



DMK 387

Pressure Transmitter

Ceramic sensor

accuracy according to IEC 60770:
standard: 0.35 % FSO
option: 0.25 % FSO

Nominal pressure

from 0 ... 100 mbar up to 0 ... 60 bar

Output signal

2-wire: 4 ... 20 mA

3-wire: 0 ... 10 V

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

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 as 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 a use in explosive environments.

Preferred areas of use

-  Plant and machine engineering
-  Laboratory techniques
-  Fuel and oil
-  Water



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	60	
Level	[mH ₂ O]	1	1.6	2.5	4	6	10	16	25	40	50	100	160	250	400	600	
Overpressure	[bar]	3	4	5	5	5	7	7	12	12	20	20	20	40	70	70	
Burst pressure ≥	[bar]	4	6	8	8	7	9	9	18	18	25	30	30	45	80	80	
Permissible vacuum	[bar]	-0.2	-0.3	-0.5									-1				

Output signal / supply	
Standard	2-wire: 4 ... 20 mA / V _S = 12 ... 36 V _{DC}
Option IS-version	2-wire: 4 ... 20 mA / V _S = 14 ... 28 V _{DC}
Option	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 60770 - limit point adjustment (non-linearity, hysteresis, repeatability)

Thermal errors (Offset and Span)	
Tolerance band	[% FSO] 1.0 % FSO for nominal pressure in compensated range -20 ... 80 °C

Permissible temperatures	
Permissible temperatures	medium: -40 ... 85 °C electronics/environment: -40 ... 85 °C storage: -40 ... 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

Mechanical stability	
Vibration	10 g RMS (25 ... 2000 Hz) according to DIN EN 60068-2-6

Materials (wetted parts)	
Pressure port	standard: stainless steel 1.4404 (316 L) option: PVDF ² , PP ² others on request
Housing	stainless steel 1.4404 (316 L) others on request
Seals (O-rings)	FKM, EPDM, FFKM others on request
Diaphragm	ceramics Al ₂ O ₃ 99.9 % others on request

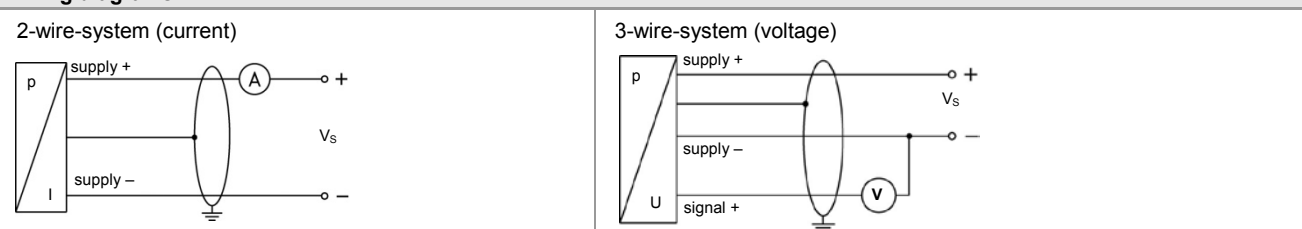
² only for mechanical port G3/4", min. operation temperature for PVDF -30 °C

Explosion protection (only for 4 ... 20 mA / 2-wire)

Approval DX14B-DMK 387	IBExU 15 ATEX 1066 X pressure port: stainless steel zone 0: II 1G Ex ia IIC T4 Ga pressure port: PVDF or PP zone 1: II 2G Ex ia IIC T4 Gb 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
Ambient temperature range	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	ca. 180 g
Ingress protection	IP 67 and defined at electrical connections
CE-conformity	EMC Directive: 2014/30/EU
ATEX Directive	2014/34/EU

Wiring diagrams



DMK 387

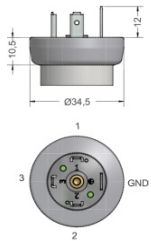
Pressure Transmitter

Technical data

Pin configuration					
Electrical connection	ISO 4400	Binder 723 (5-pin)	M12x1 / metal (4-pin)	field housing	cable colours (IEC 60757)
supply +	1	3	1	IN +	wh (white)
supply -	2	4	2	IN -	bn (brown)
signal + (only 3-wire)	3	1	3	OUT +	gn (green)
Shield	Ground contact	5	4		gnye (green-yellow)

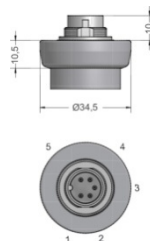
Electrical connections (dimensions in mm)

standard

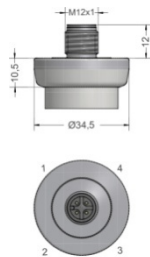


ISO 4400 (IP 65)

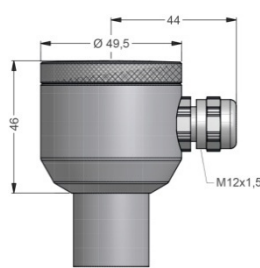
option



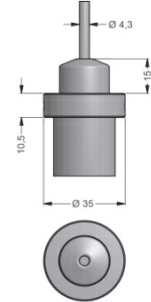
Binder Series 723 5-pin (IP 67)



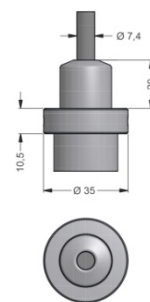
M12x1 4-pin (IP 67)



compact field housing (IP 67)



cable outlet with PVC-cable (IP 67)³



cable outlet, cable with ventilation tube (IP 68)⁴

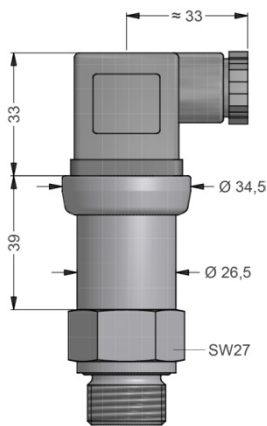
⇒ universal field housing stainless steel 1.4404 (316 L) with cable gland M20x1.5 (ordering code 880) and other versions on request

³ standard: 2 m PVC cable without ventilation tube (permissible temperature: -5 ... 70 °C)

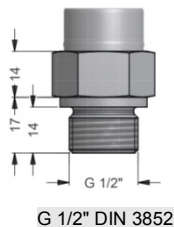
⁴ different cable types and lengths available, permissible temperature depends on kind of cable

Mechanical connections (dimensions mm / in)

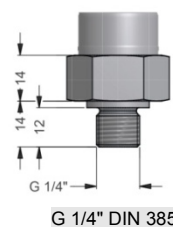
standard



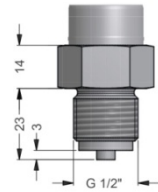
pressure ports



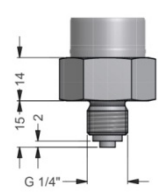
G 1/2" DIN 3852



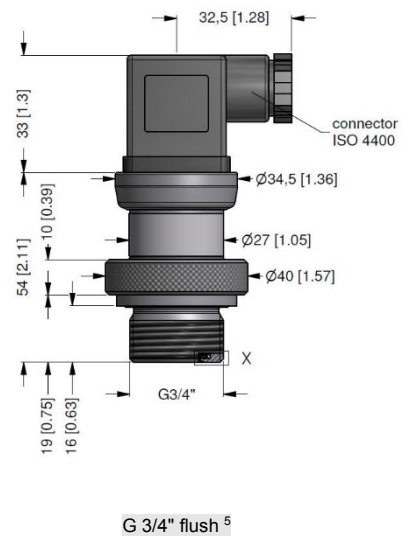
G 1/4" DIN 3852



G1/2" EN 837

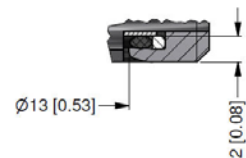


G1/4" EN 837



G 3/4" flush⁵

X (3 : 1)



⁵ not in connection with field housing

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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															
600	60		6	0	0	2															
customer			9	9	9	9															consult
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 ¹			T	A	0																
cable outlet ²			T	R	0																
male plug M12x1 (4-pin) / metal			M	1	0																
compact field housing			8	5	0																
stainless steel 1.4305 (303)			9	9	9															consult	
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			K	0	0																
customer			9	9	9															consult	
Seals																					
FKM			1																		
EPDM			3																		
FFKM			7																		
customer			9																		consult
Pressure port																					
stainless steel 1.4404 (316L)			1																		
PVDF ⁴			B																		
PP ⁴			E																		
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)

² cable with ventilation tube (code TR0 = PVC cable), different cable types and lengths available, price without cable

³ metric threads and others on request

⁴ only for mechanical connection G3/4", minimum permissible temperature for PVDF is -30 °C