

Model 131S

General Purpose Pressure Transmitters

Description

The 131S is a silicone piezoresistive pressure transmitter fitting most industrial pressure measurement applications. Due its compact and rugged design, this model is suitable for applications of processing and control operations such as hydraulics, pneumatics, test equipment, liquid level measurement, compressor and pump control, etc. With various options of process connection and electrical interface, the 131S can be fitted into almost all common systems.

The 131S consisting of a stainless steel diaphragm, wetted part, and housing can be used for measurements involving hostile media compatible with 316 stainless steel. Featuring an inner-cavity process connection, the transmitter is specially designed to measure pressure of gases or dilute fluids with pressure reference of gauge, absolute, or sealed gauge.

By selecting proper electrical interface, the 131S is able to reach the environmental protection rating up to IP67.



Features

- measuring ranges: 0.35bar, ..., 600bar
- pressure references:
gauge, absolute, and sealed gauge
- accuracy up to 0.25%fs
- selectable output:
4~20 mA (standard), 0.5~4.5V ratiometric and others.
- wide choice of process connection and electrical interface
- protection rating up to IP67

Applications

- mechanical engineering
- hydraulics and pneumatics
- compressor and pump systems
- liquid level measurement
- test equipment

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Technical Data

Parameters		Units	Specifications	Notes
pressure medium			gases or dilute liquids	1
pressure references & ranges	gauge	bar	0~0.35, ~0.6, ~1, ~1.6, ~2.5, ~4, ~6, ~10, ~16, ~25, ~40	2
	absolute	bar	0~1, ~1.6, ~2.5, ~4, ~6, ~10, ~16, ~25, ~40	
	sealed gauge	bar	0~10, ~16, ~25, ~40, ~60, ~100, ~160, ~250, ~400, ~600	
proof pressure		%fs	150	3
burst pressure		%fs	200 (1000bar for range of 600bar)	
output signal		mA	4~20 (standard)	
		V	0.5~4.5 (ratiometric), 0~5, 1~5	
		digital	I ² C	
accuracy		%fs	±0.25, ±0.5 (standard)	4
long-term stability		%fs/year	≤ ±0.2 (standard), ≤ ±0.1 is available on request	
power supply (Vs)		Vdc	12 < Vs ≤ 36; 5 (for output = 0.5~4.5 V)	
load resistance for voltage output		kΩ	> 5	
load resistance for current loop		Ω	≤ (Vs - 12V) / 0.02A	
insulation resistance		MΩ	500 @100Vdc	
compensated temperature range		°C	-10 ~ +70 (0~50°C in case of ranges ≤ 2bar)	
operating temperature range		°C	-40 ~ +125	
storage temperature range		°C	-40 ~ +125	
temperature coefficient of zero		%fso/°C	≤ ±0.03	
temperature coefficient of span		%fso/°C	≤ ±0.03	
vibration resistance (20, ..., 2000 Hz)		g	10	
life time		cycles	10 ⁸	
response time		ms	≤ 1	5
seal			O-ring (fluorine rubber)	
pressure diaphragm			316L SS	
wetted parts material			316 SS	
electronics housing material			304 SS	
filling oil			silicone oil (standard), fluorine oil	6
environment protection			IP65 (standard), IP67 (only for cable connection)	
net weight		gram	~180	

Notes: 1. The pressure medium should be compatible with wetted parts material and pressure diaphragm.

2. For customized pressure ranges, consult BCM.

3. "fs" refers to full scale pressure or rated pressure.

4. Including non-linearity, hysteresis and repeatability.

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

6. Fluorine oil can be used for in food and oxygen industry

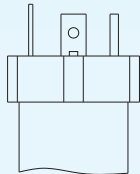
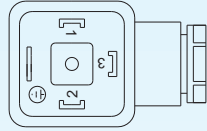
The listed specifications and dimensions are subject to change without prior notice.

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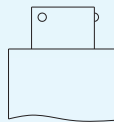
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Dimensions

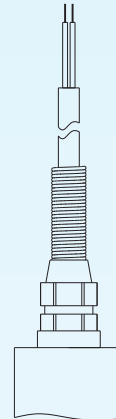
electrical interface



DIN43650 connector
(standard)



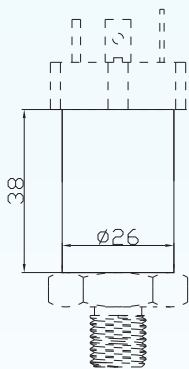
4-pin circular connector
for a detachable cable



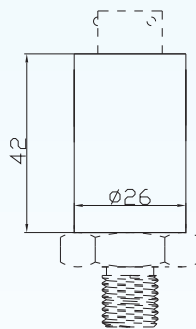
Φ5mm shielded PVC cable
for IP rating up to IP67

- 2 wires for current loop
- 3 wires for voltage output
- 4 wires for I²C output
- cable length (L) should be specified in ordering information

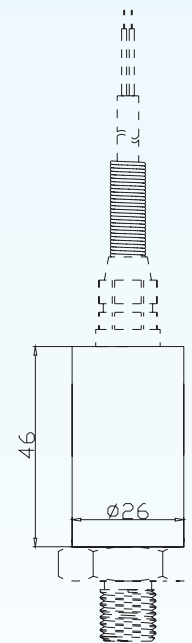
electronics housing (casing)



with DIN43650 connector
(standard)



with circular connector



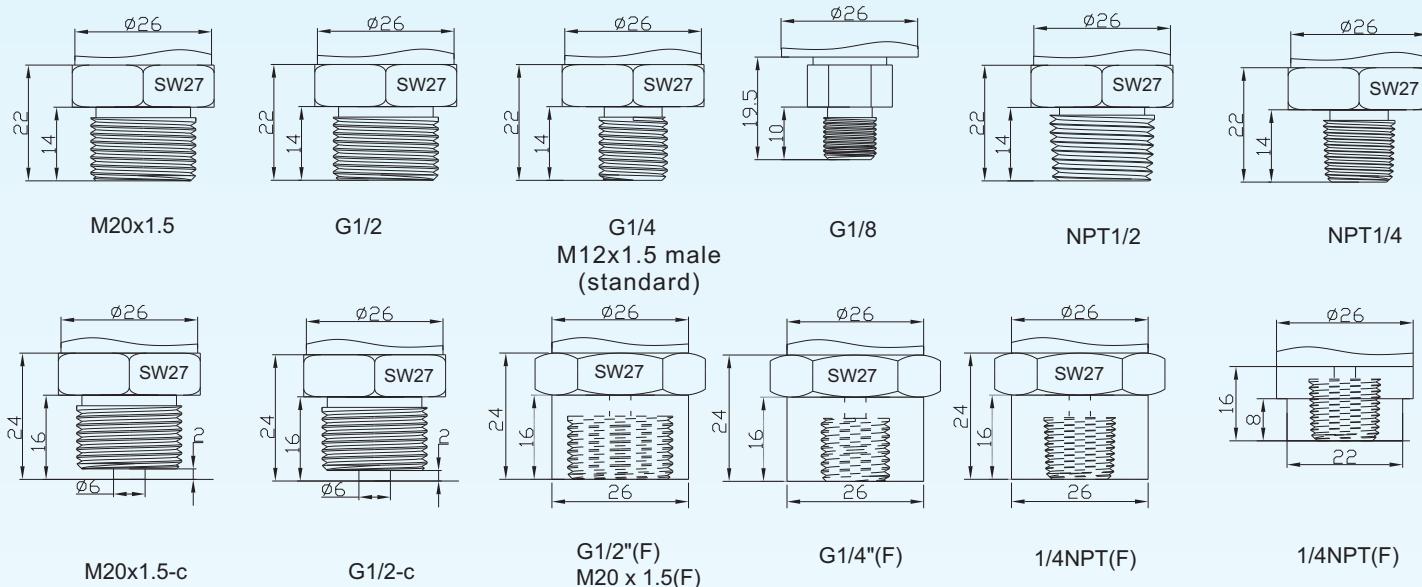
with shielded PVC cable

Notes: All dimensions are in mm.

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mechanical interface



Notes: - All dimensions are in mm.

- The mechanical interfaces and the electrical interfaces listed can be combined freely.
- If other types of interfaces are on request, consult BCM.

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Ordering Information

position (pos.) 1: model									
131S									
pos. 2: pressure ranges and references									
0/0.35bar G		0/4bar G, A, S		0/40bar G, A, S		0/400bar S		G: gauge pressure	
0/0.6bar G		0/6bar G, A, S		0/60bar S		0/600bar S		A: absolute pressure	
0/1bar G, A		0/10bar G, A, S		0/100bar S				S: sealed gauge	
0/1.6bar G, A		0/16bar G, A, S		0/160bar S					
0/2.5bar G, A		0/25bar G, A, S		0/250bar S					
pos. 3: output signal									
4/20 mA (standard)		0.5/4.5 V (ratiometric)		0/5 V		1/5 V		I ² C	
pos. 4: accuracy									
0.25%fs		0.5%fs (standard)							
pos. 5: filling oil									
siOil = silicone oil		fOil = fluorine oil							
pos. 6: pressure diaphragm									
316L stainless steel									
pos. 7: mechanical interface									
Refer to the drawings of mechanical interface for available options.									
pos. 8: electrical interface									
DIN43650 (standard)									
circular connection									
Φ5/2(*)/PVC/1m = Φ5mm, 2-core(*) shielded PVC cable									
L = 1m (cable length can be customized), for Ip67.									
(*) : 2-core: current loop;									
3-core: voltage output;									
4-core: I ² C digital output.									
pos. 9: environment protection									
IP65		IP67							
pos. 10: 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	pos. 9	pos. 10

Examples of Ordering Code

- standard transmitter:

131S-0/16barG-4/20mA-0.5%fs-siOil-316L-G1/4-DIN43650-IP65

- customized transmitter:

131S-10/50barG-1/5V-0.5%fs-siOil-316L-G1/4-Φ5/3/PVC/1m-IP67-(*)

(*): Customized pressure range = 10~50 barG.



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