

## Data sheet

DE27

Digital differential pressure transmitter

The DE27 is a multi-functional differential pressure transmitter. It is suitable for measuring over-pressure, under-pressure and differential pressure in dry and neutral gaseous media.

Fields of application include:

- Air-conditioning technology
- Ventilation technology
- Environmental technology

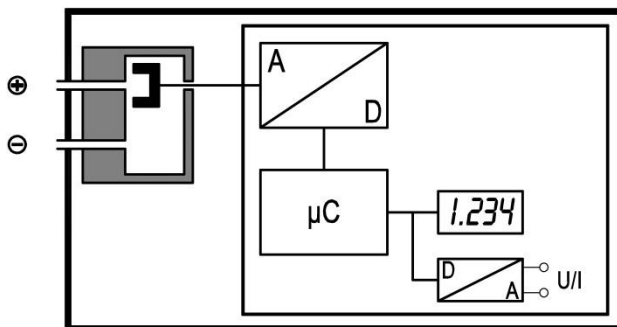
### Design and mode of operation

The basis of this transmitter is a piezoresistive sensor element. The pressures that are to be measured impact directly on a silicon membrane equipped with piezoresistive resistors.

Changes in pressure generate changes in resistance that are analysed by electronics integrated into the device; these can be displayed on the optional display and converted to an output signal.

The output signal, which is available as current or voltage, can be damped, spread and inverted.

### Functional Schematic

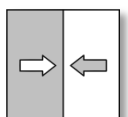


### Important features

- Robust, resistant to overpressure and maintenance-free
- Signal output with the option of characteristic curve spread and inversion with any offset within the measuring range.
- Setting of all parameters and measuring point records by means of a transmitter PC Interface EU03 (accessories).

### Typical applications

- Monitoring of automatic roll filters
- Extraction systems etc.
- Draft measurement in chimneys
- Flow and control pressure measurements



## Technical data

		0 ... range									± ranges															
Basic measuring range <sup>o)</sup>		mbar	4	6	10	16	25	40	60	100	2.5	4	6	10	16	25	40	60								
		Pa	400	600	1000	1600	••)	••)	••)	••)	250	400	600	1000	1600	••)	••)	••)								
		inWC	1.6	2.5	4	6.5	10	16	25	40	1	1.6	2.5	4	6.5	10	16	25								
Stat. operating pressure	max.	mbar	50			100			250			500			50			100			250			500		
Bursting pressure		mbar	150			300			750			1500			150			300			750			1500		
Characteristic curve deviation <sup>o)</sup>	max.	%FS	2.5 (1.0)									2.5 (1.0)														
	typ.	%FS	1.5 (0.5)									1.5 (0.5)														
TK range <sup>oo)</sup>	max.	%FS/10K	1.0			0.3			1.0			0.5			0.3											
	typ.	%FS/10K	0.3									0.3														
Tk zero point <sup>oo)</sup>	max.	%FS/10K	1.0			0.4			1.0			0.5			0.4											
	typ.	%FS/10K	0.2									0.2														

- ) : In addition to the listed units, the following units are also available: bar, Pa, kPa and psi
- ) : Only available for four digit displays (-9999...+9999). In this case, the last digit can be unsettled.
- o) : Non-linearity and hysteresis at 25°C; basic measuring range (characteristic curve linear, not spread); values in brackets only on request
- oo) : in terms of the basic measuring range (not spread), compensation range 0...60°C

		<b>General points</b>	
Admissible ambient temperature		-10 ... 70 °C	
Admissible media temperature		-10 ... 70 °C	
Admissible storage temperature		-20 ... 70 °C	
Enclosure protection class		IP 65 acc. to DIN EN 60529	
		<b>Electrical data</b>	
Electrical connection type		3-Conductor	2-Conductor
Rated Voltage		24 V AC/DC	24 V DC
Allowed operating voltage U <sub>b</sub>		12 ... 32 V AC/DC	6 ... 32 V DC
Output signal		0 ... 10 V DC	4 ... 20 mA DC
Admissible apparent ohmic resistance		U <sub>b</sub> = 12...15 V → R <sub>L</sub> ≥ 15kΩ U <sub>b</sub> ≥ 15V → R <sub>L</sub> ≥ 12kΩ	R <sub>L</sub> ≤ (U <sub>b</sub> - 6V) / 0,02 A
Characteristic curve		linear	linear
Current draw		≤ 15 mA	≤ 22 mA
Measured Value Display <sup>1</sup>		3½ or 4 digit LCD	3½ or 4 digit LCD
Note: In the case of four digit display, the display resolution may be larger than the measuring resolution (approx. 3500 digits). This can lead to an unsettled presentation of the values.			
		<b>Ports</b>	
Process connection		2x plug nipple for 6/4 mm hose	
electr. connection		M12 plug connection	
		<b>Materials</b>	
Housing		Polyamide PA 6.6, Polycarbonate PC	
Media-contacting material		Silicon, PVC, aluminium, brass	
		<b>Assembly</b>	
		Wall mounting by means of assembly straps	

<sup>1</sup> Stating measuring unit

## Programming

Via PC adapter EU03 (accessories); can be locked with a password.

	Settings:
Attenuation	0,0 ... 100,0 s (jump response time 10 / 90 %)
Measuring range unit	mbar / Pa / in H2O / bar / kPa / psi / % <sup>(0)</sup>
Zero-point stabilising	0 ... 100 digits <sup>(1)</sup>
Start / end of measuring range	Start / end of basic measuring range <sup>(2)</sup>
Zero point correction	± 100 digits <sup>(3)</sup>
Implementation of characteristic curve	linear, max. 4:1 spread, inverted

Comments:

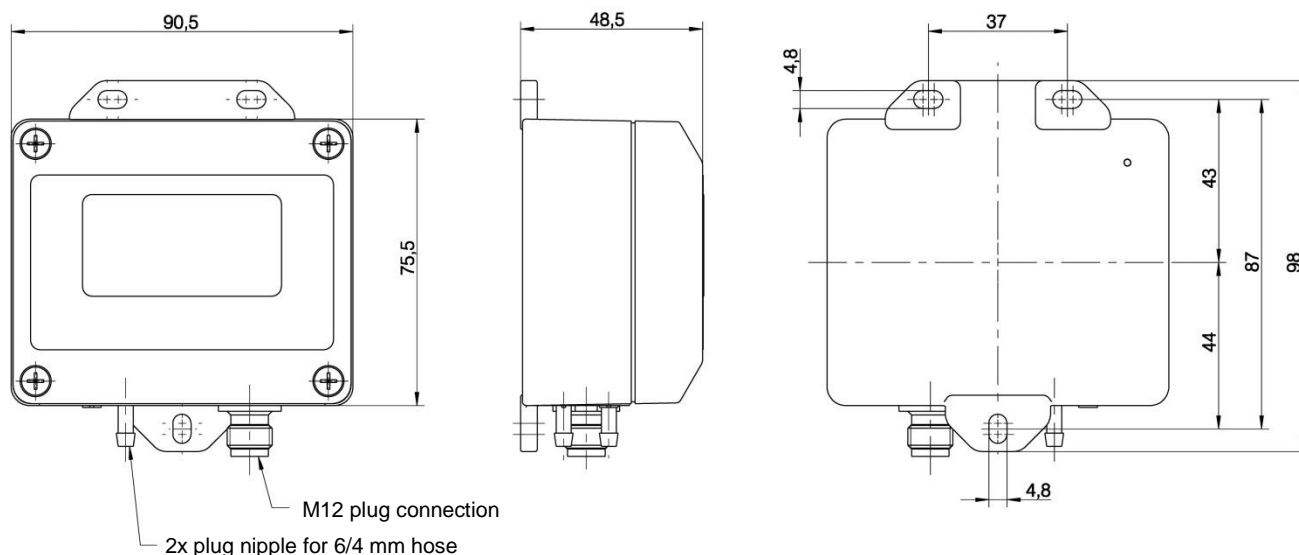
<sup>(0)</sup>: The unit % refers to the measuring range defined by the start of the measuring range (= 0%) and the end of the measuring range (= 100%).

<sup>(1)</sup>: Measured values ( $\leq 100$  digits around zero) are set to zero (e.g. to suppress leak flow rate).

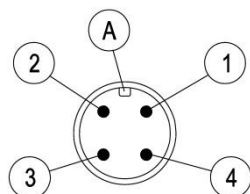
<sup>(2)</sup>: Maximum effective spread 4:1. Only the output signal is influenced. Therefore falling characteristic curve is possible. If the start of the measuring range > the end of the measuring range; the measuring range unit % refers to the range defined in this way!

<sup>(3)</sup>: Zero point correction for compensation of various installation positions.

## Dimensional drawings (All dimensions in mm unless otherwise specified)



## Electrical connection



### 2 wire connection (4...20 mA DC)

Pin	Signal name		Cable colour
1	Supply/output	+	brown
2	n.c.		white
3	Supply/output	-	blue
4	n.c.		black
A	Coding		

### 3 wire connection (0...10 mA DC) (0...10V DC)

Pin	Signal name		Cable colour
1	Supply	+U <sub>b</sub>	brown
2	n.c.		white
3	Supply	-U <sub>b</sub> /-Sig	blue
4	Delivery	+Sig	black
A	Coding		

**Order Codes**

**Digital differential pressure transmitter**

Type DE27     K 0 4 5     0   C W

**Measuring range Stat. operating pressure**

0 ... 4 mbar	50 mbar	>	5	2
0 ... 6 mbar	50 mbar	>	5	2
0 ... 10 mbar	100 mbar	>	5	4
0 ... 16 mbar	100 mbar	>	5	5
0 ... 25 mbar	250 mbar	>	5	6
0 ... 40 mbar	250 mbar	>	5	7
0 ... 60 mbar	500 mbar	>	5	8
0 ... 100 mbar	500 mbar	>	5	9
-2.5 ... 2.5 mbar	50 mbar	>	A	6
-4 ... 4 mbar	50 mbar	>	A	7
-6 ... 6 mbar	50 mbar	>	A	8
-10 ... 10 mbar	100 mbar	>	A	9
-16 ... 16 mbar	100 mbar	>	B	1
-25 ... 25 mbar	250 mbar	>	B	2
-40 ... 40 mbar	250 mbar	>	C	5
-60 ... 60 mbar	500 mbar	>	B	3

**Characteristic curve deviation (relative pressure)**

Characteristic curve deviation 2.5% .....(Standard) **K**  
 Characteristic curve deviation 1% .....(only on request) **C**

**Process connection**

Plug nipple for 6/4 mm hose .....> **4 5**

**Output signal**

4 ... 20 mA DC .. two-wire .....> **B**  
 0 ... 10 V DC .... three-wire .....> **C**

**Operating voltage**

24 V DC/AC..... (only voltage output) .....> **K**  
 24 V DC..... (only power output) .....> **P**

**Measured Value Display**

No Measured Value Display .....> **0**  
 3.5 character LCD .....> **1**  
 4 digit LCD .....> **A**

**Electrical connection**

M12 plug connection .....> **C**

**Assembly**

Wall mounting.....> **W**

**Accessories**

Purchase order number	Designation	No. of Poles	Usage	Length
06401993	Connection cable with M12 connector	4-pole	for power supply / output signal	2 m
06401994	Connection cable with M12 connector	4-pole	for supply / signal	5 m
EU03.F300	Adapter for parameterization via PC software for 3-wire transmitter			
EU03.F200	Adapter for parameterization via PC software for 2-wire transmitter			

