



# **DMP 331**

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 b

### **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
- welded pressure sensor
- 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



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Input pressure range										
Nominal pressure gauge	e [bar]	-10	0.10	0.16	0.25	0.40	0.60	1	1.6	
Nominal pressure absol		-	-	-	-	0.40	0.60	1	1.6	
Overpressure	[bar]		0.5	1	1	2	5	5	1.0	
Burst pressure ≥	[bar]	7.5	1.5	1.5	1.5	3	7.5	7.5	15	
	[bui]	7.0	1.0	1.0	1.0	0	1.0	1.0	10	
Nominal pressure	[]]	2.5	4	6	10	16	25	40	60	
gauge / abs.	[bar]	10	00	10	40	00	00	405	405	
Overpressure	[bar]	10	20	40	40	80	80	105	105	
Burst pressure ≥	[bar]	15	25	50	50	120	120	210	210	
Vacuum resistance		$p_N \ge 1$ bar: $p_N < 1$ bar:	unlimited vacuon request	um resistan	ce					
Output signal / Supply										
Standard		2-wire:	4 20 mA	/ //	8 32 \/aa		SIL-version:	$V_{2} = 14$ 2	8 1/20	
Option IS-protection		2-wire:		$/ V_{\rm S} = 10$			SIL-version:			
Options 3-wire		3-wire:	0 20 mA		4 30 V <sub>DC</sub>			vs – 14 Zo	C V DC	
Options 5-wire		J-Wile.	0 20 MA		4 30 V <sub>DC</sub>					
Performance										
Accuracy <sup>1</sup>		standard:	nominal pres	ssure < 0.4 b	ar: ≤±	: 0.50 % FSC	)			
			nominal pres	ssure ≥ 0.4 b	oar: ≤±	: 0.35 % FSC	)			
		option 1: option 2:	nominal pres			± 0.25 % FSC ± 0.10 % FSC				
Permissible load		current 2-w			 nin) / 0.02 Α] Ω					
		current 3-w		$= 240 \Omega$	nin) / 0.02 / (] 3	2				
		voltage 3-w		= 10 kΩ						
Influence effects		supply:	0.05 % FSO							
		load: 0.05 % FSO / $k\Omega$								
Long term stability		≤ ± 0.1 % F	SO / year at r	eference co	nditions					
Response time		2-wire:	≤ 10 msec							
		3-wire:	≤ 3 msec							
<sup>1</sup> accuracy according to IEC		· · ·	nent (non-linea	rity, hysteresis	s, repeatability)					
Thermal effects (offset	and span	i)								
Nominal pressure p <sub>N</sub>	[bar]		-1 0		< 0	0.40		≥ 0.40		
Tolerance band [% FSO]					≤±1		≤ ± 0.75			
in compensated range	[°C]		-20 85		0	. 70		-20 85	5	
Permissible temperatu	res									
Medium		-40 125 °	С							
Electronics / environmer	nt	-40 85 °C								
Storage		-40 100 °	С							
Electrical protection		·								
Short-circuit protection		permanent								
Reverse polarity protection		no damage, but also no function								
IVEAGISE POIGHTA DIOLECH	ion	emission and immunity according to EN 61326								
		emission ar			EN 61326					
Electromagnetic compat		emission ar			EN 61326					
Electromagnetic compat			nd immunity a	ccording to I	EN 61326	according	to DIN EN 60	068-2-6		
Electromagnetic compat Mechanical stability Vibration		10 g RMS (	nd immunity a 25 2000 Hi	ccording to I	EN 61326	-	to DIN EN 60			
Electromagnetic compat Mechanical stability Vibration Shock			nd immunity a 25 2000 Hi	ccording to I	EN 61326	-	to DIN EN 60 to DIN EN 60			
Electromagnetic compat Mechanical stability Vibration Shock Materials		10 g RMS ( 500 g / 1 m	nd immunity a 25 2000 H: sec	ccording to I	EN 61326	-				
Electromagnetic compat Mechanical stability Vibration Shock Materials Pressure port		10 g RMS ( 500 g / 1 m stainless st	nd immunity a 25 2000 Hi sec eel 1.4404 (3	ccording to I z) 16 L)	EN 61326	-				
Electromagnetic compat Mechanical stability Vibration Shock Materials Pressure port	ibility	10 g RMS ( 500 g / 1 m stainless str stainless str stainless str	nd immunity a 25 2000 Hi sec eel 1.4404 (3 eel 1.4404 (3 eel 1.4301 (3)	ccording to F z) 16 L) 16 L) 04)		according	to DIN EN 60			
Electromagnetic compat Mechanical stability Vibration Shock Materials Pressure port Housing Option compact field hou	ibility	10 g RMS ( 500 g / 1 m stainless str stainless str stainless str cable gland	nd immunity a 25 2000 Hi sec eel 1.4404 (3 eel 1.4404 (3 eel 1.4301 (30 M12x1.5, bra	ccording to F z) 16 L) 16 L) 04)		according	to DIN EN 60			
Electromagnetic compat Mechanical stability Vibration Shock Materials Pressure port Housing	ibility	10 g RMS ( 500 g / 1 m stainless str stainless str stainless str cable gland standard:	nd immunity a 25 2000 Hi sec eel 1.4404 (3 eel 1.4404 (3 eel 1.4404 (3 eel 1.4301 (30 M12x1.5, bra FKM	ccording to F z) 16 L) 16 L) 04)		according	to DIN EN 60			
Electromagnetic compat Mechanical stability Vibration Shock Materials Pressure port Housing Option compact field hou	ibility	10 g RMS ( 500 g / 1 m stainless str stainless str stainless str cable gland standard: options:	nd immunity a 25 2000 Hi sec eel 1.4404 (3 eel 1.4404 (3 eel 1.4301 (30 M12x1.5, bra FKM EPDM	ccording to F z) 16 L) 16 L) 04) ass, nickel pl	ated (clampir	according	to DIN EN 60			
Electromagnetic compat Mechanical stability Vibration Shock Materials Pressure port Housing Option compact field how	ibility	10 g RMS ( 500 g / 1 m stainless str stainless str stainless str cable gland standard: options:	nd immunity a 25 2000 Hi sec eel 1.4404 (3 eel 1.4404 (3 eel 1.4301 (30 M12x1.5, bra FKM EPDM welded versic	ccording to F z) 16 L) 16 L) 04) ass, nickel pl	ated (clampir	according	to DIN EN 60			
Electromagnetic compat Mechanical stability Vibration Shock Materials Pressure port Housing Option compact field hou Seals	ibility	10 g RMS ( 500 g / 1 m stainless str stainless str cable gland standard: options: others on re	ad immunity a 25 2000 Hi sec eel 1.4404 (3 eel 1.4404 (3 eel 1.4301 (30 M12x1.5, bra FKM EPDM welded versic equest	ccording to R z) 16 L) 16 L) 04) ass, nickel pl on $^{2}$ (for p <sub>N</sub> $\leq$	ated (clampir	according	to DIN EN 60			
Electromagnetic compat Mechanical stability Vibration Shock Materials Pressure port Housing Option compact field hou	ibility	10 g RMS ( 500 g / 1 m stainless str stainless str cable gland standard: options: others on re stainless str	nd immunity a 25 2000 Hi sec eel 1.4404 (3 eel 1.4404 (3 eel 1.4301 (30 M12x1.5, bra FKM EPDM welded versic	ccording to R z) 16 L) 16 L) 04) ass, nickel pl on <sup>2</sup> (for $p_N \le 1$ 16 L)	ated (clampir	according	to DIN EN 60			

Explosion protection (only for 4	20 mA / 2-wire)						
Approvals		( / IECEX IBE 12,0027X)					
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						
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						
Permissible temperatures for							
environment	in zone 1 or higher:	-40/-20 70 °C					
Connecting cables (by factory)	cable capacitance: cable inductance:		eld also signal line/signal line: 160 pF/m eld also signal line/signal line: 1 μH/m				
Miscellaneous	cable inductance.	Signal line/shield also Sign					
Option SIL2 version <sup>3</sup>	according to IEC 61508	ding 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 <sup>4</sup>						
Operational life	100 million load cycles						
CE-conformity	EMC Directive: 2014/30	)/FU					
ATEX Directive	2014/34/EU	5,20					
<sup>3</sup> only for 4 20 mA / 2-wire, not in con <sup>4</sup> Pressure transmitters are calibrated in	-		is position is changed on inst	allation there can h	ne sliaht		
deviations in the zero point for pressur			is position is changed on mat		o sign		
Wiring diagrams							
2-wire-system (current)		3-wire-system (cu	rrent / voltage)				
			nent / vonage/				
p supply + A V <sub>2</sub> Supply -	+	p supply + //U signal +					
Pin configuration Electrical connection	ISO 4400	Dinder 702	M12x1 / metal	Dovenet MIL	0.06480		
Electrical connection	150 4400	Binder 723 (5-pin)	(4-pin)	Bayonet MIL-C-26482 (10-6)			
	1	2 1	3	C	в		
				D	A		
	3 GNI			D E 2-wire	F 3-wire		
Supply +		4 5			F 3-wire		
Supply + Supply –		3		A	A		
Supply –	1 2	3 4	2		A D		
Supply – Signal + (for 3-wire)	1 2 3	3 4 1	2 3	A B -	A D B		
Supply – Signal + (for 3-wire) Shield	1 2 3 ground pin (=)	3 4 1 5	2	A	A D B		
Supply – Signal + (for 3-wire)	1 2 3 ground pin (=)	3 4 1	2 3	A B -	A D B		
Supply – Signal + (for 3-wire) Shield	1 2 3 ground pin (=) compact	3 4 1 5	2 3 4	A B -	A D B		
Supply – Signal + (for 3-wire) Shield Electrical connection	1 2 3 ground pin (=) compact	3 4 1 5 field housing s. S+ GND	2 3 4 cable colours	A B - pressure	A D B		
Supply – Signal + (for 3-wire) Shield Electrical connection Supply +	1 2 3 ground pin (=) compact	3 4 1 5 field housing s. S+ GND Vs+	2 3 4 cable colours WH (	A B - pressure s (IEC 60757) white)	A D B		
Supply – Signal + (for 3-wire) Shield Electrical connection Supply + Supply –	1 2 3 ground pin (=) compact	3 4 1 5 field housing s. S+ GND Vs+ Vs+ Vs-	2 3 4 cable colours WH ( BN (b	A B - pressure s (IEC 60757) white) prown)	A D B		
Supply – Signal + (for 3-wire) Shield Electrical connection Supply +	1 2 3 ground pin (=) compact	3 4 1 5 field housing s. S+ GND Vs+	2 3 4 cable colours WH ( BN (b GN (c	A B - pressure s (IEC 60757) white)	A D B		



# DMP 331

Industrial Pressure Transmitter



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NSC

pressure measurement

BD SEI



	Ordering code DMP 331		
DMP 331		ПП	
Pressure			
gauge absolute <sup>1</sup>			
Input [bar]			
0.10 <sup>1</sup> 0.16 <sup>1</sup>	1 0 0 0 1 1 6 0 0		
0.25 1	2 5 0 0		
0.40 0.60	4 0 0 0 0 6 0 0 0 0 0 0 0 0 0 0 0 0 0 0		
1.0	1 0 0 1		
1.6 2.5	1 6 0 1 2 5 0 1		
4.0	4 0 0 1		
6.0 10	6 0 0 1 1 0 0 2		
16	1 6 0 2		
25	2 5 0 2		
40 60	4 0 0 2 6 0 0 2		
-1 0	X 1 0 2		
Output	9 9 9 9		consult
4 20 mA / 2-wire	1		
0 20 mA / 3-wire 0 10 V / 3-wire	2 3		
intrinsic safety 4 20 mA / 2-wire	E		
SIL2 4 20 mA / 2-wire SIL2 with intrinsic safety	15		
4 20 mA / 2-wire	ES		
customer	9		consult
Accuracy standard for $p_N \ge 0.4$ bar: 0.35 % FSO	3		
standard for $p_N < 0.4$ bar: 0.50 % FSO	5		
option 1 for $p_N \ge 0.4$ bar:0.25 % FSOoption 2:0.10 % FSO $^2$			
customer	9		consult
Electrical connection male and female plug ISO 4400	1 0 0		
male plug Binder series 723 (5-pin)	2 0 0		
cable outlet with PVC cable (IP67) <sup>3</sup> cable outlet.	T A O		
cable with ventilation tube (IP68) <sup>4</sup>	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); 2 wire	B G 4		
compact field housing	8 5 0		
stainless steel 1.4301 (304) customer	9 9 9		consult
Mechanical connection			
G1/2" DIN 3852 G1/2" EN 837	1 0 0 2 0 0		
G1/4" DIN 3852	2 0 0 3 0 0		
G1/4" EN 837 G1/2" DIN 3852	4 0 0		
with flush sensor 5	F 0 0		
G1/2" DIN 3852 open pressure port <sup>5</sup> 1/2" NPT	H 0 0 N 0 0		
1/4" NPT	N 4 0 9 9 9		
customer	9 9 9		consult
FKM	1		
EPDM	3		
without (welded version) <sup>5,6</sup> customer	3 2 9		consult
Special version			
standard customer		0 0 0 9 9 9	consult
		1 - 1 - 1	

<sup>1</sup> absolute pressure possible from 0.4 bar

 $^{\rm 2}\,$  not in combination with SIL <sup>3</sup> standard: 2 m PVC cable without ventilation tube (permissible temperature: -5 ... 70°C), others on request

<sup>4</sup> code TR0 = PVC cable, cable with ventilation tube available in different types and lengths

 $^5$  only for  $p_{\rm N}$   $\leq 40$  bar

<sup>6</sup> welded version only with pressure ports according to EN 837 and NPT

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