



# DMK 351

## Pressure Transmitter

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

### Product characteristics

- ▶ high media resistance



### Optional versions

- ▶ IS-version  
Ex ia = intrinsically safe for gases and dusts
- ▶ diaphragm 99.9 % Al<sub>2</sub>O<sub>3</sub>
- ▶ customer specific versions



The pressure transmitter DMK 351 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, optionally available as Al<sub>2</sub>O<sub>3</sub> 99.9%, the DMK 351 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 are

-  Plant and Machine Engineering
-  Laboratory Techniques

### Preferred used for

-  Fuel and Oil
-  Water



<b>Pressure ranges</b>																
Nominal pressure	[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
Level	[mH <sub>2</sub> O]	0.4	0.6	1	1.6	2.5	4	6	10	16	25	40	60	100	160	200
Overpressure	[bar]	2	2	4	4	6	6	8	8	15	25	25	35	35	45	45
Low pressure	[bar]	-0.2		-0.3		-0.5						-1				
<b>Output signal / Supply</b>																
Standard		2-wire: 4 ... 20 mA / V <sub>S</sub> = 9 ... 32 V <sub>DC</sub>														
Option IS-protection		2-wire : 4 ... 20 mA / V <sub>S</sub> = 14 ... 28 V <sub>DC</sub> Option 3-wire: 0 ... 10 V / V <sub>S</sub> = 12.5 ... 32 V <sub>DC</sub>														
<b>Performance</b>																
Accuracy <sup>1</sup>		standard: ≤ ± 0.35 % FSO option for P <sub>N</sub> ≥ 0.6 bar: ≤ ± 0.25 % FSO														
Permissible load		current 2-wire R <sub>max</sub> = [(V <sub>S</sub> - V <sub>Smin</sub> ) / 0.02 A] Ω      voltage 3-wire: R <sub>min</sub> = 10 k Ω														
Influence effects		supply: 0.05 % FSO / 10 V load: 0.05 % FSO / kΩ														
Long term stability		≤ ± 0.1 % FSO / year at reference conditions														
Turn-on time		700 msec														
Mean measuring rate		5/sec														
Response time		mean response time: < 200 msec										max. response time: 380 msec				
<sup>1</sup> accuracy according to IEC 60770 - limit point adjustment (non-linearity, hysteresis, repeatability)																
<b>Thermal errors (Offset and Span)</b>																
Tolerance band		≤ ± 0.1 % FSO / 10 K      in compensated range: -20 ... 80 °C														
<b>Permissible temperatures</b>																
Permissible temperatures		medium: -40 ... 125 °C electronics / environment: -40 ... 85 °C storage: -40 ... 100 °C														
<b>Electrical protection</b>																
Short-circuit protection		permanent														
Reverse polarity protection		no damage, but also no function														
Electromagnetic compatibility		emission and immunity according to EN 61326														
<b>Mechanical stability</b>																
Vibration		10 g RMS (20 ... 2000 Hz)										according to DIN EN 60068-2-6				
Shock		100 g / 1 msec										according to DIN EN 60068-2-27				
<b>Materials</b>																
Pressure port		stainless steel 1.4404 (316L)														
Housing		stainless steel 1.4404 (316L)														
Option compact field housing		stainless steel 1.4305 (303) with cable gland brass, nickel plated										others on request				
Seal (media wetted)		FKM EPDM														
Diaphragm		standard: ceramics Al <sub>2</sub> O <sub>3</sub> 96 % option: ceramics Al <sub>2</sub> O <sub>3</sub> 99.9 %														
Media wetted parts		pressure port, seals, diaphragm														
<b>IS-protection (only for 4 ... 20 mA / 2-wire)</b>																
Approval DX 14-DMK 351		IBExU 05 ATEX 1070 X Male (connector)-version: zone 0: II 1G Ex ia IIC T4 Ga zone 20: II 1D Ex iaD 20 T 85°C cable-version: zone 0: II 1G Ex ia IIB T4 Ga zone 20: II 1D Ex iaD 20 T 85°C														
Safety technical maximum values		U <sub>i</sub> = 28 V <sub>DC</sub> , I <sub>i</sub> = 93 mA, P <sub>i</sub> = 660 mW, C <sub>i</sub> ≤ 27 nF, L <sub>i</sub> ≤ 5 μH														
Max. permissible temperature for environment		in zone 0: -20 ... 60 °C for p <sub>atm</sub> 0.8 bar up to 1.1 bar in zone 1 and higher: -25 ... 70 °C														
Connecting cables (by factory)		capacity: signal line / shield also signal line / signal line: 160 pF/m inductance: signal line / shield also signal line / signal line: 1 μH/m														
<b>Miscellaneous</b>																
Installation position		any														
Current consumption		signal output current: max. 21 mA										signal output voltage: max. 5 mA				
Weight		min. 200 g														
Operational life		> 100 x 10 <sup>6</sup> loading cycles														
CE-conformity		EMC-directive: 2004/108/EC														
ATEX Directive		94/9/EC														

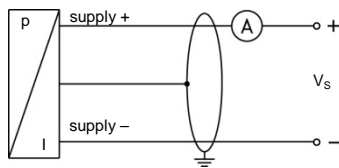
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Pressure Transmitter

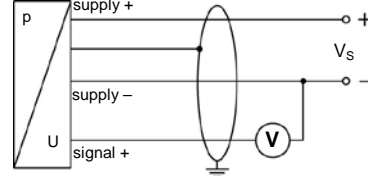
Technical Data

## Wiring diagram

2-wire-system (current)



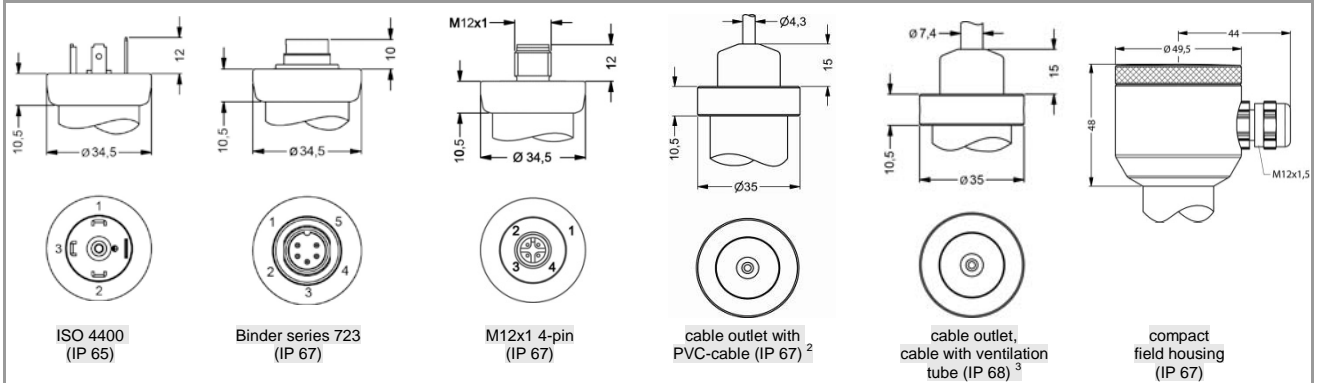
3-wire-system (current / voltage)



## Pin configuration

Electrical connection	ISO 4400	Binder 723 (5-pin)	M12x1 (4-pin)	field housing	cable colours (DIN 47100)
Supply +	1	3	1	IN +	wh (white)
Supply -	2	4	2	IN -	bn (brown)
Signal +	3	1	3	OUT +	gn (green)
Shield	ground contact	5	4	⏏	ye/gn (yellow / green)

## Electrical connections (dimensions in mm)

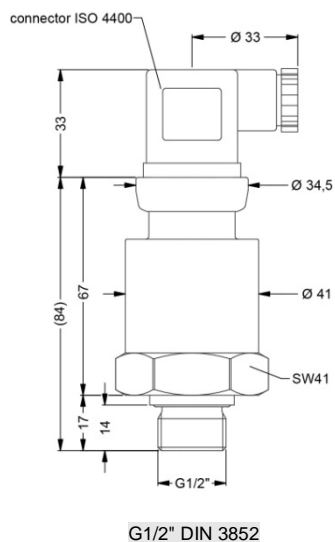


<sup>2</sup> standard: 2 m PVC-cable without ventilation tube (permissible temperature: -5 ... 70°C), optional cable with ventilation tube

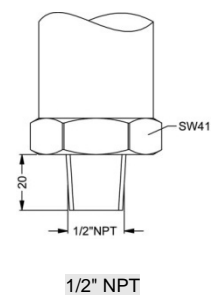
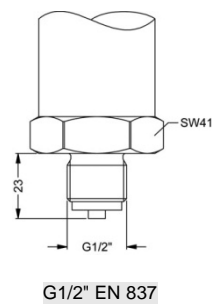
<sup>3</sup> different cable types and lengths available, permissible temperature depends on kind of cable

## Dimensions (in mm)

standard



option



This data sheet contains product specification, properties are not guaranteed. Subject to change with notice.





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