





DMP 33 1

Industrial Pressure Transmitter for Low Pressure

Stainless Steel Sensor

accuracy according to IEC 60770: standard: 0.35 % FSO option: 0.25 / 0.1 % FSO

Nominal pressure

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

Output signals

2-wire: 4 ... 20 mA

3-wire: 0 ··· 20 mA / 0 ··· 10 V

others on request

Special characteristic

- perfect thermal behaviour
- excellent long term stability
- pressure port G 1/2" flush from 100 mbar

Optional versions

- IS-version Ex ia = intrinsically safe for gases and dusts
- SIL 2-according to IEC 61508 / IEC 61511
- pressure sensor welded
- customer specific versions

The pressure transmitter DMP 331 can be used in all industrial areas when the medium is compatible with stainless steel 1.4404 (316 L) or 1.4435 (316 L). Additional are different elastomer seals as well as a helium tested welded version available.

The modulare concept of the device allows to combine different stainless steel sensors and electronic modules with a variety of electrical and mechanical versions. Thus a diversity of variations is created, meeting almost all requirements in industrial applications.

Preferred areas of use are



Plant and Machine Engineering



Environmental Engineering (water - sewage - recycling)



Energy Industry



















Technical Data

Input pressure range									
Nominal pressure gauge	[bar]	-10	0.10	0.16	0.25	0.40	0.60	1	1.6
Nominal pressure abs.	[bar]	-	-	-	-	0.40	0.60	1	1.6
Overpressure	[bar]	5	0.5	1	1	2	5	5	10
Burst pressure ≥	[bar]	7.5	1.5	1.5	1.5	3	7.5	7.5	15
Nominal pressure		2.5	4	6	10	16	25	40	60
gauge / abs.	[bar]	2.5	4	0	10	10	23	40	00
Overpressure	[bar]	10	20	40	40	80	80	105	105
Burst pressure ≥	[bar]	15	25	50	50	120	120	210	210
Vacuum resistance	P _N ≥ 1 bar: unlimited vacuum resistance								
		P _N < 1 bar: on request							
Output signal / Supply									

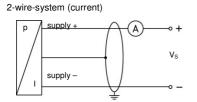
Output signal / Supply							
Standard	2-wire: 4 20 mA / V _S =	8 32 V _{DC} SIL-version: V _S	= 14 28 V _{DC}				
Option IS-protection	2-wire: 4 20 mA / V _S = 10 28 V _{DC} SIL-version: V _S = 14 28 V _{DC}						
Options 3-wire		4 30 V _{DC} 4 30 V _{DC}					
Performance							
Accuracy 1	standard: nominal pressure < 0						
	nominal pressure \geq 0.4 bar: \leq \pm 0.35 % FSO option 1: nominal pressure \geq 0.4 bar: \leq \pm 0.25 % FSO option 2: for all nominal pressure: \leq \pm 0.1 % FSO						
Permissible load	current 2-wire: $R_{max} = [(V_S - V_S min) / 0.02 A] \Omega$ current 3-wire: $R_{max} = 500 \Omega$ voltage 3-wire: $R_{min} = 10 k\Omega$						
Influence effects	supply: 0.05 % FSO / 10 V	loa	d: 0.05 % FSO / kΩ				
Long term stability	≤ ± 0.1 % FSO / year at reference						
Response time	2-wire: ≤ 10 msec		vire: ≤3 msec				
	limit point adjustment (non-linearity, hyster						
Thermal effects (Offset and Sp		, -1					
Nominal pressure P _N [ba		< 0.40	≥ 0.40				
Tolerance band [% FS		≤ ± 1	≤ ± 0.75				
	C] -20 85	0 70	-20 85				
Permissible temperatures	-,	- · · · · ·					
Permissible temperatures	medium: -40	. 125 °C					
r emperatures	electronics / environment: -40	electronics / environment: -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) accor	ding to DIN FN 60068-2-6					
Shock							
Materials	000 g / 1000	ag to 2t 2t 00000 2.2.					
Pressure port	stainless steel 1.4404 (316 L)						
Housing	stainless steel 1.4404 (316 L)						
Option compact field housing	stainless steel 1.4305 (303), cable	e gland brass, nickel plated	others on request				
Seals (media wetted)	standard: FKM options: EPDM	g.m. a acas, monor pracoa	55.5 50quoot				
	welded version ² (for F	² n≤ 40 bar)	others on request				
Diaphragm	stainless steel 1.4435 (316 L)						
Media wetted parts	pressure port, seals, diaphragm						
•	ports according to EN 837, P _N ≤ 40 bar						
Explosion protection (only for							
Approvals DX19-DMP 331	IBEXU 10 ATEX 1068 X / IECEx IBE 12.0027X zone 0: II 1G Ex ia IIC T4 Ga zone 20: II 1D Ex ia IIIC T 85°C Da						
Safety technical maximum value	U _i = 28 V, I _i = 93 mA, P _i = 660 mV the supply connections have an ir		housing				
Permissible temperatures for environment		with p _{atm} 0.8 bar up to 1.1 bar	<u> </u>				
Connecting cables (by factory)	cable capacitance: signal line/s	hield also signal line/signal line: 1 hield also signal line/signal line: 1					

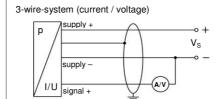


Miscellaneous			
Option SIL ³ 2	according to IEC 61508 / IEC 61511		
Current consumption	signal output current: max. 25 mA	signal output voltage: max. 7 mA	
Weight	approx. 200 g		
Installation position	any ⁴		
Operational life	> 100 x 10 ⁶ pressure cycles		
CE-conformity	EMC Directive: 2014/30/EU		
ATEX Directive	2014/34/EU		

³ only for 4 ... 20 mA / 2-wire, not in combination with the accuracy 0.1%

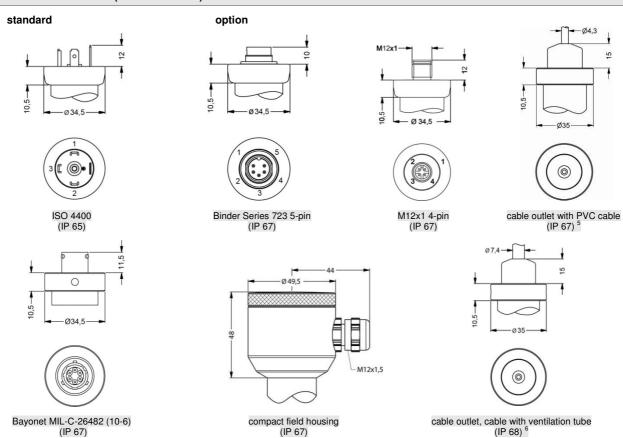
Wiring diagrams





Pin configuration							
Electrical connection	ISO 4400	Binder 723 (5-pin)	M12x1/metal (4-pin)	Bayonet 26482 2-wire		field housing	cable colours (IEC 60757)
Supply +	1	3	1	Α	Α	IN +	wh (white)
Supply –	2	4	2	В	D	IN –	bn (brown)
Signal + (for 3-wire)	3	1	3	-	В	OUT +	gn (green)
Shield	ground pin	5	4	pressui	re port	<u></u>	gnye (green-yellow))

Electrical connections (dimensions in mm)



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

⁴ Pressure transmitters are calibrated in a vertical position with the pressure connection down. If this position is changed on installation there can be slight deviations in the zero point for pressure ranges P_N ≤ 1 bar.

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

⁶ different cable types and lengths available, permissible temperature depends on kind of cable

Mechanical connections (dimensions in mm) standard SIL- and SIL-IS-version 33 © 2017 BD|SENSORS GmbH - The specifications given in this document represent the state of engineering at the time of publishing. We reserve the right to make modifications to the specifications and materials. Ø34.5 Ø34,5 83 Ø26,5 Ø26,5 50 SW27 SW27 17 17 4 G1/2" G1/2" G1/2" DIN 3852 G1/2" DIN 3852 with ISO 4400 with ISO 4400 option G1/2" G1/2" DIN 3852 G1/2" EN 837 G1/2" DIN 3852 open port, P_N ≤ 40 bar with flush sensor, $P_N \le 40$ bar 15 4 4 ₩ 20 G 1/4" G 1/4" 1/4" NPT G1/4" DIN 3852 G1/4" EN 837 1/2" NPT 1/4" NPT ⇒ metric threads and other versions on request





	Ordering code	DMP 331		
DMP 331]-]-[
Pressure gauge	1 1 0			
absolute Input [bar]	1 1 1 1			
0.10 0.16				
	1 1 6 0 0 1 2 5 0 0 4 0 0 0			
0.60	6 0 0 0			
1.0 1.6	1 0 0 1			
2.5 4.0	2 5 0 1 4 0 0 1			
6.0 10	6 0 0 1 1 0 0 2			
16 25	1 6 0 2 2 5 0 2			
40 60	4 0 0 2 6 0 0 2			
-1 0	1 6 0 2 2 5 0 2 4 0 0 2 6 0 0 2 X 1 0 2 9 9 9 9			
Output				consult
4 20 mA / 2-wire 0 20 mA / 3-wire	1 2			
0 10 V / 3-wire Intrinsic safety 4 20 mA / 2-wire	3 E			
SIL2 4 20 mA / 2-wire SIL2 with intrinsic safety	1S ES			
4 20 mA / 2-wire customer	9			consult
Accuracy standard for P _N ≥ 0.4 bar 0.35 %	3			consult
standard for P_N < 0.4 bar 0.5 % option 1 for P_N \geq 0.4 bar 0.25 %	5	i		
option 2 0.1 % customer				consult
Electrical connection	9			Consult
Male and female plug ISO 4400 Male plug Binder series 723 (5-pin)		1 0 0 2 0 0 T A 0		
Cable outlet with PVC cable Cable outlet		T R 0		
Male plug M12x1 (4-pin) / metal Bayonet MIL-C-26482 (10-6); 2 wire		M 1 0 B G 0		
Bayonet MIL-C-26482 (10-6); 3 wire Compact field housing		B G 4		
stainless steel 1.4305 customer		8 5 0 9 9		consult
Mechanical connection G1/2" DIN 3852		1 0 0		
G1/2" EN 837 G1/4" DIN 3852		2 0 0		
G1/4" EN 837		4 0 0		
G1/2" DIN 3852 with flush sensor		F 0 0		
G1/2" DIN 3852 open pressure port 1/2" NPT	5	H 0 0 N 0 0		
1/4" NPT customer		N 4 0 9 9 9		consult
Seals FKM		1		
EPDM without (welded version)	5, 6	3 2	3	
customer Special version		9		consult
standard customer			0 0 0 9 9	
absolute pressure possible from 0.4 bar not in combination with SIL standard: 2 m PVC cable without ventilation tube (perm cable with ventilation tube (code TR0 = PVC cable), diff only for $P_N \le 40$ bar with well-ded version only with pressure ports according to EN	erent cable types and lengths available, price without		9 9 3	consult consult consult
				14.03.2018

¹ absolute pressure possible from 0.4 bar

² not in combination with SIL

 $^{^3}$ standard: 2 m PVC cable without ventilation tube (permissible temperature: -5 \dots 70°C), others on request

⁴ cable with ventilation tube (code TR0 = PVC cable), different cable types and lengths available, price without cable

 $^{^{5}}$ only for $P_{N} \le 40$ bar

 $^{^{\}rm 6}$ welded version only with pressure ports according to EN 837