

DMK 351P

Pressure Transmitter for the Process Industry

Ceramic Sensor

accuracy according to IEC 60770:
Standard: 0.35 % FSO
Option: 0.25 % FSO



Nominal pressure

from 0 ... 40 mbar up to 0 ... 20 bar

Output signal

2-wire: 4 ... 20 mA
3-wire: 0 ... 10 V
others on request

Special characteristics

- ▶ hygienic version
- ▶ diaphragm ceramics Al₂O₃ 99.9 %
- ▶ different process connections (G1 1/2", dairy pipe, Clamp, etc.)
- ▶ high overpressure capability



Optional versions

- ▶ IS-version
Ex ia = intrinsically safe
for gases and dusts
- ▶ customer specific versions
e.g. special pressure ranges



The pressure transmitter DMK 351P has been designed for measuring small system pressure in the food industry and chemical industry.

The DMK 351P is based on an own-developed capacitive ceramic sensor element. It features high overpressure resistance and high resistance against most of aggressive media. A variety of different process and electrical connections and an intrinsically safe version complete the range of possibilities.

Preferred areas of use are

-  Food industry
-  Chemical and petrochemical industry

Preferred used for

-  Paint and varnish
-  Viscous and pasty media



DMK 351P

Process Pressure Transmitter

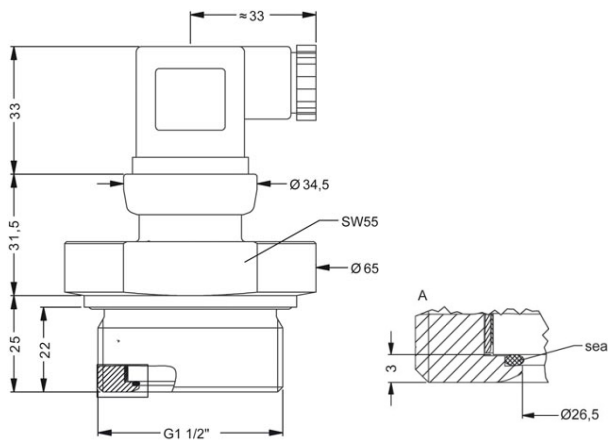
Technical Data

Pressure ranges																	
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	16	20		
Nominal pressure absolute ¹ [bar]	on request						0.4	0.6	1	1.6	2.5	4	6	10	16	20	
Overpressure [bar]	2	2	4	4	6	6	8	8	15	25	25	35	35	45	45		
Permissible vacuum [bar]	-0.2		-0.3		-0.5				-1								
¹ not in combination with output 0 ... 10 V / 3-wire																	
Output signal / Supply																	
Standard	2-wire: 4 ... 20 mA / V _S = 9 ... 32 V _{DC}																
Option IS-protection	2-wire: 4 ... 20 mA / V _S = 14 ... 28 V _{DC}																
Option 3-wire	3-wire: 0 ... 10 V / V _S = 12.5 ... 32 V _{DC}																
Performance																	
Accuracy ²	standard: ≤ ± 0.35 % FSO option for p _N ≥ 0.6 bar: ≤ ± 0.25 % FSO																
Long term stability	≤ ± 0.1 % FSO / year at reference conditions																
Influence effects	supply: 0.05 % FSO / 10 V load: 0.05 % FSO / kΩ																
Permissible load	current 2-wire: R _{max} = [(V _S - V _{S min}) / 0.02 A] Ω voltage 3-wire: R _{min} = 10 kΩ																
Turn-on time	700 msec																
Mean measuring rate	5 / sec																
Response time	mean response time: ≤ 200 msec max. response time: 380 msec																
² accuracy according to IEC 60770 - limit point adjustment (non-linearity, hysteresis, repeatability)																	
Thermal effect (offset and span)																	
Tolerance band	≤ ± 1 % FSO																
In compensated range	-20 ... 80 °C																
Permissible temperatures																	
Permissible temperatures	medium: -40 ... 125 °C electronics / environment: -40 ... 85 °C storage: -40 ... 100 °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																
Shock	500 g / 1 msec half sine according to DIN EN 60068-2-27																
Materials																	
Pressure port	stainless steel 1.4404 (316L)																
Housing	stainless steel 1.4404 (316L)																
Option compact field housing	stainless steel 1.4301 (304); cable gland M12x1.5, brass, nickel plated (clamping range 2 ... 8 mm)																
Seal (media wetted)	FKM EPDM others on request																
Diaphragm	ceramic Al ₂ O ₃ 99.9 %																
Media wetted parts	pressure port, seals, diaphragm																
Explosion protection (only for 4 ... 20 mA / 2-wire)																	
Approval DX 14-DMK 351 P	IBExU 05 ATEX 1070 X zone 0: II 1G Ex ia IIC T4 Ga zone 20: II 1D Ex ia IIIC T110 °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, C _{gnd} = 27 nF																
Max. permissible temperature for environment	zone 0: -20 ... 60 °C for p _{atm} 0.8 bar up to 1.1 bar zone 1 and higher: -25 ... 70 °C																
Connecting cables (by factory)	cable capacity: signal line / shield also signal line / signal line: 220 pF/m cable inductance: signal line / shield also signal line / signal line: 1.5 μH/m																
Miscellaneous																	
Current consumption	max. 21 mA																
Weight	min. 200 g																
Installation position	any																
Operational life	100 million load cycles																
CE-conformity	EMC-directive: 2014/30/EU																
ATEX Directive	2014/34/EU																

Wiring diagram					
<p>2-wire-system (current)</p>			<p>3-wire-system (current / voltage)</p>		
Pin configuration					
Electrical connection	ISO 4400	Binder 723 (5-pin)	M12x1 (4-pin)	compact 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 pin	5	4		GNYE (green-yellow)
Electrical connections (dimensions in mm)					
standard		options			
ISO 4400 (IP 65)		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	
<p>⇒ universal stainless steel field housing 1.4404 with cable gland M20x1.5 (ordering code 880) and other versions on request</p>					
<p>³ standard: 2 m PVC-cable without ventilation tube (permissible temperature: -5 ... 70 °C)</p> <p>⁴ different cable types and lengths available, permissible temperature depends on kind of cable</p>					

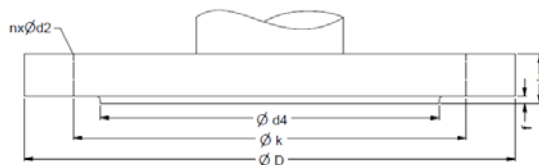
Mechanical connections (dimensions in mm)

standard



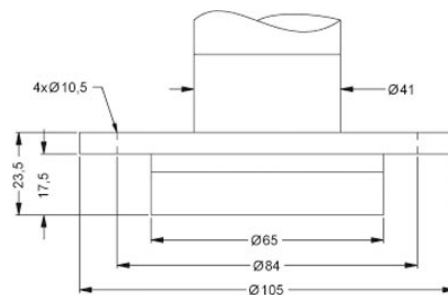
G1 1/2" DIN 3852

options

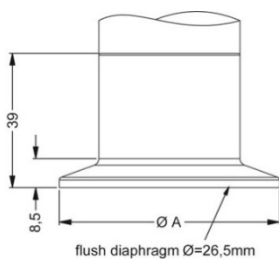


flange (DIN 2501)

dimensions in mm			
size	DN 25	DN 50	DN 80
D	115	165	200
k	85	125	160
d4	68	102	138
b	18	20	20
f	2	3	3
n	4	4	8
d2	14	18	18
p _N [bar]	≤ 40	≤ 40	≤ 16

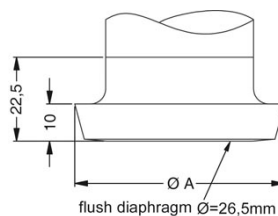


flange DRD⁵



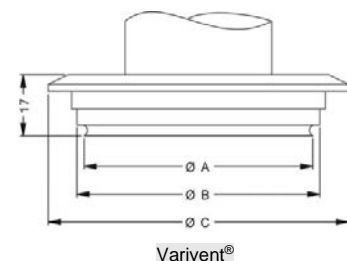
Clamp (DIN 32676)

dimensions in mm		
size	DN 32	DN 50
A	50.5	64
p _N [bar]	≤ 16	≤ 16



dairy pipe (DIN 11851)

dimensions in mm		
size	DN 40	DN 50
A	56	68.5



Varivent®

dimensions in mm	
size	DN 40/50
A	64
B	68
C	84

⁵ mounting flange is included in the delivery (already pre-assembled)

