

DMD 331

Differential Pressure Transmitter for Liquids and Gases



- ▶ 2 piezoresistive stainless steel sensors
- ▶ media isolation by 1.4435 (316L) stainless steel diaphragms
- ▶ accuracy:
0.25 % FSO BFSL
(0.5 % FSO IEC 60770)
- ▶ differential pressure from 0 ... 20 mbar up to 0 ... 16 bar

The DMD 331 is a differential pressure transmitter for industrial use, based on a piezoresistive stainless steel sensor, which can be applied on both sides with fluids and gases compatible with stainless steel 1.4571 (316Ti) or 1.4435 (316L).

The compact design allows the integration of the DMD 331 also in plant constructions / machines with small space available. When pressure is applied the DMD 331 determines the pressure difference between positive and negative sides and transforms this into a proportional electrical signal.

Available output signals are 4 ... 20 mA / 2-wire and 0 ... 10 V / 3-wire.

Preferred areas of use are:

- ▶ mechanical engineering and plant construction
- ▶ filter monitoring
- ▶ hydraulic applications
- ▶ flow measurement

- ▶ differential pressure wet / wet
- ▶ permissible static pressure - one sided - up to 30 times of differential pressure range
- ▶ excellent long term stability
- ▶ compact design
- ▶ mechanically robust and reliable at dynamic pressures as well as shock and vibration

Characteristics

CE

DMD 331
Differential Pressure Transmitter

Input pressure range						
Nominal range [bar]	0.2	0.4	1	2.5	6	16
Differential pressure range [bar]	0 ... 0.02 up to 0 ... 0.2	0 ... 0.04 up to 0 ... 0.4	0 ... 0.1 up to 0 ... 1	0 ... 0.25 up to 0 ... 2.5	0 ... 0.6 up to 0 ... 6	0 ... 1.6 up to 0 ... 16
permissible static pressure one-sided [bar]	0.5	1	3	6	20	60

Output signal / Supply	
Standard	2-wire: 4 ... 20 mA / $V_S = 12 \dots 36 V_{DC}$
Optional	3-wire: 0 ... 10 V / $V_S = 14 \dots 36 V_{DC}$

Performance	
Accuracy	IEC 60770 ¹ : $\leq \pm 0.5 \% \text{ FSO}$ BFSL: $\leq \pm 0.25 \% \text{ FSO}$
Permissible load	current 2-wire: $R_{max} = [(V_S - V_{Smin}) / 0.02] \Omega$ voltage 3-wire: $R_{min} = 10 \text{ k}\Omega$
Influence effects	supply: 0.05 % FSO / 10 V load: 0.05 % FSO / k Ω
Long term stability	$\leq \pm 0.2 \% \text{ FSO} / \text{year}$
Response time	< 5 msec

Thermal errors ² (Offset and Span)			
Nominal pressure P _N [bar]	0.2	0.4	≥ 1.0
Tolerance band [% FSO]	$\leq \pm 2.5$	$\leq \pm 2$	$\leq \pm 1.5$
TC, average [% FSO / 10 K]	± 0.4	± 0.3	± 0.2
in compensated range [°C]	0 ... 50	0 ... 50	0 ... 70

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)
Shock	100 g / 11 ms

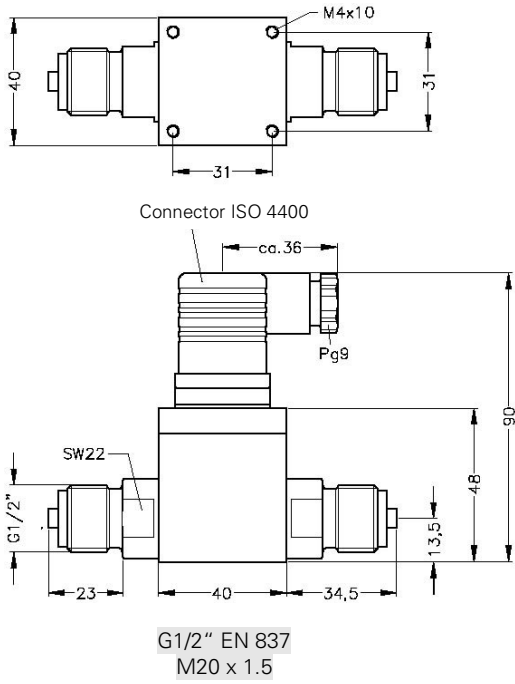
Permissible temperatures	
Media	-25 ... 125 °C
Electronics / environment	-25 ... 85 °C
Storage	-40 ... 100 °C

¹ accuracy according to IEC 60770 – limit point adjustment (non-linearity, hysteresis, repeatability)

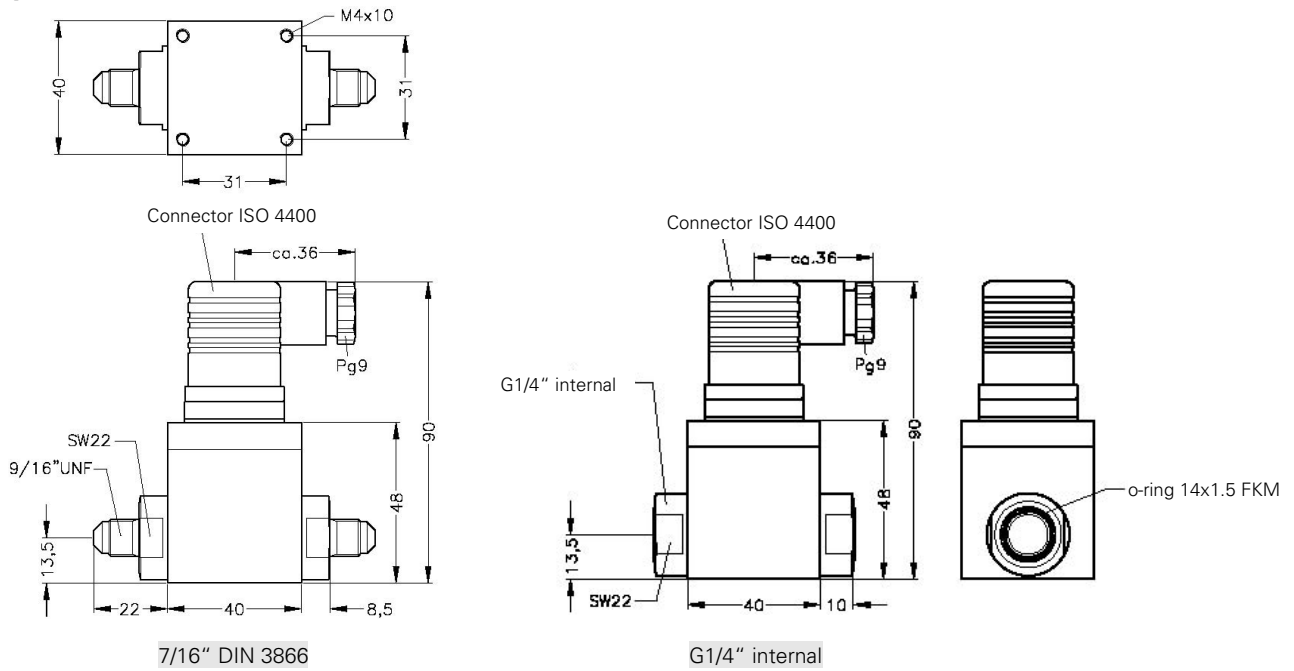
² relating to nominal pressure range

Mechanical connection

Standard



Optional



Electrical connection

Standard	male and female plug ISO 4400 (IP 65)
Optional ³	Brad Harrison®-Mini Change (IP 67)
others	on request

³ possible with 2-wire version

Materials

Pressure port	stainless steel 1.4571 (316Ti)
Housing	aluminium, black anodised
Seals (media wetted)	FKM, others on request
Diaphragm	stainless steel 1.4435 (316L)
Media wetted parts	pressure port, seals, diaphragm

Miscellaneous

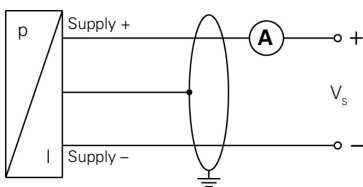
Current consumption	signal output current: max. 25 mA signal output voltage: max. 7 mA
Weight	approx. 250 g
Operational life	> 100 x 10 ⁶ cycles

Pin configuration

Electrical connection		ISO 4400	Brad Harrison
2-wire-system	Supply +	1	A
	Supply -	2	B
	Ground	ground pin	C
3-wire-system	Supply +	1	-
	Supply -	2	-
	Signal +	3	-
	Ground	ground pin	-

Wiring diagrams

2-wire-system (current)



3-wire-system (voltage)

