Model 131S Silicon Piezoresistive Pressure Transmitters For General Purpose

Features

- silicon piezoresistive technology
- measuring ranges from 0~1 bar to 0~600 bar
- gauge and absolute reference available
- selectable output of 4~20 mA (standard), 0.5~4.5V, or 0.5~5V (or 10V)
- 0.5 %fs accuracy
- stainless steel (SS) case and SS 316L wetted parts
- available in many type of pressure connection threads and electrical interfaces

Applications

- general purpose for industrial applications
- hydraulics and pneumatics
- refrigeration and air conditioning systems
- compressor controls
- process engineering

Description

131S-series pressure transmitters are designed for general purpose and made of silicon piezoresistive technology. When a working pressure acts on the metal diaphragm, the pressure is transmitted to a Wheatstone bridge circuit of the pressure sensor die (SE103) through filling fluid. The output signal of the bridge circuit, which is proportional to the working pressure, is processed further to fit application purpose by a signal conditioning circuit.

The pressure range of the 131S transmitters starts from 0~1 bar and ends to 0~600 bar. A number of standard output signals, such as 4~20 mA current loop or voltage output of 0.5~4.5V or 0.5~5V (or 10V), are available when order. The measuring accuracy of 131S transmitters is 0.5%fs (fs=full scale). Thanks to BCM's advanced temperature compensation technology and aging process, model 131S transmitters provide rather good long-term stability (<0.2%fs/year) and excellent thermal characteristics (<0.03%fs/ºC).

By means of an inner cavity, model 131S transmitter is designed to measure either gauge or absolute pressures of gases or dilute liquids. The all-stainless steel construction allows 131S transmitters to have a compatibility of pressure media with SS 316L. Typical applications of 131S transmitters include hydraulics and pneumatics, domestic appliances, refrigeration and air conditioning.

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Technical data

parameters	units	specifications
pressure medium		gases or dilute fluids compatible with the material of wetted parts
pressure range	barG	0~1, ~1.6, ~2.5, ~4, ~6, ~10, ~16, ~25, ~40
	barA	0~1, ~1.6, ~2.5, ~4, ~6, ~10, ~16, ~25, ~40
	barSG	0~10, ~16, ~25, ~40, ~60, ~100, ~160, ~250, ~400, ~600
overload pressure	%fs	150
burst pressure	%fs	200
output signal		4~20 mA (standard), 0.5~4.5 V (ratiometric), 0.5~5 (or 10) V
accuracy	%fs	± 0.25, ±0.5 (standard), ± 1
long-term stability	%fs/year	< 0.2
power supply (V_{sup})	Vdc	15, ..., 36
response time (10...90%)	ms	<1
load resistance for current loop	Ω	≤ (V_{sup}-12)V/0.02mA
load resistance for voltage output	kΩ	> 5
storage temperature range	°C	-40 ~ +125
operating temperature range	°C	-40 ~ +125
compensated temperature range	°C	-10 ~ +60
temp. coefficient of span	%fs/°C	± 0.03
temp. coefficient of zero	%fs/°C	± 0.03
vibration resistance (20, ..., 2000 Hz)	g	10
seal (O-ring)		fluorine rubber
transmission fluid		silicone oil (standard), fluorine oil* (for food & oxygen industries)
material of diaphragm		316L SS
material of wetted parts		316 SS
material of electronics housing		304 SS
mechanical interface		refer to the drawings of mechanical interface
electrical interface		refer to the drawings of electrical interface
environment protection	IP rating	IP 65, IP 66
unit weight	g	~ 180

The listed specifications and dimensions are subject to change without prior notice.
*: Fluoro fluids = Goruber fluoro Instrument fill fluids 2919

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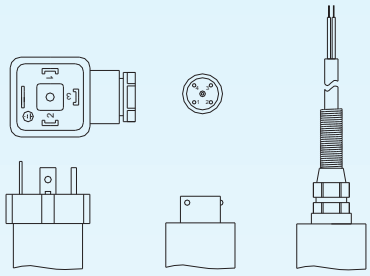
Dimensions

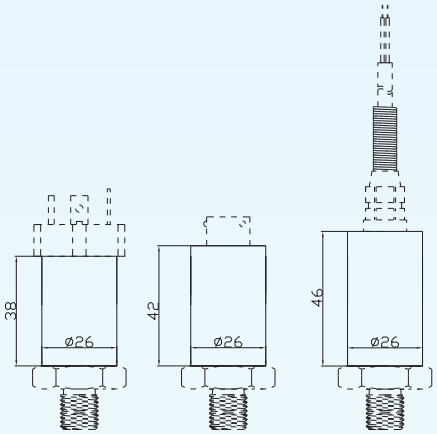
electrical interface#



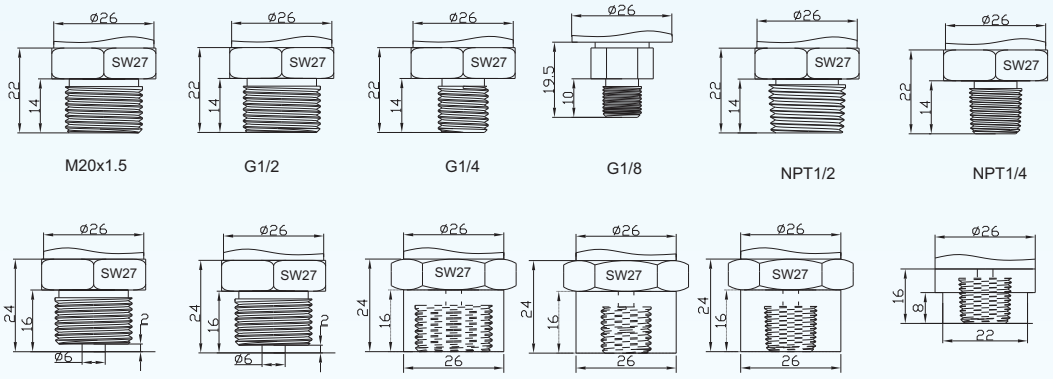
DIN43650 | n*-pin circular connector | Φ5, m**-wire PVC cable, L***m

*: n = 4
**: m = 2 (for current loop), 3 (for voltage output)
***: L = cable length

electronics housing (case)

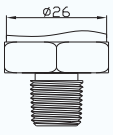


mechanical interface#



M20x1.5 | G1/2 | G1/4 | G1/8 | NPT1/2 | NPT1/4

M20x1.5-c | G1/2-c | G1/2"(F) M20 x 1.5(F) | G1/4"(F) | 1/4NPT(F) | 1/4NPT(F)



other threads (on request##)

#: The mechanical interfaces and the electrical interfaces listed below can be combined freely.
##: Other types of interfaces are available on request and to be confirmed in case of order.

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Ordering Information

position (pos.) 1: model	pos. 2: ranges and types	pos. 3: output signal	pos. 4: accuracy	pos. 5: supply power	pos. 6: filling fluid	pos. 7: material (diaphragm)	pos. 8: mechanical interface	pos. 9: electrical interface	pos. 10: environment protection	pos. 11: customized spec's
131S	1 bar, G, A 1.6 bar, G, A 2.5 bar, G, A 4 bar, G, A 6 bar, G, A 10 bar, G, A, S 16 bar, G, A, S 25 bar, G, A, S 40 bar, G, A, S 60 bar, S 100 bar, S 160 bar, S 250 bar, S 400 bar, S 600 bar, S G: gauge pressure A: absolute pressure S: sealed gauge	4~20 mA 0.5~4.5 V (ratiometric) 0.5~5 V 0.5~10 V	0.5 %fs	24 V (15,..., 36 Vdc) 5 V (for o/p = 0.5~4.5 V)	siOil: silicone oil fOil: fluorine oil	316L stainless steel	Refer to drawings of mechanical interface for available options.	For available connections, refer to drawings of electrical interface. For cable, code = diameter(Φ)/number of conductors/cable jacket /cable length 5.7/4/PVC/5 = Φ5.7 mm,4-conductors shielded, PVC, length=L m*	IP 65 IP 66	When any customized spec's are required, the customer needs to add "C" as the last parameter in the ordering code, and specifies the wished spec's on his order clearly. The customized spec's needs to be confirmed in advance by BCM's sales representative. Code "C" can be omitted if no customized spec's are required.
pos.1	pos. 2	pos. 3	pos. 4	pos. 5	pos. 6	pos. 7	pos. 8	pos. 9	pos. 10	pos. 11

*: NA = not available or not applicable;
**: L = cable length. This value is a customized value.

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

ISO9001 Certified Company

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