



DMK 331

Industrial Pressure Transmitter for Aggressive Media

- ▶ thickfilm ceramic sensor
- ▶ accuracy acc. to IEC 60770:
0.5 % FSO
- ▶ nominal pressure ranges
from 0 ... 0.6 bar
up to 0 ... 600 bar

The pressure transmitter DMK 331 is a supplement to our industrial pressure transmitters of DMP series.

It's available in the following mechanical versions:

- Standard: open pressure port G1/2" with recessed ceramic sensor
- Option: semi-flush ceramic sensor with pressure port G1/2" for pressure ranges 0 ... 0.6 to 0 ... 25 bar

Both versions are particularly suited for viscous, pasty, or highly contaminated media.

The version with PVDF pressure port is used with aggressive media stainless steel does not resist, for example in medical applications, water treatment, and chemical industry.

Preferred areas of use are:

- ▶ medical technology
- ▶ environmental technology
- ▶ galvanic coating
- ▶ chemical and pharmaceutical industries

- ▶ small thermal effect
- ▶ good long term stability
- ▶ accuracy acc. to IEC 60770:
0.5 % FSO
- ▶ option: oil and fat free for oxygen applications
- ▶ option Ex:
II 1 G EEx ia IIC T4 (stainless steel pressure port)
II 2 G EEx ia IIC T4 (plastic pressure port);
only for 4 ... 20 mA / 2-wire
(TÜV 03 ATEX 2006 X)
- ▶ customer specific versions:
 - special pressure ranges
 - variety of electrical and mechanical connections
 - other versions on request

Characteristics



DMK 331
Industrial Pressure Transmitter

Input pressure range ¹

Nominal pressure gauge [bar]	-1...0	0.6	1	1.6	2.5	4	6	10	16	25	40	60	100	160	250	400	600
Nominal pressure abs. [bar]	-	0.6	1	1.6	2.5	4	6	10	16	25	40	60	100	160	250	400	600
Permissible overpressure [bar]	3	3	3	7	7	12	12	25	50	50	120	120	250	500	500	600	750

Output signal / Supply

Standard	2-wire:	4 ... 20 mA / $V_s = 12 \dots 36 V_{DC}$	Ex-protection:	$V_s = 14 \dots 28 V_{DC}$
Optional	3-wire:	0 ... 20 mA / $V_s = 14 \dots 36 V_{DC}$ 0 ... 10 V / $V_s = 14 \dots 36 V_{DC}$		

Performance

Accuracy ²	$\leq \pm 0.5 \% \text{ FSO}$ (BFSL: $\leq \pm 0.25 \% \text{ FSO}$)		
Permissible load	current 2-wire:	$R_{\max} = [(V_s - V_{s \min}) / 0.02] \Omega$	
	current 3-wire:	$R_{\max} = 500 \Omega$	
	voltage 3-wire:	$R_{\min} = 10 k\Omega$	
Influence effects	supply:	0.05 % FSO / 10 V	
	load:	0.05 % FSO / kΩ	

Thermal effects

Thermal error for offset and span	$\leq \pm 0.2 \% \text{ FSO} / 10 \text{ K}$
in compensated range	-25 ... 85 °C

Electrical protection

Insulation resistance	> 100 MΩ
Short-circuit protection	permanent
Reverse polarity protection	no damage, but also no function
Electromagnetic compatibility	emission and immunity according to EN 61326
Option Ex-protection DX13-DMK 331	stainless steel pressure port: II 1 G EEx ia IIC T4 plastic pressure port: II 2 G EEx ia IIC T4 (only with 4 ... 20 mA / 2-wire) safety technical maximum values: $V_i = 28 \text{ V}$, $I_i = 93 \text{ mA}$, $P_i = 660 \text{ mW}$

Mechanical stability

Vibration	10 g RMS (20 ... 2000 Hz)
Shock	100 g / 11 ms

Permissible temperatures

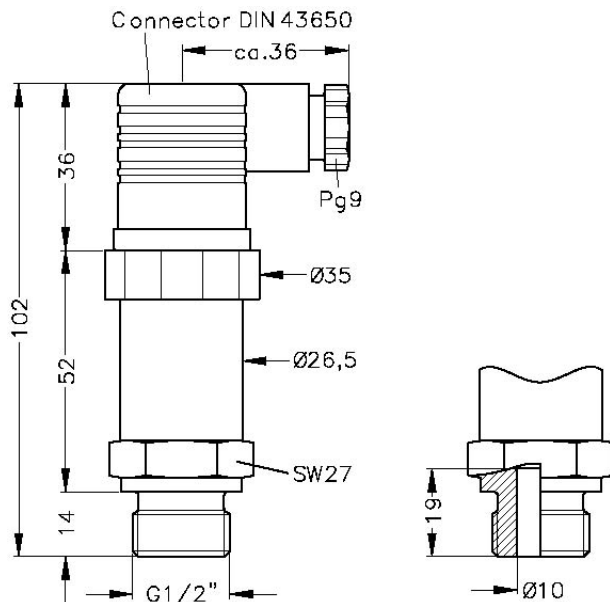
Medium	-25 ... 135 °C
Electronics / environment	-25 ... 85 °C
Storage	-40 ... 125 °C

¹ PVDF version only up to 60 bar

² accuracy according to IEC 60770 – limit point adjustment (non-linearity, hysteresis, repeatability)

Mechanical connection

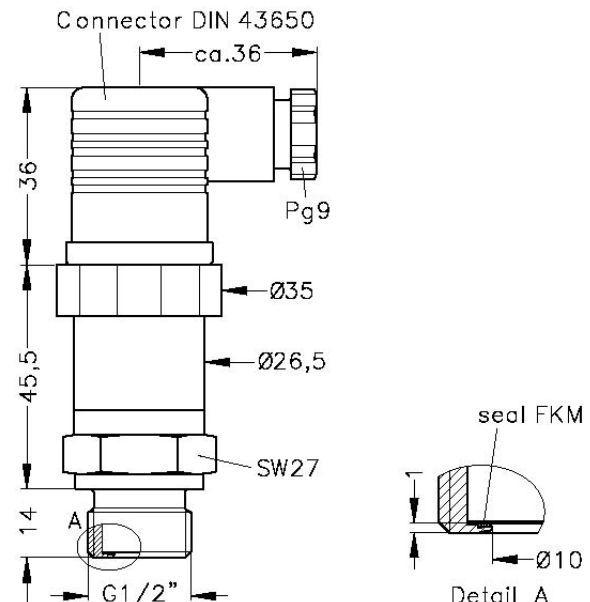
Standard



G1/2" open port DIN 3852

⇒ Ex-protection: total length increases by 18 mm!

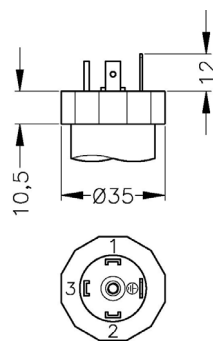
Optional



G1/2" with semi-flush diaphragm³

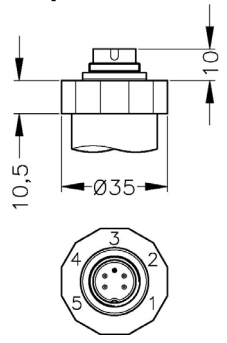
Electrical connection

Standard

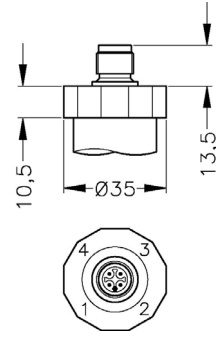


DIN 43650 (IP 65)

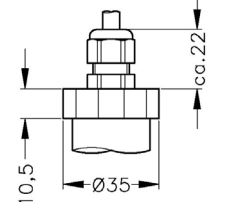
Optional



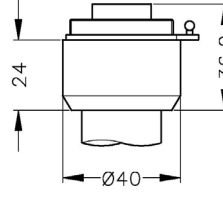
Binder Series 723 (IP 67)



M12x1 4-pin (IP 67)



Cable gland (IP 67)⁴



Buccaneer (IP 68)⁵

³ semi-flush diaphragm only up to 25 bar

⁴ different cable types and lengths available, standard: 2 m PVC cable (without ventilation tube), optionally cable with ventilation tube

⁵ for gauge pressure up to 40 bar cable with ventilation tube required

Materials

Pressure port	standard: stainless steel 1.4571 (316 Ti) optional: PVDF ⁶ others on request
Housing	stainless steel 1.4301 (304)
Seals (media wetted)	$P_N < 100$ bar: FKM $P_N \geq 100$ bar: NBR others on request
Diaphragm	ceramic Al_2O_3 96 %
Media wetted parts	pressure port, seals, diaphragm

Miscellaneous

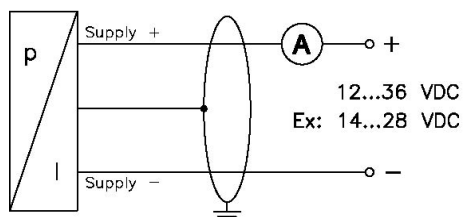
Current consumption	signal output current: max. 25 mA signal output voltage: max. 7 mA
Weight	approx. 140 g
Installation position	any
Operational life	$> 100 \times 10^6$ cycles

Pin configuration

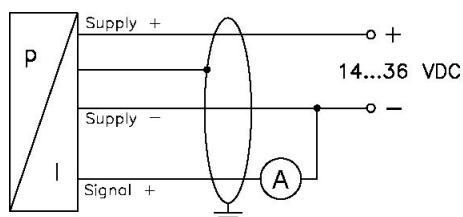
Electrical connection		DIN 43650	Binder 723 (5-pin)	M12x1 (4-pin)	Buccaneer (4-pin)	cable colours (DIN 47100)
2-wire-system	Supply +	1	3	1	1	white
	Supply -	2	4	2	2	brown
	Ground	ground pin	5	4	4	yellow / black
3-wire-system	Supply +	1	3	1	1	white
	Supply -	2	4	2	2	brown
	Signal +	3	1	3	3	green
	Ground	ground pin	5	4	4	yellow / black

Wiring diagrams

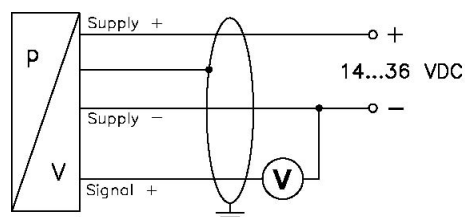
2-wire-system (current)



3-wire-system (current)



3-wire-system (voltage)



⁶ PVDF only up to 60 bar