

Model 101B-c

General Purpose OEM Pressure Sensors



101B-c OEM pressure sensors are manufactured from BCM piezo resistive silicon dies. The sensors are designed with CAD, the performance is simulated and the sensor prototype is fully tested before batch production. Serious quality control and dedicated calibration processes guarantee the specifications of these OEM pressure sensors in mass production and the higher production eligible rate.

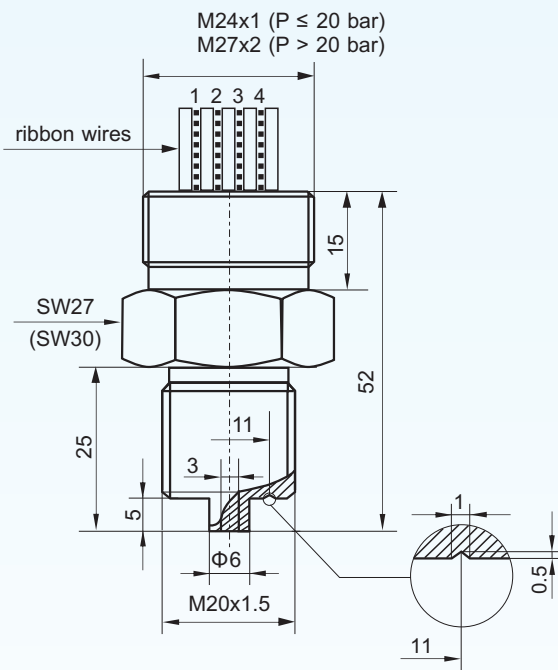
The 101B-c pressure sensor is assembled with one 101B-a19G sensor in a threaded stainless steel housing for screw-in installation. so the 101B-c has a diaphragm inside the pressure port, suitable for measuring the pressure of gasses or thin liquids. The sensor is re-calibrated to its specifications after assembly, the front male thread of the housing is M20x1.5 and the rear male thread is made to either M24x1(P ≤ 20 bar) or M27x2 (P > 20), sealed with an O-ring on its front surface.

The model 101B-c has a wide pressure range of 0~0.2 to 0~600 bar, and a high accuracy up to 0.1%fso, although the compensation temperature range is 0~70°C, the sensor can still work in the temperature range of -45°C ~ +125°C. another advantage is constant current or constant voltage are both available as excitation power supply, this making 101B-c has a wide application areas.

All OEM pressure sensors are delivered with an individual certificate to aid their further application.



Dimensions:



Applications:

- Process control systems
- Level systems
- Hydraulic systems and valves
- Biomedical instruments

Features:

- Measuring ranges: 0~0.2 bar to 0~600 bar
- Isolated construction, suitable for various fluid medium
- Wide suitability and easy operation, solid, reliability
- Temperature compensation by laser trimming
- Specification auto-tested by a computer
- Optional accuracy
- Gauge, absolute and sealed gauge
- Constant current or voltage excitation

Physical properties:

- Diaphragm: 316L ; Tantalum (optional)
- Pressure port: 1Cr18Ni9Ti ; Hastelloy C (optional)
- O-rings: Viton
- Lead: Gold-plated Kovar
- Fill Fluid: Silicon oil < 0.5CC
- Laser trim board: Ceramic
- Weight: 110 g

Reference specifications:

- Media Temperature: 25 ± 1 °C
- Ambient Temperature: 25 ± 1 °C
- Vibration: 0.1 g (1m/s/s) max
- Humidity: 50% ± 10%
- Ambient Pressure: 86 ~ 106 kPa
- Excitation Source: 1.5 ± 0.0015 mA dc

Environmental conditions:

- Position Effect: <0.1% of Zero shift for 90° tilt in any direction
- Vibration Effect: No change at 10gs' RMS, 20~2000 Hz
- Shock: 100g, for 10 millisecond
- Life: 100 million cycles

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Specifications:

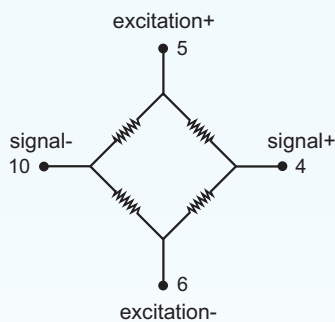
parameters	units	specifications
pressure medium		gases or diluted liquids, compatible to wetted parts
measuring ranges*	bar	0~0.2, 0~0.35, 0~0.7, 0~1, 0~2, 0~3.5, 0~7, 0~10, 0~20, 0~35, 0~70, 0~100, 0~200, 0~350, 0~600
pressure type		absolute (A), gauge(G), sealed gauged pressure (SG)
overload pressure	%FSO	150
excitation	mA	1 (standard), 0.5, ..., 2.0
full scale output	mVdc	≥ 45 (range 0~0.2 bar), ≥ 60 (other ranges)
zero offset	mVdc	± 1(option), ± 2 (standard), ± 5 (max.)
accuracy	%FSO	± 0.1, ± 0.25 (standard), ± 0.5
long-term stability	%FSO/year	0.2 (standard), 0.3
life time	cycles	10 ⁸
response time	ms	≥ 1 (10% ~ 90% of leading edge)
input resistance	Ω	2000 ~ 8000
output resistance	Ω	3500 ~ 6000
insulation resistance	MΩ	≥ 500 @ 500 V dc
storage temperature range	°C	-40 ~ +120
operating temperature range	°C	-40 ~ +120
compensated temperature range	°C	0 ~ 50 (ranges ≤ 100 bar), 0~80 (ranges ≥ 200 bar)
temperature coefficient of ZERO and SPAN	%FSO/°C	± 0.04 (standard), ± 0.08 (for ranges ≤ 0.7 bar) ± 0.03 (standard), ± 0.04 (for ranges from 0~1 bar to 0~100 bar) ≤ 0.02 (for ranges ≥ 200 bar)
pressure interface		M20 X 1.5 male
electrical interface		6P (6 gold-plated kovar pins, Φ0.45); 4R (4-wire ribbon cable, width x length = 10 x 50 mm); 4F (4 colored PVC flexible wires, 100 mm length)
installing thread		M24 X 1 male (ranges ≤ 20 bar), M27 X 2 male (ranges > 20bar)
diaphragm material		316L, Tantalum (optional)
pressure port material		1Cr18Ni9Ti; Hastelloy C (optional)
net weight	gram	110

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

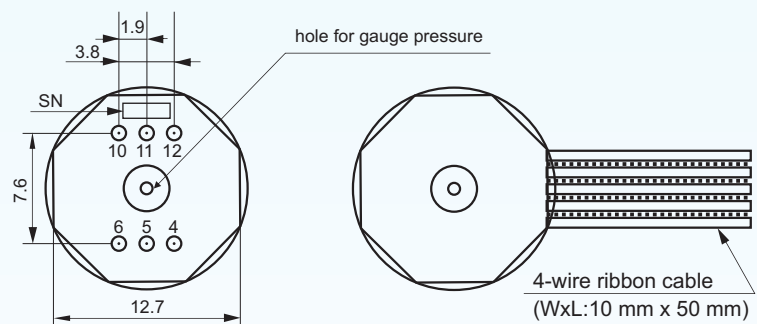
Reference test conditions: temperature = 25 °C, humidity = 40 %RH, excitation = 1.5 mA.

*: The negative pressure measurement is available on requests for gauge pressure.

Wheatstone bridge circuit:



Electrical connections:



6-pin or 4-wire electrical configuration

pin	connection	color
4	signal +	red
5	excitation +	black
6	excitation -	yellow
10	signal -	blue
11	N.C. (*)	N.A. (**)
12	N.C. (*)	N.A. (**)

* N.C.: not connected

** N.A.: not available

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Ordering code:

example: 101B-c - 35 - G - II - 6P - c - N - Cxxxx

model number	
101B-c	
101B-c (TH)*	
pressure ranges & available pressure types	
020 = 0~0.2 bar G	20 = 0~20 bar G, A
035 = 0~0.35 bar G	35 = 0~35 bar G, S, A
070 = 0~0.7 bar G, A	70 = 0~70 bar S
1 = 0~1 bar G, A	100 = 0~100 bar S
2 = 0~2 bar G, A	200 = 0~200 bar S
3.5 = 0~3.5 bar G, A	350 = 0~350 bar S
7 = 0~7 bar G, A	600 = 0~600 bar S
10 = 0~10 bar G, A	
pressure types	
G = gauge (relative) pressure	
A = absolute pressure	
S = sealed reference pressure	
accuracy (NL+HY+RP)	
I = 0.1%fso	II = 0.25%fso
III = 0.5%fso	
electrical connection	
6P = 6 gold-plated Kovar pins of 0.45 mm in diameter	
4R = 4-wire ribbon cable (width x length: 10 x 50 mm)	
4F = 4 colored PVC flexible wires (length = 100 mm)	
excitation	
c = 0.5~2.0 mA	
measurement of negative pressure	
Y = need for negative pressure (-1 bar ~ 0)	
N = no need for negative pressure	
<p>Cxxxx: This is a customized code given by the customer who can use this code to indicate his desired/wished specifications of the sensor to be ordered on his order sheet. The code starts with a "C" and is followed by 4 digits, the customer can use the 4 digits to indicate the month and date when he requests this customized specifications. The sales team of BCM will confirm this customized specifications when sending BCM's <<Order Confirmation>>.</p>	

*: TH = Tantalum diaphragm and Hastelloy-C housing

ordering code explanations: 101B-c - 35 - G - II - 6P - c - N - C0116

Model 101B-c OEM pressure sensor for gauge (relative) pressure measurement in 0~35 bar range, the pressure sensor is fully compensated with laser trimmed technology to an accuracy of 0.25%fso, electric connection is 6 gold-plated kovar pins, and the sensor is excited with 0.5~2.0 mA constant current, no need for negative pressure measurement. The customer has indicated on January 16th his wished specification on his order sheet for the ordered 101B-c, and this customer-wished specification has to be confirmed by BCM sales team on <<Order Confirmation>>.



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