Product Data Sheet
00813-0100-4051, Rev BA
Catalog 2008 - 2009

Rosemount 3051 Revision 5 Pressure Transmitter

THE PROVEN INDUSTRY LEADER IN PRESSURE MEASUREMENT.

- *Best-in-Class performance with 0.04% High Accuracy option*
- *Industry first installed five-year stability*
- *Best-in-Class Dynamic Performance*
- *Coplanar™ platform enables integrated pressure, flow, and level solutions*
- *Advanced PlantWeb® Functionality to increase plant productivity*
- *Safety Certified to IEC 61508*

Includes Transmitter Option TR

Contents

Setting the Standard for Pressure Measurement

Industry's best-in-class total performance, a flexible *Coplanar* platform, and installed five-year stability, has made the Rosemount 3051 the standard in pressure measurement.

Industry's best-in-class total performance of ±0.15%
Total performance is the true measure of "real-world" transmitter performance. Using superior sensor technology and engineered for optimal performance, the 3051 delivers unprecedented ±0.04% reference accuracy, resulting in total installed operating performance of ±0.15%. Superior total performance equates to reduced variability and improved plant safety.

Installed five-year stability of ±0.125%
Transmitter stability is a critical measure of transmitter performance over time. Through aggressive simulation testing beyond standard IEC 770 testing, the 3051 has proven its ability to maintain performance over a five year period under the most demanding process conditions. Superior transmitter stability reduces calibration frequency to save operation and maintenance costs.

Unmatched dynamic performance
In dynamic applications, speed of measurement is as important as repeatability. The 3051 responds up to eight times faster than the typical pressure transmitter to detect and control variations quickly and efficiently. Superior dynamic response yields more accurate measurements to reduce variability and increase profitability.

***Coplanar* platform enables integrated solutions**
The versatile *Coplanar* platform design enables the best process connections for pressure, flow and level applications. Right out of the box, the solution arrives factory calibrated, pressure-tested, and ready to install. The flexible 3051 design reduces engineering and inventory costs.

Advanced *PlantWeb* Functionality

The 3051 Powers PlantWeb architecture or any digital automation architecture with the best sensor / transmitter, the best implementation practices, and best field intelligence including process alerts, configurable alarms, and PlantWeb alerts. And it delivers all it's value to any host using open and interoperable standards.

Safety Certified to IEC 61508

The 3051 is certified to IEC 61508 for non-redundant use in SIL 1 and SIL 2 Safety Instrumented Systems and redundant use in SIL 3 Safety Instrumented Systems.

Rosemount Pressure Solutions

Rosemount 3051S Series of Instrumentation
Scalable pressure, flow and level measurement solutions improve installation and maintenance practices.

Rosemount 3095MV Mass Flow Transmitter
Accurately measures differential pressure, static pressure and process temperature to dynamically calculate fully compensated mass flow.

Rosemount 304, 305 and 306 Integral Manifolds
Factory-assembled, calibrated and seal-tested manifolds reduce on-site installation costs.

Rosemount 1199 Diaphragm Seals
Provides reliable, remote measurements of process pressure and protects the transmitter from hot, corrosive, or viscous fluids.

Orifice Plate Primary Element Systems: Rosemount 1495 and 1595 Orifice Plates, 1496 Flange Unions and 1497 Meter Sections
A comprehensive offering of orifice plates, flange unions and meter sections that is easy to specify and order. The 1595 Conditioning Orifice provides superior performance in tight fit applications.

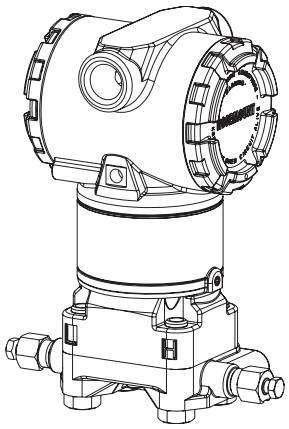
***Annubar*® Flowmeter Series: Rosemount 3051SFA, 3095MFA, and 485**
The state-of-the-art, fifth generation Rosemount 485 *Annubar* combined with the 3051S or 3095 MultiVariable transmitter creates an accurate, repeatable and dependable insertion-type flowmeter.

Compact Orifice Flowmeter Series: Rosemount 3051SFC, 3095MFC, and 405
Compact Orifice Flowmeters can be installed between existing flanges, up to a Class 600 (PN100) rating. In tight fit applications, a conditioning orifice plate version is available, requiring only two diameters of straight run upstream and two downstream.

***ProPlate*® Flowmeter Series: Rosemount *ProPlate*, Mass *ProPlate*, and 1195**
These integral orifice flowmeters eliminate the inaccuracies that become more pronounced in small orifice line installations. The completely assembled, ready to install flowmeters reduce cost and simplify installation.

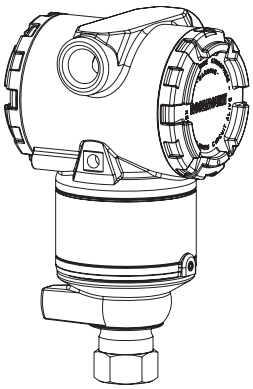
Product Offering

Rosemount 3051C - Differential, Gage, and Absolute



See ordering information on page 23.

- Performance up to 0.04% accuracy
- Installed five-year stability of 0.125%
- *Coplanar* platform enables integrated manifold, primary element and diaphragm seal solutions
- Calibrated spans/ranges from 0.1 inH_2O to 4000 psi (0,25 mbar to 276 bar)
- 316L SST, *Hastelloy*® C276, *Monel*®, Tantalum, Gold-plated *Monel*, or Gold-plated 316L SST process isolators

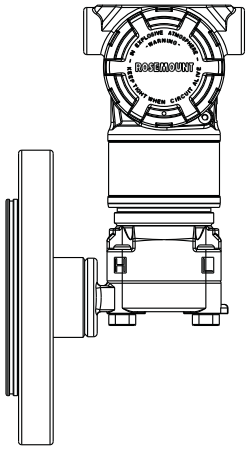


Rosemount 3051T - Gage and Absolute

See ordering information on page 27.

- Performance up to 0.04% accuracy
- Five year installed stability of 0.125%
- Calibrated spans from 0.3 to 10000 psi (10,3 mbar to 689 bar)
- Multiple process connections available
- 316L SST and Hastelloy C-276 process isolators

Rosemount 3051L - Liquid Level



See ordering information on page 29.

- Performance up to 0.075% accuracy
- Welded fill fluid system provides best-in-class system reliability
- Flush, 2, 4, and 6-in. extended diaphragms
- Multiple fill fluids and wetted materials available

Performance Specifications

Total Performance is based on combined errors of reference accuracy, ambient temperature effect, and static pressure effect.
This product data sheet covers HART protocols (Zero-based spans, reference conditions, silicone oil fill, 316 SST isolating diaphragms, and digital trim values equal to the 4-20 mA span setpoints).

Conformance to specification (±3 Sigma)

Technology leadership, advanced manufacturing techniques and statistical process control ensure specification conformance to at least ±3σ.

Reference Accuracy(1)

Models	Standard	High Accuracy Option
3051CD, 3051CG		
Range 0 (CD)	±0.10% of span For spans less than 2:1, accuracy = ±0.05% of URL	
Range 1	±0.10% of span For spans less than 15:1, accuracy = $\pm\left[0.025 + 0.005\left(\frac{URL}{Span}\right)\right]$% of Span	
Ranges 2-5	±0.065% of span For spans less than 10:1, accuracy = $\pm\left[0.015 + 0.005\left(\frac{URL}{Span}\right)\right]$% of Span	Ranges 2-4 High Accuracy Option, P8 ±0.04% of span For spans less than 5:1, accuracy = $\pm\left[0.015 + 0.005\left(\frac{URL}{Span}\right)\right]$% of Span
3051T		
Ranges 1-4	±0.065% of span For spans less than 10:1, accuracy = $\pm\left[0.0075\left(\frac{URL}{Span}\right)\right]$% of Span	Ranges 2-4 High Accuracy Option, P8 ±0.04% of span For spans less than 5:1, accuracy = $\pm\left[0.0075\left(\frac{URL}{Span}\right)\right]$% of Span
Range 5	±0.075% of span For spans less than 10:1, accuracy = $\pm\left[0.0075\left(\frac{URL}{Span}\right)\right]$% of Span	
3051CA		
Ranges 1-4	±0.065% of span For spans less than 10:1, accuracy = $\pm\left[0.0075\left(\frac{URL}{Span}\right)\right]$% of Span	Ranges 2-4 High Accuracy Option, P8 ±0.04% of span For spans less than 5:1, accuracy = $\pm\left[0.0075\left(\frac{URL}{Span}\right)\right]$% of Span
3051L		
All Ranges	±0.075% of span For spans less than 10:1, accuracy = $\pm\left[0.025 + 0.005\left(\frac{URL}{Span}\right)\right]$% of Span	

(1) Reference accuracy includes hysteresis, terminal-based linearity, and repeatability of the pressure sensor.

Total Performance

For ±50 °F (28 °C) temperature changes, up to 1000 psi (6,9 MPa) line pressure (CD only), from 1:1 to 5:1 rangedown.

Models		Total Performance
3051C		
	Ranges 2-5	±0.15% of span
3051T		
	Ranges 1-4	±0.15% of span

Long Term Stability

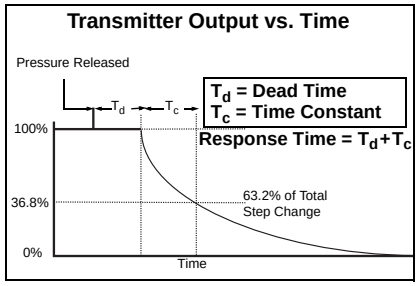
Models		Long Term Stability
3051C		
	Ranges 2-5	±0.125% of URL for 5 years ±50 °F (28 °C) temperature changes, and up to 1000 psi (6,9 MPa) line pressure.
3051CD		
	Ranges 0-1	±0.2% of URL for 1 year
3051T		
	Ranges 1-4	±0.125% of URL for 5 years ±50 °F (28 °C) temperature changes, and up to 1000 psi (6,9 MPa) line pressure.

Dynamic Performance

	4 - 20 mA (*HART* protocol)[1]
Total Response Time (T_d + T_c)[2]:	
3051C, Ranges 2-5:	100 ms
Range 1:	255 ms
Range 0:	700 ms
3051T:	100 ms
3051L:	Consult factory
Dead Time (Td)	45 ms (nominal)
Update Rate	22 times per second

(1) Dead time and update rate apply to all models and ranges; analog output only
(2) Nominal total response time at 75 °F (24 °C) reference conditions.

Typical HART Transmitter Response Time



Line Pressure Effect per 1000 psi (6,9 MPa)

For line pressures above 2000 psi (13,7 MPa) and Ranges 4-5, see user manual (Rosemount publication number 00809-0100-4051).

Models		Line Pressure Effect
3051CD		Zero Error[1]
	Range 0	±0.125% of URL/100 psi (6,89 bar)
	Range 1	±0.25% of URL/1000 psi (68,9 bar)
	Ranges 2-3	±0.05% of URL/1000 psi (68,9 bar) for line pressures from 0 to 2000 psi (0 to 13,7 MPa)
		Span Error
	Range 0	±0.15% of reading/100 psi (6,89 bar)
	Range 1	±0.4% of reading/1000 psi (68,9 bar)
	Ranges 2-3	±0.1% of reading/1000 psi (68,9 bar)

(1) Zero error can be calibrated out.

Ambient Temperature Effect per 50°F (28°C)

Models		Ambient Temperature Effect
3051CD/CG		
	Range 0	±(0.25% URL + 0.05% span)
	Range 1	±(0.1% URL + 0.25% span)
	Ranges 2-5	±(0.0125% URL + 0.0625% span) from 1:1 to 5:1 ±(0.025% URL + 0.125% span) from 5:1 to 100:1
3051T		
	Range 1	±(0.025% URL + 0.125% span) from 1:1 to 10:1 ±(0.05% URL + 0.125% span) from 10:1 to 100:1
	Range 2-4	±(0.025% URL + 0.125% span) from 1:1 to 30:1 ±(0.035% URL + 0.125% span) from 30:1 to 100:1
	Range 5	±(0.1% URL + 0.15% span)
3051CA		
	All Ranges	±(0.025% URL + 0.125% span) from 1:1 to 30:1 ±(0.035% URL + 0.125% span) from 30:1 to 100:1
3051L		See Rosemount Inc. Instrument Toolkit® software.

Mounting Position Effects

Models	Mounting Position Effects
3051C	Zero shifts up to ±1.25 inH_2O (3,11 mbar), which can be calibrated out. No span effect.
3051L	Zero shifts up to 1 inH_2O (2,49 mbar) with liquid level diaphragm in vertical plane. Zero shifts up to 5 inH_2O (12,43 mbar) plus extension length on extended units, with diaphragm in horizontal plane. All zero shifts can be calibrated out. No span effect.
3051T/CA	Zero shifts up to 2.5 inH_2O (6,22 mbar), which can be calibrated out. No span effect.

Vibration Effect

Less than ±0.1% of URL when tested per the requirements of IEC60770-1 field or pipeline with high vibration level (10-60 Hz 0.21mm displacement peak amplitude / 60-2000 Hz 3g).

Power Supply Effect

Less than ±0.005% of calibrated span per volt.

Electromagnetic Compatibility (EMC)

Meets all relevant requirements of IEC/EN 61326 and NAMUR NE-21.

Transient Protection (Option Code T1)

Meets IEEE C62.41, Category B

6 kV crest (0.5 μs - 100 kHz)
3 kV crest (8 × 20 microseconds)
6 kV crest (1.2 × 50 microseconds)

General Specifications:

Response Time: < 1 nanosecond
Peak Surge Current: 5000 amps to housing
Peak Transient Voltage: 100 V dc
Loop Impedance: < 25 ohms
Applicable Standards: IEC61000-4-4, IEC61000-4-5

NOTE:
Calibrations at 68 °F (20 °C) per ASME Z210.1 (ANSI)

FUNCTIONAL SPECIFICATIONS

Range and Sensor Limits

TABLE 1. 3051CD, 3051CG, and 3051L Range and Sensor Limits

3051CD, 3051CG, 3051L						
Range	Minimum Span		Range and Sensor Limits			
			Lower (LRL)			
	3051CD[1], CG, L	Upper (URL)	3051C Differential	3051C/ Gage	3051L Differential	3051L Gage
0	0.1 inH_2O (0,25 mbar)	3.0 inH_2O (7,47 mbar)	–3.0 inH_2O (-7,47 mbar)	NA	NA	NA
1	0.5 inH_2O (1,2 mbar)	25 inH_2O (62,3 mbar)	–25 inH_2O (–62,3 mbar)	–25 inH_2O (–62,3 mbar)	NA	NA
2	2.5 inH_2O (6,2 mbar)	250 inH_2O (0,62 bar)	–250 inH_2O (–0,62 bar)	–250 inH_2O (–0,62 bar)	–250 inH_2O (–0,62 bar)	–250 inH_2O (–0,62 bar)
3	10 inH_2O (24,9 mbar)	1000 inH_2O (2,49 bar)	–1000 inH_2O (–2,49 bar)	0.5 psia (34,5 mbar abs)	–1000 inH_2O (–2,49 bar)	0.5 psia (34,5 mbar abs)
4	3 psi (0,20 bar)	300 psi (20,6 bar)	–300 psi (–20,6 bar)	0.5 psia (34,5 mbar abs)	–300 psi (–20,6 bar)	0.5 psia (34,5 mbar abs)
5	20 psi (1,38 bar)	2000 psi (137,9 bar)	– 2000 psi (–137,9 bar)	0.5 psia (34,5 mbar abs)	NA	NA

(1) Range 0 only available with 3051CD. Range 1 only available with 3051CD or 3051CG.

TABLE 2. 3051CA Range and Sensor Limits

3051CA			
Range	Minimum Span	Range and Sensor Limits	
		Upper (URL)	Lower (LRL)
1	0.3 psia (20,6 mbar)	30 psia (2,07 bar)	0 psia (0 bar)
2	1.5 psia (0,103 bar)	150 psia (10,3 bar)	0 psia (0 bar)
3	8 psia (0,55 bar)	800 psia (55,2 bar)	0 psia (0 bar)
4	40 psia (2,76 bar)	4000 psia (275,8 bar)	0 psia (0 bar)

TABLE 3. 3051T Range and Sensor Limits

3051T				
Range	Minimum Span	Range and Sensor Limits		
		Upper (URL)	Lower (LRL)	Lower[1] (LRL) (Gage)
1	0.3 psi (20,6 mbar)	30 psi (2,07 bar)	0 psia (0 bar)	–14.7 psig (–1,01 bar)
2	1.5 psi (0,103 bar)	150 psi (10,3 bar)	0 psia (0 bar)	–14.7 psig (–1,01 bar)
3	8 psi (0,55 bar)	800 psi (55,2 bar)	0 psia (0 bar)	–14.7 psig (–1,01 bar)
4	40 psi (2,76 bar)	4000 psi (275,8 bar)	0 psia (0 bar)	–14.7 psig (–1,01 bar)
5	2000 psi (137,9 bar)	10000 psi (689,4 bar)	0 psia (0 bar)	–14.7 psig (–1,01 bar)

(1) Assumes atmospheric pressure of 14.7 psig (1.01 bar).

Service

Liquid, gas, and vapor applications

HART 4–20 mA (Output Code A)

Zero and Span Adjustment

Zero and span values can be set anywhere within the range limits stated in Table 1 and Table 2.

Span must be greater than or equal to the minimum span stated in Table 1 and Table 2.

Output

Two-wire 4–20 mA, user-selectable for linear or square root output. Digital process variable superimposed on 4–20 mA signal, available to any host that conforms to the *HART* protocol.

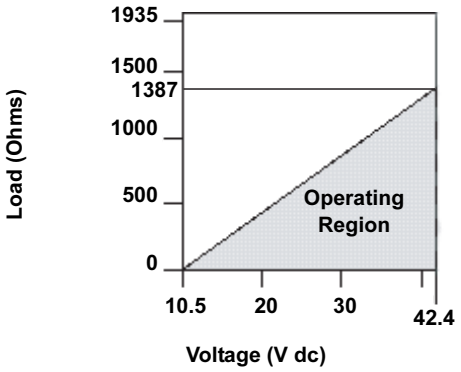
Power Supply

External power supply required. Standard transmitter (4–20 mA) operates on 10.5 to 42.4 V dc with no load.

Load Limitations

Maximum loop resistance is determined by the voltage level of the external power supply, as described by:

Max. Loop Resistance = 43.5 (Power Supply Voltage – 10.5)



Communication requires a minimum loop resistance of 250 ohms.

Overpressure Limits

Transmitters withstand the following limits without damage:

Rosemount 3051CD/CG

- Range 0: 750 psi (51,7 bar)
- Range 1: 2000 psig (137,9 bar)
- Ranges 2–5: 3626 psig (250 bar)
  4500 psig (310,3 bar) for option code P9
  6092 psig (420,0 bar) for option code P0

Rosemount 3051CA

- Range 1: 750 psia (51,7 bar)
- Range 2: 1500 psia (103,4 bar)
- Range 3: 1600 psia (110,3 bar)
- Range 4: 6000 psia (413,7 bar)

Rosemount 3051TG/TA

- Range 1: 750 psi (51,7 bar)
- Range 2: 1500 psi (103,4 bar)
- Range 3: 1600 psi (110,3 bar)
- Range 4: 6000 psi (413,7 bar)
- Range 5: 15000 psi (1034,2 bar)

Rosemount 3051L

For 3051L or Level Flange Option Codes FA, FB, FC, FD, FP, and FQ, limit is 0 psia to the flange rating or sensor rating, whichever is lower.

TABLE 4. 3051L and Level Flange Rating Limits

Standard	Type	CS Rating	SST Rating
ANSI/ASME	Class 150	285 psig	275 psig
ANSI/ASME	Class 300	740 psig	720 psig
ANSI/ASME	Class 600	1480 psig	1440 psig
At 100 °F (38 °C), the rating decreases with increasing temperature.			
DIN	PN 10–40	40 bar	40 bar
DIN	PN 10/16	16 bar	16 bar
DIN	PN 25/40	40 bar	40 bar
At 248 °F (120 °C), the rating decreases with increasing temperature.			

Static Pressure Limit

Rosemount 3051CD Only

Operates within specifications between static line pressures of 0.5 psia (0,03 bar) and 3626 psig (250 bar), with the exception of:

- Range 0: 0.5 psia to 750 psig (0,03 to 51,7 bar)
- Range 1: 0.5 psia to 2000 psig (0,03 to 137,9 bar)
- Option code P9: 4500 psig (310,3 bar)
- Option code P0: 6092 psig (420,0 bar)

Burst Pressure Limits

Coplanar or traditional process flange:

- 10000 psig (689,5 bar)

3051T:

- Ranges 1–4: 11000 psi (758,4 bar)
- Range 5: 26000 psig (1792,6 bar)

Temperature Limits

Ambient

–40 to 185 °F (–40 to 85 °C)
With LCD display: –40 to 175 °F (–40 to 80 °C)(1)
With option code P0: -4 to 185°F (-20 to 85 °C)

(1) LCD display may not be readable and LCD updates will be slower at temperatures below -4 °F (-20 °C).

Storage

–50 to 230 °F (–46 to 110 °C)

With LCD display: –40 to 185 °F (–40 to 85 °C)

Process

At atmospheric pressures and above. See Table 5

TABLE 5. 3051 Process Temperature Limits

3051CD, 3051CG, 3051CA	
Silicone Fill Sensor(1)	
with *Coplanar* Flange	–40 to 250 °F (–40 to 121 °C)(2)
with Traditional Flange	–40 to 300 °F (–40 to 149 °C)(2)(3)
with Level Flange	–40 to 300 °F (–40 to 149 °C)(2)
with 305 Integral Manifold	–40 to 300 °F (–40 to 149 °C)(2)
Inert Fill Sensor(1)	0 to 185 °F (–18 to 85 °C)(4)(5)
3051T (Process Fill Fluid)	
Silicone Fill Sensor(1)	–40 to 250 °F (–40 to 121 °C)(2)
Inert Fill Sensor(1)	–22 to 250 °F (–30 to 121 °C)(2)
3051L Low-Side Temperature Limits	
Silicone Fill Sensor(1)	–40 to 250 °F (–40 to 121 °C)(2)
Inert Fill Sensor(1)	0 to 185 °F (–18 to 85 °C)(2)
3051L High-Side Temperature Limits (Process Fill Fluid)	
Syltherm® XLT	–100 to 300 °F (–73 to 149 °C)
D.C. Silicone 704®	60 to 400 °F (15 to 205 °C)
D.C. Silicone 200	–40 to 400 °F (–40 to 205 °C)
Inert	–50 to 350 °F (–45 to 177 °C)
Glycerin and Water	0 to 200 °F (–18 to 93 °C)
Neobee M-20	0 to 400 °F (–18 to 205 °C)
Propylene Glycol and Water	0 to 200 °F (–18 to 93 °C)

(1) Process temperatures above 185 °F (85 °C) require derating the ambient limits by a 1.5:1 ratio.

(2) 220 °F (104 °C) limit in vacuum service; 130 °F (54 °C) for pressures below 0.5 psia (0,03 bar).

(3) 3051CD0 process temperature limits are –40 to 212 °F (–45 to 100 °C)

(4) 160 °F (71 °C) limit in vacuum service.

(5) Not available for 3051CA.

Humidity Limits

0–100% relative humidity

Turn-On Time

Performance within specifications less than 2.0 seconds after power is applied to the transmitter

Volumetric Displacement

Less than 0.005 in^3 (0,08 cm^3)

Damping

Analog output response to a step input change is user-selectable from 0 to 60 seconds for one time constant. This software damping is in addition to sensor module response time.

Failure Mode Alarm

HART 4-20mA (output code A)

If self-diagnostics detect a gross transmitter failure, the analog signal will be driven offscale to alert the user. Rosemount standard, NAMUR, and custom alarm levels are available (see Table 6 below).

High or low alarm signal is software-selectable or hardware-selectable via the optional switch (option D1).

TABLE 6. Alarm Configuration Options

	High Alarm	Low Alarm
Standard	≥ 21.75 mA	≤ 3.75 mA
NAMUR compliant(1)	≥ 22.5 mA	≤ 3.6 mA
Custom levels(2)	20.2 - 23.0 mA	3.6 - 3.8 mA

(1) Analog output levels are compliant with NAMUR recommendation NE 43, see option codes C4 or CN.

(2) Low alarm must be 0.1 mA less than low saturation and high alarm must be 0.1 mA greater than high saturation.

Safety Certified Transmitter Failure Values

Safety accuracy: 2.0%(1)
Safety response time: 1.5 seconds

(1) A 2% variation of the transmitter mA output is allowed before a safety trip. Trip values in the DCS or safety logic solver should be derated by 2%.

PHYSICAL SPECIFICATIONS

Electrical Connections

1/2–14 NPT, G1/2, and M20 × 1.5 (CM20) conduit. *HART* interface connections fixed to terminal block.

Process Connections

Rosemount 3051C

1/4–18 NPT on 2 1/8-in. centers

1/2–14 NPT on 2-, 2 1/8-, or 2 1/4-in. centers

Rosemount 3051L

High pressure side: 2-, 3-, or 4-in., ASME B 16.5 (ANSI) Class 150, 300 or 600 flange; 50, 80 or 100 mm, PN 40 or 10/16 flange

Low pressure side: 1/4–18 NPT on flange 1/2–14 NPT on adapter

Rosemount 3051T

1/2–14 NPT female. A DIN 16288 Male (available in SST for Range 1–4 transmitters only), or Autoclave type F-250-C (Pressure relieved 9/16–18 gland thread; 1/4 OD high pressure tube 60° cone; available in SST for Range 5 transmitters only).

Process-Wetted Parts

Drain/Vent Valves

316 SST, Hastelloy C-276, or *Monel* material (*Monel* not available with 3051L)

Process Flanges and Adapters

Plated carbon steel, SST cast CF-8M (cast version of 316 SST, material per ASTM-A743), Hastelloy C-276, or *Monel* cast alloy M30C

Wetted O-rings

Glass-filled PTFE or Graphite-filled PTFE

Process Isolating Diaphragms

Isolating Diaphragm Material	3051CD/CG	3051T	3051CA
316L SST	•	•	•
Hastelloy C-276	•	•	•
Monel	•		•
Tantalum	•		
Gold-plated *Monel*	•		•
Gold-plated SST	•		•

Rosemount 3051L Process Wetted Parts

Flanged Process Connection (Transmitter High Side)

Process Diaphragms, Including Process Gasket Surface

- 316L SST, Hastelloy C-276, or Tantalum

Extension

- CF-3M (Cast version of 316L SST, material per ASTM-A743), or Hastelloy C-276. Fits schedule 40 and 80 pipe.

Mounting Flange

- Zinc-cobalt plated CS or SST

Reference Process Connection (Transmitter Low Side)

Isolating Diaphragms

- 316L SST or Hastelloy C-276

Reference Flange and Adapter

- CF-8M (Cast version of 316 SST, material per ASTM-A743)

Non-Wetted Parts

Electronics Housing

Low-copper aluminum or CF-8M (Cast version of 316 SST, material per ASTM-A743). NEMA 4X, IP 65, IP 68

Coplanar Sensor Module Housing

CF-3M (Cast version of 316L SST, material per ASTM-A743)

Bolts

ASTM A449, Type 1
ASTM F593G, Condition CW1
ASTM A193, Grade B7M
ASTM A193 Class 2, Grade B8M
Monel K-500

Sensor Module Fill Fluid

Silicone oil (D.C. 200) or Fluorocarbon oil (Halocarbon or Fluorinert® FC-43 for 3051T)

Process Fill Fluid (3051L only)

Syltherm XLT, D.C. Silicone 704, D.C. Silicone 200, inert, glycerin and water, Neobee M-20 or propylene glycol and water

Paint

Polyurethane

Cover O-rings

Buna-N

Shipping Weights

Refer to “Shipping Weights” on page 33

Product Certifications

Approved Manufacturing Locations

Emerson Process Management - Rosemount Inc. — Chanhassen, Minnesota, USA

Emerson Process Management — Wessling, Germany

Emerson Process Management Asia Pacific Private Limited — Singapore

Beijing Rosemount Far East Instrument Co., LTD — Beijing, China

European Directive Information

ATEX Directive

Emerson Process Management complies with the ATEX Directive.

Intrinsic safety Ex ia protection type

- Pressure transmitter with ia type protection shall operate with a certified intrinsic safety power supply only.
- Closing of entries in the device must be carried out using the appropriate Exe or Exn metal cable gland and metal blanking plug or any appropriate ATEX approved cable gland and blanking plug with IP66 rating certified by an EU approved certification body.
- Pressure transmitter with intrinsic safety type protection is not valid if it is not connected to an intrinsic safety circuit.
- The Rosemount 3051 with option code T1(1) does not pass the 500V high voltage test and using it with a shunt-diode safety barrier is not allowed. Transmitter without option code T1(1) can be tested using the 500V high voltage test.

Flame-Proof enclosure Ex d protection type

- Pressure transmitter with flameproof enclosure type protection shall only be opened when power is removed.
- Closing of entries in the device must be carried out using the appropriate Exd metal cable gland and metal blanking plug or any appropriate ATEX approved cable gland and blanking plug with IP66 rating certified by an EU approved certification body.
- Do not exceed the energy level, which is stated on the approval label.

Type n protection type

- The Rosemount 3051 with option code T1(1) does not pass the 500V high voltage test and using it with a shunt-diode safety barrier is not allowed. Transmitter without option code T1(1) can be tested using the 500V high voltage test.
- Closing of entries in the device must be carried out using the appropriate Exe or Exn metal cable gland and metal blanking plug or any appropriate ATEX approved cable gland and blanking plug with IP66 rating certified by an EU approved certification body.

European Pressure Equipment Directive (PED) (97/23/EC)

Rosemount 3051CA4; 3051PD2, 3; 3051PG2, 3, 4, 5; 3051HD2, 3, 4, 5; 3051HG2, 3, 4, 5; 3051CG2, 3, 4, 5; 3051CD2, 3, 4, 5 *(also with P9 option)*; Pressure Transmitters are category III equipment— QS Certificate of Assessment - EC No. PED-H-100

All other Rosemount 3051/3001 Pressure Transmitters — Sound Engineering Practice

Transmitter Attachments: Diaphragm Seal - Process Flange - Manifold — Sound Engineering Practice

Pressure transmitters that are SEP or Category I with Explosion-Proof protection are outside the scope of PED and cannot be marked for compliance with PED.

Mandatory CE-marking for pressure transmitters in accordance with Article 15 of the PED can be found on the transmitter body (CE 0434).

Pressure transmitters categories I – IV, use module H for conformity assessment procedures.

Electro Magnetic Compatibility (EMC) (2004/108/EC)

All 3051 Pressure Transmitters meet all of the requirements of EN 61326: 1997 - A1, A2, and A3 and NAMUR NE-21. Installed signal wiring should not be run together and should not be in the same cable tray as AC power wiring.

Device must be properly grounded or earthed according to local electric codes.

To improve protection against signal interference, shielded cable is recommended.

Other important guidelines

Only use new, original parts.

To prevent the process medium escaping, do not unscrew or remove process flange bolts, adapter bolts or bleed screws during operation.

When accessories are added to the transmitter, the minimum pressure rating of any component shall not be exceeded.

Maintenance shall only be done by qualified personnel.

Ordinary Location Certification for Factory Mutual

As standard, the transmitter has been examined, tested, and approved to meet basic electrical, mechanical, and fire protection requirements by FM, a nationally recognized testing laboratory (NRTL) as accredited by the Federal Occupational Safety and Health Administration (OSHA).

(1) Lightning protection.

Hazardous Locations Certifications

North American Certifications

Factory Mutual (FM)

E5 Explosion-Proof for Class I, Division 1, Groups B, C, and D. Dust-Ignition-Proof for Class II, Division 1, Groups E, F, and G. Dust-Ignition-Proof for Class III, Division 1.
T5 (Ta = 85 °C), Factory Sealed, Enclosure Type 4x

I5 Intrinsically Safe for use in Class I, Division 1, Groups A, B, C, and D; Class II, Division 1, Groups E, F, and G; Class III, Division 1 when connected per Rosemount drawing 03031-1019 and 00268-0031 (When used with a HART communicator); Non-incendive for Class I, Division 2, Groups A, B, C, and D.
Temperature Code:T4 (Ta = 40 °C), T3 (Ta = 85 °C), Enclosure Type 4x.

Input parameters pending.

Canadian Standards Association (CSA)

C6 Explosion-Proof and intrinsically safe approval. Intrinsically safe for Class I, Division 1, Groups A, B, C, and D when connected in accordance with Rosemount drawings 03031-1024. Temperature Code T3C.
Explosion-Proof for Class I, Division 1, Groups B, C, and D. Dust-Ignition-Proof for Class II and Class III, Division 1, Groups E, F, and G. Suitable for Class I, Division 2 Groups A, B, C, and D hazardous locations. Enclosure type 4X, factory sealed.

Input parameters pending.

European Certifications

I1 ATEX Intrinsically Safe and Dust
Certification No.: BAS 97ATEX1089X ⟨Ex⟩ II 1 GD

EEx ia IIC T4 (Tamb = –60 to +70 °C)
Dust Rating: T80 °C (Tamb –20 to 40 °C) IP66/IP68
CE 1180

ATEX I1 Input Parameters
U_i= 30 V
I_i = 200 mA
P_i = 0.9 W
C_i = 0.012 µF
L_i = 0.0

Special conditions for Safe Use (X): When the optional transient protection terminal block is installed, the apparatus is not capable of withstanding the 500V insulation test required by Clause 6.4.12 of EN50020:1994. This must be taken into account when installing the apparatus.

NOTE
a) Pressure transmitter with ia type protection shall operate with a certified intrinsic safety power supply only.
b) Closing of entries in the device must be carried out using the appropriate EExe or EExn metal cable gland and metal blanking plug or any appropriate ATEX approved cable gland and blanking plug with IP66 rating certified by an EU approved certification body.
c) Pressure transmitter with intrinsic safety type protection is not valid if it is not connected to an intrinsic safety circuit.

The transmitter complies with category one (highest category) and is allowed to be installed in ZONE 0.

N1 ATEX Non-incendive/Type n and Dust
Certification No.: BAS 00ATEX3105X ⟨Ex⟩ II 3 GD

EEx nL IIC T5 (T_{amb} = –40 to +70 °C)
U_i = 45 Vdc max
Dust rating: T80 °C (T_{amb} = –20 to 40 °C) IP66/IP68

Special Conditions for Safe Use (x): When the optional transient protection terminal block is installed, the apparatus is not capable of withstanding a 500V r.m.s. by Clause 9.1 of EN 50021:1999 test to case. This must be taken into account on any installation in which it is used, for example by assuring that the supply to the apparatus is galvanically isolated.

E8 ATEX Flame-Proof and Dust
Certification No.: KEMA 00ATEX2013X ⟨Ex⟩ II 1/2 GD

EEx d IIC T6 (T_{amb} = –50 to 65 °C)
EEx d IIC T5 (T_{amb} = –50 to 80 °C)
Dust rating T90 °C, IP66/IP68
CE 1180
Vmax = 45 V dc

Special Conditions for Safe Use (X): This device contains a thin wall diaphragm. Installation, maintenance, and use shall take into account the environmental conditions to which the diaphragm will be subjected. The manufacturer's instructions for installation and maintenance shall be followed in detail to assure safety during its expected lifetime.

NOTE
a) Pressure transmitter with flameproof enclosure type protection shall only be opened when power is removed.
b) Closing of entries in the device must be carried out using the appropriate EE d metal cable gland and metal blanking plug or any appropriate ATEX approved cable gland and blanking plug with IP66 rating certified by an EU approved certification body.
c) Do not exceed the energy level, which is stated on the approval label.

Japanese Certifications

Approvals pending, consult factory for availability.

E4 TIIS Flame-Proof

I4 TIIS Intrinsic Safety

Australian Certifications

I7 SAA Intrinsically Safe
Certification No.: AUS EX 1249X

Ex ia IIC T4 (T_{amb} = 70 °C)
Ex ia I (T_{amb} = -60 °C to +70 °C)
IP65
When connected per Rosemount drawing 03031-1026

Special Conditions for Safe Use (X):
The apparatus may only be used with a passive current limited power source Intrinsic Safety application. The power source must be such that Po ≤ (Uo * Io) / 4.

Modules using transient protection in the terminal assembly (T1 transient protection models) the apparatus enclosure is to be electrically bonded to the protective earth.

The conductor used for the connection shall be equivalent to a copper conductor of 4 mm^2 minimum cross-sectional area.

SAA Approved Input Parameters
U_i = 30 V
I_i = 200 mA
I_i = 160 mA (Option Code T1)
P_i = 0.9 W
C_i = 0.01 µF (Output Code A)
L_i = 10 µH
L_i = 1,05 mH (Output Code A with T1)(1)

E7 SAA Explosion-Proof (Flame-Proof)
Certification No.: AUS EX 1347X

Ex d IIC T6 (T_{amb} = 40 °C)
Ex d IIC T5 (T_{amb} = 80 °C)
DIP T6 (T_{amb} = 40 °C)
DIP T5 (T_{amb} = 80 °C)
IP65

Special Conditions for Safe Use (x): It is a condition of safe use for transmitter enclosures having cable entry thread other than metric conduit thread that the equipment be utilized with an appropriate certified thread adaptor.

N7 SAA Type n (Non-sparking)
Certification No.: AUS EX 1249X

Ex n IIC T4 (T_{amb} = 70 °C)
Ex n IIC T5 (T_{amb} = 40 °C)
IP65

Special Conditions for Safe Use (x): Where the equipment is installed such that there is an unused conduit entry, it must be sealed with a suitable blanking plug to maintain the IP40 degree of protection. Any blanking plug used with the equipment shall be of a type which requires the use of a tool to effect its removal. Voltage source shall not exceed 60V ac or 75V dc.

(1) SAA intrinsically safe requires stainless steel housing for Group I mining applications.

Combinations of Certifications

Stainless steel certification tag is provided when optional approval is specified. Once a device labeled with multiple approval types is installed, it should not be reinstalled using any other approval types. Permanently scratch off or mark unused approval types on the approval label.

K5 **E5** and **I5** combination

KB **K5** and **C6** combination

K6 **C6**, **I1**, and **E8** combination

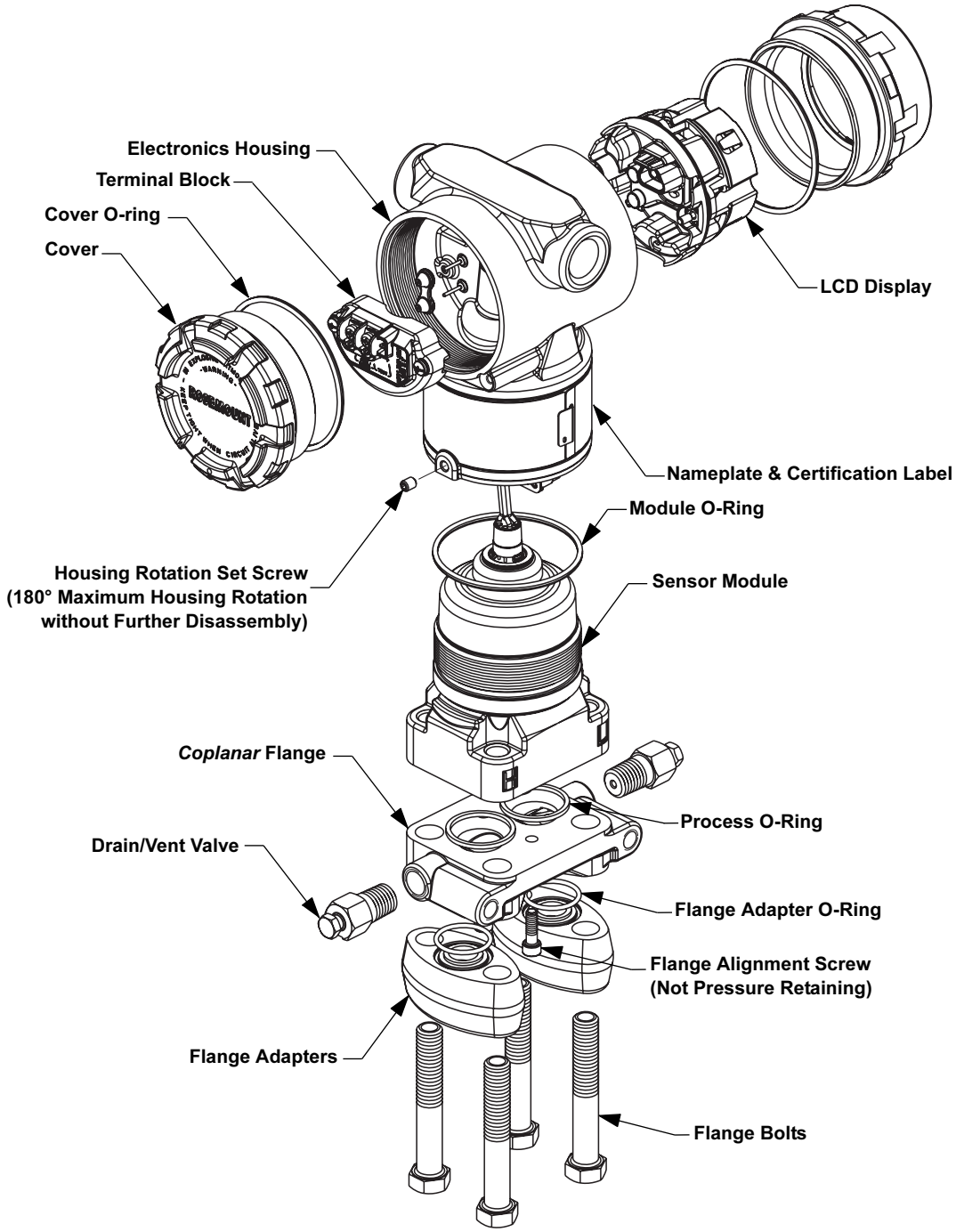
K8 **E8, E1**, and **N1** combination

K7 **E7**, **I7**, and **N7** combination

KD **K5, C6, I1,** and **E8** combination

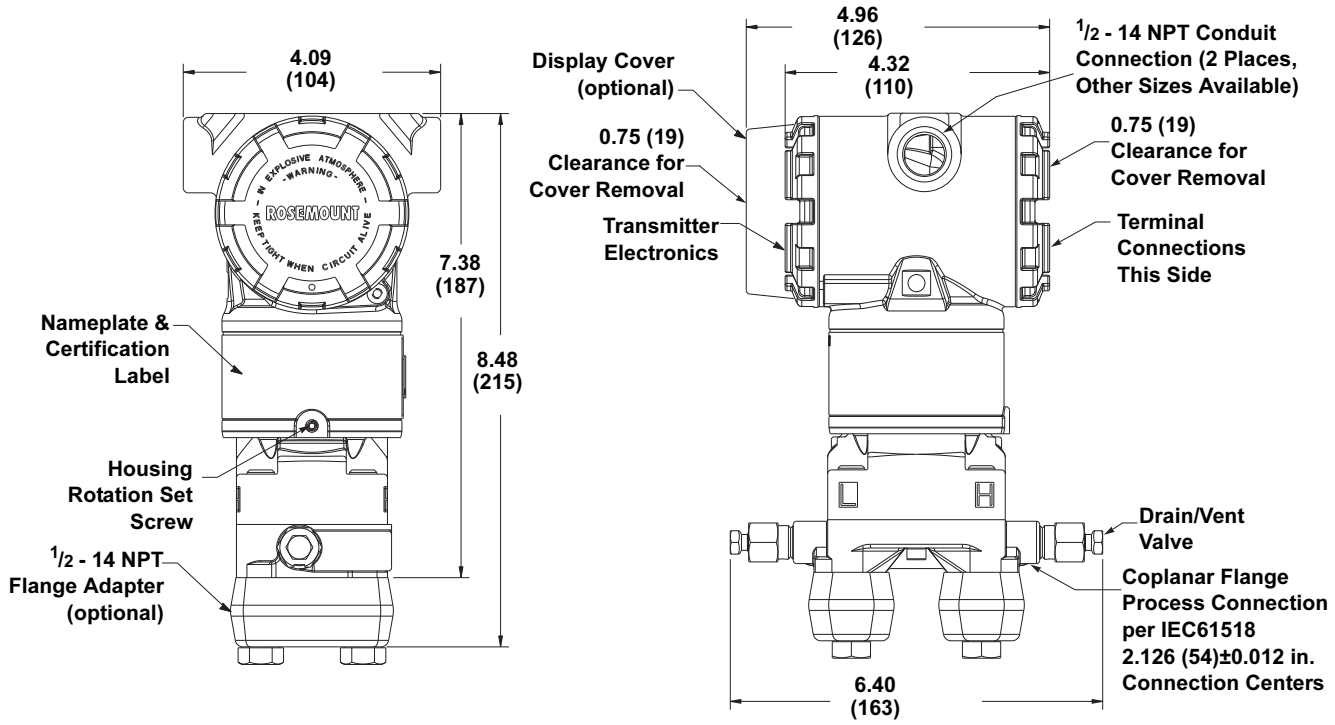
Dimensional Drawings

3051 Exploded View

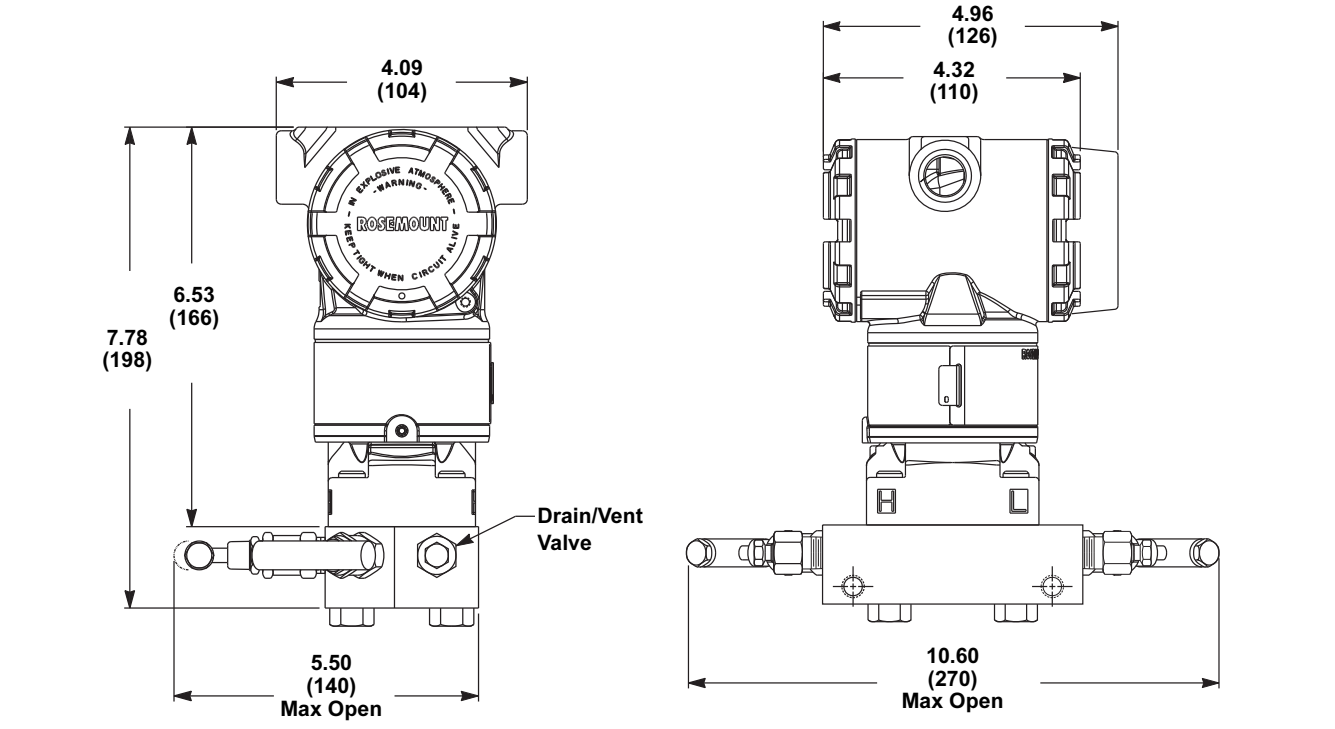


Dimensions are in inches (mm).

3051C *Coplanar* with *Coplanar* Flange



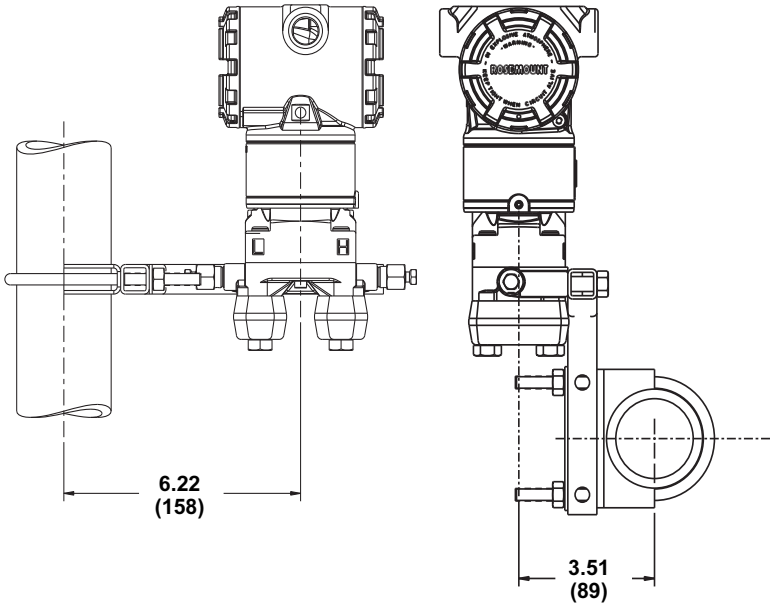
3051C *Coplanar* with Rosemount 305 *Coplanar* Integral Manifold

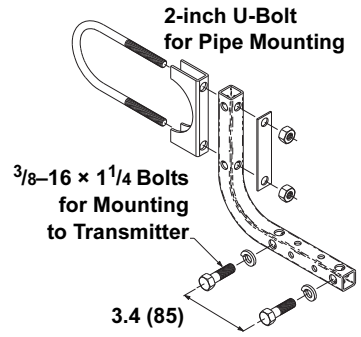


Dimensions are in inches (mm).

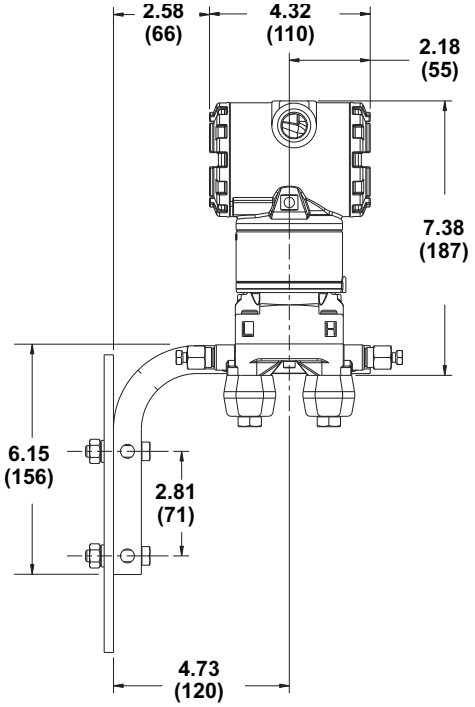
Coplanar Flange Mounting Configurations with Optional Bracket (option B4) for 2-in. Pipe or Panel Mounting

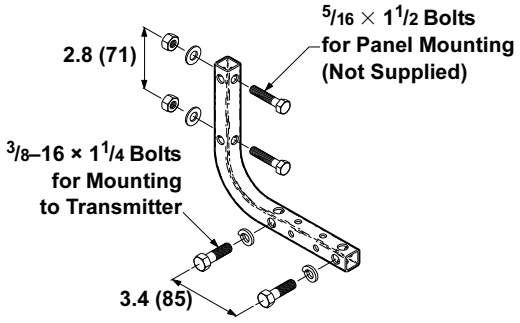
Pipe Mount





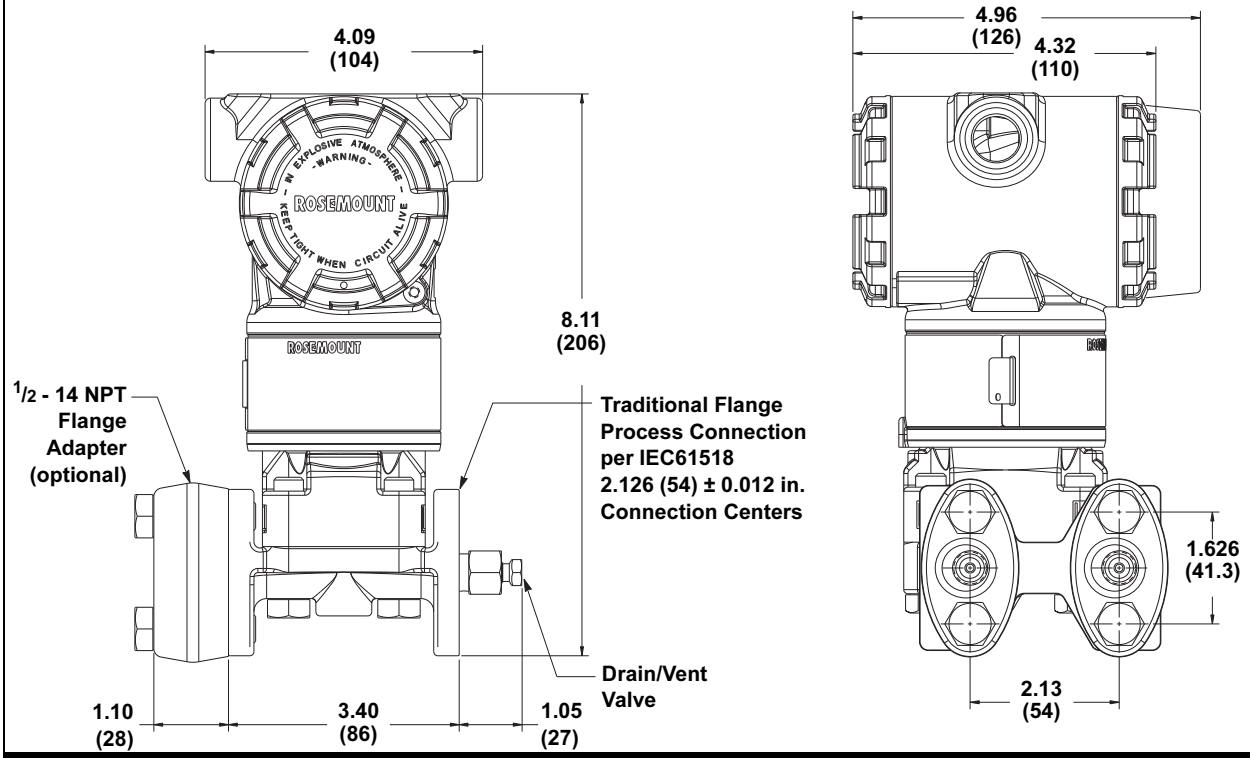
Panel Mount



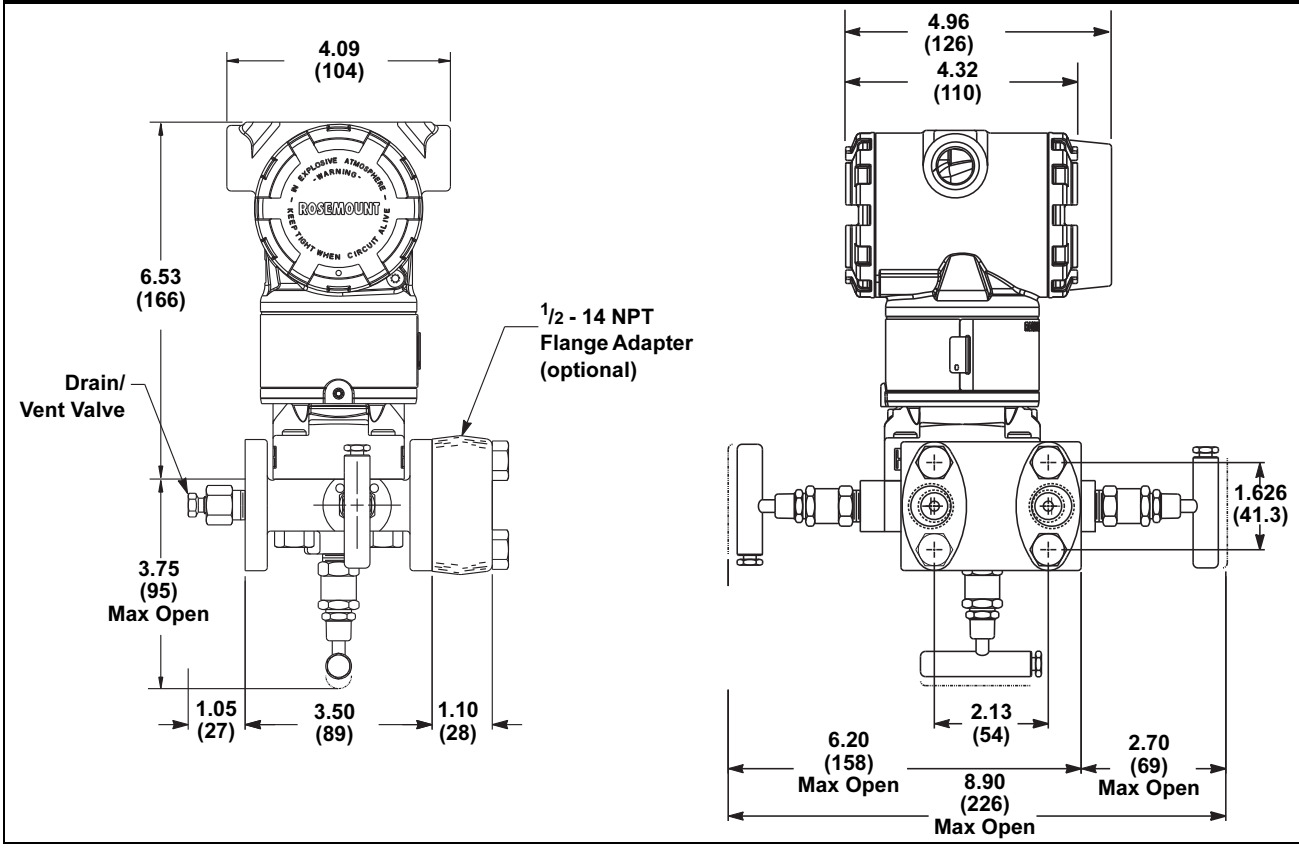


Dimensions are in inches (mm).

3051C *Coplanar* with Traditional Flange



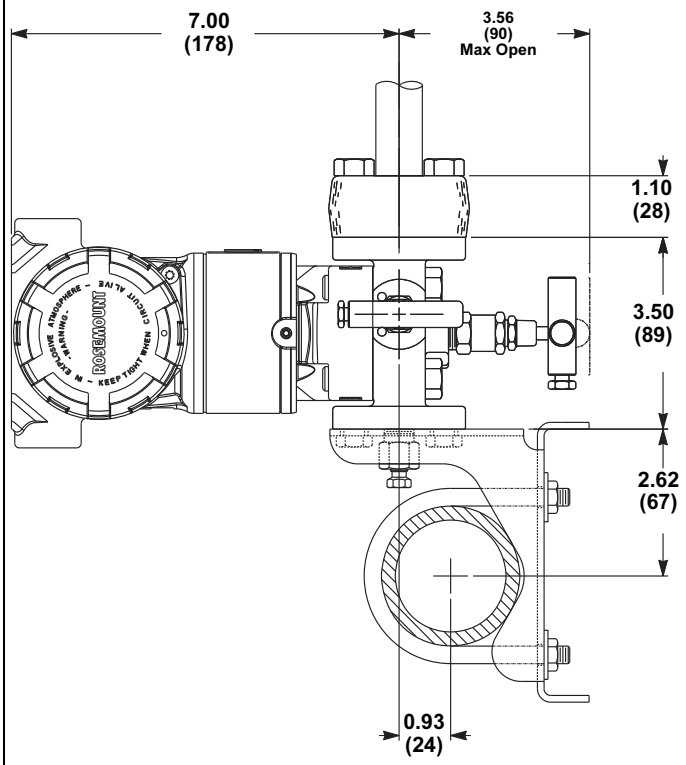
3051C *Coplanar* with Rosemount 305 Traditional Integral Manifold

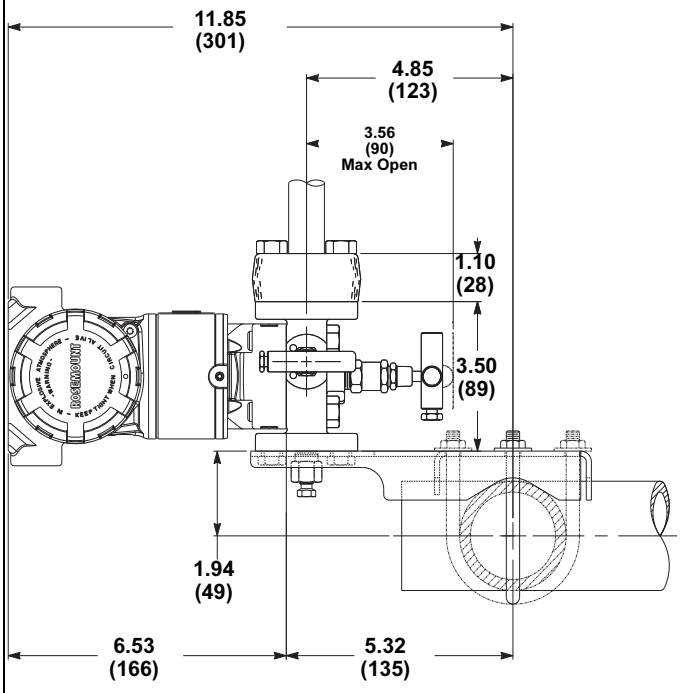


Dimensions are in inches (mm).

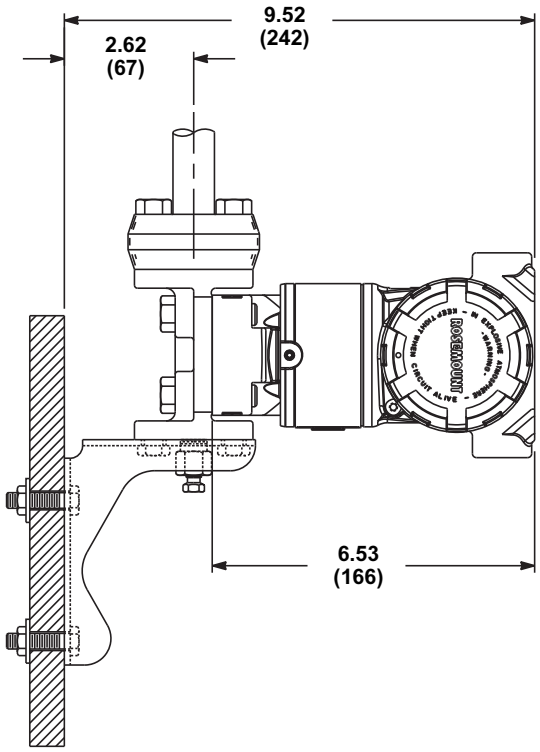
Traditional Flange Mounting Configurations with Optional Brackets for 2-in. Pipe or Panel Mounting

Pipe Mount 305 Integral Manifold (option B1/B7/BA)



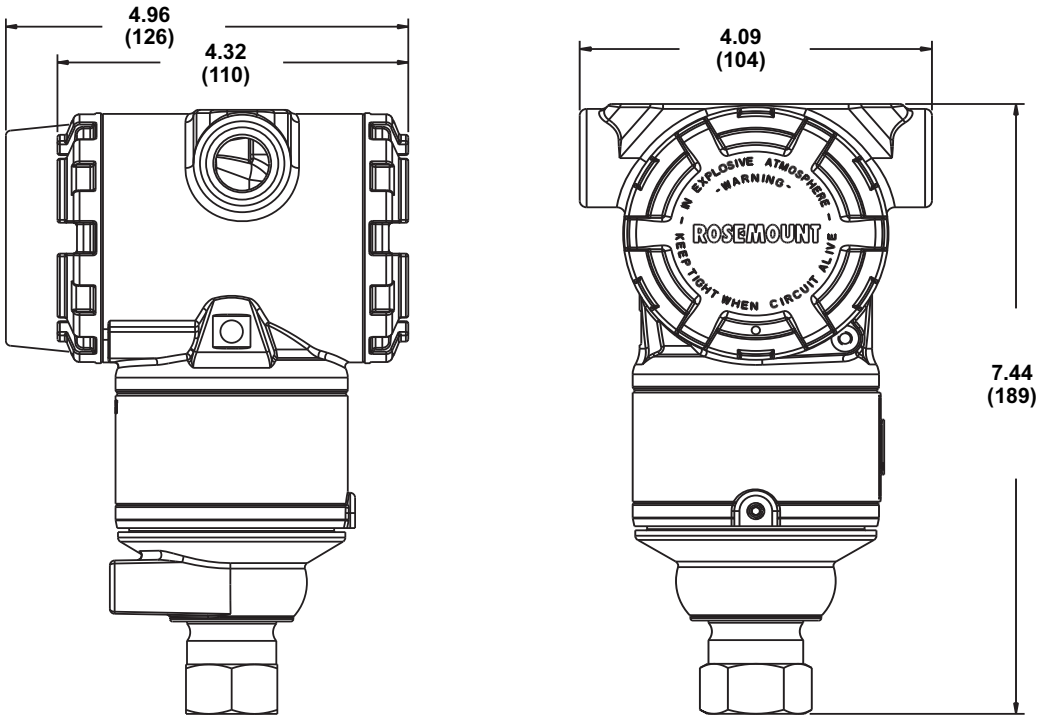


Panel Mount (option B2/B8)



Dimensions are in inches (mm).

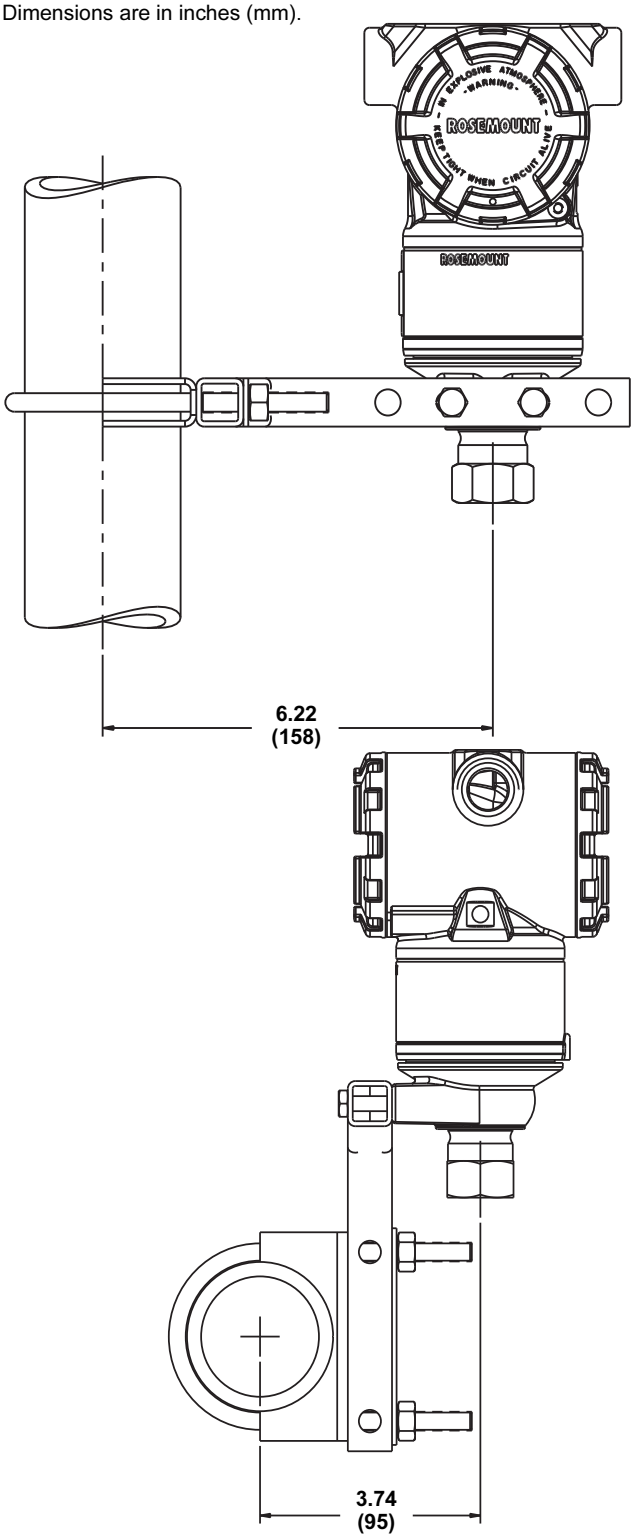
3051T Inline



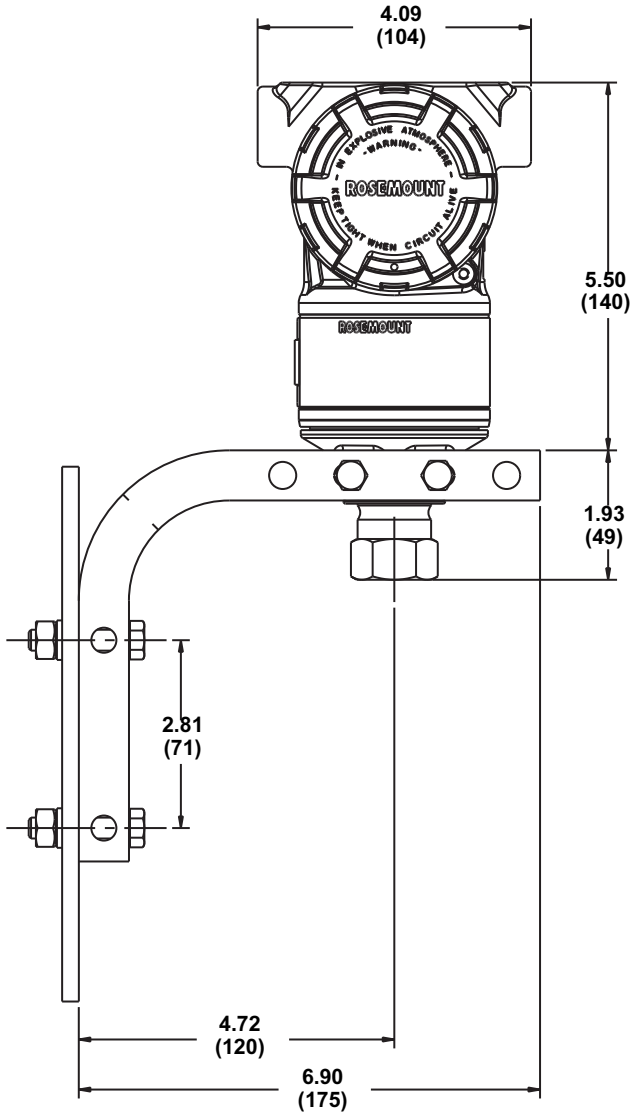
3051T Inline Mounting Configurations with Optional Bracket (option B4) for 2-in. Pipe or Panel Mounting

Pipe Mount

Dimensions are in inches (mm).



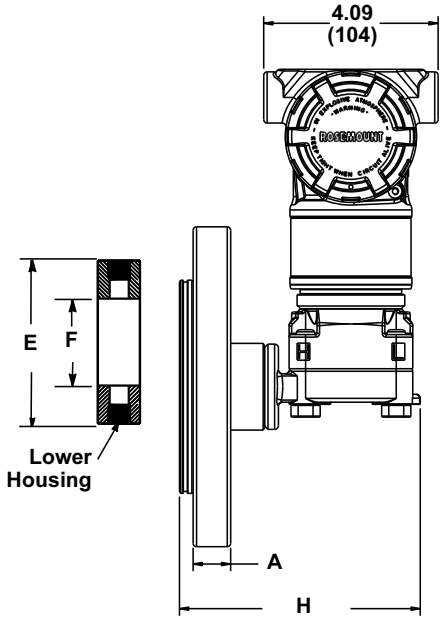
Panel Mount



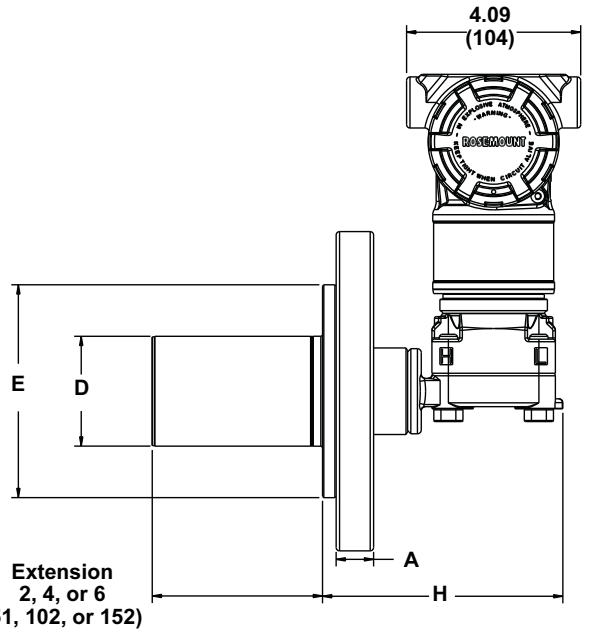
3051L Liquid-Level

Flush Flanged Configuration

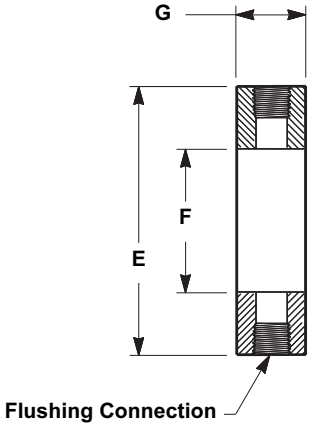
Dimensions are in inches (mm).



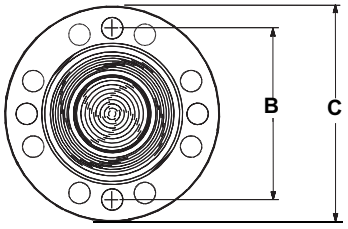
Extended Flange Configuration



Optional Flushing Connection Ring (Lower Housing)



Diaphragm Assembly and Mounting Flange



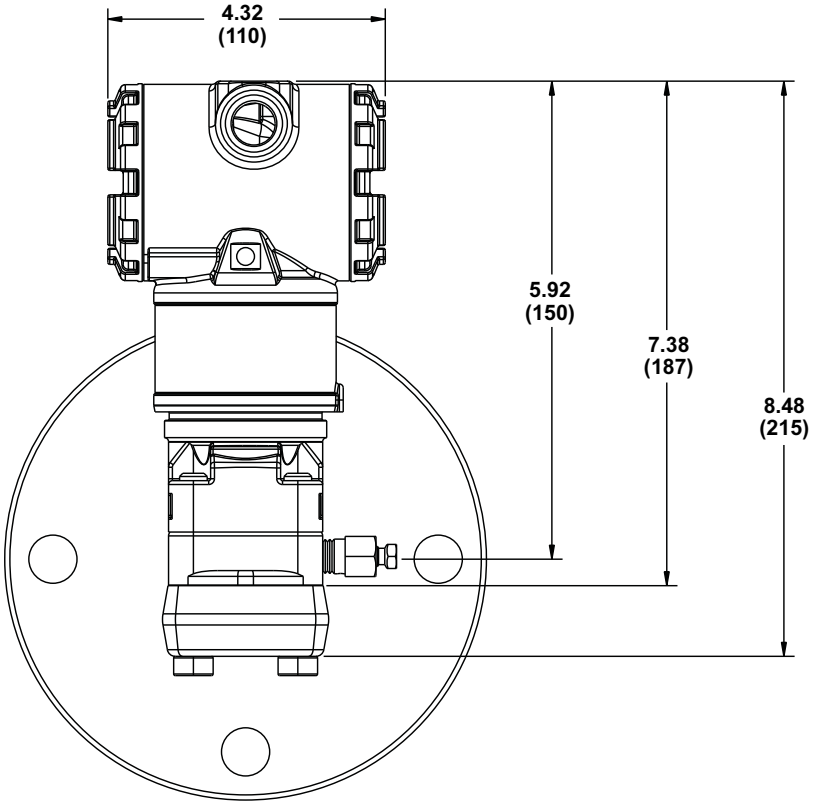


TABLE 7. 3051L Dimensional Specifications

Except where indicated, dimensions are in inches (millimeters).

Class	Pipe Size	Flange Thickness A	Bolt Circle Diameter B	Outside Diameter C	No. of Bolts	Bolt Hole Diameter	Extension Diameter(1) D	O.D. Gasket Surface E
ASME B16.5 (ANSI) 150	2 (51)	0.69 (18)	4.75 (121)	6.0 (152)	4	0.75 (19)	NA	3.6 (92)
	3 (76)	0.88 (22)	6.0 (152)	7.5 (191)	4	0.75 (19)	2.58 (66)	5.0 (127)
	4 (102)	0.88 (22)	7.5 (191)	9.0 (229)	8	0.75 (19)	3.5 (89)	6.2 (158)
ASME B16.5 (ANSI) 300	2 (51)	0.82 (21)	5.0 (127)	6.5 (165)	8	0.75 (19)	NA	3.6 (92)
	3 (76)	1.06 (27)	6.62 (168)	8.25 (210)	8	0.88 (22)	2.58 (66)	5.0 (127)
	4 (102)	1.19 (30)	7.88 (200)	10.0 (254)	8	0.88 (22)	3.5 (89)	6.2 (158)
ASME B16.5 (ANSI) 600	2 (51)	1.00 (25)	5.0 (127)	6.5 (165)	8	0.75 (19)	NA	3.6 (92)
	3 (76)	1.25 (32)	6.62 (168)	8.25 (210)	8	0.88 (22)	2.58 (66)	5.0 (127)
DIN 2501 PN 10–40	DN 50	20 mm	125 mm	165 mm	4	18 mm	NA	4.0 (102)
DIN 2501 PN 25/40	DN 80	24 mm	160 mm	200 mm	8	18 mm	65 mm	5.4 (138)
	DN 100	24 mm	190 mm	235 mm	8	22 mm	89 mm	6.2 (158)
DIN 2501 PN 10/16	DN 100	20 mm	180 mm	220 mm	8	18 mm	89 mm	6.2 (158)

Class	Pipe Size	Process Side F	Lower Housing G		H
			1/4 NPT	1/2 NPT	
ASME B16.5 (ANSI) 150	2 (51)	2.12 (54)	0.97 (25)	1.31 (33)	5.65 (143)
	3 (76)	3.6 (91)	0.97 (25)	1.31 (33)	5.65 (143)
	4 (102)	3.6 (91)	0.97 (25)	1.31 (33)	5.65 (143)
ASME B16.5 (ANSI) 300	2 (51)	2.12 (54)	0.97 (25)	1.31 (33)	5.65 (143)
	3 (76)	3.6 (91)	0.97 (25)	1.31 (33)	5.65 (143)
	4 (102)	3.6 (91)	0.97 (25)	1.31 (33)	5.65 (143)
ASME B16.5 (ANSI) 600	2 (51)	2.12 (54)	0.97 (25)	1.31 (33)	7.65 (194)
	3 (76)	3.6 (91)	0.97 (25)	1.31 (33)	7.65 (194)
DIN 2501 PN 10–40	DN 50	2.4 (61)	0.97 (25)	1.31 (33)	5.65 (143)
DIN 2501 PN 25/40	DN 80	3.6 (91)	0.97 (25)	1.31 (33)	5.65 (143)
	DN 100	3.6 (91)	0.97 (25)	1.31 (33)	5.65 (143)
DIN 2501 PN 10/16	DN 100	3.6 (91)	0.97 (25)	1.31 (33)	5.65 (143)

(1) Tolerances are 0.040 (1,02), –0.020 (0,51).

Ordering Information

TABLE 8. 3051C Differential, Gage, and Absolute Pressure Transmitters — = Not Applicable • = Applicable

Model	Transmitter Type (Select One)			CD	CG	CA
3051CD	Differential Pressure Transmitter (requires option code TR)			•	—	—
3051CG	Gage Pressure Transmitter (requires option code TR)			—	•	—
3051CA	Absolute Pressure Transmitter (requires option code TR)			—	—	•
Code	**Pressure Ranges (Range/Min. Span)**			**CD**	**CG**	**CA**
	3051CD	**3051CG(1)**	**3051CA**			
0(2)	–3 to 3 inH_2O/0.1 inH_2O (–7,5 to 7,5 mbar/0,25 mbar)	Not Applicable	Not Applicable	•	—	—
1	–25 to 25 inH_2O/0.5 inH_2O (–62,2 to 62,2 mbar/1,2 mbar)	–25 to 25 inH_2O/0.5 inH_2O (–62,2 to 62,2 mbar/1,2 mbar)	0 to 30 psia/0.3 psia (0 to 2,1 bar/20,7 mbar)	•	•	•
2	–250 to 250 inH2O/2.5 inH_2O (–623 to 623 mbar/6,2 mbar)	–250 to 250 inH_2O/2.5 inH_2O (–623 to 623 mbar/6,2 mbar)	0 to 150 psia/1.5 psia (0 to 10,3 bar/0,1 bar)	•	•	•
3	–1000 to 1000 inH_2O/10 inH_2O (–2,5 to 2,5 bar/25 mbar)	–393 to 1000inH_2O/10in H_2O (–0,98 to 2,5 bar/25 mbar)	0 to 800 psia/8 psia (0 to 55,2 bar/0,55 bar)	•	•	•
4	–300 to 300 psi/3 psi (–20,7 to 20,7 bar/0,2 bar)	–14.2 to 300 psi/3 psi (–0,98 to 20,7 bar/0,2 bar)	0 to 4000 psia/40 psia (0 to 275,8 bar/2,8 bar)	•	•	•
5	–2000 to 2000 psi/20 psi (–137,9 to137,9 bar/1,4 bar)	–14.2 to 2000 psig/20 psi (–0,98 to 137,9 bar/1,4 bar)	Not Applicable	•	•	—
Code	**Output**			**CD**	**CG**	**CA**
A	4–20 mA with Digital Signal Based on *HART* Protocol			•	•	•
Code	**Materials of Construction**			**CD**	**CG**	**CA**
	Process Flange Type	**Flange Material**	**Drain/Vent**			
2	Coplanar	SST	SST	•	•	•
3(3)	Coplanar	Hastelloy C-276	Hastelloy C-276	•	•	•
4	Coplanar	Monel	Monel	•	•	•
5	Coplanar	Plated CS	SST	•	•	•
7(3)	Coplanar	SST	Hastelloy C-276	•	•	•
8(3)	Coplanar	Plated CS	Hastelloy C-276	•	•	•
0	Alternate Flange—See Options on Pressure-24			•	•	•
Code	**Isolating Diaphragm**			**CD**	**CG**	**CA**
2(3)	316L SST			•	•	•
3(3)	Hastelloy C-276			•	•	•
4	*Monel*			•	•	•
5	Tantalum *(Available on 3051CD and CG, Ranges 2–5 only. Not available on 3051CA)*			•	•	—
6	Gold-plated *Monel (Use in combination with O-ring Option Code B.)*			•	•	•
7	Gold-plated SST			•	•	•
Code	**O-ring**					
A	Glass-filled PTFE			•	•	•
B	Graphite-filled PTFE			•	•	•
Code	**Fill Fluid**			**CD**	**CG**	**CA**
1	Silicone			•	•	•
2	Inert fill (Halocarbon)			•	•	—
Code	**Housing Material**		**Conduit Entry Size**	**CD**	**CG**	**CA**
A	Polyurethane-covered Aluminum		½–14 NPT	•	•	•
B	Polyurethane-covered Aluminum		M20 × 1.5 (CM20)	•	•	•
D	Polyurethane-covered Aluminum		G½	•	•	•
J	SST		½–14 NPT	•	•	•
K	SST		M20 × 1.5 (CM20)	•	•	•
M	SST		G½	•	•	•

TABLE 8. 3051C Differential, Gage, and Absolute Pressure Transmitters — = Not Applicable • = Applicable

Code	Alternate Flange Options (Requires Materials of Construction Code 0)	CD	CG	CA
H2	Traditional Flange, 316 SST, SST Drain/Vent	•	•	•
H3(3)	Traditional Flange, *Alloy C*, Hastelloy C-276 Drain/Vent	•	•	•
H4	Traditional Flange, *Monel*, *Monel* Drain/Vent	•	•	•
H7(3)	Traditional Flange, 316 SST, Hastelloy C-276 Drain/Vent	•	•	•
HJ	DIN Compliant Traditional Flange, SST, 1/16 in. Adapter/Manifold Bolting	•	•	•
HK	DIN Compliant Traditional Flange, SST, 10 mm Adapter/Manifold Bolting	•	•	•
HL	DIN Compliant Traditional Flange, SST, 12mm Adapter/Manifold Bolting *(Not available on 3051CD0)*	•	•	•
FA	Level Flange, SST, 2 in., ANSI Class 150, Vertical Mount	•	•	•
FB	Level Flange, SST, 2 in., ANSI Class 300, Vertical Mount	•	•	•
FC	Level Flange, SST, 3 in., ANSI Class 150, Vertical Mount	•	•	•
FD	Level Flange, SST, 3 in., ANSI Class 300, Vertical Mount	•	•	•
FP	DIN Level Flange, SST, DN 50, PN 40, Vertical Mount	•	•	•
FQ	DIN Level Flange, SST, DN 80, PN 40, Vertical Mount	•	•	•
Code	**Integral Mount Manifold Options (Requires Materials of Construction Code 0)**	**CD**	**CG**	**CA**
S5(4)	Assemble to Rosemount 305 Integral Manifold (specified separately, see the Rosemount 305 and 306 Integral Manifolds PDS (document number 00813-0100-4733))	•	•	•
S6(4)	Assemble to Rosemount 304 Manifold or Connection System	•	•	•
Code	**Integral Mount Primary Elements Options**	**CD**	**CG**	**CA**
S4(4)	Factory Assembly to Rosemount Primary Element (Rosemount *Annubar* or Rosemount 1195 Integral Orifice) *(With the primary element installed, the maximum operating pressure will equal the lesser of either the transmitter or the primary element. Option is available for factory assembly to range 1–4 transmitters only)*	•	—	—
S3(4)	Factory Assembly to Rosemount 405 Primary Element	•	—	—
Code	**Diaphragm Seal Assemblies Options** ***NOTE: Standard flange and adapter bolts are austenitic 316 SST.***	**CD**	**CG**	**CA**
S1(4)	One Diaphragm Seal (Direct Mount or Capillary Connection Type)	•	•	•
S2(4)	Two Diaphragm Seals (Direct Mount or Capillary Connection Type)	•	—	—
Code	**Mounting Bracket Options**	**CD**	**CG**	**CA**
B4	*Coplanar* Flange Bracket for 2-in. Pipe or Panel Mounting, all SST	•	•	•
B1	Traditional Flange Bracket for 2-in. Pipe Mounting, CS Bolts	•	•	•
B2	Traditional Flange Bracket for Panel Mounting, CS Bolts	•	•	•
B3	Traditional Flange Flat Bracket for 2-in. Pipe Mounting, CS Bolts	•	•	•
B7	B1 Bracket with Series 300 SST Bolts	•	•	•
B8	B2 Bracket with Series 300 SST Bolts	•	•	•
B9	B3 Bracket with Series 300 SST Bolts	•	•	•
BA	SST B1 Bracket with Series 300 SST Bolts	•	•	•
BC	SST B3 Bracket with Series 300 SST Bolts	•	•	•
Code	**Hazardous Locations Certification Options**	**CD**	**CG**	**CA**
E5	FM Explosion-proof	•	•	•
I5	FM Intrinsically safe, non-incendive	•	•	•
K5	FM Explosion-proof, Intrinsically safe, non-incendive (combination of E5 and I5)	•	•	•
I1	ATEX Intrinsically safe, Dust	•	•	•
N1	ATEX Type n, Dust	•	•	•
E8	ATEX Flameproof, Dust	•	•	•
E4	TIIS Flameproof (consult factory for availability)	•	•	•
I4	TIIS Intrinsically safe (consult factory for availability)	•	•	—
C5	Measurement Canada Accuracy *(Limited availability depending on transmitter type and range. Contact an Emerson Process Management representative)*	•	•	•
C6	CSA Explosion-proof, Intrinsically safe	•	•	•
K6	CSA and ATEX Flameproof, Intrinsically safe (combination of C6, I1, and E8)	•	•	•
KB	FM and CSA Explosion-proof, Intrinsically safe, Dust (combination of K5 and C6)	•	•	•
K7	SAA Flameproof, Intrinsically safe (combination of I7, N7, and E7)	•	•	•

TABLE 8. 3051C Differential, Gage, and Absolute Pressure Transmitters — = Not Applicable • = Applicable

K8	ATEX Flameproof, Intrinsically Safe, Type n, Dust (combination of E8, I1 and N1)	•	•	•
KD	FM, CSA, and ATEX Explosion-proof, Intrinsically Safe (combination of K5, C6, I1, and E8)	•	•	•
I7[5]	SAA Intrinsically safe	•	•	•
E7	SAA Flameproof	•	•	•
N7	SAA Type n	•	•	•
DW[6]	NSF Drinking Water	•	•	•
Code	**Bolting Options**	**CD**	**CG**	**CA**
L4	Austenitic 316 SST Bolts	•	•	•
L5	ASTM A 193, Grade B7M Bolts	•	•	•
L6	*Monel* Bolts	•	•	•
L8	ASTM A 193 Class 2, Grade B8M Bolts	•	•	•
Code	**Display Option**	**CD**	**CG**	**CA**
M5	LCD Display	•	•	•
	OTHER OPTIONS	**CD**	**CG**	**CA**
Code	**Special Certifications**			
Q4	Calibration Data Sheet	•	•	•
Q8	Material Traceability Certification per EN 10204 3.1 *(Only available for the sensor module housing and Coplanar or traditional flanges and adapters (3051C), and for the sensor module housing and low-volume Coplanar flange and adapter (3051C with Option Code S1))*	•	•	•
Q16	Surface finish certification for sanitary remote seals	•	•	•
QZ	Remote Seal System Performance Calculation Report			
QP	Calibration certification and tamper evident seal	•	•	•
QG	Calibration certificate and GOST verification certificate	•	•	•
QS	Prior-use certificate of FMEDA data	•	•	•
QT	Safety certified to IEC 61508 with certificate of FMEDA data	•	•	•
Code	**Terminal Blocks**			
T1	Transient Protection Terminal Block	•	•	•
Code	**Special Configuration (Software)**			
C1	Custom Software Configuration (Completed CDS 00806-0100-4051 required with order)	•	•	•
C3	Gage Calibration (3051CA4 only)	—	—	•
C4[7]	Analog Output Levels Compliant with NAMUR Recommendation NE 43: 27-June-1996 and High Alarm Level	•	•	•
CN[7]	Analog Output Levels Compliant with NAMUR Recommendation NE 43: 27-June-1996 and Low Alarm Level	•	•	•
CR[8]	Custom alarm and saturation signal levels, high alarm	•	•	•
CS[8]	Custom alarm and saturation signal levels, low alarm	•	•	•
CT	Low alarm (standard Rosemount alarm and saturation levels)	•	•	•
Code	**Special Procedures**			
P1	Hydrostatic Testing with Certificate	•	•	•
P2	Cleaning for Special Service	•	•	•
P3	Cleaning for <1 PPM Chlorine/Fluorine	•	•	•
P4	Calibrate at line pressure *(Specify Q48 on order for corresponding certificate)*	•	•	•
Code	**Special Configuration (Hardware)**			
DF	1/2 -14 NPT flange adapter(s)— Material determined by flange material	•	•	•
D7	*Coplanar* Flange Without Drain/Vent Ports	•	•	•
D8	Ceramic Ball Drain/Vents	•	•	•
D9	JIS Process Connection—RC ¼ Flange with RC ½ Flange Adapter	•	•	•
P8[9]	0.04% accuracy to 5:1 turndown (Range 2-4)	•	•	•
P9	4500 psig (310,3 bar) Static Pressure Limit (3051CD Ranges 2–5 only)	•	—	—
P0[10]	6092 psig (420,0 bar) Static Pressure Limit (3051CD Ranges 2-5 only)	•	—	—
D1	Hardware Adjustments (zero, span, alarm, security)	•	•	•
V5[11]	External Ground Screw Assembly	•	•	•

TABLE 8. 3051C Differential, Gage, and Absolute Pressure Transmitters — = Not Applicable • = Applicable

Code	Transmitter Revision Option			
TR	Transmitter Revision 5	•	•	•
Typical Model Number:	**3051CD 2 A 0 2 A 1 A S5 M5 TR**			

(1) 3051CG lower range limit varies with atmospheric pressure.

(2) 3051CD0 is available only with Output Code A, Process Flange Code 0 (Alternate Flange H2, H7, HJ, or HK), Isolating Diaphragm Code 2, O-ring Code A, and Bolting Option L4.

(3) Materials of Construction comply with recommendations per 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.

(4) "Assemble-to" items are specified separately and require a completed model number.

(5) Requires stainless steel housings (Option Codes J, K and M) for Group I mining applications.

(6) Requires 316L SST wetted materials, glass-filled PTFE o-ring (standard) and process connection code 2.

(7) NAMUR-Compliant operation is pre-set at the factory and cannot be changed to standard operation in the field.

(8) Requires option code C1, custom software configuration. A Configuration Data Sheet must be completed, see page 33

(9) Requires 316L SST (option 2) or Hastelloy C-276 (option 3) isolating materials.

(10) Requires 316L SST or Hastelloy C-276 diaphragm material, assemble to Rosemount 305 integral manifold or DIN-compliant traditional flange process connection, and bolting option L8.

(11) The V5 option is not needed with the T1 option; external ground screw assembly is included with the T1 option.

TABLE 9. 3051T Gage and Absolute Pressure Transmitter

Model	Transmitter Type	
3051T	Pressure Transmitter (requires option code TR)	
Code	**Pressure Type**	
G	Gage	
A	Absolute	
Code	**Pressure Ranges (Range/Min. Span)** **3051TG[1]**	**3051TA**
1	–14.7 to 30 psi/0.3 psi (–1,01 to 2,1 bar/20,7 mbar)	0 to 30 psia/0.3 psia (0 to 2,1 bar/20,7 mbar)
2	–14.7 to 150 psi/1.5 psi (–1,01 to 10,3 bar/103,4 mbar)	0 to 150 psia/1.5 psia (0 to 10,3 bar/103,4 mbar)
3	–14.7 to 800 psi/8 psi (–1,01 to 55,2 bar/0,55 bar)	0 to 800 psia/8 psia (0 to 55,2 bar/0,55 bar)
4	–14.7 to 4000 psi/40 psi (–1,01 to 275,8 bar/2,8 bar)	0 to 4000 psia/40 psia (0 to 275,8 bar/2,8 bar)
5	–14.7 to 10000 psi/2000 psi (–1,01 to 689,5 bar/138 bar)	0 to 10000 psia/2000 psia (0 to 689,5 bar/138 bar)
Code	**Output**	
A	4–20 mA with Digital Signal Based on *HART* Protocol	
Code	**Process Connection Style**	
2B	1/2–14 NPT Female	
2C	G½ A DIN 16288 Male (Available in SST for Range 1–4 only)	
2F	Coned and Threaded, Compatible with Autoclave Type F-250-C *(Only available in SST for Range 5)*	
Code	**Isolating Diaphragm**	**Process Connection Wetted Parts Material**
2[2]	316L SST	316L SST
3[2]	Hastelloy C-276	Hastelloy C-276
Code	**Fill Fluid**	
1	Silicone	
2	Inert (Fluorinert® FC-43)	
Code	**Housing Material**	**Conduit Entry Size**
A	Polyurethane-covered Aluminum	½–14 NPT
B	Polyurethane-covered Aluminum	M20 × 1.5 (CM20)
D	Polyurethane-covered Aluminum	G½
J	SST	½–14 NPT
K	SST	M20 × 1.5 (CM20)
M	SST	G½
Code	**Integral Mount Manifold Options**	
S5[3]	Assemble to Rosemount 306 Integral Manifold (specified separately, see the Rosemount 305 and 306 Integral Manifolds PDS (document number 00813-0100-4733)) (*Requires 1/2-in. process connection code 2B)*	
Code	**Diaphragm Seal Assemblies Options**	
S1[3]	One Diaphragm Seal (Direct Mount or Capillary Connection Type) (Requires Process Connection Style code 2B)	
Code	**Mounting Brackets Options**	
B4	Bracket for 2-in. Pipe or Panel Mounting, All SST	
Code	**Hazardous Locations Certifications Options**	
E5	FM Explosion-proof	
I5	FM Intrinsically safe, non-incendive	
K5	FM Explosion-proof, Intrinsically safe, non-incendive (combination of E5 and I5)	
I1	ATEX Intrinsically safe, Dust	
N1	ATEX Type n, Dust	
E8	ATEX Flameproof, Dust	
E4	TIIS Flameproof (consult factory for availability)	
I4	TIIS Intrinsically safe (consult factory for availability)	
C5	Measurement Canada Accuracy *(Limited availability depending on transmitter type and range. Contact an Emerson Process Management representative)*	
C6	CSA Explosion-proof, Intrinsically safe	
K6	CSA and ATEX Flameproof, Intrinsically safe (combination of C6, I1, and E8)	
KB	FM and CSA Explosion-proof, Intrinsically safe, Dust (combination of K5 and C6)	
K7	SAA Flameproof, Intrinsically safe (combination of I7, N7, and E7)	

TABLE 9. 3051T Gage and Absolute Pressure Transmitter

K8	ATEX Flameproof, Intrinsically Safe, Type n, Dust (combination of E8, I1 and N1)
KD	FM, CSA, and ATEX Explosion-proof, Intrinsically Safe (combination of K5, C6, I1, and E8)
I7(4)	SAA Intrinsically safe
E7	SAA Flameproof
N7	SAA Type n
DW(5)	NSF Drinking Water
	OTHER OPTIONS
Code	**Special Certifications**
Q4	Calibration Data Sheet
Q8	Material Traceability Certification per EN 10204 3.1 *NOTE: This option applies to the process connection only.*
Q16	Surface finish certification for sanitary remote seals
QZ	Remote Seal System Performance Calculation Report
QP	Calibration certification and tamper evident seal
QS	Prior-use certificate of FMEDA data
QT	Safety certified to IEC 61508 with certificate of FMEDA data
Code	**Display**
M5	LCD Display
Code	**Terminal Blocks**
T1	Transient Protection Terminal Block
Code	**Special Configuration (Software)**
C1	Custom Software Configuration (Completed CDS 00806-0100-4001 required with order)
C4(6)	Analog Output Levels Compliant with NAMUR Recommendation NE 43: 27-June-1996 and High Alarm Level
CN(6)	Analog Output Levels Compliant with NAMUR Recommendation NE 43: 27-June-1996 and Low Alarm Level
CR(7)	Custom alarm and saturation signal levels, high alarm
CS(7)	Custom alarm and saturation signal levels, low alarm
CT	Low alarm (standard Rosemount alarm and saturation levels)
Code	**Special Procedures**
P1	Hydrostatic Testing with Certificate
P2	Cleaning for Special Service
P3	Cleaning for <1 PPM Chlorine/Fluorine
P8(8)	0.04% accuracy to 5:1 turndown (Range 1-4)
Code	**Special Configuration (Hardware)**
D1	Hardware Adjustments (zero, span, alarm, security)
V5(9)	External Ground Screw Assembly
Code	**Transmitter Revision Option**
TR	Transmitter Revision 5

Typical Model Number: 3051T G 5 F 2A 2 1 A B4 TR

(1) 3051TG lower range limit varies with atmospheric pressure.

(2) Materials of Construction comply with recommendations per 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.

(3) "Assemble-to" items are specified separately and require a completed model number.

(4) Requires stainless steel housings (Option Codes J, K and M) for Group I mining applications.

(5) Requires 316L SST wetted materials, glass-filled PTFE o-ring (standard) and process connection code 2.

(6) NAMUR-Compliant operation is pre-set at the factory and cannot be changed to standard operation in the field.

(7) Requires option code C1, custom software configuration. A Configuration Data Sheet must be completed, see page 33

(8) Requires 316L SST (option 2) or Hastelloy C-276 (option 3) isolating materials.

(9) The V5 option is not needed with T1 option; external ground screw assembly is included with the T1 option.

TABLE 10. 3051L Flange-Mounted Liquid Level Transmitter

Model	**Transmitter Type**		
3051L	Flange-Mounted Liquid Level Transmitter (requires option code TR)		
Code	**Pressure Ranges (Range/Min. Span)**		
2	–250 to 250 inH_2O/2.5 inH_2O (–0,6 to 0,6 bar/6,2 mbar)		
3	–1000 to 1000 inH_2O/10 inH_2O (–2,5 to 2,5 bar/25 mbar)		
4	–300 to 300 psi/3 psi (–20,7 to 20,7 bar/0,2 bar)		
Code	**Output**		
A	4–20 mA with Digital Signal Based on *HART* Protocol		
High Pressure Side			
Code	**Diaphragm Size**	**Material**	**Extension Length**
G0	2 in./DN 50	316L SST	Flush Mount Only
H0	2 in./DN 50	Hastelloy C-276	Flush Mount Only
J0	2 in./DN 50	Tantalum	Flush Mount Only
A0	3 in./DN 80	316L SST	Flush Mount
A2	3 in./DN 80	316L SST	2 in./50 mm
A4	3 in./DN 80	316L SST	4 in./100 mm
A6	3 in./DN 80	316L SST	6 in./150 mm
B0	4 in./DN 100	316L SST	Flush Mount
B2	4 in./DN 100	316L SST	2 in./50 mm
B4	4 in./DN 100	316L SST	4 in./100 mm
B6	4 in./DN 100	316L SST	6 in./150 mm
C0	3 in./DN 80	Hastelloy C-276	Flush Mount
C2	3 in./DN 80	Hastelloy C-276	2 in./50 mm
C4	3 in./DN 80	Hastelloy C-276	4 in./100 mm
C6	3 in./DN 80	Hastelloy C-276	6 in./150 mm
D0	4 in./DN 100	Hastelloy C-276	Flush Mount
D2	4 in./DN 100	Hastelloy C-276	2 in./50 mm
D4	4 in./DN 100	Hastelloy C-276	4 in./100 mm
D6	4 in./DN 100	Hastelloy C-276	6 in./150 mm
E0	3 in./DN 80	Tantalum	Flush Mount Only
F0	4 in./DN 100	Tantalum	Flush Mount Only
Code	**Mounting Flange**		
	Size	**ASME B 16.5 (ANSI) or DIN Flange Rating**	**Material**
M	2 in.	Class 150	CS
A	3 in.	Class 150	CS
B	4 in.	Class 150	CS
N	2 in.	Class 300	CS
C	3 in.	Class 300	CS
D	4 in.	Class 300	CS
P	2 in.	Class 600	CS
E	3 in.	Class 600	CS
X	2 in.	Class 150	SST
F	3 in.	Class 150	SST
G	4 in.	Class 150	SST
Y	2 in.	Class 300	SST
H	3 in.	Class 300	SST
J	4 in.	Class 300	SST
Z	2 in.	Class 600	SST
L	3 in.	Class 600	SST
Q	DN 50	PN 10-40	CS
R	DN 80	PN 40	CS
S	DN 100	PN 40	CS
V	DN 100	PN 10/16	CS

TABLE 10. 3051L Flange-Mounted Liquid Level Transmitter

K	DN 50	PN 10-40		SST
T	DN 80	PN 40		SST
U	DN 100	PN 40		SST
W	DN 100	PN 10/16		SST

Code	Process Fill-High Pressure Side	Temperature Limits
A	*Syltherm* XLT	–100 to 300 °F (–73 to 149 °C)
C	*D. C. Silicone 704*	60 to 400 °F (15 to 205 °C)
D	*D. C. Silicone 200*	–40 to 400 °F (–40 to 205 °C)
H	Inert (Halocarbon)	–50 to 350 °F (–45 to 177 °C)
G	Glycerine and Water	0 to 200 °F (–17 to 93 °C)
N	*Neobee M-20*	0 to 400 °F (–17 to 205 °C)
P	Propylene Glycol and Water	0 to 200 °F (–17 to 93 °C)

Low Pressure Side

Code	Configuration	Flange Adapter	Diaphragm Material	Sensor Fill Fluid
11	Gage	SST	316L SST	Silicone
21	Differential	SST	316L SST	Silicone
22	Differential	SST	Hastelloy C-276	Silicone
2A	Differential	SST	316L SST	Inert (Halocarbon)
2B	Differential	SST	Hastelloy C-276	Inert (Halocarbon)
31	Remote Seal	SST	316L SST	Silicone *(Requires Option Code S1)*

Code	O-ring Material
A	Glass-filled PTFE

Code	Housing Material	Conduit Entry Size
A	Polyurethane-covered Aluminum	½–14 NPT
B	Polyurethane-covered Aluminum	M20 × 1.5 (CM20)
D	Polyurethane-covered Aluminum	G½
J	SST	½–14 NPT
K	SST	M20 × 1.5 (CM20)
M	SST	G½

Code	Diaphragm Seal Assemblies Options
S1[1]	One Diaphragm Seal *(requires low pressure side Option Code 31 capillary connection type)*

Code	Hazardous Locations Certification Options
E5	FM Explosion-proof
I5	FM Intrinsically safe, non-incendive
K5	FM Explosion-proof, Intrinsically safe, non-incendive (combination of E5 and I5)
I1	ATEX Intrinsically safe, Dust
N1	ATEX Type n, Dust
E8	ATEX Flameproof, Dust
E4	TIIS Flameproof (consult factory for availability)
I4	TIIS Intrinsically safe (consult factory for availability)
C6	CSA Explosion-proof, Intrinsically safe
K6	CSA and ATEX Flameproof, Intrinsically safe (combination of C6, I1, and E8)
KB	FM and CSA Explosion-proof, Intrinsically safe, Dust (combination of K5 and C6)
K7	SAA Flameproof, Intrinsically safe (combination of I7, N7, and E7)
K8	ATEX Flameproof, Intrinsically Safe, Type n, Dust (combination of E8, I1 and N1)
KD	FM, CSA, and ATEX Explosion-proof, Intrinsically Safe (combination of K5, C6, I1, and E8)
I7[2]	SAA Intrinsically safe
E7	SAA Flameproof
N7	SAA Type n

Code	Bolt for Flange and Adapters Options
L5	ASTM A 193, Grade B7M Bolts

Code	Display Option
M5	LCD Display

TABLE 10. 3051L Flange-Mounted Liquid Level Transmitter

	OTHER OPTIONS					
Code	**Special Certifications**					
Q4	Calibration Data Sheet					
Q8	Material Traceability Certification per EN 10204 3.1 (*Available with the diaphragm, upper housing, Coplanar flange, adapter, sensor module housing, lower housing/flushing connection, and extension)*					
QZ	Remote Seal System Performance Calculation Report					
QP	Calibration certification and tamper evident seal					
QS	Prior-use certificate of FMEDA data					
QT	Safety certified to IEC 61508 with certificate of FMEDA data					
Code	**Terminal Blocks**					
T1	Transient Protection Terminal Block					
Code	**Special Configuration (Software)**					
C1	Custom Software Configuration (*Completed CDS 00806-0100-4001 required with order)*					
C4(3)	Analog Output Levels Compliant with NAMUR Recommendation NE 43: 27-June-1996 and High Alarm Level					
CN(3)	Analog Output Levels Compliant with NAMUR Recommendation NE 43: 27-June-1996 and Low Alarm Level					
CR(4)	Custom alarm and saturation signal levels, high alarm					
CS(4)	Custom alarm and saturation signal levels, low alarm					
CT	Low alarm (standard Rosemount alarm and saturation levels)					
Code	**Special Procedures**					
P1	Hydrostatic Testing with Certificate					
Code	**Special Configuration (Hardware)**					
D1	Hardware Adjustments (zero, span, alarm, security)					
D8	Ceramic Ball Drain/Vents					
V5(5)	External Ground Screw Assembly					
Code	**Lower Housing Flushing Connections**					
	Ring Material	**Number**	**Size**	**2 in.**	**3 in.**	**4 in.**
F1	SST	1	1/4	•	•	•
F2	SST	2	1/4	•	•	•
F3(6)	Hastelloy C-276	1	1/4	•	•	•
F4(6)	Hastelloy C-276	2	1/4	•	•	•
F7	SST	1	1/2	•	•	•
F8	SST	2	1/2	•	•	•
F9	Hastelloy C-276	1	1/2	•	•	•
F0	Hastelloy C-276	2	1/2	•	•	•
Code	**Transmitter Revision Options**					
TR	Transmitter Revision 5					

Typical Model Number: 3051L 2 A A0 A D 21 A A F1 TR

(1) "Assemble-to" items are specified separately and require a completed model number.

(2) Requires stainless steel housings (Option Codes J, K and M) for Group I mining applications.

(3) NAMUR-Compliant operation is pre-set at the factory and cannot be changed to standard operation in the field.

(4) Requires option code C1, custom software configuration. A Configuration Data Sheet must be completed, see page 33

(5) The V5 option is not needed with the T1 option; external ground screw assembly is included with the T1 option.

(6) Not available with Option Codes A0, B0, and G0.

OPTIONS

Standard Configuration

Unless otherwise specified, transmitter is shipped as follows:

ENGINEERING UNITS	
***Differential/Gage*:**	inH_2O (Range 0, 1, 2, and 3) psi (Range 4 and 5)
***Absolute/3051T*:**	psi (all ranges)
4 mA:	0 (engineering units above)
20 mA:	Upper range limit
Output:	Linear
Flange type:	Specified model code option
Flange material:	Specified model code option
O-ring material:	Specified model code option
Drain/vent:	Specified model code option
Integral display:	Installed or none
Alarm:	High
Software tag:	(Blank)

Custom Configuration *HART* protocol only

If Option Code C1 is ordered, the customer may specify the following data in addition to the standard configuration parameters.

- Output Information
- LCD Display Configuration
- Analog Output Alarm and Saturation Signal Levels
- Scaled Variable Information
- Process Alert Setpoints

Tagging (3 options available)

- Standard SST hardware tag is wired to the transmitter. Tag character height is 0.125 in. (3,18 mm), 56 characters maximum.
- Tag may be permanently stamped on transmitter nameplate upon request, 56 characters maximum.
- Tag may be stored in transmitter memory (30 characters maximum). Software tag is left blank unless specified.

Optional Rosemount 304, 305 or 306 Integral Manifolds

Factory assembled to 3051C and 3051T transmitters. Refer to the following Product Data Sheet (document number 00813-0100-4839 for Rosemount 304 and 00813-0100-4733 for Rosemount 305 and 306) for additional information.

Optional Diaphragm and Sanitary Seals

Refer to Product Data Sheet 00813-0100-4016 or 00813-0201-4016 for additional information.

Output Information

Output range points must be the same unit of measure. Available units of measure include:

inH2O	inH2O@4 °C	psi	Pa
inHg	ftH2O	bar	kPa
mmH2O	mmH2O@4 °C	mbar	torr
mmHg	g/cm2	kg/cm2	atm
MPa			

Transmitter Revision Option

TR Transmitter Revision 5

- Optional safety certification to IEC 61508
- Scaled variable and expanded diagnostics (process alerts, configurable alarms, PlantWeb alerts)
- Optional static line pressure to 6,092 psi (420 bar)

LCD display

M5 Digital Display, 5-Digit, 2-Line LCD

- Direct reading of digital data for higher accuracy
- Displays user-defined flow, level, volume, or pressure units
- Displays diagnostic messages for local troubleshooting
- 90-degree rotation capability for easy viewing

Hardware Adjustments

D1 Local zero, span, alarm, and security

- Internal hardware adjustment buttons and switches

Transient Protection

T1 Integral Transient Protection Terminal Block

Meets IEEE C62.41, Category B

6 kV crest (0.5 μs - 100 kHz)
3 kV crest (8 × 20 microseconds)
6 kV crest (1.2 × 50 microseconds)

General Specifications:

Response Time: < 1 nanosecond
Peak Surge Current: 5000 amps to housing
Peak Transient Voltage: 100 V dc
Loop Impedance: < 25 ohms
Applicable Standards: IEC61000-4-4, IEC61000-4-5

Bolts for Flanges and Adapters

- Options permit bolts for flanges and adapters to be obtained in various materials
- Standard material is plated carbon steel per ASTM A449, Type 1

L4 Austenitic 316 Stainless Steel Bolts per ASTM F593G

L5 Plated Alloy Steel bolts per ASTM A 193, Grade B7M

L6 *Monel* Bolts

L8 Austenitic 316 SST bolts per ASTM A193, Class 2, Grade B8M

Rosemount 3051C *Coplanar* Flange and 3051T Bracket Option

B4 Bracket for 2-in. Pipe or Panel Mounting

- For use with the standard *Coplanar* flange configuration
- Bracket for mounting of transmitter on 2-in. pipe or panel
- Stainless steel construction with stainless steel bolts

Rosemount 3051C Traditional Flange Bracket Options

B1 Bracket for 2-in. Pipe Mounting

- For use with the traditional flange option
- Bracket for mounting on 2-in. pipe
- Carbon steel construction with carbon steel bolts
- Coated with polyurethane paint

B2 Bracket for Panel Mounting

- For use with the traditional flange option
- Bracket for mounting transmitter on wall or panel
- Carbon steel construction with carbon steel bolts
- Coated with polyurethane paint

B3 Flat Bracket for 2-in. Pipe Mounting

- For use with the traditional flange option
- Bracket for vertical mounting of transmitter on 2-in. pipe
- Carbon steel construction with carbon steel bolts
- Coated with polyurethane paint

B7 B1 Bracket with SST Bolts

- Same bracket as the B1 option with Series 300 stainless steel bolts

B8 B2 Bracket with SST Bolts

- Same bracket as the B2 option with Series 300 stainless steel bolts

B9 B3 Bracket with SST Bolts

- Same bracket as the B3 option with Series 300 stainless steel bolts

BA Stainless Steel B1 Bracket with SST Bolts

- B1 bracket in stainless steel with Series 300 stainless steel bolts

BC Stainless Steel B3 Bracket with SST Bolts

- B3 bracket in stainless steel with Series 300 stainless steel bolts

Shipping Weights

TABLE 11. Transmitter Weights without Options

Transmitter	Add Weight In lb (kg)
3051C	6.8 (3.1)
3051L	Table 12 on page 33
3051T	3.1 (1.4)

TABLE 12. 3051L Weights without Options

Flange	Flush lb. (kg)	2-in. Ext. lb (kg)	4-in. Ext. lb (kg)	6-in. Ext. lb (kg)
2-in., 150	13.3 (6.0)	—	—	—
3-in., 150	18.3 (8.3)	20.3 (9.2)	21.3 (9.7)	22.3 (10.1)
4-in., 150	24.3 (11.0)	27.3 (12.4)	29.3 (13.3)	31.3 (14.2)
2-in., 300	18.3(8.3)	—	—	—
3-in., 300	23.3 (10.6)	25.3 (11.5)	26.3 (11.9)	27.3 (12.4)
4-in., 300	33.3 (15.1)	36.3 (16.5)	38.3 (17.4)	40.3 (18.3)
2-in., 600	16.1(7.3)	—	—	—
3-in., 600	26.0 (11.8)	28.0 (12.7)	29.0 (13.2)	30.0 (13.6)
DN 50/PN 40	14.6 (6.6)	—	—	—
DN 80/PN 40	20.3 (9.2)	22.3 (10.1)	23.3 (10.6)	24.3 (11.0)
DN 100/ PN 10/16	18.6 (8.4)	20.6 (9.3)	21.6 (9.8)	22.6 (10.3)
DN 100/ PN 40	24.0 (10.9)	26.0 (11.8)	27.0 (12.2)	28.0 (12.7)

TABLE 13. Transmitter Options Weights

Code	Option	Add lb (kg)
J, K, L, M	Stainless Steel Housing(T)	4.4 (2.0)
J, K, L, M	Stainless Steel Housing (C, L, H, P)	3.5 (1.6)
M5	LCD display for Aluminum Housing	0.5 (0.2)
B4	SST Mounting Bracket for *Coplanar* Flange	1.0 (0.5)
B1 B2 B3	Mounting Bracket for Traditional Flange	2.3 (1.0)
B7 B8 B9	Mounting Bracket for Traditional Flange	2.3 (1.0)
BA, BC	SST Bracket for Traditional Flange	2.3 (1.0)
H2	Traditional Flange	2.4 (1.1)
H3	Traditional Flange	2.7 (1.2)
H4	Traditional Flange	2.6 (1.2)
H7	Traditional Flange	2.5 (1.1)
FC	Level Flange—3 in., 150	10.8 (4.9)
FD	Level Flange—3 in., 300	14.3 (6.5)
FA	Level Flange—2 in., 150	10.7 (4.8)
FB	Level Flange—2 in., 300	14.0 (6.3)
FP	DIN Level Flange, SST, DN 50, PN 40	8.3 (3.8)
FQ	DIN Level Flange, SST, DN 80, PN 40	13.7 (6.2)

Item	Weight In lb. (kg)
Aluminum standard cover	0.4 (0,2)
SST standard cover	1.26 (0,6)
Aluminum display cover	0.7 (0,3)
SST display cover	1.56 (0,7)
LCD display(1)	0.1 (0,1)

(1) Display only

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Rosemount 3051 Pressure Transmitters may be protected by one or more of the following U.S. Patent Nos. 4,370,890; 4,466,290; 4,612,812; 4,791,352; 4,798,089; 4,818,994; 4,833,922; 4,866,435; 4,926,340; 4,988,990; and 5,028,746. Mexico Patentado No. 154,961. May depend on model. Other foreign patents issued and pending.

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