

DMK 387

Pressure Transmitter

Ceramic sensor

accuracy according to IEC 61298-2:
standard: 0.35 % FSO
option: 0.25 % FSO



Nominal pressure

from 0 ... 100 mbar up to 0 ... 40 bar

Output signal

2-wire: 4 ... 20 mA

3-wire and others on request

Product characteristics

- ▶ diaphragm
ceramics 99.9 % Al₂O₃
- ▶ high long-term stability





Optional versions

- ▶ IS-version
Ex ia = intrinsically safe for
gases and dust
- ▶ different kinds of inch threads
- ▶ pressure port in PVDF or PP-HT
for aggressive media
- ▶ drinking water certificate
according to DVGW and KTW

The pressure transmitter DMK 387 has been specially designed for applications in plant and machine engineering as well as laboratory techniques and is suitable for measuring small system pressure and filling heights.

By using our own-developed capacitive sensor, available in Al₂O₃ 99.9%, the DMK 387 offers a high overpressure resistance and a high temperature and media resistance. The pressure transmitter is available in an intrinsically safe version for usage in explosive environments.

Preferred areas of use

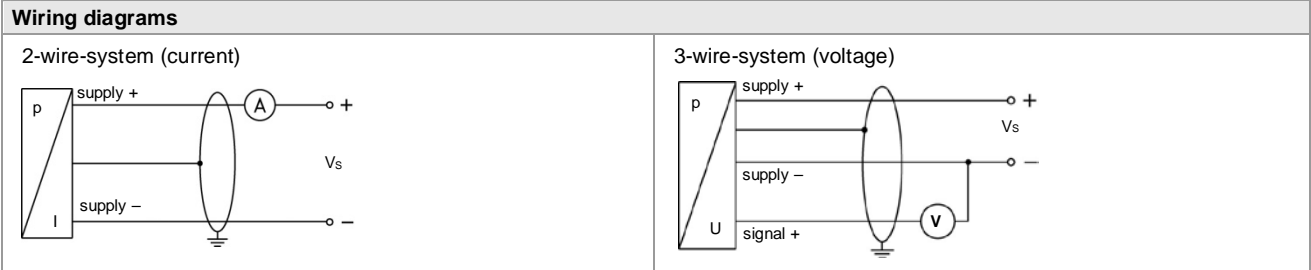
-  Plant and machine engineering
-  Laboratory techniques
-  Water
-  Aggressive media



Input pressure range																
Nominal pressure gauge	[bar]	0.1	0.16	0.25	0.4	0.6	1	1.6	2.5	4	6	10	16	25	40	
Level	[mH ₂ O]	1	1.6	2.5	4	6	10	16	25	40	60	100	160	250	400	
Overpressure	[bar]	3	4	5	5	5	7	7	12	12	20	20	20	40	70	
Burst pressure ≥	[bar]	4	6	8	8	8	9	9	18	18	25	30	30	45	80	
Permissible vacuum	[bar]	-0.2	-0.3	-0.5								-1				
Output signal / Supply																
Standard	2-wire: 4 ... 20 mA / V _S = 14 ... 36 V _{DC}															
Option IS-version	2-wire: 4 ... 20 mA / V _S = 14 ... 28 V _{DC}															
On request	3-wire: 0 ... 10 V / V _S = 14 ... 36 V _{DC}															
Performance																
Accuracy ¹	standard: ≤ ± 0.35 % FSO option: ≤ ± 0.25 % FSO others on request															
Permissible load	current 2-wire: R _{max} = [(V _S - V _{Smin}) / 0.02 A] Ω voltage 3-wire: R _{min} = 10 kΩ															
Influence effects	supply: 0.05 % FSO / 10 V load: 0.05 % FSO / kΩ															
Long term stability	≤ ± 0.1 % FSO / year															
Turn-on time	450 msec															
Mean response time	≤ 70 msec															
Measuring rate	80 Hz															
¹ accuracy according to IEC 61298-2 - limit point adjustment (non-linearity, hysteresis, repeatability)																
Thermal effects (offset and span)																
Tolerance band	≤ ± 1 % FSO															
In compensated range	-20 ... 80 °C															
Permissible temperatures																
Medium ²	-40 ... 125 °C															
Electronics / environment	-40 ... 85 °C															
Storage	-40 ... 85 °C															
² for pressure port in PVDF the operation medium temperature is -30 ... 60 °C and in PP-HT 0 ... 60 °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															
Mechanical stability																
Vibration	20 g RMS / 10 ... 2000 Hz according to DIN EN 60068-2-6															
Materials																
Pressure port / housing	standard: options for G3/4" flush:	pressure port				housing										
		stainless steel 1.4404 (316 L) PVDF (p _{max} = 20 bar) PP-HT (p _{max} = 10 bar)				stainless steel 1.4404 (316 L) PVDF PP-HT										
Option compact field housing	stainless steel 1.4301 (304) cable gland M12x1.5, brass, nickel plated (clamping range 2 ... 8 mm)															
Seals (O-rings)	FKM, EPDM (without / with drinking water certificate), FFKM others on request															
Diaphragm	ceramics Al ₂ O ₃ 99.9 % others on request															
Media wetted parts	pressure port, seals, diaphragm															
Explosion protection (only for 4 ... 20 mA / 2-wire)																
Approval DX14B-DMK 387	IBExU 15 ATEX 1066 X / IECEx IBE 18.0019X pressure port: stainless steel zone 0: II 1G Ex ia IIC T4 Ga pressure port: PVDF or PP-HT zone 1: II 2G Ex ia IIC T4 Gb for all pressure ports zone 20: II 1D Ex ia IIIC T135 °C Da															
Safety technical maximum values	U _i = 28 V, I _i = 93 mA, P _i = 660 mW, C _i = 14 nF, L _i = 0 μH, the supply connections have an inner capacity of max. 27 nF to the housing															
Permissible temperatures for environment	in zone 0: -20 ... 60 °C with p _{atm} 0.8 bar up to 1.1 bar in zone 1 or higher: -25 ... 65 °C															
Connecting cables (by factory)	cable capacitance: signal line/shield also signal line/signal line: 160 pF/m cable inductance: signal line/shield also signal line/signal line: 1 μH/m															

Miscellaneous	
Current consumption	max. 22 mA
Weight	approx. 180 g
Operational life	100 million load cycles
CE-conformity	EMC Directive: 2014/30/EU
ATEX Directive	2014/34/EU
Drinking water certificate ³	according to DVGW W 270 and UBA KTW

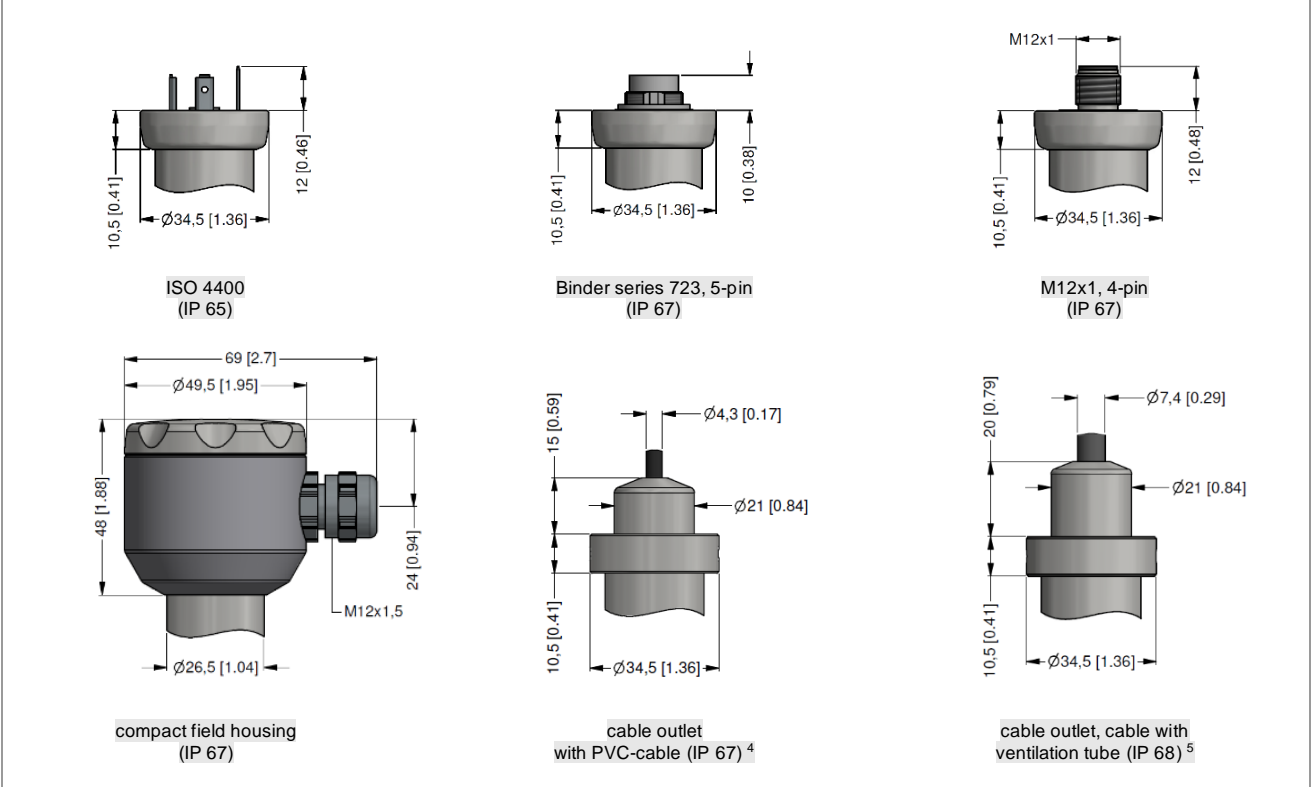
³ only possible with EPDM seal; not possible with IS-version (explosion protection), with order the indication "with drinking water certificate" is necessary



Pin configuration

Electrical connection	ISO 4400	Binder 723 (5-pin)	M12x1 / metal (4-pin)	compact field housing	cable colours (IEC 60757)
supply + supply - signal + (only 3-wire)					WH (white) BN (brown) GN (green)
Shield	ground pin	5	4	GND	GNYE (green-yellow)

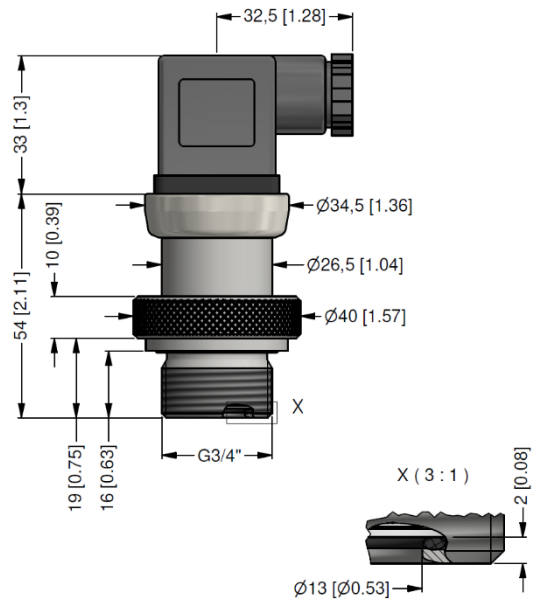
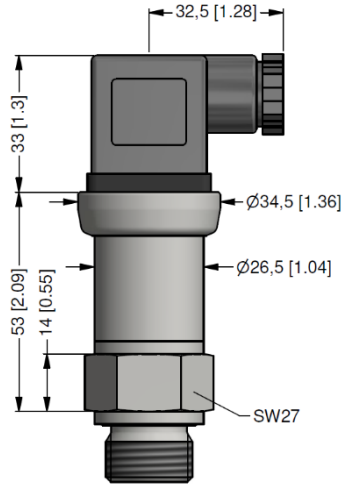
Electrical connections (dimensions mm / in)



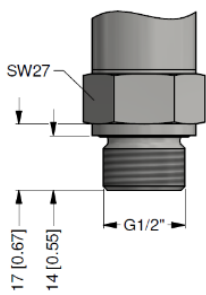
⇒ universal field housing stainless steel 1.4404 (316 L) with cable gland M20x1.5 (ordering code 880) and other versions on request

⁴ standard: 2 m PVC cable without ventilation tube (permissible temperature: -5 ... 70 °C)
⁵ different cable types and lengths available, permissible temperature depends on kind of cable

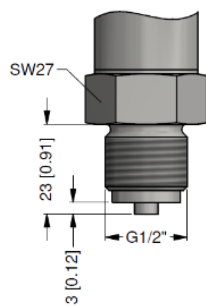
Dimensions (mm / in)



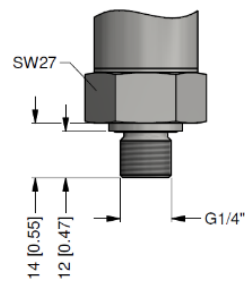
G 3/4" flush⁶



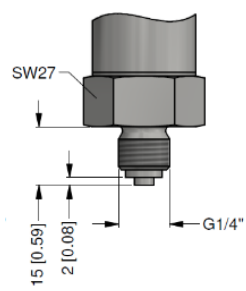
G1/2" DIN 3852



G1/2" EN 837



G1/4" DIN 3852



G1/4" EN 837

⁶ not in combination with field housing

Ordering code DMK 387

DMK 387

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Pressure			
gauge in bar	2	8	5
gauge in mH ₂ O	2	8	6
Input			
	[mH ₂ O]	[bar]	
	1.0	0.1	1 0 0 0
	1.6	0.16	1 6 0 0
	2.5	0.25	2 5 0 0
	4.0	0.40	4 0 0 0
	6.0	0.60	6 0 0 0
	10	1.0	1 0 0 1
	16	1.6	1 6 0 1
	25	2.5	2 5 0 1
	40	4.0	4 0 0 1
	60	6.0	6 0 0 1
	100	10	1 0 0 2
	160	16	1 6 0 2
	250	25	2 5 0 2
	400	40	4 0 0 2
	customer		9 9 9 9
Output			
4 ... 20 mA / 2-wire			1
0 ... 10 V / 3-wire			3
intrinsic safety 4 ... 20 mA / 2-wire			E
customer			9
			consult
Accuracy			
standard	0.35 % FSO		3
option	0.25 % FSO		2
customer			9
			consult
Electrical connection			
male and female plug ISO 4400			1 0 0
male plug Binder series 723 (5-pin)			2 0 0
cable outlet with PVC cable (IP67) ¹			T A 0
cable outlet,			T R 0
cable with ventilation tube (IP68) ²			
male plug M12x1 (4-pin) / metal			M 1 0
compact field housing			8 5 0
stainless steel 1.4301 (304)			
customer			9 9 9
			consult
Mechanical connection			
G1/2" DIN 3852			1 0 0
G1/2" EN 837			2 0 0
G1/4" DIN 3852			3 0 0
G1/4" EN 837			4 0 0
G3/4" with flush sensor ⁴			K 0 0
customer			9 9 9
			consult
Seal			
FKM			1
EPDM			3
DVGW/KTW: EPDM ⁵			3T
FFKM			7
customer			9
			consult
Pressure port			
stainless steel 1.4404 (316L)			1
PVDF (p _{max} = 20 bar) ⁶			B
PP-HT (p _{max} = 10 bar) ⁶			R
customer			9
			consult
Diaphragm			
ceramics Al ₂ O ₃ 99.9 %			C
customer			9
			consult
Special version			
standard			0 0 0
customer			9 9 9
			consult

¹ standard: 2 m PVC cable without ventilation tube (permissible temperature: -5 ... 70 °C); others on request

² code TR0 = PVC cable, cable with ventilation tube available in different types and lengths

³ metric threads and others on request

⁴ not in combination with field housing

⁵ drinking water certification only possible with EPDM seal (code 3T); not possible with IS version (explosion protection)

⁶ only for mechanical connection G3/4"; for pressure port in PVDF the operation medium temperature is -30 ... 60 °C and in PP-HT 0 ... 60 °C