

Model 430S Silicon Piezoresistive Pressure Transmitters For Low Pressure Applications



Features

- silicon piezoresistive technology
- measuring ranges from -0.1~+1 bar to 0~1 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

- 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 -0.1~+1 bar and ends to 0~1 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 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%fs/°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*	barG	-0.1~0, ..., -1~+1; 0~0.04, ..., 0~1
	barA	0~1
	barS	NA**
overload pressure	%fs	150
burst pressure	%fs	200
output signal		4~20 mA (standard), 0.5~4.5 Vdc (ratiometric), 0.5~5 (or 10) Vdc
accuracy	%fs	± 0.25, ±0.5 (standard)
long-term stability	%fs/year	< 0.2
power supply (V _{sup})	Vdc	15, ..., 36; 5 (for 0.5~4.5 Vdc output)
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 (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	IP rating	IP 65, IP 66
unit weight	g	~ 180

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

*: Refer to the ordering information for the available ranges.

** : NA = not available or not applicable

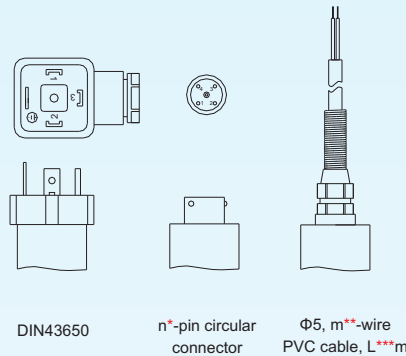
***: Fluoro fluids = Goruber fluoro Instrument fill fluids 2919

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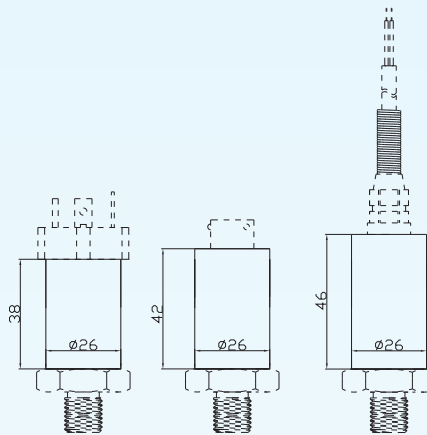
Dimensions

electrical interface#

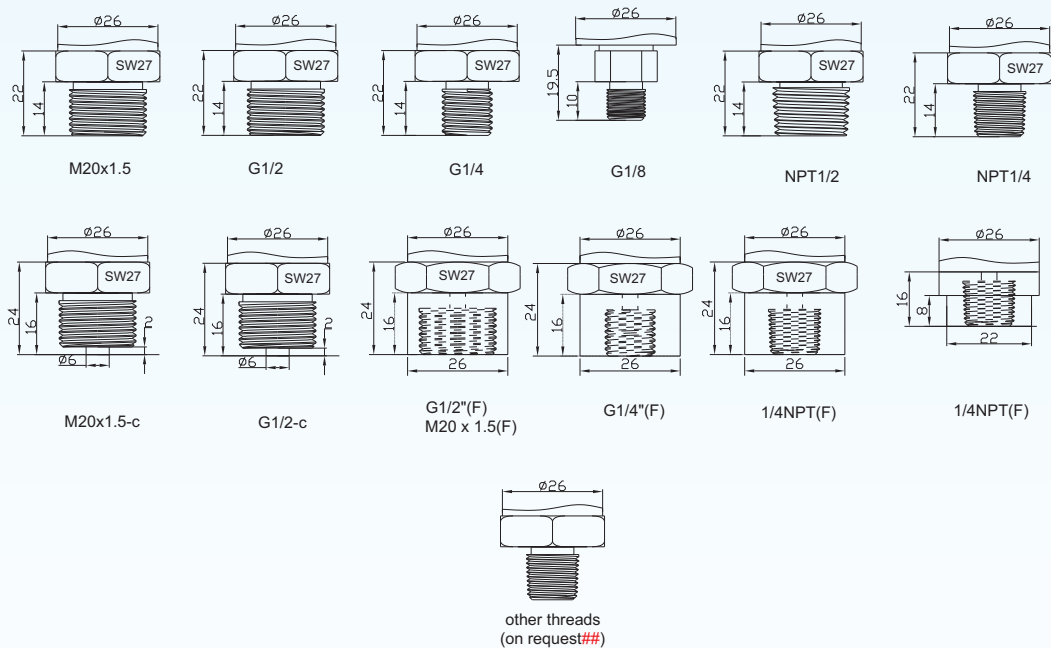


#: n = 4
 **: m = 2 (for current loop), 3 (for voltage output)
 ***: L = cable length

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 types										
-0.1~0 bar, G		0~0.04 bar, G		0~0.16 bar, G		0~1 bar, A		G: gauge pressure A: absolute pressure		
-0.1~+0.25 bar, G		0~0.06 bar, G		0~0.25 bar, G						
-0.1~+0.4 bar, G		0~0.1 bar, G		0~0.4 bar, G						
-0.1~+0.6 bar, G				0~0.6 bar, G						
-0.1~+1 bar, G				0~1 bar, G						
pos. 3: output signal										
4~20 mA		0.5~4.5 V (ratiometric)		0.5~5 V		0.5~10 V				
pos. 4: accuracy										
0.5 %fs										
pos. 5: supply power										
24 V (15, ..., 36 Vdc)		5 V (for o/p = 0.5~4.5 V)								
pos. 6: filling fluid										
siOil: silicone oil		fOil: fluorine oil								
pos. 7: material (diaphragm)										
316L stainless steel										
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										
IP 65 IP 66										
pos. 11: customized spec's										
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: 430S-(-0.1/0.25)barG-4/20mA-0.5%fs-siOil-316L-G1/4-DIN43650-IP65-C



ISO9001 Certified Company

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