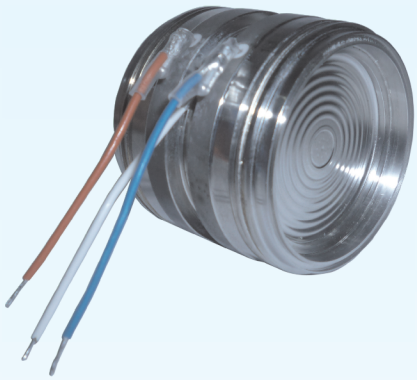
Model 115C
Metal Capacitive Differential Pressure Sensors

115C differential pressure sensors (DPS) are made of two symmetric capacitors in back-to-back configuration, each of which consists of one stationary plate and a common moving plate shared by the two capacitors. With the common plate moving as a result of application of external pressures, the differential capacitance system is formed: when the external pressures are applied to this system, one capacitor increases its capacitance, while the other decreases its capacitance at the same time. As a result, the system is sensitive to the applied external pressures.

115C makes use of this system to measure the differential pressure (D). Thanks to its large diameter of the diaphragm and high accuracy of the capacitors, 115C DPS is capable of measuring very low differential pressures down to 0~15 mbar. The 115C DPS can sustain a system pressure up to 312 bar for differential pressure applications with a measuring accuracy up to 0.2 %fso (fso = full scale output).

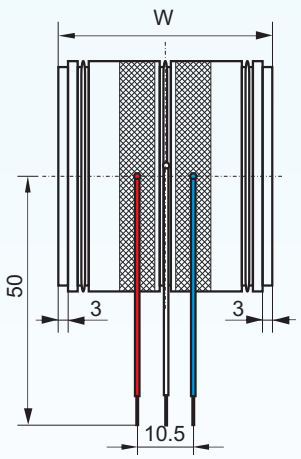
Model 115C is typically used to build intelligent pressure transmitters with accuracy up to 0.075 %fso, and for OEM applications which may require by the customer for certain modifications on its mechanical interface.



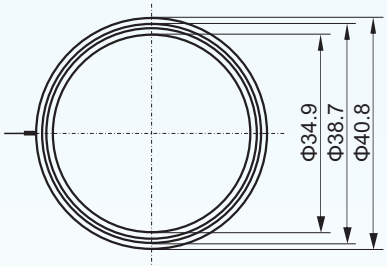
Features:

- pressure ranges & types:
  - D: 0~15 mbar, ... , 0~68.9 bar
  - G: 0~75 mbar, ... , 0~413.7 bar
  - A: 0~374 mbar, ... , 0~68.9 bar
- system pressure: up to 312 bar for diff. pressure applications
- overload pressure: up to 520 bar for gauge pressure applications
- accuracy: up to 0.2 %fso
- 100% stainless steel construction
- material of diaphragm: 316L stainless steel (SS)
  option: Hastelloy-C, Tantalum, or Monel

Dimensions:



W < 35.1 (for ranges I, II, III)
W ≥ 35.1 (for ranges IV, ..., IX)



wire in red: high pressure side
wire in blue: low pressure side
wire in white: GND

BCM SENSOR TECHNOLOGIES BVBA

Industriepark Zone 4, Brechtsebaan 2
B-2900 Schoten - Antwerpen, BELGIUM

Tel.: +32-3-238 6469
Fax: +32-3-238 4171

website: www.bcmsensor.com
email: sales@bcmsensor.com

Model 115C
Metal Capacitive Differential Pressure Sensors

Specifications:

parameters	units	specifications			
pressure medium		gas, dilute liquid, paste, viscous fluid or fluid with grains, as long as compatible with the diaphragm material of 115C			
differential pressure (D) ranges	mbar, D	0~15	~75; ~374; ~1,868; ~6,900; ~20,700	~374; ~1,868; ~6,900; ~20,700; ~68,900	
system pressure	bar	70	140	312	
differential overload pressure	bar	70	140	312	
gauge pressure (G) ranges	bar, G	0~0.075; ~0.374; ~1.9; ~6.9; ~20.7; ~68.9		0~206.8	0~413.7
absolute pressure (A) ranges	bar, A	0~0.374; ~1.9; ~6.9; ~20.7; ~68.9			
overload pressure for G & A pressures	bar	140		420	520
full scale output	pF	90 ± 20 if the high pressure is at "H" side. 300 ± 40 if the high pressure is at "L" side.			
ZERO offset	pF	120 ± 40 for pressure ranges ≤ 0~1,868 mbar; 140 ± 40 for other pressure ranges			
accuracy*	%fso	0.5 for diff. pressure range 0~15 mbar 0.2 for pressure ranges ≤ 0~1,868 mbar 0.25 for other pressure ranges			
ZERO variation caused by system pressure #	%fso	‧,‧° for pressure ranges ≤ 0~75 mbar 0.25 for other pressure ranges			
SPAN variation caused by system pressure #	%fso	-1.5 ± 0.25 for pressure ranges ≤ 0~75 mbar -1 ± 0.25 for other pressure ranges			
operating temperature range	°C	-30 ~ +90			
storage temperature range	°C	-40 ~ +100			
temperature coefficient of ZERO	%fso/°C	± 0.0045			
temperature coefficient of SPAN	%fso/°C	± 0.009			
long-terms stability	%fso/year	± 0.25			
insulation resistance	MΩ	> 500 @ 100 Vdc			
electrical interface	wires	3 colored flying wires with PVC insulation, length = 50 mm (standard)			
diaphragm material		316L SS (standard); option: Hastelloy-C, Tantalum or Monel			
weight	g	~ 280			

The listed specifications are subject to change without prior notice.
Reference of test conditions: temperature = 25°C, humidity = 60 %RH.
*: Other accuracies are available on request.
#: The variations of ZERO and SPAN can be eliminated when the 115C DPS is associated with an electronics circuit which is adjusted to the given system pressure.

BCM SENSOR TECHNOLOGIES BVBA

ISO9001 Certified Company

Industriepark Zone 4, Brechtsebaan 2
B-2900 Schoten - Antwerpen, BELGIUM

Tel.: +32-3-238 6469
Fax: +32-3-238 4171

website: www.bcmsensor.com
email: sales@bcmsensor.com

Model 115C
Metal Capacitive Differential Pressure Sensors

Ordering code of 115C DPS:

example: 115C(DP) - V - 140 - 0.2 - 12 - Cxxxx

pressure types
115C(vDP) for very low diff. pressure (DP) applications
115C(DP) 115C for DP applications
115C(hDP) 115C for DP applications of high system pressure
115C(AP) 115C for absolute pressure applications
115C(GP) 115C for gauge (relative) pressure applications

pressure ranges & types vs system/overload pressure	
I = 0~15 mbarD	vs 70 bar
II = 0~75 mbarD or G	vs 140 bar
III = 0~374 mbarD, G, or A	vs 140 bar or 312 bar
IV = 0~1,868 mbarD, G, or A	vs 140 bar or 312 bar
V = 0~6.9 barD, G, or A	vs 140 bar or 312 bar
VI = 0~20.7 barD, G, or A	vs 140 bar or 312 bar
VII = 0~68.9 barD, G, or A	vs 140 bar or 312 bar
VIII = 0~206.8 barG	vs 420 bar
IX = 0~413.7 barG	vs 520 bar

system or overload pressure
70 = 70 bar for DP range I
140 = 140 bar for DP ranges II~VI, G ranges II~VI, or A ranges III~VII
312 = 312 bar for DP ranges III~VII
420 = 420 bar for G range VIII
520 = 520 bar for G range IX

accuracy	
0.5 = 0.5 %fso for range I	0.2 = 0.2 %fso for range II~IV
0.25 = 0.25 %fso for other ranges	other accuracies on request

diaphragm material
12 = 316L SS (standard)
13 = Hastelloy-C
14 = Tantalum
15 = Monel

Cxxxx: This code starts with a “C” and is followed by 4 digits. This is a customized code given by the customer who will indicate on his order sheet his desired specification for the ordered 115C DPS.. The customer can use the 4 digits to indicate the month and date when he requests this customized specification. The BCM sales team members will confirm this customized specification on BCM's <<Order Confirmation>> document.

Ordering code explanation: 115C(DP)-V-140-0.2-12-C0116

115C DPS for DP application with measuring range = 0~6.9 bar (range V), the system and diff. overload pressure = 140 bar, the measuring accuracy = 0.2 %fso, and the diaphragm material = 316L SS. The customer has indicated on his order sheet his desired specification on January 16. And this customized specification has to be confirmed by BCM sales team members on our <<Order Confirmation>> document.

BCM SENSOR TECHNOLOGIES BVBA

ISO9001 Certified Company

Industriepark Zone 4, Brechtsebaan 2
B-2900 Schoten - Antwerpen, BELGIUM

Tel.: +32-3-238 6469
Fax: +32-3-238 4171

website: www.bcmsensor.com
email: sales@bcmsensor.com