

## DE13 || Differential Pressure Transmitter

The differential pressure transmitter DE13 for differential, negative and positive pressure measurement using a diaphragm system with liquid filling. The instrument transmits a standard electrical signal.

### Typical Applications

- Monitoring filter condition
- Flow control
- Monitoring  $\Delta p$  at valves
- Pump control

### Construction and Operation

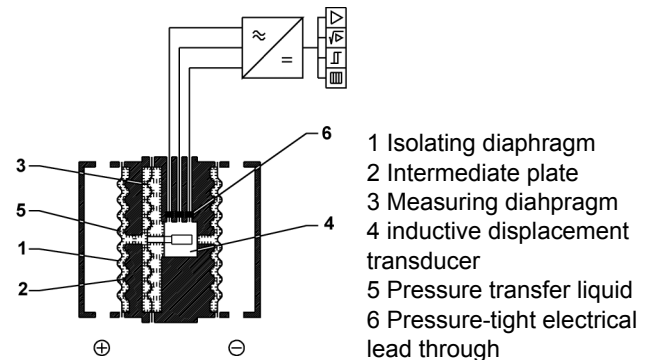
The pressures to be compared each act on an outer flexible stainless steel isolating diaphragm. They are transferred to the sensing diaphragm by the pressure transfer fluid. When pressures are equal on both sides of the sensing diaphragm, it is at zero position.

Pressure difference across the sensing diaphragm causes it to deflect away from the higher pressure side, resulting in linear displacement of the LVDT core. This displacement is sensed by the LVDT's coils, and converted by an electronic module to an output signal proportional to the differential pressure.

Inward deflection of each isolating diaphragm is limited by the intermediate plate behind it. This also limits the pressure that can be transferred to the sensing diaphragm. Thus, all three diaphragms are fully protected against excess differential pressure in either direction, and also against high static pressures.



### Functional Scheme



### Main Features

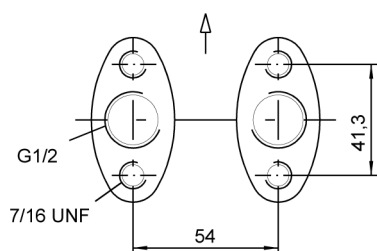
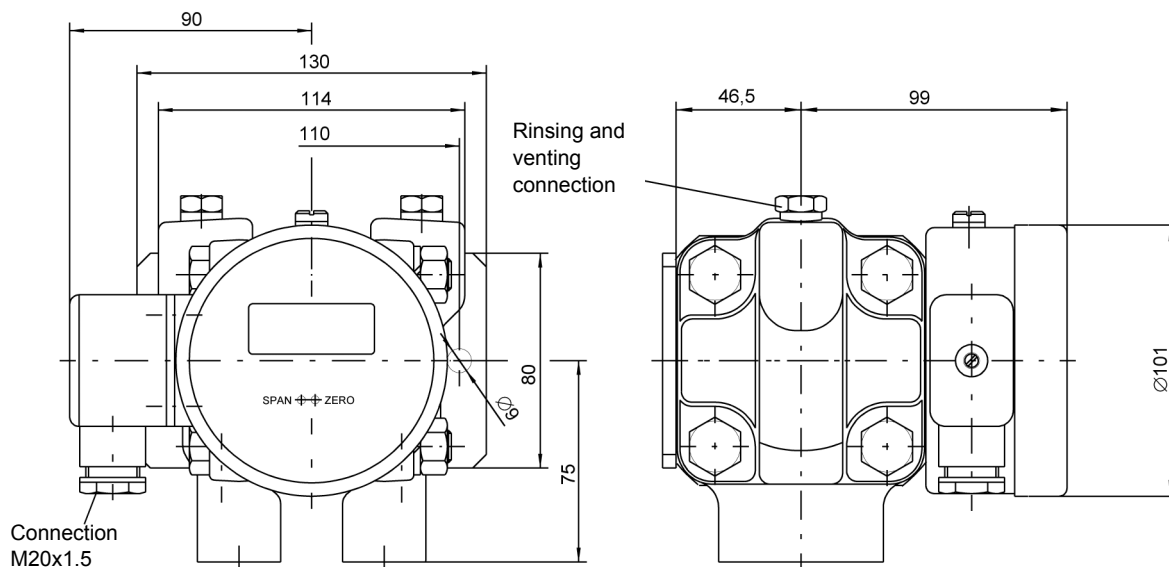
- highly corrosion resistant
- rugged, wear resistant sensor design
- low hysteresis
- easy to rinse pressure chambers
- unaffected by fouling



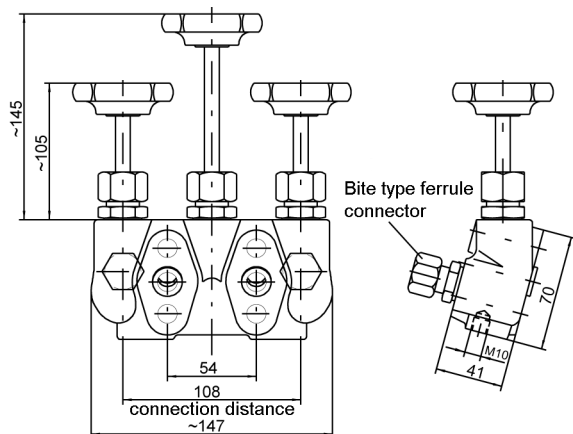
## Specifications

	<b>General</b>		
Measuring range	0 - 40 mbar to 0 - 25 bar (see Ordering Code)		
Nominal pressure	100 bar		
Max. static operating pressure	100 bar		
Max. pressure load	overpressure safe up to max. static operating pressure		
Linearity	< 1% FS		
Hysteresis	< 0.3% FS		
Temperature drift	< 0.5% / 10 K		
Perm. ambient temperature	-10°C bis +60°C		
Perm. medium temperature	70°C		
Protection class	IP 65 acc. to DIN EN 60529		
	<b>Electrical Data</b>		
Operating voltage	24 V AC	24 V AC	
	24 V DC	24 V DC	24 V DC
Power consumption	approx. 3 VA / 3 W	approx. 3 VA / 3 W	approx. 3 W
Electrical connection	3-wire	3-wire	2-wire
Output signal	0 - 20 mA	0 - 10 V DC	4 - 20 mA
Load	max. 1000 Ω	> 2 k Ω	max. 450 Ω
Current limiting	approx. 30 mA	-	approx. 30 mA
Voltage limiting	-	approx. 12 V DC	-
Indication	3½ digit LC-Display		
Slope adjustment	approx. 10% FS		
Zero adjustment	approx. 10% FS		
	<b>Connection</b>		
Electrical connection	Plug connection		
Pressure connection	Flange connection acc. to DIN EN 61518 female thread G ½ (other connections on request)		
Rinsing and venting connection	G 1/8 female thread with sealing plug		
	<b>Materials, Mounting</b>		
Pressure chamber, diaphragms (isolating/sensing)	Chrome-nickel-steel 1.4404 (AISI 316L - in contact with medium)		
Gaskets	Viton® / in contact with medium		
Intermediate plate	Aluminium, hard coated		
Electronics housing	Chrome-nickel-steel 1.4301		
Materials on request	Pressure chamber and isolating diaphragms of Hastelloy C® (PTFE-coated sealing)		
Mounting / Pressure connection	Process pipe connection to be erected by using bite type ferrule connectors or direct fitting of pipe into G½ F thread. Make sure that the connection is firmly sealed. The instrument can be wall mounted using wall mounting plate or pipe mounted using mounting kit DZ10.		
	<b>Accessories</b>		
DZ36	Blocking/equalising valve The optional 3-spindle blocking/equalising valve DZ36 may be flanged directly onto the connection flanges acc. to DIN EN 61518. Differential pressure transmitters should be connected using valves for they then can be shut off the system easily (for inspection, maintenance etc.).		
DZ10	Mounting kit for 2" pipes		

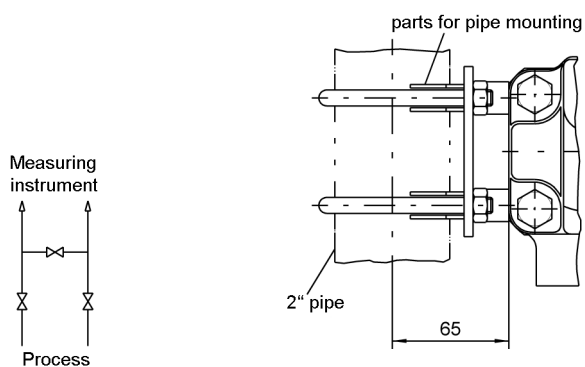
**Dimensions** (all units in mm unless otherwise stated)



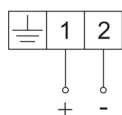
Accessory: DZ36 blocking/equalising valve



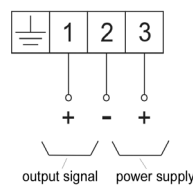
Accessory: Mounting kit for 2" pipe DZ10



Electrical connection: 2-wire



Electrical connection: 3-wire



## Ordering Code

Differential Pressure Transmitter DE13 

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### Measuring range

0 ... 40 mbar	>	5	7
0 ... 60 mbar	>	5	8
0 ... 100 mbar	>	5	9
0 ... 160 mbar	>	6	0
0 ... 250 mbar	>	8	2
0 ... 400 mbar	>	8	3
- 40 ... 60 mbar	>	7	0
- 60 ... 100 mbar	>	7	2
-100 ... 150 mbar	>	7	4
-150 ... 250 mbar	>	7	6
0 ... 0.6 bar	>	0	1
0 ... 1 bar	>	0	2
0 ... 1.6 bar	>	0	3
0 ... 2.5 bar	>	0	4
0 ... 4 bar	>	0	5
0 ... 6 bar	>	0	6
0 ... 10 bar	>	0	7
0 ... 16 bar	>	0	8
0 ... 25 bar	>	0	9
-1 ... 0.6 bar	>	3	2
-1 ... 1.5 bar	>	3	3
-1 ... 3 bar	>	3	4
-1 ... 5 bar	>	3	5

### Pressure connection

Flange connection acc. to DIN EN 61518 with female thread G1/2	>	0	3
Connection branch with female thread 1/2 -14 NPT	>	0	5
Connection shank with male thread G1/4 B stainless steel	>	1	1
Connection shank with male thread G1/2 B stainless steel	>	1	3
Byte type ferrule connector of 1.4571 for 12 mm pipe	>	2	7

### Electrical output signal

0 - 20 mA 3-wire (STANDARD)	>	A
4 - 20 mA 2-wire <b>only for 24 V DC</b>	>	B
0 - 10 V DC 3-wire (STANDARD)	>	C
4 - 20 mA 3-wire (STANDARD)	>	P

### Operating voltage

24 V AC ±10%	>	4
24 V DC ±10%	>	9

### Indication / Switching function

Without indication / switching function	>	0
3½-digit indication	>	1

### Mounting

Rear mounting holes	>	E
Wall mounting kit	>	W
Pipe mounting kit	>	R