



## **DMD 331**

### Differential Pressure Transmitter for Liquids and Gases

Stainless Steel Sensor

accuracy according to EN IEC 62828-2: 0.5 % span

#### **Differential pressure**

from 0 ... 20 mbar up to 0 ... 16 bar

#### **Output signals**

2-wire: 4 ... 20 mA 3-wire: 0 ... 10 V

#### **Special characteristics**

- differential pressure wet / wet
- permissible static pressure -onesidedup to 30 times of differentialpressure range
- ▶ compact design
- mechanical robust and reliable at dynamic pressures as well as shockand vibration

#### **Optional versions**

- IS-version
  Ex ia = intrinsically safe version for gases and dust
- different electrical and mechanical connections
- customer specific versions

The DMD 331 is a differential pressure transmitter for industrial applications and is based on a piezoresistive stainless steel sensor, which can be pressurized on both sides with fluids or gases compatible with SST 1.4404 (316L) and 1.4435 (316L).

The compact design allows an integration of the DMD 331 in machines and applications with limited space. The DMD 331 calculates the difference between the pressure on the positive and the negative side and converts it into a proportional electrical signal.

#### Preferred areas of use are



Plant and Machine Engineering



**Energy Industry** 

#### Preferred used for



Water











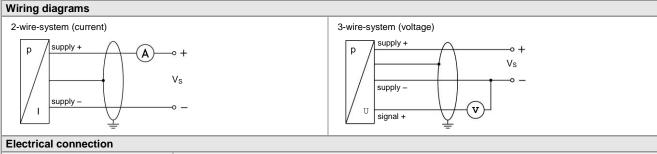




#### Differential Pressure Transmitter

Input pressure range	ressure range					
Nominal pressure [bar]	0.2	0.4	1	2.5	6	16
Differential pressure range [bar]						
TD 1:1	0 0.02	0 0.04	0 0.1	0 0.25	0 0.6	0 1.6
up to	up to	up to	up to	up to	up to	up to
TD 10: 1	0 0.2	0 0.4	0 1	0 2.5	0 6	0 16
Permissible static pressure,	0.5	1	3	6	20	60
one-sided [bar]	0.5	ľ	3	0	20	00

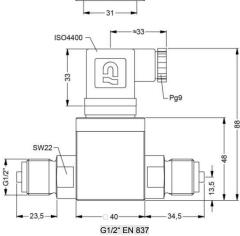
Output signal / Supply						
Standard	2-wire: $4 \dots 20 \text{ mA} / V_S = 12$					
Option IS-version	2-wire: 4 20 mA / V <sub>S</sub> = 14					
Option 3-wire	3-wire: 0 10 V / V <sub>S</sub> = 14	36 V <sub>DC</sub>				
Performance						
Accuracy 1	For ranges of max, input pressu	re + PN > 1 bar (codes C.D.E)				
,	≤ ± 0,5 % span (differential pressure range with TD from 1:1 up to 5:1)					
	≤ ± 1 % span (differential pressu					
	For ranges of max. input pressure + PN > 1 bar (codes A,B,F)					
	$\leq \pm 0.5$ % span (differential pressure range with TD from 100 to 50 % from static pressure)					
	≤±1% span (differential pressure range with TD > 50 to 10% from static pressure)					
Permissible load	current 2-wire: $R_{max} = [(V_S - V_S min)]$	) / 0.02 A] Ω voltage 3-wire:	$R_{min} = 10 \text{ k}\Omega$			
Influence effects	supply: 0.05 % span / 10 V	load: 0.	05 % span / kΩ			
Long term stability	≤ ± 0.2 % span / year					
Response time	< 5 msec					
<sup>1</sup> accuracy according to EN IEC 62828-2-	- limit point adjustment (non-linearity, hys	teresis, repeatability)				
Thermal effects 2 (Offset and Spar	n) / Permissible temperatures					
Nominal pressure P <sub>N</sub> [bar]	0.2	0.4	≥ 1.0			
Tolerance band [% span]	≤ ± 2.5	≤ ± 2	≤ ± 1.5			
TC, average [% span / 10 K]	± 0.4	± 0.3	± 0.2			
in compensated range [°C]	0 5	60	0 70			
Permissible temperatures	medium: -25 125 °C elect	ronics / environment: -25 85 °C	storage: -40 100 °C			
<sup>2</sup> relating to nominal pressure range						
Electrical protection						
Short-circuit protection	permanent					
Reverse polarity protection	no damage, but also no function					
Electromagnetic compatibility						
Mechanical stability	, ,					
Vibration	·					
Shock	10 g KMS (20 2000 Hz)					
Materials	100 g / 11 111000					
Pressure port	stainless steel 1.4404 (316L)					
Housing	aluminium, black anodized					
Seals (media wetted)	FKM / others on request					
Diaphragm	stainless steel 1.4435 (316L)					
Media wetted parts	pressure port, seals, diaphragm					
Miscellaneous	7 7 1					
Current consumption						
Carroni concamption	signal output current. I max. 25 mA signal output voltage: max. 7 mA					
Weight	approx. 250 g					
Operational life	100 million load cycles					
Ingress protection	IP 65					
CE-conformity	EMC Directive: 2014/30/EU					
ATEX Directive	2014/34/EU					
Explosion protection (onla for 4	. 20 mA / 2 wire)					
Approvals DX3A-DMD 331						
	zone 1: II 2G Ex ia IIC T4 Gb, II 2D Ex ia IIIC T85 °C Db					
zone 0: II 1G Ex ia IIC T4 Ga, II 1D Ex ia IIIC T85 °C Da						
Safety technical maximum values	$U_i = 28 \text{ V}_{DC}, I_i = 93 \text{ mA}, P_i = 660 \text{ mW}, C_i \le 1 \text{ nF}, L_i \le 10 \mu\text{H},$					
Permissible temperatures for	the supply connections have an inner capacity of max. 27 nF to the housing					
environment	-25 65 °C					
Pin configuration						
Electrical connection	ISO 4400					
Supply +	1					
Supply – Signal + (only 3-wire)						
Shield	,					
Stileiu	ground pin					



Standard	male and female plug ISO 4400 (IP 65)
Others	on request

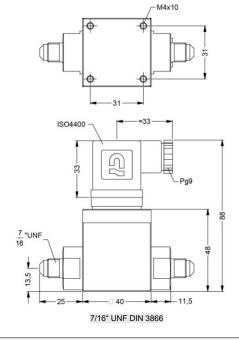
#### Mechanical connection (dimensions in mm)

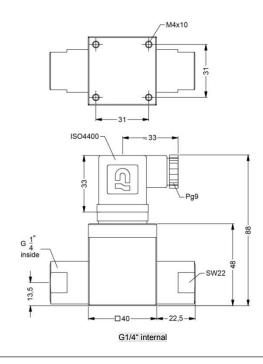
# M4x10



#### option

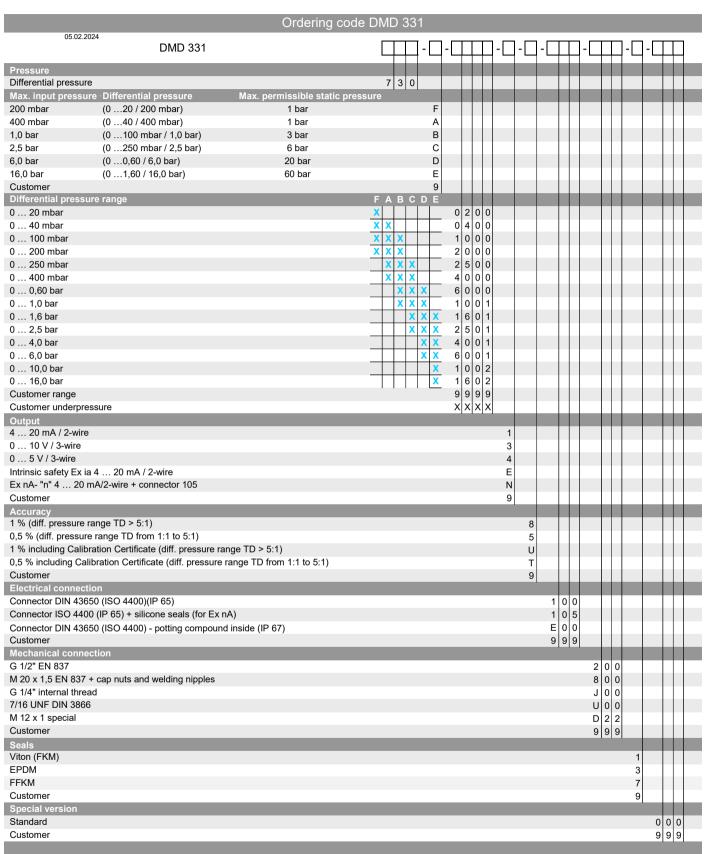
standard





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0,-...without additional charge / On request...in accordance with the producer / Standard EN 837-1/-3 corresponds to original Standard DIN 16288 The span of differential pressure can be selected on an individual basis from 10% to 100% max. pressure on input +.

X - selected version of max. pressure on input "+" and differential pressure is producible.



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Surcharges for calibration are not subject to any discounts. Subject to change.

This document contains the specification for ordering the product; detailed technical parameters of the product and its possible variants are given in the data sheet. BD SENSORS reserves the right to change sensor specifications without further notice.





