Product Data Sheet
00813-0100-4801, Rev EA
February 2004

Rosemount 3051S Series

- *Best-in-class performance with 0.04% accuracy*
- *Industry's first %-of-reading flow transmitter delivering a 10x performance improvement*
- *Industry's first 10-year stability under actual process conditions*
- *Unprecedented reliability backed by a limited 12-year warranty*
- *SuperModule™ design platform enables more cost effective installation and maintenance practices*
- *Scalable functionality to meet your expanding needs*
- *Safety Certified to IEC61508 by TÜViT*

Content

CE

ROSEMOUNT®

POWERS PlantWeb

This product is a core component of the PlantWeb digital plant architecture.

EMERSON™
Process Management

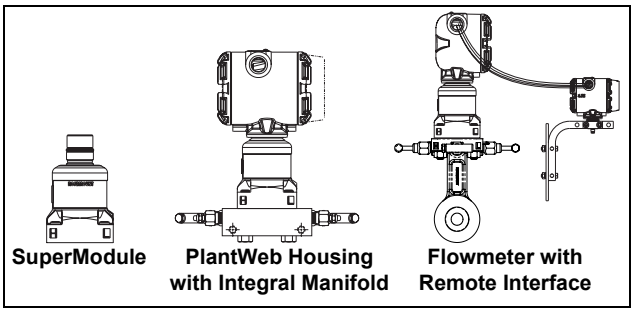
Success goes beyond the transmitter to an enabling platform

Best-in-class performance with 0.04% accuracy
The Rosemount 3051S delivers cutting edge performance beginning with the SuperModule platform. Among the many advances, Saturn™ sensing technology incorporates a secondary sensor to optimize performance and expand diagnostic capabilities.

Industry's first %-of-reading flow transmitter
Innovative design combined with patent-pending manufacturing techniques deliver a 10x performance improvement and a wide flow turndown.

Industry's first 10-year stability under actual process conditions
Stability begins with an all-welded, 316L SST hermetically sealed SuperModule which houses the single board electronics, thus eliminating moisture and field contaminant effects.

Unprecedented reliability backed by a limited 12-year warranty
Further enhance installation practices and advanced diagnostic capabilities with the most reliable platform supported by a 12-year warranty.



Certified for use in SIS Applications
The 3051S is certified by TÜViT to IEC61508 for single input use in SIL 2 Safety Instrumented Systems and dual input use in SIL 3 Safety Instrumented Systems.

SuperModule design platform enables more cost effective installation and maintenance practices
A scalable architecture enables direct mounting of the SuperModule for maximum performance and reliability. The flexible remote mount LCD display and interface provides access to all digital communications and diagnostics.

Scalable functionality to meet expanding needs
From basic process variable generation to advanced PlantWeb™ functionality and highly integrated measurement solutions, the 3051S Series meets every application requirement.

Rosemount Pressure Solutions

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

Rosemount 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 3095MV MultiVariable transmitter creates an accurate, repeatable and dependable insertion-type flowmeter.

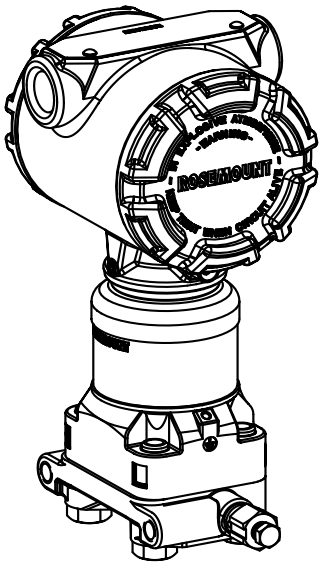
Compact Orifice Flowmeter Series: Rosemount 3051SFC, 3095MFC, and 405
Compact Orifice Flowmeters can be installed between existing flanges, up to a Class 600 (PN100) rating. In tight fit applications, a conditioning orifice plate version is available, requiring only two diameters of straight run upstream.

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.

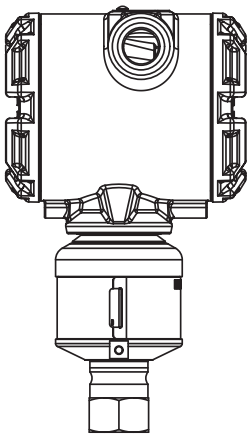
Rosemount 3051S Selection Guide

Rosemount 3051S_C Coplanar™ Differential, Gage, and Absolute

See ordering information on page 24.



- Performance up to 0.04% accuracy with 200:1 turndown
- Available 10-year stability and limited 12-year warranty
- Coplanar platform enables integrated manifold, primary element and diaphragm seal solutions
- Calibrated spans from 0.1 inH_2O to 4000 psi (0,25 mbar to 276 bar)
- 316L SST, Hastelloy® C, Monel®, Tantalum, gold-plated Monel, or gold-plated 316L SST process isolators



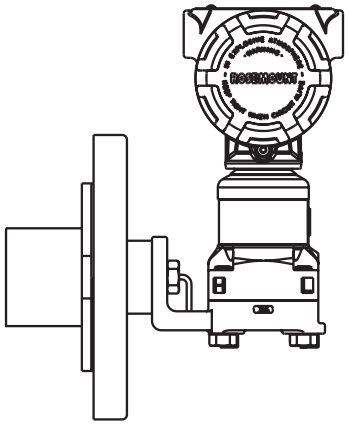
Rosemount 3051S_T In-Line Gage and Absolute

See ordering information on page 28.

- Performance up to 0.04% accuracy with 200:1 turndown
- Available 10-year stability and limited 12-year warranty
- Calibrated spans from 0.15 to 10000 psi (10,3 mbar to 689 bar)
- Multiple process connections available
- 316L SST and Hastelloy C process isolators

Rosemount 3051S_L Liquid Level

See ordering information on page 31.



- Performance up to 0.04% accuracy with 100:1 turndown
- Flush, 2, 4, and 6-in. extended diaphragms
- Multiple fill fluids available
- 316L SST, Hastelloy, or Tantalum wetted materials

Rosemount 3051S Safety Certified

- Applies to all differential, gage, absolute, and level applications
- Available with all process connections
- TÜViT IEC61508 Safety Certified SIL 2 Claim Limit

CONSIDER PERFORMANCE REQUIREMENTS

Ultra

- 0.04% span accuracy; 200:1 turndown
- 10-year stability and limited 12-year warranty

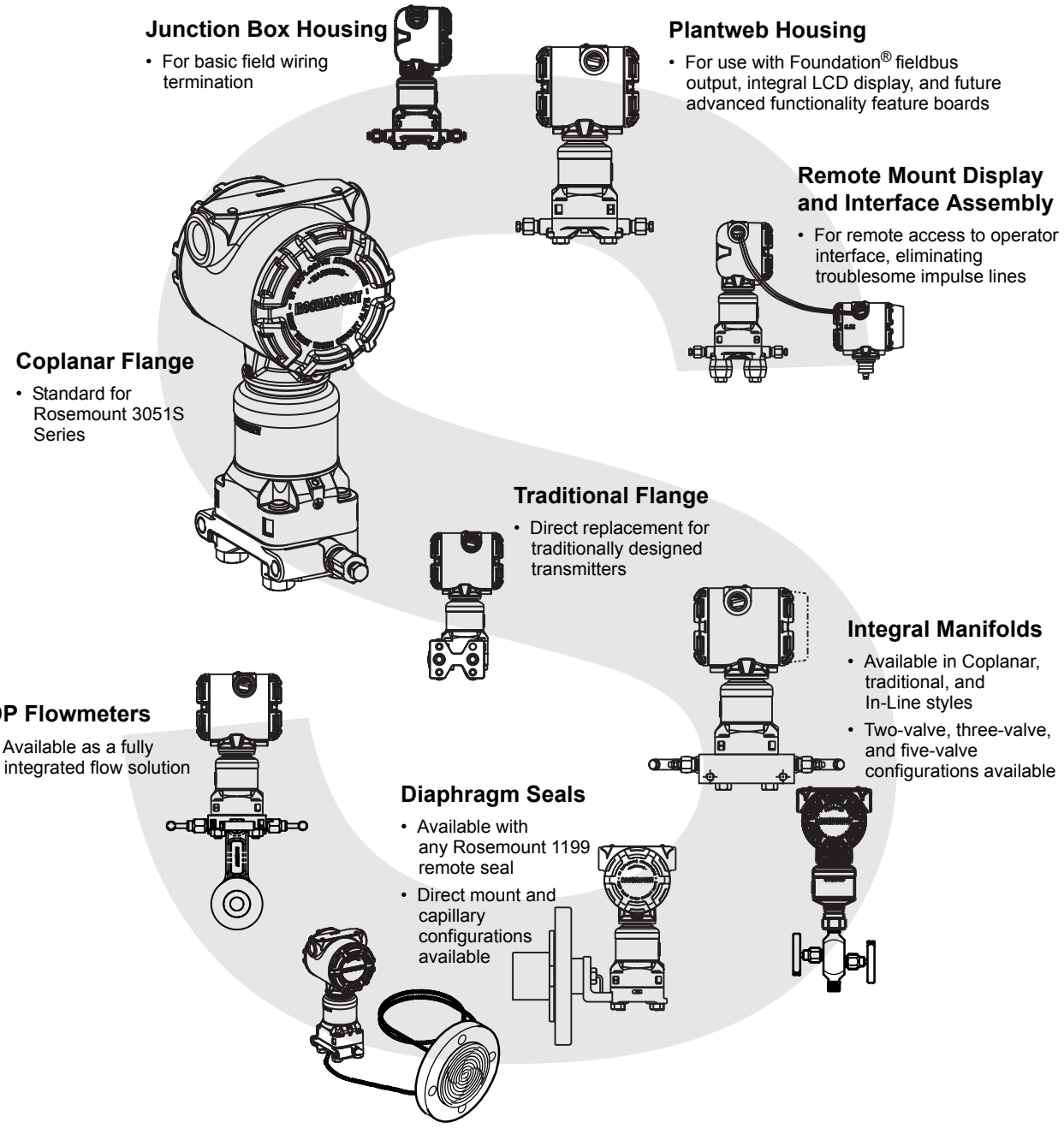
Classic

- 0.065% span accuracy; 100:1 turndown
- 5-year stability and standard warranty

Ultra for Flow

- 0.04% reading accuracy; 200:1 turndown
- 10-year stability and limited 12-year warranty

DETERMINE HOUSING AND PROCESS CONNECTION



Specifications

PERFORMANCE SPECIFICATIONS

For zero-based spans, reference conditions, silicone oil fill, SST materials, Coplanar flange (3051S_C) or 1/2 in.- 14 NPT (3051S_T) 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.

3051S SIS Safety Transmitter Specifications

The 3051S SIS specifications are the same as Classic performance transmitters with the exception of the following: accuracy and turndown (page 5), total response time and update rate (page 6), and load limitations (page 10).

Reference Accuracy

Models	Ultra[1] [2] [3]	Classic[1] [2] [3]	Ultra for Flow[1] [4]
3051S_CD, CG			
Ranges 2 - 4	±0.04% of span. For spans less than 10:1, $\pm\left[0.005 + 0.0035\left(\frac{URL}{span}\right)\right]$% of span	±0.065% of span. For spans less than 10:1, $\pm\left[0.015 + 0.005\left(\frac{URL}{span}\right)\right]$% of span	±0.04% of reading For turndown greater than 8:1 from URL, ±0.5% of reading
Range 5	±0.05% of span. For spans less than 10:1, $\pm\left[0.005 + 0.0045\left(\frac{URL}{span}\right)\right]$% of span	±0.065% of span. For spans less than 10:1, $\pm\left[0.015 + 0.005\left(\frac{URL}{span}\right)\right]$% of span	
Range 1	±0.09% of span. For spans less than 15:1, $\pm\left[0.015 + 0.005\left(\frac{URL}{span}\right)\right]$% of span	±0.10% of span. For spans less than 15:1, $\pm\left[0.025 + 0.005\left(\frac{URL}{span}\right)\right]$% of span	
Range 0	±0.09% of span. For spans less than 2:1 = ±0.045% of URL	±0.10% of span. For spans less than 2:1 = ±0.05% of URL	
3051S_T			
Ranges 1 - 5	±0.04% of span. For spans less than 10:1, $\pm\left[0.004\left(\frac{URL}{span}\right)\right]$% of span	±0.065% of span. For spans less than 10:1, $\pm\left[0.0065\left(\frac{URL}{span}\right)\right]$% of span	
3051S_CA			
Ranges 1 - 4	±0.04% of span. For spans less than 10:1, $\pm\left[0.004\left(\frac{URL}{span}\right)\right]$% of span	±0.065% of span. For spans less than 10:1, $\pm\left[0.0065\left(\frac{URL}{span}\right)\right]$% of span	
Range 0	±0.075% of span. For spans less than 5:1, $\pm\left[0.025 + 0.01\left(\frac{URL}{span}\right)\right]$% of span	±0.075% of span. For spans less than 5:1, $\pm\left[0.025 + 0.01\left(\frac{URL}{span}\right)\right]$% of span	
3051S_L	±0.04% of span. For spans less than 10:1, $\pm\left[0.005 + 0.0035\left(\frac{URL}{span}\right)\right]$% of span	±0.065% of span. For spans less than 10:1, $\pm\left[0.015 + 0.005\left(\frac{URL}{span}\right)\right]$% of span	

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

(2) For FOUNDATION fieldbus transmitters, use calibrated range in place of span.

(3) For the 3051S SIS Safety Transmitter, follow Classic transmitter specifications for up to 10:1 turndown on all models except range 0. The 3051S2CD0 is limited to 2:1 turndown, 3051S2CA0 is limited to 5:1 turndown.

(4) Ultra for Flow applicable for CD Ranges 2-3 only.

Total Performance

Models	Ultra[1]	Classic[1]	Ultra for Flow[2] [3]
3051S_			
CD Ranges 2-3 CG Ranges 2-5 T Ranges 2-4 CA Ranges 2-4	±0.125% of span; for ±50°F (28°C) temperature changes; 0-100% relative humidity, up to 1000 psi (68,9 bar) line pressure (CD only), from 1:1 to 5:1 turndown.	±0.15% of span; for ±50°F (28°C) temperature changes; 0-100% relative humidity, up to 1000 psi (68,9 bar) line pressure (CD only), from 1:1 to 5:1 turndown.	±0.125% of reading; for ±50°F (28°C) temperature changes; 0-100% relative humidity, up to 1000 psi (68,9 bar) line pressure, over 8:1 turndown from URL.

(1) Total performance is based on combined errors of reference accuracy, ambient temperature effect, and line pressure effect, reading at 70% of span.

(2) Total performance is based on combined errors of reference accuracy, ambient temperature effect, and line pressure effect.

(3) Ultra for Flow applicable for CD Ranges 2-3 only.

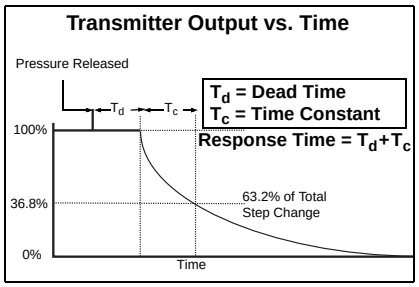
Long Term Stability

Models	Ultra and Ultra for Flow	Classic
3051S_		
CD Ranges 2 - 5 CG Ranges 2 -5 T Ranges 1 - 5 and CA Ranges 1 - 4	±0.20% of URL for 10 years; for ±50°F (28°C) temperature changes, up to 1000 psi (68,9 bar) line pressure (CD only)	±0.125% of URL for 5 years; for ±50°F (28°C) temperature changes, up to 1000 psi (68,9 bar) line pressure (CD only)

Dynamic Performance

	4 - 20 mA (HART®)[1]	Fieldbus protocol[3]
Total Response Time (Td + Tc)[2]:		
3051S_C, Ranges 2 - 5:	100 milliseconds	152 milliseconds
Range 1:	255 milliseconds	307 milliseconds
Range 0:	700 milliseconds	752 milliseconds
3051S_T:	100 milliseconds	152 milliseconds
3051S_L:	See Instrument Toolkit™.	See Instrument Toolkit
Process Variable Response Time		
3051S SIS, Ranges 2 - 5	220 milliseconds	Not Applicable
Range 1:	375 milliseconds	Not Applicable
Range 0:	820 milliseconds	Not Applicable
3051S_T:	220 milliseconds	Not Applicable
3051S_L:	See Instrument Toolkit™	Not Applicable
Dead Time (Td)	45 milliseconds (nominal)	97 milliseconds
Update Rate		
3051S	22 times per second	22 times per second
3051S SIS	11 times per second	Not Applicable

Typical Transmitter Response Time



3051-3051_17A

(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.

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

Models	Ultra	Classic	Ultra for Flow[1]
3051S_CD, CG			From –40 to 185 °F (–40 to 85 °C): ±0.13% reading up to 8:1 turndown from URL ±2.0% reading for turndown greater than 8:1 up to 100:1 from URL
Range 2 - 5[2]	± (0.009% URL + 0.04% span) from 1:1 to 10:1 ± (0.018% URL + 0.08% span) from >10:1 to 200:1	± (0.0125% URL + 0.0625% span) from 1:1 to 5:1 ± (0.025% URL + 0.125% span) from >5:1 to 100:1	
Range 0	± (0.25% URL + 0.05% span) from 1:1 to 30:1	± (0.25% URL + 0.05% span) from 1:1 to 30:1	
Range 1	± (0.1% URL + 0.25% span) from 1:1 to 50:1	± (0.1% URL + 0.25% span) from 1:1 to 50:1	
3051S_T			
Ranges 2 - 4	± (0.009% URL + 0.04% span) from 1:1 to 10:1 ± (0.018% URL + 0.08% span) from >10:1 to 200:1	± (0.0125% URL + 0.0625% span) from 1:1 to 5:1 ± (0.025% URL + 0.125% span) from >5:1 to 100:1	
Range 5	± (0.05% URL + 0.075% span) from 1:1 to 10:1	± (0.05% URL + 0.075% span) from 1:1 to 5:1	
Range 1	± (0.0125% URL + 0.0625% span) from 1:1 to 5:1 ± (0.025% URL + 0.125% span) from >5:1 to 200:1	± (0.0125% URL + 0.0625% span) from 1:1 to 5:1 ± (0.025% URL + 0.125% span) from >5:1 to 100:1	
3051S_CA			
Ranges 2 - 4	± (0.009% URL + 0.04% span) from 1:1 to 10:1 ± (0.018% URL + 0.08% span) from >10:1 to 200:1	± (0.0125% URL + 0.0625% span) from 1:1 to 5:1 ± (0.025% URL + 0.125% span) from >5:1 to 100:1	
Range 0	± (0.1% URL + 0.25% span) from 1:1 to 30:1	± (0.1% URL + 0.25% span) from 1:1 to 30:1	
Range 1	± (0.0125% URL + 0.0625% span) from 1:1 to 5:1 ± (0.025% URL + 0.125% span) from >5:1 to 100:1	± (0.0125% URL + 0.0625% span) from 1:1 to 5:1 ± (0.025% URL + 0.125% span) from >5:1 to 100:1	
3051S_L	See Rosemount Instrument Toolkit.	See Rosemount Instrument Toolkit.	

(1) Ultra for Flow applicable for CD Ranges 2-3 only.

(2) Use Classic specification for 3051S_CD Range 5 Ultra.

Line Pressure Effect

For line pressures above 2000 psi (137,9 bar) and ranges 4-5, see the 3051S Series reference manual (document number 00809-0100-4801).

Models	Ultra and Ultra for Flow	Classic
3051S_CD	**Zero Error** (1)	**Zero Error**(1)
Range 2 - 3	± 0.035% URL per 1000 psi (69 bar)	± 0.05% URL per 1000 psi (69 bar)
Range 0	± 0.125% URL per 100 psi (6,89 bar)	± 0.125% URL per 100 psi (6,89 bar)
Range 1	± 0.25% URL per 1000 psi (69 bar)	± 0.25% URL per 1000 psi (69 bar)
	Span Error	**Span Error**
Range 2 -3	± 0.1% of reading per 1000 psi (69 bar)	± 0.1% of reading per 1000 psi (69 bar)
Range 0	± 0.15% of reading per 100 psi (6,89 bar)	± 0.15% of reading per 100 psi (6,89 bar)
Range 1	± 0.4% of reading per 1000 psi (69 bar)	± 0.4% of reading per 1000 psi (69 bar)

(1) Zero error can be calibrated out

Mounting Position Effects

Models	Ultra, Ultra for Flow, and Classic
3051S_C	Zero shifts up to ±1.25 inH_2O (3,11 mbar), which can be calibrated out; no span effect
3051S_L	With liquid level diaphragm in vertical plane, zero shift of up to 1 inH_2O (25,4 mmH_2O); with diaphragm in horizontal plane, zero shift of up to 5 inH_2O (127 mmH_2O) plus extension length on extended units; all zero shifts can be calibrated out; no span effect
3051S_T and 3051S_CA	Zero shifts to 2.5 inH2O (63,5 mmH20), which can be calibrated out; no span effect

Vibration Effect

All Models:

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).

Housing Style codes 1J, 1K, 1L, 2J
Less than ±0.1% of URL when tested per the requirements of IEC60770-1 field with general application or pipeline with low vibration level (10-60 Hz 0.15mm displacement peak amplitude / 60-500 Hz 2g).

Power Supply Effect

All Models:

Less than ±0.005% of calibrated span per volt

Electromagnetic Compatibility (EMC)

All Models:

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

Transient Protection (Option T1)

All Models:

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)

Meets IEEE C37.90.1, Surge Withstand Capability
- SWC 2.5 kV crest, 1.25 MHz wave form

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[1]

Range	Minimum Span 3051S_		Range and Sensor Limits 3051S_			
	Ultra and Ultra for Flow	Classic	Upper (URL)	Lower (LRL)		
				3051S_CD[1]	3051S_CG, LG[2]	3051S_LD[2]
0	0.1 inH_2O (0,25 mbar)	0.1 inH_2O (0,25 mbar)	3.0 inH_2O (7,5 mbar)	–3.0 inH_2O (–7,5 mbar)	NA	NA
1	0.5 inH_2O (1,24 mbar)	0.5 inH_2O (1,24 mbar)	25.0 inH_2O (62,3 mbar)	–25.0 inH_2O (–62,3 mbar)	–25.0 inH_2O (–62,3 mbar)	–25.0 inH_2O (–62,3 mbar)
2	1.3 inH_2O (3,11 mbar)	2.5 inH_2O (6,23 mbar)	250.0 inH_2O (0,62 bar)	–250.0 inH_2O (–0,62 bar)	–250.0 inH_2O (–0,62 bar)	–250.0 inH_2O (–0,62 bar)
3	5.0 inH_2O (12,4 mbar)	10.0 inH_2O (24,9 mbar)	1000.0 inH_2O (2,49 bar)	–1000.0 inH_2O (-2,49 bar)	–393.0 inH_2O (–979 mbar)	–1000.0 inH_2O (–2,49 bar)
4	1.5 psi (103,4 mbar)	3.0 psi (206,8 mbar)	300.0 psi (20,7 bar)	–300.0 psi (–20,7 bar)	–14.2 psig (–979 mbar)	–300.0 psi (–20,7 bar)
5	10.0 psi (689,5 mbar)	20.0 psi (1,38 bar)	2000.0 psi (137,9 bar)	– 2000.0 psi (–137,9 bar)	–14.2 psig (–979 mbar)	– 2000.0 psi (–137,9 bar)

(1) Lower (LRL) is 0 inH_2O (0 mbar) for Ultra for Flow.

(2) When specifying a 3051S_L Ultra, use Classic minimum span.

3051S_T Range and Sensor Limits					
Range	Minimum Span		Upper (URL)	Lower (LRL) (Abs.)	Lower[1] (LRL) (Gage)
	Ultra and Ultra for Flow	Classic			
1	0.15 psi (10,3 mbar)	0.3 psi (20,7 mbar)	30 psi (2,07 bar)	0 psia (0 bar)	–14.7 psig (–1,01 bar)
2	0.75 psi (51,7 mbar)	1.5 psi (0,103 bar)	150 psi (10,34 bar)	0 psia (0 bar)	–14.7 psig (–1,01 bar)
3	4 psi (275,8 mbar)	8 psi (0,55 bar)	800 psi (55,16 bar)	0 psia (0 bar)	–14.7 psig (–1,01 bar)
4	20 psi (1,38 bar)	40 psi (2,76 bar)	4000 psi (275,8 bar)	0 psia (0 bar)	–14.7 psig (–1,01 bar)
5	1000 psi (68,9 bar)	2000 psi (137,9 bar)	10000 psi (689,5 bar)	0 psia (0 bar)	–14.7 psig (–1,01 bar)

(1) Assumes atmospheric pressure of 14.7 psig.

3051S_CA, LA[1] Range and Sensor Limits				
Range	Minimum Span		Upper (URL)	Lower (LRL)
	Ultra	Classic		
0[2]	0.167 psia (11,5 mbar)	0.167 psia (11,5 mbar)	5 psia (0,34 bar)	0 psia (0 bar)
1	0.3 psia (20,7 mbar)	0.3 psia (20,7 mbar)	30 psia (2,07 bar)	0 psia (0 bar)
2	0.75 psia (51,7 mbar)	1.5 psia (0,103 bar)	150 psia (10,34 bar)	0 psia (0 bar)
3	4 psia (275,8 mbar)	8 psia (0,55 bar)	800 psia (55,16 bar)	0 psia (0 bar)
4	20 psia (1,38 bar)	40 psia (2,76 bar)	4000 psia (275,8 bar)	0 psia (0 bar)

(1) When specifying a 3051S_L Ultra, use Classic minimum span.

(2) Range 0 is not available for 3051S_LA.

(1) For the 3051S SIS Safety Transmitter, turndown is limited to 10:1 on all models with the exception of range 0. The 3051S2CD0 is limited to 2:1 turndown, the 3051S2CA0 is limited to 5:1 turndown.

Service

Liquid, gas, and vapor applications

4–20 mA (output option code A)

Zero and Span Adjustment

Zero and span values can be set anywhere within the range. Span must be greater than or equal to the minimum span.

Output

Two-wire 4–20 mA is 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): 10.5 to 42.4 V dc with no load

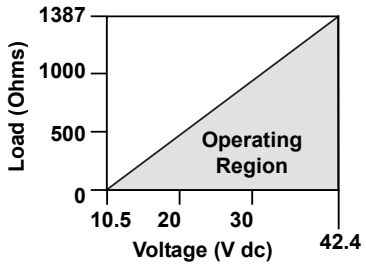
3051S SIS safety transmitter: 12 to 42 Vdc with no load

Load Limitations

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

Standard Transmitter

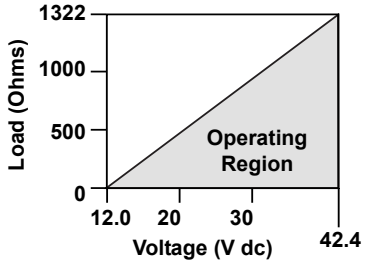
Maximum Loop Resistance = 43.5 * (Power Supply Voltage – 10.5)



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

3051S SIS Safety Transmitter (Output code B)

Maximum Loop Resistance = 43.5 * (Power Supply Voltage – 12.0)



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

FOUNDATION fieldbus (output option 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)

Overpressure Limits

Transmitters withstand the following limits without damage:

3051S_CD, CG

Range 0: 750 psi (51,7 bar)

Range 1: 2000 psig (137,9 bar)

Ranges 2–5: 3626 psig (250,0 bar)
4500 psig (310,3 bar) for option code P9

6092 psig (420 bar) for option code P0 (3051S_CD only)

3051S_CA

Range 0: 60 psia (4,13 bar)

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)

3051S_TG, 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)

3051S_LD, LG, LA

Limit is flange rating or sensor rating, whichever is lower (see the table below).

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, per ANSI/ASME B16.5.			
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, per DIN 2401.			

Static Pressure Limit

3051S_CD Only

Operates within specifications between static line pressures of 0.5 psia and 3626 psig;
4500 psig (310,3 bar) for option code P9

6092 psig (420 bar) for option code P0

Range 0: 0.5 psia to 750 psig (0,03 to 51,71 bar)

Range 1: 0.5 psia to 2000 psig (0,03 to137,90 bar)

Burst Pressure Limits

Coplanar or traditional process flange

- 10000 psig (689,5 bar).

3051S_T:

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

Temperature Limits

Ambient

–40 to 185 °F (–40 to 85 °C)

With LCD display: –4 to 175 °F (–20 to 80 °C)

With option code P0: –4 to 185 °F (–20 to 85 °C)

Storage

–50 to 230 °F (–46 to 110 °C)

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

Process Temperature Limits

At atmospheric pressures and above.

3051S_C Coplanar	
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)(4)
3051S_T In-Line (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)
3051S_L 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)
3051S_L High-Side Temperature Limits (Process Fill Fluid)	
Syltherm® XLT	–100 to 300 °F (–73 to 149 °C)
D.C.® Silicone 704(5)	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 H_2O	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.

(4) Not available for 3051S_CA.

(5) Upper limit of 600 °F (315 °C) is available with 1199 seal assemblies mounted away from the transmitter with the use of capillaries and up to 500 °F (260 °C) with direct mount extension.

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 option codes A and B)

If self-diagnostics detect a gross transmitter failure, the analog signal will be driven offscale to alert the user. Rosemount standard (default), NAMUR, and custom alarm levels are available (see Table 1 below).

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

TABLE 1. Alarm Configuration

	High Alarm	Low Alarm
Default	≥ 21.75 mA	≤ 3.75 mA
NAMUR compliant(1)	≥ 22.5 mA	≤ 3.6 mA
Custom levels(2) (3)	20.2 - 23.0 mA	3.6 - 3.8 mA

(1) Analog output levels are compliant with NAMUR recommendation NE 43 (June 27, 1996), see option codes C4 or C5.

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

(3) Not available with the 3051S SIS Safety Transmitter

3051S SIS Safety 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 for Output code A.

Process Connections

3051S_C

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)

3051S_T

1/2–14 NPT female,
Non-Threaded instrument flange (available in SST for Range 1–4 transmitters only),
G1/2 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).

3051S_L

High pressure side: 2-in.(50.8mm), 3-in. (72 mm), or 4-in. (102mm), ASME B 16.5 (ANSI) Class 150, 300 or 600 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

Process-Wetted Parts

Process Isolating Diaphragms

	3051S_			
Isolating Diaphragm Material	CD, CG	T	CA	L
316L SST	•	•	•	See Below
Hastelloy C-276 ®	•	•	•	
Monel 400	•		•	
Tantalum	•			
Gold-plated *Monel* 400	•		•	
Gold-plated 316L SST	•		•	

Drain/Vent Valves

316 SST, Hastelloy C-276, or Monel 400 material
(Monel is not available with 3051S_L).

Process Flanges and Adapters

Plated carbon steel,
CF-8M (Cast version of 316 SST, material per ASTM-A743),
CW-12MW (Cast version of Hastelloy C-276, material per ASTM-A494),
M-30C (Cast version of Monel 400, material per ASTM-A494).

Wetted O-rings

Glass-filled TFE
(Graphite-filled TFE with Isolating Diaphragm code 6)

3051S_L 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 CW-12MW (Cast version of Hastelloy C, material ASTM A494); fits schedule 40 and 80 pipe

Mounting Flange

Zinc-cobalt plated CS or 316 SST

Reference Process Connection (Transmitter Low Side)

Isolating Diaphragms

316L SST or Hastelloy C-276

Reference Flange and Adapter

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

Non-Wetted Parts

Electronics Housing

Low-copper aluminum or CF-3M (Cast version of 316L SST)
NEMA 4X, IP 65, IP 66

Coplanar Sensor Module Housing

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

Bolts

Plated carbon steel per ASTM A449, Type 1

Austenitic 316 SST

ASTM A 453, Class A, Grade 660

ASTM A 193, Grade B7M

ASTM A 193, Class 2, Grade B8M

Monel

Sensor Module Fill Fluid

Silicone or inert halocarbon (Inert is not available with 3051S_CA). In-Line series uses Fluorinert® FC-43.

Process Fill Fluid (Liquid Level Only)

3051S_L: Syltherm XLT, D.C. Silicone 704, D.C. Silicone 200, inert, glycerin and water, Neobee M-20, propylene glycol and water.

Paint

Polyurethane

Cover O-rings

Buna-N

Shipping Weights for 3051S

TABLE 2. SuperModule weights

SuperModule	Weight in lb. (kg)
Coplanar(1)	3.1 (1,4)
In-Line	1.4 (0,6)

(1) Flange and bolts not included.

TABLE 3. Transmitter weights without options

Complete Transmitter(1)	Add Weight In lb (kg)
3051S_C with junction box housing	6.9 (3,1)
3051S_T with junction box housing	3.3 (1,5)
3051S_C with PlantWeb housing	7.2 (3,3)
3051S_T with PlantWeb housing	3.6 (1,6)

(1) Fully functional transmitter with terminal block, covers, and SST flange.

TABLE 4. 3051S_L 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 (9,8)
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)
2-in., 600	15.3 (6,9)	—	—	—
3-in., 600	25.2 (11,4)	27.2 (12,3)	28.2 (12,8)	29.2 (13,2)
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 (10,7)
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 option weights

Option Code	Option	Add lb (kg)
1J, 1K, 1L	SST PlantWeb housing	3.4 (1,5)
2J	SST Junction Box housing	3.3 (1,5)
2A, 2B, 2C	Aluminum Junction Box housing	1.2 (0,5)
1A, 1B, 1C	Aluminum PlantWeb housing	1.2 (0,5)
M5	LCD display for aluminum PlantWeb housing(1), LCD display for SST PlantWeb housing(1)	0.8 (0,4) 1.72 (0,8)
B4	SST mounting bracket for Coplanar flange	0.6 (0,3)
B1, B2, B3	Mounting Bracket for Traditional flange	2.3 (1,0)
B7, B8, B9	Mounting Bracket for Traditional flange with SST bolts	2.3 (1,0)
BA, BC	SST Bracket for Traditional flange	2.3 (1,0)
F12, F22	SST Traditional flange(2)	3.3 (1,5)
F13, F23	Traditional flange (Hastelloy)	2.7 (1,2)
E12, E22	SST Coplanar flange(2)	1.9 (0,9)
F14, F24	Traditional flange (Monel)	2.6 (1,2)
F15, F25	Traditional Flange (SST with Hastelloy D/V)	2.5 (1,1)
G21	Level flange—3 in., 150	10.8 (4,9)
G22	Level flange—3 in., 300	14.3 (6,5)
G11	Level flange—2 in., 150	10.7 (4,9)
G12	Level flange—2 in., 300	14.0 (6,4)
G31	DIN Level flange, SST, DN 50, PN 40	8.3 (3,8)
G41	DIN Level flange, SST, DN 80, PN 40	13.7 (6,2)

(1) Includes LCD display connector board and display cover

(2) Includes mounting bolts

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)
Junction Box terminal block	0.3 (0,1)
PlantWeb terminal block	0.2 (0,1)

(1) Display only

Product Certifications

Approved Manufacturing Locations

Rosemount Inc. — Chanhassen, Minnesota USA

Fisher-Rosemount 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 our local sales office.

ATEX Directive (94/9/EC)

Emerson Process Management complies with the ATEX Directive.

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

Models 3051S_CA4; 3051S_CD2, 3, 4, 5; *(also with P9 option)*
Pressure Transmitters — QS Certificate of Assessment - EC No. PED-H-20, Module H Conformity Assessment

All other Model 3051S Pressure Transmitters — Sound Engineering Practice

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

Primary Elements, Flowmeter — See appropriate Primary Element QIG

Electro Magnetic Compatibility (EMC) (89/336/EEC)

All Models: EN 50081-1: 1992; EN 50082-2:1995; EN 61326-1:1997 – Industrial

Ordinary Location Certification for FM

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).

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 and Class III, Division 1, Groups E, F, and G; hazardous locations; enclosure Type 4X, conduit seal not required when installed according to Rosemount drawing 03151-1003.

I5/IF 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; Class I, Zone 0 AEx ia IIC when connected in accordance with Rosemount drawing 03151-1006;
Non-incendive for Class I, Division 2, Groups A, B, C, and D
Enclosure Type 4X
For entity parameters see control drawing 03151-1006.

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, when installed per Rosemount drawing 03151-1013, CSA Enclosure Type 4X; conduit seal not required.

I6/IF Intrinsically Safe for Class I, Division 1, Groups A, B, C, and D when connected in accordance with Rosemount drawings 03151-1016;
For entity parameters see control drawing 03151-1016.

European Certifications

I1/IA ATEX Intrinsic Safety
Certificate No.: BAS01ATEX1303X ⟨Ex⟩ II 1G
EEx ia IIC T5 (-60°C ≤ T_a ≤ 40°C)
T4 (-60°C ≤ T_a ≤ 70°C)
T4 (-60°C ≤ T_a ≤ 40°C) (FISCO)
CE 1180

TABLE 6. Input Parameters

Loop / Power	Groups
U_i = 30 V	HART/FOUNDATION Fieldbus
U_i = 15 V	FISCO
I_i = 300 mA	HART/FOUNDATION Fieldbus
I_i = 215 mA	FISCO
P_i = 1.0 W	HART
P_i = 1.3 W	FOUNDATION Fieldbus
P_i = 2.0 W	FISCO
C_i = 38 nF	SuperModule™
C_i = 11.4 nF	With a Housing option
C_i = 0	FOUNDATION Fieldbus/FISCO
L_i = 0	All Except Remote Display
L_i = 60 µH	Remote Display

Special Conditions for Safe Use (X)

1. The apparatus, excluding the Types 3051 S-T and 3051 S-C (In-line and Coplanar SuperModules respectively), is not capable of withstanding the 500V test as defined in Clause 6.4.12 of EN 50020. This must be considered during installation.
2. The terminal pins of the Types 3051 S-T and 3051 S-C must be protected to IP20 minimum.

N1 ATEX Type n
Certificate No.: BAS01ATEX3304X ⟨Ex⟩ II 3 G
EEx nL IIC T5 (T_a = -40 °C TO 70 °C)
Ui = 45 Vdc max
IP66
CE

Special Conditions for Safe Use (x)

The apparatus is not capable of withstanding the 500V insulation test required by Clause 9.1 of EN 50021: 1999. This must be taken into account when installing the apparatus.

ND ATEX Dust
Certificate No.: BAS01ATEX1374X ⟨Ex⟩ II 1 D
T105°C (-20 °C ≤ T_{amb} ≤ 85 °C)
V_{max} = 42.4 volts max
A = 24 mA
IP66
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 50020.
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.
5. The 3051S must be securely screwed in place to maintain the ingress protection of the enclosure.

E1 ATEX Flame-Proof
Certificate No.: KEMA00ATEX2143X ⟨Ex⟩ II 1/2 G
EEx d IIC T6 (-50 °C ≤ T_{amb} ≤ 65 °C)
EEx d IIC T5 (-50 °C ≤ T_{amb} ≤ 80 °C)
V_{max} = 42.4V
CE 1180

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. The Model 3051S pressure transmitter must include a Series 300S housing integrally mounted to a Series Model 3051S Sensor module as per Rosemount drawing 03151-1023.

Japanese Certifications (does not apply to 3051SF models)

E4 JIS Flame-Proof
Ex d IIC T6

Certificate	Description
C15682	Coplanar with Junction Box Housing
C15683	Coplanar with PlantWeb Housing
C15684	Coplanar with PlantWeb Housing and LCD Display
C15685	In-Line SST with Junction Box Housing
C15686	In-Line Hastelloy with Junction Box Housing
C15687	In-Line SST with PlantWeb Housing
C15688	In-Line Hastelloy with Plantweb Housing
C15689	In-Line SST with Plantweb Housing and LCD Display
C15690	In-Line Hastelloy with PlantWeb Housing and LCD Display

Australian Certifications (does not apply to 3051SF models)

E7 SAA Explosion-Proof (Flame-Proof)
Certification No.: AUS Ex 3798X
Ex d IIC T6 (T_a = 60°C) IP66
DIP A21 TA T6 (T_a = 60°C) IP66

Conditions for safe use (X)

1. It is a condition of safe use that each housing shall be connected to external circuits via suitable conduit of Standards Australia certified cable glands. Where only one entry is used for connection to external circuits, the unused entry shall be closed by means of the blanking plug supplied by the equipment manufacturer or by a suitable Standards Australia certified blanking plug.
2. It is a condition of safe use that dielectric strength test shall be applied whenever the terminal block is changed or replaced in either the dual compartment or single compartment housings. The breakdown current shall be less than 5 mA, when 500 V, 47 to 62 Hz, is applied for one minute. Note: if tested with an optional T1 transient protector terminal block fitted, the protection will operate and hence there will be no current indicated.
3. It is a condition of safe use that each transmitter module shall be used with a Model 300S housing, in order to comply with Flame-Proof requirements.
4. It is a condition of safe use that each Model 300S housing fitted with a transmitter module shall be marked with the same certification marking code information. Should the housing be replaced after initial supply to another Model 300S housing, the replacement housing shall have the same certification marking code information as the housing it replaces.

Combinations of Certifications

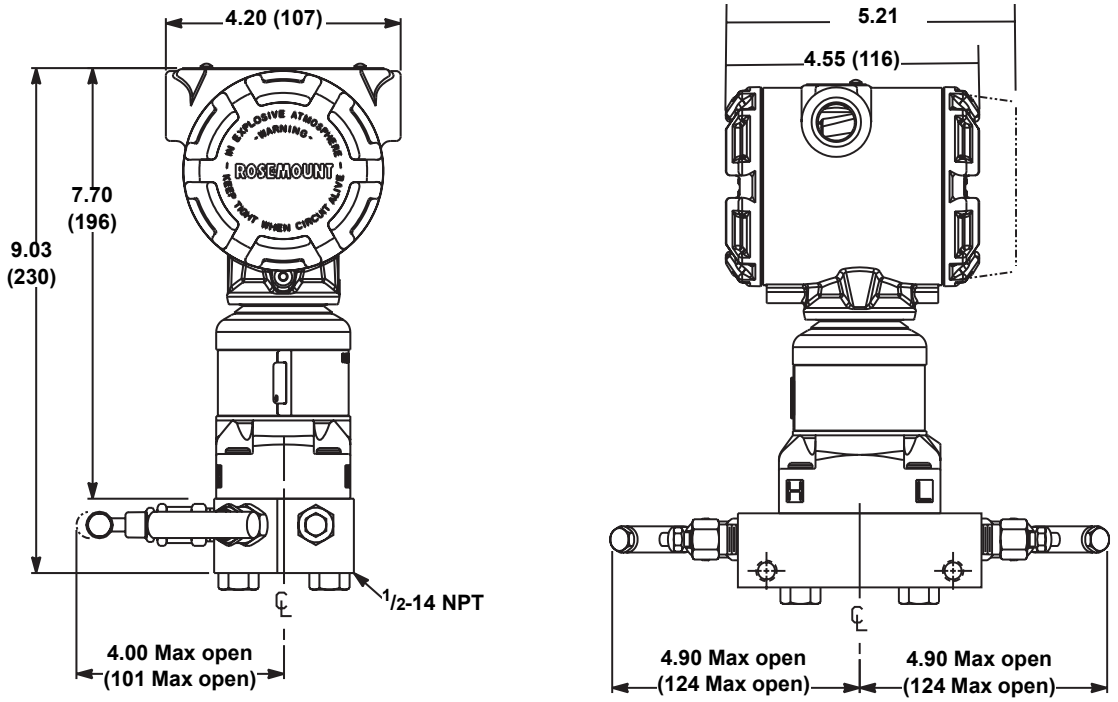
Stainless steel certification tag is provided when optional approval is specified. Once a device labeled with multiple approval types is installed, it should not be reinstalled using any other approval types. Permanently mark the approval label to distinguish it from unused approval types.

K1 Combination of **E1**, **I1**, **N1**, and **ND**
K5 Combination of **E5** and **I5**
K6 Combination of **E6** and **I6**
KA Combination of **E1**, **I1**, **E6,** and **I6**
KB Combination of **E5**, **I5**, **I6** and **E6**
KC Combination of **E5**, **E1**, **I5** and **I1**

Dimensional Drawings

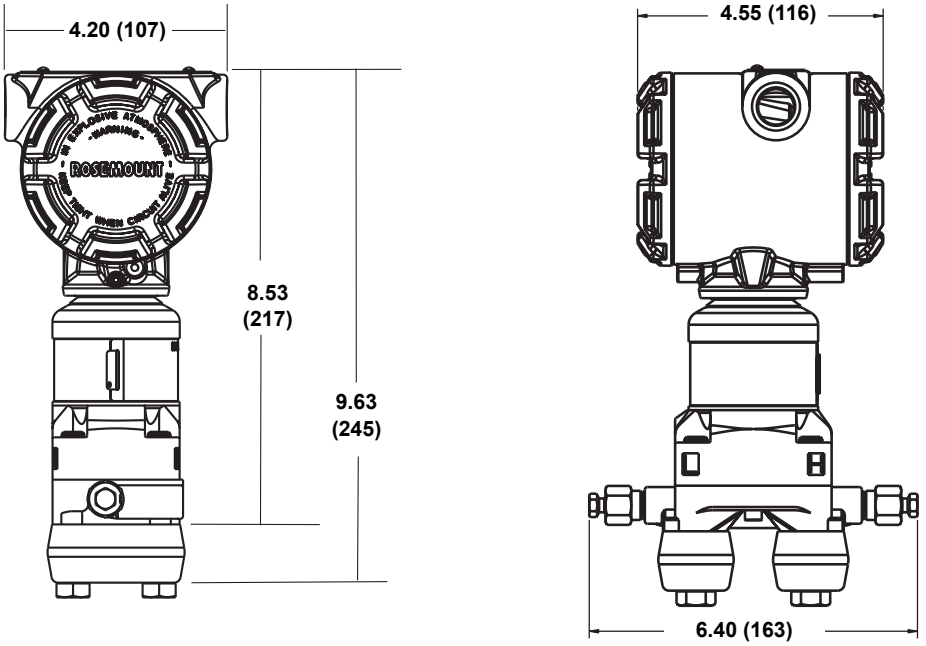
Dimensions are in inches (millimeters).
Process adapters (option D2) and Rosemount 305 integral manifolds must be ordered with the transmitter.

PlantWeb Housing with Coplanar SuperModule and 305 Coplanar Integral Manifold



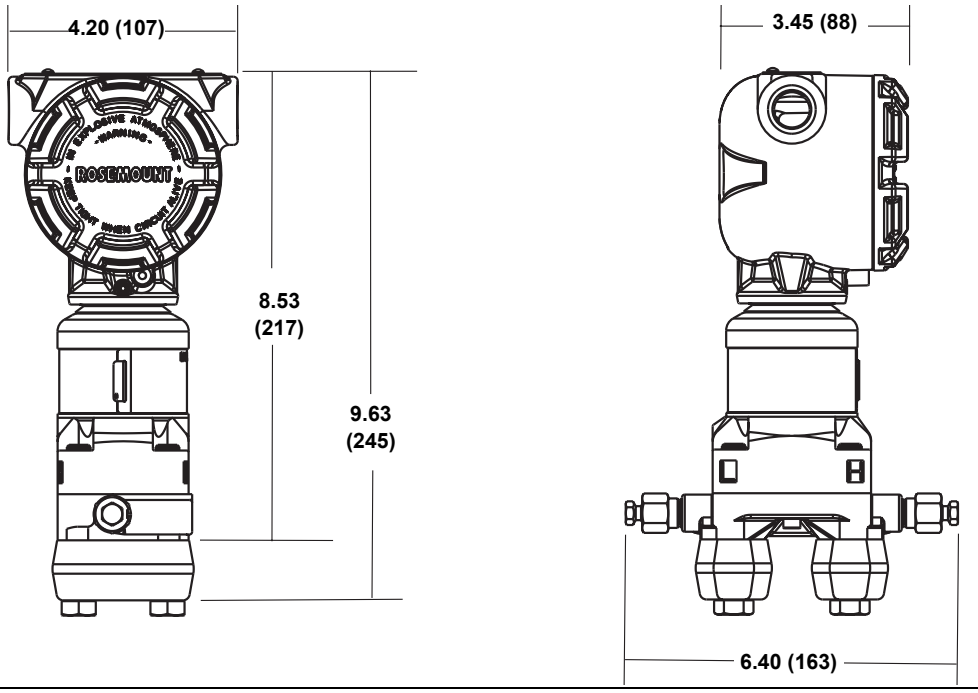
3051S/COPLANAR/ 3151_A01A, 3151_A01B

PlantWeb Housing with Coplanar SuperModule and Coplanar Flange



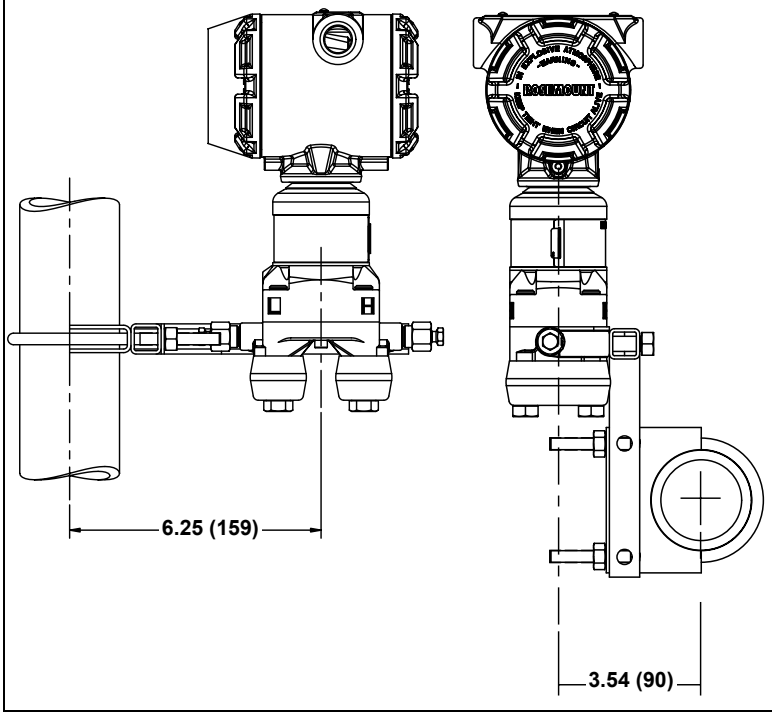
3051S/ COPLANAR/3151_C101A, 3051_C200A

Junction Box Housing with Coplanar SuperModule and Coplanar Flange

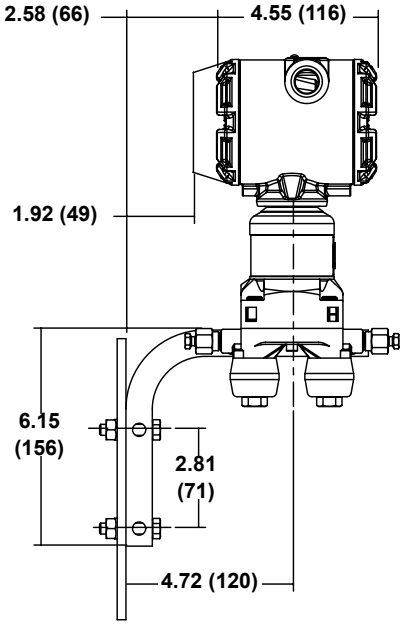


Coplanar Flange Mounting Configurations

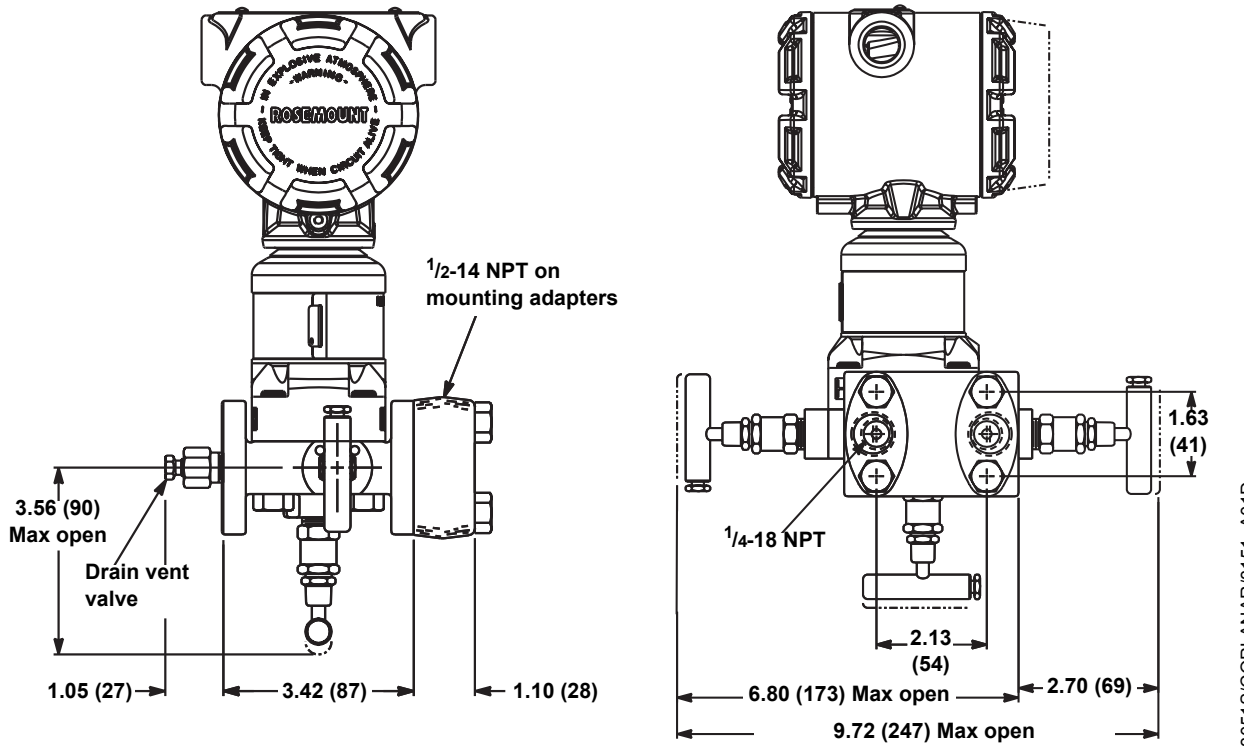
Pipe Mount



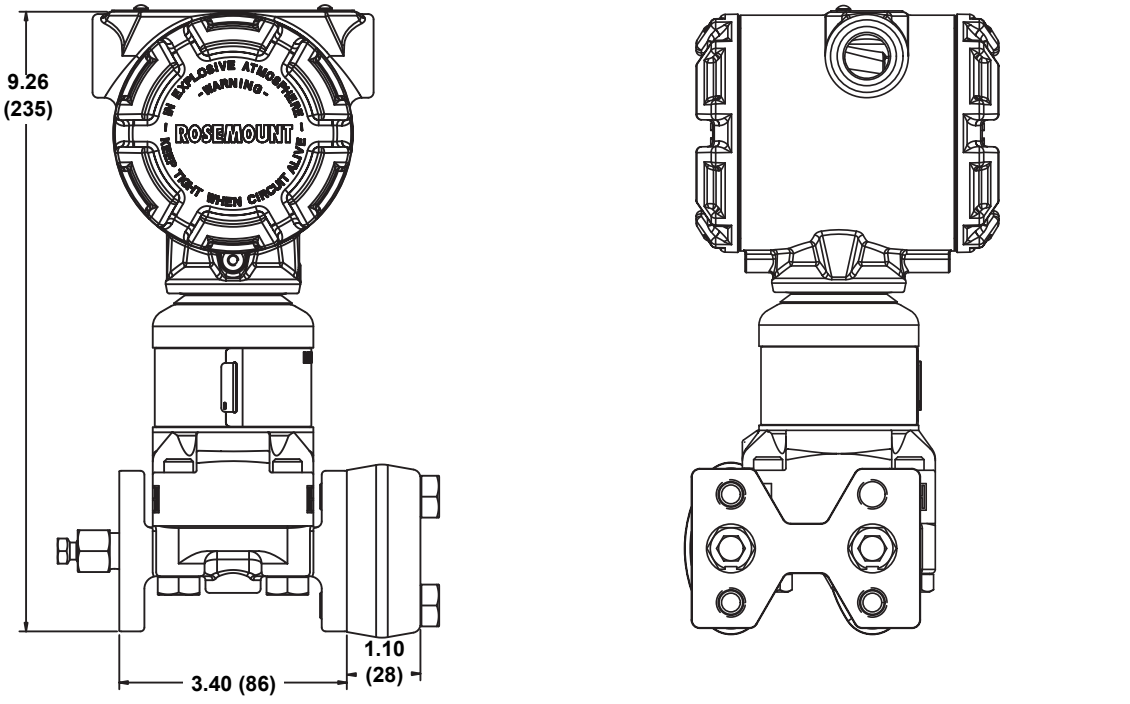
Panel Mount



PlantWeb Housing with Coplanar SuperModule and 305 Traditional Integral Manifold

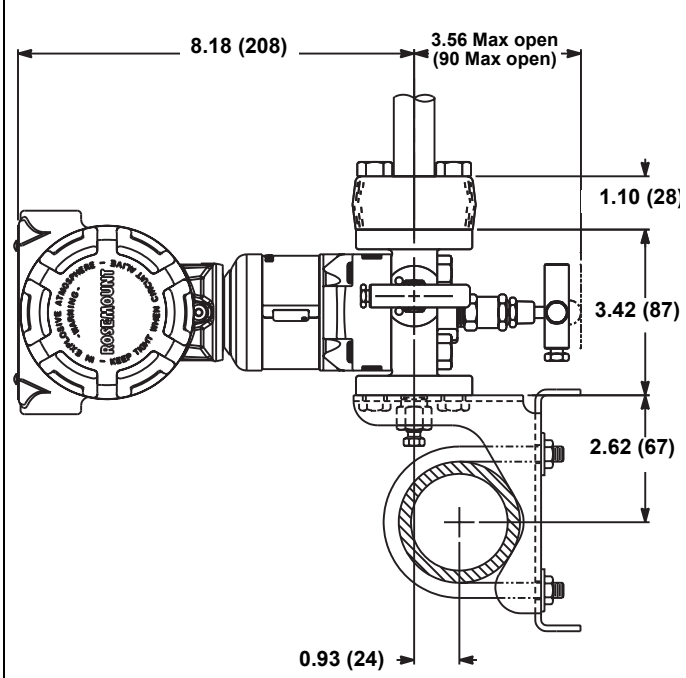


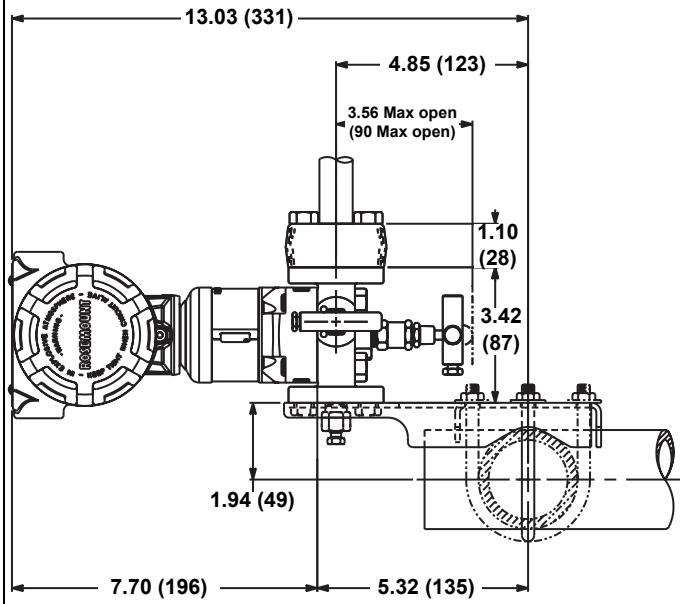
PlantWeb Housing with Coplanar SuperModule and Traditional Flange



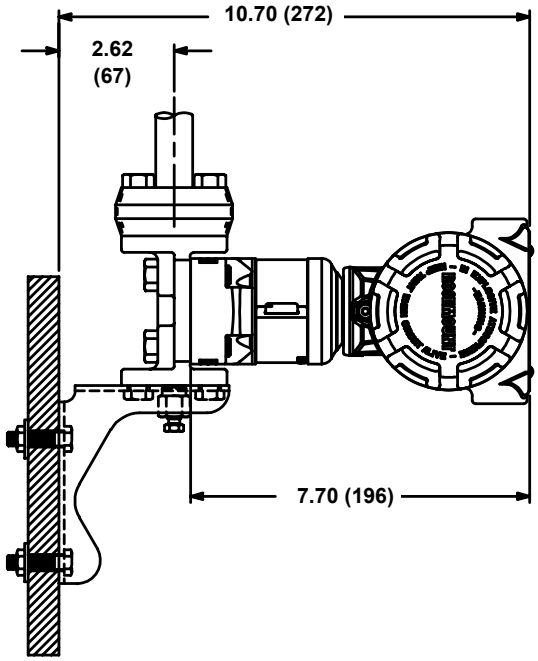
Traditional Flange Mounting Configurations

Pipe Mount 305 Integral Manifold





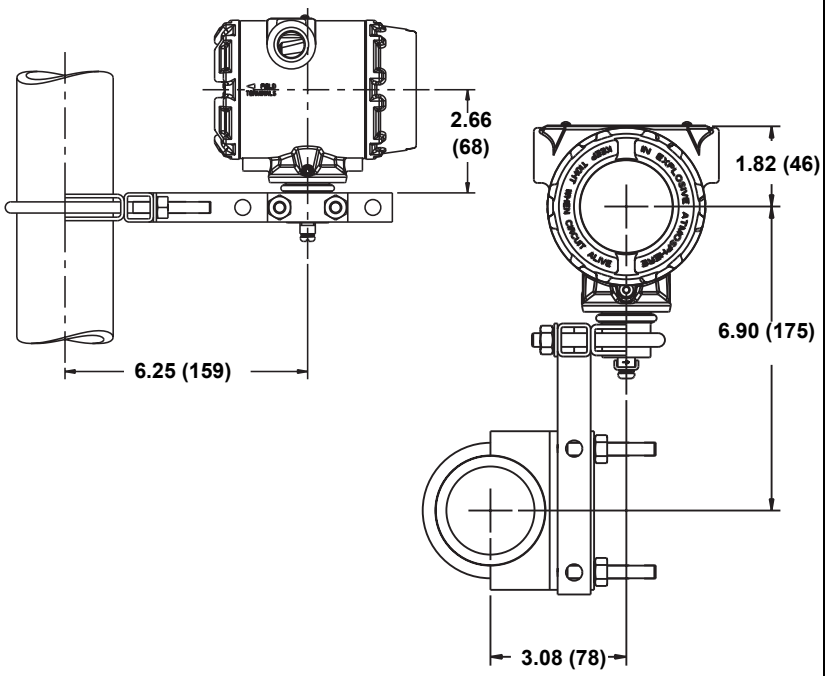
Panel Mount



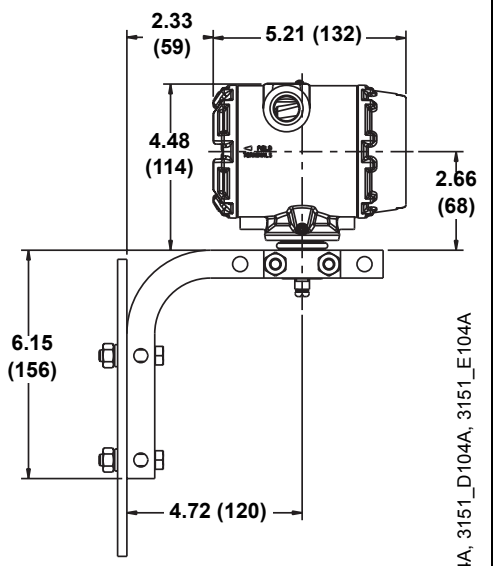
3051S/COPLANAR/3151_A01E, 3151_F519A

Remote Mount LCD Display and Interface Mounting Configurations

Pipe Mount

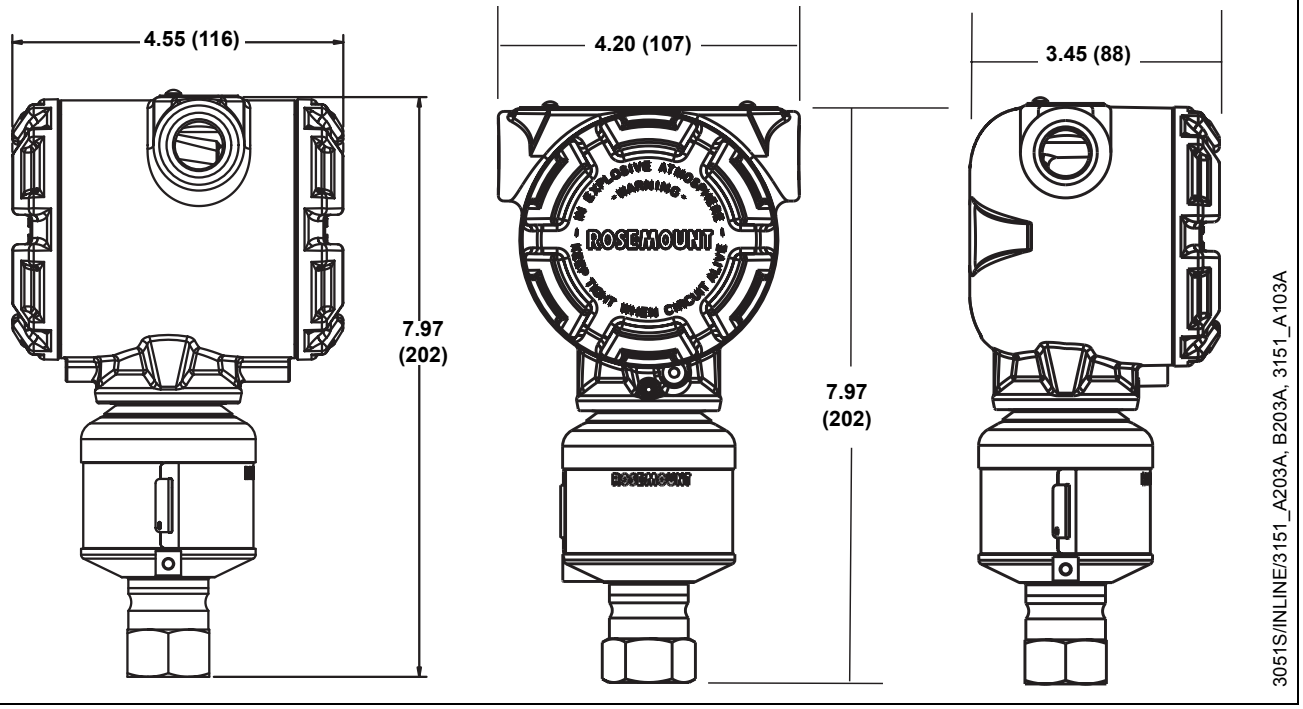


Panel Mount



3051S/3151_C104A, 3151_D104A, 3151_E104A

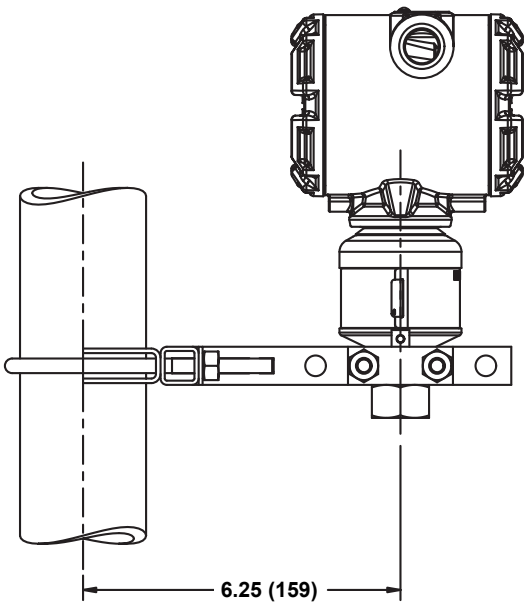
PlantWeb and Junction Box Housings with In-Line SuperModule

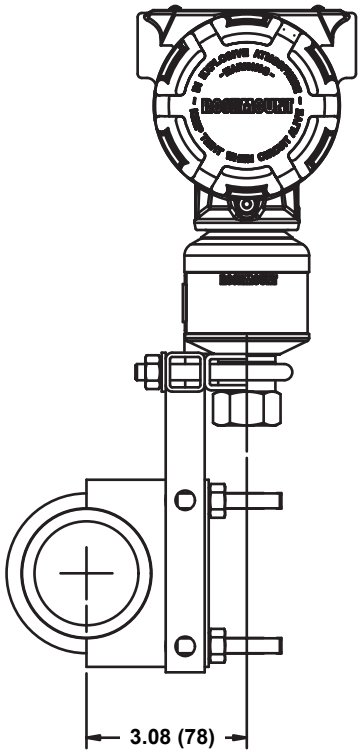


3051S/INLINE/3151_A203A, B203A, 3151_A103A

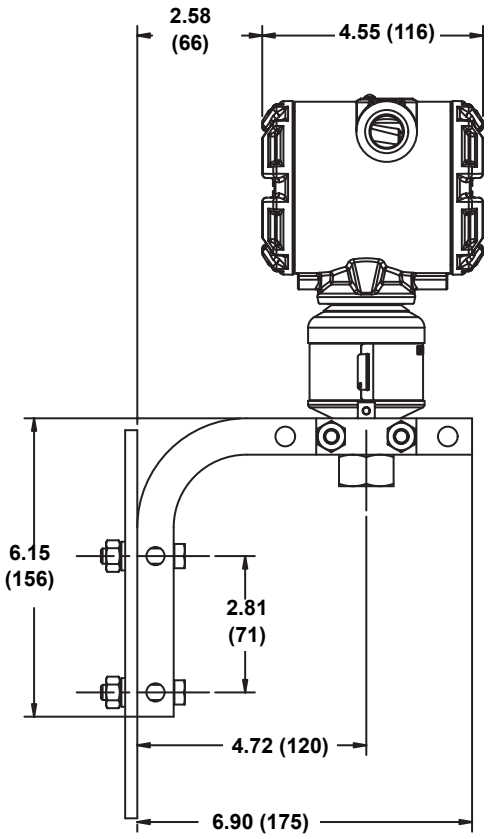
In-line Mounting Configurations with Optional Mounting Bracket

Pipe Mount





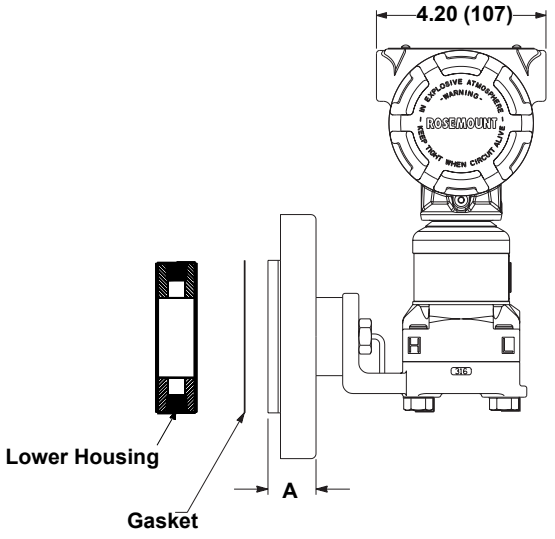
Panel Mount



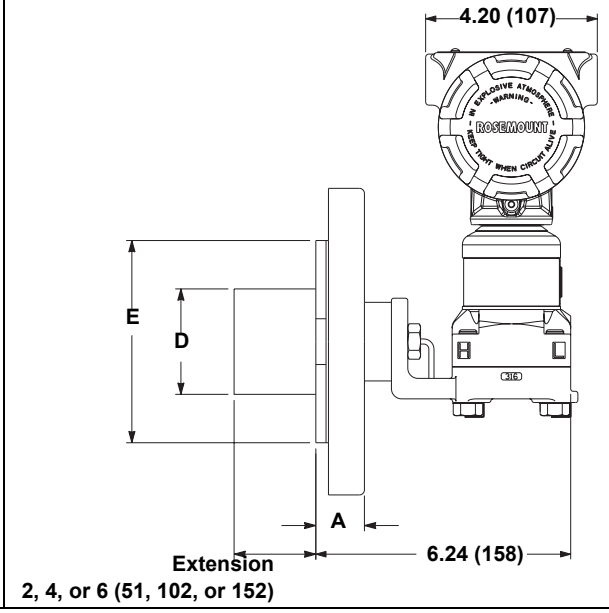
3051S/INLINE/3151_A103A, B103A

3051S_L

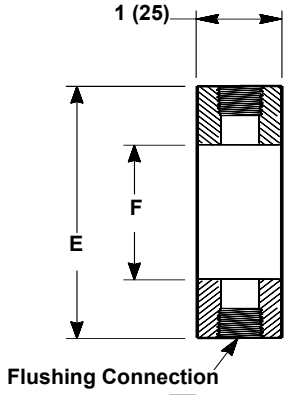
Flush Flanged Configuration



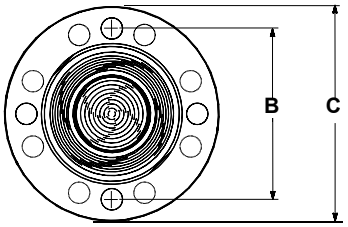
Extended Flanged Configuration



Optional Flushing Connection Ring (Lower Housing)



Diaphragm Assembly and Mounting Flange



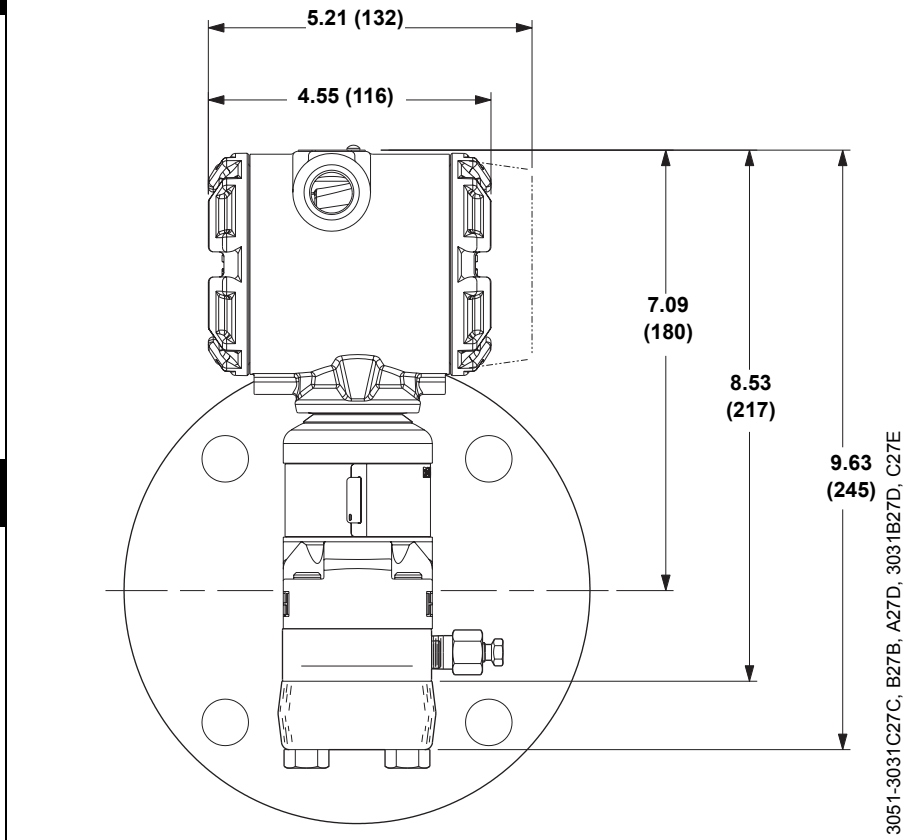


TABLE 7. 3051S_L Dimensional Specifications

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	Process Side F
ASME B16.5 (ANSI) 150	2 (51)	0.69 (18)	4.75 (121)	6.0 (152)	4	0.75 (19)	NA	3.6 (92)	2.12 (54)
	3 (76)	0.88 (22)	6.0 (152)	7.5 (191)	4	0.75 (19)	2.58 (66)	5.0 (127)	3.5 (89)
	4 (102)	0.88 (22)	7.5 (191)	9.0 (229)	8	0.75 (19)	3.5 (89)	6.2 (158)	4.5 (114)
ASME B16.5 (ANSI) 300	2 (51)	0.82 (21)	5.0 (127)	6.5 (165)	8	0.75 (19)	NA	3.6 (92)	2.12 (54)
	3 (76)	1.06 (27)	6.62 (168)	8.25 (210)	8	0.88 (22)	2.58 (66)	5.0 (127)	3.5 (89)
	4 (102)	1.19 (30)	7.88 (200)	10.0 (254)	8	0.88 (22)	3.5 (89)	6.2 (158)	4.5 (114)
ASME B16.5 (ANSI) 600	2 (51)	1.00 (25)	5.0 (127)	6.5 (165)	8	0.75 (19)	NA	3.6 (92)	2.12 (54)
	3 (76)	1.25 (32)	6.62 (168)	8.25 (210)	8	0.88 (22)	2.58 (66)	5.0 (127)	3.5 (89)
DIN 2501 PN 10–40	DN 50	20 mm	125 mm	165 mm	4	18 mm	NA	4.0 (102)	2.5 (63)
DIN 2501 PN 25/40	DN 80	24 mm	160 mm	200 mm	8	18 mm	65 mm	5.4 (138)	3.7 (94)
	DN 100	24 mm	190 mm	235 mm	8	22 mm	89 mm	6.2 (158)	4.5 (114)
DIN 2501 PN 10/16	DN 100	20 mm	180 mm	220 mm	8	18 mm	89 mm	6.2 (158)	4.5 (114)

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

Ordering Information

Rosemount 3051S Series Coplanar

Model	Transmitter Type
3051S	Scalable pressure transmitter

Code	Performance Class
1[1]	Ultra: 0.04% span accuracy, 200:1 turndown, 10-year stability, limited 12-year warranty
3[1]	Ultra for Flow: 0.04% reading accuracy, 200:1 turndown, 10-year stability, limited 12-year warranty
2	Classic: 0.065% span accuracy, 100:1 turndown, 5-year stability

Code	Connection Type
C	Coplanar

Code	Measurement Type[2]
D	Differential
G	Gage
A	Absolute

	Pressure Range		
Code	Differential	Gage	Absolute
0A[3]	-3 to 3 inH_2O (-7,47 to 7,47 mbar)	N/A	0 to 5 psia (0 to 0,34 bar)
1A	-25 to 25 inH_2O (-62,2 to 62,2 mbar)	-25 to 25 inH_2O (-62,2 to 62,2 mbar)	0 to 30 psia (0 to 2,06 bar)
2A	-250 to 250 inH_2O (-623 to 623 mbar)	-250 to 250 inH_2O (-623 to 623 mbar)	0 to 150 psia (0 to 10,34 bar)
3A	-1000 to 1000 inH_2O (-2,5 to 2,5 bar)	-393 to 1000 inH_2O (-0,98 to 2,5 bar)	0 to 800 psia (0 to 55,2 bar)
4A	-300 to 300 psi (-20,7 to 20,7 bar)	-14.2 to 300 psig (-0,98 to 21 bar)	0 to 4000 psia (0 to 275,8 bar)
5A	-2000 to 2000 psi (-137,9 to 137,9 bar)	-14.2 to 2000 psig (-0,98 to 137,9 bar)	N/A

Code	Isolating Diaphragm
2[4]	316L SST
3[4]	Hastelloy C-276
4	Monel 400
5[5]	Tantalum
6	Gold-plated Monel 400 (Includes graphite-filled TFE o-ring)
7	Gold-plated 316L SST

			Material Type[7]		
Code	Process Connection[6]	Size	Flange Material	Drain Vent	Bolting
000	None				
A11	Assemble to Rosemount 305 integral manifold				
B11[8]	Assemble to one Rosemount 1199 diaphragm seal				
B12[8]	Assemble to two Rosemount 1199 diaphragm seals				
C11[9]	Assemble to Rosemount 405 primary element				
D11	Assemble to Rosemount 1195 integral orifice and Rosemount 305 integral manifold				
EA2	Assemble to Annubar with Coplanar flange		316 SST	316 SST	
EA3	Assemble to Annubar with Coplanar flange		Hastelloy C-276	Hastelloy C-276	
EA5	Assemble to Annubar with Coplanar flange		316 SST	Hastelloy C-276	
E11	Coplanar flange	1/4–18 NPT	CS	316 SST	
E12	Coplanar flange	1/4–18 NPT	316 SST	316 SST	
E13[4]	Coplanar flange	1/4–18 NPT	Hastelloy C-276	Hastelloy C-276	
E14	Coplanar flange	1/4–18 NPT	Monel 400	Monel 400	
E15[4]	Coplanar flange	1/4–18 NPT	316 SST	Hastelloy C-276	
E16[4]	Coplanar flange	1/4–18 NPT	CS	Hastelloy	
E21	Coplanar flange	RC 1/4	CS	316 SST	
E22	Coplanar flange	RC 1/4	316 SST	316 SST	
E23[4]	Coplanar flange	RC 1/4	Hastelloy C-276	Hastelloy C-276	
E24	Coplanar flange	RC 1/4	Monel 400	Monel 400	
E25[4]	Coplanar flange	RC 1/4	316 SST	Hastelloy C-276	
E26[4]	Coplanar flange	RC 1/4	CS	Hastelloy C-276	

F12	Traditional flange	1/4–18 NPT	316 SST	316 SST	
F13[4]	Traditional flange	1/4–18 NPT	Hastelloy C-276	Hastelloy C-276	
F14	Traditional flange	1/4–18 NPT	Monel 400	Monel 400	
F15[4]	Traditional flange	1/4–18 NPT	316 SST	Hastelloy C-276	
F22	Traditional flange	RC 1/4	316 SST	316 SST	
F23[4]	Traditional flange	RC 1/4	Hastelloy C-276	Hastelloy C-276	
F24	Traditional flange	RC 1/4	Monel 400	Monel 400	
F25[4]	Traditional flange	RC 1/4	316 SST	Hastelloy C-276	
F32	Bottom vent traditional flange	1/4–18 NPT	316 SST	316 SST	
F52	DIN-compliant traditional flange	1/4–18 NPT	316 SST	316 SST	7/16-in. bolting
F62	DIN-compliant traditional flange	1/4–18 NPT	316 SST	316 SST	M10 bolting
F72	DIN-compliant traditional flange	1/4–18 NPT	316 SST	316 SST	M12 bolting
G11	Vertical mount level flange	2-in. ANSI class 150	316 SST		
G12	Vertical mount level flange	2-in. ANSI class 300	316 SST		
G14[4]	Vertical mount level flange	2-in. ANSI class 150	Hastelloy C-276		
G15[4]	Vertical mount level flange	2-in. ANSI class 300	Hastelloy C-276		
G21	Vertical mount level flange	3-in. ANSI class 150	316 SST		
G22	Vertical mount level flange	3-in. ANSI class 300	316 SST		
G24[4]	Vertical mount level flange	3-in. ANSI class 150	Hastelloy C-276		
G25[4]	Vertical mount level flange	3-in. ANSI class 300	Hastelloy C-276		
G31	Vertical mount level flange	DIN- DN 50 PN 40	316 SST		
G41	Vertical mount level flange	DIN- DN 80 PN 40	316 SST		

Code	Output
A	4–20 mA with digital signal based on HART protocol
B[10]	4 – 20 mA Safety Certified with digital signal based on HART protocol (requires PlantWeb housing)
F	FOUNDATION fieldbus: AI block, Link Master, Input Selector Block (requires PlantWeb housing)

Code	Housing Style	Material[7]	Conduit Entry Size
00	None (SuperModule only, no housing included)		
1A	PlantWeb housing	Aluminum	1/2–14 NPT
1B	PlantWeb housing	Aluminum	M20 x 1.5 (CM20)
1C	PlantWeb housing	Aluminum	G1/2
1J	PlantWeb housing	316L SST	1/2–14 NPT
1K	PlantWeb housing	316L SST	M20 x 1.5 (CM20)
1L	PlantWeb housing	316L SST	G1/2
2A	Junction Box housing	Aluminum	1/2–14 NPT
2B	Junction Box housing	Aluminum	M20 x 1.5 (CM20)
2C	Junction Box housing	Aluminum	G1/2
2J	Junction Box housing	316L SST	1/2–14 NPT
2E	Junction Box housing with output for remote interface	Aluminum	1/2–14 NPT
2F	Junction Box housing with output for remote interface	Aluminum	M20 x 1.5 (CM20)
2G	Junction Box housing with output for remote interface	Aluminum	G1/2
2M	Junction Box housing with output for remote interface	316L SST	1/2–14 NPT

OPTIONS

Code	PlantWeb Functionality
A01	Regulatory control suite: PID, arith, signal char, integ, etc. (requires PlantWeb housing and FOUNDATION fieldbus)
D01	Diagnostics suite: Plugged Impulse Line and SPM diagnostics (requires PlantWeb housing and FOUNDATION fieldbus)

Code	Mounting Brackets
B4	Coplanar flange bracket, all SST, 2-in. pipe and panel
B1	Traditional flange bracket, CS, 2-in. pipe
B2	Traditional flange bracket, CS, panel
B3	Traditional flange flat bracket, CS, 2-in. pipe
B7	Traditional flange bracket, B1 with SST bolts
B8	Traditional flange bracket, B2 with SST bolts
B9	Traditional flange bracket, B3 with SST bolts
BA	Traditional flange bracket, B1, all SST
BC	Traditional flange bracket, B3, all SST

Code	Special Configuration (Software)
C1[11]	Custom software configuration (*A Configuration Data Sheet must be completed, see page 37.)*
C3	Gage pressure calibration on Rosemount 3051S_CA4 only
C4[11]	NAMUR alarm and saturation levels, high alarm
C5[11]	NAMUR alarm and saturation levels, low alarm
C6[1][11]	Custom alarm and saturation signal levels, high alarm *Note: Requires option code C1, custom software configuration. A Configuration Data Sheet must be completed (see page 37).*
C7[1][11]	Custom alarm and saturation signal levels, low alarm *Note: Requires option code C1, custom software configuration. A Configuration Data Sheet must be completed (see page 37).*
C8[11]	Low alarm (standard Rosemount alarm and saturation levels)
Code	**Special Configuration (Hardware)**
D1[11]	Hardware adjustments (zero, span, alarm, security) *Note: Not available with housing style codes 2E, 2F, 2G, or 2M.*
D2	Process adapters 1/2-14 NPT
D4	External ground screw assembly
D5	Delete transmitter drain/vent valves (install plugs)
D7	Coplanar flange without drain/vent ports
D8	Ceramic drain/vent valves
D9	RC 1/2 process adapters
Code	**Product Certifications[12]**
Hazardous Locations Certifications	
E1	ATEX flame-proof
I1	ATEX Intrinsically Safe
IA	ATEX FISCO Intrinsically Safe; for FOUNDATION fieldbus protocol only
N1	ATEX Type n
K1	ATEX flame-proof, Intrinsically Safe, Type n (combination of E1, I1, N1, ND, and Dust)
ND	ATEX Combustible Dust
E4	JIS flame-proof
E5	FM Approvals explosion-proof
I5	FM Approvals Intrinsically Safe, non-incendive
IE	FM Approvals FISCO Intrinsically Safe; for FOUNDATION fieldbus protocol only
K5	FM Approvals explosion-proof, Intrinsically Safe, non-incendive (combination of E5 and I5)
E6	CSA explosion-proof
I6	CSA Intrinsically Safe, non-incendive
IF	CSA FISCO Intrinsically Safe; for FOUNDATION fieldbus protocol only
K6	CSA flame-proof, Intrinsically Safe, non-incendive (combination of E6 and I6)
D3[10][13]	Measurement Canada Accuracy Approval *Note: Gas measurement approval only.*
E7	SAA flameproof
KA	ATEX and CSA flame-proof and Intrinsically Safe (combination of E1, I1, E6, and I6) *Note: Only available on housing codes 00, IA, IJ, 2A, or 2J.*
KB	FM Approvals and CSA explosion-proof and Intrinsically Safe (combination of E5, E6, I5, and I6) *Note: Only available on housing codes 00, IA, IJ, 2A, or 2J.*
KC	FM Approvals and ATEX explosion-proof and Intrinsically Safe (combination of E5, E1, I5, and I1) *Note: Only available on housing codes 00, IA, IJ, 2A, or 2J.*

Code	Alternate Materials of Construction
L1	Inert sensor fill fluid (differential and gage only). *Note: Silicone fill fluid is standard.*
L2	Graphite-filled TFE o-ring
L4	Austenitic 316 SST bolts
L5	ASTM A 193, Grade B7M bolts
L6	Monel bolts
L7	ASTM A 453, Class A, Grade 660 bolts
L8	ASTM A 193, Class 2, Grade B8M bolts
Code	**Digital Display**
M5	PlantWeb LCD Display (requires PlantWeb housing)
M8(1)(11)	Remote mount LCD display and interface, 50 ft. (15 m) cable; PlantWeb housing, SST bracket, requires 4-20 mA / HART output *Note: PlantWeb housing material determined by Housing Style code.*
M9(1)(11)	Remote mount LCD display and interface, 100 ft. (31 m) cable; PlantWeb housing, SST bracket, requires 4-20 mA / HART output *Note: PlantWeb housing material determined by Housing Style code.*
Code	**Special Procedures**
P1	Hydrostatic testing
P2	Cleaning for special services
P3	Cleaning for less than 1PPM chlorine/fluorine
P9	4500 psig (310 bar) static pressure limit (Rosemount 3051S_CD only)
P0(14)	6092 psig (420 bar) static pressure limit (Rosemount 3051S_CD only)
Code	**Special Certifications**
Q4	Calibration certificate
QP	Calibration certificate and tamper evident seal
Q8	Material traceability certification per EN 10204 3.1.B
QS	Quality certification for Safety Instrumented Systems
Code	**Terminal Blocks**
T1	Transient protection
Typical Model Number: 3051S1CD 2 A 2 E12 A 1A B4	

(1) Not available with Output code B.

(2) Performance Class code 3 is available with Measurement Type code D only.

(3) 3051S_CD0 is only available with traditional flange, 316 SST diaphragm material, silicone fill fluid and bolting option L4.

(4) Materials of Construction meet NACE material recommendation per MR 01-75. Environmental limits apply to certain materials. Consult latest standard for details.

(5) Tantalum diaphragm material is only available on Classic, ranges 2A - 5A, differential and gage.

(6) Process connection option codes B12, C11, D11, EA2, EA3 and EA5 are only available on differential Measurement Type, option code D.

(7) Material specified is cast as follows: CF-8M is the cast version of 316 SST, CF-3M is the cast version of 316L SST, CW-12MW is the cast version of Hastelloy C-276, M-30C is the cast version of Monel 400. For housing, material is aluminum with polyurethane paint.

(8) Consult a Rosemount representative for performance specifications.

(9) Not available with 405P Remote Mount, option code R3, see document number 00813-0100-4810.

(10) Requires Hardware Adjustments option code D1.

(11) Not available with Output code F.

(12) Valid when SuperModule and housing have equivalent approvals.

(13) Limited availability depending on transmitter type and range. Contact a sales representative for additional information.

(14) 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.

End of Selections

Rosemount 3051S Series In-Line

Model	Transmitter Type		
3051S	Scalable pressure transmitter		
Code	**Performance Class**		
1[1]	Ultra: 0.04% span accuracy, 200:1 turndown, 10-year stability, limited 12-year warranty		
2	Classic: 0.065% span accuracy, 100:1 turndown, 5-year stability		
Code	**Device Type**		
T	In-Line		
Code	**Measurement Type**		
G	Gage		
A	Absolute		
	Pressure Range		
Code	**TG**	**TA**	
1A	-14.7 to 30 psi (-1,0 to 2,1 bar)	0 to 30 psia (2,1 bar)	
2A	-14.7 to 150 psi (-1,0 to 10,3 bar)	0 to 150 psia (10,3 bar)	
3A	-14.7 to 800 psi (-1,0 to 55 bar)	0 to 800 psia (55 bar)	
4A	-14.7 to 4000 psi (-1,0 to 276 bar)	0 to 4000 psia (276 bar)	
5A	-14.7 to 10000 psi (-1,0 to 689 bar)	0 to 10000 psia (689 bar)	
Code	**Isolating Diaphragm / Process Connection Material**		
2[2]	316L SST		
3[2]	Hastelloy C-276		
Code	**Process Connection Style**		
A11	Assemble to Rosemount 306 integral manifold		
B11[3]	Assemble to one Rosemount 1199 diaphragm seal		
E11	1/2–14 NPT female		
F11	Non-threaded instrument-flange (I-flange) (Range 1-4 only)		
G11	G1/2 A DIN 16288 male (Range 1-4 only)		
H11	Coned and threaded, compatible with autoclave type F-250-C (Range 5A only)		
Code	**Output**		
A	4–20 mA with digital signal based on HART protocol		
B[4]	4 – 20 mA Safety Certified with digital signal based on HART protocol (requires PlantWeb housing)		
F	FOUNDATION fieldbus: AI block, Link Master, Input Selector Block (requires PlantWeb housing)		
Code	**Housing Style**	**Materials[5]**	**Conduit Entry Size**
00	None (SuperModule only, no housing included)		
1A	PlantWeb housing	Aluminum	1/2–14 NPT
1B	PlantWeb housing	Aluminum	M20 x 1.5 (CM20)
1C	PlantWeb housing	Aluminum	G1/2
1J	PlantWeb housing	316L SST	1/2–14 NPT
1K	PlantWeb housing	316L SST	M20 x 1.5 (CM20)
1L	PlantWeb housing	316L SST	G 1/2
2A	Junction Box housing	Aluminum	1/2–14 NPT
2B	Junction Box housing	Aluminum	M20 x 1.5 (CM20)
2C	Junction Box housing	Aluminum	G 1/ 2
2J	Junction Box housing	316L SST	1/2–14 NPT
2E	Junction Box housing with output for remote interface	Aluminum	1/2–14 NPT
2F	Junction Box housing with output for remote interface	Aluminum	M20 x 1.5 (CM20)
2G	Junction Box housing with output for remote interface	Aluminum	G1/2
2M	Junction Box housing with output for remote interface	316L SST	1/2–14 NPT

OPTIONS	
Code	**PlantWeb Functionality**
A01	Regulatory control suite: PID, arith, signal char, integ, etc. (requires PlantWeb housing and FOUNDATION fieldbus)
D01	Diagnostics suite: Plugged Impulse Line and SPM diagnostics (requires PlantWeb housing and FOUNDATION fieldbus)
Code	**Mounting Bracket**
B4	Bracket, all SST, 2-in. pipe and panel
Code	**Special Configuration (Software)[6]**
C1	Custom software configuration (*A Configuration Data Sheet must be completed, see page 37.)*
C4	NAMUR alarm and saturation values, high alarm
C5	NAMUR alarm and saturation values, low alarm
C6[1]	Custom alarm and saturation signal levels, high alarm *Note: Requires option code C1, custom software configuration. A Configuration Data Sheet must be completed (see page 37).*
C7[1]	Custom alarm and saturation signal levels, low alarm *Note: Requires option code C1, custom software configuration. A Configuration Data Sheet must be completed (see page 37).*
C8	Low alarm (Standard Rosemount alarm and saturation signal levels)
Code	**Special Configuration (Hardware)**
D1[6]	Hardware adjustments (zero, span, alarm, security) *Note: Not available with Housing Style codes 2E, 2F, 2G, or 2M.*
D4	External ground screw assembly
Code	**Product Certifications[7]**
Hazardous Locations Certifications	
E1	ATEX flame-proof
I1	ATEX Intrinsically Safe
IA	ATEX FISCO Intrinsically Safe; for FOUNDATION fieldbus protocol only
N1	ATEX Type n
K1	ATEX flame-proof, Intrinsically Safe, Type n (combination of E1, I1, N1, ND, and Dust)
ND	ATEX Combustible Dust
E4	JIS flame-proof
E5	FM Approvals explosion-proof
I5	FM Approvals Intrinsically Safe, non-incendive
IE	FM Approvals FISCO Intrinsically Safe; for FOUNDATION fieldbus protocol only
K5	FM Approvals explosion-proof, Intrinsically Safe, non-incendive (combination of E5 and I5)
E6	CSA explosion-proof
I6	CSA Intrinsically Safe, non-incendive
IF	CSA FISCO Intrinsically Safe; for FOUNDATION fieldbus protocol only
K6	CSA flame-proof, Intrinsically Safe, non-incendive (combination of E6 and I6)
D3[4] [8]	Measurement Canada Accuracy Approval. *Note: Gas measurement approval only.*
E7	SAA flameproof
KA	ATEX and CSA flame-proof and Intrinsically Safe (combination of E1, I1, E6, and I6) *Note: Only available on Housing Style codes 00, IA, IJ, 2A, or 2J.*
KB	FM Approvals and CSA explosion-proof and Intrinsically Safe (combination of E5, E6, I5, and I6) *Note: Only available on Housing Style codes 00, IA, IJ, 2A, or 2J.*
KC	FM Approvals and ATEX explosion-proof and Intrinsically Safe (combination of E5, E1, I5, and I1) *Note: Only available on Housing Style codes 00, IA, IJ, 2A, or 2J.*

Code	Alternate Materials of Construction
L1	Inert sensor fill fluid *Note: Silicone fill fluid is standard.*
L4	Austenitic 316 SST bolts for Process Connection option code F11, I-Flange
Code	**Digital Display**
M5	PlantWeb LCD Display (requires PlantWeb housing)
M8(1)(6)	Remote mount LCD display and interface, 50 ft. (15 m) cable; PlantWeb housing, SST bracket, requires 4-20 mA / HART output *Note: PlantWeb housing material determined by Housing Style code.*
M9(1)(6)	Remote mount LCD display and interface, 100 ft. (31 m) cable; PlantWeb housing, SST bracket, requires 4-20 mA / HART output *Note: PlantWeb housing material determined by Housing Style code.*
Code	**Special Procedures**
P1	Hydrostatic testing
P2	Cleaning for special services
P3	Cleaning for less than 1 PPM chlorine/fluorine
Code	**Special Certifications**
Q4	Calibration certificate
QP	Calibration certificate and tamper evident seal
Q8	Material traceability certification per EN 10204 3.1.B
QS	Quality certification for Safety Instrumented Systems
Code	**Terminal Blocks**
T1	Transient protection
Typical Model Number: 3051S1TG 2 A 2 E11 A 1A B4	

(1) Not available with Output code B.

(2) Materials of Construction meet NACE material recommendation per MR 01-75. Environmental limits apply to certain materials. Consult latest standard for details.

(3) Contact a Rosemount representative for performance specifications.

(4) Requires Hardware Adjustments option code D1.

(5) Material specified is cast as follows: CF-3M is the cast version of 316L SST. For housing, material is aluminum with polyurethane paint.

(6) Not available with Output code F.

(7) Valid when SuperModule and housing have equivalent approvals.

(8) Limited availability depending on transmitter type and range. Contact a sales representative for additional information.

End of Selections

Rosemount 3051S Series Liquid Level

You must select either FF diaphragm seal type (see "Flush Flanged Seal" on page 32) or for EF diaphragm seal type (see "Extended Flanged Seal" on page 33) and then finish this selection by choosing transmitter options.

Model	Transmitter Type		
3051S	Scalable pressure transmitter		
Code	**Performance Class**		
1[(1)]	Ultra: 0.04% span accuracy, 100:1 turndown, 10-year stability, limited 12-year warranty		
2	Classic: 0.065% span accuracy, 100:1 turndown, 5-year stability		
Code	**Connection Type**		
L	Level		
Code	**Measurement Type**		
D	Differential		
G	Gage		
A	Absolute		
	Pressure Range		
Code	**Differential (LD)**	**Gage (LG)**	**Absolute (LA)**
1A	-25 to 25 inH_2O (-62,2 to 62,2 mbar)	-25 to 25 inH_2O (-62,2 to 62,2 mbar)	0 to 30 psia (2,1 bar)
2A	-250 to 250 inH_2O (-623 to 623 mbar)	-250 to 250 inH_2O (-623 to 623 mbar)	0 to 150 psia (10 bar)
3A	-1000 to 1000 inH_2O (-2,5 to 2,5 bar)	-393 to 1000 inH_2O (-0,98 to 2,5 bar)	0 to 800 psia (55 bar)
4A	-300 to 300 psi (-20,7 to 20,7 bar)	-14.2 to 300 psig (-0,98 to 21 bar)	0 to 4000 psia (276 bar)
5A	-2000 to 2000 psi (-137,9 to 137,9 bar)	-14.2 to 2000 psig (-0,98 to 137,9 bar)	N/A
Code	**Output**		
A	4-20 mA with digital signal based on HART protocol		
B[(2)]	4 – 20 mA Safety Certified with digital signal based on HART protocol (requires PlantWeb housing)		
F	FOUNDATION fieldbus: AI block, Link Master, Input Selector Block (requires PlantWeb housing)		
Code	**Housing Style**	**Material[(3)]**	**Conduit Entry**
00	None (SuperModule only, no housing included)		
1A	PlantWeb housing	Aluminum	1/2–14 NPT
1B	PlantWeb housing	Aluminum	M20 x 1.5 (CM20)
1C	PlantWeb housing	Aluminum	G1/2
1J	PlantWeb housing	316L SST	1/2–14 NPT
1K	PlantWeb housing	316L SST	M20 x 1.5 (CM20)
1L	PlantWeb housing	316L SST	G1/2
2A	Junction Box housing	Aluminum	1/2–14 NPT
2B	Junction Box housing	Aluminum	M20 x 1.5 (CM20)
2C	Junction Box housing	Aluminum	G1/2
2J	Junction Box housing	316L SST	1/2–14 NPT
2E	Junction Box with output for remote interface	Aluminum	1/2–14 NPT
2F	Junction Box with output for remote interface	Aluminum	M20 x 1.5 (CM20)
2G	Junction Box with output for remote interface	Aluminum	G1/2
2M	Junction Box with output for remote interface	316L SST	1/2–14 NPT
Code	**Seal System Type**		
1	Direct-mount diaphragm seal system		
Code	**High Pressure Side Extension (between transmitter flange and seal)**		
0	Direct-mount (No extension)		
Code	**Low Pressure Side Connection (sensor module)**		
1	One capillary connection remote diaphragm seal (see Rosemount 1199 ordering table for seal information)		
2	316L SST isolator / 316 SST transmitter flange		
3	Hastelloy C-276 isolator / 316 SST transmitter flange		
Code	**Capillary Length**		
0	N/A		
Code	**Diaphragm Seal Fill Fluid**		
A	Syltherm XLT		
C	D. C. Silicone 704		
D	D. C. Silicone 200		
H	Inert (Halocarbon)		
G	Glycerine and Water		
N	Neobee M-20		
P	Propylene Glycol and Water		

Next, select either Flush Flanged (FF) diaphragm seal (see table below) or Extended Flanged (EF) diaphragm seal (see page 33).

Seal Options (page 32—33)

Flush Flanged Seal

Code	Process Connection Style	
FF	Flush Flanged, Ra 125-250 gasket surface	
Code	**Diaphragm Seal Size (High Side)**	
G	2-in./DN 50	
7	3-in.	
J	DN 80	
9	4-in./DN 100	
Code	**Flange Rating (High Side)**	
1	Class 150	
2	Class 300	
4	Class 600	
G	PN 40	
E	PN 10/16; available with 4 in. DN 100 only	
Code	**Isolator Material**	**Flange Material (High Side)**
CA	316L SST	CS
DA	316L SST	316 SST
CB	Hastelloy	CS
DB	Hastelloy	316 SST
CC	Tantalum - seam welded(4)	CS
DC	Tantalum - seam welded(4)	316 SST
Code	**Lower Housing Material (High Side)(5)**	
0	None	
A	316 SST	
B	Hastelloy	
Code	**Flushing Connection Quantity and Size (Lower Housing, High Side)**	
0	None	
1	1 ($^1/_4$-in.)	
3	2 ($^1/_4$-in.)	
7	1 ($^1/_2$-in.)	
9	2 ($^1/_2$-in.)	
Code	**Seal Options: Gaskets**	
SJ	Teflon® gasket for lower housing	
SK	Gylon gasket for lower housing	
SN	Grafoil™ gasket for lower housing	
Code	**Other Options**	
ST(6)	Materials per NACE MR 01—75	
Continue with transmitter options		

(1) Not available with Output code B.

(2) Requires Hardware Adjustments option code D1.

(3) Material specified is cast as follows: CF-3M is the cast version of 316L SST. For housing, material is aluminum with polyurethane paint.

(4) Not recommended for use with spiral wound metallic gaskets (see 1199 product data sheet, document 00813-0100-4016 for additional options)

(5) Standard gasket for lower housing consists of non-asbestos fiber.

(6) Materials of Construction meet NACE material recommendation per MR 01-75. Environmental limits apply to certain materials. Consult latest standard for details.

Extended Flanged Seal

Code	Process Connection Style	
EF	Extended flanged, Ra 125-250 gasket surface	
Code	**Diaphragm Seal Size (High Side)**	
7	3-in./DN 80, 2.58-in. diaphragm	
9	4-in./DN 100, 3.5-in. diaphragm	
Code	**Flange Rating (High Side)**	
1	Class 150	
2	Class 300	
4	Class 600	
G	PN 40	
E	PN 10/16; available with 4 in. DN 100 only	
Code	**Isolator Material and Extension Material**	**Flange Material (High Side)**
CA	316L SST	CS
DA	316L SST	316 SST
CB	Hastelloy	CS
DB	Hastelloy	316 SST
Code	**Extension Length (High Side, 1st Position)**	
2	2-in./50 mm	
4	4-in./100 mm	
6	6-in./150 mm	
Code	**Extension Length (High Side, 2nd Position)**	
0	0-in./0 mm	

Transmitter Options continued

(— = Not Applicable • = Applicable)

	TRANSMITTER OPTIONS			
Code	**PlantWeb Functionality**			
A01	Regulatory control suite: PID, arith, signal char, integ, etc. (requires PlantWeb housing and FOUNDATION fieldbus)			
D01	Diagnostics suite: Plugged Impulse Line and SPM diagnostics (requires PlantWeb housing and FOUNDATION fieldbus)			
Code	**Special Configuration (Software)**			
C1[1]	Custom software configuration (*A Configuration Data Sheet must be completed, see page 37.)*			
C3	Gage pressure calibration on Rosemount 3051S_LA only			
C4[1]	NAMUR alarm and saturation levels, high alarm			
C5[1]	NAMUR alarm and saturation levels, low alarm			
C6[1][2]	Custom alarm and saturation signal levels, high alarm *Note: Requires option code C1, custom software configuration. A Configuration Data Sheet must be completed (see page 37).*			
C7[1][2]	Custom alarm and saturation signal levels, low alarm *Note: Requires option code C1, custom software configuration. A Configuration Data Sheet must be completed (see page 37).*			
C8[1]	Low alarm (standard Rosemount alarm and saturation levels).			
Code	**Special Configuration (hardware)**	**LD**	**LG**	**LA**
D1	Hardware adjustments (zero, span, alarm, security) Note: Not available with fieldbus protocol or Housing Style codes 2E, 2F, 2G, or 2M.	•	•	•
D2	1/2-14 NPT process connections process adapters	•	—	—
D4	External ground screw assembly	•	•	•
D5	Delete transmitter drain/vent valves (install plugs)	•	—	—
D8	Ceramic drain/vent valves	•	—	—
D9	RC 1/2 process connections (process adapters)	•	—	—
Code	**Product Certifications[3]**			
Hazardous Locations Certifications				
E1	ATEX flame-proof			
I1	ATEX Intrinsically Safe			
IA	ATEX FISCO Intrinsically Safe; for FOUNDATION fieldbus protocol only			
N1	ATEX Type n			
K1	ATEX flame-proof, Intrinsically Safe, Type n (combination of E1, I1, N1, ND, and Dust)			
ND	ATEX Combustible Dust			

E4	JIS flame-proof
E5	FM Approvals explosion-proof
I5	FM Approvals Intrinsically Safe, non-incendive
IE	FM Approvals FISCO Intrinsically Safe; for FOUNDATION fieldbus protocol only
K5	FM Approvals explosion-proof, Intrinsically Safe, non-incendive (combination of E5 and I5)
E6	CSA explosion-proof
I6	CSA Intrinsically Safe, non-incendive
IF	CSA FISCO Intrinsically Safe; for FOUNDATION fieldbus protocol only
K6	CSA flame-proof, Intrinsically Safe, non-incendive (combination of E6 and I6)
D3[4] [5]	Measurement Canada Accuracy Approval *Note: Gas measurement approval only.*
E7	SAA flameproof
KA	ATEX and CSA flame-proof and Intrinsically Safe (combination of E1, I1, E6, and I6) *Note: Only available on Housing Style codes 00, IA, IJ, 2A, or 2J.*
KB	FM Approvals and CSA explosion-proof and Intrinsically Safe (combination of E5, E6, I5, and I6) *Note: Only available on Housing Style codes 00, IA, IJ, 2A, or 2J.*
KC	FM Approvals and ATEX explosion-proof and Intrinsically Safe (combination of E5, E1, I5, and I1). *Note: Only available on Housing Style codes 00, IA, IJ, 2A, or 2J.*
Code	**Alternate Materials of Construction**
L1	Inert sensor fill fluid (differential and gage only) *Note: Silicone fill fluid is standard.*
L2	Graphite-filled TFE o-ring
L4	Austenitic 316 SST bolts
L5	ASTM A 193, Grade B7M bolts
L6	Monel bolts
L7	ASTM A 453, Class A, Grade 660 bolts
L8	ASTM A 193, Class 2, Grade B8M bolts
Code	**Digital Display**
M5	PlantWeb LCD Display (requires PlantWeb housing)
M8[1] [2]	Remote mount LCD display and interface, 50 ft. (15 m) cable; PlantWeb housing, SST bracket, requires 4-20 mA / HART output *Note: PlantWeb housing material determined by Housing Style code.*
M9[1] [2]	Remote mount LCD display and interface, 100 ft. (31 m) cable; PlantWeb housing, SST bracket, requires 4-20 mA / HART output *Note: PlantWeb housing material determined by Housing Style code.*
Code	**Special Procedures**
P1	Hydrostatic testing
P2	Cleaning for special services
P3	Cleaning for less than 1PPM chlorine/fluorine
Code	**Special Certifications**
Q4	Calibration certificate
QP	Calibration certificate and tamper evident seal
Q8	Material traceability certification per EN 10204 3.1.B
QS	Quality certification for Safety Instrumented Systems
Code	**Terminal blocks**
T1	Transient protection
Typical Model Number for FF seal: 3051S 2 LD 2 A A 1A 1 0 2 0 D FF 7 1 DA 0 0	
Typical Model Number for EF seal: 3051S2 LD 2 A A 1A 1 0 2 0 D EF 7 1 DA 2 0	

(1) Not available with Output code F.

(2) Not available with Output code B.

(3) Valid when SuperModule and housing have equivalent approvals.

(4) Requires Hardware Adjustments option code D1.

(5) Limited availability depending on transmitter type and range. Contact a sales representative for additional information.

End of 3051S_L selections.

Rosemount 300S Series Housing "Kit"

Model			
300S[1]	Housing "Kit" for Rosemount 3051S Scalable Pressure Transmitter		
Code	**Housing Style**	**Material[2]**	**Conduit Entry**
1A	PlantWeb housing	Aluminum	1/2–14 NPT
1B	PlantWeb housing	Aluminum	M20 x 1.5 (CM20)
1C	PlantWeb housing	Aluminum	G1/2
1J	PlantWeb housing	316L SST	1/2–14 NPT
1K	PlantWeb housing	316L SST	M20 x 1.5 (CM20)
1L	Plantweb housing	316L SST	G 1/2
2A	Junction Box housing	Aluminum	1/2–14 NPT
2B	Junction Box housing	Aluminum	M20 x 1.5 (CM20)
2C	Junction Box housing	Aluminum	G1/2
2J	Junction Box housing	316L SST	1/2–14 NPT
2E	Junction Box housing with output for remote interface	Aluminum	1/2–14 NPT
2F	Junction Box housing with output for remote interface	Aluminum	M20 x 1.5 (CM20)
2G	Junction Box housing with output for remote interface	Aluminum	G1/2
2M	Junction Box housing with output for remote interface	316L SST	1/2–14 NPT
3A	Remote mount display housing	Aluminum	1/2–14 NPT
3B	Remote mount display housing	Aluminum	M20 x 1.5 (CM20)
3C	Remote mount display housing	Aluminum	G1/2
3J	Remote mount display housing	316L SST	1/2–14 NPT

Code	**Output**
A	4-20 mA with digital signal based on HART protocol
B[3]	4 – 20 mA Safety Certified with digital signal based on HART protocol (requires PlantWeb housing)
F	FOUNDATION fieldbus: AI Block, Link Master, Input Selector Block (requires PlantWeb housing)

	OPTIONS
Code	**PlantWeb Functionality**
A01	Regulatory control suite: PID, arith, signal char, integ, etc. (requires PlantWeb housing and FOUNDATION fieldbus)
D01	Diagnostics suite: Plugged Impulse Line and SPM diagnostics (requires PlantWeb housing and FOUNDATION fieldbus)

Code	**Special Configuration (Hardware)**
D1[4]	Hardware adjustments (zero, span, alarm, security) Note: Not available with Housing Style codes 2E, 2F, 2G, 2M, 3A, 3B, 3C, or 3J.
D4	External ground screw assembly

Code	**Product Certifications**
Hazardous Locations Certifications	
E1	ATEX flame-proof
I1	ATEX Intrinsically Safe
IA	ATEX FISCO Intrinsically Safe; for FOUNDATION fieldbus protocol only
N1	ATEX Type n
K1	ATEX flame-proof, Intrinsically Safe, Type n (combination of E1, I1, N1, ND, and Dust)
ND	ATEX Combustible Dust
E4	JIS flame-proof
E5	FM Approvals explosion-proof
I5	FM Approvals Intrinsically Safe, non-incendive
IE	FM Approvals FISCO Intrinsically Safe; for FOUNDATION fieldbus protocol only
K5	FM Approvals explosion-proof, Intrinsically Safe, non-incendive (combination of E5 and I5)
E6	CSA explosion-proof
I6	CSA Intrinsically Safe, non-incendive
IF	CSA FISCO Intrinsically Safe; for FOUNDATION fieldbus protocol only
K6	CSA flame-proof, Intrinsically Safe, non-incendive (combination of E6 and I6)
E7	SAA flameproof
KA	ATEX and CSA flame-proof and Intrinsically Safe (combination of E1, I1, E6, and I6) *Note: Only available on Housing Style codes IA, IJ, 2A, or 2J.*
KB	FM Approvals and CSA explosion-proof and Intrinsically Safe (combination of E5, E6, I5, and I6) *Note: Only available on Housing Style codes IA, IJ, 2A, or 2J.*

KC	FM Approvals and ATEX explosion-proof and Intrinsically Safe (combination of E5, E1, I5, and I1) *Note: Only available on Housing Style codes IA, IJ, 2A, or 2J*

Code	Digital Display
M5	PlantWeb LCD Display (requires PlantWeb housing)
M8[5]	Remote mount LCD display and interface, 50 ft. (15 m) cable; SST bracket, requires 4-20 mA / HART output
M9[5]	Remote mount LCD display and interface, 100 ft. (31 m) cable; SST bracket, requires 4-20 mA / HART output

Code	Terminal Blocks
T1	Transient Protection Terminal Block *Note: Not available with Housing Style codes 3A, 3B, 3C, or 3J.*

Typical Model Number: 300S 1A A E5

(1) Not available with Output code B.

(2) Material specified is cast as follows: CF-3M is the cast version of 316L SST. For housing, material is aluminum with polyurethane paint.

(3) Requires Hardware Adjustments option code D1.

(4) Not available with Output code F.

(5) Not available with Output code F. Only available on Housing Style codes 3A, 3B, 3C, or 3J.

Rosemount 3051S HART Configuration Data Sheet

* = ***Defaults***

CONFIGURATION DATA SHEET

Customer _____ P.O. No. _____

Model No. _____ Line Item _____

OUTPUT INFORMATION: (Software Selectable)

Eng. Units =	☐ ***InH_2O***[2] *	☐ psi [3]	☐ Pa	☐ ftH_2O	☐ MPa
	☐ inHg	☐ bar	☐ kPa	☐ g/cm^2	
	☐ mbar	☐ Torr	☐ mmH_2O	☐ inH_2O at 4 °C	
	☐ Atm	☐ kg/cm^2	☐ mmHg	☐ mmH_2O at 4 °C	
Output =	☐ ***Linear*** *	☐ Square Root (For DP transmitters only)			
Transmitter Sensor Temp. Units[1] =	☐ °***C*** *	☐ °F			
Range Points: 4mA =	|__|__|__|__|__|__|__| (0) *		20mA = |__|__|__|__|__|__|__| (URL) ★		
Damping[1] (0–60 sec.):	|__|__|.|__|__| (0.4 sec.) *				

TAGGING INFORMATION

☐ Wired (5 lines of 17 characters)

|__|__|__|__|__|__|__|__|__|__|__|__|__|__|__|__|__|

|__|__|__|__|__|__|__|__|__|__|__|__|__|__|__|__|__|

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Standard Software Tag: |__|__|__|__|__|__|__|__| (First 8 characters of wired or permanent tagging information—8 characters max)

TRANSMITTER INFORMATION [1]

Descriptor:|__|__|__|__|__|__|__|__|__|__|__|__|__|__|__|__|
(16 characters)

Message:|__|__|__|__|__|__|__|__|__|__|__|__|__|__|__|__|__|__|__|__|__|__|__|__|__|__|__|__|__|__|__|__|
(32 characters)

Date: ☐ ☐/☐ ☐ ☐/☐ ☐
Day Month Year

(1) Requires a C1 option code.

(2) H2O Range 0-3

(3) PSI Range 4-5, and all 3051T

DIGITAL DISPLAY INFORMATION (One or more of the listed variables can be selected to be displayed on the LCD display.)

☐ ***Engineering Units** ∗*
☐ % of Range
☐ Scaled Variable(1)
☐ Sensor Temperature

SIGNAL SELECTION(2)

☐ ***4–20 mA with simultaneous digital signal based on HART protocol** ∗*
☐ Burst mode of HART digital process variable(1)
Burst mode output options:
☐ Primary variable
☐ Primary variable in percent of range and mA
☐ All dynamic variables in engineering units
☐ All dynamic variables in engineering units and the primary variable mA value
☐ Multidrop Communication(1) Transmitter Address (1-15): |__|__| (default = 0)

SECURITY INFORMATION (2)

Write Protect: ☐ On ☐ ***Off** ∗* Local Zero and Span: ☐ ***Enabled** ∗* ☐ Disabled

ANALOG OUTPUT ALARM AND SATURATION SIGNAL LEVELS(1) (2)

All categories must be completed for custom configuration. Rosemount or NAMUR NE 43 values should be selected via option code.

☐ Custom (Requires Option C6 or C7)= Low Alarm: (≤ |__|.|__|__| mA)—values must be between 3.8 and 3.6

Low Saturation (|__|.|__|__| mA)—values must be between 3.9 and 3.7

* Low alarm must be 0.1 mA lower than the low saturation value

High Alarm (≥ |__|__|.|__|__| mA)—values must be between 20.2 and 23.0

High Saturation (|__|__|.|__|__| mA)—values must be between 20.1 and 21.5

* High alarm must be at least 0.1 mA higher than the high saturation value

For Reference Only:
Alarm Values: Values (mA) the transmitter outputs if it detects a gross malfunction condition.
Saturation Values: Values (mA) the transmitter outputs if applied pressure goes outside the 4–20 mA range values.

***Standard** ∗ =*	Low Alarm: (≤ 3.75 mA)	Low Saturation (3.9 mA)
	High Alarm (≥ 21.75 mA)	High Saturation (20.8 mA)
NAMUR NE43 (Option C4 or C5) =	Low Alarm: (≤ 3.6 mA)	Low Saturation (3.8 mA)
	High Alarm (≥22.5 mA)	High Saturation (20.5 mA)

PROCESS VARIABLE OUTPUT ASSIGNMENTS (1)

***Primary Variable** ∗*	☐ ***Measured Pressure** ∗*	☐ Scaled Variable(1)	
Secondary Variable:	☐ Measured Pressure	☐ Scaled Variable(1)	☐ ***Device Temperature** ∗*
Tertiary Variable:	☐ Measured Pressure	☐ ***Scaled Variable**(1) ∗*	☐ Device temperature

(1) Not available with Output code B.

(2) Requires a C1 option code.

SCALED VARIABLE INFORMATION(1) (2)	
Scaled Units = |__|__|__|__|__| (5 characters max—spaces consume 0-9, A-Z, /, %, -, and * character positions)	
Transfer Function=	
☐ ***Linear*** *	☐ Square Root
Linear Scaled Variable (with Linear option only)	**Square Root Scaled Variable** (with Square Root option only)
Low pressure value |__|__|__|__|__|__|__| (Eng. Units)	Low pressure value: 0 (Eng. Units)
High pressure value |__|__|__|__|__|__|__|(Eng. Units)	High pressure value |__|__|__|__|__|__|__| (Eng. Units)
Low scaled value |__|__|__|__|__|__|__| (Scaled Units)	Low scaled value: 0 (Scaled Units)
High scaled value |__|__|__|__|__|__| __|(Scaled Units)	High scaled value |__|__|__|__|__|__|__| (Scaled Units)
Linear Offset |__|__|__|__|__|__|__| (Eng. Units)	**Low Flow Cut** ☐ On ☐ ***Off*** * |__|__|__|__|__|__|__| (Scaled unit)
Range Values—both categories must be completed. (used when scaled variable is set to primary variable)	
LRV |__|__|__|__|__|__|__| (Scaled Unit) (seven characters max)	URV |__|__|__|__|__|__|__| (Scaled Unit) (seven characters max)
PROCESS ALERT SETPOINTS(1)	
Process alert setpoints are values set by the user where the transmitter outputs a HART message and digital display information when the applied pressure or temperature goes outside the designated range. The pressure values are limited to the range of the transmitter.	
Pressure Process Alert (HART signal only) ☐ On ☐ ***Off*** *	Temperature Process Alert (HART signal only) ☐ On ☐ ***Off*** *
☐ Low alert |__|__|__|__|__|__|__| (Eng. Unit)	☐ Low alert |__|__|__|__|__| (Temp. Unit -40°F, -40 °C)
(LRL ≤ Low Alert ≤ High Alert ≤ URL)	(-40 °C ≤ Low Alert ≤ * High Alert ≤ 85°C) *must have a 5°C difference
☐ High Alert |__|__|__|__|__|__|__| (Eng. Unit)	☐ High Alert |__|__|__|__|__| (Temp. Unit 185°F, 85 °C)

(1) Requires a C1 option code.

(2) Not available with Output code "B."

Rosemount 3051S Series

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 GmbH & Co.
Argelsrieder Feld 3
82234 Wessling
Germany
Tel 49 (8153) 9390
Fax 49 (8153) 939172

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

Beijing Rosemount Far East Instrument Co., Limited
No. 6 North Street,
Hepingli, Dong Cheng District
Beijing 100013, China
T (86) (10) 6428 2233
F (86) (10) 6422 8586

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Process Management