BD|SENSORS
pressure measurement

DMD 341

Differential Pressure Transmitter for Gases and Compressed Air in Compact Version

Silicon Sensor

accuracy according to IEC 61298-2:
0.35 % / 1% / 2%

Differential pressure

from 0 ... 6 mbar up to 0 ... 1000 mbar

Output signals

2-wire: 4 … 20 mA

3-wire: 0 ... 20 mA / 0 ... 10 V

Special characteristics

► aluminium housing

► suited for non-aggressive gases and compressed air

Optional versions

► customer specific versions

The DMD 341 is a differential pressure transmitter for non-aggressive gases and compressed air. Because of its compact and robust aluminium housing it is particularly suited for machine and plant engineering.

Basic element of the DMD 341 is a piezo-resistive silicon sensor, which features high accuracy and excellent long term stability.

Preferred areas of use are

Plant and machine engineering

Heating and air conditioning

Preferred used for

CO_2
N_2

Compressed air, non-aggressive gases

CE RoHS REACH c UL us LISTED

Input pressure range

Nominal pressure p_N [mbar] (over, differential pressure)	0...6	0...10	0...20	0...40	0...60	0...100	0...160	0...250	0...400	0...600	0...1000
Nominal pressure p_N symmetric (differential pressure) [mbar]	± 6	± 10	± 20	± 40	± 60	± 100	±160	± 250	± 400	± 600	±1000
Overpressure [mbar]	100	100	200	350	350	1000	1000	1000	1000	3000	3000

Output signal / Supply

Standard	standard pressure range:	2-wire: 4 ... 20 mA / V_S = 8 ... 32 V_{DC}
Options 3-wire	standard pressure range:	3-wire: 0 ... 20 mA / V_S = 14 ... 30 V_{DC}
		0 ... 10 V / V_S = 14 ... 30 V_{DC}

Performance

Accuracy [1]	p_N > 160 mbar: ≤ ± 0.35 % FSO	
	40 mbar ≤ p_N ≤ 160 mbar: ≤ ± 1 % FSO	
	p_N < 40 mbar: ≤ ± 2 % FSO	
Permissible load	current 2-wire: R_{max} = [($V_S - V_{S\,min}$) / 0.02 A] Ω	current 3-wire: R_{max} = 240 Ω
	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 at reference conditions	
Response time	< 5 msec	

[1] accuracy according to IEC 61298-2 – limit point adjustment (non-linearity, hysteresis, repeatability)

Thermal effects (offset and span)

Nominal pressure p_N [mbar]	≤ 10	≤ 20	≤ 250	> 250
Tolerance band [% FSO]	≤ ± 2	≤ ± 1.5	≤ ± 1	≤ ± 0.5
TC, average [% FSO / 10 K]	± 0.3	± 0.25	± 0.15	± 0.08
In compensated range	0 ... 60 °C			

Permissible temperatures

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

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	20 g RMS / 10 ... 2000 Hz according DIN EN 60068-2-6
Shock	500 g / 11 msec half sine according DIN EN 60068-2-27

Materials

Pressure port	G1/8″ internal: aluminium, silver anodized
	flexible tube connection Ø6.6 x 11: brass, nickel plated
Housing	aluminium, silver anodised
Seal (media wetted)	PUR, bonded
Sensor	silicon, glass, RTV, ceramics Al_2O_3, nickel
Media wetted parts	pressure port, housing, seal, sensor

Miscellaneous

Connecting cables (by factory)	cable capacitance: signal line/shield also signal line/signal line: 160 pF/m
	cable inductance: signal line/shield also signal line/signal line: 1 µH/m
Current consumption	signal output current: max. 25 mA
	signal output voltage: max. 7 mA
Weight	approx. 250 g
Operational life	100 million load cycles
CE-conformity	EMC Directive: 2014/30/EU

Pin configuration
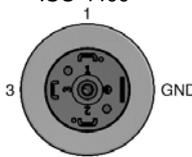
Electrical connection	ISO 4400	M12x1 (4-pin), metal	cable colour (IEC 60757)
Supply +	1	1	WH (white)
Supply −	2	2	BN (brown)
Signal + (only 3-wire)	3	3	GN (green)
Shield	ground pin ⏚	4	GNYE (green-yellow)
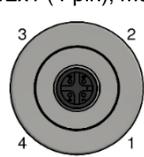
Wiring diagrams

2-wire-system (current)
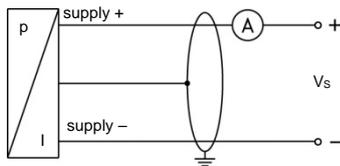
3-wire-system (current / voltage)
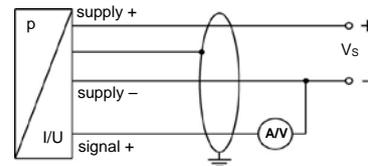
Electrical connections (dimensions mm / in)

ISO 4400 (IP 65)

M12x1, 4-pin (IP 67)

cable outlet with PVC-cable (IP 67) [2]
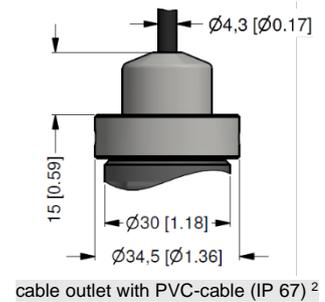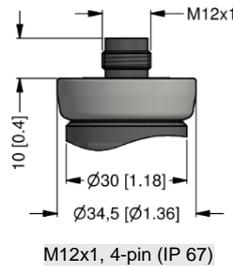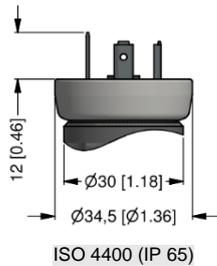
[2] standard: 2 m PVC cable without ventilation tube (permissible temperature: -5 … 70 °C); optionally cable with ventilation tube

Dimensions (mm / in)

connector ISO 4400
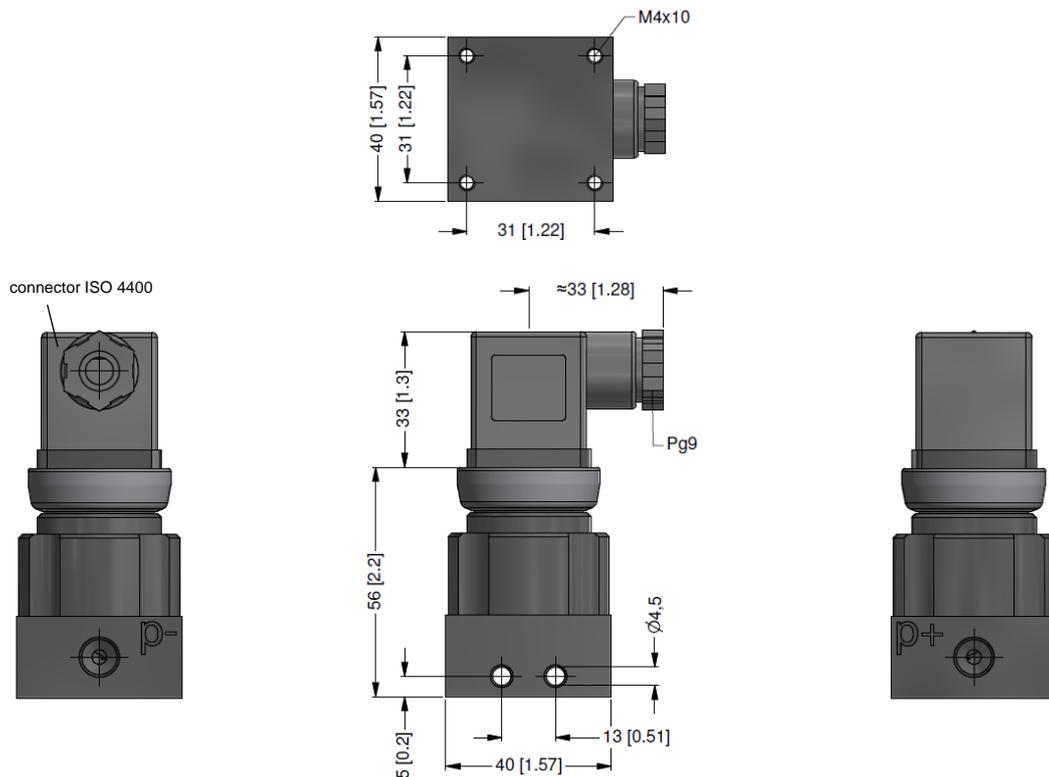
Mechanical connection (dimensions mm / in)

G1/8" internal thread

Ø6.6x11 (for flex. tubes Ø6)

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Pressure				
differential pressure	3	3	0	
gauge pressure	3	3	1	

Input	[mbar]					
6	0	0	6	0		
10	0	1	0	0		
20	0	2	0	0		
40	0	4	0	0		
60	0	6	0	0		
100	1	0	0	0		
160	1	6	0	0		
250	2	5	0	0		
400	4	0	0	0		
600	6	0	0	0		
1000	1	0	0	1		
-6 ... 6	S	0	0	6		consult
-10 ... 10	S	0	1	0		consult
-20 ... 20	S	0	2	0		consult
-40 ... 40	S	0	4	0		consult
-60 ... 60	S	0	6	0		consult
-100 ... 100	S	1	0	0		consult
-160 ... 160	S	1	6	0		consult
-250 ... 250	S	2	5	0		consult
-400 ... 400	S	4	0	0		consult
-600 ... 600	S	6	0	0		consult
-1000 ... 1000	S	1	0	2		consult
customer	9	9	9	9		consult

Output		
4 … 20 mA / 2-wire	1	
0 … 20 mA / 3-wire	2	
0 … 10 V / 3-wire	3	
customer	9	consult

Accuracy			
standard for p_N > 160 mbar:	0,35 % FSO	3	
standard for 40 mbar ≤ p_N ≤ 160 mbar:	1,0 % FSO	8	
standard for p_N < 40 mbar:	2,0 % FSO	G	
customer		9	consult

Electrical connection				
male and female plug ISO 4400	1	0	0	
male plug M12x1 (4-pin), metal	M	1	0	
cable outlet with PVC cable (IP67) [1]	T	A	0	
customer	9	9	9	consult

Mechanical connection				
G1/8" internal thread	Q	0	0	
Ø 6.6 x 11 (for flex. tubes Ø 6)	Y	0	0	
customer	9	9	9	consult

Seal	
PUR, bonded	6

Special version				
standard	0	0	0	
customer	9	9	9	consult

[1] standard: 2 m PVC cable without ventilation tube (permissible temperature: -5 ... 70 °C); others on request