EPDM
Process connection	Nickel-plated brass
- Cutting ring screw connection O-ring	EPDM
- Pneumatic plug connector O-ring	NBR

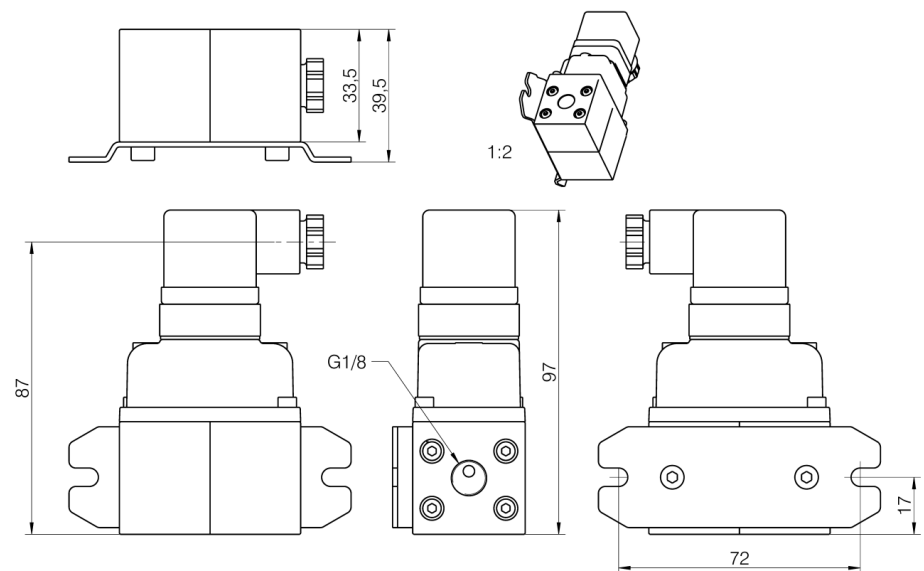
2.7 Construction design

2.7.1 Dimensional picture

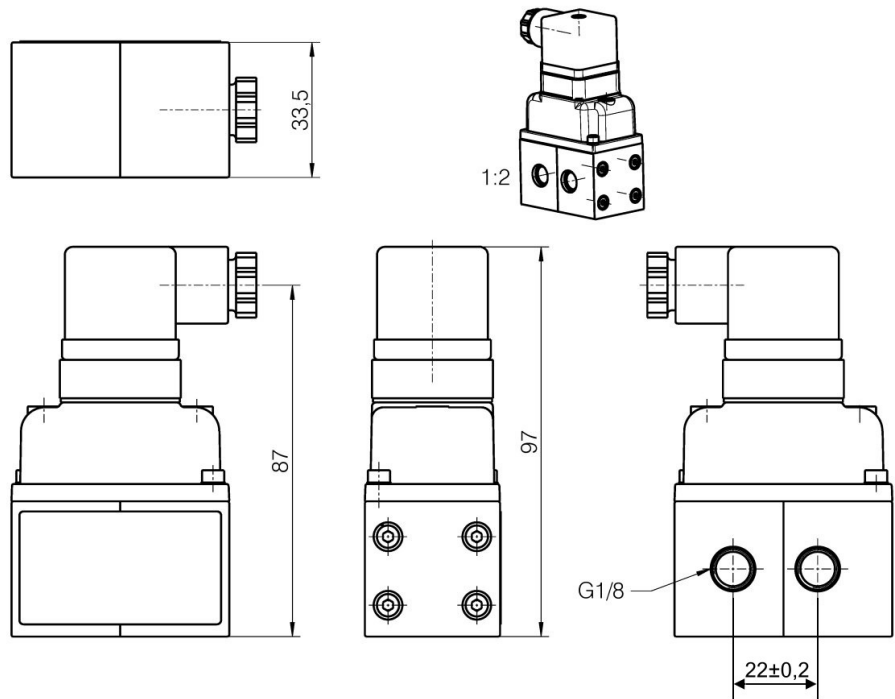
2.7.1.1 Process connection below



2.7.1.2 Process connection side (axial)



2.7.1.3 Process connection rear



2.7.2 Process connection

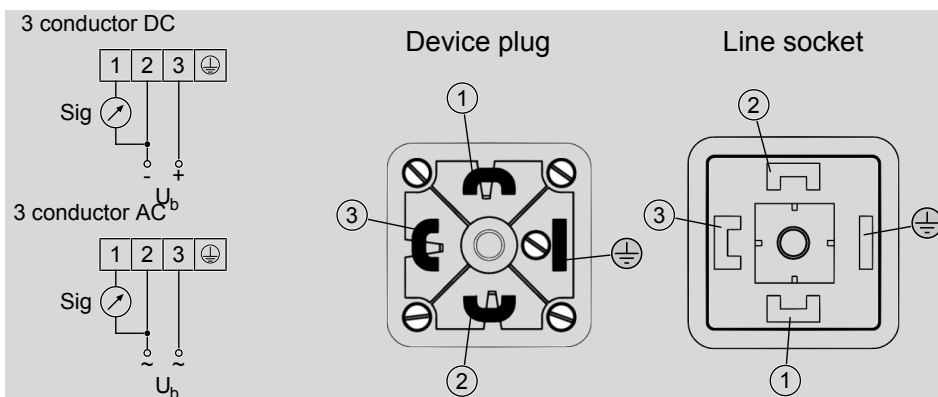
Type	the material.	Seal
Inner thread G1/8	Brass or stainless steel 1.4305 (+)	---
Cutting ring connection for 6 or 8 mm pipe	Brass or stainless steel 1.4771	EPDM silicone-free
Pneumatic plug connector for 6/4 or 8/6 mm hose	Nickel-plated brass stainless steel 1.4401	NBR silicone-free

(+) depends on the design of the pressure chamber

2.7.3 Electrical connections

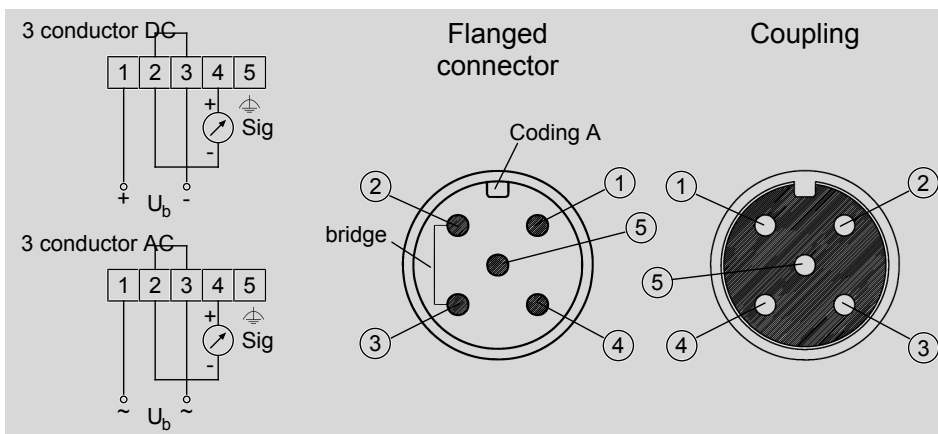
Standardised plug DIN EN 175 301-803-A

A silicone and halogen-free control cable 4 x 0.5 mm² to max. 1.5 mm² can be used as a connection cable.

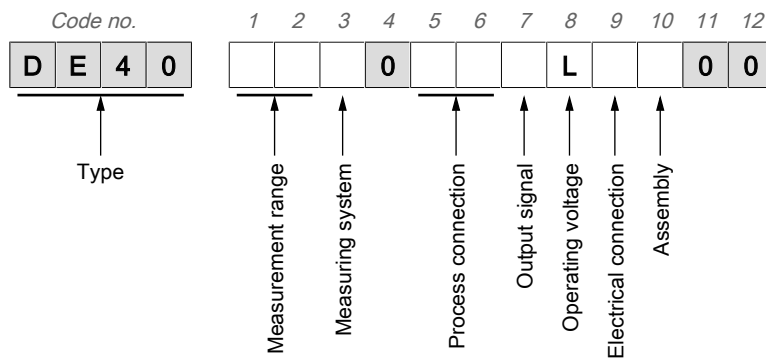


M12 plug DIN EN 61079-2-101

A flexible, silicone and halogen-free control cable (5 x 0.34 mm²) with an axial M12 coupling can be used as a connection cable. Prefabricated lines in different lengths are available as accessories.



3 Order Codes



[1.2] Measuring range

01	0...0.6 bar
02	0...1 bar
03	0...1.6 bar
45	0...2 bar
04	0...2.5 bar
05	0...4 bar
06	0...6 bar
07	0...10 bar

[3] Design of the measuring system (pressure chamber)

M	Pressure chamber brass (CW614N), process connection below
N	Pressure chamber brass (CW614N), process connection side (axial)
H	Pressure chamber brass (CW614N), process connection at the rear
W	Pressure chamber stainless steel (1.4305), process connection below
V	Pressure chamber stainless steel (1.4305), process connection side (axial)
I	Pressure chamber stainless steel (1.4305), process connection at the rear

[5.6] Process connection

00	Inner thread G $\frac{1}{8}$
P6	Pneumatic plug connector for 6/4 mm hose
P8	Pneumatic plug connector for 8/6 mm hose
28	Cutting ring connection in brass for 6 mm pipe
29	Cutting ring connection in brass for 8 mm pipe
24	Cutting ring connection in stainless steel (1.4571) for 6 mm pipe
25	Cutting ring connection in stainless steel (1.4571) for 8 mm pipe

[7] Output signal (3-wire connection)

C	0 ... 10 V DC
P	4 ... 20 mA DC

[8] Operating voltage	
L	24 V AC/DC

[9] Electrical connection	
H	Standardised plug (valve plug) DIN EN 175 301-803-A
M	M12 plug DIN EN 61079-2-101

[10] Assembly	
0	Standard (attachment boreholes ⁽⁺⁾)
W	Wall mounting

⁽⁺⁾ not required for process connection at the rear

3.1 Prefabricated connection lines

Art. No.	Planned measures	Length
06401571	5 x 0.34 mm ² PUR cable with M12 coupling, straight	1 m
06401995	5 x 0.34 mm ² PUR cable with M12 coupling, straight	2 m
06401996	5 x 0.34 mm ² PUR cable with M12 coupling, straight	5 m
06401564	5 x 0.34 mm ² PUR cable with M12 coupling, straight	7 m
06401573	5 x 0.34 mm ² PUR cable with M12 coupling, straight	10 m
06401567	5 x 0.34 mm ² PUR cable with M12 coupling, straight	15 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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