

Model 430S

Gauge Pressure Transmitters



Features

- silicon piezoresistive technology
- measuring ranges from -30~+30 mbar to -600~+600 mbar
- 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

- medical instrumentation
- other low pressure applications

Description

430S-series pressure transmitters are designed for low pressure applications 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 430S transmitters starts from -30~+30 mbar and ends to -600~+600 mbar. A number of standard output signals, such as 4~20 mA current loop or voltage output of 0.5~4.5 V or 0.5~5 V (or 10V), are available when order. The measuring accuracy of 430S transmitters is 0.5%fs (fs=full scale). Thanks to BCM's advanced temperature compensation technology and aging process, model 430S transmitters provide rather good long-term stability (<0.2%fs/year) and excellent thermal characteristics (<0.03%fso/°C).

The all-welded stainless steel construction of 430S PTs allows them to have better media compatibility. Various mechanical interfaces and electrical interfaces are available. These interfaces can be combined without limitation.

By means of an inner cavity, model 430S transmitter is designed to measure low gauge or absolute pressures of gases or dilute liquids. The all-stainless steel construction allows 430S transmitters to have a compatibility of pressure media with SS 316L. 430S transmitters are especially suitable for medical applications.

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Technical Data

parameters	units	specifications
pressure medium		gases or dilute fluids compatible with the material of wetted parts
pressure range	mbar	-30 ~ +30, -70 ~ +70, -100 ~ +100, -160 ~ +160, -250 ~ +250, -400 ~ +400, -600 ~ +600
pressure reference		gauge
overload pressure	%fs	150
burst pressure	%fs	200
output signal		4~20 mA (standard), 0.5~4.5 Vdc (ratiometric), 0~5 Vdc, 1~5Vdc I ² C
accuracy	%fs	≤ ±0.5
long-term stability	%fs/year	≤ ±0.2
power supply (Vs)	Vdc	12 < Vs ≤ 36; 5 (for 0.5~4.5 Vdc output)
response time (10...90%)	ms	< 1
load resistance for current loop	Ω	≤ (Vs - 12V) / 0.02A
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 zero	%fso/°C	≤ ±0.03
temp. coefficient of span	%fso/°C	≤ ±0.03
vibration resistance (5, ..., 200 Hz)	g	5
transmission fluid		silicone oil (standard), fluoro fluids (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		IP65, IP66
unit weight	g	~180

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

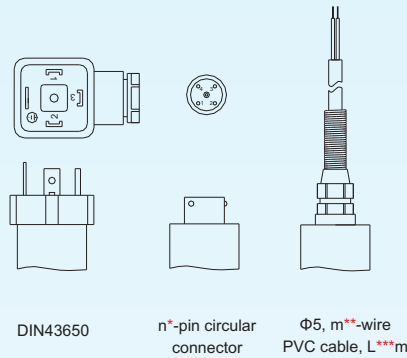
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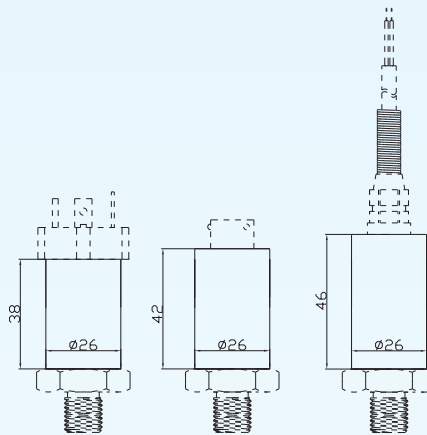
Dimensions

electrical interface#

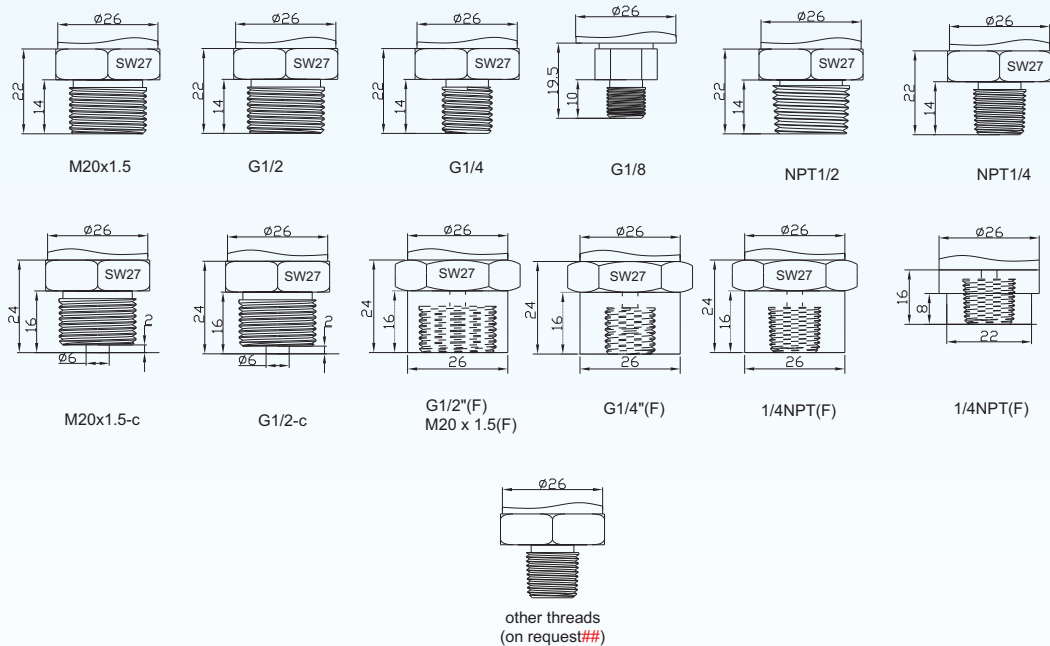


*: n = 4
 **: m = 2 (for current loop), 3 (for voltage output)
 ***: L = cable length

electronics housing (case)



mechanical interface#



#: 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									
430S									
pos. 2: ranges and pressure reference									
(-30/+30) mbarG (-400/+400) mbarG G: gauge pressure (-70/+70) mbarG (-600/+600) mbarG (-100/+100) mbarG (-160/+160) mbarG (-250/+250) mbarG									
pos. 3: output signal									
4/20mA (standard) 0.5/4.5V (ratiometric) 0/5V 0-5V I ² C									
pos. 4: accuracy									
0.5%fs									
pos. 5: supply power									
24V (12V < Vs ≤ 36V) 5 V (for o/p = 0.5-4.5 V)									
pos. 6: filling fluid									
siOil: silicone oil fOil: fluorine oil									
pos. 8: mechanical interface									
Refer to drawings of mechanical interface for available options.									
pos. 9: electrical interface									
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*									
pos. 10: environment protection									
IP65 IP66									
pos. 11: 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

*: L = cable length. This value is a customized value.

Examples of Ordering Code

- standard transmitter:

430S-(-100/+100)mbarG-4/20mA-0.5%fs-24V-siOil-G1/4-DIN43650-IP65

- customized transmitter:

430S-(-300/+300)mbarG-4/20mA-0.5%fs-5V-siOil-G1/4-DIN43650-IP65-(*).

(*): Customized pressure range = -300 ~ +300 mbarG.

