



LMK 351

Screw-in Pressure Transmitter

- ▶ capacitive ceramic sensor
- ▶ flush diaphragm
- ▶ accuracy:
 - 0.175 % / 0.125 % FSO BFSL
 - (0.35 % / 0.25 % FSO IEC 60770)
- ▶ nominal pressure ranges from
 - 0 ... 40 mbar up to 0 ... 10 bar
 - (0 ... 40 cmWC up to 0 ... 100 mWC)

The screw-in transmitter LMK 351 has been designed especially for level and process measurement. By using a capacitive ceramic sensor an excellent measuring performance is being achieved.

Because of its material the capacitive ceramic sensor features high compatibility against aggressive media. The pressure port can be made of stainless steel 1.4571 (316Ti) or – for very aggressive media – of PVDF or PVC.

The pressure sensors are flush mounted allowing the use also in viscous or contaminated media.

Sealing of the sensor against the pressure port is made with a FKM seal. Other elastomers are available on request.

Our application engineers would like to assist you in selecting the best combination suited for your specific application.

Preferred areas of use are:

- ▶ level measurement
- ▶ chemical industry
- ▶ medical technology
- ▶ pharmaceutical technology

- ▶ ceramic sensor without oil filling and with high resistance against aggressive media such as acids and lyes
- ▶ small thermal effect
- ▶ good long term stability
- ▶ 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
 - other designs on request

Characteristics

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Technical Data

Input pressure range ¹														
Nominal pressure gauge [bar]	0.04	0.06	0.1	0.16	0.25	0.4	0.6	1	1.6	2.5	4	6	10	
Level [mWC]	0.4	0.6	1.0	1.6	2.5	4.0	6.0	10	16	25	40	60	100	
Permissible overpressure [bar]	1	1	2	2	4	4	4	7	7	15	25	25	40	

Output signal / Supply	
Standard	2-wire: 4 ... 20 mA / $V_s = 9 \dots 36 V_{DC}$ Ex-protection: $V_s = 12 \dots 28 V_{DC}$
Optional	3-wire: 0 ... 10 V / $V_s = 14 \dots 36 V_{DC}$ (on request)

Performance	
Accuracy ²	standard: $\leq \pm 0.35 \% \text{ FSO}$ (BFSL: $\leq \pm 0.175 \% \text{ FSO}$) option: $\leq \pm 0.25 \% \text{ FSO}$ (BFSL: $\leq \pm 0.125 \% \text{ FSO}$)
Permissible load	current 2-wire: $R_{max} = [(V_s - V_{smin}) / 0.02] \Omega$ voltage 3-wire: $R_{min} = 10 \text{ k}\Omega$
Influence effects	supply: 0.05 % FSO / 10 V load: 0.05 % FSO / k Ω
Long term stability	$\leq \pm 0.1 \% \text{ FSO} / \text{year}$

Thermal effects	
Temperature error for offset and span in compensated range	$\leq \pm 0.1 \% \text{ FSO} / 10 \text{ K}$ -25 ... 85 °C

Electrical protection	
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-LMK 351	stainless steel housing: II 1 G EEx ia IIC T4 plastic housing: 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 ... 125 °C
Electronics / environment	-25 ... 85 °C
Storage	-40 ... 125 °C

¹ version with diaphragm Al₂O₃ 99,9% up to 1 bar

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

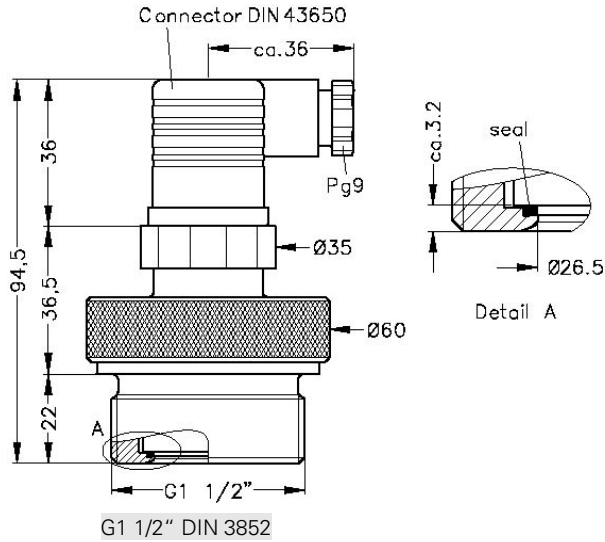
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Technical Data

Mechanical connection

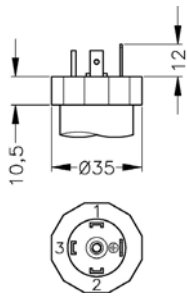
Standard



⇒ Drawing shows stainless steel version; plastic version is 3.5 mm longer!

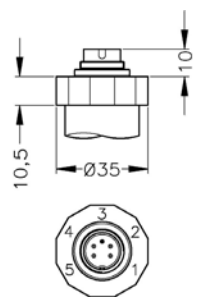
Electrical connection

Standard

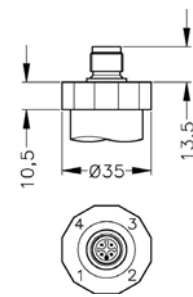


DIN 43650 (IP 65)

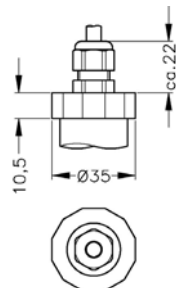
Optional



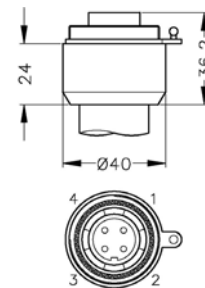
Binder Series 723 (IP 67)



M12x1 4-pin (IP 67)



Cable gland (IP 67)³



Buccaneer (IP 68)⁴

³ different cable types and lengths available; standard: 2 m PVC cable (without ventilation tube), optionally cable with ventilation tube

⁴ for gauge pressure cable with ventilation tube required

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Materials

Pressure port	standard: stainless steel 1.4571 (316Ti) optional: PVC grey / PVDF
Housing	stainless steel 1.4305 (303)
Seals (media wetted)	FKM others on request
Diaphragm	Standard: ceramics Al ₂ O ₃ 96 % Option: ceramics Al ₂ O ₃ 99.9 % (up to 1 bar)
Media wetted parts	pressure port, seals, diaphragm

Miscellaneous

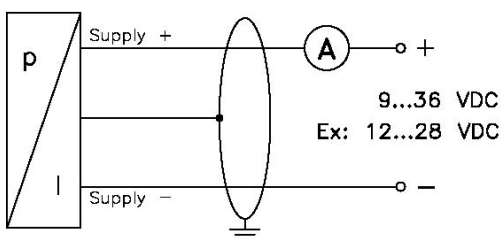
Current consumption	signal output current: max. 21 mA signal output voltage: max. 5 mA
Weight	approx. 200 g
Installation position	any
Operational life	> 100 x 10 ⁶ cycles

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	cable shield

Wiring diagrams

2-wire-system (current)



3-wire-system (voltage)

