



DMP 331P

Industrial Pressure Transmitter

Process Connections With Flush Welded Stainless Steel Diaphragm

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

Nominal pressure

from 0 ... 100 mbar up to 0 ... 40 bar

Output signals

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

Special characteristics

- hygienic version
- diaphragm with low surface roughness
- ► CIP / SIP cleaning up to 150 °C
- vacuum resistant

Optional versions

- IS-version
 Ex ia = intrinsically safe for gases and dust
- SIL 2 according to IEC 61508 / IEC 61511
- Diaphragm in Hastelloy[®] or Tantalum
- cooling element for media temperatures up to 300 °C

The pressure transmitter DMP 331P was designed for use in the food / beverage and pharmaceutical industry. The compact design with hygienic versions makes it possible to achieve an outstanding performance in terms of accuracy, temperature behavior and long term stability.

The modular construction concept allows a combination of various process connections with different filling fluids and a cooling element. Several electrical connections complete the profile of DMP 331P.

Preferred areas of use are



Food and Beverage



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Pharmaceutical Industry

Material and test certificates

- inspection certificate 3.1 according to EN 10204
- test report 2.2 according to EN 10204

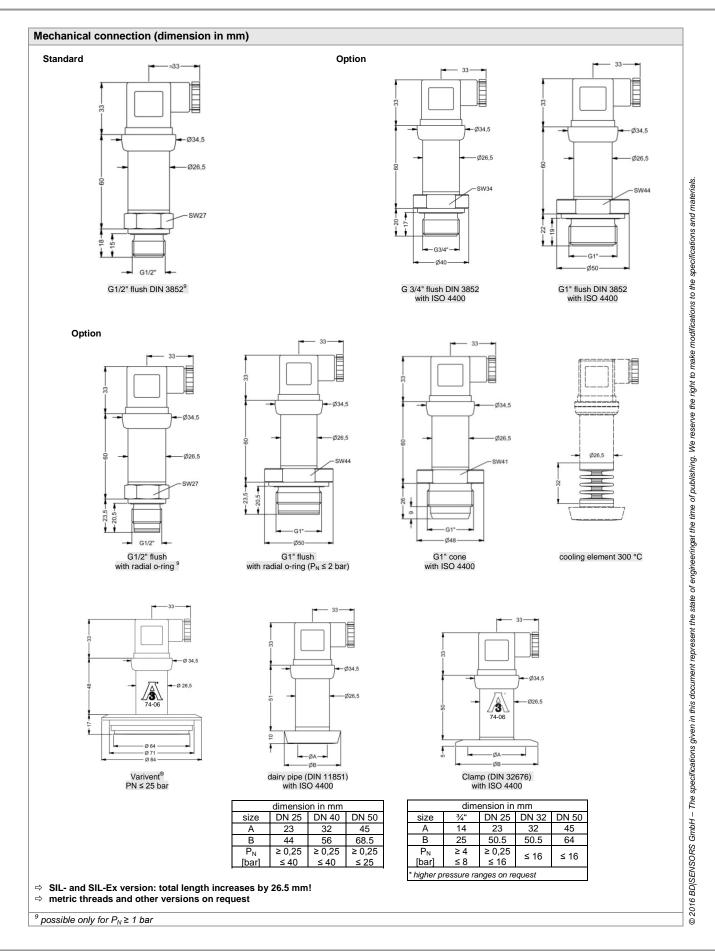




Input pressure range ¹										
Nominal pressure gauge	[bar]	-10	0.10	0.16	0.25	0.40	0.60	1	1.6	
Nominal pressure abs.	[bar]		-	-	-	0.40	0.60	1	1.6	
Overpressure	[bar]		0.5	1	1	2	5	5	10	
Burst pressure ≥	[bar]	7.5	1.5	1.5	1.5	3	7.5	7.5	15	
•									1	
Nominal pressure gauge / abs.	[bar]	2.5	4	6	10	16	25	40		
Overpressure	[bar]	10	20	40	40	80	80	105		
Burst pressure ≥	[bar]				50	120	120	210		
Vacuum resistance	[~~.]	$P_N > 1$ bar: unlimited vacuum resistance								
		$P_N \le 1$ bar:								
¹ consider the pressure resist	tance of fitt	ing and clamps	5							
Output signal / Supply										
		0	00	/)/ 0	00.1/	011	N/ 44 0	20.1/		
Standard				/ V _S = 8			V _s =142			
Option IS-protection				/ V _s = 10		SIL-version:	V _S = 14 2	28 V _{DC}		
Options 3-wire				/ V _s = 14						
_ /		0	10 V /	/ V _S = 14	30 V _{DC}					
Performance										
Accuracy ²		standard:		essure < 0.4		.5 % FSO				
		ontion		essure ≥ 0.4		.35 % FSO				
		option:	•	essure ≥ 0.4		.25 % FSO				
Permissible load		current 2-w		$= [(V_S - V_S min)]$) / 0.02 A] Ω					
		current 3-w		= 500 Ω						
		voltage 3-v		10 kΩ						
Influence effects			.05 % FSO /			.05 % FSO /	kΩ			
Long term stability				t reference co						
Response time		2-wire: < 1				≤ 3 msec				
² accuracy according to IEC (s, repeatability)					
Thermal effects (Offset	-	-	sible temper	atures						
Nominal pressure P _N	[bar]		-1 0			0.40		≥ 0.40		
Tolerance band	[% FSO		≤ ± 0.75			1,5		≤ ± 0.75		
in compensated range	[°C]		-20 85			. 50		-20 85)	
Permissible temperatures	S [™]	medium:				ng fluid silico				
				-10	125 °C TOT TIM	ng fluid food	grade oli			
		alactropics	/ onvironmo			•	- ctoro	ao: 10 10	0 °C	
Pormissible tomporature	modium		/ environme	nt: -40	85 °C	-40 300 %		ige: -40 10		
Permissible temperature		filling fluid	silicone oil	nt: -40 c	85 °C	-40 300 °(C vacu	um: -40 15	0 °C⁵	
for cooling element 300°C	С	filling fluid	silicone oil food grade o	nt: -40 c	85 °C overpressure: overpressure:	-10 250 °C	C vacu C vacu	um: -40 15 um: -10 15	0 °C⁵	
for cooling element 300°C ³ an optional cooling element	C t can influe	filling fluid filling fluid nce thermal eff	silicone oil food grade o fects for offset	nt: -40 il c and span depe	85 °C overpressure: overpressure: anding on instal	-10 250 °C lation position a	C vacu C vacu and filling cond	um: -40 15 um: -10 15 litions.	0 °C⁵	
for cooling element 300°C	C t can influe	filling fluid filling fluid nce thermal eff	silicone oil food grade o fects for offset	nt: -40 il c and span depe	85 °C overpressure: overpressure: anding on instal	-10 250 °C lation position a	C vacu C vacu and filling cond	um: -40 15 um: -10 15 litions.	0 °C⁵	
for cooling element 300°C ³ an optional cooling element ⁴ max. temperature of the me	C t can influe	filling fluid filling fluid nce thermal eff	silicone oil food grade o fects for offset	nt: -40 il c and span depe	85 °C overpressure: overpressure: anding on instal	-10 250 °C lation position a	C vacu C vacu and filling cond	um: -40 15 um: -10 15 litions.	0 °C⁵	
for cooling element 300°C 3 an optional cooling element 4 max. temperature of the me 5 also for $P_{abs} \leq 1$ bar	C t can influe	filling fluid f filling fluid f nee thermal eff ominal pressur	silicone oil food grade o fects for offset e gauge > 0 ba	nt: -40 c il c and span depe ar: 150 °C for 6	85 °C overpressure: overpressure: anding on instal	-10 250 °C lation position a	C vacu C vacu and filling cond	um: -40 15 um: -10 15 litions.	0 °C⁵	
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for cooling element 300°C ³ an optional cooling element ⁴ max. temperature of the me ⁵ also for $P_{abs} \le 1$ bar Electrical protection Short-circuit protection Reverse polarity protection Electromagnetic	C t can influe edium for n	filling fluid a filling fluid a filling fluid a proce thermal eff pominal pressur	silicone oil food grade o fects for offset e gauge > 0 ba e, but also no	nt: -40 il c and span depe ar: 150 °C for 6	85 °C overpressure: overpressure: anding on instal 0 minutes with	-10 250 °C lation position a	C vacu C vacu and filling cond	um: -40 15 um: -10 15 litions.	0 °C⁵	
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Explosion protection (only for 4.									
Approvals	IBExU 10 ATEX 10	68 X / IECEx IB	E 12.0027X						
DX 19-DMP 331P	zone 0: II 1G Ex ia IIC T4 Ga zone 20: II 1D Ex ia IIIC T 85°C Da								
Safety technical maximum values	$U_i = 28 \text{ V}, I_i = 93 \text{ mA}, P_i = 660 \text{ mW}, C_i \approx 0 \text{ nF}, L_i \approx 0 \mu\text{H},$ 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: -20 70 °C								
Connecting cables cable capacitance: signal line/shield also signal line/signal line: 160 pF/m (by factory) cable inductance: signal line/shield also signal line/signal line: 1µH/m									
Viscellaneous	cable inductance.	Signar Inte/Siner	a also signar inte/signa						
Dption SIL ⁶ 2	according to IEC 61								
Current consumption	according to IEC 61508 / IEC 61511								
	signal output current: max. 25 mA signal output voltage: max. 7 mA								
Veight nstallation position	min. 200 g (depending on process connection)any (standard calibration in a vertical position with the pressure port connection down;differing installation position for $P_N \le 2$ bar have to be specified in the order)								
Operational life	> 100 x 10 ⁶ pressur	•							
CE-conformity	EMC Directive: 201								
,		4/JU/EU							
ATEX Directive	2014/34/EU								
only for 4 20 mA / 2-wire									
Viring diagrams									
2-wire-system (current)		2	e-system (current / voltage	2)					
2-wire-system (Cullent)		3-WIF	, , ,	2)					
p supply + A supply -	∞+ Vs	p	p supply + o + V _S supply - o -						
	-o —		I/U signal +						
Pin configuration									
Electrical connection	ISO 4400	Binder 723 (5-pin)	M12x1 / metal (4-pin)	field housing	cable colour (IEC 60757)				
Supply +	1	3	1	IN +	wh (white)				
Supply – Signal (only 3-wire)	2 3	4 1	2 3	IN - OUT+	bn (brown) gn (green)				
Shield	ground pin	5	4	<u> </u>	gnye (green-yellow)				
Electrical connections (dimensio	ns in mm)		1 1		(9.0011)0.001)				
standard	option								
Standard	option		M12v1		Ø4,3				
	900 - 034,5 -			- 501 					
				(
ISO 4400 (IP 65)	Binder Series 7 (IP 67)	23	M12x1 4-pin (IP 67)	cable outlet with PVC cable (IP 67) ⁷					
		0 495 M12x1,5 0 26,5	501						
		field housing (IP 67)		cable with ventilation tub (IP 68) ⁸	e				
universal field housing stainle and other versions on request				30)					
atondard 2 m DV/C ashle with suit "									

DMP 331P Industrial Pressure Transmitter





pressure measurement



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501										
1 0 0 0										
1 6 0 0										
4 0 0 0										
1 6 0 1										
1 6 0 2										
4 0 0 2										
X 1 0 2										
9 9 9 9										consult
	1									
	3									
	E 1S									
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	9									consult
	3									
	2									
	9									consult
		TR	R 0							
		9 9	9 9							consult
				Z 0	0					
				Z 3	0					
				73	1					
				25	1					
					1					
				K 3	1					
				C 6	2					
				C 6	3					
				M 7	3					
				M 7	6					
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cable types and lengths availa smitter with electrical connecti			hanical	connect	ion dair	y pipe.				
			hanical	connect	ion dair	y pipe.				consult consult consult consult consult consult consult
	1 6 0 0 2 5 0 0 4 0 0 0 1 0 0 1 1 6 0 1 2 5 0 1 4 0 0 1 2 5 0 1 4 0 0 1 2 5 0 1 4 0 0 2 2 5 0 2 4 0 0 2 2 5 0 2 4 0 0 2 2 3 0 2 4 0 0 2 2 4 0 0 2 3 9 9 9 9 9 9 9 9 9 9 9 9 9 9	1 0 0 0 0 1 6 0 0 2 5 0 0 4 0 0 0 6 0 0 0 1 0 0 1 1 6 0 1 2 5 0 1 4 0 0 1 1 6 0 1 2 5 0 1 4 0 0 1 1 6 0 1 1 0 0 2 1 6 0 2 2 5 0 2 4 0 0 2 2 5 0 2 4 0 0 2 2 5 0 2 4 0 0 2 3 3 E S 9 9 9 9 9 9 9 9 9 9 9 9 9	1 0 0 0 0 2 5 0 0 4 0 0 0 0 6 0 0 0 1 1 0 0 1 1 6 0 1 2 5 0 1 4 0 0 0 1 1 6 0 1 2 5 0 2 4 0 0 0 2 2 5 0 2 4 0 0 0 2 2 5 0 2 4 0 0 0 2 3 5 2 3 4 0 0 3 5 2 3 4 0 0 3 5 2 3 4 0 4 0 0 2 4 4 0 4 0 2 4 4 0 4 0 2 4 4 0 4 0 4 0 4 0 4 0 4 0 4 0 4	1 0 0 0 1	1 0 0 0 1	1 0	1 0 0 0 0 2 5 0 0 4 0 0 0 1 6 0 0 2 5 0 1 2 0 0 0 2 7 A 0 0 3 1 1 2 7 6 1 2 7 6 1 4 1 0 3 1 1 3 1	1 0 0 0 0 2 5 0 0 2 5 0 1 2 5 0 1 2 5 0 1 1 0 0 2 1 0 0 2 2 5 0 2 4 0 0 0 1 1 0 0 2 2 5 0 2 4 0 0 0 1 1 0 0 2 2 5 0 2 4 0 0 0 1 1 0 0 2 2 5 0 2 4 0 0 0 1 1 0 0 2 2 5 0 2 4 0 0 0 1 1 0 0 0 2 5 0 2 4 0 0 0 1 1 0 0 0 2 6 0 2 2 6 0 2 4 0 0 0 1 1 0 0 0 2 7 0 0 T A 0 9 9 9 9 9 1 0 0 2 3 1 X 1 0 2 9 9 9 9 9 1 0 0 X 1 0 2 2 5 7 Z 3 0 X 3 1 X 4 1 X 4 1 X 4 1 X 4 1 X 5 X 6 1 X 3 1 X 7 X 6 1 X 7 X 7 X 7 X 7 X 7 X 7 X 7 X 7	1 0	1 0