

IDM 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	0 ... 1	0 ... 2	0 ... 3.5	0 ... 7	0 ... 20	0 ... 35	0 ... 70
	up to	up to	up to	up to	up to	up to	up to	up to
	TD 1:10	0 ... 0.1	0 ... 0.2	0 ... 0.35	0 ... 0.7	0 ... 2	0 ... 3.5	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	≤ ± 1 % BFSL							
² accuracy according to IEC 60770 (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							

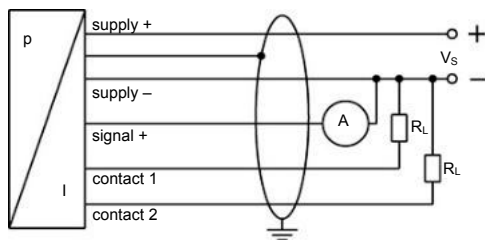
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Differential Pressure Transmitter

Technical Data

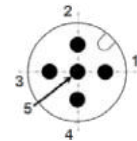
Mechanical stability		
Vibration	10 g RMS (20 ... 2000 Hz)	according to DIN EN 60068-2-6
Shock	100 g / 11 msec	according to DIN EN 60068-2-27
Materials		
Pressure port	stainless steel 1.4404 (316L)	
Housing	PA 6.6, Polycarbonate	
Seals	FKM	others on request
Diaphragm	stainless steel 1.4435 (316L)	
Media 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



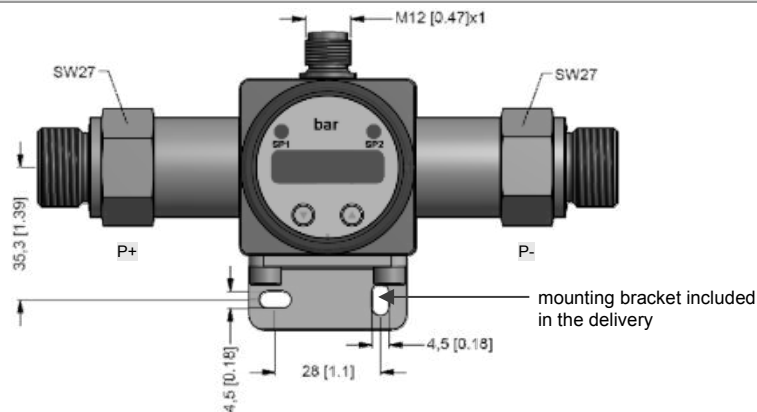
Pin configuration

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

