

Data sheet

DE46 | Digital differential pressure switch / transmitter with 4-digit colour change LCD

The DE46 is a multi-functional switching unit with an optional transmitter output.

It is suitable for measuring very small overpressure, underpressure and differential pressure levels in gaseous media.

Fields of application include

- Air conditioning and ventilation technology
- Environmental technology
- Clean room and laboratory technology

Design and mode of operation

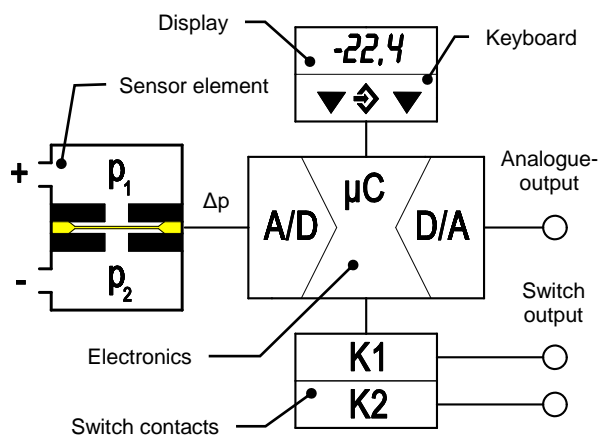
This switching device is based on a capacitive sensor element that is suitable for measuring overpressure, underpressure and differential pressure.

The measured pressure acts on the sensor element with a micromechanically produced differential condenser in silicon-glass technology.

Changes in pressure generate changes in capacity, which is evaluated by the device's electronics and transformed into signals on the display, switch contacts and an output signal.

The optional output signal can be dampened, spread, inverted and can also be transformed in a non-linear manner via a table function.

Function diagram

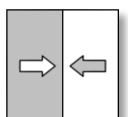


Important features

- Long-term stable measurement of very small pressure levels
- Robust, resistant to overpressure and maintenance-free
- Optional signal output with possibility of characteristic curve spread and reversal with any off-set
- Characteristic curve implementation via table with max. 30 measuring points
- Complete adjustment of all parameters and measuring point protocol possible through optional PC adaptor EU03

Typical applications

- Filter technology
- Precision air channel measurements
- Clean room pressure compensation
- Burner under-pressure measurement
- Furnace circulating air control



Technical data

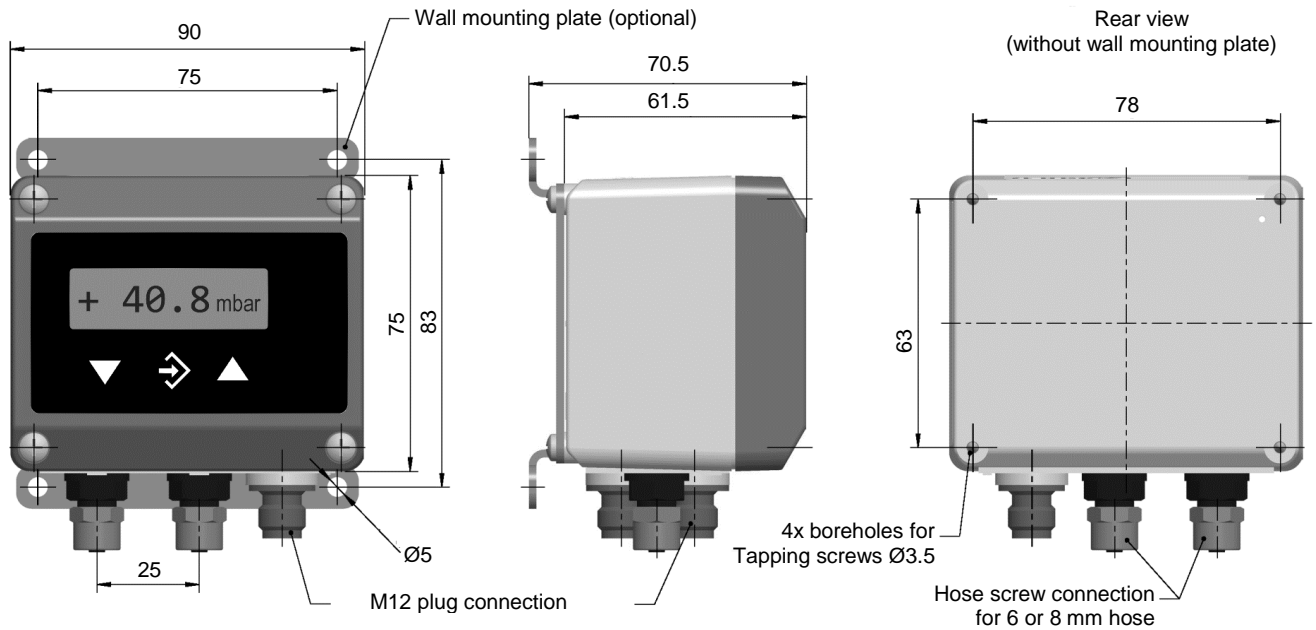
Basic measuring range	Pa	0-25	0-50	0-100	0-250	0-500	0-1000	- 25...+ 25	- 50...+ 50	- 20...+ 80	- 100...+ 100
Max. stat. operating pressure	bar	1.0									
Bursting pressure	bar	1.7									
Max. deviation from the characteristic curve	%FS	1.0									
Reproducibility	%FS	0.1									
Max. TK spread and zero point °°	%FS/10K	0.6									

°: Characteristic curve deviation (non-linearity and hysteresis) at 25°C, basic measuring range (linear characteristic curve, not spread)

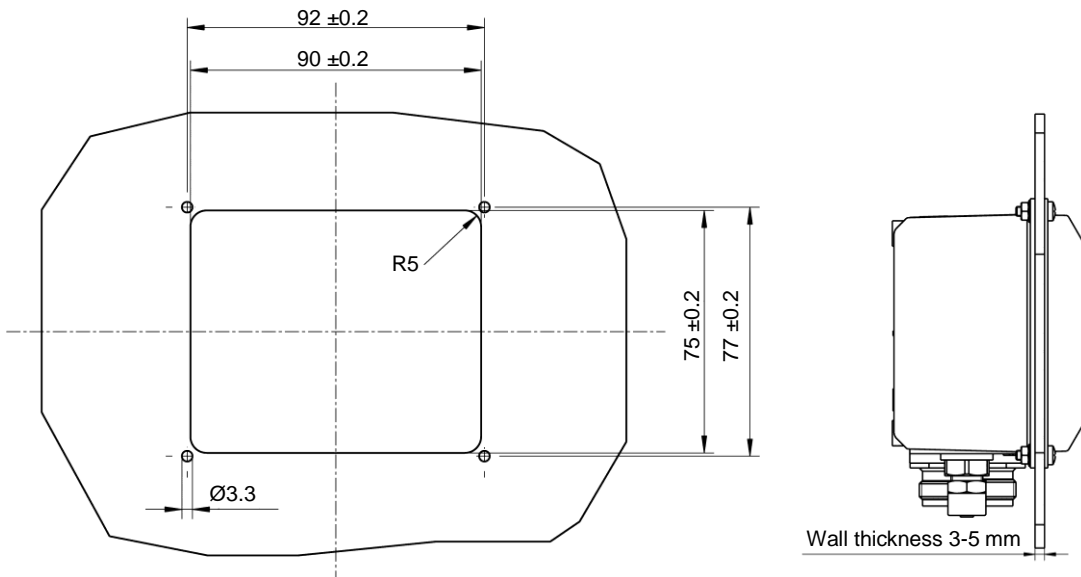
°°: with reference to the basic measuring range (not spread), Compensation range 4...50°C.

	General data	
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	
	Electrical data	
Rated Voltage	24 V DC/AC	
Admissible operating voltage U_b	20 ... 32 V DC/AC	
Connection type	Three-wire	
Output signal	0 ... 20 mA 4 ... 20 mA	0 ... 10 V DC
Apparent ohmic resistance	$U_b \leq 26V : R_L \leq (U_b - 4V)/0.02A$ $U_b > 26V : R_L \leq 1100\Omega$	$R_L \geq 2 k\Omega$
Power consumption	approx. 2 W / VA	
Measured Value Display	4-digit LCD, full graphic, colour backlighting	
	Switch contacts	
Progr. switching function	2 potential-free relay contacts Open contact (NO) / break contact (NC)	2 potential-free semiconductor switches (MOSFET) SPST-NO/NC
Switching voltage	max. 32 V DC/AC	3 ... 32 V DC/AC
Max. switching current	2A	0.25 A
max. switching output	64 W/VA	8 W/VA ($R_{on} \leq 4\Omega$)
	Connections, materials, assembly	
Electrical connections	Round plug connector M12 for supply and analogue output signal (5-pole, male) for switch contacts (4-pole, male)	
Pressure Connections	Hose screw connections made of Al, 6/4 mm or 8/6 mm	
Casing material	Polyamide PA 6.6	
Media-contacting material	Silicon, PVC, aluminium, brass	
Assembly	Wall mounting Panel mounting Assembly of the mounting rails	

Dimensional drawings (all dimensions in mm unless otherwise specified)



Cutout for panel mounting



Order Codes

Digital differential pressure switch / transmitter with 4-digit colour change LCD

Type DE46

		0	0			N	W		M	
--	--	---	---	--	--	---	---	--	---	--

Measuring range

- 0... 25 Pa..... > D 1
- 0... 50 Pa..... > J 6
- 0... 100 Pa..... > D 4
- 0... 250 Pa..... > D 6
- 0... 500 Pa..... > J 7
- 0... 1000 Pa..... > D 9
- 25.0... +25.0 Pa > L 5
- 50.0... +50.0 Pa > L 2
- 20.0... +80.0 Pa > L 0
- 100.0.. +100.0 Pa..... > L 7

Pressure connection

- Aluminium screw connection for 6 / 4 mm hose 4 0
- Aluminium screw connection for 8 / 6 mm hose 4 1

Electrical output signal

- without analogue electrical output signal..... > 0
- 0 – 20 mA 3-wire (STANDARD) > A
- 0 – 10 V DC 3-wire (STANDARD) > C
- 4 – 20 mA 3-wire (STANDARD) > P

Operating voltage

- 24 V DC/AC (20 - 32 V DC/AC) > N

Measuring unit

- Selectable pressure units > W

Measured value display / contact elements

- 4-digit colour change LCD - 2 relay contacts..... > C
- 4-digit colour change LCD - 2 semiconductor switch..... > D

Electrical connection

- M12 plug connection > M

Assembly option

- Standard (attachment boreholes on rear side) > 0
- Assembly of the mounting rails > S
- Panel mounting set..... > T
- Wall mounting..... > W

Accessories

Order Code	Designation	No. of Poles	Usage	Length
06401993	Connection cable with M12 connector	4-pole	for switching outputs	2 m
06401994	Connection cable with M12 connector	4-pole	for switching outputs	5 m
06401995	Connection cable with M12 connector	5-pole	for supply / signal	2 m
06401996	Connection cable with M12 connector	5-pole	for supply / signal	5 m
EU03.F300	Adapter for parameterisation via PC software			

