BD|SENSORS
pressure measurement

DMD 831

Differential Pressure Transmitter with Display and Contact for Fluids and Gases

- 2 piezoresistive stainless steel sensors
- differential pressure from 0 ... 1 bar up to 0 ... 70 bar
- display mode selectable: P+, P-, ΔP
- display and pressure ports rotatable

Technical Data

Input pressure range								
Nominal pressure [1]	[bar]	1	2	3.5	7	20	35	70
Differential pressure range	[bar]							
	TD 1:1 up to TD 1:10	0 … 1 up to 0 … 0.1	0 … 2 up to 0 … 0.2	0 … 3.5 up to 0 … 0.35	0 … 7 up to 0 … 0.7	0 … 20 up to 0 … 2	0 … 35 up to 0 … 3.5	0 … 70 up to 0 … 7
[1] nominal pressure corresponds to the maximal permissible static pressure (one-sided)								

Analogue signal / Supply		
Standard	3-wire: 4 ... 20 mA	24 V_{DC} ± 10 %
Permissible load	500 Ω	
Accuracy [2]	≤ ± 2 % FSO	
[2] accuracy according to IEC 61298-2 – limit point adjustment (non-linearity, hysteresis, repeatability)		
Contact		
Number, type	standard: 1 PNP	option: 2 independent PNP
Max. switching current	125 mA, short-circuit proof	
Switching accuracy [2]	≤ ± 0.5 % FSO	
Repeatability	≤ ± 0.1 % FSO	
Switching cycles	> 100 x 10^6	
Delay time	0 ... 100 sec	
Programming		
Adjustability	analogue output / contact refers to: pressure "P+" or pressure "P-" or pressure difference	
	turn-down: max. 1:10	
Thermal error [3] (offset and span) / Permissible temperatures		
Tolerance band	≤ ± 1.5 % FSO	
TC, average	± 0.2 % FSO / 10 K	
In compensated range	0 ... 70 °C	
Permissible temperatures	medium: -40 ... 125 °C electronics / environment: -25 … 85 °C storage: -40 ... 85 °C	
[3] relating to nominal pressure range		
Electrical protection		
Short-circuit protection	permanent	
Reverse polarity protection	no damage, but also no function	
Electromagnetic compatibility	emission and immunity according to EN 61326	

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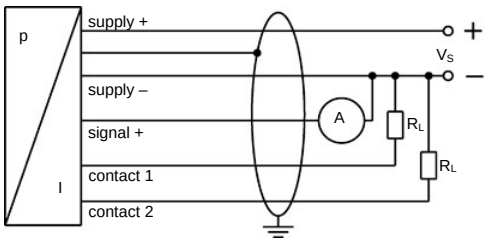
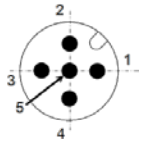
Mechanical stability		
Vibration	20 g RMS / 10 ... 2000 Hz	according to DIN EN 60068-2-6
Shock	500 g / 1 msec half sine	according to DIN EN 60068-2-27
Materials		
Pressure port	stainless steel 1.4404 (316L)	
Housing	PA 6.6, Polycarbonate	
Seals	FKM	others on request
Diaphragm	stainless steel 1.4435 (316L)	
Media wetted parts	pressure port, seals, diaphragm	
Miscellaneous		
Display	4-digit, red LED-display, digit size 7 mm; range of indication -1999 ... +9999; accuracy 0.1 % +/- 1 digit; digital damping 0.3 … 30 sec (programmable)	
Current consumption	max. 60 mA (without switching current)	
Weight	approx. 350 g	
Operational life	100 million load cycles	
Ingress protection (device)	IP 65	

Wiring diagram



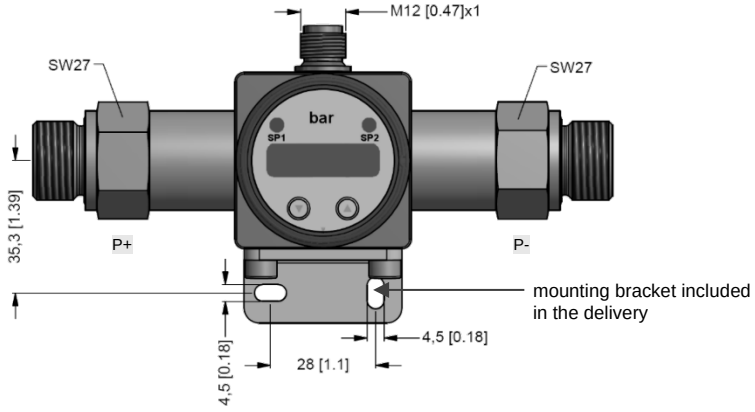
Pin configuration

Electrical connections	M12x1 (5-pin), plastic
Supply +	1
Supply –	3
Signal +	2
Contact 1	4
Contact 2	5
Shield	via pressure port



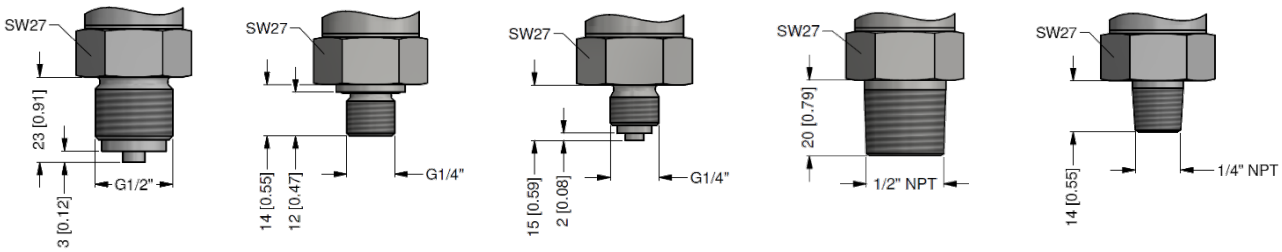
Mechanical connections (dimensions mm / in)

standard



option

G1/2" DIN 3852



G1/2" EN 837 | G1/4" DIN 3852 | G1/4" EN 837 | 1/2" NPT | 1/4" NPT

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Ordering code DMD 831

DMD 831 □□□-□□-□□□□-□-□-□-□□□-□□□-□-□□□

Pressure																									
differential pressure	7	3	2																						
Nominal pressure range [bar]																									
1.0				D	5																				
2.0				D	6																				
3.5				D	7																				
7.0				D	8																				
20				D	A																				
35				D	B																				
70				H	1																				
customer				9	9																				consult
Differential pressure range [bar]																									
1.0						1	0	0	1																
2.0						2	0	0	1																
3.5						3	5	0	1																
7.0						7	0	0	1																
20						2	0	0	2																
35						3	5	0	2																
70						7	0	0	2																
customer						9	9	9	9																consult
Analogue output																									
4 … 20 mA / 3-wire										7															
customer										9															consult
Contact																									
1 contact PNP											1														
2 contacts PNP											2														
customer											9														consult
Accuracy																									
2 % FSO												G													
customer												9													consult
Electrical connection																									
M12x1 (5-pin)													N	0	1										
customer													9	9	9										consult
Mechanical connection																									
G 1/2" DIN 3852																1	0	0							
G 1/2" EN 837																2	0	0							
G 1/4" DIN 3852																3	0	0							
G 1/4" EN 837																4	0	0							
1/2" NPT																N	0	0							
1/4" NPT																N	4	0							
customer																9	9	9							consult
Seal																									
FKM																			1						
customer																			9						consult
Special version																									
standard																				0	0	0			
customer																				9	9	9			consult

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09.01.2026

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