Product Data Sheet
00813-0100-4101, Rev AA
March 2008

Rosemount 2051 Pressure Transmitter

- *Reference Accuracy of 0.075%*
- *Rangeability of 100:1*
- *Protocols available include 4-20 mA HART®, FOUNDATION fieldbus®, 1-5 Vdc HART Low Power*
- *Coplanar™ platform enables integration of primary elements, manifolds, and diaphragm seal solutions*
- *Complete pressure transmitter family to meet your pressure, level, and flow needs*

Contents

Meeting Your Pressure Measurement Needs

Confidence in your measurement

The 2051 capabilities are designed to meet a wide range of applications. Combining 0.075% reference accuracy, 100:1 rangedown, and extended two-year stability provides confidence in your pressure measurements.

Output protocols enable easy integration

The 2051 is available in 4-20mA HART, Low Power HART, or FOUNDATION fieldbus output protocols. Easily integrate the 2051 into existing or new installations.

Coplanar platform enables integrated solutions

The versatile Coplanar platform design enables the best process connection for pressure, flow, and level applications. The final 2051 assembly arrives factory calibrated, pressure-tested, and ready to install. The flexible design reduces engineering and inventory costs.

Complete pressure offering

The 2051 family of pressure transmitters offers differential, gage, and absolute pressure measurements. The complete offering ensures the 2051 meets your measurement needs.

Rosemount Pressure Solutions

Rosemount 3051S Series of Instrumentation
Highest performing scalable pressure, flow and level measurement solutions drive better plant efficiency and more productivity. Innovative features include wireless, advanced diagnostics, and multivariable technologies.

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

Rosemount 3051 Pressure Transmitter Family
Proven industry standard performance and reliability to increase plant profitability. Includes the most comprehensive offering to meet all application needs.

Rosemount 305, 306 and 304 Manifolds
Factory-assembled, calibrated and seal-tested transmitter-to-manifold assemblies reduce 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 are easy to specify and order. The 1595 Conditioning Orifice provides superior performance in tight fit applications.

Annubar® Flowmeter Series: Rosemount 3051SFA ProBar®, 3095MFA Mass ProBar, 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 3051SFP ProPlate, 3095MFP 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 2051C Differential and Gage

See ordering information on page 26.

- Performance of 0.075% accuracy, optional 0.065%
- Two-year stability of 0.10%, optional five-year stability
- *Coplanar* platform enables integrated manifold, primary element and diaphragm seal solutions
- Calibrated spans/ranges from 0.5 inH_2O to 2000 psi (1,2 mbar to 276 bar)
- 316L SST and Alloy C-276 process wetted parts

Rosemount 2051T Gage and Absolute

See ordering information on page 30.

- Performance of 0.075% accuracy, optional 0.065%
- Two-year stability of 0.10%, optional five-year stability
- Calibrated spans/ranges from 0.3 to 10000 psi (10,3 mbar to 689 bar)
- Multiple process connections available
- 316L SST and Alloy C-276 process wetted parts

Rosemount 2051L Liquid Level

See ordering information on page 33.

- Performance of 0.075% accuracy
- Welded fill fluid system provides best-in-class system reliability
- Flush and extended diaphragms
- Multiple fill fluids and process wetted materials available

Specifications

PERFORMANCE SPECIFICATIONS

For zero based spans, reference conditions, silicone oil fill, SST materials, Coplanar flange (2051C) or 1/2 in. - 14 NPT (2051T) process connections, digital trim values set to equal range points.

Conformance To Specification (±3σ (Sigma))

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

Reference Accuracy(1)

Models		Standard		Performance Option, P8
2051C				
	Ranges 2-5	±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	Ranges 2-5	High Accuracy Option, P8 ±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
	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		
2051T				
	Ranges 1-4	±0.075% of span For spans less than 10:1, accuracy = $\pm\left[0.0075\left(\frac{URL}{Span}\right)\right]$% of Span	Ranges 1-4	High Accuracy Option, P8 ±0.065% of span For spans less than 10:1, accuracy = $\pm\left[0.0075\left(\frac{URL}{Span}\right)\right]$% of Span
	Range 5	±0.075% of span for spans greater than 5:1		
2051L				
	Ranges 2-4	±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) For FOUNDATION fieldbus transmitters, use calibrated range in place of span.

Long Term Stability

Models	Standard	Performance Option, P8
2051C[1]		
Ranges 2-5	±0.1% of URL for 2 years	±0.125% of URL for 5 years
2051CD		
Range 1	±0.2% of URL for 1 year	
2051T[1]		
Ranges 1-5	±0.1% of URL for 2 years	±0.125% of URL for 5 years

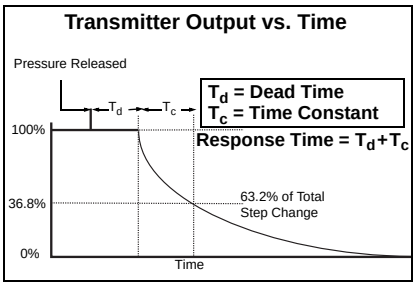
(1) ±50 °F (28 °C) temperature changes, and up to 1000 psi (6,9 MPa) line pressure.

Dynamic Performance

	4 - 20 mA HART[1]	Fieldbus[3]
Total Response Time ($T_d + T_c$)[2]:		
2051C, Range 3-5:	115 milliseconds	152 milliseconds
Range 1:	270 milliseconds	307 milliseconds
Range 2:	130 milliseconds	152 milliseconds
2051T:	100 milliseconds	152 milliseconds
2051L:	See *Instrument Toolkit*®	See *Instrument Toolkit*
Dead Time (Td)	60 milliseconds (nominal)	97 milliseconds
Update Rate	22 times per second	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.
(3) Transmitter fieldbus output only, segment macro-cycle not included.

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 00809-0100-4101).

Models	Line Pressure Effect
2051CD	Zero Error[1]
Ranges 2-3	±0.1% of URL/1000 psi (68,9 bar) for line pressures from 0 to 2000 psi (0 to 13,7 MPa)
Range 1	±0.5% of URL/1000 psi (68,9 bar)
	Span Error
Ranges 2-3	±0.1% of reading/1000 psi (68,9 bar)
Range 1	±0.4% of reading/1000 psi (68,9 bar)

(1) Can be calibrated out at line pressure.

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

Models	Ambient Temperature Effect
2051C	
Ranges 2-5	±(0.025% URL + 0.125% span) from 1:1 to 5:1 ±(0.05% URL + 0.25% span) from 5:1 to 100:1
Range 1	±(0.2% URL + 0.5% span) from 1:1 to 50:1
2051T	
Range 2-4	±(0.05% URL + 0.25% span) from 1:1 to 30:1 ±(0.07% URL + 0.25% span) from 30:1 to 100:1
Range 1	±(0.05% URL + 0.25% span) from 1:1 to 10:1 ±(0.10% URL + 0.25% span) from 10:1 to 100:1
Range 5	±(0.2% URL + 0.3% span)
2051L	See *Instrument Toolkit*

Mounting Position Effects

Models	Mounting Position Effects
2051C	Zero shifts up to ±1.25 inH_2O (3,11 mbar), which can be calibrated out. No span effect.
2051T	Zero shifts up to ±2.5 inH_2O (6,22 mbar), which can be calibrated out. No span effect.
2051L	With liquid level diaphragm in vertical plane, zero shift of up to 1 inH_2O (2,49 mbar). With diaphragm in horizontal plane, zero shift of up to 5 inH_2O (12,43 mbar) plus extension length on extended units. Zero shifts 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

All Models

Less than ±0.005% of calibrated span per volt.

Electromagnetic Compatibility (EMC)

All Models

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

Transient Protection (Option Code T1)

All Models:

Meets IEEE C62.41, Category Location B

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

Meets IEEE C37.90.1, Surge Withstand Capability

- SWC 2.5 kV crest, 1.0 MHz wave form

FUNCTIONAL SPECIFICATIONS

Range and Sensor Limits

Range	2051CD, 2051CG, 2051L					
		Range and Sensor Limits				
			Lower (LRL)			
	Minimum Span	Upper (URL)	2051C Differential	2051C Gage	2051L Differential	2051L Gage
1	0.5 inH_2O (1,2 mbar)	25 inH_2O (62,3 mbar)	–25 inH_2O (–62,1 mbar)	–25 inH_2O (–62,1 mbar)	N/A	N/A
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 (0,207 bar)	300 psi (20,6 bar)	–300 psi (–20,6 bar)	0.5 psia (34,5 mbar abs)	–300 psi (–20,7 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)	N/A	N/A

Range	2051T			
		Range and Sensor Limits		
	Minimum Span	Upper (URL)	Lower (LRL) (Abs)	Lower[(1)] (LRL) (Gage)
1	0.3 psi (20,6 mbar)	30 psi (2,06 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.

Service

Liquid, gas, and vapor applications

Protocols

4–20 mA HART (Output Code A)

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.

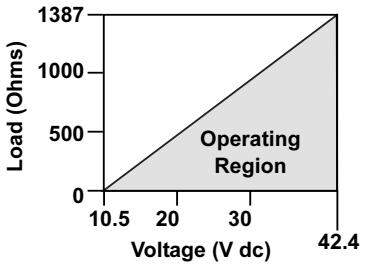
Power Supply

External power supply required. Standard transmitter 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:

Maximum Loop Resistance = 43.5 * (Power Supply Voltage – 10.5)



The HART communicator requires a minimum loop resistance of 250Ω for communication.

FOUNDATION fieldbus (Output Code F)

Power Supply

External power supply required; transmitters operate on 9.0 to 32.0 V dc transmitter terminal voltage.

Current Draw

17.5 mA for all configurations (including LCD display option)

FOUNDATION fieldbus Function Block Execution Times

Block	Execution Time
Resource	-
Transducer	-
LCD Block	-
Analog Input 1, 2	30 milliseconds
PID	45 milliseconds

FOUNDATION fieldbus Parameters

Schedule Entries	7 (max.)
Links	20 (max.)
Virtual Communications Relationships (VCR)	12 (max.)

Standard Function Blocks

Resource Block

- Contains hardware, electronics, and diagnostic information.

Transducer Block

- Contains actual sensor measurement data including the sensor diagnostics and the ability to trim the pressure sensor or recall factory defaults.

LCD Block

- Configures the local display.

2 Analog Input Blocks

- Processes the measurements for input into other function blocks. The output value is in engineering units or custom and contains a status indicating measurement quality.

PID Block

- Contains all logic to perform PID control in the field including cascade and feedforward.

Backup Link Active Scheduler (LAS)

The transmitter can function as a Link Active Scheduler if the current link master device fails or is removed from the segment.

1-5 Vdc HART Low Power (Output Code M)

Output

Three wire 1–5 Vdc output, user-selectable for linear or square root output. Digital process variable superimposed on voltage signal, available to any host conforming to the *HART* protocol.

Power Supply

External power supply required. Standard transmitter operates on 9 to 28 Vdc with no load.

Power Consumption

3.0 mA, 27–84 mW

Output Load

100 kΩ or greater

Overpressure Limits

Transmitters withstand the following limits without damage:

2051C

- Ranges 2–5: 3626 psig (250 bar)
  4500 psig (310,3 bar) for option code P9
- Range 1: 2000 psig (137,9 bar)

2051T

- 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)

2051L

Limit is flange rating or sensor rating, whichever is lower (see Table 1).

TABLE 1. 2051L Flange Rating

Standard	Type	CS Rating	SST Rating
ANSI/ASME	Class 150	285 psig	275 psig
ANSI/ASME	Class 300	740 psig	720 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
At 248 °F (120 °C), the rating decreases with increasing temperature.			

Static Pressure Limit

2051CD

- Operates within specifications between static line pressures of -14.2 psig (0.034 bar) and 3626 psig (250 bar)
  - For Option Code P9, 4500 psig (310,3 bar)
- Range 1: 0.5 psia to 2000 psig (34 mbar and 137,9 bar)

Burst Pressure Limits

2051C Coplanar or traditional process flange

- 10000 psig (689,5 bar)

2051T

- Ranges 1–4: 11000 psi (758,4 bar)
- Range 5: 26000 psi (1792,64 bar)

Temperature Limits

Ambient

–40 to 185 °F (–40 to 85 °C)

With LCD display(1): –40 to 175 °F (–20 to 80 °C)

Storage

–50 to 230 °F (–46 to 110 °C)

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

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

Process Temperature Limits

At atmospheric pressures and above.

TABLE 2. 2051 Process Temperature Limits

2051C	
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)
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)(3)
2051T (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)
2051L 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)
2051L High-Side Temperature Limits (Process Fill Fluid)	
Syltherm® XLT	–100 to 300 °F (–73 to 149 °C)
D.C. Silicone 704®	32 to 400 °F (0 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.

(3) 160 °F (71 °C) limit in vacuum service.

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 25.6 seconds for one time constant. This software damping is in addition to sensor module response time.

Failure Mode Alarm

If self-diagnostics detect a sensor or microprocessor failure, the analog signal is driven either high or low to alert the user. High or low failure mode is user-selectable with a jumper on the transmitter. The values to which the transmitter drives its output in failure mode depend on whether it is factory-configured to *standard* or *NAMUR-compliant* operation. The values for each are as follows:

Standard Operation			
Output Code	**Linear Output**	**Fail High**	**Fail Low**
S	3.9 ≤ I ≤ 20.8	I ≥ 21.75 mA	I ≤ 3.75 mA
M	0.97 ≤ V ≤ 5.2	V ≥ 5.4 V	V ≤ 0.95V

NAMUR-Compliant Operation			
Output Code	**Linear Output**	**Fail High**	**Fail Low**
S	3.8 ≤ I ≤ 20.5	I ≥ 22.5 mA	I ≤ 3.6 mA

Output Code F

If self-diagnostics detect a gross transmitter failure, that information gets passed as a status along with the process variable.

PHYSICAL SPECIFICATIONS

Electrical Connections

1/2–14 NPT, G1/2, and M20 × 1.5 (CM20) conduit.

Process Connections

2051C

- 1/4–18 NPT on 2 1/8-in. centers
- 1/2–14 NPT and RC 1/2 on 2-in.(50.8mm), 2 1/8-in. (54.0 mm), or 2 1/4-in. (57.2mm) centers (process adapters)

2051T

- 1/2–14 NPT female
- G 1/2 A DIN 16288 Male (available in SST for Range 1–4 transmitters only)
- 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)

2051L

- High pressure side: 2-in.(50.8mm), 3-in. (72 mm), or 4-in. (102mm), ASME B 16.5 (ANSI) Class 150 or 300 flange; 50, 80 or 100 mm, DIN 2501 PN 40 or 10/16 flange
- Low pressure side: 1/4–18 NPT on flange, 1/2–14 NPT on process adapter

2051C Process Wetted Parts

Drain/Vent Valves

316 SST or Alloy C-276

Process Flanges and Adapters

Plated carbon steel, SST CF-8M (cast version of 316 SST, material per ASTM-A743), or CW12MW (cast version of Alloy C-276)

Wetted O-rings

Glass-filled PTFE or Graphite-filled PTFE

Process Isolating Diaphragms

316L SST or Alloy C-276

2051T Process Wetted Parts

Process Connections

- 316L SST or Alloy C-276

Process Isolating Diaphragms

- 316L SST or Alloy C-276

2051L Process Wetted Parts

Flanged Process Connection (Transmitter High Side)

Process Diaphragms, Including Process Gasket Surface

- 316L SST or Alloy C-276

Extension

- CF-3M (Cast version of 316L SST, material per ASTM-A743), or Cast 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 Alloy C-276

Reference Flange and Adapter

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

Non-Wetted Parts for 2051C/T/L

Electronics Housing

Low-copper aluminum or CF-8M (Cast version of 316 SST).
Enclosure Type 4X, IP 65, IP 66, IP68

Coplanar Sensor Module Housing

CF-3M (Cast version of 316L SST)

Bolts

ASTM A449, Type 1 (zinc-cobalt plated carbon steel)
ASTM F593G, Condition CW1 (Austenitic 316 SST)
ASTM A193, Grade B7M (zinc plated alloy steel)

Sensor Module Fill Fluid

Silicone oil (D.C. 200) or Fluorocarbon oil (Halocarbon or Fluorinert® FC-43 for 2051T)

Process Fill Fluid (2051L 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

TABLE 3. Transmitter Weights without Options

Transmitter	lb. (kg)
2051C	6.0 (2,7)
2051L	Table 4 below
2051T	3.0 (1,4)

TABLE 4. 2051L 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	12.5 (5,7)	—	—	—
3-in., 150	17.5 (7,9)	19.5 (8,8)	20.5 (9,3)	21.5 (9,7)
4-in., 150	23.5 (10,7)	26.5 (12,0)	28.5 (12,9)	30.5 (13,8)
2-in., 300	17.5 (7,9)	—	—	—
3-in., 300	22.5 (10,2)	24.5 (11,1)	25.5 (11,6)	26.5 (12,0)
4-in., 300	32.5 (14,7)	35.5 (16,1)	37.5 (17,0)	39.5 (17,9)
DN 50/PN 40	13.8 (6,2)	—	—	—
DN 80/PN 40	19.5 (8,8)	21.5 (9,7)	22.5 (10,2)	23.5 (10,6)
DN 100/ PN 10/16	17.8 (8,1)	19.8 (9,0)	20.8 (9,5)	21.8 (9,9)
DN 100/ PN 40	23.2 (10,5)	25.2 (11,5)	26.2 (11,9)	27.2 (12,3)

TABLE 5. Transmitter Options Weights

Code	Option	Add lb (kg)
J, K, L, M	Stainless Steel Housing	3.9 (1,8)
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)

Product Certifications

Approved Manufacturing Locations

Rosemount Inc. — Chanhassen, Minnesota USA
Emerson Process Management GmbH & Co. — Wessling, Germany
Emerson Process Management Asia Pacific Private Limited — Singapore
Beijing Rosemount Far East Instrument Co., LTD — Beijing, China

European Directive Information

The EC declaration of conformity for all applicable European directives for this product can be found on the Rosemount website at www.rosemount.com. A hard copy may be obtained by contacting an Emerson Process Management representative.

ATEX Directive (94/9/EC)
All 2051 transmitters comply with the ATEX Directive.

European Pressure Equipment Directive (PED) (97/23/EC)
2051CG2, 3, 4, 5; 2051CD2, 3, 4, 5 (also with P9 option)
— QS Certificate of Assessment - EC No. PED-H-100 Module H Conformity Assessment

All other 2051 Pressure Transmitters
— Sound Engineering Practice

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

Electro Magnetic Compatibility (EMC) (2004/108/EC)
All 2051 Pressure Transmitters meet all of the requirements of IECEN61326:2006 and NAMUR NE-21.

Ordinary Location Certification for Factory Mutual
As standard, the transmitter has been examined and tested to determine that the design meets 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).

HART PROTOCOL

Hazardous Locations Certifications

North American Certifications

FM Approvals

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 02051-1009; 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
For input parameters see control drawing 02051-1009.

Canadian Standards Association (CSA)

E6 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 for indoor and outdoor hazardous locations. Enclosure type 4X, factory sealed

I6 Intrinsically safe approval. Intrinsically safe for Class I, Division 1, Groups A, B, C, and D when connected in accordance with Rosemount drawing 02051-1008. Temperature Code T3C.
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
For input parameters see control drawing 02051-1008.

European Certifications

I1 ATEX Intrinsic Safety
Certification No. PENDING ⟨Ex⟩ II 1 G
Ex ia IIC T4 (–60 ≤ T_a ≤ +70 °C)
IP66 IP68
CE 1180

TABLE 6. Input Parameters

U_i = 30V
I_i = 200 mA
P_i = 1.0W
C_i = 0.012 µF

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 6.3.12 of EN60079-11. This must be taken into account when installing the apparatus.

N1 ATEX Type n
Certification No. PENDING ⟨Ex⟩ II 3 G
Ex nAnL IIC T4 (–40 ≤ T_a ≤ +70 °C)
U_i = 42.4 Vdc max
IP66
CE

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. 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.

E1 ATEX Flame-Proof
Certification No. PENDING ⟨Ex⟩ II 1/2 G
Ex d IIC T6 (–50 ≤ T_a ≤ 65 °C)
Ex d IIC T5 (–50 ≤ T_a ≤ 80 °C)
IP66
CE 1180
Vmax = 42.4 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.

ND ATEX Dust
Certification No. PENDING ⟨Ex⟩ II 1 D
Dust Rating: T80 °C (–20 ≤ T_a ≤ 40 °C) IP66 IP68
Vmax = 42.4 V dc
A = 22 mA
CE 1180

Special Conditions for Safe Use (X):
1. The user must ensure that the maximum rated voltage and current (42.4 volts, 22 milliampere, DC) are not exceeded. All connections to other apparatus or associated apparatus shall have control over this voltage and current equivalent to a category "ib" circuit according to EN 60079-1.
2. Cable entries must be used which maintain the ingress protection of the enclosure to at least IP66.
3. Unused cable entries must be filled with suitable blanking plugs which maintain the ingress protection of the enclosure to at least IP66.
4. Cable entries and blanking plugs must be suitable for the ambient range of the apparatus and capable of withstanding a 7J impact test.

IECEx Certifications

I7 IECEx Intrinsic Safety
Certification No. PENDING ⟨Ex⟩ II 1 GD
Ex ia IIC T4 (–60 ≤ T_a ≤ +70 °C)
Dust Rating: T80 °C (–20 ≤ T_a ≤ 40 °C) IP66
CE 1180

TABLE 7. Input Parameters

U_i = 30V
I_i = 200 mA
P_i = 1.0W
C_i = 0.012 µF

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 6.3.12 of IEC60079-11. This must be taken into account when installing the apparatus.

E7 IECEx Explosion-Proof (Flame-Proof)
Certification No. PENDING Ⓔx II 1/2 G
Ex d IIC T6 (–50 ≤ T_a ≤ 65 °C)
Ex d IIC T5 (–50 ≤ T_a ≤ 80 °C)
CE 1180
Vmax = 42.4 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.

N7 IECEx Type n
Certification No. PENDING Ⓔx II 3 G
Ex nAnL IIC T4 (–40 ≤ T_a ≤ +70 °C)
U_i = 42.4 Vdc max
CE

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. 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.

TIIS Certifications (consult factory for availability)

E4 TIIS Flame-Proof
Ex d IIC T6

I4 TIIS Intrinsic Safety
Ex ia IIC T4

Inmetro Certifications (consult factory for availability)

E2 Flame-Proof
BR-Ex d IIC T6/T5

I2 Intrinsic Safety
BR-Ex ia IIC T4

GOST Certifications (consult factory for availability)

IM Intrinsic Safety
Certificate Pending

EM Flame-Proof
Certificate Pending

China (NEPSI) Certifications (consult factory for availability)

E3 Flame-Proof
Ex d II B+H_2T3~T5

I3 Intrinsic Safety
Ex ia IIC T3/T4

KOSHA Certifications (consult factory for availability)

EP Flame-Proof
Ex d IIB+H2 T5

IP Intrinsic Safety
Ex ia IIC T3

CCoE Certifications (consult factory for availability)

IW Intrinsic Safety
Ex ia IIC T4

EW Flame-Proof
Ex d IIC T5 or T6

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 mark the approval label to distinguish it from unused approval types.

K1 **E1, I1, N1,** and **ND** combination

K2 **E2** and **I2** combination (consult factory for availability)

K3 **E3** and **I3** combination (consult factory for availability)

K4 **E4** and **I4** combination (consult factory for availability)

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

K6 **I6** and **E6** combination

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

KA **K6** and **K1** combination

KB **K5** and **K6** combination

KC **K5** and **K1** combination

KD **K5**, **K6**, **K1** combination

FIELDBUS PROTOCOL

Hazardous Locations Certifications

North American Certifications

FM Approvals

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/IE 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 02051-1009; 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
For input parameters see control drawing 02051-1009.

Canadian Standards Association (CSA)

E6 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 for indoor and outdoor hazardous locations. Enclosure type 4X, factory sealed

I6/IF Intrinsically safe approval. Intrinsically safe for Class I, Division 1, Groups A, B, C, and D when connected in accordance with Rosemount drawings 02051-1008. Temperature Code T3C.
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
For input parameters see control drawing 02051-1008.

European Certifications

I1 ATEX Intrinsic Safety
Certification No. PENDING ⟨Ex⟩ II 1 G
Ex ia IIC T4 (T_{amb} = –60 to +60 °C)
IP66
CE 1180

TABLE 8. Input Parameters

U_i = 30V
I_i = 300 mA
P_i = 1.3 W
C_i = 0 µF

Special Conditions for Safe Use (X):
The device is not capable of withstanding the 500V insulation test required by Clause 6.3.12 of EN60079-11. This must be taken into account when installing the apparatus.

IA ATEX FISCO Intrinsic Safety
Certification No. ⟨Ex⟩ II 1 G
Ex ia IIC T4 (T_{amb} = –60 to +60 °C)
IP66
CE 1180

TABLE 9. Input Parameters

U_i = 17.5 V
I_i = 380 mA
P_i = 5.32 W
C_i = ≤ 5 µF
L_i = ≤ 10 µH

Special Conditions for Safe Use (X):
The device is not capable of withstanding the 500V insulation test required by Clause 6.3.12 of EN60079-11. This must be taken into account when installing the apparatus.

N1 ATEX Type n
Certification No. PENDING ⟨Ex⟩ II 3 G
Ex nAnL IIC T4 (T_{amb} = –40 to +70 °C)
U_i = 32 Vdc max
IP66

Special Conditions for Safe Use (X):
The device is not capable of withstanding the 500V insulation test required by Clause 6.3.12 of EN60079-11. This must be taken into account when installing the apparatus.

E1 ATEX Flame-Proof
Certification No. PENDING ⟨Ex⟩ II 1/2 G
Ex d IIC T6 (T_{amb} = –50 to 65 °C)
Ex d IIC T5 (T_{amb} = –50 to 80 °C)
IP66
CE 1180
Vmax = 32 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.

ND ATEX Dust
Certification No. PENDING ⟨Ex⟩ II 1 D
Dust Rating: T80 °C (–20 ≤ T_a ≤ 40 °C) IP66 IP68
Vmax = 42.4 V dc
A = 22 mA
CE 1180

Special Conditions for Safe Use (X):

1. The user must ensure that the maximum rated voltage and current (42.4 volts, 22 milliampere, DC) are not exceeded. All connections to other apparatus or associated apparatus shall have control over this voltage and current equivalent to a category “ib” circuit according to EN 60079-1.
2. Cable entries must be used which maintain the ingress protection of the enclosure to at least IP66.
3. Unused cable entries must be filled with suitable blanking plugs which maintain the ingress protection of the enclosure to at least IP66.
4. Cable entries and blanking plugs must be suitable for the ambient range of the apparatus and capable of withstanding a 7J impact test.

IECEx Certifications

I7 IECEx Intrinsic Safety
Certification No. PENDING ⟨Ex⟩ II 1 G
Ex ia IIC T4 (T_{amb} = –60 to +60 °C)
IP66
CE 1180

TABLE 10. Input Parameters

U_i = 30V
I_i = 300 mA
P_i = 1.3 W
C_i = 0 µF

Special Conditions for Safe Use (X):
The device is not capable of withstanding the 500V insulation test required by Clause 6.3.12 of IEC60079-11. This must be taken into account when installing the apparatus.

IG ATEX FISCO Intrinsic Safety
Certification No. ⟨Ex⟩ II 1 G
Ex ia IIC T4 (T_{amb} = –60 to +60 °C)
IP66
CE 1180

TABLE 11. Input Parameters

U_i = 17.5 V
I_i = 380 mA
P_i = 5.32 W
C_i = ≤ 5 µF
L_i = ≤ 10 µH

Special Conditions for Safe Use (X):
The device is not capable of withstanding the 500V insulation test required by Clause 6.3.12 of EN60079-11. This must be taken into account when installing the apparatus.

E7 IECEx Explosion-Proof (Flame-Proof)
Certification No. PENDING ⟨Ex⟩ II 1/2 GD
Ex d IIC T6 (T_{amb} = –50 to 65 °C)
Ex d IIC T5 (T_{amb} = –50 to 80 °C)
IP66
CE 1180
Vmax = 32 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.

N7 IECEx Type n
Certification No. PENDING ⟨Ex⟩ II 3 G
Ex nAnL IIC T4 (T_{amb} = –40 to +70 °C)
U_i = 32 Vdc max

Special Conditions for Safe Use (X):

The device is not capable of withstanding the 500V insulation test required by Clause 6.3.12 of IEC60079-11. This must be taken into account when installing the device.

TIIS Certifications (consult factory for availability)

E4 TIIS Flame-Proof
Ex d IIC T6

I4 TIIS Intrinsic Safety
Ex ia IIC T4

ID TIIS FISCO Intrinsic Safety
Certificate Pending

Inmetro Certifications (consult factory for availability)

E2 Flame-Proof
BR-Ex d IIC T6/T5

I2 Intrinsic Safety
BR-Ex ia IIC T4

IB FISCO Intrinsic Safety
Certificate Pending

GOST Certifications (consult factory for availability)

IM Intrinsic Safety
Certificate Pending

EM Flame-Proof
Certificate Pending

China (NEPSI) Certifications (consult factory for availability)

E3 Flame-Proof
Ex d II B+H_2T3~T5

I3 Intrinsic Safety
Ex ia IIC T3/T4

IC FISCO Intrinsic Safety
Certificate Pending

KOSHA Certifications (consult factory for availability)

EP Flame-Proof
Ex d IIB+H2 T5

IP Intrinsic Safety
Ex ia IIC T3

CCoE Certifications (consult factory for availability)

IW Intrinsic Safety
Ex ia IIC T4

EW Flame-Proof
Ex d IIC T5 or T6

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 mark the approval label to distinguish it from unused approval types.

K1 **E1, I1, N1,** and **ND** combination

K2 **E2** and **I2** combination (consult factory for availability)

K3 **E3** and **I3** combination (consult factory for availability)

K4 **E4** and **I4** combination (consult factory for availability)

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

K6 **I6** and **E6** combination

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

KA **K6** and **K1** combination

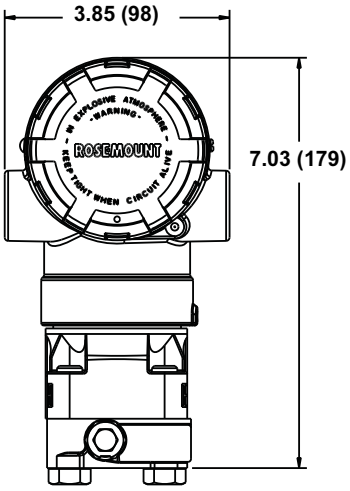
KB **K5** and **K6** combination

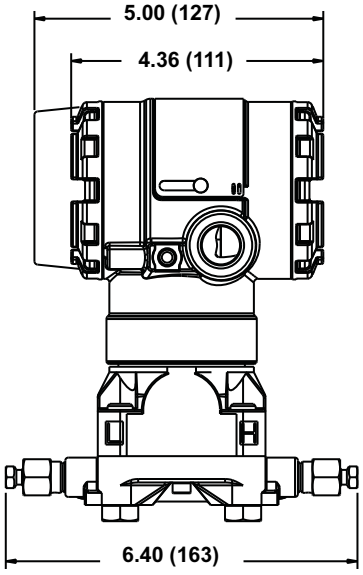
KC **K5** and **K1** combination

KD **K5, K6, K1 combination**

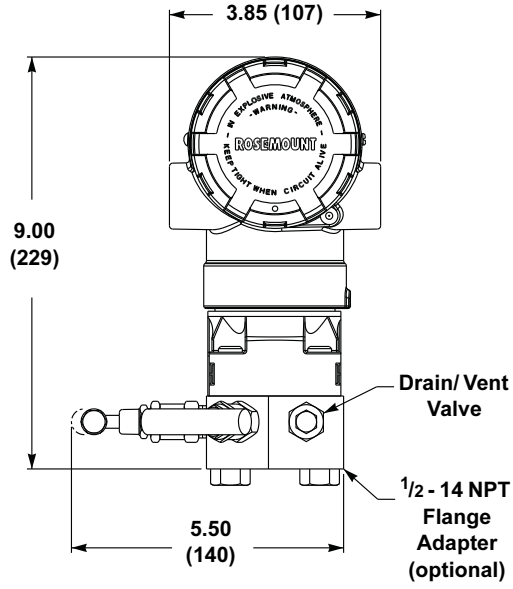
Dimensional Drawings

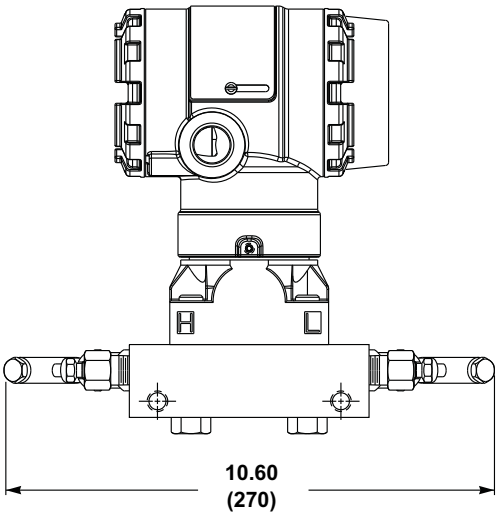
2051C *Coplanar* Flange Dimensional Drawing





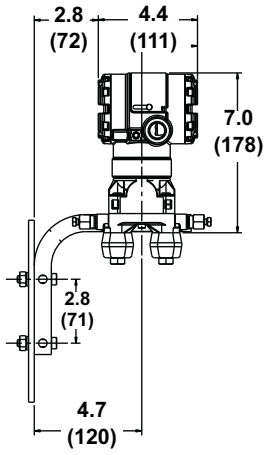
2051C Coplanar with Rosemount 305 Coplanar Integral Manifold

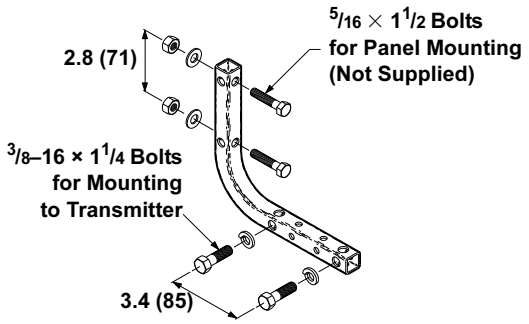




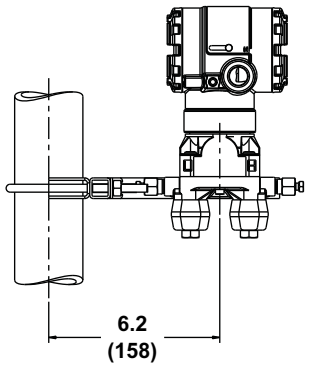
Coplanar Flange Mounting Configurations with Optional Bracket (B4) for 2-in. Pipe or Panel Mounting

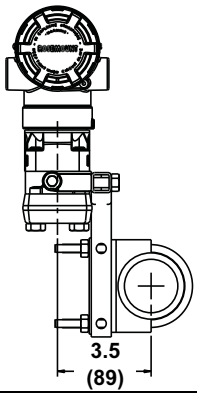
PANEL MOUNTING

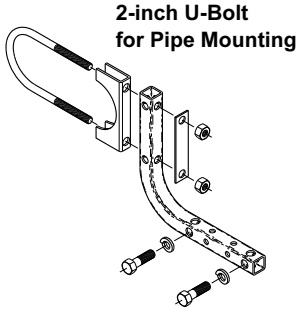




PIPE MOUNTING

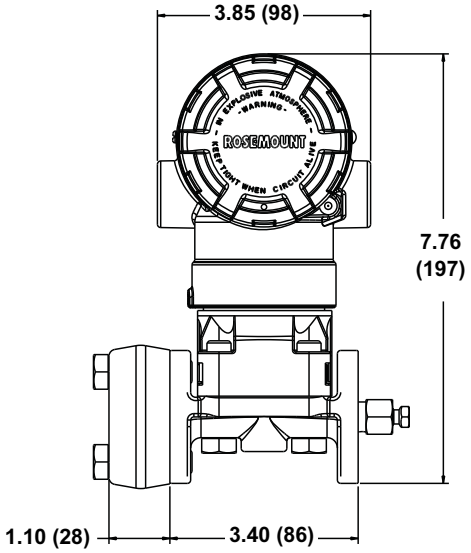


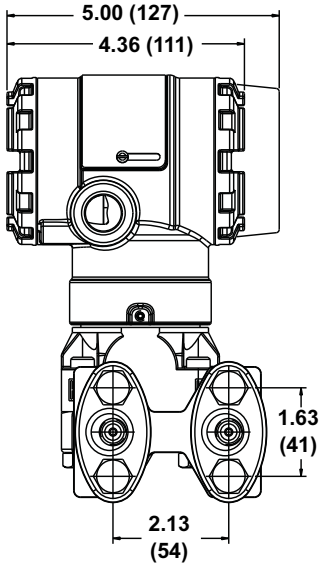




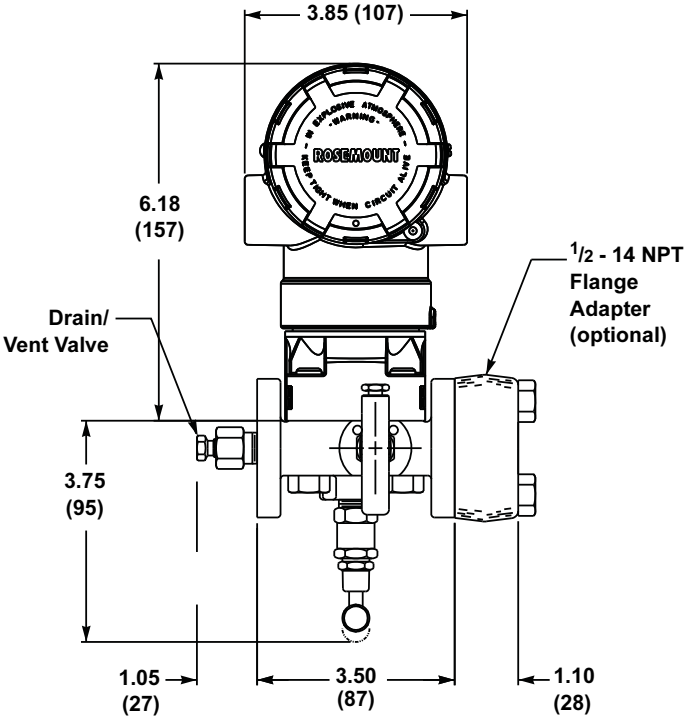
Dimensions are in inches (millimeters)

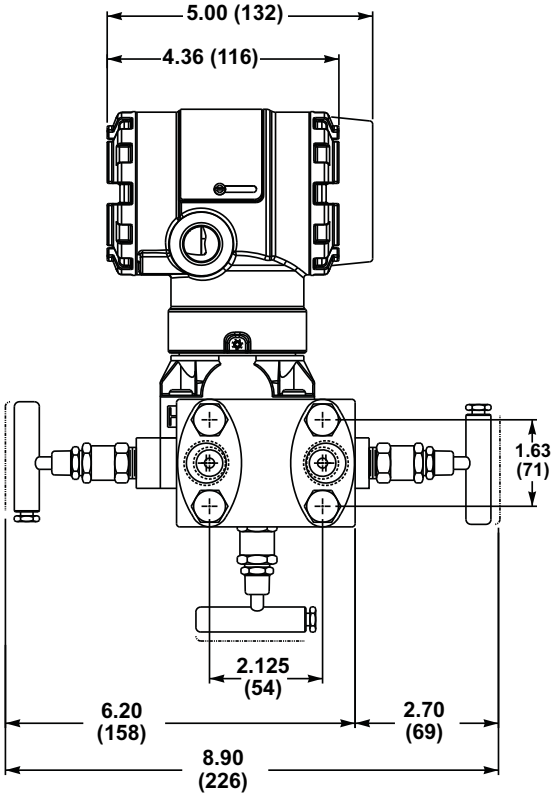
2051C Coplanar with Traditional Flange





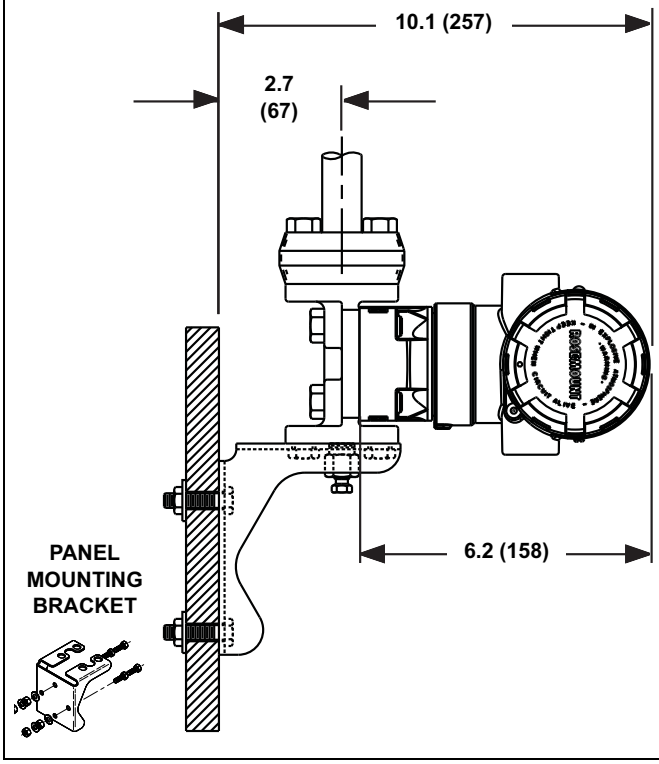
2051C Coplanar with Rosemount 305 Traditional Integral Manifold



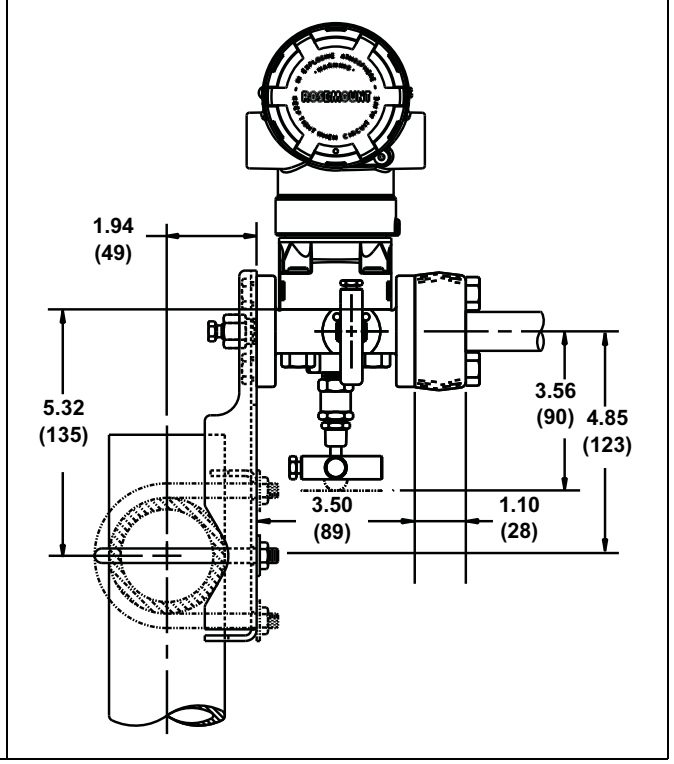


Traditional Flange Mounting Configurations with Optional Brackets for 2-in. Pipe or Panel Mounting

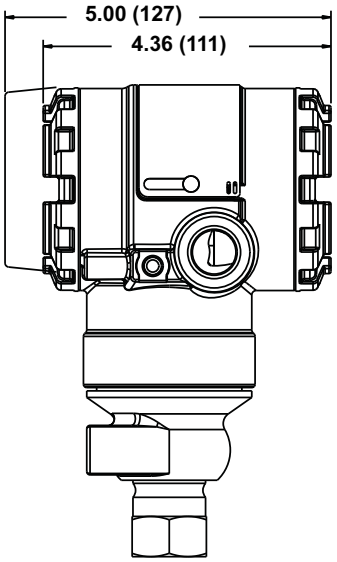
Panel Mount (Bracket Option B2/B8)

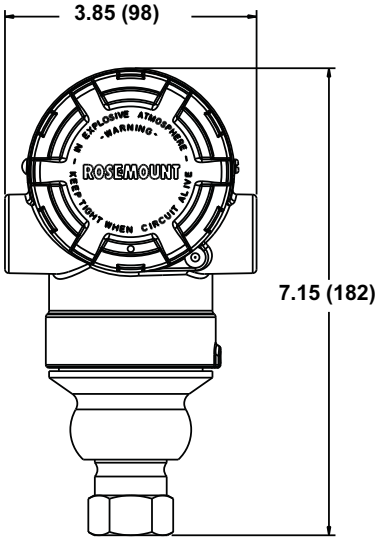


Pipe Mount (Bracket Option B3/B9)

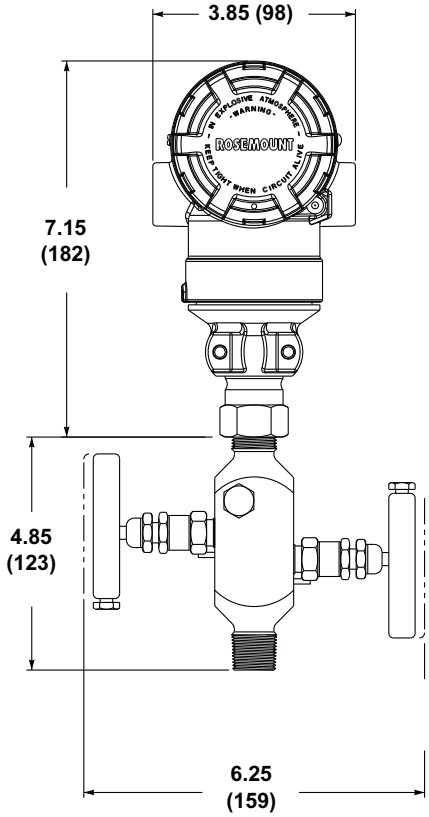


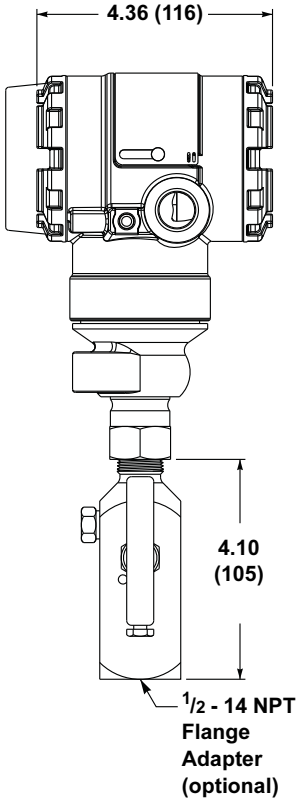
2051T Dimensional Drawings





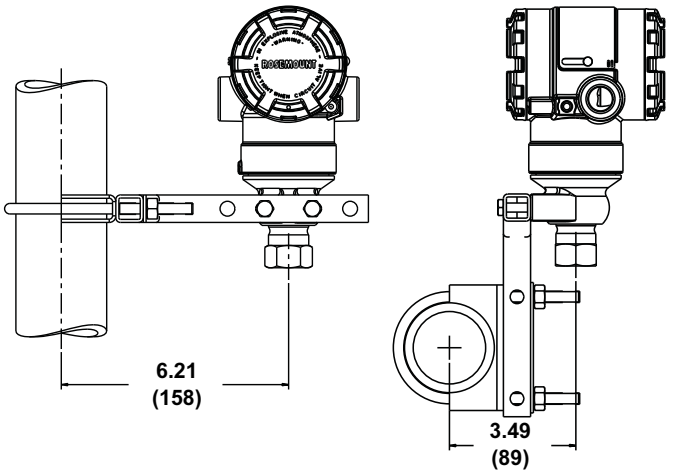
2051T with Rosemount 306 Integral Manifold



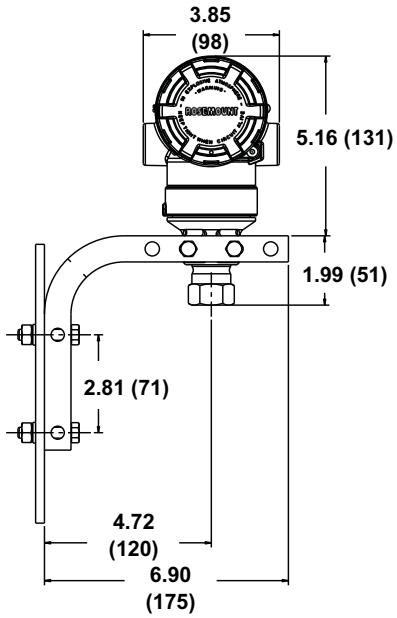


2051T Typical Mounting Configurations with Optional Mounting Bracket

Pipe Mounting

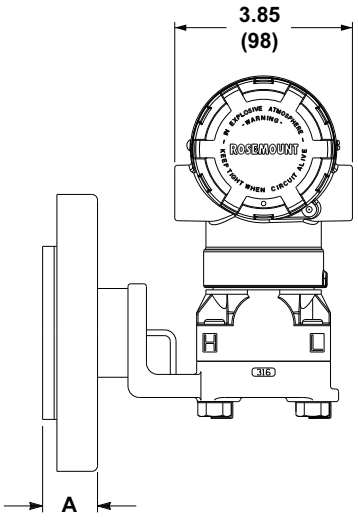


Panel Mounting

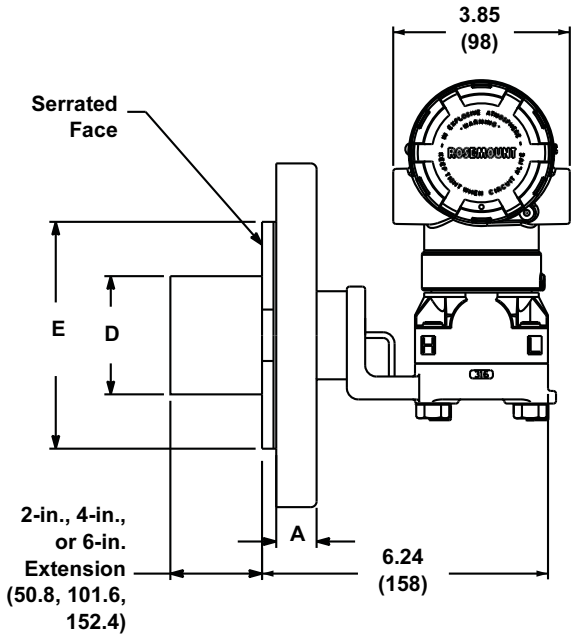


2051L Liquid Level

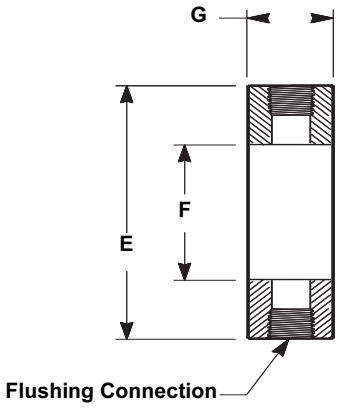
2-in. Flange Configuration (Flush Mount Only)



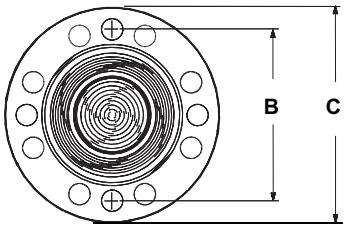
3- and 4-in. Flange Configuration



Optional Flushing Connection Ring (Lower Housing)



Diaphragm Assembly and Mounting Flange



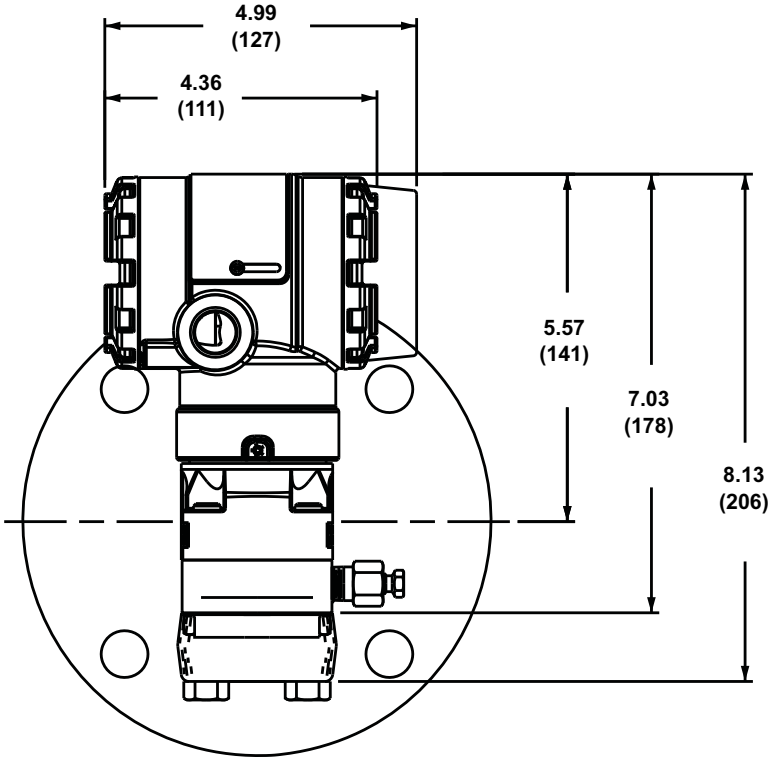


TABLE 12. 2051L Dimensional Specifications

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)
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)

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)
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)

(1) Tolerances are -0.020 and +0.040 (-0,51 and +1,02)

Ordering Information

Model	Transmitter Type (Select One)			CD	CG
2051C	Pressure Transmitter			•	•
Model	**Measurement Type**			**CD**	**CG**
D	Differential			•	—
G	Gage			—	•
Code	**Pressure Ranges (Range/Min. Span)**			**CD**	**CG**
	2051CD	**2051CG**			
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 (–62,1 to 62,2 mbar/1,2 mbar)		•	•
2	–250 to 250 inH_2O/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)		•	•
3	–1000 to 1000 inH_2O/10 inH_2O (–2,5 to 2,5 bar/25 mbar)	–393 to 1000 inH_2O/10 inH_2O (–0,98 to 2,5 bar/25 mbar)		•	•
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)		•	•
5	–2000 to 2000 psi/20 psi (–137,9 to 137,9 bar/1,4 bar)	–14.2 to 2000 psig/20 psi (–0,98 to 137,9 bar/1,4 bar)		•	•
Code	**Output**			**CD**	**CG**
A	4–20 mA with Digital Signal Based on *HART* Protocol			•	•
M	Low-Power, 1–5 V dc with Digital Signal Based on HART Protocol			•	•
F	FOUNDATION fieldbus Protocol			•	•
Code	**Materials of Construction**			**CD**	**CG**
	Process Flange Type	**Flange Material**	**Drain/Vent**		
2	Coplanar	SST	SST	•	•
3(1)	Coplanar	Cast C-276	Alloy C-276	•	•
5	Coplanar	Plated CS	SST	•	•
7(1)	Coplanar	SST	Alloy C-276	•	•
8(1)	Coplanar	Plated CS	Alloy C-276	•	•
0	Alternate Process Connection (Requires selecting Flange, Manifold, or Primary Element option code, see page 27)			•	•
Code	**Isolating Diaphragm**			**CD**	**CG**
2(1)	316L SST			•	•
3(1)	Alloy C-276			•	•
Code	**O-ring**				
A	Glass-filled PTFE			•	•
B	Graphite-filled PTFE			•	•
Code	**Fill Fluid**			**CD**	**CG**
1	Silicone			•	•
2	Inert fill (Halocarbon)			•	•
Code	**Housing Material**		**Conduit Entry Size**	**CD**	**CG**
A	Polyurethane-covered Aluminum		½–14 NPT	•	•
B	Polyurethane-covered Aluminum		M20 × 1.5 (CM20)	•	•
D	Polyurethane-covered Aluminum		G½	•	•
J	SST (consult factory for availability)		½–14 NPT	•	•
K	SST (consult factory for availability)		M20 × 1.5 (CM20)	•	•
M	SST (consult factory for availability)		G½	•	•

Code	Options	CD	CG
Alternate Process Connection: Flange[2]			
H2	Traditional Flange, 316 SST, SST Drain/Vent	•	•
H3[1]	Traditional Flange, Cast C-276, Alloy C-276 Drain/Vent	•	•
H7[1]	Traditional Flange, 316 SST, Alloy C-276 Drain/Vent	•	•
HJ	DIN Compliant Traditional Flange, SST, 7/16 in. Adapter/Manifold Bolting	•	•
HK[3]	DIN Compliant Traditional Flange, SST, 10 mm Adapter/Manifold Bolting	•	•
HL	DIN Compliant Traditional Flange, SST, 12mm Adapter/Manifold Bolting	•	•
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	•	•
Alternate Process Connection: Manifold[2][4]			
S5	Assemble to Rosemount 305 Integral Manifold	•	•
S6	Assemble to Rosemount 304 Manifold or Connection System	•	•
Alternate Process Connection: Primary Element[2][4]			
S4[5]	Assemble to Rosemount Primary Element	•	—
S3	Assemble to Rosemount 405 Primary Element	•	—
Diaphragm Seal Assemblies[4]			
S1[6]	Assemble to one Rosemount 1199 diaphragm seal	•	•
S2[7]	Assemble to two Rosemount 1199 diaphragm seals	•	—
Mounting Brackets			
B1[8]	Traditional Flange Bracket for 2-in. Pipe Mounting, CS Bolts	•	•
B2[8]	Traditional Flange Bracket for Panel Mounting, CS Bolts	•	•
B3[8]	Traditional Flange Flat Bracket for 2-in. Pipe Mounting, CS Bolts	•	•
B4[9]	Coplanar Flange Bracket for 2-in. Pipe or Panel Mounting, all SST	•	•
B7[8]	B1 Bracket with Series 300 SST Bolts	•	•
B8[8]	B2 Bracket with Series 300 SST Bolts	•	•
B9[8]	B3 Bracket with Series 300 SST Bolts	•	•
BA[8]	SST B1 Bracket with Series 300 SST Bolts	•	•
BC[8]	SST B3 Bracket with Series 300 SST Bolts	•	•
Product Certifications			
E1[10]	ATEX Flameproof	•	•
E2[10]	INMETRO Flameproof (consult factory for availability)	•	•
E3[10]	China Flameproof (consult factory for availability)	•	•
E4[10]	TIIS Flameproof (consult factory for availability)	•	•
E5	FM Explosion-proof, Dust Ignition-proof	•	•
E6	CSA Explosion-proof, Dust Ignition-proof, Division 2	•	•
E7	IECEx Flameproof	•	•
EP[10]	Korea (KOSHA) Flameproof Approval (consult factory for availability)	•	•
EW[10]	India (CCOE) Flameproof Approval (consult factory for availability)	•	•
EM[10]	GOST Explosion-proof (consult factory for availability)		
I1	ATEX Intrinsic Safety	•	•
I2[10]	INMETRO Intrinsic Safety (consult factory for availability)	•	•
I3[10]	China Intrinsic Safety (consult factory for availability)	•	•
I4[10]	TIIS Intrinsic Safety (consult factory for availability)	•	•
I5	FM Intrinsically Safe, Division 2	•	•
I6	CSA Intrinsically Safe	•	•
I7[10]	IECEx Intrinsic Safety	•	•
IA[11]	ATEX FISCO Intrinsic Safety	•	•
IB[11]	INMETRO FISCO Intrinsic Safety (consult factory for availability)	•	•
IC[11]	CHINA FISCO Intrinsic Safety (consult factory for availability)	•	•
ID[11]	TIIS FISCO Intrinsic Safety (consult factory for availability)	•	•
IE[11]	FM FISCO Intrinsically Safe	•	•

IF[11]	CSA FISCO Intrinsically Safe	•	•
IG[11]	IECEx FISCO Intrinsically Safe	•	•
IP[10]	Korea (KOSHA) Instrinsic Safety (consult factory for availability)	•	•
IM[10]	GOST Intrinsically Safe (consult factory for availability)	•	•
IW[10]	India (CCOE) Intrinsic Safety Approval (consult factory for availability)	•	•
K1[10]	ATEX Flameproof, Intrinsic Safety, Type n, Dust	•	•
K2[10]	INMETRO Flameproof, Intrinsic Safety, Type n (consult factory for availability)	•	•
K3[10]	China Flameproof, Intrinsic Safety, Type n (consult factory for availability)	•	•
K4[10]	TIIS Flameproof, Intrinsic Safety (consult factory for availability)	•	•
K5	FM Explosion-proof, Dust Ignition-proof, Intrinsically Safe, Division 2	•	•
K6	CSA Explosion-proof, Dust Ignition-proof, Intrinsically Safe, Division 2	•	•
K7[10]	IECEx Flameproof, Intrinsic Safety, Type n	•	•
KA	ATEX and CSA Flameproof, Intrinsically Safe, Division 2	•	•
KB	FM and CSA Explosion-proof, Dust Ignition-proof, Intrinsically Safe, Division 2	•	•
KC	FM and ATEX Explosion-proof, Intrinsically Safe, Division 2	•	•
KD[10]	FM, CSA, and ATEX Explosion-proof, Intrinsically Safe	•	•
N1[10]	ATEX Type n	•	•
N7[10]	IECEx Type n	•	•
ND	ATEX Dust	•	•
Bolting Configurations		•	•
L4	Austenitic 316 SST Bolts	•	•
L5	ASTM A 193, Grade B7M Bolts		
L8	ASTM A 193 Class 2, Grade B8M Bolts	•	•
Digital Display			
M5	LCD display	•	•
Special Configuration (Hardware)			
D4[12]	Zero and Span Hardware Adjustments	•	•
DF[13]	$^1/_2$-14 NPT Flange Adapters	•	•
D9[14]	JIS Process Connection-RC $^1/_4$ Flange with RC $^1/_2$ Flange Adapter	•	•
V5[15]	External Ground Screw Assembly	•	•
Performance			
P8[16]	0.065% accuracy and 5 year stability	•	•
Terminal Blocks			
T1	Transient Protection Terminal Block	•	•
Special Configuration (Software)			
C1[17]	Custom Software Configuration (Requires completed Configuration Data Sheet)	•	•
C4[17][18]	Analog Output Levels Compliant with NAMUR Recommendation NE 43, Alarm High	•	•
CN[17][18]	Analog Output Levels Compliant with NAMUR Recommendation NE 43 Alarm Low	•	•
Special Procedures			
P1	Hydrostatic Testing with Certificate	•	•
P2[19]	Cleaning for Special Service	•	•
P9	4500 psig (310 bar) static pressure limit (Ranges 2-5 only)	•	•
P3[19]	Cleaning for <1 PPM Chlorine/Fluorine	•	•
Special Certifications			
Q4	Calibration Certificate	•	•
Q8	Material Traceability Certification per EN 10204 3.1.B	•	•
QS[17]	Prior-use certificate of FMEDA data	•	•
Q16[20]	Surface finish certification for sanitary remote seals	•	•
QZ[20]	Remote Seal System Performance Calculation Report	•	•

Typical Model Number: 2051C D 2 A 2 2 A 1 A B4 M5

(1) 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.

(2) Requires 0 code in Materials of Construction for Alternate Process Connection.

(3) Not valid with optional code P9 for 4500psi Static Pressure.

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

(5) Process Flange limited to Coplanar (codes 2, 3, 5, 7, 8) or Traditional (H2, H3, H7).

(6) Not valid with optional code D9 for RC1/2 Adaptors.

(7) Not valid with optional codes DF & D9 for Adaptors.

(8) Requires option in the Alternate Process Connection: Flange section.

(9) Requires Coplanar flange.

(10) Not available with Low Power output code M.

(11) Only valid with FOUNDATION fieldbus output code F.

(12) Not available with FOUNDATION fieldbus output code F.

(13) Not valid with Alternate Process Connection options S3, S4, S5, S6.

(14) Not available with Alternate Process Connection: DIN Flanges and Level Flanges.

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

(16) Available for HART 4-20mA output code A. Valid for Ranges 2-5 only.

(17) Only available with HART 4-20mA output (output code A).

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

(19) Not valid with Alternate Process Connections S5 & S6.

(20) Requires one of the Diaphragm Seal Assemblies codes (S1 or S2).

Model	Transmitter Type (Select One)	
2051T	In-Line Pressure Transmitter	
Model	**Measurement Type**	
G	Gage	
A	Absolute	
Code	**Pressure Ranges (Ranges/ Min. Span)**	
	2051TG	**2051TA**
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	
M	Low-Power, 1–5 V dc with Digital Signal Based on HART Protocol	
F	FOUNDATION fieldbus Protocol	
Code	**Process Connection Style**	
2B	1/2–14 NPT female	
2C	G1/2 A DIN 16288 male (Range 1-4 only)	
2F	Coned and Threaded, Compatible with Autoclave Type F-250-C (Includes Gland and Collar, Available in SST for Range 5 only)	
Code	**Isolating Diaphragm**	
2(1)	316L SST	
3(1)	Alloy C-276	
Code	**Fill Fluid**	
1	Silicone	
2	Inert fill (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 (consult factory for availability)	½–14 NPT
K	SST (consult factory for availability)	M20 × 1.5 (CM20)
M	SST (consult factory for availability)	G½
Code	**Options**	
Manifold Assemblies		
S5(2)	Assemble to Rosemount 306 Integral Manifold	
Diaphragm Seal Assemblies		
S1(2)	Assemble to one Rosemount 1199 diaphragm seal	
Mounting Brackets		
B4	Bracket for 2-in. Pipe or Panel Mounting, all SST	

Product Certifications	
E1[3]	ATEX Flameproof
E2[3]	INMETRO Flameproof (consult factory for availability)
E3[3]	China Flameproof (consult factory for availability)
E4[3]	TIIS Flameproof (consult factory for availability)
E5	FM Explosion-proof, Dust Ignition-proof
E6	CSA Explosion-proof, Dust Ignition-proof, Division 2
E7	IECEx Flameproof
EP[3]	Korea (KOSHA) Flameproof Approval (consult factory for availability)
EW[3]	India (CCOE) Flameproof Approval (consult factory for availability)
EM[3]	GOST Explosion-proof (consult factory for availability)
I1	ATEX Intrinsic Safety
I2[3]	INMETRO Intrinsic Safety (consult factory for availability)
I3[3]	China Intrinsic Safety (consult factory for availability)
I4[3]	TIIS Intrinsic Safety (consult factory for availability)
I5	FM Intrinsically Safe, Division 2
I6	CSA Intrinsically Safe
I7[3]	IECEx Intrinsic Safety
IA[4]	ATEX FISCO Intrinsic Safety
IB[4]	INMETRO FISCO Intrinsic Safety (consult factory for availability)
IC[4]	CHINA FISCO Intrinsic Safety (consult factory for availability)
ID[4]	TIIS FISCO Intrinsic Safety (consult factory for availability)
IE[4]	FM FISCO Intrinsically Safe
IF[4]	CSA FISCO Intrinsically Safe
IG[4]	IECEx FISCO Intrinsically Safe
IP[3]	Korea (KOSHA) Instrinsic Safety (consult factory for availability)
IM[3]	GOST Intrinsically Safe (consult factory for availability)
IW[3]	India (CCOE) Intrinsic Safety Approval (consult factory for availability)
K1[3]	ATEX Flameproof, Intrinsic Safety, Type n, Dust
K2[3]	INMETRO Flameproof, Intrinsic Safety, Type n (consult factory for availability)
K3[3]	China Flameproof, Intrinsic Safety, Type n (consult factory for availability)
K4[3]	TIIS Flameproof, Intrinsic Safety (consult factory for availability)
K5	FM Explosion-proof, Dust Ignition-proof, Intrinsically Safe, Division 2
K6	CSA Explosion-proof, Dust Ignition-proof, Intrinsically Safe, Division 2
K7[3]	IECEx Flameproof, Intrinsic Safety, Type n
KA	ATEX and CSA Flameproof, Intrinsically Safe, Division 2
KB	FM and CSA Explosion-proof, Dust Ignition-proof, Intrinsically Safe, Division 2
KC	FM and ATEX Explosion-proof, Intrinsically Safe, Division 2
KD[3]	FM, CSA, and ATEX Explosion-proof, Intrinsically Safe
N1[3]	ATEX Type n
N7[3]	IECEx Type n
ND	ATEX Dust
Digital Display	
M5	LCD display
Special Configuration (Hardware)	
D4[5]	Zero and Span Hardware Adjustments
V5[6]	External Ground Screw Assembly
Performance	
P8[7]	0.065% accuracy and 5 year stability
Terminal Blocks	
T1	Transient Protection Terminal Block

Special Configuration (Software)	
C1[8]	Custom Software Configuration (Requires completed Configuration Data Sheet)
C4[8][9]	Analog Output Levels Compliant with NAMUR Recommendation NE 43, Alarm High
CN[8][9]	Analog Output Levels Compliant with NAMUR Recommendation NE 43 Alarm Low
Special Procedures	
P1	Hydrostatic Testing with Certificate
P2[10]	Cleaning for Special Service
P3[10]	Cleaning for <1 PPM Chlorine/Fluorine
Special Certifications	
Q4	Calibration Certificate
Q8	Material Traceability Certification per EN 10204 3.1.B
QS[8]	Prior-use certificate of FMEDA data
Q16[11]	Surface finish certification for sanitary remote seals
QZ[11]	Remote Seal System Performance Calculation Report

Typical Model Number: 2051T G 3 A 2B 1 A B4 M5

(1) 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.

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

(3) Not available with Low Power output code M.

(4) Only valid with FOUNDATION fieldbus output code F.

(5) Not available with FOUNDATION fieldbus output code F.

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

(7) Available for HART 4-20mA output code A. Valid for Ranges 1-4 only.

(8) Only available with HART 4-20mA output (output code A).

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

(10) Not valid with Alternate Process Connection S5.

(11) Requires S1 Diaphragm Seal Assembly code.

Model	Transmitter Type		
2051L	Flange-Mounted Liquid Level Transmitter		
Code	**Pressure Ranges (Range/Minimum 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		
M	Low-Power, 1–5 V dc with Digital Signal Based on HART Protocol		
F	FOUNDATION fieldbus Protocol		
Code	**High Pressure Side**		
	Diaphragm Size	**Material**	**Extension Length**
G0	2 in./DN 50	316L SST	Flush Mount Only
H0	2 in./DN 50	Alloy C-276	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	Alloy C-276	Flush Mount
C2	3 in./DN 80	Alloy C-276	2 in./50 mm
C4	3 in./DN 80	Alloy C-276	4 in./100 mm
C6	3 in./DN 80	Alloy C-276	6 in./150 mm
D0	4 in./DN 100	Alloy C-276	Flush Mount
D2	4 in./DN 100	Alloy C-276	2 in./50 mm
D4	4 in./DN 100	Alloy C-276	4 in./100 mm
D6	4 in./DN 100	Alloy C-276	6 in./150 mm
Code	**Mounting Flange**		
	Size	**Rating**	**Material**
M	2 in.	Class 150, ANSI	CS
A	3 in.	Class 150, ANSI	CS
B	4 in.	Class 150, ANSI	CS
N	2 in.	Class 300, ANSI	CS
C	3 in.	Class 300, ANSI	CS
D	4 in.	Class 300, ANSI	CS
X	2 in.	Class 150, ANSI	SST
F	3 in.	Class 150, ANSI	SST
G	4 in.	Class 150, ANSI	SST
Y	2 in.	Class 300, ANSI	SST
H	3 in.	Class 300, ANSI	SST
J	4 in.	Class 300, ANSI	SST
Q	DN50	PN 10-40, DIN	CS
R	DN80	PN 40, DIN	CS
K	DN50	PN 10-40, DIN	SST
T	DN80	PN 40, DIN	SST

Code	Process Fill-High Pressure Side		Temperature Limits	
A	Syltherm® XLT		-100 to 300 °F (-73 to 135 °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	Glycerin 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)	
Code	**Low Pressure Side**			
	Configuration	**Flange Adapter**	**Diaphragm Material**	**Sensor Fill Fluid**
11	Gage	SST	316L SST	Silicone
21	Differential	SST	316L SST	Silicone
22	Differential (SST Valve Seat)	SST	Alloy C-276	Silicone
2A	Differential	SST	316L SST	Inert (Halocarbon)
2B	Differential (SST Valve Seat)	SST	Alloy C-276	Inert (Halocarbon)
31	Remote Seal	SST	316L SST	Silicone
Code	**O-ring**			
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 (consult factory for availability)		½–14 NPT	
K	SST (consult factory for availability)		M20 × 1.5 (CM20)	
M	SST (consult factory for availability)		G½	
Code	**Options**			
Diaphragm Seal Assembly				
S1[1]	Assemble to one Rosemount 1199 diaphragm seal			
Product Certifications				
E1[2]	ATEX Flameproof			
E2[2]	INMETRO Flameproof (consult factory for availability)			
E3[2]	China Flameproof (consult factory for availability)			
E4[2]	TIIS Flameproof (consult factory for availability)			
E5	FM Explosion-proof, Dust Ignition-proof			
E6	CSA Explosion-proof, Dust Ignition-proof, Division 2			
E7	IECEx Flameproof			
EP[2]	Korea (KOSHA) Flameproof Approval (consult factory for availability)			
EW[2]	India (CCOE) Flameproof Approval (consult factory for availability)			
EM[2]	GOST Explosion-proof (consult factory for availability)			
I1	ATEX Intrinsic Safety			
I2[2]	INMETRO Intrinsic Safety (consult factory for availability)			
I3[2]	China Intrinsic Safety (consult factory for availability)			
I4[2]	TIIS Intrinsic Safety (consult factory for availability)			
I5	FM Intrinsically Safe, Division 2			
I6	CSA Intrinsically Safe			
I7[2]	IECEx Intrinsic Safety			
IA[3]	ATEX FISCO Intrinsic Safety			
IB[3]	INMETRO FISCO Intrinsic Safety (consult factory for availability)			
IC[3]	CHINA FISCO Intrinsic Safety (consult factory for availability)			
ID[3]	TIIS FISCO Intrinsic Safety (consult factory for availability)			
IE[3]	FM FISCO Intrinsically Safe			
IF[3]	CSA FISCO Intrinsically Safe			
IG[3]	IECEx FISCO Intrinsically Safe			
IP[2]	Korea (KOSHA) Instrinsic Safety (consult factory for availability)			

IM[2]	GOST Intrinsically Safe (consult factory for availability)
IW[2]	India (CCOE) Intrinsic Safety Approval (consult factory for availability)
K1[2]	ATEX Flameproof, Intrinsic Safety, Type n, Dust
K2[2]	INMETRO Flameproof, Intrinsic Safety, Type n (consult factory for availability)
K3[2]	China Flameproof, Intrinsic Safety, Type n (consult factory for availability)
K4[2]	TIIS Flameproof, Intrinsic Safety (consult factory for availability)
K5	FM Explosion-proof, Dust Ignition-proof, Intrinsically Safe, Division 2
K6	CSA Explosion-proof, Dust Ignition-proof, Intrinsically Safe, Division 2
K7[2]	IECEx Flameproof, Intrinsic Safety, Type n
KA	ATEX and CSA Flameproof, Intrinsically Safe, Division 2
KB	FM and CSA Explosion-proof, Dust Ignition-proof, Intrinsically Safe, Division 2
KC	FM and ATEX Explosion-proof, Intrinsically Safe, Division 2
KD[2]	FM, CSA, and ATEX Explosion-proof, Intrinsically Safe
N1[2]	ATEX Type n
N7[2]	IECEx Type n
ND	ATEX Dust
Digital Display	
M5	LCD display
Special Configuration (Hardware)	
D4[4]	Zero and Span Hardware Adjustments
DF[5]	1/2-14 NPT Flange Adapters
V5[6]	External Ground Screw Assembly
Terminal Blocks	
T1	Transient Protection Terminal Block
Special Configuration (Software)	
C1[7]	Custom Software Configuration (Requires completed Configuration Data Sheet)
C4[7][8]	Analog Output Levels Compliant with NAMUR Recommendation NE 43, Alarm High
CN[7][8]	Analog Output Levels Compliant with NAMUR Recommendation NE 43 Alarm Low
Special Certifications	
Q4	Calibration Certificate
Q8	Material Traceability Certification per EN 10204 3.1.B
QS[7]	Prior-use certificate of FMEDA data
Q16	Surface finish certification for sanitary remote seals
QZ	Remote Seal System Performance Calculation Report
Flushing Connections	
F1	One 1/4-inch Connector, SST Ring Material
F2	Two 1/4-inch Connectors, SST Ring Material
F3[9]	One 1/4-inch Connector, Cast C-276 Ring Material
F4[9]	Two 1/4-inch Connectors, Cast C-276 Ring Material
F7	One 1/2-inch Connector, SST Ring Material
F8	Two 1/2-inch Connectors, SST Ring Material
F9	One 1/2-inch Connector, Cast C-276 Ring Material
F0	Two 1/2-inch Connectors, Cast C-276 Ring Material

Typical Model Number: 2051L 2 A 2 2 A 1 A B4

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

(2) Not available with Low Power output code M.

(3) Only valid with FOUNDATION fieldbus output code F.

(4) Not valid with FOUNDATION fieldbus output code F.

(5) Not available with Diaphragm Seal Assembly option S1.

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

(7) Only available with HART 4-20mA output (output code A).

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

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

OPTIONS

Standard Configuration

Unless otherwise specified, transmitter is shipped as follows:

Engineering Units 2051C:	inH_2O (Ranges 1-3), psi (Ranges 4-5)
Engineering Units 2051T:	psi (all ranges)
Engineering Units 2051L:	inH_2O
4 mA (1 V dc)(1):	0 (engineering units above)
20 mA (5 V dc)(1):	Upper range limit
Output:	Linear
Flange type:	Specified model code option
Flange material:	Specified model code option
Drain/vent:	Specified model code option
Integral meter:	Installed or none
Alarm(1):	High
Software tag:	(Blank)

(1) Not applicable to fieldbus.

Tagging (3 options available)

- Standard SST hardware tag is permanently affixed on transmitter. Tag character height is 0.125 in. (3,18 mm), 140 characters maximum.
- Tag may be wired to the transmitter nameplate upon request, 85 characters maximum.
- Tag may be stored in transmitter memory (8 characters maximum). Software tag is left blank unless specified.

Commissioning tag (fieldbus only)

A temporary commissioning tag is attached to all transmitters. The tag indicates the device ID and allows an area for writing the location.

Optional Rosemount 304, 305 or 306 Integral Manifolds

Factory assembled to 2051C and 2051T transmitters. Refer to 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 (document number 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:

inH_2O	inH_2O@4 °C(1)	psi	Pa
inHg	ftH_2O	bar	kPa
mmH_2O	mmH_2O@4 °C(1)	mbar	torr
mmHg	g/cm2	kg/cm2	atm

(1) Not available on low power.

Hardware Adjustments

D4 Local zero and span adjustments

- Alarm and security adjustments ship standard

LCD display

M5 Digital Meter, 5-Digit

- 2-Line LCD for 4-20 mA HART
- 1-Line LCD for 1-5 Vdc HART Low Power
- 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

Transient Protection

T1 Integral Transient Protection Terminal Block

Meets IEEE C62.41, Category Location B

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

Meets IEEE C37.90.1, Surge Withstand Capability

SWC 2.5 kV crest, 1.0 MHz wave form

Bolts for Flanges and Adapters

- Standard material is plated carbon steel per ASTM A449, Type 1

L4 Austenitic 316 Stainless Steel Bolts
L5 ASTM A 193, Grade B7M Bolts
L8 ASTM A 193 Class 2, Grade B8M Bolts

Rosemount 2051C *Coplanar* Flange and 2051T 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

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

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Rosemount Model 2051 Smart 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.

Emerson Process Management

Rosemount Inc.
8200 Market Boulevard
Chanhassen, MN 55317 USA
T (U.S.) 1 800 999 9307
T (International) (952) 906 8888
F (952) 949 7001

www.rosemount.com

Emerson Process Management
Heath Place
Bognor Regis
West Sussex PO22 9SH
England
T 44 (0) 1243 863121
F 44 (0) 1243 867554

Emerson Process Management Asia Pacific Private Limited
1 Pandan Crescent
Singapore 128461
T (65) 6777 8211
F (65) 6777 0947
Enquiries@AP.EmersonProcess.com

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