

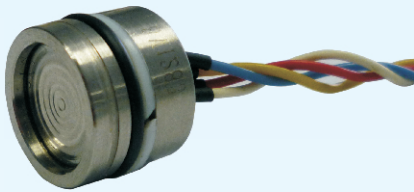
# Model 101B-a15G Compensated Pressure Sensors



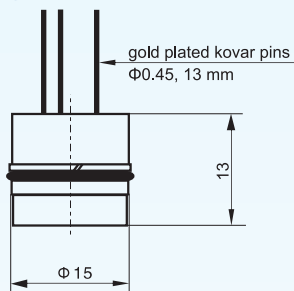
101B-a15G OEM pressure sensors are manufactured from BCM piezoresistive silicon dies. The sensors are designed with CAD, the performance is simulated and the sensor prototype is fully tested before batch production. Serious quality control and dedicated calibration processes guarantee the specifications of these OEM pressure sensors in mass production and the higher production eligible rate.

101B-a15G OEM pressure sensors possess a flush diaphragm facing the pressure media, able to measure pressures of viscous liquids, the diaphragm form a chamber, in which oil is filled to isolate the sensing element and transfer pressure. This isolation enables the sensor to measure the pressures of corrosive fluids as well as electro conductive liquids.

The model of 101B-a15G has wide pressure ranges from -1~0 to 0~600 bar, and a typical accuracy of 0.25%fs. Both constant current and constant voltage are available as excitation method allowing 101B-a15G to have a wide application areas.



## Dimensions:



## Applications:

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

## Environmental conditions:

Position Effect: <0.1% of Zero shift for 90° tilt in any direction

Vibration Effect: No change at 20 gs' RMS, 20~5000 Hz

Shock: 100 g, for 10 millisecond

Life: 100 million cycles

## Features:

- Measuring ranges: -1 ~ 0 bar to 0 ~ 600 bar
- Optional accuracy: 0.25 %fs
- Gauge (G), absolute (A) and sealed gauge (S)
- Constant current or constant voltage excitation
- Temperature compensation range: -10 ~ 70 °C
- O-ring sealing method
- Isolated construction with flush diaphragm, suitable for various fluid medium

## Physical Properties:

Diaphragm:	316L SS
Sensor housing:	316L SS
O-rings:	Viton
Lead:	Gold-plated Kovar
Wire:	Silicone rubber insulated wires
Fill Fluid:	Silicon oil < 0.5CC

## 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:	0.86 ~ 1.06 bar
Excitation Source:	1.5 ± 0.0015 mA dc

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# Model 101B-a15G Compensated Pressure Sensors

## Technical Data:

parameters	units	specifications
pressure medium		viscous fluid or fluid with grains, compatible with the wetted parts
pressure ranges & types*	bar, G	-1~0, 0~1, 0~2.5, 0~4, 0~6, 0~10, 0~16, 0~25
	bar, A	0~10, 0~16, 0~25, 0~40
	bar, S	0~10, 0~16, 0~25, 0~40, 0~60, 0~100, 0~250, 0~400, 0~600
overload pressure	%fs	200 (for pressure ≤ 100 bar), 150 (for pressure > 100 bar)
full scale output (@ 1.5 mA)	mVdc	≥ 100 (typical)
zero offset	mVdc	≤ ± 2
accuracy	%fs	0.25 (standard), 0.5
long-term stability	%FS/year	0.2
life time	cycles	10 <sup>8</sup>
response time	ms	≤ 0.5 (10% ~ 90% of leading edge)
excitation	recommended, mA	1.5 (recommended), 1, ..., 2
	Vdc	5 (recommended), 5, ..., 10
input resistance	Ω	4500 ± 1500
output resistance	Ω	4500 ± 1500
insulation resistance	MΩ @ 250 V dc	100
compensated temperature range	°C	-10 ~ +70
operating temperature range	°C	- 40 ~ +125
storage temperature range	°C	- 40 ~ +125
temperature coefficient of ZERO	%fs/°C	≤ ± 0.02
temperature coefficient of SPAN	%fs/°C	≤ ± 0.02
pressure interface		O-ring (Viton)
electrical interface		4F (4 colored flying wires, silicone rubber insulated, 100 mm), standard 5P (5 gold-plated kovar pins, Φ0.45 mm, length = 13 mm) 4P (4 gold-plated kovar pins, Φ0.45 mm, length = 13 mm)
diaphragm material		316L SS
pressure port material		316L SS
filling oil		silicone oil
net weight	gram	~ 23

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

Reference of test conditions: excitation = 1.5 mA, T = 25 °C, humidity = 60 %RH.

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

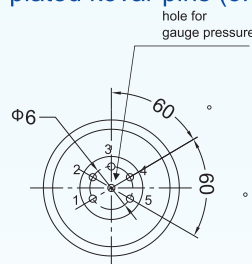
## Electronic Connections (#):

### 4-colored flying wires (4F)



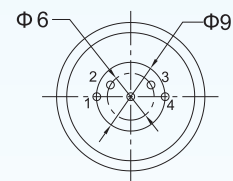
wire color	connection
yellow	signal +
red	excitation +
blue	excitation -
white	signal -

### 5 gold-plated kovar pins (5P)



pin	connection
1	excitation -
2	signal -
3	excitation +
4	signal +
5	excitation -

### 4 gold-plated kovar pins (4P)



pin	connection
1	excitation -
2	signal -
3	excitation +
4	signal +

#: In case of alterations, refer to the label on the packaging.

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# Model 101B-a15G Compensated Pressure Sensors



## Ordering Codes System:

example: 101B-a15G - 2.5 - G - II - c - T - 4F - Cxxxx

model number
101B-a15G

pressure ranges & available pressure types	
N1 = -1~0 bar G	40 = 40 bar A, S
1 = 0~1 bar G	60 = 60 bar S
2.5 = 2.5 bar G	100 = 100 bar S
4 = 4 bar G	250 = 250 bar S
6 = 6 bar G	400 = 400 bar S
10 = 10 bar G, A, S	600 = 100 bar S
16 = 16 bar G, A, S	
25 = 25 bar G, A, S	

pressure types
G = gauge pressure
A = absolute pressure
S = sealed gauge pressure

accuracy
II = 0.25%fs (standard)    III = 0.5%fs

excitation method
c = 1.5 mA (recommended), (1, ..., 2 mA)
v = 10 Vdc, (5, ..., 10 Vdc)

compensated temperature range
T = -10 ~ +70 °C

electrical connection
4F = 4-colored wires, silicone rubber insulated, 100 mm
5P = 5 gold-plated Kovar pins, Φ0.45 mm, 13 mm
4P = 4 gold-plated Kovar pins, Φ0.45 mm, 13 mm

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>>.

### Ordering code explanations: 101B-a15G - 2.5 - G - II - c - T - 4F - C0116

Model 101B-a15G compensated OEM pressure sensor for gauge pressure measurement in 0~2.5 bar range, the accuracy of this pressure sensor is 0.25 %fs, the excitation current is 1.5 mA, the compensated temperature range is -10~70 °C, the electrical connection is 4-colored silicone rubber insulated flying wires. The customer has indicated on January16th the customized specification on his order sheet for the ordered 101B-a15G, and this customized specifications has to be confirmed by BCM sales team on <<Order Confirmation>>.



ISO9001 Certified Company

## BCM SENSOR TECHNOLOGIES BVBA

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