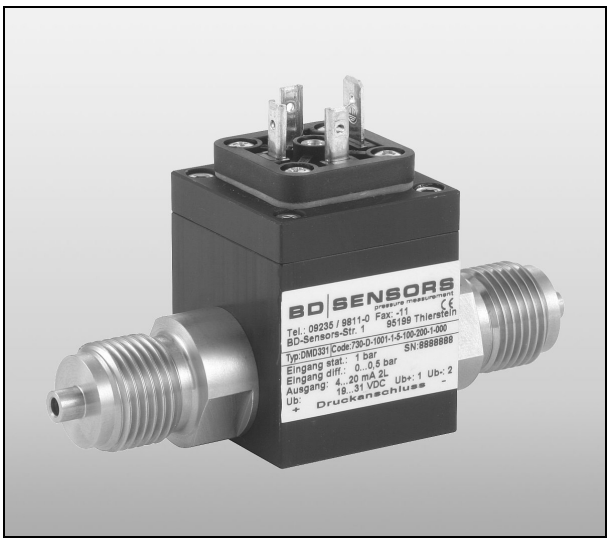
BD SENSORS
pressure measurement



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

Characteristics

- 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

CE

DMD 331
Differential Pressure Transmitter

TÜV CERT DIN EN ISO 9001

BD SENSORS GmbH
BD-Sensors-Strasse 1
D - 95199 Thierstein

Telefon +49 (0) 92 35 / 98 11- 0
Telefax +49 (0) 92 35 / 98 11- 11

www.bdsensors.de
info@bdsensors.de

DMD 331

Differential Pressure Transmitter

Technical Data

Input pressure range

Nominal range [bar]	0.2	0.4	1	2.5	6	16
Differential pressure range [bar]	0.02 up to 0.2	0.04 up to 0.4	0.1 up to 1	0.25 up to 2.5	0.6 up to 6	1.6 up to 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 ... 36 V_{DC}
Optional	3-wire: 0 ... 10 V / V_S = 14 ... 36 V_{DC}

Performance

Accuracy	IEC 60770 [1]: ≤ ± 0.5 % FSO	BFSL: ≤ ± 0.25 % FSO
Permissible load	current 2-wire: $R_{max} = [(V_S - V_{S\,min}) / 0.02]\ \Omega$ voltage 3-wire: R_{min} = 10 kΩ	
Influence effects	supply: 0.05 % FSO / 10 V load: 0.05 % FSO / kΩ	
Long term stability	≤ ± 0.2 % FSO / 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]	≤ ± 2.5	≤ ± 2.0	≤ ± 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

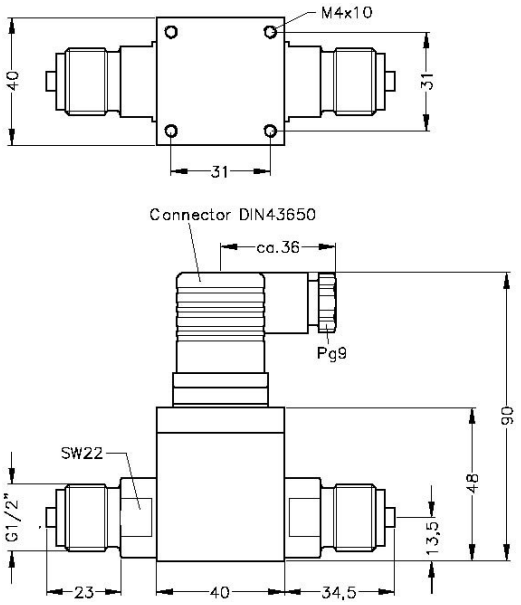
Media	-25 ... 125 °C
Electronics / environment	-25 ... 85 °C
Storage	-40 ... 100 °C

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

[2] relating to nominal pressure range

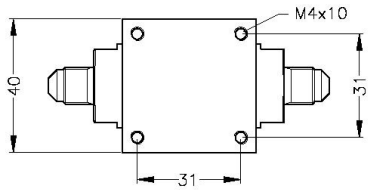
Mechanical connection

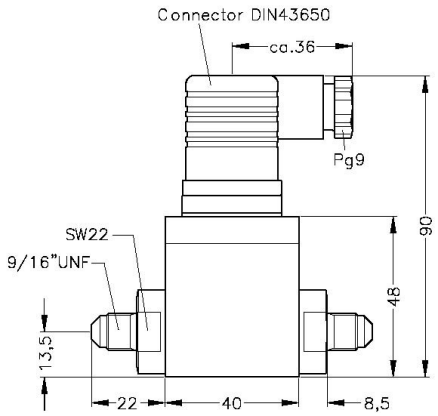
Standard



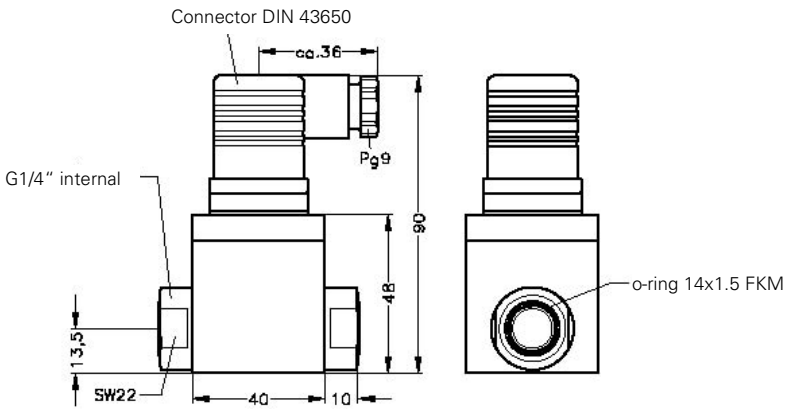
G1/2“ EN 837
M20 x 1.5

Optional





7/16“ DIN 3866



G1/4“ internal

Electrical connection

Standard	male and female plug DIN 43650 (IP 65)
Optional [3]	Brad Harrison®-Mini Change (IP 67)
others	on request

[3] possible with 2-wire version

DMD 331

Differential Pressure Transmitter

Technical Data

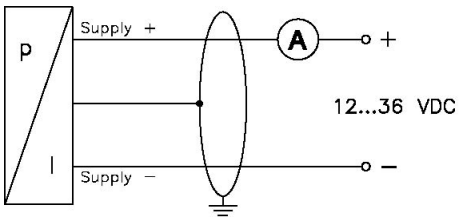
Materials	
Pressure port	stainless steel 1.4571 (316Ti)
Housing	aluminium, black anodised
Seals (media wetted)	FKM, others on request
Diaphragm	stainless steel 1.4435 (316L)
Media wetted parts	pressure port, seals, diaphragm

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

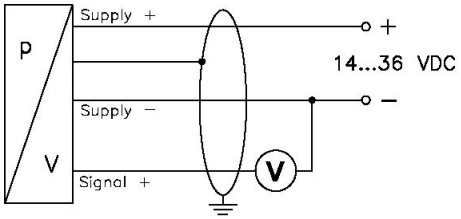
Pin configuration			
Electrical connection		DIN 43650	Brad Harrison
2-wire-system	Supply +	1	A
	Supply –	2	B
	Ground	ground pin	C
3-wire-system	Supply +	1	-
	Supply –	2	-
	Signal +	3	-
	Ground	ground pin	-

Wiring diagrams

2-wire-system (current)



3-wire-system (voltage)



Telefon +49 (0) 92 35 / 98 11- 0
Telefax +49 (0) 92 35 / 98 11- 11
www.bdsensors.de
info@bdsensors.de
BD SENSORS pressure measurement

Fax: +49 (0) 92 35 / 98 11 -11

BD SENSORS pressure measurement

Ordering Code DMD 331

DMD 331 ☐☐☐-☐-☐☐☐☐-☐-☐-☐☐☐-☐☐☐-☐-☐☐☐

Pressure

differential pressure	7 3 0

Nominal pressure range [bar]

0,2	F
0,4	A
1,0	B
2,5	C
6,0	D
16	E
customer	9

Differential pressure rang [bar]

	F	A	B	C	D	E	
0,02	■						0 2 0 0
0,04	■	■					0 4 0 0
0,10	■	■	■				1 0 0 0
0,25		■	■	■			2 5 0 0
0,40		■	■	■			4 0 0 0
0,60			■	■	■		6 0 0 0
1,0			■	■	■		1 0 0 1
2,5				■	■	■	2 5 0 1
4,0					■	■	4 0 0 1
6,0					■	■	6 0 0 1
10						■	1 0 0 2
16						■	1 6 0 2
customer							9 9 9 9

Output

4 ... 20 mA / 2-wire	1
0 ... 10 V / 3-wire	3
customer	9

Accuracy

0,5 %	5
customer	9

Electrical connection

Male and female plug DIN 43650	1 0 0
Brad Harrison®- Mini Change	B 0 0
customer	9 9 9

Mechanical connection

G1/2" EN 837	2 0 0
7/16" UNF DIN 3866	U 0 0
G1/4" internal thread	J 0 0
customer	9 9 9

Seals

FKM	1
customer	9

Special version

standard	0 0 0
customer	9 9 9

TÜV CERT DIN EN ISO 9001

BD SENSORS GmbH
BD-Sensors-Straße 1
D - 95199 Thierstein

Telefon +49 (0) 92 35 / 98 11- 0
Telefax +49 (0) 92 35 / 98 11- 11

www.bdsensors.de
info@bdsensors.de