



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
- ▶ different process connections (G1 1/2", diary pipe, clamp, etc.)
- ▶ high overpressure capability

Optional versions

- ▶ IS-version
Ex ia = intrinsically safe for gases and dusts
- ▶ diaphragm 99.9 % Al₂O₃
- ▶ customer specific versions
e.g. special pressure ranges

DMK 351P

Pressure Transmitter for the Process Industry

Ceramic Sensor

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

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



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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 absolut	[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	-	-	

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 ¹																																										
Standard		$\leq \pm 0.35\% \text{ FSO}$																																								
Option		$\leq \pm 0.25\% \text{ FSO}$																																								
Long term stability		$\leq \pm 0.1\% \text{ FSO} / \text{year}$																																								
Influence effects		supply: 0.05 % FSO / 10 V load: 0.05 % FSO / kΩ																																								
Permissible load		current 2-wire:	$R_{\max} = [(V_S - V_{S\min}) / 0.02 A] \Omega$																																							
		voltage 3-wire:	$R_{\min} = 10 \text{ k}\Omega$																																							
Turn-on time		700 msec																																								
Mean measuring rate		5 / sec																																								
Response time		mean response time: $\leq 200 \text{ msec}$ max. response time: 380 msec																																								
' accuracy according to IEC 60770 - limit point adjustment (non-linearity, hysteresis, repeatability)																																										
Thermal errors (offset and span) / Permissible temperatures																																										
Thermal error		$\leq \pm 0.1\% \text{ FSO} / 10 \text{ K}$ in compensated range -20 ... 80°C																																								
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		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																																								
Materials																																										
Pressure port		stainless steel 1.4404																																								
Housing Standard compact field housing		stainless steel 1.4404 stainless steel 1.4435																																								
Seal (media wetted)		FKM EPDM others on request																																								
Diaphragm Standard Option		ceramic Al ₂ O ₃ 96 % ceramic Al ₂ O ₃ 99.9 %																																								
Media wetted parts		pressure port, seals, diaphragm																																								
IS-protection (only for 4 ... 20 mA / 2-wire)																																										
Approval DX 14-DMK 351 P		male (connector)-version: zone 0: II 1 G Ex ia IIC T4 zone 20: II 1 D Ex IP6X T=85°C cable-version: zone 0: II 1 G EEx ia IIB T4 zone 20: II 1 D EEx IP6X T=85°C																																								
Safety technical maximum values		$U_i = 28 \text{ V}$, $I_i = 93 \text{ mA}$, $P_i = 660 \text{ mW}$, $C_i = 27 \text{ nF}$, $L_i = 5 \mu\text{H}$																																								
Max. permissible temperature for environment		zone 0: -20 ... 60 °C for p_{atm} 0.8 bar up to 1.1 bar zone 1: -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																																								
Miscellaneous																																										
Current consumption		max. 21 mA																																								
Weight		min. 200 g																																								
Installation position		any																																								
Operational life		> 100 x 10 ⁶ loading cycles																																								
CE-conformity		EMC-directive: 2004/108/EC																																								

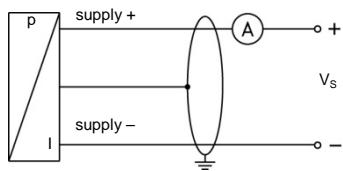
DMK 351P

Process Pressure Transmitter

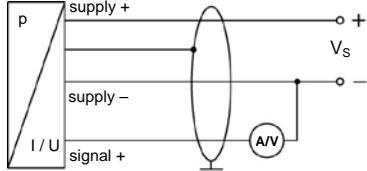
Technical Data

Wiring diagram

2-wire-system (current)



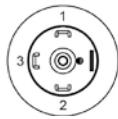
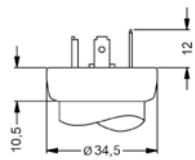
3-wire-system (current / voltage)



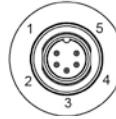
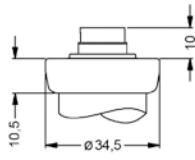
Pin configuration

Electrical connection	ISO 4400	Binder 723 (5-pin)	M12x1 (4-pin)	field housing	cable colour (DIN 47100)
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	—	ye/gn (yellow / green)

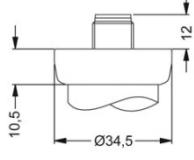
Electrical connections (dimensions in mm)



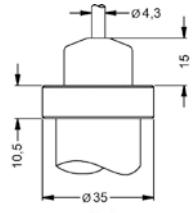
ISO 4400 (IP 65)



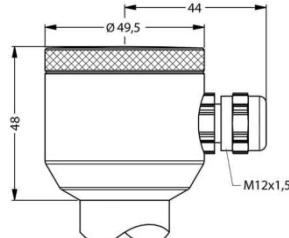
Binder series 723 (IP 67)



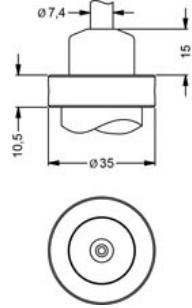
M12x1 4-pin (IP 67)



cable outlet with
PVC-cable (IP 67)²



compact field housing (IP 67)



cable outlet,
cable with ventilation tube
(IP 68)³

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

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

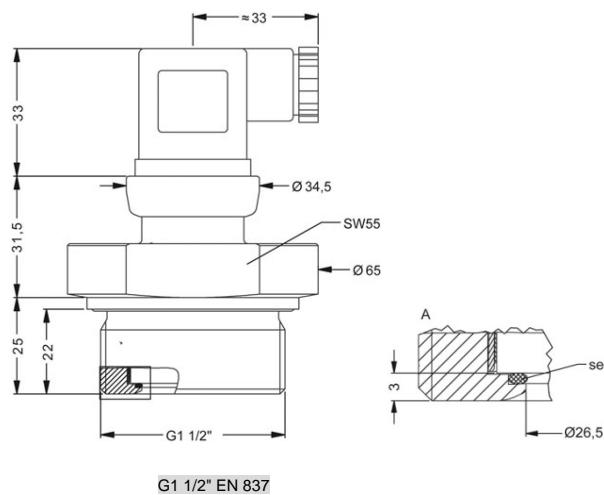
³ different cable types and lengths available, permissible temperature depends on kind of cable

DMK 351P

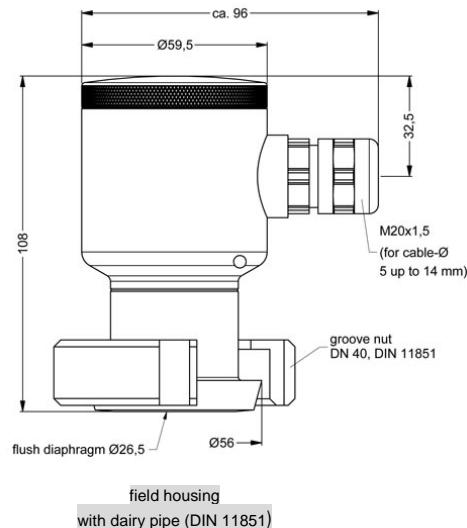
Process Pressure Transmitter

Technical Data

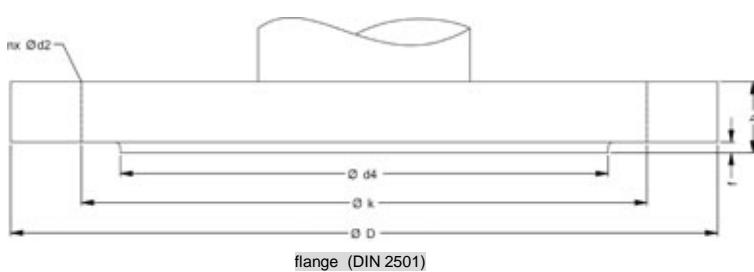
Dimensions (in mm)



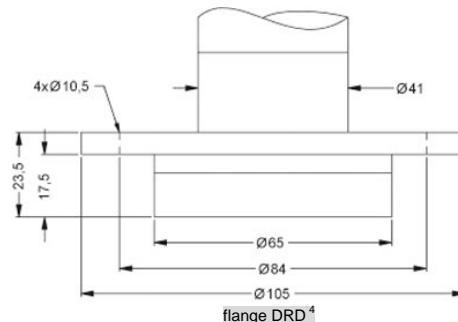
G1 1/2" EN 837



field housing
with dairy pipe (DIN 11851)

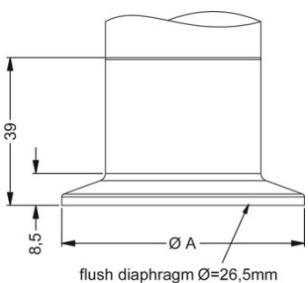


flange (DIN 2501)

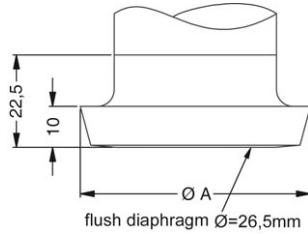


flange DRD⁴

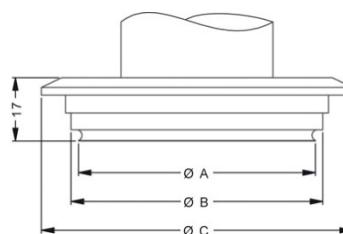
dimensions in mm			
size	DN25	DN50	DN80
D	115	165	200
k	85	125	160
d4	68	102	138
b	18	20	20
f	2	3	3
n	4	4	8
d2	14	18	18
P _N [bar]	≤ 40	≤ 40	≤ 16



Clamp (DIN 32676)



dairy pipe (DIN 11851)



Varivent

dimensions in mm		
size	DN32	DN50
A	50,5	64
P _N [bar]	≤ 16	≤ 16

dimensions in mm			
size	DN25	DN40	DN50
A	44	56	68,5

dimensions in mm		
size	P41	P63
A	64	91
B	68	96,5
C	84	113

⁴ mounting flange is included in the delivery (already pre-assembled)

Ordering code DMK 351P

DMK 351P																				
Pressure																				
	gauge	2	9	5																
	absolute ¹	2	9	6																
Input	[mH ₂ O]	[bar]																		
0.4	0.04		0	4	0	0														
0.6	0.06		0	6	0	0														
1.0	0.10		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														
200	20		2	0	0	2														
	customer		9	9	9	9														consult
Output																				
	4 ... 20 mA / 2-wire						1													
	0 ... 10 V / 3-wire						3													consult
Intrinsic safety	4 ... 20 mA / 2-wire						E													consult
	customer						9													
Accuracy																				
standard	0.35 %						3													
option	0.25 %						2													
	customer						9													consult
Electrical connection																				
	Male and female plug ISO 4400						1	0	0											
	Cable outlet with PVC cable ²						T	A	0											
	Binder series 723						2	0	0											
	Compact field housing						8	5	0											
	Cable outlet						T	R	0											
	Male plug M12x1 (4-pin) / metal						M	1	0											
	customer						9	9	9											consult
Mechanical connection																				
	G 1 1/2" DIN flush (DIN 3852)						M	0	0											
	Clamp DN 32 (DIN 32676)						C	6	2											
	Clamp DN 50 (DIN 32676)						C	6	3											
	Dairy pipe DN 40 (DIN 11851) ³						M	7	5											
	Dairy pipe DN 50 (DIN 11851) ³						M	7	6											
	Varivent® DN 40/50						P	4	1											consult
	Flange DN 25 / PN 40 (DIN 2501)						F	2	0											consult
	Flange DN 50 / PN 40 (DIN 2501)						F	2	3											consult
	Flange DN 80 / PN 16 (DIN 2501)						F	1	4											consult
	customer						9	9	9											consult
Seals																				
	FKM							1												
	EPDM							3												
	customer							9												consult
Pressure port																				
	Stainless steel 1.4404 (316L)							1												
	customer							9												consult
Diaphragm																				
	Ceramics Al ₂ O ₃ 96 %							2												
	Ceramics Al ₂ O ₃ 99.9 %							C												
	customer							9												consult
Special version																				
	standard								0	0	0									
	customer								9	9	9									consult

¹ absolute pressure from 0.04 bar up to 0.25 bar on request

² standard: 2 m PVC cable without ventilation tube

³ The cup nut has to be mounted by production of pressure transmitter with electrical connection field housing and mechanical connection dairy pipe.

The cup nut has to be ordered as separate position.



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