

Rosemount[®] 215 MultiVariable[™] Sensor Module



The Rosemount 215 MultiVariable Sensor Module is based on the same innovative sensor technology used in Rosemount MultiVariable Transmitters. This versatile sensor module is easily integrated with OEM Flow Computer Equipment using Controller Area Network (CAN) Protocol, which provides fast and reliable digital bus communication. Using robust Rosemount technology, this sensor is guaranteed to stand up to even the toughest process and ambient conditions. With unmatched measurement accuracy, the Rosemount 215 is a perfect solution for integration with the world's most advanced flow computers. The Rosemount 215 is commonly used in custody transfer applications where high accuracy, fast updates, and reliable measurements are required. By measuring differential pressure, static pressure (gage or absolute), and module temperature; the Rosemount 215 is able to meet all of your multivariable sensor needs.

Rosemount 215 Product Overview



Industry leading performance with $\pm 0.05\%$ of DP reading accuracy

Enabled by superior sensor technology and engineered for optimal flow performance, the 215 delivers unparalleled reference accuracy with up to 100:1 rangeability. Superior performance results in increased measurement accuracy.

Reliable communications with CAN Protocol

Designed for easy integration with OEM flow equipment, the 215 communicates using CAN protocol. Update rates of up to 22 times per second ensure that the 215 is delivering process information fast enough to meet even the strictest requirements.

All-welded, hermetic 316 SST housing

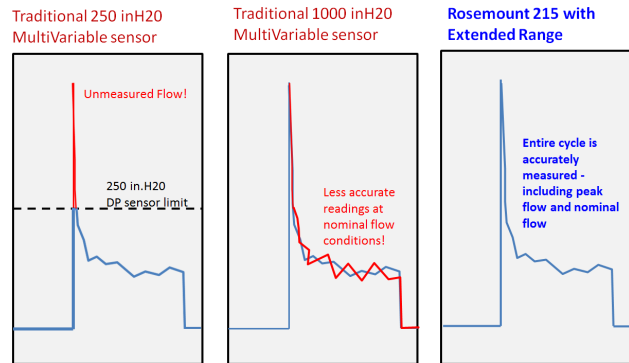
Designed to withstand the harshest of environments, the Rosemount 215 utilizes an all-welded, hermetically sealed 316 SST sensor module housing. This field proven technology is the most robust sensor design available on the market.

Hermetic glass seal

The Rosemount 215 uses a hermetic glass seal, which protects the sensor and electronics from moisture and field contaminants. It meets the relevant Dual Seal requirements of ANSI/ISA 12.27.01 and is capable of being certified when paired with a certified electronics housing.

Extended range for plunger lift measurement

Utilizing a new sensor technology, a 250 inH₂O URL sensor is able to read peak flows up to 800 inH₂O. This provides high performance over the standard flows below 250 inH₂O, and also captures the pressure spikes in plunger lift applications that would be missed by a traditional sensor.



Advanced electronics technology

Progressive electronics within the 215 provide high accuracy, unmatched reliability, and low power consumption.

Advanced Saturn™ dual-capacitance sensor

The innovative Rosemount Saturn Dual-Capacitance Sensor incorporates an extra sensor to enhance performance. This world-class sensor delivers best in class performance as well as built in overpressure protection.

Contents

Ordering Information 3
 Specifications 7

Product Certifications 15
 Dimensional Drawings 16

Ordering Information

Specification and selection of product materials, options, or components must be made by the purchaser of the equipment. See page 13 for more information on Material Selection.

Table 1. Rosemount 215 MultiVariable Sensor Module

★ The Standard offering represents the most common options. The starred options (★) should be selected for best delivery.

The Expanded offering is subject to additional delivery lead time.

Model	Sensor module type		
215A	MultiVariable Sensor Module		
Performance class⁽¹⁾			
1P	Enhanced: 0.075% Span DP Accuracy		★
3P ⁽²⁾	Enhanced for Flow: 0.05% Reading DP Accuracy		★
2P	Standard: 0.1% Span DP Accuracy		★
Measurement type			
2	Differential Pressure and Static Pressure		★
Differential pressure range			
1	-25 to 25 inH ₂ O (-62,16 to 62,16 mbar)		★
2	-250 to 250 inH ₂ O (-621,60 to 621,60 mbar)		★
A ⁽³⁾	Extended Range Capability: 0 to 250 inH ₂ O (0 to 621,60 mbar)		★
3	-1000 to 1000 inH ₂ O (-2,49 to 2,49 bar)		★
4 ⁽⁴⁾	-150 to 150 psi (-10,34 to 10,34 bar)		★
5 ⁽⁴⁾	-2000 to 2000 psi (-137,89 to 137,89 bar)		★
Static pressure type			
A	Absolute		★
G	Gage		★
Static pressure range		Absolute (A)	Gage (G)
6 ⁽⁵⁾	Range 6	0.5 to 300 psia (0,03 to 20,68 bar)	-14.2 to 300 psi (-0,98 to 20,68 bar)
3 ⁽⁶⁾	Range 3	0.5 to 800 psia (0,03 to 55,15 bar)	-14.2 to 800 psi (-0,98 to 55,15 bar)
7 ⁽⁵⁾	Range 7	0.5 to 1500 psia (0,03 to 103,42 bar)	-14.2 to 1500 psi (-0,98 to 103,42 bar)
4 ⁽⁷⁾	Range 4	0.5 to 3626 psia (0,03 to 250,00 bar)	-14.2 to 3626 psi (-0,98 to 250,00 bar)
Isolating diaphragm			
2 ⁽⁸⁾	316L SST		★
3 ⁽⁸⁾	Alloy C-276		★

Table 1. Rosemount 215 MultiVariable Sensor Module

★ The Standard offering represents the most common options. The starred options (★) should be selected for best delivery.

The Expanded offering is subject to additional delivery lead time.

Process connection	Conn size	Material type			
		Flange material	Drain vent		
A11 ⁽⁹⁾⁽¹⁰⁾	Assemble to 305 Manifold Integral Manifold				★
A12 ⁽⁹⁾	Assemble to 304 or AMF Manifold with 316 SST Traditional Flange				★
C11 ⁽⁹⁾	Assemble to Model 405C or 405P Primary Element				★
D11 ⁽⁹⁾	Assemble to Rosemount 1195 Integral Orifice and Rosemount 305 Manifold				★
EA2 ⁽⁹⁾	Assemble to Model 485 or 405A Annubar [®] Primary Element with Coplanar [™] Flange	316 SST	316 SST		★
E11	Coplanar flange	1/4-18 NPT	Carbon Steel	316 SST	★
E12	Coplanar flange	1/4-18 NPT	316 SST	316 SST	★
E13 ⁽⁸⁾	Coplanar flange	1/4-18 NPT	Cast C-276	Alloy C-276	★
E15 ⁽⁸⁾	Coplanar flange	1/4-18 NPT	316 SST	Alloy C-276	★
E16 ⁽⁸⁾	Coplanar flange	1/4-18 NPT	Carbon Steel	Alloy C-276	★
F12	Traditional flange	1/4-18 NPT	316 SST	316 SST	★
F13 ⁽⁸⁾	Traditional flange	1/4-18 NPT	Cast C-276	Alloy C-276	★
F15 ⁽⁸⁾	Traditional flange	1/4-18 NPT	316 SST	Alloy C-276	★
F52	DIN-compliant traditional flange with 7/16-in. bolting	1/4-18 NPT	316 SST	316 SST	★

Options (include with selected model number)

Mounting brackets ⁽¹⁰⁾		Bracket material	Pipe/panel	Bolt material	
B4	Coplanar flange bracket	SST	2-in. pipe and panel	SST	★
B1	Traditional flange bracket	Carbon Steel	2-in. pipe	N/A	★
B2	Traditional flange bracket	Carbon Steel	Panel	N/A	★
B3	Traditional flange flat bracket	Carbon Steel	2-in. pipe	N/A	★
B7	Traditional flange bracket B1	Carbon Steel	2-in. pipe	SST	★
B8	Traditional flange bracket B2	Carbon Steel	Panel	SST	★
B9	Traditional flange flat bracket B3	Carbon Steel	2-in. pipe	SST	★
BA	Traditional flange bracket B1	SST	2-in. pipe	SST	★
BC	Traditional flange flat bracket B3	SST	2-in. pipe	SST	★

Table 1. Rosemount 215 MultiVariable Sensor Module

★ The Standard offering represents the most common options. The starred options (★) should be selected for best delivery.

The Expanded offering is subject to additional delivery lead time.

Process adapters		
D2 ⁽¹¹⁾	1/2–14 NPT process adapters	★
External ground screw assembly		
D4	External ground screw assembly	★
Drain/vent valve		
D5 ⁽¹¹⁾	Delete sensor module drain/vent valves (install plugs)	★
Sensor fill fluid		
L1	Inert sensor fill fluid (not available with an absolute static pressure type)	★
O-ring		
L2	Graphite-filled PTFE O-ring	★
Bolting material⁽¹¹⁾		
L4	Austenitic 316 SST bolts	★
L5	ASTM A193, Grade B7M bolts	★
L6	Alloy K-500 bolts	★
L7 ⁽¹²⁾	ASTM A453, Class D, Grade 660 bolts	★
L8	ASTM A193, Class 2, Grade B8M bolts	★
Pressure testing		
P1	Hydrostatic testing with certificate	★
Cleaning process area		
P2 ⁽¹¹⁾	Cleaning for special services	
P3 ⁽¹¹⁾	Cleaning for less than 1PPM chlorine/fluorine	
Calibration data certification		
Q4	Calibration certificate	★
Material traceability certification		
Q8	Material traceability certification per EN 10204 3.1B	★

Table 1. Rosemount 215 MultiVariable Sensor Module

★ The Standard offering represents the most common options. The starred options (★) should be selected for best delivery.

The Expanded offering is subject to additional delivery lead time.

NACE certificates ⁽¹³⁾		
Q15	Certificate of Compliance to NACE MR0175/ISO15156 for wetted materials	★
Q25	Certificate of Compliance to NACE MR0103 for wetted materials	★
Typical model number: 215A1P2AG7A11		

1. For detailed specifications see "Performance specifications" on page 7.
2. Performance Class 3P is only available with DP range 2, 3, and 4.
3. DP Range A is only available with Performance Class 1P.
4. Only available with static pressure range 4 and Isolating Diaphragm 3.
5. SP Ranges 6 and 7 are only available with DP Range 2, 3, or A.
6. Available with DP Range 1 and Performance Class 1P or 2P only.
7. With DP range 1, absolute limits are 0.5 to 2000 psia (0,03 to 137,89 bar) and gage limits are -14.2 to 2000 psig (-0,98 to 137,89 bar).
8. Materials of Construction comply with metallurgical requirements highlighted within NACE MR0175/ISO 15156 for sour oil field production environments. Environmental limits apply to certain materials. Consult latest standard for details. Selected materials also conform to NACE MR0103 for sour refining environments. Order with Q15 or Q25 to receive a NACE certificate.
9. "Assemble to" items are specified separately and require a completed model number.
10. For process connection option code A11, the mounting bracket must be ordered as part of the manifold model number.
11. Not available with process connection option code A11.
12. Bolts are not considered process wetted. In instances where NACE MR0175/ISO 15156 and NACE MR0103 conformance is required for bolting, L7 is the recommended bolting option.
13. NACE compliant wetted materials are identified by Footnote 8.

Specifications

Performance specifications

For zero-based spans, reference conditions, silicone oil fill, glass-filled PTFE O-rings, SST materials, coplanar flange, lower trim point = zero DP; except where noted.

Conformance to specification ($\pm 3\sigma$ [Sigma])

Technology leadership, advanced manufacturing techniques, and statistical process control ensure pressure measurement specification conformance to $\pm 3\sigma$ or better.

Reference accuracy

Stated reference accuracy equations include terminal based linearity, hysteresis, and repeatability.

Range	Standard	Enhanced	Enhanced for Flow
DP			
1	$\pm 0.1\%$ span; For spans less than 5:1, $\pm[0.025+0.015(USL/Span)]\%$ span	$\pm 0.1\%$ span; For spans less than 15:1, $\pm[0.025+0.005(USL/Span)]\%$ span	N/A
2 - 3	$\pm 0.1\%$ span; For spans less than 10:1, $\pm[0.01 (USL/Span)]\%$ span	$\pm 0.075\%$ span; For spans less than 10:1, $\pm[0.025 +0.005(USL/Span)]\%$ span	$\pm 0.05\%$ reading; For readings less than 8:1, $\pm[0.05 + 0.0023(USL/Rdg)]\%$ reading
4 ⁽¹⁾	$\pm 0.1\%$ span; For spans less than 10:1, $\pm[0.01 (USL/Span)]\%$ span	$\pm 0.075\%$ span; For spans less than 10:1, $\pm[0.025 +0.005(USL/Span)]\%$ span	$\pm 0.05\%$ reading; For readings less than 3:1, $\pm[0.05 + 0.00245(USL/Rdg)]\%$ reading
5 ⁽¹⁾	$\pm 0.1\%$ span; For spans less than 10:1, $\pm[0.01 (USL/Span)]\%$ span	$\pm 0.075\%$ span; For spans less than 10:1, $\pm[0.025 +0.005(USL/Span)]\%$ span	N/A
Extended Range (Code A)	N/A	$\pm 0.075\%$ span for spans 25 to 250 inH ₂ O; For readings above span, $\pm 0.15\%$ reading	N/A
AP & GP			
3, 4, 6, and 7	$\pm 0.1\%$ span; For spans less than 5:1, $\pm[0.017 (USL/Span)]\%$ span	$\pm 0.075\%$ span; For spans less than 5:1, $\pm[0.013(USL/Span)]\%$ span	$\pm 0.05\%$ span; For spans less than 5:1, $\pm[0.006(USL/Span)]\%$ span

1. For Ranges 4 or 5, only available in Alloy C-276.

Long-term stability

215 model	Standard	Enhanced/enhanced for flow
All 215 products ⁽¹⁾	$\pm 0.1\%$ USL for 1 year	$\pm 0.125\%$ USL for 5 years; for ± 50 °F (28 °C) temperature changes, up to 1000 psi (68,9 bar) line pressure

1. For DP Range 1: $\pm 0.2\%$ USL for 1 year.

Warranty

Models	Standard and enhanced	Enhanced for flow
All 215 products ⁽¹⁾	1-year limited warranty ⁽²⁾	12-year limited warranty ⁽³⁾

- Warranty details can be found in Emerson™ Process Management Terms & Conditions of Sale, Document 63445.
- Goods are warranted for twelve (12) months from the date of initial installation or eighteen (18) months from the date of shipment by seller, whichever period expires first.
- Rosemount Enhanced for Flow sensor module have a limited warranty of twelve (12) years from date of shipment. All other provisions of Emerson Process Management standard limited warranty remain the same.

Ambient temperature effect

Temperature Effect is defined as output at a given temperature minus the output at Reference Operating Conditions, measured in \pm percent of USL deviation per 50 °F (28 °C) change from Reference Operating Conditions. Specifications apply only over the Ambient Temperature Limits.

Range	Standard	Enhanced	Enhanced for flow
DP	per 50 °F (28 °C)	per 50 °F (28 °C)	per 50 °F (28 °C)
1	$\pm(0.2\% \text{ USL} + 0.25\% \text{ span})$ from 1:1 to 30:1, $\pm(0.24\% \text{ USL} + 0.15\% \text{ span})$ from 30:1 to 50:1	$\pm(0.1\% \text{ USL} + 0.25\% \text{ span})$ from 1:1 to 30:1, $\pm(0.125\% \text{ USL} + 0.15\% \text{ span})$ from 30:1 to 50:1	N/A
2-3	$\pm(0.15\% \text{ USL})$ from 1:1 to 30:1, $\pm(0.20\% \text{ USL})$ from 30:1 to 50:1	$\pm(0.0175\% \text{ USL} + 0.1\% \text{ span})$ from 1:1 to 5:1, $\pm(0.035\% \text{ USL} + 0.125\% \text{ span})$ from 5:1 to 100:1	$\pm 0.13\% \text{ reading}$ from 1:1 to 5:1, $\pm[0.13 + 0.04 (\text{USL/RDG})]\% \text{ reading}$ from 5:1 to 100:1
Extended Range (Code A) ⁽¹⁾	N/A	For units spanned 75 to 250 inH ₂ O, $\pm(0.025\% \text{ MSL} + 0.125\% \text{ span})$ For pressures between span and 250 inH ₂ O, $\pm(0.025\% \text{ MSL} + 0.125\% \text{ reading})$ For units spanned 25 to 75 inH ₂ O, $\pm(0.09\% \text{ MSL} + 0.03\% \text{ span})$ For pressures between span and 250 inH ₂ O, $\pm(0.09\% \text{ MSL} + 0.03\% \text{ reading})$ For pressure readings above 250 inH ₂ O, $\pm 0.15\% \text{ reading}$	N/A
4-5 ⁽²⁾	$\pm(0.225\% \text{ USL})$ from 1:1 to 50:1	$\pm(0.04\% \text{ USL} + 0.175\% \text{ span})$ from 1:1 to 100:1	N/A
AP/GP	per 50 °F (28 °C)	per 50 °F (28 °C)	per 50 °F (28 °C)
3, 4, 6, and 7	$\pm(0.175\% \text{ USL})$ from 1:1 to 10:1, $\pm(0.225\% \text{ USL})$ from 10:1 to 25:1	$\pm(0.050\% \text{ USL} + 0.125\% \text{ span})$ from 1:1 to 10:1, $\pm(0.060\% \text{ USL} + 0.175\% \text{ span})$ from 10:1 to 40:1	$\pm(0.040\% \text{ USL} + 0.060\% \text{ span})$ from 1:1 to 10:1, $\pm(0.050\% \text{ USL} + 0.150\% \text{ span})$ from 10:1 to 40:1

- For Extended Range (Code A), MSL is the Maximum Span Limit of 250 inH₂O (621,60 mbar).
- With Ranges 4 or 5, only available in Alloy C-276.

Line pressure effect

Range	Standard	Enhanced and enhanced for flow
Zero error⁽¹⁾		
2-3 and Extended Range (Code A) ⁽²⁾	± 0.1% USL per 1000 psi (69 bar) For Static Pressures above 2000 psi: ±[0.2 + 0.0001 * (Ps - 2000)]% / 1000 psi	± 0.05% USL per 1000 psi (69 bar) For Static Pressures above 2000 psi: ±[0.1 + 0.0001 * (Ps - 2000)]% / 1000 psi
1	± 0.25% USL per 1000 psi (69 bar)	± 0.25% USL per 1000 psi (69 bar)
4-5	± 0.2% USL per 1000 psi (69 bar) For Static Pressures above 2000 psi: ±[0.2 + 0.00012 * (Ps - 2000)]% / 1000 psi	± 0.01% USL per 1000 psi (69 bar) For Static Pressures above 2000 psi: ±[0.2 + 0.0002 * (Ps - 2000)]% / 1000 psi
Span error		
2-5 ⁽³⁾ and Extended Range (Code A)	± 0.2% USL per 1000 psi (69 bar)	± 0.2% USL per 1000 psi (69 bar)
1	± 0.4% USL per 1000 psi (69 bar)	± 0.4% USL per 1000 psi (69 bar)

1. Zero error can be removed by performing a zero trim at line pressure.
2. For Extended Range (Code A), USL is the Maximum Span Limit (MSL) of 250 inH₂O (621,60 mbar).
3. DP Range 4-5 have systematic line pressure effects that are correctable by calibration to the tolerances shown.

Mounting position effect

There is no significant span effect due to mounting position. The zero effect can be eliminated by re-trimming output at zero after installation.

Sensor	Maximum zero shift
DP	±1.25 inH ₂ O (3,11 mbar)
AP & GP	±2.5 inH ₂ O (6,22 mbar)

Functional specifications

Service

Liquid, gas, and vapor applications

Range and sensor limits

The range limits are shown in the tables below. The calibrated span must exceed the minimum trim span.

Range	Differential pressure sensor ⁽¹⁾			
	Lower sensor limit (LSL)		Upper sensor limit (USL)	
1	-25 inH ₂ O (-62,16 mbar)		25 inH ₂ O (62,16 mbar)	
2	-250 inH ₂ O (-0,62 bar)		250 inH ₂ O (0,62 bar)	
3	-1000 inH ₂ O (-2,49 bar)		1000 inH ₂ O (2,49 bar)	
4	-150 psi (-10,34 bar)		150 psi (10,34 bar)	
5	-2000 psi (-137,89 bar)		2000 psi (137,89 bar)	
Extended Range (Code A) ⁽²⁾	-800 inH ₂ O (-1,99 bar)		800 inH ₂ O (1,99 bar)	
Range	Static pressure sensor			
	Absolute pressure		Gage pressure	
	Lower sensor limit (LSL) ⁽³⁾	Upper sensor limit (USL)	Lower sensor limit (LSL) ⁽⁴⁾	Upper sensor limit (USL)
6	0.5 psia (34,47 mbar)	300 psia (20,68 bar)	-14.2 psi (-0,98 bar)	300 psi (20,68 bar)
7	0.5 psia (34,47 mbar)	1500 psia (103,42 bar)	-14.2 psi (-0,98 bar)	1500 psi (103,42 bar)
4	0.5 psia (34,47 mbar)	3626 psia (250,00 bar) ⁽⁵⁾	-14.2 psi (-0,98 bar)	3626 psi (250,00 bar) ⁽⁵⁾
3 ⁽⁶⁾	0.5 psia (34,47 mbar)	800 psia (55,15 bar)	-14.2 psi (-0,98 bar)	800 psi (55,15 bar)

1. The Lower Sensor Limit (LSL) for Enhanced for Flow Performance Class is 0 inH₂O (0 mbar).
2. For Extended Range (Code A), the Maximum Span Limit (MSL) is 250 inH₂O (0,62 bar).
3. Inert Fill: Minimum gage pressure = -13.2 psi (0,91 bar); Minimum absolute pressure: 1.5 psia (103,42 mbar).
4. Assumes atmosphere pressure of 14.7 psia (1,0 bar).
5. For static pressure Range 4 with DP Range 1, the USL is 2000 psi (137,89bar).
6. Available with DP Range 1.

Minimum span limits

Differential pressure range	Standard	Enhanced	Enhanced for flow
1	1.0 inH ₂ O (2,49 mbar)	0.50 inH ₂ O (1,24 mbar)	N/A
2	5.0 inH ₂ O (12,43 mbar)	2.5 inH ₂ O (6,22 mbar)	2.5 inH ₂ O (6,22 mbar)
3	20.0 inH ₂ O (49,73 mbar)	10.0 inH ₂ O (24,86 mbar)	10 inH ₂ O (24,86 mbar)
4	6.0 psi (0,41 bar)	3.0 psi (0,21 bar)	3.0 psi (0,21 bar)
5	40.0 psi (2,76 bar)	20.0 psi (1,38 bar)	N/A
Extended Range (Code A) ⁽¹⁾	N/A	25 inH ₂ O (62,16 mbar)	N/A
Static pressure range	Standard	Enhanced	Enhanced for flow
Allowable static pressure ranges for DP Range 2-5, A			
4	145.00 psi (10,00 bar)	90.00 psi (6,21 bar)	90.00 psi (6,21 bar)
6	12.00 psi (0,83 bar)	7.50 psi (5,17 bar)	7.50 psi (5,17 bar)
7	60.00 psi (4,14 bar)	37.50 psi (2,59 bar)	37.50 psi (2,59 bar)
Allowable static pressure ranges for DP Range 1			
3	32.00 psi (2,21 bar)	20.00 psi (1,38 bar)	N/A
4	145.00 psi (10,00 bar)	90.00 psi (6,21 bar)	N/A

1. For Extended Range (Code A), the Maximum Span Limit (MSL) is 250 inH₂O (0,62 bar).

Digital communication protocol

The Rosemount 215 MultiVariable Sensor Module uses CAN bus protocol. For more information on communication with the module, see the Rosemount 215 Reference Manual (document number 00809-0100-4215).

Power supply

External power supply required for 215

V _{min} (V)	V _{max} (V)
5.0	6.0

The maximum average current is I_{max} (mA) = 3.0mA @ 5.0VDC.

Overpressure limits

Sensor module will withstand the following limits without damage.

DP Range	Static pressure range (GP/AP)			
	3	4	6	7
1	1600 psi (110,32 bar)	2000 psi (137,89 bar)	N/A	N/A
2	N/A	3626 psi (250,00 bar)	1600 psi (110,32 bar)	3626 psi (250,00 bar)
3	N/A	3626 psi (250,00 bar)	1600 psi (110,32 bar)	3626 psi (250,00 bar)
4	N/A	3626 psi (250,00 bar)	N/A	N/A
5	N/A	3626 psi (250,00 bar)	N/A	N/A
Extended Range (Code A)	N/A	N/A	1600 psi (110,32 bar)	3626 psi (250,00 bar)

Static pressure limits

Operates within specifications between static line pressures of 0.5 psia (0,03 bar) and the values in the tables below.

DP Range	Static pressure range (GP/AP)			
	3	4	6	7
1	800 psi (55,15 bar)	2000 psi (137,89 bar)	N/A	N/A
2	N/A	3626 psi (250,00 bar)	300 psi (20,68 bar)	1500 psi (103,42 bar)
3	N/A	3626 psi (250,00 bar)	300 psi (20,68 bar)	1500 psi (103,42 bar)
4	N/A	3626 psi (250,00 bar)	N/A	N/A
5	N/A	3626 psi (250,00 bar)	N/A	N/A
Extended Range (Code A)	N/A	N/A	300 psi (20,68 bar)	1500 psi (103,42 bar)

Burst pressure limits

10081 psi (695,06 bar)

Maximum working pressure limits

Maximum working pressure is the maximum pressure allowed for normal sensor module operation. For a differential pressure sensor module, the maximum working pressure is the static line pressure under which the sensor module can safely operate. If one side of the sensor module is exposed to the full static line pressure due to mis-valving, the sensor module will experience an output shift and must be re-zeroed. The maximum working pressure of the 215 sensor module is equal to the Static Pressure Limit, as shown in the table above. The maximum working pressure of sensor modules with assembled process connection options is limited by the lowest maximum pressure rating of the individual components.

Temperature limits

Ambient

-40 to 185 °F (-40 to 85 °C)

Storage

-50 to 185 °F (-46 to 85 °C)

Humidity limits

0 to 100% relative humidity

Turn-on time

This module can be configured via software to exhibit an output within 450 milliseconds of power being applied.

Volumetric displacement

Less than 0.005 in³ (0,08 cm³)

Physical specifications

Material selection

Emerson provides a variety of Rosemount products with various product options and configurations including materials of construction that can be expected to perform well in a wide range of applications. The Rosemount product information presented is intended as a guide for the purchaser to make an appropriate selection for the application. It is the purchaser's sole responsibility to make a careful analysis of all process parameters (such as all chemical components, temperature, pressure, flow rate, abrasives, contaminants, etc.), when specifying product materials, options, and components for the particular application. Emerson Process Management is not in a position to evaluate or guarantee the compatibility of the process fluid or other process parameters with the product, options, configuration or materials of construction selected.

Austenitic 316 SST per ASTM F593

ASTM A453, Class D, Grade 660 SST

ASTM A193, Grade B7M alloy steel

ASTM A193, Class 2, Grade B8M SST

Alloy K-500

Sensor module fill fluid

Silicone or inert halocarbon

Process connections

Coplanar sensor module	
Standard	1/4-18 NPT on 2 1/8-in. centers
Flange Adapters	1/2-14 NPT on 2-in. (50.8 mm), 2 1/8-in. (54.0 mm), or 2 1/4-in. (57.2 mm) centers

Process-wetted parts

Process isolating diaphragms

Coplanar sensor module
316L SST (UNS S31603), Alloy C-276 (UNS N10276), Alloy 400 (UNS N04400)

Drain/vent valves

316 SST or Alloy C-276 material

Process flanges and flange adapters

Plated carbon steel

SST: CF-8M (Cast 316 SST) per ASTM A743

Cast C-276: CW-12MW per ASTM A494

Wetted O-rings

Glass-filled PTFE

Non-wetted parts

Sensor module housing

SST: CF-3M (Cast 316L SST)

Bolts

Plated carbon steel per ASTM A449, Type 1

Shipping weights

Sensor module weights⁽¹⁾

Coplanar sensor module
3.1 lb (1,4 kg)

1. Flange and bolts not included.

Sensor module option weights

Option code	Option	Add lb (kg)
B4	SST Mounting Bracket for Coplanar Flange	1.2 (0,5)
B1, B7	Mounting Bracket for Traditional Flange	1.7 (0,8)
B2, B8	Mounting Bracket for Traditional Flange with SST Bolts	1.3 (0,6)
B3, B9	Flat Mounting Bracket for Traditional Flange	1.7 (0,8)
BA, BC	SST Bracket for Traditional Flange	1.6 (0,7)
F12	SST Traditional Flange with SST Drain Vents ⁽¹⁾	3.2 (1,5)
F13	Cast C-276 Traditional Flange with Alloy C-276 Drain Vents ⁽¹⁾	3.6 (1,6)
E12	SST Coplanar Flange with SST Drain Vents ⁽¹⁾	1.9 (0,9)
F15	SST Traditional Flange with Alloy C-276 Drain Vents ⁽¹⁾	3.2 (1,5)

1. Includes mounting bolts.

Product Certifications

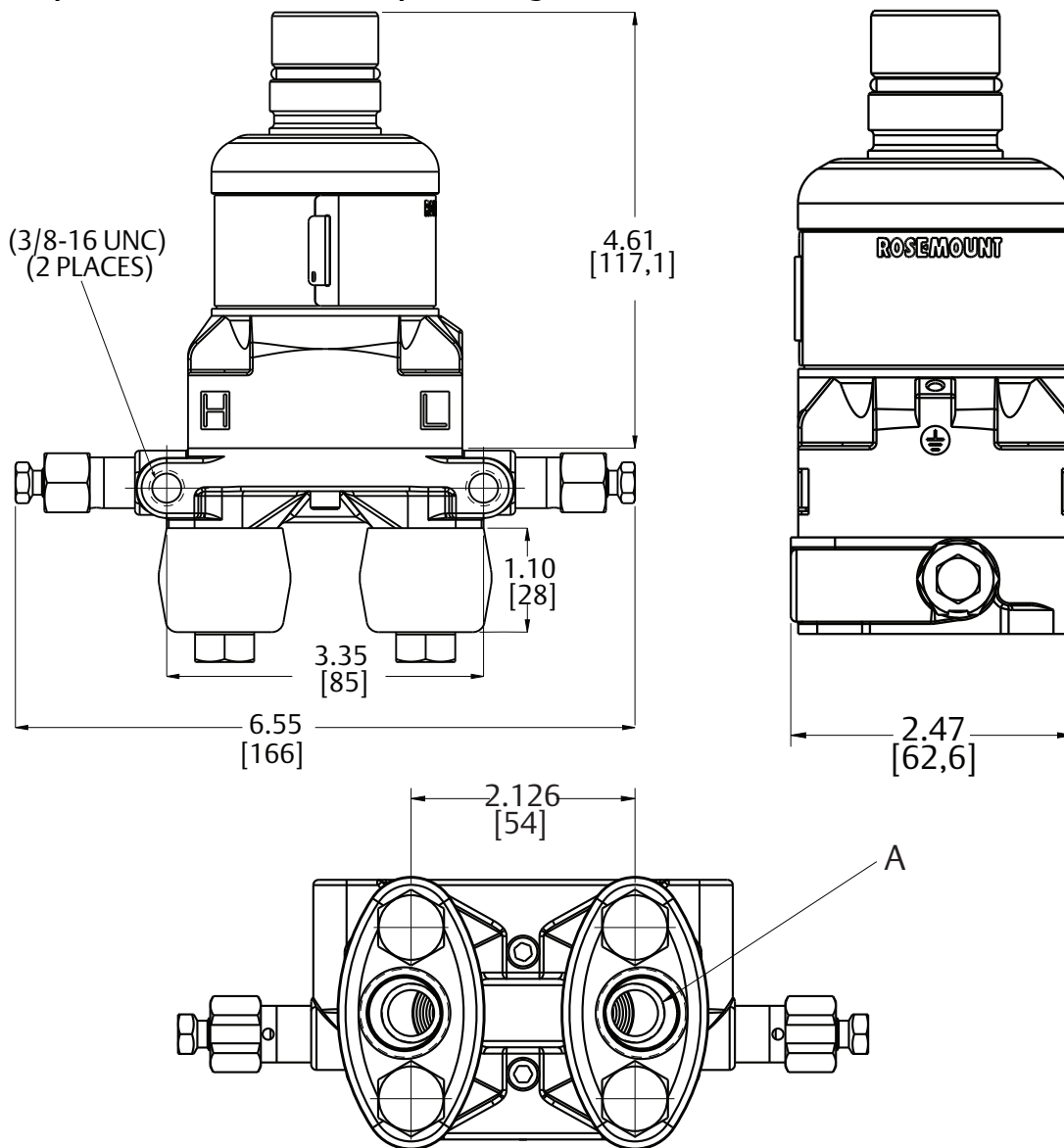
Ordinary Location Certification

Certificate pending.

Dimensional Drawings

Process adapters (option D2) and Rosemount 305 Integral Manifolds must be ordered with the module.

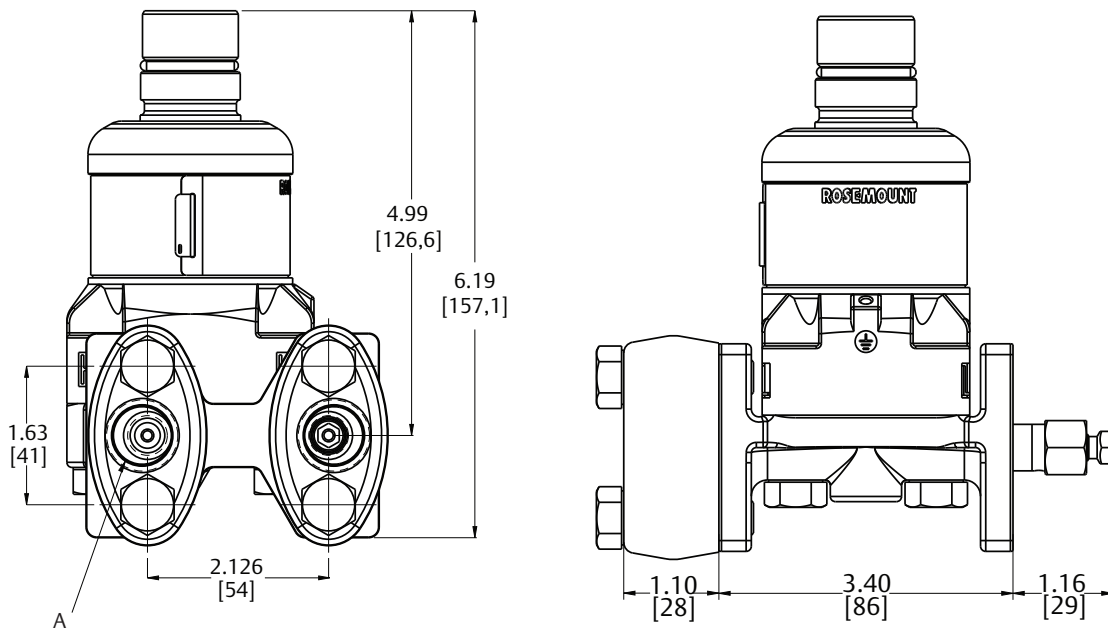
Figure 1. Coplanar Sensor Module and Coplanar Flange



A. $\frac{1}{4}$ -18 NPT process connection or $\frac{1}{2}$ -14 NPT with optional flange adapters.
 Adapters can be rotated to provide connection centers of 2.00 (51), 2.126 (54), or 2.25 (57).

Dimensions are in inches (millimeters).

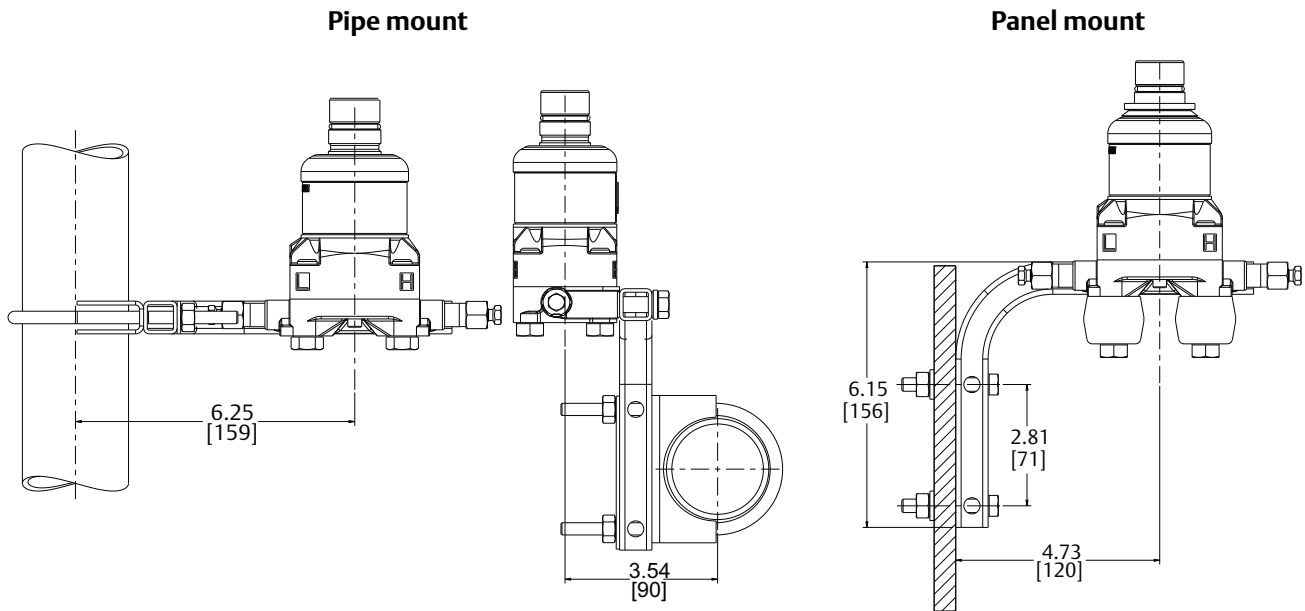
Figure 2. Coplanar Sensor Module and Traditional Flange



A. 1/4-18 npt process connection or 1/2-14 npt with optional flange adapters.
 Adapters can be rotated to provide connection centers of 2.00 (51), 2.126 (54), or 2.25 (57).

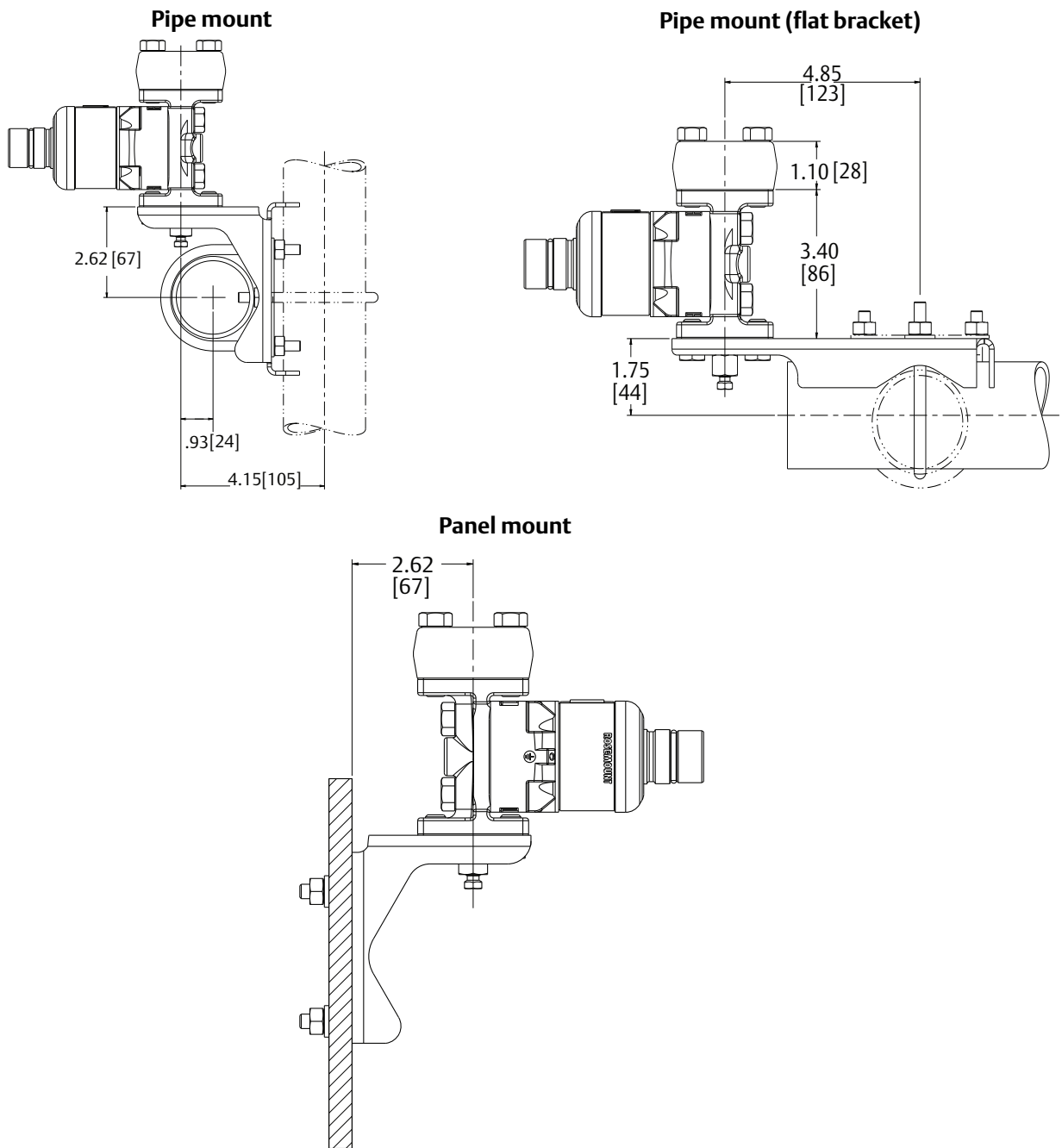
Dimensions are in inches (millimeters).

Figure 3. Coplanar Flange Mounting Configurations



Dimensions are in inches (millimeters).

Figure 4. Traditional Flange Mounting Configurations



Dimensions are in inches (millimeters).

Global Headquarters

Emerson Process Management

6021 Innovation Blvd.
Shakopee, MN 55379, USA
☎ +1 800 999 9307 or +1 952 906 8888
☎ +1 952 949 7001
✉ RFQ.RMD-RCC@EmersonProcess.com

North America Regional Office

Emerson Process Management

8200 Market Blvd.
Chanhassen, MN 55317, USA
☎ +1 800 999 9307 or +1 952 906 8888
☎ +1 952 949 7001
✉ RMT-NA.RCCRFQ@Emerson.com

Latin America Regional Office

Emerson Process Management

1300 Concord Terrace, Suite 400
Sunrise, Florida, 33323, USA
☎ +1 954 846 5030
☎ +1 954 846 5121
✉ RFQ.RMD-RCC@EmersonProcess.com

Europe Regional Office

Emerson Process Management Europe GmbH

Neuhofstrasse 19a P.O. Box 1046
CH 6340 Baar
Switzerland
☎ +41 (0) 41 768 6111
☎ +41 (0) 41 768 6300
✉ RFQ.RMD-RCC@EmersonProcess.com

Asia Pacific Regional Office

Emerson Process Management Asia Pacific Pte Ltd

1 Pandan Crescent
Singapore 128461
☎ +65 6777 8211
☎ +65 6777 0947
✉ Enquiries@AP.EmersonProcess.com

Middle East and Africa Regional Office

Emerson Process Management

Emerson FZE P.O. Box 17033,
Jebel Ali Free Zone - South 2
Dubai, United Arab Emirates
☎ +971 4 8118100
☎ +971 4 8865465
✉ RFQ.RMTMEA@Emerson.com

Standard Terms and Conditions of Sale can be found at:
www.rosemount.com/terms_of_sale.
The Emerson logo is a trademark and service mark of Emerson Electric Co.
Rosemount and Rosemount logotype are registered trademarks of Rosemount Inc.
Saturn and Coplanar is a trademark of Rosemount inc.
Annubar is a registered trademark of Rosemount inc.
All other marks are the property of their respective owners.
© 2015 Rosemount Inc. All rights reserved.