

Model 219D

Differential Pressure Transmitters

Model 219D is a transmitter version of 218D differential pressure transducer. These transmitters are made of 316L stainless steel (SS) with a laser welded construction. 219D transmitters are low profile products with threads as the process interface for easy installation. The threads can be made in female or male types.

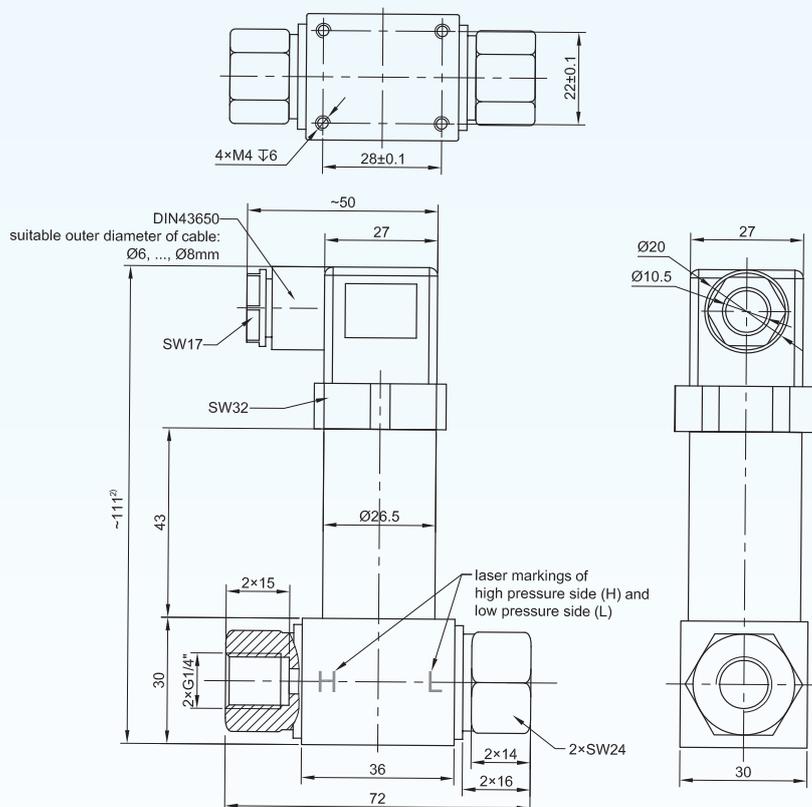
Model 219D is designed for measuring the differential pressure of gases or dilute liquids. The measuring ranges span from 0~0.1 bar up to 0~20 bar. Its output is either 4~20 mA or 0~5 Vdc with accuracy up to 0.5%fs (fs = full scale). The non-zero output at ZERO load provides an easy solution for diagnosis.



Features:

- static pressure: 1000%fs max. with limit of 100bar
- diff. pressure ranges: 0~0.1bar, ..., ~20bar
- output signal: 4~20mA (standard), 10%~90%Vs ratiometric, 0~5Vdc, 1~5Vdc, I²C, SPI
- accuracy: up to 0.5%fs
- compensated temperature range: -10~+70 °C
- materials: 316L (pressure diaphragm), 316 (wetted parts)
- construction: laser welded construction, rigid and robust
- housing protection: IP65 (with connector), IP66 (with cable)

Dimensions:

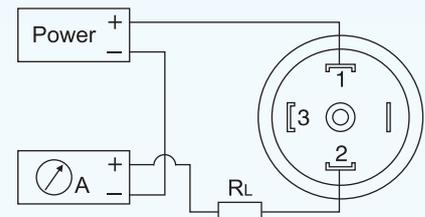


Note: 1) All dimensions are in mm.

2) In case of cable as electrical interface, the total length of 219D is ~125mm.

Electrical connection:

(4~20mA current loop configured with DIN43650)



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Technical data:

Parameters		Units	Specifications	Notes
pressure medium			compatible with pressure diaphragm	
static pressure		%fs	1000 max., with limit of 100bar	1
differential pressure ranges		barD	0~0.1, ~0.2, ~0.35, ~0.7, ~1, ~2, ~3.5, ~7, ~10, ~20	2
proof pressure	high pressure side	%fs	200 (35bar max.)	
	low pressure side	%fs	150 (1.5bar max.)	
burst pressure	high pressure side	%fs	300 (50bar max.)	
	low pressure side	%fs	200 (1.8bar max.)	
output signal	current loop	mA	4~20 (standard)	
	voltage output	V	10%~90%Vs ratiometric, 0~5V, 1~5V	
	digital		I ² C, SPI	
accuracy		%fs	±0.5 (standard), ±1	3
long-term stability		%fs/year	≤ 0.2 (ranges ≥ 0~2 bar); ≤ 0.5 (other ranges)	
power supply (Vs)	current loop	Vdc	15, ..., 30	
	voltage output	Vdc	≥ 3 (for ratiometric output), 15 < Vs ≤ 30 (for 0~5V, 1~5V)	
	digital	Vdc	3, ..., 5	
load resistance	current loop	Ω	250, ..., 750	
	voltage output	kΩ	> 5	
insulation resistance		MΩ	≥ 500 @500Vdc	
compensated temperature range		°C	0~50 (ranges ≤ 2bar), -10~+70 (ranges > 2bar)	
medium temperature range		°C	-40 ~ +125	
ambient temperature range		°C	-40 ~ +85	
storage temperature range		°C	-40 ~ +85	
temperature coefficient of zero offset		%fso/°C	≤ ±0.03	4
temperature coefficient of span		%fso/°C	≤ ±0.03	4
life time		cycles	10 ⁸	
response time		ms	≤ 1	5
process interface		thread	G1/4 female (standard), G1/4 male	
electrical interface	connector		DIN 43650 (not suitable for SPI output)	6
	cable		Φ7.2mm, shielded PVC cable, 1 meter length	6
environment protection			IP65 (with connector), IP66 (with cable)	
diaphragm material			316L SS	
wetted parts material			316 SS	
housing material			304 SS	
net weight (without cable)		gram	~360	

General conditions for measurements: media temp. = 25°C ±1°C, ambient temp. = 25°C ±1°C.

Notes: 1. "fs" means full scale and refers the maximum working pressure or rated pressure.

2. For customized pressure ranges, consult BCM.

3. Accuracy = sqrt(non-linearity² + hysteresis² + repeatability²).

4. Calculated as a rate of output change between -10°C and +70°C or between 0°C and 50°C, and normalized by the output at 25°C.

5. Response time for a 0 bar to fs step change, 10% to 90% rise time of leading edge.

6. 2 contacts for 4~20mA output; 3 contacts for ratiometric output, 0~5V and 1~5V; 4 contacts for I²C output; 5 contacts for SPI output.

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Technical data:

position (pos.) 1: model							
219D							
pos. 2: static pressure							
1000%fs (for ranges < 10bar)				100bar (for ranges ≥ 10bar)			
pos. 3: pressure ranges and references							
0/0.1bar D		0/0.7bar D		0/3.5bar D		0/20bar D	
0/0.2bar D		0/1bar D		0/7bar D		D: differential pressure	
0/0.35bar D		0/2bar D		0/10bar D			
pos. 4: output signal							
4/20mA (standard)		10%/90%Vs		0/5V		1/5V	I ² C
pos. 5: accuracy							
0.5%fs (standard)				1%fs			
pos. 6: mechanical interface							
G1/4(female) (standard)				G1/4(male)			
Other threads available on request							
pos. 7: electrical interface							
DIN43650 (not for SPI output)							
Φ7.2/n(#)/PVC/1m = Φ7.2mm, number of cores(#), shielded PVC cable, cable length = 1m, cable length can be customized.							
#: 2: 4~20mA; 3: 10%~90%Vs, 0~5V, 1~5V; 4: I ² C; 5: SPI.							
Other electrical interface available on request.							
pos. 8: customized specifications							
“(*)” is necessary only if any customized parameter is required, otherwise it is neglectable.							
pos.1	pos. 2	pos. 3	pos. 4	pos. 5	pos. 6	pos. 7	pos. 8

Examples of Ordering Code

- standard transmitter:

219D-1000%fs-0/7barD-4/20mA-0.5%fs-G1/4(female)-DIN43650

- customized transmitter:

219D-100bar-0/12barD-10%/90%Vs-0.5%fs-30bar-G1/4(male)-Φ7.2/3/PVC/1m-(*).

(*): Customized pressure range = 0~12barD.

The specifications, dimensions, and ordering information listed above are subject to change without prior notice.

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