

Rosemount® 3051S Series of Instrumentation

Scalable pressure, flow, and level solutions



WirelessHART

Innovation reaching across your operation

With the Rosemount 3051S Series of Instrumentation, you can optimize your operation in these critical areas: production, quality, energy efficiency, and safety and environment. By leveraging the power of the scalable Rosemount 3051S across your entire operation, you'll be able to minimize process variability, gain greater process insight, reduce maintenance and downtime, and meet regulatory demands. What's more, it's easy for your people to use, ensuring you will realize the full potential of your measurement investment.

Rosemount 3051S SuperModule™ Platform



The most advanced pressure, flow, and level measurements

- The all-welded hermetic SST design delivers the industry's highest field reliability
- Ultra performance provides up to $\pm 0.025\%$ accuracy and 200:1 rangedown
- Ultra for Flow performance provides up to $\pm 0.04\%$ of reading and 14:1 flow turndown
- 15-year stability and 15-year limited warranty
- SIL3 Capable: IEC 61508 certified by an accredited 3rd party agency for use in safety instrumented systems up to SIL 3 [minimum requirement of single use (1oo1) for SIL 2 and redundant use (1oo2) for SIL 3]

Rosemount 3051S Series selection guide



Rosemount 3051S Coplanar™ differential, gage, or absolute transmitter

See ordering information on [page 5](#).

- Coplanar Platform enables integrated manifold, primary element, and seal system solutions
- Dual-capacitance Saturn™ sensor technology corrects for overpressure and line pressure effects
- Calibrated spans from 0.1 inH₂O to 4000 psi (0,25 mbar to 276 bar)
- Available with 316L SST, Alloy C-276, Alloy 400, Tantalum, gold-plated Alloy 400, or gold-plated 316L SST process isolators



Rosemount 3051S in-line gage or absolute transmitter

See ordering information on [page 13](#).

- Direct threaded connection, manifold or seal system solutions
- Piezoresistive sensor technology allows calibrated spans from 0.3 to 10000 psi (20,7 mbar to 689 bar)
- Available with 316L SST or Alloy C-276 process isolators

Contents

Rosemount 3051S Coplanar Pressure Transmitter	5
Rosemount 3051S In-Line Pressure Transmitter	13
Rosemount 3051S MultiVariable Transmitter	19
Rosemount 3051SF DP Flowmeters	26
Rosemount 3051S Electronic Remote Sensor (ERS) System	50
Rosemount 3051S Scalable™ Level Transmitter	64
Specifications	82

Rosemount 3051S/3051SFx (Measurement Type D)/ 3051S ERS Certifications	101
Rosemount 3051S and 3051SMV Wireless Certifications	106
Rosemount 3051SMV/3051SFx (Measurement Type 1-7) Certifications	108
Dimensional Drawings	111

Rosemount 3051S MultiVariable Transmitter

See ordering information on [page 19](#).

- Combines differential pressure, static pressure, and process temperature measurements along with mass and energy flow in a single device
- Compensates for 25+ different variables providing accurate and repeatable flow readings
- Customize pressure and temperature compensation for any flow application
- Easily configure flow and device parameters with Engineering Assistant™ Software



Rosemount 3051SF DP Flowmeters

See ordering information on [page 26](#).

- Integrates the 3051S with Rosemount's industry leading primary elements to create one complete flowmeter assembly
- Fully assembled, configured and leak tested for out-of-the-box installation
- Reduce installed costs by replacing 10 parts traditionally used for a DP Flow installation with one flowmeter
- Reduce straight pipe requirements, lower permanent pressure loss, and achieve accurate measurement in small line sizes



Rosemount 3051S Electronic Remote Sensor (ERS™) System

See ordering information on [page 50](#).

- The industry's first digital DP Level architecture consists of a single 4-20 mA HART® loop with two 3051S pressure sensors connected electronically
- Unique digital architecture enables stable and repeatable DP Level measurements on tall vessels, towers, and applications with wide-varying temperatures
- Achieve increased process insight and diagnostics with MultiVariable measurements including DP, Pressure, and Scaled Variable for Tank Level or Volume
- Simplify installations and maintenance by eliminating wet or dry legs, heat tracing, and purge systems



Rosemount 3051S Level Transmitter

See ordering information on [page 64](#).

- Level transmitters combine world-class 3051S pressure transmitters with direct-mount seals, all in a single integrated model number
- Connect to virtually any process with a comprehensive offering of seal types, sizes, fill fluids, and diaphragm materials
- Combine with an 1199 Remote Mount Seal to form a Tuned-System™ Assembly for a cost effective, easy-to-install DP Level measurement solution



Advanced functionality

WirelessHART® (IEC 62591) capabilities

Available on coplanar, in-line, multivariable, DP flowmeters and level transmitters

- Quickly deploy new pressure, level and flow measurements in 70% less time
- Eliminate wiring design and construction complexities to lower costs by 40 - 60%
- Reduce pipe penetrations and impulse piping with industry-leading MultiVariable technology
- Extended range antenna capabilities provide access to remote locations
- Delivering over a decade of maintenance free performance with 15-year stability and 10-year power module life



Advanced diagnostic capabilities

Available on coplanar, in-line, DP flowmeters and level transmitters

- Provides diagnostic coverage from the process to the transmitter to the host
- Prevent on-scale failures by diagnosing electrical loop issues with Power Advisory diagnostics
- Statistical Process Monitoring detects abnormal process conditions enabling more productive and safer operations
- Extend diagnostic coverage to Safety Instrumented Systems with IEC 61508 SIL 2/3 capable rating



Remote display and interface

Available on coplanar, in-line, DP flowmeters, electronic remote sensors, and level transmitters

- Direct mount to the process and access transmitter capabilities and diagnostics at grade
- Get access up to 100 feet (30 m) away from the process to ensure personnel safety
- Eliminate the need for impulse lines for best practice installations



Rosemount Instrument Manifolds

Available on traditional, coplanar, and in-line transmitters

- Designed and engineered to provide optimal performance with Rosemount 3051S transmitters
- Reduce cost and leak points with flangeless coplanar design
- Fully integrated manifold and transmitter assemblies come fully leak checked, calibrated and assembled allowing for one purchase order to save time and cost
- Rosemount manifolds provide a wide variety of styles, materials, and configurations to fit any process



Rosemount 3051S Coplanar Pressure Transmitter



3051S Coplanar Pressure Transmitter

Rosemount 3051S Coplanar Pressure Transmitters are the industry leader for differential, gage, and absolute pressure measurement. The Coplanar Platform allows seamless integration with manifolds, primary elements, and seal solutions. Capabilities include:

- Ultra, Ultra for Flow, and Classic Performance
- 4-20 mA HART, Wireless, FOUNDATION™ fieldbus protocols
- Safety Certification (Option Code QT)
- Advanced Diagnostics (Option Code DA2)
- Remote Display and Interface (Option Code M7, M8, or M9)

Additional Information

Specifications: [page 82](#)

Certifications: [page 101](#)

Dimensional drawings: [page 111](#)

Table 1. Rosemount 3051S Scalable Coplanar Pressure Transmitter ordering information

★ The Standard offering represents the most common options. The starred options (★) should be selected for best delivery.
The Expanded offering is subject to additional delivery lead time.

Model	Transmitter type			
3051S	Scalable Pressure Transmitter			
Performance class ⁽¹⁾				
Standard				Standard
1	Ultra: 0.025 percent span accuracy, 200:1 rangedown, 15-yr stability, 15-yr limited warranty			★
3 ⁽²⁾	Ultra for Flow: 0.04 percent reading accuracy, 200:1 turndown, 15-yr stability, 15-yr limited warranty			★
2	Classic: 0.035 percent span accuracy, 150:1 rangedown, 15-yr stability			★
Connection type				
Standard				Standard
C	Coplanar			★
Measurement type ⁽³⁾				
Standard				Standard
D	Differential			★
G	Gage			★
Expanded				Expanded
A	Absolute			
Pressure range				
	Differential	Gage	Absolute	
Standard				Standard
1A	-25 to 25 inH ₂ O (-62,3 to 62,3 mbar)	-25 to 25 inH ₂ O (-62,3 to 62,3 mbar)	0 to 30 psia (0 to 2,06 bar)	★
2A	-250 to 250 inH ₂ O (-623 to 623 mbar)	-250 to 250 inH ₂ O (-623 to 623 mbar)	0 to 150 psia (0 to 10,34 bar)	★
3A	-1000 to 1000 inH ₂ O (-2,5 to 2,5 bar)	-393 to 1000 inH ₂ O (-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 20,7 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	★
Expanded				Expanded
0A ⁽⁴⁾	-3 to 3 inH ₂ O (-7,47 to 7,47 mbar)	N/A	0 to 5 psia (0 to 0,34 bar)	

Table 1. Rosemount 3051S Scalable Coplanar Pressure Transmitter ordering information

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

The Expanded offering is subject to additional delivery lead time.

Isolating diaphragm							
Standard						Standard	
2 ⁽⁵⁾	316L SST					★	
3 ⁽⁵⁾	Alloy C-276					★	
Expanded						Expanded	
4 ⁽⁵⁾	Alloy 400						
5 ⁽⁶⁾	Tantalum						
6 ⁽⁵⁾	Gold-Plated Alloy 400 (includes Graphite-Filled PTFE o-ring)						
7 ⁽⁵⁾	Gold-Plated 316L SST						
Process connection			Size	Materials of construction			
				Flange material	Drain vent	Bolting	
Standard							Standard
000	None (no process flange)						★
A11 ⁽⁷⁾	Assemble to Rosemount 305 Integral Manifold						★
A12 ⁽⁷⁾	Assemble to Rosemount 304 or AMF Manifold and SST traditional flange						★
A15	Assemble to Rosemount 304 or AMF manifold to SST Traditional Flange with Alloy C-276 Drain Vents						★
A16 ⁽⁷⁾	Assemble to 304 or AMF Manifold to DIN SST Traditional Flange						★
A22	Assemble AMF manifold to SST Coplanar Flange						★
B11 ⁽⁷⁾⁽⁸⁾⁽⁹⁾	Assemble to one Rosemount 1199 Seal			SST		★	
B12 ⁽⁷⁾⁽⁸⁾⁽⁹⁾	Assemble to two Rosemount 1199 Seals			SST		★	
C11 ⁽⁷⁾	Assemble to Rosemount 405C or 405P Primary Element						★
D11 ⁽⁷⁾	Assemble to Rosemount 1195 integral orifice and Rosemount 305 Integral Manifold						★
EA2 ⁽⁷⁾	Assemble to Rosemount 485 or 405A Annubar™ Primary Element with Coplanar flange			SST	316 SST	★	
EA3 ⁽⁷⁾	Assemble to Rosemount 485 or 405A Annubar Primary Element with Coplanar flange			Cast C-276	Alloy C-276	★	
EA5 ⁽⁷⁾	Assemble to Rosemount 485 or 405A Annubar Primary Element with Coplanar flange			SST	Alloy C-276	★	
E11	Coplanar flange	1/4-18 NPT	CS	316 SST		★	
E12	Coplanar flange	1/4-18 NPT	SST	316 SST		★	
E13 ⁽⁵⁾	Coplanar flange	1/4-18 NPT	Cast C-276	Alloy C-276		★	
E14	Coplanar flange	1/4-18 NPT	Cast Alloy 400	Alloy 400/K-500		★	
E15 ⁽⁵⁾	Coplanar flange	1/4-18 NPT	SST	Alloy C-276		★	
E16 ⁽⁵⁾	Coplanar flange	1/4-18 NPT	CS	Alloy C-276		★	
E21	Coplanar flange	RC 1/4	CS	316 SST		★	
E22	Coplanar flange	RC 1/4	SST	316 SST		★	
E23 ⁽⁵⁾	Coplanar flange	RC 1/4	Cast C-276	Alloy C-276		★	
E24	Coplanar flange	RC 1/4	Cast Alloy 400	Alloy 400/K-500		★	
E25 ⁽⁵⁾	Coplanar flange	RC 1/4	SST	Alloy C-276		★	
E26 ⁽⁵⁾	Coplanar flange	RC 1/4	CS	Alloy C-276		★	
F12	Traditional flange	1/4-18 NPT	SST	316 SST		★	
F13 ⁽⁵⁾	Traditional flange	1/4-18 NPT	Cast C-276	Alloy C-276		★	
F14	Traditional flange	1/4-18 NPT	Cast Alloy 400	Alloy 400/K-500		★	
F15 ⁽⁵⁾	Traditional flange	1/4-18 NPT	SST	Alloy C-276		★	
F22	Traditional flange	RC 1/4	SST	316 SST		★	
F23 ⁽⁵⁾	Traditional flange	RC 1/4	Cast C-276	Alloy C-276		★	
F24	Traditional flange	RC 1/4	Cast Alloy 400	Alloy 400/K-500		★	
F25 ⁽⁵⁾	Traditional flange	RC 1/4	SST	Alloy C-276		★	
F52	DIN-compliant traditional flange	1/4-18 NPT	SST	316 SST	7/16-in. bolting	★	

Table 1. Rosemount 3051S Scalable Coplanar Pressure Transmitter ordering information

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

The Expanded offering is subject to additional delivery lead time.

G11	Vertical mount level flange	2-in. ANSI class 150	SST	316 SST		★
G12	Vertical mount level flange	2-in. ANSI class 300	SST	316 SST		★
G21	Vertical mount level flange	3-in. ANSI class 150	SST	316 SST		★
G22	Vertical mount level flange	3-in. ANSI class 300	SST	316 SST		★
G31	Vertical mount level flange	DIN- DN 50 PN 40	SST	316 SST		★
G41	Vertical mount level flange	DIN- DN 80 PN 40	SST	316 SST		★
Expanded						Expanded
F32	Bottom vent traditional flange	$\frac{1}{4}$ -18 NPT	SST	316 SST		
F42	Bottom vent traditional flange	RC $\frac{1}{4}$	SST	316 SST		
F62	DIN-compliant traditional flange	$\frac{1}{4}$ -18 NPT	SST	316 SST	M10 bolting	
F72	DIN-compliant traditional flange	$\frac{1}{4}$ -18 NPT	SST	316 SST	M12 bolting	
Transmitter output						
Standard						Standard
A	4–20 mA with digital signal based on HART protocol					★
F ⁽¹⁰⁾	FOUNDATION fieldbus protocol					★
X ⁽¹¹⁾	Wireless (requires wireless options and wireless PlantWeb™ housing)					★
Housing style				Material	Conduit entry size	
Standard						Standard
00	None (SuperModule spare part, order output code A)					★
1A	PlantWeb housing		Aluminum	$\frac{1}{2}$ -14 NPT		★
1B	PlantWeb housing		Aluminum	M20 x 1.5		★
1J	PlantWeb housing		SST	$\frac{1}{2}$ -14 NPT		★
1K	PlantWeb housing		SST	M20 x 1.5		★
5A ⁽¹²⁾	Wireless PlantWeb housing		Aluminum	$\frac{1}{2}$ -14 NPT		★
5J ⁽¹²⁾	Wireless PlantWeb housing		SST	$\frac{1}{2}$ -14 NPT		★
2A	Junction Box housing		Aluminum	$\frac{1}{2}$ -14 NPT		★
2B	Junction Box housing		Aluminum	M20 x 1.5		★
2J	Junction Box housing		SST	$\frac{1}{2}$ -14 NPT		★
2E	Junction Box housing with output for remote display and interface		Aluminum	$\frac{1}{2}$ -14 NPT		★
2F	Junction Box housing with output for remote display and interface		Aluminum	M20 x 1.5		★
2M	Junction Box housing with output for remote display and interface		SST	$\frac{1}{2}$ -14 NPT		★
7J ⁽¹³⁾	Quick Connect (A size Mini, 4-pin male termination)		SST			★
Expanded						Expanded
1C	PlantWeb housing		Aluminum	G $\frac{1}{2}$		
1L	PlantWeb housing		SST	G $\frac{1}{2}$		
2C	Junction Box housing		Aluminum	G $\frac{1}{2}$		
2G	Junction Box housing with output for remote display and interface		Aluminum	G $\frac{1}{2}$		

Wireless options (Requires option code X and wireless PlantWeb housing)

Update rate		
Standard		Standard
WA	User Configurable Update Rate	★
Operating frequency and protocol		
Standard		Standard
3	2.4 GHz DSSS, IEC 62591 (<i>Wireless</i> HART)	★
Omni-directional wireless antenna		
Standard		Standard
WK	External Antenna	★
WM	Extended Range, External Antenna	★

Table 1. Rosemount 3051S Scalable Coplanar Pressure Transmitter ordering information

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

The Expanded offering is subject to additional delivery lead time.

Expanded		Expanded
WN	High-Gain, Remote Antenna	
SmartPower™		
Standard		Standard
1 ⁽¹⁴⁾	Adapter for Black Power Module (I.S. Power Module Sold Separately)	★

Other options (include with selected model number)

PlantWeb control functionality		
Standard		Standard
A01 ⁽¹⁵⁾	FOUNDATION fieldbus Advanced Control Function Block Suite	★
PlantWeb diagnostic functionality		
Standard		Standard
D01 ⁽¹⁵⁾	FOUNDATION fieldbus Diagnostics Suite	★
DA2 ⁽¹⁵⁾⁽¹⁶⁾	Advanced HART Diagnostics Suite	★
PlantWeb enhanced measurement functionality		
Standard		Standard
H01 ⁽¹⁵⁾⁽¹⁷⁾	FOUNDATION fieldbus Fully Compensated Mass Flow Block	★
Mounting bracket ⁽¹⁸⁾		
Standard		Standard
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	★
Software configuration		
Standard		Standard
C1 ⁽¹⁹⁾	Custom software configuration (Requires Configuration Data Sheet)	★
C2	Custom flow configuration (Requires H01 and Configuration Data Sheet)	★
Gage pressure calibration		
Standard		Standard
C3	Gage pressure calibration on Rosemount 3051S_CA4 only	★
Alarm Limit		
Standard		Standard
C4 ⁽¹⁵⁾⁽¹⁹⁾	NAMUR alarm and saturation levels, high alarm	★
C5 ⁽¹⁵⁾⁽¹⁹⁾	NAMUR alarm and saturation levels, low alarm	★
C6 ⁽¹⁵⁾⁽¹⁹⁾	Custom alarm and saturation signal levels, high alarm (Requires C1 and Configuration Data Sheet)	★
C7 ⁽¹⁵⁾⁽¹⁹⁾	Custom alarm and saturation signal levels, low alarm (Requires C1 and Configuration Data Sheet)	★
C8 ⁽¹⁵⁾⁽¹⁹⁾	Low alarm (standard Rosemount alarm and saturation levels)	★
Hardware adjustments		
Standard		Standard
D1 ⁽¹⁵⁾⁽¹⁹⁾⁽²⁰⁾	Hardware adjustments (zero, span, alarm, security)	★
Flange adapter		
Standard		Standard
D2 ⁽²¹⁾	1/2-14 NPT flange adapter	★

Table 1. Rosemount 3051S Scalable Coplanar Pressure Transmitter ordering information

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

The Expanded offering is subject to additional delivery lead time.

Expanded		Expanded
D9 ⁽²¹⁾	RC ¹ /2 SST flange adapter	
Custody transfer		
Standard		Standard
D3 ⁽²²⁾	Measurement Canada Accuracy Approval	★
Ground screw		
Standard		Standard
D4 ⁽²³⁾	External ground screw assembly	★
Drain/vent valve		
Standard		Standard
D5 ⁽²¹⁾	Delete transmitter drain/vent valves (install plugs)	★
Expanded		Expanded
D7 ⁽²¹⁾	SST Coplanar flange without drain/vent ports	
Conduit plug		
Standard		Standard
DO ⁽²⁴⁾	316 SST Conduit Plug	★
Product certifications⁽²⁵⁾		
Standard		Standard
E1	ATEX Flameproof	★
I1	ATEX Intrinsic Safety	★
IA	ATEX FISCO Intrinsic Safety (FOUNDATION fieldbus protocol only)	★
N1	ATEX Type n	★
K1	ATEX Flameproof, Intrinsic Safety, Type n, Dust	★
ND	ATEX Dust	★
E4	TIIS Flameproof	★
I4 ⁽¹²⁾	TIIS Intrinsic Safety	★
E5	FM Explosion-proof, Dust Ignition-proof	★
I5	FM Intrinsically Safe; Nonincendive	★
IE	FM FISCO Intrinsically Safe (FOUNDATION fieldbus protocol only)	★
K5	FM Explosion-proof, Dust Ignition-proof, Intrinsically Safe, Division 2	★
E6 ⁽²⁶⁾	CSA Explosion-proof, Dust Ignition-proof, Division 2	★
I6	CSA Intrinsically Safe	★
IF	CSA FISCO Intrinsically Safe (FOUNDATION fieldbus protocol only)	★
K6 ⁽²⁶⁾	CSA Explosion-proof, Dust Ignition-proof, Intrinsically Safe, Division 2	★
E7	IECEx Flameproof, Dust	★
I7	IECEx Intrinsic Safety	★
IG	IECEx FISCO Intrinsic Safety (FOUNDATION fieldbus protocol only)	★
N7	IECEx Type n	★
K7	IECEx Flameproof, Dust, Intrinsic Safety, Type n	★
E2	INMETRO Flameproof	★
I2	INMETRO Intrinsic Safety	★
IB	INMETRO FISCO Intrinsic Safety	★
K2	INMETRO Flameproof, Intrinsic Safety	★
E3	China Flameproof	★
I3	China Intrinsic Safety	★
N3	China Type n	★
KA ⁽²⁶⁾	ATEX and CSA Flameproof, Intrinsically Safe, Division 2	★
KB ⁽²⁶⁾	FM and CSA Explosion-proof, Dust Ignition-proof, Intrinsically Safe, Division 2	★
KC	FM and ATEX Explosion-proof, Intrinsically Safe, Division 2	★
KD ⁽²⁶⁾	FM, CSA, and ATEX Explosion-proof, Intrinsically Safe	★
KG	FM, CSA, ATEX and IECEx FISCO Intrinsic Safety	★

Table 1. Rosemount 3051S Scalable Coplanar Pressure Transmitter ordering information

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

The Expanded offering is subject to additional delivery lead time.

Shipboard approvals		
Standard		Standard
SBS	American Bureau of Shipping	★
Sensor fill fluid		
Standard		Standard
L1 ⁽²⁷⁾	Inert sensor fill fluid	★
O-ring		
Standard		Standard
L2	Graphite-filled PTFE o-ring	★
Bolting material		
Standard		Standard
L4 ⁽²¹⁾	Austenitic 316 SST bolts	★
L5 ⁽²¹⁾	ASTM A 193, Grade B7M bolts	★
L6 ⁽²¹⁾	Alloy K-500 bolts	★
L7 ⁽²¹⁾⁽²⁸⁾	ASTM A453, Class D, Grade 660 bolts	★
L8 ⁽²¹⁾	ASTM A193, Class 2, Grade B8M bolts	★
Display type⁽²⁹⁾		
Standard		Standard
M5	PlantWeb LCD display	★
M7 ⁽¹⁵⁾⁽³⁰⁾⁽³¹⁾	Remote mount LCD display and interface, PlantWeb housing, no cable, SST bracket	★
M8 ⁽¹⁵⁾⁽³⁰⁾	Remote mount LCD display and interface, PlantWeb housing, 50 ft. (15 m) cable, SST bracket	★
M9 ⁽¹⁵⁾⁽³⁰⁾	Remote mount LCD display and interface, PlantWeb housing, 100 ft. (31 m) cable, SST bracket	★
Pressure testing		
Expanded		Expanded
P1 ⁽³²⁾	Hydrostatic testing with certificate	
Special cleaning		
Expanded		Expanded
P2 ⁽²¹⁾	Cleaning for special services	
P3 ⁽²¹⁾	Cleaning for less than 1PPM chlorine/fluorine	
Maximum static line pressure		
Standard		Standard
P9	4500 psig (310 bar) static pressure limit (Rosemount 3051S_CD only)	★
P0 ⁽³³⁾	6092 psig (420 bar) static pressure limit (Rosemount 3051S2CD only)	★
Calibration certification		
Standard		Standard
Q4	Calibration certificate	★
QP	Calibration certificate and tamper evident seal	★
Material traceability certification		
Standard		Standard
Q8	Material traceability certification per EN 10204 3.1	★
Quality certification for safety		
Standard		Standard
QS ⁽¹⁵⁾⁽¹⁹⁾	Prior-use certificate of FMEDA Data	★
QT ⁽³⁴⁾	Safety-certified to IEC 61508 with certificate of FMEDA data	★
Transient protection		
Standard		Standard
T1 ⁽³⁵⁾⁽³⁶⁾	Transient terminal block	★

Table 1. Rosemount 3051S Scalable Coplanar Pressure Transmitter ordering information

★ The Standard offering represents the most common options. The starred options (★) should be selected for best delivery.
The Expanded offering is subject to additional delivery lead time.

Drinking water approval		
Standard		Standard
DW ⁽³⁷⁾	NSF Drinking Water Approval	★
Surface finish certification		
Standard		Standard
Q16	Surface finish certification for sanitary remote seals	★
Toolkit total system performance reports		
Standard		Standard
QZ	Remote Seal System Performance Calculation Report	★
Conduit electrical connector		
Standard		Standard
GE ⁽³⁸⁾	M12, 4-pin, Male Connector (eurofast®)	★
GM ⁽³⁸⁾	A size Mini, 4-pin, Male Connector (minifast®)	★
NACE Certificate		
Standard		Standard
Q15 ⁽³⁹⁾	Certificate of Compliance to NACE MR0175/ISO 15156 for wetted materials	★
Q25 ⁽³⁹⁾	Certificate of Compliance to NACE MR0103 for wetted materials	★
Typical model number: 3051S1CD 2A 2 E12 A 1A DA2 B4 M5		

- (1) For detailed specifications see “Specifications” on page -82.
- (2) This option is only available with range codes 2A and 3A, 316L SST or Alloy C-276 isolating diaphragm and silicone fill fluid.
- (3) Performance Class code 3 is available with Measurement Type code D only.
- (4) 3051S_CD0 is only available with SST traditional flange, 316L SST diaphragm material, and Bolting option L4.
- (5) Materials of Construction comply with metallurgical requirements highlighted within NACE MR0175/ISO 15156 for sour oil field production environments. Environmental limits apply to certain materials. Consult latest standard for details. Selected materials also conform to NACE MR0103 for sour refining environments. Order with Q15 or Q25 to receive a NACE certificate.
- (6) Tantalum diaphragm material is only available for ranges 2A - 5A, differential and gage.
- (7) “Assemble to” items are specified separately and require a completed model number. Process connection option codes B12, C11, D11, EA2, EA3, and EA5 are only available on differential Measurement Type, code D.
- (8) Consult an Emerson Process Management representative for performance specifications.
- (9) Not available with Performance Class code 3.
- (10) Requires PlantWeb™ housing.
- (11) Only intrinsically safe approval codes apply.
- (12) Only available with output code X.
- (13) Available with output code A only. Available approvals are FM Intrinsically Safe; Nonincendive (option code I5), CSA Intrinsically Safe (option code I6), ATEX Intrinsic Safety (option code I1), or IECEx Intrinsic Safety (option code I7). Contact an Emerson Process Management representative for additional information.
- (14) Long-Life Power Module must be shipped separately, order Power Module 701PBKKE.
- (15) Not available with output code X.
- (16) Requires PlantWeb housing and output code A. Includes Hardware Adjustments as standard.
- (17) Requires Rosemount Engineering Assistant to configure.

- (18) For process connection option code A11, the mounting bracket must be ordered as part of the manifold model number.
- (19) Not available with output code F.
- (20) Not available with housing style codes 00, 2E, 2F, 2G, 2M, 5A, 5J, or 7J.
- (21) Not available with process connection option code A11.
- (22) Requires PlantWeb housing and Hardware Adjustments option code D1. Limited availability depending on transmitter type and range. Contact an Emerson Process Management representative for additional information.
- (23) This assembly is included with options E1, N1, K1, ND, E4, E7, N7, K7, E2, E3, KA, KC, KD, IA, IB, IE, IF, IG, KG, and T1.
- (24) Transmitter is shipped with 316 SST conduit plug (uninstalled) in place of standard carbon steel conduit plug.
- (25) Valid when SuperModule Platform and housing have equivalent approvals.
- (26) Not available with M20 or G ½ conduit entry size.
- (27) Only available on differential and gage measurement types. Silicone fill fluid is standard.
- (28) Bolts are not considered process wetted. In instances where NACE MR0175/ISO 15156 and NACE MR0103 conformance is required for bolting, L7 is the recommended bolting option.
- (29) Not available with Housing code 7J.
- (30) Not available with output code F, option code DA2, or option code QT.
- (31) See the 3051S Reference Manual (document number 00809-0100-4801) for cable requirements. Contact an Emerson Process Management representative for additional information.
- (32) P1 is not available with 3051S_CA0.
- (33) Requires 316L SST, Alloy C-276, or Gold-plated 316L SST diaphragm material, assemble to Rosemount 305 integral manifold or DIN-compliant traditional flange process connection, and bolting option L8. Limited to Pressure Range (Differential), ranges 2A – 5A.
- (34) Not available with output code F or X. Not available with housing code 7J.
- (35) Not available with Housing code 00, 5A, 5J, or 7J.
- (36) The T1 option is not needed with FISCO Product Certifications; transient protection is included in the FISCO product certification codes IA, IB, IE, IF, IG, and KG.
- (37) Requires 316L SST diaphragm material, glass-filled PTFE O-ring (standard), and Process Connection code E12 or F12.
- (38) Not available with Housing code 00, 5A, 5J, or 7J. Available with Intrinsically Safe approvals only. For FM Intrinsically Safe; Nonincendive (option code I5) or FM FISCO Intrinsically Safe (option code IE), install in accordance with Rosemount drawing 03151-1009. Suitable for use with all IS approvals (I1, I2, I3, I5, I6, I7, IA, IB, IE, IF, IG).
- (39) NACE compliant wetted materials are identified by [Footnote 5](#).

Rosemount 3051S In-Line Pressure Transmitter



3051S In-Line Pressure Transmitter

Rosemount 3051S In-line Pressure Transmitters are the industry leader for Gage and Absolute pressure measurement. The in-line, compact design allows the transmitter to be connected directly to a process for quick, easy and cost effective installation. Capabilities include:

- Ultra and Classic Performance
- 4-20 mA HART, Wireless, FOUNDATION fieldbus protocols
- Safety Certification (Option Code QT)
- Advanced Diagnostics (Option Code DA2)
- Remote Display and Interface (Option Code M7, M8, or M9)

Additional information

Specifications: [page 82](#)

Certifications: [page 101](#)

Dimensional Drawings: [page 113](#)

Table 2. Rosemount 3051S Scalable In-Line Pressure Transmitter ordering information

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

The Expanded offering is subject to additional delivery lead time.

Model	Transmitter type		
3051S	Scalable Pressure Transmitter		
Performance class ⁽¹⁾			
Standard			Standard
1	Ultra: 0.025 percent span accuracy, 200:1 rangedown, 15-yr stability, 15-yr limited warranty		★
2	Classic: 0.035 percent span accuracy, 150:1 rangedown, 15-yr stability		★
Connection type			
Standard			Standard
T	In-Line		★
Measurement type			
Standard			Standard
G	Gage		★
A	Absolute		★
Pressure range			
	Gage	Absolute	
Standard			Standard
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)	★
Isolating diaphragm			
Standard			Standard
2 ⁽²⁾⁽³⁾	316L SST		★
3 ⁽²⁾⁽³⁾	Alloy C-276		★

Table 2. Rosemount 3051S Scalable In-Line Pressure Transmitter ordering information

★ The Standard offering represents the most common options. The starred options (★) should be selected for best delivery.
The Expanded offering is subject to additional delivery lead time.

Process connection				
Standard				Standard
A11 ⁽⁴⁾	Assemble to Rosemount 306 Integral Manifold			★
B11 ⁽⁴⁾⁽⁵⁾	Assemble to one Rosemount 1199 Seal			★
E11	1/2–14 NPT female			★
G11	G1/2 A DIN 16288 male (Range 1-4 only)			★
Expanded				Expanded
F11	Non-threaded instrument flange (I-flange) (Range 1-4 only)			
Transmitter output				
Standard				Standard
A	4–20 mA with digital signal based on HART® protocol			★
F ⁽⁶⁾	FOUNDATION fieldbus protocol			★
X ⁽⁷⁾	Wireless (Requires wireless options and wireless PlantWeb housing)			★
Housing style		Material	Conduit entry size	
Standard				Standard
00	None (SuperModule spare part, order output code A)			★
1A	PlantWeb housing	Aluminum	1/2–14 NPT	★
1B	PlantWeb housing	Aluminum	M20 x 1.5	★
1J	PlantWeb housing	SST	1/2–14 NPT	★
1K	PlantWeb housing	SST	M20 x 1.5	★
5A ⁽⁸⁾	Wireless PlantWeb housing	Aluminum	1/2–14 NPT	★
5J ⁽⁸⁾	Wireless PlantWeb housing	SST	1/2–14 NPT	★
2A	Junction Box housing	Aluminum	1/2–14 NPT	★
2B	Junction Box housing	Aluminum	M20 x 1.5	★
2J	Junction Box housing	SST	1/2–14 NPT	★
2E	Junction Box housing with output for remote display and interface	Aluminum	1/2–14 NPT	★
2F	Junction Box housing with output for remote display and interface	Aluminum	M20 x 1.5	★
2M	Junction Box housing with output for remote display and interface	SST	1/2–14 NPT	★
7J ⁽⁹⁾	Quick Connect (A size Mini, 4-pin male termination)	SST		★
Expanded				Expanded
1C	PlantWeb housing	Aluminum	G1/2	
1L	PlantWeb housing	SST	G1/2	
2C	Junction Box housing	Aluminum	G1/2	
2G	Junction Box housing with output for remote display and interface	Aluminum	G1/2	

Wireless options (requires option code X and wireless PlantWeb housing)

Update rate		
Standard		Standard
WA	User Configurable Update Rate	★
Operating frequency and protocol		
Standard		Standard
3	2.4 GHz DSSS, IEC 62591 (<i>Wireless</i> HART)	★
Omnidirectional wireless antenna		
Standard		Standard
WK	External Antenna	★
WM	Extended Range, External Antenna	★
Expanded		Expanded
WN	High-Gain, Remote Antenna	
SmartPower™		
Standard		Standard
1 ⁽¹⁰⁾	Adapter for Black Power Module (I.S. Power Module Sold Separately)	★

Table 2. Rosemount 3051S Scalable In-Line Pressure Transmitter ordering information

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

The Expanded offering is subject to additional delivery lead time.

Other options (Include with selected model number)

PlantWeb control functionality		
Standard		Standard
A01 ⁽¹¹⁾	FOUNDATION fieldbus Advanced Control Function Block Suite	★
plantweb diagnostic functionality		
Standard		Standard
D01 ⁽¹¹⁾	FOUNDATION fieldbus Diagnostics Suite	★
DA2 ⁽¹¹⁾⁽¹²⁾	Advanced HART Diagnostics Suite	★
Mounting bracket		
Standard		Standard
B4	Bracket, all SST, 2-in. pipe and panel	★
Software configuration		
Standard		Standard
C1 ⁽¹³⁾	Custom software configuration (Requires Configuration Data Sheet)	★
Alarm limit		
Standard		Standard
C4 ⁽¹¹⁾⁽¹³⁾	NAMUR alarm and saturation levels, high alarm	★
C5 ⁽¹¹⁾⁽¹³⁾	NAMUR alarm and saturation levels, low alarm	★
C6 ⁽¹¹⁾⁽¹³⁾	Custom alarm and saturation signal levels, high alarm (Requires C1 and Configuration Data Sheet)	★
C7 ⁽¹¹⁾⁽¹³⁾	Custom alarm and saturation signal levels, low alarm (Requires C1 and Configuration Data Sheet)	★
C8 ⁽¹¹⁾⁽¹³⁾	Low alarm (standard Rosemount alarm and saturation levels)	★
Hardware adjustments		
Standard		Standard
D1 ⁽¹¹⁾⁽¹³⁾⁽¹⁴⁾	Hardware adjustments (zero, span, alarm, security)	★
Custody transfer		
Standard		Standard
D3 ⁽¹⁵⁾	Measurement Canada Accuracy Approval	★
Ground screw		
Standard		Standard
D4 ⁽¹⁶⁾	External ground screw assembly	★
Conduit plug		
Standard		Standard
DO ⁽¹⁷⁾	316 SST Conduit Plug	★
Product certifications⁽¹⁸⁾		
Standard		Standard
E1	ATEX Flameproof	★
I1	ATEX Intrinsic Safety	★
IA	ATEX FISCO Intrinsic Safety (FOUNDATION fieldbus protocol only)	★
N1	ATEX Type n	★
K1	ATEX Flameproof, Intrinsic Safety, Type n, Dust	★
ND	ATEX Dust	★
E4	TIIS Flameproof	★
I4 ⁽⁸⁾	TIIS Intrinsic Safety	★
E5	FM Explosion-proof, Dust Ignition-proof	★
I5	FM Intrinsically Safe; Nonincendive	★
IE	FM FISCO Intrinsically Safe (FOUNDATION fieldbus protocol only)	★
K5	FM Explosion-proof, Dust Ignition-proof, Intrinsically Safe, Division 2	★
E6 ⁽¹⁹⁾	CSA Explosion-proof, Dust Ignition-proof, Division 2	★
I6	CSA Intrinsically Safe	★
IF	CSA FISCO Intrinsically Safe (FOUNDATION fieldbus protocol only)	★

Table 2. Rosemount 3051S Scalable In-Line Pressure Transmitter ordering information

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

The Expanded offering is subject to additional delivery lead time.

K6 ⁽¹⁹⁾	CSA Explosion-proof, Dust Ignition-proof, Intrinsically Safe, Division 2	★
E7	IECEX Flameproof, Dust Ignition-proof	★
I7	IECEX Intrinsic Safety	★
IG	IECEX FISCO Intrinsic Safety (FOUNDATION fieldbus protocol only)	★
N7	IECEX Type n	★
K7	IECEX Flameproof, Dust Ignition-proof, Intrinsic Safety, Type n	★
E2	INMETRO Flameproof	★
I2	INMETRO Intrinsic Safety	★
IB	INMETRO FISCO Intrinsic Safety	★
K2	INMETRO Flameproof, Intrinsic Safety	★
E3	China Flameproof	★
I3	China Intrinsic Safety	★
N3	China Type n	★
KA ⁽¹⁹⁾	ATEX and CSA Flameproof, Intrinsically Safe, Division 2	★
KB ⁽¹⁹⁾	FM and CSA Explosion-proof, Dust Ignition-proof, Intrinsically Safe, Division 2	★
KC	FM and ATEX Explosion-proof, Intrinsically Safe, Division 2	★
KD ⁽¹⁹⁾	FM, CSA, and ATEX Explosion-proof, Intrinsically Safe	★
KG	FM, CSA, ATEX and IECEX FISCO Intrinsic Safety	★
Shipboard approvals		
Standard		Standard
SBS	American Bureau of Shipping	★
Sensor fill fluid		
Standard		Standard
L1 ⁽²⁰⁾	Inert sensor fill fluid	★
Display type⁽²¹⁾		
Standard		Standard
M5	PlantWeb LCD display	★
M7 ⁽¹¹⁾⁽²²⁾⁽²³⁾	Remote mount LCD display and interface, PlantWeb housing, no cable, SST bracket	★
M8 ⁽¹¹⁾⁽²⁴⁾	Remote mount LCD display and interface, PlantWeb housing, 50 ft. (15 m) cable, SST bracket	★
M9 ⁽¹¹⁾⁽²⁴⁾	Remote mount LCD display and interface, PlantWeb housing, 100 ft. (31 m) cable, SST bracket	★
Pressure testing		
Expanded		Expanded
P1	Hydrostatic testing with certificate	
Special cleaning		
Expanded		Expanded
P2 ⁽²⁴⁾	Cleaning for special services	
P3 ⁽²⁴⁾	Cleaning for less than 1PPM chlorine/fluorine	
Calibration certification		
Standard		Standard
Q4	Calibration certificate	★
QP	Calibration certificate and tamper evident seal	★
Material traceability certification		
Standard		Standard
Q8	Material traceability certification per EN 10204 3.1	★
Quality certification for safety		
Standard		Standard
QS ⁽¹¹⁾⁽¹³⁾	Prior-use certificate of FMEDA Data	★
QT ⁽²⁵⁾	Safety-certified to IEC 61508 with certificate of FMEDA data	★

Table 2. Rosemount 3051S Scalable In-Line Pressure Transmitter ordering information

★ The Standard offering represents the most common options. The starred options (★) should be selected for best delivery.
The Expanded offering is subject to additional delivery lead time.

Transient protection		
Standard		Standard
T1 ⁽²⁶⁾⁽²⁷⁾	Transient terminal block	★
Drinking water approval		
Standard		Standard
DW ⁽²⁸⁾	NSF Drinking Water Approval	★
Surface finish certification		
Standard		Standard
Q16	Surface finish certification for sanitary remote seals	★
Toolkit total system performance reports		
Standard		Standard
QZ	Remote Seal System Performance Calculation Report	★
Conduit electrical connector		
Standard		Standard
GE ⁽²⁹⁾	M12, 4-pin, Male Connector (eurofast)	★
GM ⁽²⁹⁾	A size Mini, 4-pin, Male Connector (minifast)	★
NACE Certificate		
Standard		Standard
Q15 ⁽³⁰⁾	Certificate of Compliance to NACE MR0175/ISO 15156 for wetted materials	★
Q25 ⁽³⁰⁾	Certificate of Compliance to NACE MR0103 for wetted materials	★
Typical model number: 3051S1TG 2A 2 E11 A 1A DA2 B4 M5		

- (1) For detailed specifications see [“Specifications” on page -82](#).
- (2) Materials of Construction comply with metallurgical requirements highlighted within NACE MR0175/ISO 15156 for sour oil field production environments. Environmental limits apply to certain materials. Consult latest standard for details. Selected materials also conform to NACE MR0103 for sour refining environments. Order with Q15 or Q25 to receive a NACE certificate.
- (3) Isolator diaphragm selection will dictate materials of construction for wetted parts.
- (4) “Assemble to” items are specified separately and require a completed model number.
- (5) Consult an Emerson Process Management representative for performance specifications.
- (6) Requires PlantWeb housing.
- (7) Only intrinsically safe approval codes apply.
- (8) Only available with output code X.
- (9) Only available with output code A. Available approvals are FM Intrinsically Safe; Nonincendive (option code I5), CSA Intrinsically Safe (option code I6), ATEX Intrinsic Safety (option code I1), or IECEx Intrinsic Safety (option code I7). Contact an Emerson Process Management representative for additional information.
- (10) Long-Life Power Module must be shipped separately, order Power Module 701PBKKE.
- (11) Not available with output code X.
- (12) Requires PlantWeb housing and output code A. Includes Hardware Adjustments as standard.
- (13) Not available with output code F.
- (14) Not available with housing style codes 00, 01, 2E, 2F, 2G, 2M, 5A, 5J, or 7J.
- (15) Requires PlantWeb housing and Hardware Adjustments option code D1. Limited availability depending on transmitter type and range. Contact an Emerson Process Management representative for additional information.
- (16) This assembly is included with options E1, N1, K1, ND, E4, E7, N7, K7, E2, E3, KA, KC, KD, IA, IB, IE, IF, IG, KG, and T1.

- (17) Transmitter is shipped with 316 SST conduit plug (uninstalled) in place of standard carbon steel conduit plug.
- (18) Valid when SuperModule Platform and housing have equivalent approvals.
- (19) Not available with M20 or G ½ conduit entry size.
- (20) Silicone fill fluid is standard.
- (21) Not available with Housing code 7J.
- (22) Not available with output code F, option code DA2, or option code QT.
- (23) See the 3051S Reference Manual (document number 00809-0100-4801) for cable requirements. Contact an Emerson Process Management representative for additional information.
- (24) Not available with process connection option code A11.
- (25) Not available with output code F or X. Not available with housing code 7J.
- (26) Not available with Housing code 00, 5A, 5J, or 7J.
- (27) The T1 option is not needed with FISCO Product Certifications; transient protection is included in the FISCO product certification codes IA, IB, IE, IF, IG, and KG.
- (28) Requires 316L SST diaphragm material and Process Connection code E11 or G11.
- (29) Not available with Housing code 00, 5A, 5J, or 7J. Available with Intrinsically Safe approvals only. For FM Intrinsically Safe; Nonincendive (option code I5) or FM FISCO Intrinsically Safe (option code IE), install in accordance with Rosemount drawing 03151-1009. Suitable for use with all IS approvals (I1, I2, I3, I5, I6, I7, IA, IB, IE, IF, IG).
- (30) NACE compliant wetted materials are identified by [Footnote 2](#).

Rosemount 3051S MultiVariable Transmitter



3051S MultiVariable Transmitter

The Rosemount 3051S MultiVariable Transmitter delivers unprecedented performance and capabilities by providing superior flow calculations including fully compensated mass or volume, energy, and totalized flow. Specify the level of compensation that best matches the application:

- Gas, natural gas, and steam measurement: Utilize full compensation (differential pressure, line pressure, and temperature measurement)
- Saturated steam: Utilize differential and line pressure, or differential pressure and temperature measurement
- Liquids: Utilize differential pressure and temperature measurement
- Liquids at stable temperatures: Utilize differential pressure measurement
- 4-20 mA HART, *WirelessHART*

Additional information

Specifications: [page 82](#)

Certifications: [page 108](#)

Dimensional drawings: [page 111](#)

Table 3. Rosemount 3051S Scalable MultiVariable Transmitter ordering information

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

The Expanded offering is subject to additional delivery lead time.

Model	Transmitter type	
3051SMV	Scalable MultiVariable Transmitter	
Performance class⁽¹⁾		
Standard		Standard
3051SMV MultiVariable SuperModule, Measurement Types 1 and 2		
3 ⁽²⁾	Ultra for Flow: 0.04% reading DP accuracy, 200:1 rangedown, 10-year stability, 15-year limited warranty	★
5	Classic MV: 0.04% span DP accuracy, 100:1 rangedown, 5-year stability	★
3051SMV Single Variable SuperModule, Measurement Types 3 and 4		
1 ⁽³⁾	Ultra: 0.025% span DP accuracy, 200:1 rangedown, 15-year stability, 15-year limited warranty	★
2	Classic: 0.035% span DP accuracy, 150:1 rangedown, 15-year stability	★
3 ⁽²⁾	Ultra for Flow: 0.04% reading DP accuracy, 200:1 rangedown, 15-year stability, 15-year limited warranty	★
MultiVariable type		
Standard		Standard
M	Measurement with Fully Compensated Mass and Energy Flow Calculations	★
P	Measurement of Process Variables Only (No Flow Calculations)	★
Measurement type		
Standard		Standard
1	Differential Pressure, Static Pressure, and Temperature	★
2	Differential Pressure and Static Pressure	★
3	Differential Pressure and Temperature	★
4	Differential Pressure	★
Differential pressure range		
Standard		Standard
0 ⁽³⁾⁽⁴⁾	-3 to 3 inH ₂ O (-7,47 to 7,47 mbar)	★
1	-25 to 25 inH ₂ O (-62,3 to 62,3 mbar)	★

Table 3. Rosemount 3051S Scalable MultiVariable Transmitter ordering information

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

The Expanded offering is subject to additional delivery lead time.

2	-250 to 250 inH ₂ O (-623 to 623 mbar)			★	
3	-1000 to 1000 inH ₂ O (-2,5 to 2,5 bar)			★	
4	-150 to 150 psi (-10,3 to 10,3 bar) for Measurement Types 1 & 2; -300 to 300 psi (-20,7 to 20,7 bar) for Types 3 & 4			★	
5	-2000 to 2000 psi (-137,9 to 137,9 bar)			★	
Static pressure type					
Standard				Standard	
N ⁽⁵⁾	None			★	
A	Absolute			★	
G	Gage			★	
Static pressure range		Absolute	Gage		
Standard				Standard	
N ⁽⁵⁾	None			★	
3	Range 3	0.5 to 800 psia (0,03 to 55,2 bar)	-14.2 to 800 psig (-0,98 to 55,2 bar)	★	
4 ⁽⁶⁾	Range 4	0.5 to 3626 psia (0,03 to 250 bar)	-14.2 to 3626 psig (-0,98 to 250 bar)	★	
Temperature input					
Standard				Standard	
N ⁽⁷⁾	None			★	
R ⁽⁸⁾	RTD Input (Type Pt 100, -328 to 1562 °F (-200 to 850 °C))			★	
Isolating diaphragm					
Standard				Standard	
2 ⁽⁹⁾	316L SST			★	
3 ⁽⁹⁾	Alloy C-276			★	
Expanded				Expanded	
5 ⁽¹⁰⁾	Tantalum				
7 ⁽⁹⁾	Gold-Plated 316L SST				
Process connection		Size	Material type		
			Flange material	Drain vent	Bolting
Standard					Standard
000	None (no process flange)				★
A11 ⁽¹¹⁾	Assemble to Rosemount 305/306 Integral Manifold				★
A12 ⁽¹¹⁾	Assemble to Rosemount 304 or AMF Manifold with SST Traditional Flange				★
A15	Assemble to Rosemount 304 or AMF manifold to SST Traditional Flange with Alloy C-276 Drain Vents				★
A16 ⁽¹¹⁾	Assemble to 304 or AMF Manifold to DIN SST Traditional Flange				★
A22	Assemble AMF manifold to SST Coplanar Flange				★
B11 ⁽¹¹⁾⁽¹²⁾	Assemble to one Rosemount 1199 Seal				★
B12 ⁽¹¹⁾⁽¹²⁾	Assemble to two Rosemount 1199 Seals				★
C11 ⁽¹¹⁾	Assemble to Rosemount 405C or 405P Primary Element				★
D11 ⁽¹¹⁾	Assemble to Rosemount 1195 Integral Orifice and Rosemount 305 Integral Manifold				★
EA2 ⁽¹¹⁾	Assemble to Rosemount 485 or 405A Annubar™ Primary Element with Coplanar flange	SST	316 SST		★
EA3 ⁽¹¹⁾	Assemble to Rosemount 485 or 405A Annubar Primary Element with Coplanar flange	Cast C-276	Alloy C-276		★
EA5 ⁽¹¹⁾	Assemble to Rosemount 485 or 405A Annubar Primary Element with Coplanar flange	SST	Alloy C-276		★
E11	Coplanar flange	1/4–18 NPT	Carbon Steel	316 SST	★
E12	Coplanar flange	1/4–18 NPT	SST	316 SST	★
E13 ⁽⁹⁾	Coplanar flange	1/4–18 NPT	Cast C-276	Alloy C-276	★
E14	Coplanar flange	1/4–18 NPT	Cast Alloy 400	Alloy 400/K-500	★

Table 3. Rosemount 3051S Scalable MultiVariable Transmitter ordering information

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

The Expanded offering is subject to additional delivery lead time.

Standard						Standard
E15 ⁽⁹⁾	Coplanar flange	1/4–18 NPT	SST	Alloy C-276		★
E16 ⁽⁹⁾	Coplanar flange	1/4–18 NPT	Carbon Steel	Alloy C-276		★
E21	Coplanar flange	RC 1/4	Carbon Steel	316 SST		★
E22	Coplanar flange	RC 1/4	SST	316 SST		★
E23 ⁽⁹⁾	Coplanar flange	RC 1/4	Cast C-276	Alloy C-276		★
E24	Coplanar flange	RC 1/4	Cast Alloy 400	Alloy 400/K-500		★
E25 ⁽⁹⁾	Coplanar flange	RC 1/4	SST	Alloy C-276		★
E26 ⁽⁹⁾	Coplanar flange	RC 1/4	Carbon Steel	Alloy C-276		★
F12	Traditional flange	1/4–18 NPT	SST	316 SST		★
F13 ⁽⁹⁾	Traditional flange	1/4–18 NPT	Cast C-276	Alloy C-276		★
F14	Traditional flange	1/4–18 NPT	Cast Alloy 400	Alloy 400/K-500		★
F15 ⁽⁹⁾	Traditional flange	1/4–18 NPT	SST	Alloy C-276		★
F22	Traditional flange	RC 1/4	SST	316 SST		★
F23 ⁽⁹⁾	Traditional flange	RC 1/4	Cast C-276	Alloy C-276		★
F24	Traditional flange	RC 1/4	Cast Alloy 400	Alloy 400/K-500		★
F25 ⁽⁹⁾	Traditional flange	RC 1/4	SST	Alloy C-276		★
F52	DIN-compliant traditional flange	1/4–18 NPT	SST	316 SST	7/16-in. bolting	★
G11	Vertical mount level flange	2-in. ANSI class 150	SST			★
G12	Vertical mount level flange	2-in. ANSI class 300	SST			★
G14	Vertical mount level flange	2-in. ANSI class 150	Cast C-276			★
G15	Vertical mount level flange	2-in. ANSI class 300	Cast C-276			★
G21	Vertical mount level flange	3-in. ANSI class 150	SST			★
G22	Vertical mount level flange	3-in. ANSI class 300	SST			★
G31	Vertical mount level flange	DIN- DN 50 PN 40	SST			★
Expanded						Expanded
EB6	Assemble to Primary Element with Manifold and Coplanar Flange, CS, Alloy C-276					
F32	Bottom vent traditional flange	1/4–18 NPT	SST	316 SST		
F42	Bottom vent traditional flange	RC 1/4	SST	316 SST		
F62	DIN-compliant traditional flange	1/4–18 NPT	SST	316 SST	M10 bolting	
F72	DIN-compliant traditional flange	1/4–18 NPT	SST	316 SST	M12 bolting	
G41	Vertical mount level flange	DIN- DN 80 PN 40	SST			
Transmitter output						
Standard						Standard
A	4–20 mA with digital signal based on HART protocol					★
X ⁽¹³⁾	Wireless (requires wireless options and wireless PlantWeb housing)					★
Housing style			Material	Conduit entry size		
Standard						Standard
1A	PlantWeb housing		Aluminum	1/2–14 NPT		★
1B	PlantWeb housing		Aluminum	M20 x 1.5		★
1J	PlantWeb housing		SST	1/2–14 NPT		★
1K	PlantWeb housing		SST	M20 x 1.5		★
5A ⁽¹⁴⁾	Wireless PlantWeb housing		Aluminum	1/2–14 NPT		★
5J ⁽¹⁴⁾	Wireless PlantWeb housing		SST	1/2–14 NPT		★
Expanded						Expanded
1C	PlantWeb housing		Aluminum	G 1/2		
1L	PlantWeb housing		SST	G 1/2		

Table 3. Rosemount 3051S Scalable MultiVariable Transmitter ordering information

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

The Expanded offering is subject to additional delivery lead time.

Wireless options (requires option code X and wireless PlantWeb housing)

Update rate		
Standard		Standard
WA	User configurable update rate	★
Operating frequency and protocol		
Standard		Standard
3	2.4 GHz DSSS, IEC 62591 (WirelessHART)	★
Omni-directional wireless antenna		
Standard		Standard
WK	External Antenna	★
WM	Extended Range, External Antenna	★
Expanded		Expanded
WN	High-Gain, Remote Antenna	
SmartPower™		
Standard		Standard
1 ⁽¹⁵⁾	Adapter for Black Power Module (I.S. Power Module sold separately)	★

Other options (include with selected model number)

RTD cable (RTD sensor must be ordered separately)		
Standard		Standard
C12	RTD Input with 12 ft. (3.66 m) of Shielded Cable	★
C13	RTD Input with 24 ft. (7.32 m) of Shielded Cable	★
C14	RTD Input with 75 ft. (22.86 m) of Shielded Cable	★
Standard		Standard
C22	RTD Input with 12 ft. (3.66 m) of Armored Shielded Cable	★
C23	RTD Input with 24 ft. (7.32 m) of Armored Shielded Cable	★
C24	RTD Input with 75 ft. (22.86 m) of Armored Shielded Cable	★
C32	RTD Input with 12 ft. (3.66 m) of ATEX/IECEx Flameproof Cable	★
C33	RTD Input with 24 ft. (7.32 m) of ATEX/IECEx Flameproof Cable	★
C34	RTD Input with 75 ft. (22.86 m) of ATEX/IECEx Flameproof Cable	★
Mounting brackets ⁽¹⁶⁾		
Standard		Standard
B4	Coplanar flange bracket, all SST, 2-in. pipe and panel	★
B1	Traditional flange bracket, Carbon Steel, 2-in. pipe	★
B2	Traditional flange bracket, Carbon Steel, panel	★
B3	Traditional flange flat bracket, Carbon Steel, 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	★
Software configuration		
Standard		Standard
C1	Custom software configuration <i>Note: A Configuration Data Sheet must be completed, see document number 00806-0100-4803.</i>	★
C2	Custom flow configuration <i>Note: A Custom Fluid Data Sheet must be completed, see document number 00806-0200-4803.</i>	★
C4	NAMUR alarm and saturation levels, high alarm	★
C5	NAMUR alarm and saturation levels, low alarm	★
C6	Custom alarm and saturation signal levels, high alarm	★
C7	Custom alarm and saturation signal levels, low alarm	★
C8	Low alarm (standard Rosemount alarm and saturation levels)	★

Table 3. Rosemount 3051S Scalable MultiVariable Transmitter ordering information

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

The Expanded offering is subject to additional delivery lead time.

Flange adapter		
Standard		Standard
D2 ⁽¹⁷⁾	1/2-14 NPT flange adapter	★
Expanded		
D9 ⁽¹⁷⁾	RC 1/2 SST flange adapter	
Ground screw		
Standard		Standard
D4 ⁽¹⁸⁾	External ground screw assembly	★
Drain/vent valve		
Standard		Standard
D5 ⁽¹⁷⁾	Delete transmitter drain/vent valves (install plugs)	★
Expanded		Expanded
D7 ⁽¹⁷⁾	Coplanar flange without drain/vent ports	
Conduit plug		
Standard		Standard
DO ⁽¹⁹⁾	316 SST Conduit Plug	★
Product certifications		
Standard		Standard
E1	ATEX Flameproof	★
I1	ATEX Intrinsic Safety	★
N1	ATEX Type n	★
ND	ATEX Dust	★
K1	ATEX Flameproof, Intrinsic Safety, Type n, Dust (combination of E1, I1, N1, and ND)	★
E4	TIIS Flameproof	★
E5	FM Explosion-proof, Dust Ignition-proof	★
I5	FM Intrinsically Safe; Nonincendive	★
K5	FM Explosion-proof, Dust Ignition-proof, Intrinsically Safe, Division 2 (combination of E5 and I5)	★
E6 ⁽²⁰⁾	CSA Explosion-proof, Dust Ignition-proof, Division 2	★
I6	CSA Intrinsically Safe	★
K6 ⁽²⁰⁾	CSA Explosion-proof, Dust Ignition-proof, Intrinsically Safe, Division 2 (combination of E6 and I6)	★
E7	IECEx Flameproof, Dust Ignition-proof	★
I7	IECEx Intrinsic Safety	★
N7	IECEx Type n	★
K7	IECEx Flameproof, Dust Ignition-proof, Intrinsic Safety, and Type n (combination of E7, I7, and N7)	★
E2	INMETRO Flameproof	★
I2	INMETRO Intrinsic Safety	★
E3	China Flameproof	★
I3	China Intrinsic Safety	★
KA ⁽²⁰⁾⁽²¹⁾	ATEX and CSA Explosion-proof, Intrinsically Safe, Division 2 (combination of E1, E6, I1, and I6)	★
KB ⁽²⁰⁾⁽²¹⁾	FM and CSA Explosion-proof, Dust Ignition-proof, Intrinsically Safe, Division 2 (combination of E5, E6, I5, and I6)	★
KC ⁽²¹⁾	FM and ATEX Explosion-proof, Intrinsically Safe, Division 2 (combination of E5, E1, I5, and I1)	★
KD ⁽²⁰⁾⁽²¹⁾	FM, CSA, and ATEX Explosion-proof, Intrinsically Safe (combination of E5, E6, E1, I5, I6, and I1)	★
Drinking water approval		
Standard		Standard
DW ⁽²²⁾	NSF Drinking Water Certification	★
Shipboard approvals		
Standard		Standard
SBS	American Bureau of Shipping	★
Alternate materials of construction		
Standard		Standard
L1	Inert sensor fill fluid (Differential and Gage sensors only) <i>Note: Silicone fill fluid is standard.</i>	★
L2	Graphite-filled PTFE O-ring	★

Table 3. Rosemount 3051S Scalable MultiVariable Transmitter ordering information

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

The Expanded offering is subject to additional delivery lead time.

L4 ⁽¹⁷⁾	Austenitic 316 SST bolts	★
L5 ⁽¹⁷⁾	ASTM A193, Grade B7M bolts	★
L6 ⁽¹⁷⁾	Alloy K-500 bolts	★
L7 ⁽¹⁷⁾⁽²³⁾	ASTM A453, Class D, Grade 660 bolts	★
L8 ⁽¹⁷⁾	ASTM A193, Class 2, Grade B8M bolts	★
Digital display		
Standard		Standard
M5	PlantWeb LCD display	★
Wireless assembly options		
Standard		Standard
WTA	Integral assembly to Smart Wireless 775 THUM™ Adapter (Specified Separately)	★
Special procedures		
Standard		Standard
P1 ⁽²⁴⁾	Hydrostatic testing with certificate	★
P9 ⁽³⁾	4500 psig (310 bar) static pressure limit	★
P0 ⁽³⁾⁽²⁵⁾	6092 psig (420 bar) static pressure limit	★
Expanded		Expanded
P2 ⁽¹⁷⁾	Cleaning for special services	
P3 ⁽¹⁷⁾	Cleaning for less than 1PPM chlorine/fluorine	
Special certifications		
Standard		Standard
Q4	Calibration Certificate	★
QP	Calibration Certificate and Tamper Evident Seal	★
Q8	Material Traceability Certification per EN 10204 3.1B	★
Q16	Surface Finish Certification for Sanitary Remote Seals	★
QZ	Remote Seal System Performance Calculation Report	★
Transient protection		
Standard		Standard
T1	Transient terminal block	★
Conduit electrical connector		
Standard		Standard
GE ⁽²⁶⁾	M12, 4-pin, Male Connector (eurofast)	★
GM ⁽²⁶⁾	A size Mini, 4-pin, Male Connector (minifast)	★
NACE Certificate		
Standard		Standard
Q15 ⁽²⁷⁾	Certificate of Compliance to NACE MR0175/ISO 15156 for wetted materials	★
Q25 ⁽²⁷⁾	Certificate of Compliance to NACE MR0103 for wetted materials	★
Cold temperature		
Standard		Standard
BRR	-58 °F (-50 °C) Cold Temperature Start-up	★
Typical model number: 3051SMV 3 M 1 2 G 4 R 2 E12 A 1A B4 C2 M5		

(1) For detailed specifications see “Specifications” on page -82.

(2) For Measurement Types 1 & 2, only available with DP range codes 2, 3, and 4, 316L SST and Alloy C-276 isolating diaphragm and silicone fill fluid. For Measurements Types 3 & 4, only available with DP range codes 2 and 3, 316L SST and Alloy C-276 isolating diaphragm and silicone fill fluid.

(3) Only available with Measurement Type codes 3 and 4.

(4) DP Range 0 is only available with traditional flange, 316L SST diaphragm material, and Bolting option L4.

(5) Required for Measurement Type codes 3 and 4.

- (6) For Measurement Type codes 1 and 2 with DP range 1, absolute limits are 0.5 to 2000 psi (0,03 to 137,9 bar) and gage limits are -14.2 to 2000 psig (-0,98 to 137,9 bar).
- (7) Required for Measurement Type codes 2 and 4.
- (8) Required for Measurement Type codes 1 and 3. RTD Sensor must be ordered separately.
- (9) Materials of Construction comply with metallurgical requirements highlighted within NACE MR0175/ISO 15156 for sour oil field production environments. Environmental limits apply to certain materials. Consult latest standard for details. Selected materials also conform to NACE MR0103 for sour refining environments. Order with Q15 or Q25 to receive a NACE certificate.
- (10) Tantalum diaphragm material is only available for DP ranges 2-5.
- (11) "Assemble to" items are specified separately and require a completed model number.
- (12) Consult an Emerson Process Management representative for performance specifications.
- (13) Only available with Measurement Type 2 and MultiVariable Type P.
- (14) Only available with output code X.
- (15) Long-Life Power Module must be shipped separately, order Power Module 701PBKKF.
- (16) For process connection option code A11, the mounting bracket must be ordered as part of the manifold model number.
- (17) Not available with process connection option code A11.
- (18) This assembly is included with certification options E1, N1, K1, ND, E4, E7, N7, K7, E2, E3, KA, KC, and KD.
- (19) Transmitter is shipped with 316 SST conduit plug (uninstalled) in place of standard carbon steel conduit plug.
- (20) Not available with M20 or G ½ conduit entry size.
- (21) RTD cable not available with this option.
- (22) Requires 316L SST diaphragm material, glass-filled PTFE O-ring (standard), and Process Connection code E12 or F12.
- (23) Bolts are not considered process wetted. In instances where NACE MR0175/ISO 15156 and NACE MR0103 conformance is required for bolting, L7 is the recommended bolting option.
- (24) Not available with DP range 0.
- (25) Requires 316L SST or Alloy C-276 diaphragm material, assemble to Rosemount 305 Integral Manifold or DIN-compliant traditional flange process connection, and bolting option L8. Limited to differential pressure ranges 2-5.
- (26) Available with Intrinsically Safe approvals only. For FM Intrinsically Safe; Nonincendive approval (option code I5), install in accordance with Rosemount drawing 03151-1009.
- (27) NACE compliant wetted materials are identified by [Footnote 9](#).

Rosemount 3051SF DP Flowmeters



Rosemount 3051SF Flowmeters integrate the 3051S with industry leading primary elements. Capabilities include:

- Flowmeters are factory configured to meet your application needs (Configuration Data Sheet required)
- MultiVariable capabilities allow scalable flow compensation (Measurement Types 1-7)
- 4-20 mA HART, Wireless, and FOUNDATION fieldbus protocols
- Ultra for Flow for improved flow performance across wider flow ranges
- Integral temperature measurement (Option Code T)
- Advanced Diagnostics (Option Code DA2)
- Direct or remote mount configurations available

Additional information

Specifications: [page 82](#)

Dimensional drawings: [page 118](#)



Rosemount 3051SFA Annubar Flowmeter

- Annubar flowmeters reduce permanent pressure loss by creating less blockage in the pipe
- Ideal for large line size installations when cost, size and weight of the flowmeter are concerns

Table 4. Rosemount 3051SFA Annubar Flowmeter ordering information

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

The Expanded offering is subject to additional delivery lead time.

Model	Product description	Measurement type		• = Available — = Unavailable
		D	1-7	
3051SFA	Annubar Flowmeter	•	•	
Measurement type				
Standard				Standard
1	Fully Compensated Mass & Energy Flow Calculations – Differential & Static Pressures w/ Temperature	—	•	★
2	Compensated Flow Calculations – Differential & Static Pressures	—	•	★
3	Compensated Flow Calculations – Differential Pressure & Temperature	—	•	★
4	Compensated Flow Calculations – Differential Pressure	—	•	★
D	Differential Pressure	•	—	★
Expanded				Expanded
5	Process Variables Only (No Flow Calculations) – Differential & Static Pressures w/ Temperature	—	•	
6	Process Variables Only (No Flow Calculations) – Differential & Static Pressures	—	•	
7	Process Variables Only (No Flow Calculations) – Differential Pressure & Temperature	—	•	
Fluid type				
Standard				Standard
L	Liquid	•	•	★

Table 4. Rosemount 3051SFA Annubar Flowmeter ordering information

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

The Expanded offering is subject to additional delivery lead time.

G	Gas	•	•	★
S	Steam	•	•	★
Line size		D	1-7	
Standard				Standard
020	2-in. (50 mm)	•	•	★
025	2 ¹ / ₂ -in. (63.5 mm)	•	•	★
030	3-in. (80 mm)	•	•	★
035	3 ¹ / ₂ -in. (89 mm)	•	•	★
040	4-in. (100 mm)	•	•	★
050	5-in. (125 mm)	•	•	★
060	6-in. (150 mm)	•	•	★
070	7-in. (175 mm)	•	•	★
080	8-in. (200 mm)	•	•	★
100	10-in. (250 mm)	•	•	★
120	12-in. (300 mm)	•	•	★
Expanded				Expanded
140	14-in. (350 mm)	•	•	
160	16-in. (400 mm)	•	•	
180	18-in. (450 mm)	•	•	
200	20-in. (500 mm)	•	•	
240	24-in. (600 mm)	•	•	
300	30-in. (750 mm)	•	•	
360	36-in. (900 mm)	•	•	
420	42-in. (1066 mm)	•	•	
480	48-in. (1210 mm)	•	•	
600	60-in. (1520 mm)	•	•	
720	72-in. (1820 mm)	•	•	
780	78-in. (1950 mm)	•	•	
840	84-in. (2100 mm)	•	•	
900	90-in. (2250 mm)	•	•	
960	96-in. (2400 mm)	•	•	
Pipe I.D. range				
Standard				Standard
C	Range C from the Pipe I.D. table	•	•	★
D	Range D from the Pipe I.D. table	•	•	★
Expanded				Expanded
A	Range A from the Pipe I.D. table	•	•	
B	Range B from the Pipe I.D. table	•	•	
E	Range E from the Pipe I.D. table	•	•	
Z	Non-standard Pipe I.D. Range or line sizes greater than 12-in. (300 mm)	•	•	
Pipe material / mounting assembly material				
Standard				Standard
C	Carbon steel (A105)	•	•	★
S	316 Stainless Steel	•	•	★
0 ⁽¹⁾	No Mounting (Customer Supplied)	•	•	★
Expanded				Expanded
G	Chrome-Moly Grade F-11	•	•	
N	Chrome-Moly Grade F-22	•	•	
J	Chrome-Moly Grade F-91	•	•	
Piping orientation				
Standard				Standard
H	Horizontal Piping	•	•	★

Table 4. Rosemount 3051SFA Annubar Flowmeter ordering information

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

The Expanded offering is subject to additional delivery lead time.

D	Vertical Piping with Downwards Flow	•	•	★
U	Vertical Piping with Upwards Flow	•	•	★
Annubar type		D	1-7	
Standard				Standard
P	Pak-Lok	•	•	★
F	Flanged with opposite side support	•	•	★
Expanded				Expanded
L	Flange-Lok	•	•	
G	Gear-Drive Flo-Tap	•	•	
M	Manual Flo-Tap	•	•	
Sensor material				
Standard				Standard
S	316 Stainless Steel	•	•	★
Expanded				Expanded
H	Alloy C-276	•	•	
Sensor size				
Standard				Standard
1	Sensor size 1 — Line sizes 2-in. (50 mm) to 8-in. (200 mm)	•	•	★
2	Sensor size 2 — Line sizes 6-in. (150 mm) to 96-in. (2400 mm)	•	•	★
3	Sensor size 3 — Line sizes greater than 12-in. (300 mm)	•	•	★
Mounting type				
Standard				Standard
T1	Compression/Threaded Connection	•	•	★
A1	150# RF ANSI	•	•	★
A3	300# RF ANSI	•	•	★
A6	600# RF ANSI	•	•	★
D1	DN PN16 Flange	•	•	★
D3	DN PN40 Flange	•	•	★
D6	DN PN100 Flange	•	•	★
Expanded				Expanded
A9 ⁽²⁾	900# RF ANSI	•	•	
AF ⁽²⁾	1500# RF ANSI	•	•	
AT ⁽²⁾	2500 # RF ANSI	•	•	
R1	150# RTJ Flange	•	•	
R3	300# RTJ Flange	•	•	
R6	600# RTJ Flange	•	•	
R9 ⁽²⁾	900# RTJ Flange	•	•	
RF ⁽²⁾	1500# RTJ Flange	•	•	
RT ⁽²⁾	2500# RTJ Flange	•	•	
Opposite side support or packing gland				
Standard				Standard
0	No opposite side support or packing gland (Required for Pak-Lok and Flange-Lok models)	•	•	★
	Opposite Side Support – Required for Flanged Models			
C	NPT Threaded Opposite Support Assembly – Extended Tip	•	•	★
D	Welded Opposite Support Assembly – Extended Tip	•	•	★
Expanded				Expanded
	Packing Gland – Required for Flo-Tap Models			
	Packing gland material	Rod material	Packing material	
J ⁽³⁾	Stainless Steel Packing Gland / Cage Nipple	Carbon Steel	PTFE	•
K ⁽³⁾	Stainless Steel Packing Gland / Cage Nipple	Stainless Steel	PTFE	•
L ⁽³⁾	Stainless Steel Packing Gland / Cage Nipple	Carbon Steel	Graphite	•

Table 4. Rosemount 3051SFA Annubar Flowmeter ordering information

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

The Expanded offering is subject to additional delivery lead time.

N ⁽³⁾	Stainless Steel Packing Gland / Cage Nipple	Stainless Steel	Graphite	•	•	
R	Alloy C-276 Packing Gland / Cage Nipple	Stainless Steel	Graphite	•	•	
Isolation valve for Flo-Tap Models				D	1-7	
Standard						Standard
0 ⁽¹⁾	Not Applicable or Customer Supplied			•	•	★
Expanded						Expanded
1	Gate Valve, Carbon Steel			•	•	
2	Gate Valve, Stainless Steel			•	•	
5	Ball Valve, Carbon Steel			•	•	
6	Ball Valve, Stainless Steel			•	•	
Temperature measurement						
Standard						Standard
T ⁽⁴⁾	Integral RTD – not available with Flanged model greater than class 600#			•	•	★
0 ⁽⁵⁾	No Temperature Sensor			•	•	★
Expanded						Expanded
R ⁽⁴⁾	Remote Thermowell and RTD			•	•	
Transmitter connection platform						
Standard						Standard
3	Direct-mount, Integral 3-valve Manifold – not available with Flanged model greater than class 600			•	•	★
5	Direct -mount, 5-valve Manifold – not available with Flanged model greater than class 600			•	•	★
7	Remote-mount NPT Connections (¹ / ₂ -in. FNPT)			•	•	★
Expanded						Expanded
6	Direct-mount, High Temperature 5-valve Manifold – not available with Flanged model greater than class 600			•	•	
8	Remote-mount SW Connections (¹ / ₂ -in.)			•	•	
Differential pressure range						
Standard						Standard
1	0 to 25 in H ₂ O (0 to 62.3 mbar)			•	•	★
2	0 to 250 in H ₂ O (0 to 623 mbar)			•	•	★
3	0 to 1000 in H ₂ O (0 to 2.5 bar)			•	•	★
Static pressure range						
Standard						Standard
A ⁽⁶⁾	None			•	•	★
D	Absolute 0 to 800 psia (0 to 55.2 bar)			—	•	★
E ⁽⁷⁾	Absolute 0 to 3626 psia (0 to 250 bar)			—	•	★
J	Gage -14.2 to 800 psig (-0.979 to 55.2 bar)			—	•	★
K ⁽⁷⁾	Gage -14.2 to 3626 psig (-0.979 to 250 bar)			—	•	★
Transmitter Output						
Standard						Standard
A	4–20 mA with digital signal based on HART protocol			•	•	★
F	FOUNDATION fieldbus protocol (requires PlantWeb housing)			•	—	★
X ⁽⁸⁾⁽⁹⁾	Wireless (Requires wireless options and Wireless PlantWeb housing)			•	—	★
Transmitter housing style		Material	Conduit entry size			
Standard						Standard
00	None (Customer-supplied electrical connection)			•	—	★
1A	PlantWeb housing	Aluminum	¹ / ₂ -14 NPT	•	•	★
1B	PlantWeb housing	Aluminum	M20 x 1.5	•	•	★
1J	PlantWeb housing	SST	¹ / ₂ -14 NPT	•	•	★
1K	PlantWeb housing	SST	M20 x 1.5	•	•	★
2A	Junction Box housing	Aluminum	¹ / ₂ -14 NPT	•	—	★

Table 4. Rosemount 3051SFA Annubar Flowmeter ordering information

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

The Expanded offering is subject to additional delivery lead time.

2B	Junction Box housing	Aluminum	M20 x 1.5	•	—	★
2E	Junction Box housing with output for remote display and interface	Aluminum	1/2-14 NPT	•	—	★
2F	Junction Box housing with output for remote display and interface	Aluminum	M20 x 1.5	•	—	★
2J	Junction Box housing	SST	1/2-14 NPT	•	—	★
2M	Junction Box housing with output for remote display and interface	SST	1/2-14 NPT	•	—	★
5A ⁽¹⁰⁾	Wireless PlantWeb housing	Aluminum	1/2-14 NPT	•	—	★
5J ⁽¹⁰⁾	Wireless PlantWeb housing	SST	1/2-14 NPT	•	—	★
7J ⁽⁸⁾⁽¹¹⁾	Quick Connect (A size Mini, 4-pin male termination)			•	—	★
Expanded						Expanded
1C	PlantWeb housing	Aluminum	G ¹ /2	•	•	
1L	PlantWeb housing	SST	G ¹ /2	•	•	
2C	Junction Box housing	Aluminum	G ¹ /2	•	—	
2G	Junction Box housing with output for remote display and interface	Aluminum	G ¹ /2	•	—	
Performance class⁽¹²⁾				D	1-7	
Standard						Standard
3051S MultiVariable SuperModule, Measurement Types 1, 2, 5, and 6						
3	Ultra for Flow: 0.8% flow rate accuracy, 14:1 flow turndown, 10-year stability, 15-year limited warranty			•	•	★
5	Classic MV: 1.15% flow rate accuracy, 8:1 flow turndown, 5-yr. stability			—	•	★
3051S Single Variable SuperModule, Measurement Types 3, 4, 7, and D						
1	Ultra: up to 0.95% flow rate accuracy, 8:1 flow turndown, 15-year stability, 15-year limited warranty			•	—	★
2	Classic: up to 1.4% flow rate accuracy, 8:1 flow turndown, 15-year stability			•	—	★
3 ⁽¹³⁾	Ultra for Flow: 0.8% flow rate accuracy, 14:1 flow turndown, 15-year stability, 15-year limited warranty			•	•	★

Wireless options (requires option code X and wireless PlantWeb housing)

Update rate, operating frequency and protocol			D	1-7	
Standard					Standard
WA	User Configurable Update Rate		•	—	★
Operating frequency and protocol					
Standard					Standard
3	2.4 GHz DSSS, IEC 62591 (WirelessHART)		•	—	★
Omnidirectional wireless antenna					
Standard					Standard
WK	External Antenna		•	—	★
WM	Extended Range, External Antenna		•	—	★
Expanded					Expanded
WN	High-Gain, Remote Antenna		•	—	
SmartPower™ Adapter					
Standard					Standard
1 ⁽¹⁴⁾	Adapter for Black Power Module (I.S. Power Module Sold Separately)		•	—	★

Other options (include with selected model number)

Pressure testing			D	1-7	
Expanded					Expanded
P1 ⁽¹⁵⁾	Hydrostatic Testing with Certificate		•	•	
PX ⁽¹⁵⁾	Extended Hydrostatic Testing		•	•	

Table 4. Rosemount 3051SFA Annubar Flowmeter ordering information

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

The Expanded offering is subject to additional delivery lead time.

Special cleaning		D	1-7	
Expanded				Expanded
P2	Cleaning for Special Services	•	•	
PA	Cleaning per ASTM G93 level D (section 11.4)	•	•	
Material testing				
Expanded				Expanded
V1	Dye Penetrant Exam	•	•	
Material examination				
Expanded				Expanded
V2	Radiographic Examination	•	•	
Flow calibration				
Expanded				Expanded
W1	Flow Calibration (Average K)	•	•	
WZ	Special Calibration	•	•	
Special inspection				
Standard				Standard
QC1	Visual & Dimensional Inspection with Certificate	•	•	★
QC7	Inspection & Performance Certificate	•	•	★
Surface finish				
Standard				Standard
RL	Surface finish for Low Pipe Reynolds Number in Gas & Steam	•	•	★
RH	Surface finish for High Pipe Reynolds Number in Liquid	•	•	★
Material traceability certification				
Standard				Standard
Q8 ⁽¹⁶⁾	Material Traceability Certificate per EN 10204:2004 3.1	•	•	★
Code conformance				
Expanded				Expanded
J2 ⁽¹⁷⁾	ANSI / ASME B31.1	•	•	
J3 ⁽¹⁷⁾	ANSI / ASME B31.3	•	•	
Material conformance				
Expanded				Expanded
J5 ⁽¹⁸⁾	NACE MR-0175 / ISO 15156	•	•	
Country certification				
Standard				Standard
J6	European Pressure Directive (PED)	•	•	★
Expanded				Expanded
J1	Canadian Registration	•	•	
Installed in flanged pipe spool section				
Expanded				Expanded
H3	150# Flanged Connection with Rosemount Standard Length and Schedule	•	•	
H4	300# Flanged Connection with Rosemount Standard Length and Schedule	•	•	
H5	600# Flanged Connection with Rosemount Standard Length and Schedule	•	•	
Instrument connections for remote mount option				
Standard				Standard
G2	Needle Valves, Stainless Steel	•	•	★
G6	OS&Y Gate Valve, Stainless Steel	•	•	★

Table 4. Rosemount 3051SFA Annubar Flowmeter ordering information

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

The Expanded offering is subject to additional delivery lead time.

Expanded				Expanded
G1	Needle Valves, Carbon Steel	•	•	
G3	Needle Valves, Alloy C-276	•	•	
G5	OS&Y Gate Valve, Carbon Steel	•	•	
G7	OS&Y Gate Valve, Alloy C-276	•	•	
Special shipment		D	1-7	
Standard				Standard
Y1	Mounting Hardware Shipped Separately	•	•	★
Attach to				
Expanded				Expanded
H1	Attach to Transmitter	•	•	
Special dimensions				
Expanded				Expanded
VM	Variable Mounting	•	•	
VT	Variable Tip	•	•	
VS	Variable length Spool Section	•	•	
Transmitter calibration certification				
Standard				Standard
Q4	Calibration Certificate for Transmitter	•	•	★
QP	Calibration Certificate & Tamper Evident Seal	•	•	★
Quality certification for safety				
Standard				Standard
QS ⁽²¹⁾⁽²⁷⁾	Prior-use Certificate of FMEDA data	•	—	★
QT ⁽²⁰⁾⁽²¹⁾⁽²⁷⁾	Safety certified to IEC 61508 with certificate of FMEDA data	•	—	★
Product certifications				
Standard				Standard
E1	ATEX Flameproof	•	•	★
I1	ATEX Intrinsic Safety	•	•	★
IA	ATEX FISCO Intrinsic Safety; for FOUNDATION fieldbus protocol only	•	—	★
N1	ATEX Type n	•	•	★
ND	ATEX Dust	•	•	★
K1	ATEX Flameproof, Intrinsic Safety, Type n, Dust (combination of E1, I1, N1, and ND)	•	•	★
E4	TIIS Flameproof	•	•	★
E5	FM Explosion-proof, Dust Ignition-proof	•	•	★
I5	FM Intrinsically Safe; Nonincendive	•	•	★
K5	FM Explosion-proof, Dust Ignition-proof, Intrinsically Safe, Division 2 (combination of E5 and I5)	•	•	★
E6 ⁽¹⁹⁾	CSA Explosion-proof, Dust Ignition-proof, Division 2	•	•	★
I6	CSA Intrinsically Safe	•	•	★
K6 ⁽¹⁹⁾	CSA Explosion-proof, Dust Ignition-proof, Intrinsically Safe, Division 2 (combination of E6 and I6)	•	•	★
E7	IECEx Flameproof, Dust Ignition-proof	•	•	★
I7	IECEx Intrinsic Safety	•	•	★
K7	IECEx Flameproof, Dust Ignition-proof, Intrinsic Safety, Type n (combination of E7, I7, and N7)	•	•	★
E3	China Flameproof	•	•	★
I3	China Intrinsic Safety	•	•	★
KA ⁽¹⁹⁾	ATEX and CSA Explosion-proof, Intrinsically Safe, Division 2 (combination of E1, I1, E6, and I6)	•	•	★
Expanded				Expanded
KB ⁽¹⁹⁾	FM and CSA Explosion-proof, Dust Ignition-proof, Intrinsically Safe, Division 2 (combination of E5, E6, I5, and I6)	•	•	
KC	FM and ATEX Explosion-proof, Intrinsically Safe, Division 2 (combination of E5, E1, I5, and I1)	•	•	
KD ⁽¹⁹⁾	FM, CSA, and ATEX Explosion-proof, Intrinsically Safe (combination of E5, I5, E6, I6, E1, and I1)	•	•	

Table 4. Rosemount 3051SFA Annubar Flowmeter ordering information

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

The Expanded offering is subject to additional delivery lead time.

Shipboard approvals		D	1-7	
Standard				Standard
SBS	American Bureau of Shipping	•	•	★
Sensor fill fluid and o-ring options				
Standard				Standard
L1	Inert Sensor Fill Fluid	•	•	★
L2	Graphite-Filled (PTFE) O-ring	•	•	★
LA	Inert Sensor Fill Fluid and Graphite-Filled (PTFE) O-ring	•	•	★
Digital display⁽²⁰⁾				
Standard				Standard
M5	PlantWeb LCD display (requires PlantWeb housing)	•	•	★
M7 ⁽²¹⁾⁽²²⁾⁽²³⁾	Remote mount LCD display and interface, PlantWeb housing, no cable; SST bracket	•	N/A	★
M8 ⁽²¹⁾⁽²²⁾	Remote mount LCD display and interface, PlantWeb housing, 50 ft. (15 m) cable; SST bracket	•	N/A	★
M9 ⁽²¹⁾⁽²²⁾	Remote mount LCD display and interface, PlantWeb housing, 100 ft. (31 m) cable; SST bracket	•	N/A	★
Transient protection				
Standard				Standard
T1 ⁽²⁴⁾	Transient terminal block	•	•	★
Manifold for remote mount option				
Standard				Standard
F2	3-Valve Manifold, Stainless Steel	•	•	★
F6	5-Valve Manifold, Stainless Steel	•	•	★
Expanded				Expanded
F1	3-Valve Manifold, Carbon Steel	•	•	
F3	3-Valve Manifold, Alloy C-276	•	•	
F5	5-Valve Manifold, Carbon Steel	•	•	
F7	5-Valve Manifold, Alloy C-276	•	•	
PlantWeb control functionality				
Standard				Standard
A01	FOUNDATION fieldbus Advanced Control Function Block Suite	•	—	★
PlantWeb diagnostic functionality				
Standard				Standard
D01	FOUNDATION fieldbus Diagnostics Suite	•	—	★
DA2 ⁽²⁵⁾	Advanced HART Diagnostic Suite	•	—	★
PlantWeb enhanced measurement functionality				
Standard				Standard
H01 ⁽²⁶⁾	FOUNDATION fieldbus Fully Compensated Mass Flow Block	•	—	★
Cold temperature				
Standard				Standard
BRR	-58 °F (-50 °C) Cold Temperature Start-up	—	•	★
Alarm limit⁽²¹⁾⁽²⁷⁾				
Standard				Standard
C4	NAMUR Alarm & Saturation Levels, High Alarm	•	•	★
C5	NAMUR Alarm & Saturation Levels, Low Alarm	•	•	★
C6	Custom Alarm & Saturation Levels, High Alarm	•	•	★
C7	Custom Alarm & Saturation Levels, Low Alarm	•	•	★
C8	Low Alarm (Standard Rosemount Alarm & Saturation Levels)	•	•	★

Table 4. Rosemount 3051SFA Annubar Flowmeter ordering information

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

The Expanded offering is subject to additional delivery lead time.

Hardware adjustments and ground screw		D	1-7	
Standard				Standard
D1 ⁽²¹⁾⁽²⁷⁾⁽²⁸⁾	Hardware Adjustments (zero, span, alarm, security)	•	—	★
D4 ⁽²⁹⁾	External Ground Screw Assembly	•	•	★
DA ⁽²¹⁾⁽²⁷⁾⁽²⁸⁾	Hardware Adjustments (zero, span, alarm, security) & External Ground Screw Assembly	•	—	★
Conduit plug				
Standard				Standard
DO	316 SST Conduit Plug (<i>standard for all 3051SF Models</i>)	•	•	★
Conduit electrical connector				
Standard				Standard
GE ⁽³⁰⁾	M12, 4-pin, Male Connector (<i>eurofast</i>)	•	•	★
GM ⁽³⁰⁾	A size Mini, 4-pin, Male Connector (<i>minifast</i>)	•	•	★
Typical model number: 3051SFA D L 060 D C H P S 2 T1 0 0 0 3 2A A 1A 3				

- (1) Provide the "A" dimension for Flanged, Flange-Lok, and Threaded Flo-Tap models. Provide the "B" dimension for Flange Flo-Tap models.
- (2) Available in remote mount applications only.
- (3) The cage nipple is constructed of 304SST.
- (4) Temperature Measurement Option code T or R is required for Measurement Type codes 1, 3, 5, and 7.
- (5) Required for Measurement Type codes 2, 4, 6, and D.
- (6) Required for Measurement Type codes 3, 4, 7, and D.
- (7) For Measurement Type codes 1, 2, 5, and 6 with DP range 1, absolute limits are 0.5 to 2000 psi (0,03 to 137,9 bar) and gage limits are -14,2 to 2000 psig (-0,98 to 137,9 bar).
- (8) Only intrinsically safe approval codes apply.
- (9) Only available with Measurement Types D and 6.
- (10) Only available with output code X.
- (11) Only available with output code A.
- (12) For detailed specifications see "[Specifications](#)" on page -82.
- (13) Only available with differential pressure ranges 2 and 3, and silicone fill fluid.
- (14) Long-life Power Module must be shipped separately, order Power Module 701PBKKF.
- (15) Applies to assembled flowmeter only, mounting not tested.
- (16) Instrument Connections for Remote Mount Options and Isolation Valves for Flo-tap Models are not included in the Material Traceability Certification.
- (17) Not available with Transmitter Connection Platform 6.
- (18) Materials of Construction comply with metallurgical requirements within NACE MR0175/ISO 15156 for sour oil field production environments. Environmental limits apply to certain materials. Consult latest standard for details. Selected materials also conform to NACE MR0103 for sour refining environments.
- (19) Not available with M20 or G ½ conduit entry size.
- (20) Not available with housing code 7J.
- (21) Not available with output code X.
- (22) Not available with output code F, option code DA2, or option code QT.

- (23) See the 3051S Reference Manual (document number 00809-0100-4801) for cable requirements. Contact an Emerson Process Management representative for additional information.
- (24) Not available with Housing code 5A, 5J, or 7J. External ground screw assembly (option code D4) is included with the T1 option. The T1 option is not needed with FISCO Product Certifications.
- (25) Includes Hardware Adjustments (option code D1) as standard. Not available with output code X.
- (26) Requires Rosemount Engineering Assistant version 5.5.1 to configure.
- (27) Not available with output code F.
- (28) Not available with housing codes 2E, 2F, 2G, 2M, 5A, 5J, or 7J.
- (29) This assembly is included with options E1, N1, K1, ND, E4, E7, N7, K7, E2, E3, KA, KC, KD, IA, IE, N3, and T1.
- (30) Not available with Housing code 5A, 5J, or 7J. Available with Intrinsically Safe approvals only. For FM Intrinsically Safe; Nonincendive (option code I5) or FM FISCO Intrinsically Safe (option code IE), install in accordance with Rosemount drawing 03151-1009.



Rosemount 3051SFC Compact Orifice Flowmeter

- Compact conditioning flowmeters reduce straight piping requirements to 2D upstream and 2D downstream from a flow disturbance
- Simple installation of compact flowmeters between any existing raised-face flanges

Table 5. Rosemount 3051SFC Compact Orifice Flowmeter ordering information

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

The Expanded offering is subject to additional delivery lead time.

Model	Product description	Measurement type		• = Available — = Unavailable
		D	1-7	
3051SFC	Compact Orifice Flowmeter	•	•	
Measurement type				
Standard				Standard
1	Fully Compensated Mass & Energy Flow Calculations – Differential & Static Pressures w/ Temperature	—	•	★
2	Compensated Flow Calculations – Differential & Static Pressures	—	•	★
3	Compensated Flow Calculations – Differential Pressure & Temperature	—	•	★
4	Compensated Flow Calculations – Differential Pressure	—	•	★
D	Differential Pressure	•	—	★
Expanded				Expanded
5	Process Variables Only (No Flow Calculations) – Differential & Static Pressures w/ Temperature	—	•	
6	Process Variables Only (No Flow Calculations) – Differential & Static Pressures	—	•	
7	Process Variables Only (No Flow Calculations) – Differential Pressure & Temperature	—	•	
Primary element technology				
Standard				Standard
A	Annubar® Averaging Pitot Tube	•	•	★
C	Conditioning Orifice Plate	•	•	★
P	Orifice Plate	•	•	★
Material type				
Standard				Standard
S	316 SST	•	•	★
Line size				
Standard				Standard
005 ⁽¹⁾	1/2-in. (15 mm)	•	•	★
010 ⁽¹⁾	1-in. (25 mm)	•	•	★
015 ⁽¹⁾	1 1/2-in. (40 mm)	•	•	★
020	2-in. (50 mm)	•	•	★
030	3-in. (80 mm)	•	•	★
040	4-in. (100 mm)	•	•	★
060	6-in. (150 mm)	•	•	★
080	8-in. (200 mm)	•	•	★
100 ⁽²⁾⁽³⁾	10-in. (250 mm)	•	•	★
120 ⁽²⁾⁽³⁾	12-in. (300 mm)	•	•	★
Primary element type				
Standard				Standard
N000	Annubar Sensor Size 1	•	•	★
N040	0.40 Beta Ratio (β)	•	•	★
N065 ⁽⁴⁾	0.65 Beta Ratio (β)	•	•	★

Table 5. Rosemount 3051SFC Compact Orifice Flowmeter ordering information

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

The Expanded offering is subject to additional delivery lead time.

Temperature measurement				D	1-7	
Standard						Standard
T ⁽⁶⁾	Integral RTD			—	•	★
0 ⁽⁵⁾	No Temperature Sensor			•	•	★
Expanded						Expanded
R ⁽⁶⁾	Remote Thermowell and RTD			•	•	
Transmitter connection platform						
Standard						Standard
3	Direct-mount			•	•	★
7	Remote-mount, NPT Connections			•	•	★
Differential pressure range						
Standard						Standard
1	0 to 25 inH ₂ O (0 to 62.3 mbar)			•	•	★
2	0 to 250 inH ₂ O (0 to 623 mbar)			•	•	★
3	0 to 1000 inH ₂ O (0 to 2.5 bar)			•	•	★
Static pressure range						
Standard						Standard
A ⁽⁷⁾	None			•	•	★
D	Absolute 0 to 800 psia (0 to 55.2 bar)			—	•	★
E ⁽⁸⁾	Absolute 0 to 3626 psia (0 to 250 bar)			—	•	★
J	Gage -14.2 to 800 psig (-0.979 to 55.2 bar)			—	•	★
K ⁽⁸⁾	Gage -14.2 to 3626 psig (-0.979 to 250 bar)			—	•	★
Transmitter output						
Standard						Standard
A	4–20 mA with digital signal based on HART protocol			•	•	★
F ⁽⁹⁾	FOUNDATION fieldbus protocol			•	—	★
X ⁽¹⁰⁾⁽¹¹⁾	Wireless			•	—	★
Transmitter housing style		Material	Conduit entry size			
Standard						Standard
00	None (Customer-supplied electrical connection)			•	—	★
1A	PlantWeb housing	Aluminum	1/2-14 NPT	•	•	★
1B	PlantWeb housing	Aluminum	M20 x 1.5	•	•	★
1J	PlantWeb housing	SST	1/2-14 NPT	•	•	★
1K	PlantWeb housing	SST	M20 x 1.5	•	•	★
2A	Junction Box housing	Aluminum	1/2-14 NPT	•	—	★
2B	Junction Box housing	Aluminum	M20 x 1.5	•	—	★
2E	Junction Box housing with output for remote display and interface	Aluminum	1/2-14 NPT	•	—	★
2F	Junction Box housing with output for remote display and interface	Aluminum	M20 x 1.5	•	—	★
2J	Junction Box housing	SST	1/2-14 NPT	•	—	★
2M	Junction Box housing with output for remote display and interface	SST	1/2-14 NPT	•	—	★
5A ⁽¹²⁾	Wireless PlantWeb housing	Aluminum	1/2-14 NPT	•	—	★
5J ⁽¹²⁾	Wireless PlantWeb housing	SST	1/2-14 NPT	•	—	★
7J ⁽¹⁰⁾⁽¹³⁾	Quick Connect (A size Mini, 4-pin male termination)			•	—	★
Expanded						Expanded
1C	PlantWeb housing	Aluminum	G 1/2	•	•	
1L	PlantWeb housing	SST	G 1/2	•	•	

Table 5. Rosemount 3051SFC Compact Orifice Flowmeter ordering information

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

The Expanded offering is subject to additional delivery lead time.

2C	Junction Box housing	Aluminum	G ¹ / ₂	•	—	
2G	Junction Box housing with output for remote display and interface	Aluminum	G ¹ / ₂	•	—	
Performance class⁽¹⁴⁾				D	1-7	
Standard						Standard
3051S MultiVariable SuperModule, Measurement Types 1, 2, 5, and 6				•	•	
3	Ultra for Flow: 0.75% flow rate accuracy, 14:1 flow turndown, 10-yr stability, 15-yr limited warranty			•	•	★
5	Classic MV: 1.10% flow rate accuracy, 8:1 flow turndown, 5-yr stability			—	•	★
3051S Single Variable SuperModule, Measurement Types 3, 4, 7, and D				•	•	
1	Ultra: 0.90% flow rate accuracy, 8:1 flow turndown, 15-yr stability, 15-yr limited warranty			•	—	★
2	Classic: 1.40% flow rate accuracy, 8:1 flow turndown, 15-yr stability			•	—	★
3 ⁽¹⁵⁾	Ultra for Flow: 0.75% flow rate accuracy, 14:1 flow turndown, 15-yr stability, 15-yr limited warranty			•	•	★

Wireless options (requires option code X and wireless PlantWeb housing)

Update rate, operating frequency, and protocol				D	1-7	
Standard						Standard
WA	User Configurable Update Rate			•	—	★
Operating frequency and protocol						
Standard						Standard
3	2.4 GHz DSSS, IEC 62591 (WirelessHART)			•	—	★
Omnidirectional wireless antenna						
Standard						Standard
WK	External Antenna			•	—	★
WM	Extended Range, External Antenna			•	—	★
Expanded						Expanded
WN	High-Gain, Remote Antenna			•	—	
SmartPower™						
Standard						Standard
1 ⁽¹⁶⁾	Adapter for Black Power Module (I.S. Power Module Sold Separately)			•	—	★

Other options (include with selected model number)

Installation accessories				D	1-7	
Standard						Standard
A	ANSI Alignment Ring (150#) (Only required for 10-in. (250 mm) and 12-in. (300mm) line sizes)			•	•	★
C	ANSI Alignment Ring (300#) (Only required for 10-in. (250 mm) and 12-in. (300mm) line sizes)			•	•	★
D	ANSI Alignment Ring (600#) (Only required for 10-in. (250 mm) and 12-in. (300mm) line sizes)			•	•	★
G	DIN Alignment Ring (PN 16)			•	•	★
H	DIN Alignment Ring (PN 40)			•	•	★
J	DIN Alignment Ring (PN 100)			•	•	★
Expanded						Expanded
B	JIS Alignment Ring (10K)			•	•	
R	JIS Alignment Ring (20K)			•	•	
S	JIS Alignment Ring (40K)			•	•	
Remote adapters						
Standard						Standard
E	Flange adapters 316 SST (1/2-in. NPT)			•	•	★
High temperature applications						
Expanded						Expanded
T	Graphite Valve Packing (Tmax = 850 °F)			•	•	

Table 5. Rosemount 3051SFC Compact Orifice Flowmeter ordering information

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

The Expanded offering is subject to additional delivery lead time.

Flow calibration		D	1-7	
Expanded				Expanded
WC ⁽¹⁷⁾	Flow Calibration, 3 Pt, Conditioning Option C (All Pipe Schedules)	•	•	
WD ⁽¹⁸⁾⁽¹⁹⁾	Flow Calibration, 10 Pt, Conditioning Option C (All Schedules), Annubar Option A (Schedule 40)	•	•	
Pressure testing				
Expanded				Expanded
P1	Hydrostatic Testing with Certificate	•	•	
Special cleaning				
Expanded				Expanded
P2 ⁽²⁰⁾	Cleaning for Special Processes	•	•	
PA	Cleaning per ASTM G93 Level D (section 11.4)	•	•	
Special inspection				
Standard				Standard
QC1	Visual & Dimensional Inspection with Certificate	•	•	★
QC7	Inspection & Performance Certificate	•	•	★
Transmitter calibration certification				
Standard				Standard
Q4	Calibration Data Certificate for Transmitter	•	•	★
QP	Calibration Certificate and Tamper Evident Seal	•	•	★
Quality certification for safety				
Standard				Standard
QS ⁽²¹⁾⁽²²⁾	Prior-use certificate of FMEDA data	•	—	★
QT ⁽²¹⁾⁽²²⁾⁽²⁵⁾	Safety Certified to IEC 61508 with certificate of FMEDA data	•	—	★
Material traceability certifications				
Standard				Standard
Q8	Material Traceability Certification per EN 10204:2004 3.1	•	•	★
Code conformance				
Expanded				Expanded
J2	ANSI / ASME B31.1	•	•	
J3	ANSI / ASME B31.3	•	•	
J4	ANSI / ASME B31.8	•	•	
Material conformance				
Expanded				Expanded
J5 ⁽²³⁾	NACE MR-0175 / ISO 15156	•	•	
Country certification				
Expanded				Expanded
J1	Canadian Registration	•	•	
Product certifications				
Standard				Standard
E1	ATEX Flameproof	•	•	★
I1	ATEX Intrinsic Safety	•	•	★
IA	ATEX FISCO Intrinsic Safety; for FOUNDATION fieldbus protocol only	•	—	★
N1	ATEX Type n	•	•	★
ND	ATEX Dust	•	•	★
K1	ATEX Flameproof, Intrinsic Safety, Type n, Dust (combination of E1, I1, N1, and ND)	•	•	★
E4	TIIS Flameproof	•	•	★
E5	FM Explosion-proof, Dust Ignition-proof	•	•	★
I5	FM Intrinsically Safe; Nonincendive	•	•	★

Table 5. Rosemount 3051SFC Compact Orifice Flowmeter ordering information

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

The Expanded offering is subject to additional delivery lead time.

K5	FM Explosion-proof, Dust Ignition-proof, Intrinsically Safe, Division 2 (combination of E5 and I5)	•	•	★
E6 ⁽²⁴⁾	CSA Explosion-proof, Dust Ignition-proof, Division 2	•	•	★
I6	CSA Intrinsically Safe	•	•	★
K6 ⁽²⁴⁾	CSA Explosion-proof, Dust Ignition-proof, Intrinsically Safe, Division 2 (combination of E6 and I6)	•	•	★
E7	IECEX Flameproof, Dust Ignition-proof	•	•	★
I7	IECEX Intrinsic Safety	•	•	★
K7	IECEX Flameproof, Dust Ignition-proof, Intrinsic Safety, Type n (combination of E7, I7, and N7)	•	•	★
E3	China Flameproof	•	•	★
I3	China Intrinsic Safety	•	•	★
KA ⁽²⁴⁾	ATEX and CSA Flameproof, Intrinsically Safe, Division 2 (combination of E1, I1, E6, and I6)	•	•	★
KB ⁽²⁴⁾	FM and CSA Explosion-proof, Dust Ignition-proof, Intrinsically Safe, Division 2 (combination of E5, E6, I5, and I6)	•	•	★
KC	FM and ATEX Explosion-proof, Intrinsically Safe, Division 2 (combination of E5, E1, I5, and I1)	•	•	★
KD ⁽²⁴⁾	FM, CSA, and ATEX Explosion-proof, Intrinsically Safe (combination of E5, E6, E1, I5, I6, and I1)	•	•	★
Shipboard approvals		D	1-7	
Standard				Standard
SBS	American Bureau of Shipping	•	•	★
Sensor fill fluid and o-ring options				
Standard				Standard
L1	Inert Sensor Fill Fluid	•	•	★
L2	Graphite-filled (PTFE) O-ring	•	•	★
LA	Inert sensor fill fluid and graphite-filled (PTFE) O-ring	•	•	★
Digital display⁽²⁵⁾				
Standard				Standard
M5	PlantWeb LCD display	•	•	★
M7 ⁽²²⁾⁽²⁶⁾⁽²⁷⁾	Remote mount LCD display and interface, PlantWeb housing, no cable, SST bracket	•	N/A	★
M8 ⁽²²⁾⁽²⁶⁾	Remote mount LCD display and interface, PlantWeb housing, 50 ft. (15m) cable, SST bracket	•	N/A	★
M9 ⁽²²⁾⁽²⁶⁾	Remote mount LCD display and interface, PlantWeb housing, 100 ft. (31m) cable, SST bracket	•	N/A	★
Transient protection				
Standard				Standard
T1 ⁽²⁸⁾	Transient terminal block	•	•	★
Manifold for remote mount option				
Standard				Standard
F2	3-Valve Manifold, SST	•	•	★
F6	5-Valve Manifold, SST	•	•	★
PlantWeb control functionality				
Standard				Standard
A01	FOUNDATION fieldbus Advanced Control Function Block Suite	•	—	★
PlantWeb diagnostic functionality				
Standard				Standard
D01	FOUNDATION fieldbus Diagnostics Suite	•	—	★
DA2 ⁽²⁹⁾	Advanced HART Diagnostic Suite	•	—	★
PlantWeb enhanced measurement functionality				
Standard				Standard
H01 ⁽³⁰⁾	FOUNDATION fieldbus Fully Compensated Mass Flow Block	•	—	★
Cold temperature				
Standard				Standard
BRR	-58 °F (-50 °C) Cold Temperature Start-up	•	•	★

Table 5. Rosemount 3051SFC Compact Orifice Flowmeter ordering information

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

The Expanded offering is subject to additional delivery lead time.

Alarm limit ⁽²¹⁾⁽²²⁾		D	1-7	
Standard				Standard
C4	NAMUR Alarm & Saturation Levels, High Alarm	•	•	★
C5	NAMUR Alarm & Saturation Levels, Low Alarm	•	•	★
C6	Custom Alarm & Saturation Levels, High Alarm	•	•	★
C7	Custom Alarm & Saturation Levels, Low Alarm	•	•	★
C8	Low Alarm (Standard Rosemount Alarm & Saturation Levels)	•	•	★
Hardware adjustments and ground screw				
Standard				Standard
D1 ⁽²¹⁾⁽²²⁾⁽³¹⁾	Hardware adjustments (zero, span, alarm, security).	•	—	★
D4 ⁽³²⁾	External ground screw assembly	•	•	★
DA ⁽²¹⁾⁽²²⁾⁽³¹⁾	Hardware adjustments (zero, span, alarm, security) and external ground screw assembly	•	—	★
Conduit plug				
Standard				Standard
DO	316 SST Conduit Plug	•	•	★
Conduit electrical connector				
Standard				Standard
ZE ⁽³³⁾	M12, 4-pin, Male Connector (eurofast)	•	•	★
ZM ⁽³³⁾	A size Mini, 4-pin, Male Connector (minifast)	•	•	★
Typical model number: 3051SFC 1 C S 060 N 065 T 3 2 J A 1 A 3				

- (1) Available with primary element technology P only.
- (2) For the 10-in. (250 mm) and 12-in. (300 mm) line sizes, the alignment ring must be ordered (Installation Accessories).
- (3) 10-in. (250 mm) and 12-in. (300 mm) line sizes not available with Primary Element Technology code A.
- (4) For 2-in. (50 mm) line size the beta ratio is 0.6 for Primary Element Technology code C.
- (5) Required for Measurement Type codes 2, 4, 6, and D.
- (6) Only available with Measurement Type codes 1, 3, 5, 7.
- (7) Required for Measurement Type codes 3, 4, 7, and D.
- (8) For Measurement Type codes 1, 2, 5, and 6 with DP range 1, absolute limits are 0.5 to 2000 psi (0,03 to 137,9 bar) and gage limits are -14.2 to 2000 psig (-0,98 to 137,9 bar).
- (9) Requires PlantWeb housing.
- (10) Only intrinsically safe approval codes apply.
- (11) Only available with Measurement Types D and 6.
- (12) Only available with output code X.
- (13) Available with output code A only.
- (14) For detailed specifications see “[Specifications](#)” on page -82.
- (15) Only available with differential pressure ranges 2 and 3, and silicone fill fluid.
- (16) Long-life Power Module must be shipped separately, order Power Module 701PBKKE.
- (17) Available with Primary Element Technology code C only.

- (18) Available with Primary Element Technology codes C or A only.
- (19) For Annubar Option A, consult factory for pipe schedules other than Sch. 40.
- (20) Available with primary element technology C or P only.
- (21) Not available with Output Protocol code F.
- (22) Not available with output code X.
- (23) Materials of Construction comply with metallurgical requirements within NACE MR0175/ISO 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.
- (24) Not available with M20 or G½ conduit entry size.
- (25) Not available with housing code 7J.
- (26) Not available with output code F, option code DA2, or option code QT.
- (27) See the 3051S Reference Manual (document number 00809-0100-4801) for cable requirements. Contact an Emerson Process Management representative for additional information.
- (28) Not available with Housing code 00, 5A, 5J, or 7J. External ground screw assembly (option code D4) is included with the T1 option. The T1 option is not needed with FISCO Product Certifications.
- (29) Includes Hardware Adjustments (option code D1) as standard. Not available with output code X.
- (30) Requires Rosemount Engineering Assistant version 5.5.1 to configure.
- (31) Not available with housing codes 2E, 2F, 2G, 2M, 5A, 5J, or 7J.
- (32) This assembly is included with options E1, N1, K1, ND, E4, E7, N7, K7, E3, KA, KC, KD, IA, IE, N3, and T1.
- (33) Not available with Housing code 5A, 5J, or 7J. Available with Intrinsically Safe approvals only. For FM Intrinsically Safe; Nonincendive (option code I5) or FM FISCO Intrinsically Safe (option code IE), install in accordance with Rosemount drawing 03151-1009.



Rosemount 3051SFP Integral Orifice Flowmeter

- Precision honed pipe section for increased accuracy in small line sizes
- Self-centering plate design prevents alignment errors that magnify measurement inaccuracies in small line sizes

Table 6. Rosemount 3051SFP Integral Orifice Flowmeter ordering information

★ The Standard offering represents the most common options. The starred options (★) should be selected for best delivery. The Expanded offering is subject to additional delivery lead time.

Model	Product description	Measurement type		• = Available — = Unavailable
		D	1-7	
3051SFP	Integral Orifice Flowmeter	•	•	
Measurement type				
Standard				Standard
1	Fully Compensated Mass & Energy Flow Calculations – Differential & Static Pressures w/ Temperature	—	•	★
2	Compensated Flow Calculations – Differential & Static Pressures	—	•	★
3	Compensated Flow Calculations – Differential Pressure & Temperature	—	•	★
4	Compensated Flow Calculations – Differential Pressure	—	•	★
D	Differential Pressure	•	—	★
Expanded				Expanded
5	Process Variables Only (No Flow Calculations) – Differential & Static Pressures w/ Temperature	—	•	
6	Process Variables Only (No Flow Calculations) – Differential & Static Pressures	—	•	
7	Process Variables Only (No Flow Calculations) – Differential Pressure & Temperature	—	•	
Body material				
Standard				Standard
S	316 SST	•	•	★
Line Size				
Standard				Standard
005	1/2-in. (15 mm)	•	•	★
010	1-in. (25 mm)	•	•	★
015	1 1/2-in. (40 mm)	•	•	★
Process connection				
Standard				Standard
T1	NPT Female Body (Not Available with Remote Thermowell and RTD)	•	•	★
S1 ⁽¹⁾	Socket Weld Body (Not Available with Remote Thermowell and RTD)	•	•	★
P1	Pipe Ends: NPT threaded	•	•	★
P2	Pipe Ends: Beveled	•	•	★
D1	Pipe Ends: Flanged, DIN PN16, slip-on	•	•	★
D2	Pipe Ends: Flanged, DIN PN40, slip-on	•	•	★
D3	Pipe Ends: Flanged, DIN PN100, slip-on	•	•	★
W1	Pipe Ends: Flanged, ANSI Class 150, weld-neck	•	•	★
W3	Pipe Ends: Flanged, ANSI Class 300, weld-neck	•	•	★
W6	Pipe Ends: Flanged, ANSI Class 600, weld-neck	•	•	★
Expanded				Expanded
A1	Pipe Ends: Flanged, RF, ANSI Class 150, slip-on	•	•	
A3	Pipe Ends: Flanged, RF, ANSI Class 300, slip-on	•	•	
A6	Pipe Ends: Flanged, RF, ANSI Class 600, slip-on	•	•	
R1	Pipe Ends: Flanged, RTJ, ANSI Class 150, slip-on	•	•	
R3	Pipe Ends: Flanged, RTJ, ANSI Class 300, slip-on	•	•	
R6	Pipe Ends: Flanged, RTJ, ANSI Class 600, slip-on	•	•	
P9	Special Process Connection	•	•	

Table 6. Rosemount 3051SFP Integral Orifice Flowmeter ordering information

★ The Standard offering represents the most common options. The starred options (★) should be selected for best delivery.
The Expanded offering is subject to additional delivery lead time.

Orifice plate material		D	1-7	
Standard				Standard
S	316 SST	•	•	★
Expanded				Expanded
H	Alloy C-276	•	•	
M	Alloy 400	•	•	
Bore size option				
Standard				Standard
0066	0.066-in. (1.68 mm) for 1/2-in. pipe	•	•	★
0109	0.109-in. (2.77 mm) for 1/2-in. pipe	•	•	★
0160	0.160-in. (4.06 mm) for 1/2-in. pipe	•	•	★
0196	0.196-in. (4.98 mm) for 1/2-in. pipe	•	•	★
0260	0.260-in. (6.60 mm) for 1/2-in. pipe	•	•	★
0340	0.340-in. (8.64 mm) for 1/2-in. pipe	•	•	★
0150	0.150-in. (3.81 mm) for 1-in. pipe	•	•	★
0250	0.250-in. (6.35 mm) for 1-in. pipe	•	•	★
0345	0.345-in. (8.76 mm) for 1-in. pipe	•	•	★
0500	0.500-in. (12.70 mm) for 1-in. pipe	•	•	★
0630	0.630-in. (16.00 mm) for 1-in. pipe	•	•	★
0800	0.800-in. (20.32 mm) for 1-in. pipe	•	•	★
0295	0.295-in. (7.49 mm) for 1 1/2-in. pipe	•	•	★
0376	0.376-in. (9.55 mm) for 1 1/2-in. pipe	•	•	★
0512	0.512-in. (13.00 mm) for 1 1/2-in. pipe	•	•	★
0748	0.748-in. (19.00 mm) for 1 1/2-in. pipe	•	•	★
1022	1.022-in. (25.96 mm) for 1 1/2-in. pipe	•	•	★
1184	1.184-in. (30.07 mm) for 1 1/2-in. pipe	•	•	★
Expanded				Expanded
0010	0.010-in. (0.25 mm) for 1/2-in. pipe	•	•	
0014	0.014-in. (0.36 mm) for 1/2-in. pipe	•	•	
0020	0.020-in. (0.51 mm) for 1/2-in. pipe	•	•	
0034	0.034-in. (0.86 mm) for 1/2-in. pipe	•	•	
Transmitter connection platform				
Standard				Standard
D3	Direct-mount, 3-valve Manifold, SST	•	•	★
D5	Direct-mount, 5-valve Manifold, SST	•	•	★
R3	Remote-mount, 3-valve Manifold, SST	•	•	★
R5	Remote-mount, 5-valve Manifold, SST	•	•	★
Expanded				Expanded
D4	Direct-mount, 3-valve Manifold, Alloy C-276	•	•	
D6	Direct-mount, 5-valve Manifold, Alloy C-276	•	•	
D7	Direct-mount, High Temperature, 5-valve Manifold, SST	•	•	
R4	Remote-mount, 3-valve Manifold, Alloy C-276	•	•	
R6	Remote-mount, 5-valve Manifold, Alloy C-276	•	•	
Differential pressure range				
Standard				Standard
1	0 to 25 inH ₂ O (0 to 62.3 mbar)	•	•	★
2	0 to 250 inH ₂ O (0 to 623 mbar)	•	•	★
3	0 to 1000 inH ₂ O (0 to 2.5 bar)	•	•	★
Static pressure range				
Standard				Standard
A ⁽²⁾	None	•	•	★

Table 6. Rosemount 3051SFP Integral Orifice Flowmeter ordering information

★ The Standard offering represents the most common options. The starred options (★) should be selected for best delivery. The Expanded offering is subject to additional delivery lead time.

D	Absolute 0 to 800 psia (0 to 55.2 bar)			—	•	★
E ⁽³⁾	Absolute 0 to 3626 psia (0 to 250 bar)			—	•	★
J	Gage -14.2 to 800 psig (-0.979 to 55.2 bar)			—	•	★
K ⁽³⁾	Gage -14.2 to 3626 psig (-0.979 to 250 bar)			—	•	★
Transmitter output						
Standard						Standard
A	4–20 mA with digital signal based on HART protocol			•	•	★
F	FOUNDATION fieldbus (Requires PlantWeb housing)			•	—	★
X ⁽⁴⁾⁽⁵⁾	Wireless (Requires wireless options and wireless PlantWeb housing)			•	—	★
Transmitter housing style		Material	Conduit entry size			
Standard						Standard
00	None (Customer-supplied electrical connection)			•	—	★
1A	PlantWeb housing	Aluminum	1/2-14 NPT	•	•	★
1B	PlantWeb housing	Aluminum	M20 x 1.5	•	•	★
1J	PlantWeb housing	SST	1/2-14 NPT	•	•	★
1K	PlantWeb housing	SST	M20 x 1.5	•	•	★
2A	Junction Box housing	Aluminum	1/2-14 NPT	•	—	★
2B	Junction Box housing	Aluminum	M20 x 1.5	•	—	★
2E	Junction Box housing with output for remote display and interface	Aluminum	1/2-14 NPT	•	—	★
2F	Junction Box housing with output for remote display and interface	Aluminum	M20 x 1.5	•	—	★
2J	Junction Box housing	SST	1/2-14 NPT	•	—	★
2M	Junction Box housing with output for remote display and interface	SST	1/2-14 NPT	•	—	★
5A ⁽⁶⁾	Wireless PlantWeb housing	Aluminum	1/2–14 NPT	•	—	★
5J ⁽⁶⁾	Wireless PlantWeb housing	SST	1/2–14 NPT	•	—	★
7J ⁽⁴⁾⁽⁷⁾	Quick Connect (A size Mini, 4-pin male termination)			•	—	★
Expanded						Expanded
1C	PlantWeb housing	Aluminum	G 1/2	•	•	
1L	PlantWeb housing	SST	G 1/2	•	•	
2C	Junction Box housing	Aluminum	G 1/2	•	—	
2G	Junction Box housing with output for remote display and interface	Aluminum	G 1/2	•	—	
Performance class ⁽⁸⁾						
Standard						Standard
3051S MultiVariable SuperModule, Measurement Types 1, 2, 5, and 6						
3 ⁽⁹⁾	Ultra for Flow: 0.95% flow rate accuracy, 14:1 flow turndown, 10-year stability, 15-year limited warranty			•	•	★
5	Classic MV: 1.25% flow rate accuracy, 8:1 flow turndown, 5-year stability			—	•	★
3051S Single Variable SuperModule, Measurement Types 3, 4, 7, and D						
1	Ultra: 1.05% flow rate accuracy, 8:1 flow turndown, 15-year stability, 15-year limited warranty			•	•	★
2	Classic: 1.50% flow rate accuracy, 8:1 flow turndown, 15-year stability			•	•	★
3 ⁽⁹⁾	Ultra for Flow: 0.95% flow rate accuracy, 14:1 flow turndown, 15-year stability, 15-year limited warranty			•	•	★

Wireless options (requires option code X and wireless PlantWeb housing)

Update rate, operating frequency and protocol		D	1-7	
Standard				Standard
WA	User Configurable Update Rate	•	—	★

Table 6. Rosemount 3051SFP Integral Orifice Flowmeter ordering information

★ The Standard offering represents the most common options. The starred options (★) should be selected for best delivery. The Expanded offering is subject to additional delivery lead time.

Operating frequency and protocol		D	1-7	
Standard				
3	2.4 GHz DSSS, IEC 62591 (<i>WirelessHART</i>)	•	—	★
Omnidirectional wireless antenna				
Standard				Standard
WK	External Antenna	•	—	★
WM	Extended Range, External Antenna	•	—	★
Expanded				Expanded
WN	High-Gain, Remote Antenna	•	—	
SmartPower™				
Standard				Standard
1 ⁽¹⁰⁾	Adapter for Black Power Module (I.S. Power Module Sold Separately)	•	—	★

Other options (include with selected model number)

Transmitter / body bolt material		D	1-7	
Expanded				Expanded
G ⁽¹¹⁾	High temperature Option (850 °F (454 °C))	•	•	
Temperature sensor				
Standard				Standard
T ⁽¹²⁾	Thermowell and RTD	•	•	★
Optional connection				
Standard				Standard
G1	DIN 19213 Transmitter Connection	•	•	★
Pressure testing				
Expanded				Expanded
P1 ⁽¹³⁾	Hydrostatic Testing with Certificate	•	•	
Special cleaning				
Expanded				Expanded
P2	Cleaning for Special Services	•	•	
PA	Cleaning per ASTM G93 Level D (Section 11.4)	•	•	
Material testing				
Expanded				Expanded
V1	Dye Penetrant Exam	•	•	
Material examination				
Expanded				Expanded
V2	Radiographic Examination (available only with Process Connection code W1, W3, and W6)	•	•	
Flow calibration				
Expanded				Expanded
WD ⁽¹⁴⁾	Discharge Coefficient Verification	•	•	
WZ ⁽¹⁴⁾	Special Calibration	•	•	
Special inspection				
Standard				Standard
QC1	Visual & Dimensional Inspection with Certificate	•	•	★
QC7	Inspection & Performance Certificate	•	•	★
Material traceability certification				
Standard				Standard
Q8	Material certification per EN 10204:2004 3.1	•	•	★

Table 6. Rosemount 3051 SFP Integral Orifice Flowmeter ordering information

★ The Standard offering represents the most common options. The starred options (★) should be selected for best delivery.
The Expanded offering is subject to additional delivery lead time.

Code conformance		D	1-7	
Expanded				Expanded
J2 ⁽¹⁵⁾	ANSI / ASME B31.1	•	•	
J3 ⁽¹⁵⁾	ANSI / ASME B31.3	•	•	
J4 ⁽¹⁵⁾	ANSI / ASME B31.8	•	•	
Materials conformance				
Expanded				Expanded
J5 ⁽¹⁶⁾	NACE MR-0175 / ISO 15156	•	•	
Country certification				
Standard				Standard
J6	European Pressure Directive (PED)	•	•	★
Expanded				Expanded
J1	Canadian Registration	•	•	
Transmitter calibration certification				
Standard				Standard
Q4	Calibration Data Certificate for Transmitter	•	•	★
Quality certification for safety				
Standard				Standard
QS ⁽¹⁷⁾⁽¹⁸⁾	Prior-use Certificate of FMEDA data	•	—	★
QT ⁽¹⁷⁾⁽¹⁸⁾⁽²⁰⁾	Safety-certified to IEC 61508 with Certificate of FMEDA data	•	—	★
Product certifications				
Standard				Standard
E1	ATEX Flameproof	•	•	★
I1	ATEX Intrinsic Safety	•	•	★
IA	ATEX FISCO Intrinsic Safety; for FOUNDATION fieldbus protocol only	•	—	★
N1	ATEX Type n	•	•	★
ND	ATEX Dust	•	•	★
K1	ATEX Flameproof, Intrinsic Safety, Type n, Dust (combination of E1, I1, N1, and ND)	•	•	★
E4	TIIS Flameproof	•	•	★
E5	FM Explosion-proof, Dust Ignition-proof	•	•	★
I5	FM Intrinsically Safe; Nonincendive	•	•	★
K5	FM Explosion-proof, Dust Ignition-proof, Intrinsically Safe, Division 2 (combination of E5 and I5)	•	•	★
E6 ⁽¹⁹⁾	CSA Explosion-proof, Dust Ignition-proof, Division 2	•	•	★
I6	CSA Intrinsically Safe	•	•	★
K6 ⁽¹⁹⁾	CSA Explosion-proof, Dust Ignition-proof, Intrinsically Safe, Division 2 (combination of E6 and I6)	•	•	★
E7	IECEx Flameproof, Dust Ignition-proof	•	•	★
I7	IECEx Intrinsic Safety	•	•	★
K7	IECEx Flameproof, Dust Ignition-proof, Intrinsic Safety, Type n (combination of E7, I7, and N7)	•	•	★
E3	China Flameproof	•	•	★
I3	China Intrinsic Safety	•	•	★
KA ⁽¹⁹⁾	ATEX and CSA Flameproof, Intrinsically Safe, Division 2 (combination of E1, I1, E6, and I6)	•	•	★
KB ⁽¹⁹⁾	FM and CSA Explosion-proof, Dust Ignition-proof, Intrinsically Safe, Division 2 (combination of E5, E6, I5, and I6)	•	•	★
KC	FM and ATEX Explosion-proof, Intrinsically Safe, Division 2 (combination of E5, E1, I5, and I1)	•	•	★
KD ⁽¹⁹⁾	FM, CSA, and ATEX Explosion-proof, Intrinsically Safe (combination of E5, I5, E6, I6, E1, and I1)	•	•	★
Shipboard approvals				
Standard				Standard
SBS	American Bureau of Shipping	•	•	★
Sensor fill fluid and O-ring options				
Standard				Standard
L1	Inert Sensor Fill Fluid	•	•	★

Table 6. Rosemount 3051SFP Integral Orifice Flowmeter ordering information

★ The Standard offering represents the most common options. The starred options (★) should be selected for best delivery. The Expanded offering is subject to additional delivery lead time.

L2	Graphite-filled (PTFE) O-ring	•	•	★
LA	Inert sensor fill fluid and graphite-filled (PTFE) O-ring	•	•	★
Digital display⁽²⁰⁾		D	1-7	
Standard				Standard
M5	PlantWeb LCD display (requires PlantWeb housing)	•	•	★
M7 ⁽¹⁷⁾⁽²¹⁾⁽²²⁾	Remote mount LCD display and interface, PlantWeb housing, no cable, SST bracket	•	—	★
M8 ⁽¹⁷⁾⁽²²⁾	Remote mount LCD display and interface, PlantWeb housing, 50 ft. (15 m) cable, SST bracket	•	—	★
M9 ⁽¹⁷⁾⁽²²⁾	Remote mount LCD display and interface, PlantWeb housing, 100 ft. (31 m) cable, SST bracket	•	—	★
Transient protection				
Standard				Standard
T1 ⁽²³⁾	Transient terminal block	•	•	★
PlantWeb control functionality				
Standard				Standard
A01	FOUNDATION fieldbus Advanced Control Function Block Suite	•	—	★
PlantWeb diagnostic functionality				
Standard				Standard
D01	FOUNDATION fieldbus Diagnostics Suite	•	—	★
DA2 ⁽²⁴⁾	Advanced HART Diagnostics Suite	•	—	★
PlantWeb enhanced measurement functionality				
Standard				Standard
H01 ⁽²⁵⁾	FOUNDATION fieldbus Fully Compensated Mass Flow Block	•	—	★
Cold temperature				
Standard				Standard
BRR	-58 °F (-50 °C) Cold Temperature Start-up	—	•	★
Alarm limit⁽¹⁷⁾⁽¹⁸⁾				
Standard				Standard
C4	NAMUR Alarm & Saturation Levels, High Alarm	•	•	★
C5	NAMUR Alarm & Saturation Levels, Low Alarm	•	•	★
C6	Custom Alarm & Saturation Levels, High Alarm	•	•	★
C7	Custom Alarm & Saturation Levels, Low Alarm	•	•	★
C8	Low Alarm (Standard Rosemount Alarm & Saturation Levels)	•	•	★
Hardware adjustments and ground screw				
Standard				Standard
D1 ⁽¹⁷⁾⁽¹⁸⁾⁽²⁶⁾	Hardware Adjustments (zero, span, alarm, security)	•	—	★
D4 ⁽²⁷⁾	External ground screw assembly	•	•	★
DA ⁽¹⁷⁾⁽¹⁸⁾⁽²⁶⁾	Hardware adjustments (zero, span, alarm, security) & External Ground Screw Assembly	•	—	★
Conduit plug				
Standard				Standard
DO	316 SST Conduit Plug	•	•	★
Conduit electrical connector				
Expanded				Expanded
GE ⁽²⁸⁾	M12, 4-pin, Male Connector (<i>euromast</i>)	•	•	
GM ⁽²⁸⁾	A size Mini, 4-pin, Male Connector (<i>minifast</i>)	•	•	
Typical model number: 3051SFP 1 S 010 W3 S 0150 D3 1 J A 1A 3 M5				

(1) To improve pipe perpendicularity for gasket sealing, socket diameter is smaller than standard pipe O.D.

(2) Required for Measurement Type codes 3, 4, 7, and D.

- (3) For Measurement Type codes 1, 2, 5, and 6 with DP range 1, absolute limits are 0.5 to 2000 psi (0,03 to 137,9 bar) and gage limits are -14.2 to 2000 psig (-0,98 to 137,9 bar).
- (4) Only intrinsically safe approval codes apply.
- (5) Only available with Measurement Types D and 6.
- (6) Only available with output code X.
- (7) Only available with output code A.
- (8) For detailed specifications see [“Specifications” on page -82.](#)
- (9) Only available with differential pressure ranges 2 and 3, and silicone fill fluid.
- (10) Long-life Power Module must be shipped separately, order Power Module 701PBKKF.
- (11) Not available with 1 1/2-in. (38 mm) line size.
- (12) Thermowell material is the same as the body material.
- (13) Does not apply to Process Connection codes T1 and S1.
- (14) Not available for bore sizes 0010, 0014, 0020, or 0034.
- (15) Not available with DIN Process Connection codes D1, D2, or D3.
- (16) Materials of Construction comply with metallurgical requirements within NACE MR0175/ISO 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.
- (17) Not available with output code X.
- (18) Not available with output code F.
- (19) Not available with M20 or G 1/2 conduit entry size.
- (20) Not available with housing code 7J.
- (21) See the 3051S Reference Manual (document number 00809-0100-4801) for cable requirements. Contact an Emerson Process Management representative for additional information.
- (22) Not available with output code F, option code DA2, or option code QT.
- (23) Not available with Housing code 5A, 5J, or 7J. The T1 option is not needed with FISCO Product Certifications.
- (24) Includes Hardware Adjustments (option code D1) as standard. Not available with output code X.
- (25) Requires Rosemount Engineering Assistant version 5.5.1 to configure.
- (26) Not available with housing codes 2E, 2F, 2G, 2M, 5A, 5J, or 7J.
- (27) This assembly is included with options E1, N1, K1, ND, E4, E7, N7, K7, E2, E3, KA, KC, KD, IA, IE, N3, and T1.
- (28) Not available with Housing code 5A, 5J, or 7J. Available with Intrinsically Safe approvals only. For FM Intrinsically Safe; Nonincendive (option code I5) or FM FISCO Intrinsically Safe (option code IE), install in accordance with Rosemount drawing 03151-1009.

Rosemount 3051S Electronic Remote Sensor (ERS) System



The 3051S ERS System is a flexible, 2-wire 4-20 mA HART architecture that calculates differential pressure (DP) electronically using two pressure sensors that are linked together with a non-proprietary electrical wire.

Ideal applications for the 3051S ERS System include tall vessels and distillation columns that have traditionally required long lengths of capillary or impulse piping. When used in these types of applications, the 3051S ERS System can deliver:

- More accurate and repeatable DP measurements
- Faster time response
- Simplified installations
- Reduced maintenance

How to order

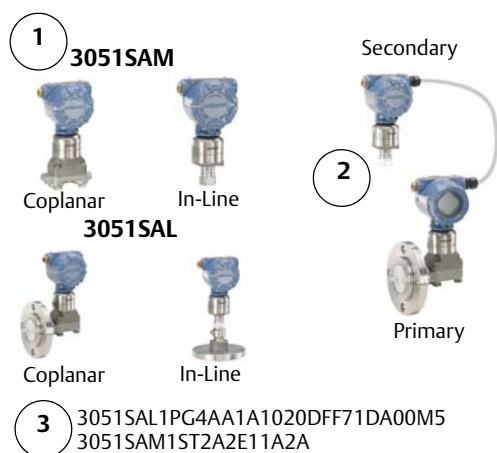
1. Choose two 3051S ERS transmitter models. These may be any combination of 3051SAM and 3051SAL models.
2. Decide which model will be the ERS Primary (4-20 mA loop termination and optional LCD display) and which will be the ERS Secondary. This will be specified by the "Configuration Type" code in each model number.
3. Specify two full model numbers per the desired configuration.

Additional information

Specifications: [page 82](#)

Certifications: [page 111](#)

Dimensional drawings: [page 111](#)



Rosemount 3051SAM Transmitter for ERS Applications

- Coplanar and in-line sensor module platforms
- Variety of process connections including threaded NPT, flanges, manifolds, and 1199 remote seals
- Available with 15-year stability and 15-year limited warranty

Table 7. Rosemount 3051SAM Transmitter for ERS Applications ordering information

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

The Expanded offering is subject to additional delivery lead time.

Model	Transmitter type	
3051SAM	Scalable Advanced Measurement Transmitter	
Performance class ⁽¹⁾		
Standard		Standard
1	Ultra: 0.025% span accuracy, 200:1 rangedown, 15-year stability, 15-year limited warranty	★
2	Classic: 0.035% span accuracy, 150:1 rangedown, 15-year stability	★

Table 7. Rosemount 3051SAM Transmitter for ERS Applications ordering information

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

The Expanded offering is subject to additional delivery lead time.

Configuration type					
Standard					Standard
P	Electronic Remote Sensor - Primary				★
S	Electronic Remote Sensor - Secondary				★
Pressure module type		Pressure sensor type			
Standard					Standard
G	Coplanar	Gage			★
T	In-Line	Gage			★
E	In-Line	Absolute			★
Expanded					Expanded
A	Coplanar	Absolute			
Pressure range ⁽²⁾					
	Coplanar gage	In-line gage	In-line absolute	Coplanar absolute	
Standard					Standard
1A	N/A	-14.7 to 30 psig (-1,0 to 2,06 bar)	0 to 30 psia (0 to 2,06 bar)	0 to 30 psia (0 to 2,06 bar)	★
2A	-250 to 250 inH2O (-623 to 623 mbar)	-14.7 to 150 psig (-1,0 to 10,34 bar)	0 to 150 psia (0 to 10,34 bar)	0 to 150 psia (0 to 10,34 bar)	★
3A	-393 to 1000 inH2O (-0,98 to 2,49 bar)	-14.7 to 800 psig (-1,0 to 55,2 bar)	0 to 800 psia (0 to 55,2 bar)	0 to 800 psia (0 to 55,2 bar)	★
4A	-14.2 to 300 psig (-0,98 to 20,7 bar)	-14.7 to 4000 psig (-1,0 to 275,8 bar)	0 to 4000 psia (0 to 275,8 bar)	0 to 4000 psia (0 to 275,8 bar)	★
5A	-14.2 to 2000 psig (-0,98 to 137,9 bar)	-14.7 to 10000 psig (-1,0 to 689,5 bar)	0 to 10000 psia (0 to 689,5 bar)	N/A	★
Isolating diaphragm					
Standard					Standard
2 ⁽³⁾	316L SST				★
3 ⁽³⁾	Alloy C-276				★
Expanded					Expanded
4 ⁽³⁾⁽⁴⁾	Alloy 400				
5 ⁽⁴⁾⁽⁵⁾	Tantalum				
6 ⁽³⁾⁽⁴⁾	Gold-plated Alloy 400 (includes Graphite-Filled PTFE O-Ring)				
7 ⁽³⁾⁽⁴⁾	Gold-plated 316L SST				
Process connection					
	Coplanar module type		In-line module type		
Standard					Standard
A11 ⁽⁶⁾	Assemble to Rosemount 305 Manifold		Assemble to Rosemount 306 Manifold		★
A12 ⁽⁶⁾	Assemble to Rosemount 304 or AMF Manifold with SST Traditional Flange		Assemble AMF Manifold to ½-14 NPT Female Process Connection		★
A15	Assemble to Rosemount 304 or AMF manifold to SST Traditional Flange with Alloy C-276 Drain Vents		N/A		★
A22	Assemble AMF manifold to SST Coplanar Flange		N/A		★
B11 ⁽⁶⁾⁽⁷⁾	Assemble to One Rosemount 1199 Remote Diaphragm Seal with SST transmitter flange		Assemble to One Rosemount 1199 Remote Diaphragm		★
E11	Coplanar Flange (CS), ¼-18 NPT, 316 SST Drain Vents		½ -14 NPT Female		★
E12	Coplanar Flange (SST), ¼-18 NPT, 316 SST Drain Vents		N/A		★
E13 ⁽³⁾	Coplanar Flange (Cast C-276), ¼-18 NPT, Alloy C-276 Drain Vents		N/A		★
E14	Coplanar Flange (Cast Alloy 400), ¼-18 NPT, Alloy 400/K-500 Drain Vents		N/A		★
E15 ⁽³⁾	Coplanar Flange (SST), ¼-18 NPT, Alloy C-276 Drain Vents		N/A		★
E16 ⁽³⁾	Coplanar Flange (CS), ¼-18 NPT, Alloy C-276 Drain Vents		N/A		★

Table 7. Rosemount 3051 SAM Transmitter for ERS Applications ordering information

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

The Expanded offering is subject to additional delivery lead time.

E21	Coplanar Flange (CS), RC ¼, 316 SST Drain Vents	N/A	★
E22	Coplanar Flange (SST), RC ¼, 316 SST Drain Vents	N/A	★
E23 ⁽³⁾	Coplanar Flange (Cast C-276), RC ¼, Alloy C-276 Drain Vents	N/A	★
E24	Coplanar Flange (Cast Alloy 400), RC ¼, Alloy 400/K-500 Drain Vents	N/A	★
E25 ⁽³⁾	Coplanar Flange (SST), RC ¼, Alloy C-276 Drain Vents	N/A	★
Standard			Standard
E26 ⁽³⁾	Coplanar Flange (CS), RC ¼, Alloy C-276 Drain Vents	N/A	★
F12	Traditional Flange (SST), 1/4-18 NPT, 316 SST Drain Vents	N/A	★
F13 ⁽³⁾	Traditional Flange (Cast C-276), 1/4-18 NPT, Alloy C-276 Drain Vents	N/A	★
F14	Traditional Flange (Cast Alloy 400), 1/4-18 NPT, Alloy 400/K-500 Drain Vents	N/A	★
F15 ⁽³⁾	Traditional Flange (SST), 1/4-18 NPT, Alloy C-276 Drain Vents	N/A	★
F22	Traditional Flange (SST), RC ¼, 316 SST Drain Vents	N/A	★
F23 ⁽³⁾	Traditional Flange (Cast C-276), RC ¼, Alloy C-276 Drain Vents	N/A	★
F24	Traditional Flange (Cast Alloy 400), RC ¼, Alloy 400/K500 Drain Vents	N/A	★
F25 ⁽³⁾	Traditional Flange (SST), RC ¼, Alloy C-276 Drain Vents	N/A	★
F52	DIN-Compliant Traditional Flange (SST), 1/4-18 NPT, 316 Drain Vents, 7-16-in. Bolting	N/A	★
G11	Vertical Mount Level Flange (SST), 2-in ANSI Class 150, 316 SST Drain Vents	G ¹ /2 A DIN 16288 male (Range 1-4 only)	★
G12	Vertical Mount Level Flange (SST), 2-in ANSI Class 300, 316 SST Drain Vents	N/A	★
G21	Vertical Mount Level Flange (SST), 3-in ANSI Class 150, 316 SST Drain Vents	N/A	★
G22	Vertical Mount Level Flange (SST), 3-in ANSI Class 300, 316 SST Drain Vents	N/A	★
G31	Vertical Mount Level Flange (SST), DIN-DN 50 PN 40, 316 SST Drain Vents	N/A	★
G41	Vertical Mount Level Flange (SST), DIN-DN 80 PN 40, 316 SST Drain Vents	N/A	★
Expanded			Expanded
F11	Traditional Flange (CS), 1/4-18 NPT, 316 SST Drain / Vents	Non-Threaded Instrument Flange (I-Flange)	
F32	Bottom Vent Traditional Flange (SST), 1/4-18 NPT, 316 SST Drain Vents	N/A	
F42	Bottom Vent Traditional Flange (SST), RC ¼, 316 SST Drain Vents	N/A	
F62	DIN-Compliant Traditional Flange (316 SST), 1/4-18 NPT, 316 Drain Vents, M10 Bolting	N/A	
F72	DIN-Compliant Traditional Flange (316 SST), 1/4-18 NPT, 316 Drain Vents, M12 Bolting	N/A	
Transmitter output			
Standard			Standard
A	4–20 mA with digital signal based on HART protocol		★
Housing style		Material	Conduit entry size
Standard			Standard
Housings for ERS Primary - Configuration Type code P			
1A	PlantWeb housing	Aluminum	1/2–14 NPT
1B	PlantWeb housing	Aluminum	M20 x 1.5 (CM 20)
1J	PlantWeb housing	SST	1/2–14 NPT
1K	PlantWeb housing	SST	M20 x 1.5 (CM 20)
2E	Junction Box with Remote Display Output	Aluminum	1/2–14 NPT

Table 7. Rosemount 3051 SAM Transmitter for ERS Applications ordering information

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

The Expanded offering is subject to additional delivery lead time.

2F	Junction Box with Remote Display Output	Aluminum	M20 x 1.5 (CM 20)	★
2M	Junction Box with Remote Display Output	SST	1/2-14 NPT	★
Standard				Standard
Housings for ERS Secondary - Configuration Type code S				
2A	Junction Box	Aluminum	1/2-14 NPT	★
2B	Junction Box	Aluminum	M20 x 1.5 (CM 20)	★
2J	Junction Box	SST	1/2-14 NPT	★
Expanded				Expanded
Housings for ERS Primary - Configuration Type code P				
1C	PlantWeb housing	Aluminum	G ^{1/2}	
1L	PlantWeb housing	SST	G ^{1/2}	
2G	Junction Box with Remote Display Output	Aluminum	G ^{1/2}	
Housings for ERS Secondary - Configuration Type code S				
2C	Junction Box	Aluminum	G ^{1/2}	

Options (include with selected model number)

Electronic remote sensor connection cable		
Standard		Standard
R05	50 ft. (15.2 m) Spool of Electronic Remote Sensor Cable	★
R10	100 ft. (30.5 m) Spool of Electronic Remote Sensor Cable	★
R15	150 ft. (45.7 m) Spool of Electronic Remote Sensor Cable	★
Mounting bracket		
Standard		Standard
B1 ⁽⁴⁾	Traditional flange bracket, CS, 2-in. pipe	★
B2 ⁽⁴⁾	Traditional flange bracket, CS, panel	★
B3 ⁽⁴⁾	Traditional flange flat bracket, CS, 2-in. pipe	★
B4	Bracket, all SST, 2-in. Pipe and Panel	★
B7 ⁽⁴⁾	Traditional flange bracket, B1 with SST bolts	★
B8 ⁽⁴⁾	Traditional flange bracket, B2 with SST bolts	★
B9 ⁽⁴⁾	Traditional flange bracket, B3 with SST bolts	★
BA ⁽⁴⁾	Traditional flange bracket, B1, all SST	★
BC ⁽⁴⁾	Traditional flange bracket, B3, all SST	★
Special configuration (software)		
Standard		Standard
C1 ⁽⁸⁾	Customer Software Configuration (“Configuration Data Sheet” must be completed)	★
C3	Gage Pressure Calibration on Rosemount 3051SAM_ _A4 only	★
C4 ⁽⁸⁾	NAMUR Alarm and Saturation Levels, High Alarm	★
C5 ⁽⁸⁾	NAMUR Alarm and Saturation Levels, Low Alarm	★
C6 ⁽⁸⁾	Custom Alarm and Saturation Levels, High Alarm (Requires C1 and Configuration Data Sheet)	★
C7 ⁽⁸⁾	Custom Alarm and Saturation Levels, Low Alarm (Requires C1 and Configuration Data Sheet)	★
C8 ⁽⁸⁾	Low alarm (standard Rosemount alarm and saturation levels)	★
Special configuration (hardware)		
Standard		Standard
D2 ⁽⁹⁾	1/2-14 NPT Flange Adapters	★
D4 ⁽¹⁰⁾	External ground screw assembly	★
D5 ⁽⁹⁾	Delete transmitter drain/vent valves (install plugs)	★
Expanded		Expanded
D7 ⁽⁹⁾	Coplanar flange without drain/vent ports	
D9 ⁽⁹⁾	RC 1/2 Flange Adapters	

Table 7. Rosemount 3051 SAM Transmitter for ERS Applications ordering information

★ The Standard offering represents the most common options. The starred options (★) should be selected for best delivery.
The Expanded offering is subject to additional delivery lead time.

Product certifications		
Standard		Standard
E1	ATEX Flameproof	★
I1	ATEX Intrinsic Safety	★
N1	ATEX Type n	★
K1	ATEX Flameproof and Intrinsically Safe, Type n, Dust	★
ND	ATEX Dust	★
E4	TIIS Flameproof	★
E5	FM Explosion-proof, Dust Ignition-proof	★
I5	FM Intrinsically Safe; Nonincendive	★
K5	FM Explosion-proof, Dust Ignition-proof, Intrinsically Safe, Division 2	★
E6 ⁽¹¹⁾	CSA Explosion-proof, Dust Ignition-proof, Division 2	★
I6	CSA Intrinsically Safe	★
K6 ⁽¹¹⁾	CSA Explosion-proof, Dust Ignition-proof, Intrinsically Safe, Division 2	★
E7	IECEX Flameproof	★
I7	IECEX Intrinsic Safety	★
N7	IECEX Type n	★
K7	IECEX Flameproof, Intrinsic Safety, Type n	★
E2	INMETRO Flameproof	★
I2	INMETRO Intrinsically Safe	★
K2	INMETRO Flameproof, Intrinsic Safety, Type n	★
E3	China Flameproof	★
I3	China Intrinsic Safety, Dust Ignition-proof	★
KA ⁽¹¹⁾	ATEX and CSA Flameproof, Intrinsically Safe, Division 2	★
KB ⁽¹¹⁾	FM and CSA Explosion-proof, Dust Ignition-proof, Intrinsically Safe, Division 2	★
KC	FM and ATEX Explosion-proof, Intrinsically Safe, Division 2	★
KD ⁽¹¹⁾	FM, CSA, and ATEX Explosion-proof, Intrinsically Safe	★
Special certifications		
Calibration certification		
Standard		Standard
Q4	Calibration certificate	★
QP	Calibration Certificate and Tamper Evident Seal	★
Material traceability certification		
Standard		Standard
Q8	Material Traceability Certification per EN 10204 3.1	★
Quality certification for safety		
Standard		Standard
QS	Prior-use certificate of FMEDA Data	★
Surface finish certification		
Standard		Standard
Q16 ⁽¹²⁾	Surface Finish Certification for Hygienic Remote Seals	★
Toolkit performance reports		
Standard		Standard
QZ ⁽¹³⁾	Remote Seal System Performance Calculation Report	★
Terminal blocks		
Standard		Standard
T1 ⁽⁸⁾	Transient Terminal Block	★

Table 7. Rosemount 3051 SAM Transmitter for ERS Applications ordering information

★ The Standard offering represents the most common options. The starred options (★) should be selected for best delivery.
The Expanded offering is subject to additional delivery lead time.

Sensor fill fluid		
Standard		Standard
L1 ⁽¹⁴⁾	Inert Sensor Fill Fluid	★
O-ring		
Standard		Standard
L2	Graphite-Filled PTFE O-Ring	★
Bolting material		
Standard		Standard
L4 ⁽⁹⁾	Austenitic 316 SST Bolts	★
L5 ⁽³⁾⁽⁹⁾	ASTM A 193, Grade B7M Bolts	★
L6 ⁽⁹⁾	Alloy K-500 Bolts	★
L7 ⁽³⁾⁽⁹⁾	ASTM A 453, Class D, Grade 660 Bolts	★
L8 ⁽⁹⁾	ASTM A 193, Class 2, Grade B8M Bolts	★
Display type (ERS Primary only)		
Standard		Standard
M5 ⁽⁸⁾	PlantWeb LCD display	★
M7 ⁽⁸⁾⁽¹⁵⁾	Remote Mount LCD display and Interface, PlantWeb housing, No Cable, SST Bracket	★
M8 ⁽⁸⁾	Remote Mount LCD display and Interface, PlantWeb housing, 50 ft. (15.2 m) Cable, SST Bracket	★
M9 ⁽⁸⁾	Remote Mount LCD display and Interface, PlantWeb housing, 100 ft. (30.5 m) Cable, SST Bracket	★
Special procedures		
Pressure testing		
Expanded		Expanded
P1	Hydrostatic Testing with Certificate	
Special cleaning		
Expanded		Expanded
P2 ⁽⁹⁾	Cleaning for Special Services	
P3 ⁽⁹⁾	Cleaning for Less than 1 PPM Chlorine/Fluorine	
NACE Certificate		
Standard		Standard
Q15 ⁽¹⁶⁾	Certificate of Compliance to NACE MR0175/ISO 15156 for wetted materials	★
Q25 ⁽¹⁶⁾	Certificate of Compliance to NACE MR0103 for wetted materials	★
Typical model number: 3051SAM 1 ST 2A 2 E11 A 2A		

(1) For detailed specifications see “Specifications” on page -82.

(2) The pressure range should be specified based on the maximum static pressure, not differential pressure.

(3) Materials of Construction comply with metallurgical requirements highlighted within NACE MR 0175 / 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 MR 0103 for sour refining environments. Order with Q15 or Q25 to receive a NACE certificate.

(4) Not available with Pressure Sensor / Module codes T or E.

(5) Tantalum diaphragm material is only available with Pressure Sensor / Module code G.

(6) “Assemble to” items are specified separately and require a completed model number.

(7) Consult an Emerson Process Management representative for performance specifications.

(8) Not available with Configuration Type code S.

(9) Not available with Process Connection code A11.

(10) This assembly is included with options E1, N1, K1, ND, E4, E7, N7, K7, E2, KA, KC, KD, K2, and T1.

- (11) Not available with M20 or G ½ conduit entry size.
- (12) Q16 is only available when the diaphragm seal has surface finish options.
- (13) The QZ report quantifies the performance of the entire ERS system. One report is provided per ERS system. The QZ option is specified on the Primary Transmitter (Configuration Type code P).
- (14) Silicone fill fluid is standard.
- (15) See the 3051S Reference Manual (document number 00809-0100-4801) for cable requirements. Contact an Emerson Process Management representative for additional information.
- (16) NACE compliant wetted materials are identified by [Footnote 3](#).



Rosemount 3051SAL Transmitter for ERS™ Applications

- Integrated transmitter and direct mount seal in a single model number
- Variety of process connections including flanged, threaded, and hygienic remote seals
- Available with 15-year limited warranty

A 3051SAL Scalable ERS Level Transmitter consists of 3 parts. First, specify the transmitter model codes found on [page 57](#). Then, specify a direct mount seal found on [page 72](#). Finish the model number by specifying all desired options on [page 60](#).

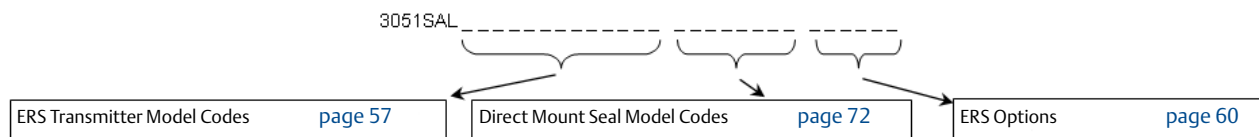


Table 8. Rosemount 3051SAL Transmitter for ERS Applications ordering information

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

The Expanded offering is subject to additional delivery lead time.

Model	Transmitter type				
3051SAL	Scalable Advanced Level Transmitter				
Performance class ⁽¹⁾					
Standard				Standard	
1	Ultra: 0.055% span accuracy, 150:1 rangedown, 15-year limited warranty			★	
2	Classic: 0.065% span accuracy, 150:1 rangedown			★	
Configuration type					
Standard				Standard	
P	Electronic Remote Sensor - Primary			★	
S	Electronic Remote Sensor - Secondary			★	
Pressure module type		Pressure sensor type			
Standard				Standard	
G	Coplanar	Gage		★	
T	In-Line	Gage		★	
E	In-Line	Absolute		★	
Expanded				Expanded	
A	Coplanar	Absolute			
Pressure range ⁽⁶⁾					
	Coplanar gage	In-line gage	In-line absolute	Coplanar absolute	
Standard					Standard
1A	N/A	-14.7 to 30 psig (-1,0 to 2,06 bar)	0 to 30 psia (0 to 2,06 bar)	0 to 30 psia (0 to 2,06 bar)	★
2A	-250 to 250 inH2O (-623 to 623 mbar)	-14.7 to 150 psig (-1,0 to 10,34 bar)	0 to 150 psia (0 to 10,34 bar)	0 to 150 psia (0 to 10,34 bar)	★
3A	-393 to 1000 inH2O (-0,98 to 2,49 bar)	-14.7 to 800 psig (-1,0 to 55,2 bar)	0 to 800 psia (0 to 55,2 bar)	0 to 800 psia (0 to 55,2 bar)	★
4A	-14.2 to 300 psig (-0,98 to 20,7 bar)	-14.7 to 4000 psig (-1,0 to 275,8 bar)	0 to 4000 psia (0 to 275,8 bar)	0 to 4000 psia (0 to 275,8 bar)	★
5A	-14.2 to 2000 psig (-0,98 to 137,9 bar)	-14.7 to 10000 psig (-1,0 to 689,5 bar)	0 to 10000 psia (0 to 689 bar)	N/A	★

Table 8. Rosemount 3051SAL Transmitter for ERS Applications ordering information

★ The Standard offering represents the most common options. The starred options (★) should be selected for best delivery.
The Expanded offering is subject to additional delivery lead time.

Transmitter output				
Standard				Standard
A	4-20 mA with Digital Signal Based on HART Protocol			★
Housing style		Material	Conduit entry size	
Standard				Standard
Housings for ERS Primary - Configuration Type Code P				
1A	PlantWeb housing	Aluminum	1/2–14 NPT	★
1B	PlantWeb housing	Aluminum	M20 x 1.5 (CM 20)	★
1J	PlantWeb housing	SST	1/2–14 NPT	★
1K	PlantWeb housing	SST	M20 x 1.5 (CM 20)	★
2E	Junction Box with Remote Display Output	Aluminum	1/2–14 NPT	★
2F	Junction Box with Remote Display Output	Aluminum	M20 x 1.5 (CM 20)	★
2M	Junction Box with Remote Display Output	SST	1/2–14 NPT	★
Housings for ERS Secondary - Configuration Type Code S				
2A	Junction Box	Aluminum	1/2–14 NPT	★
2B	Junction Box	Aluminum	M20 x 1.5 (CM 20)	★
2J	Junction Box	SST	1/2–14 NPT	★
Expanded				Expanded
Housings for ERS Primary - Configuration Type Code P				
1C	PlantWeb housing	Aluminum	G ¹ /2	
1L	PlantWeb housing	SST	G ¹ /2	
2G	Junction Box with Remote Display Output	Aluminum	G ¹ /2	
Housings for ERS Secondary - Configuration Type Code S				
2C	Junction Box	Aluminum	G ¹ /2	
Seal system type				
Standard				Standard
1	Direct-Mount Seal System			★
Direct-mount extension (between transmitter flange and seal)				
Standard				Standard
0	No Extension			★
2	2-in. (50 mm) Extension			★
4	4-in. (100 mm) Extension			★
5	Thermal Optimizer			★
Transmitter reference pressure connection				
Standard				Standard
00	None (In-Line Style Sensor)			★
20	316L SST Isolator / SST Transmitter Flange			★
30	Alloy C-276 Isolator / SST Transmitter Flange			★

Table 8. Rosemount 3051SAL Transmitter for ERS Applications ordering information

★ The Standard offering represents the most common options. The starred options (★) should be selected for best delivery.
The Expanded offering is subject to additional delivery lead time.

Seal fill fluid		Specific gravity at 77 °F (25 °C)	Temperature limits ⁽²⁾				
			No extension	2-in. (50 mm) extension	4-in. (100 mm) extension	Thermal optimizer	
Standard							Standard
D	Silicone 200	0.93	-49 to 401 °F (-45 to 205 °C)	-49 to 401 °F (-45 to 205 °C)	-49 to 401 °F (-45 to 205 °C)	-49 to 401 °F (-45 to 205 °C)	★
F	Silicone 200 for Vacuum Applications	0.93	For use in vacuum applications below 14.7 psia (1 bar-a), refer to vapor pressure curves in Rosemount DP Level Fill Fluid Specification Technical Note (00840-2100-4016).				★
L	Silicone 704	1.07	32 to 401 °F ⁽³⁾ (0 to 205 °C)	32 to 464 °F ⁽³⁾ (0 to 240 °C)	32 to 500 °F ⁽³⁾ (0 to 260 °C)	32 to 599 °F (0 to 315 °C)	★
C	Silicone 704 for Vacuum Applications	1.07	For use in vacuum applications below 14.7 psia (1 bar-a), refer to vapor pressure curves in Rosemount DP Level Fill Fluid Specification Technical Note (00840-2100-4016).				★
M	Silicone 705	1.09	68 to 401 °F ⁽³⁾ (20 to 205 °C)	68 to 464 °F ⁽³⁾ (20 to 240 °C)	68 to 500 °F ⁽³⁾ (20 to 260 °C)	68 to 698 °F ⁽³⁾ (20 to 370 °C)	★
V	Silicone 705 for Vacuum Applications	1.09	For use in vacuum applications below 14.7 psia (1 bar-a), refer to vapor pressure curves in Rosemount DP Level Fill Fluid Specification Technical Note (00840-2100-4016).				★
A	Syltherm XLT	0.85	-102 to 293 °F (-75 to 145 °C)	-102 to 293 °F (-75 to 145 °C)	-102 to 293 °F (-75 to 145 °C)	-102 to 293 °F (-75 to 145 °C)	★
H	Inert (Halocarbon)	1.85	-49 to 320 °F (-45 to 160 °C)	-49 to 320 °F (-45 to 160 °C)	-49 to 320 °F (-45 to 160 °C)	-49 to 320 °F (-45 to 160 °C)	★
G ⁽⁴⁾⁽⁵⁾	Glycerin and Water	1.13	5 to 203 °F (-15 to 95 °C)	5 to 203 °F (-15 to 95 °C)	5 to 203 °F (-15 to 95 °C)	5 to 203 °F (-15 to 95 °C)	★
N ⁽⁴⁾	Neobee M-20	0.92	5 to 401 °F ⁽³⁾ (-15 to 205 °C)	5 to 437 °F (-15 to 225 °C)	5 to 437 °F (-15 to 225 °C)	5 to 437 °F (-15 to 225 °C)	★
P ⁽⁴⁾⁽⁵⁾	Propylene Glycol and Water	1.02	5 to 203 °F (-15 to 95 °C)	5 to 203 °F (-15 to 95 °C)	5 to 203 °F (-15 to 95 °C)	5 to 203 °F (-15 to 95 °C)	★

Continue specifying a completed model number by choosing a remote seal type below:

	page 72	FF Flush Flanged Seal	Process Connections: 2 in. / DN 50 / 50A 3 in. / DN 80 / 80A 4 in. / DN 100 / 100A
	page 74	EF Extended Flanged Seal	Process Connections: 3 in. / DN 80 / 80A 4 in. / DN 100 / 100A
	page 75	RF Remote Flanged Seal	Process Connections: 1 in. / DN 25 / 25A 1.5 in. / DN 40 / 40A
	page 77	RT Remote Threaded Seal	Process Connections: ¼ - 18 NPT ½ - 14 NPT ¾ - 14 NPT 1 - 11.5 NPT

Table 8. Rosemount 3051SAL Transmitter for ERS Applications ordering information

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

The Expanded offering is subject to additional delivery lead time.

	page 79	SC Hygienic Tri-Clamp Seal	Process Connections: 1.5 in. 2 in. 3 in.
	page 80	SS Hygienic Tank Spud Seal	Process Connections: 4 in.

Options (include with selected model number)⁽²⁾⁽³⁾⁽⁴⁾⁽⁵⁾

Electronic remote sensor connection cable		
Standard ⁽⁶⁾		Standard
R05	50 ft. (15.2 m) Spool of Electronic Remote Sensor Cable	★
R10	100 ft. (30.5 m) Spool of Electronic Remote Sensor Cable	★
R15	150 ft. (45.7 m) Spool of Electronic Remote Sensor Cable	★
Software configuration		
Standard		Standard
C1 ⁽⁷⁾	Custom Software Configuration (Requires Configuration Data Sheet)	★
Gage pressure calibration		
Standard		Standard
C3	Gage Pressure Calibration on Rosemount 3051SAL__A4 only	★
Alarm limit		
Standard		Standard
C4 ⁽⁷⁾	NAMUR Alarm and Saturation Levels, High Alarm	★
C5 ⁽⁷⁾	NAMUR Alarm and Saturation Levels, Low Alarm	★
C6 ⁽⁷⁾	Custom Alarm and Saturation Levels, High Alarm (Requires C1 and Configuration Data Sheet)	★
C7 ⁽⁷⁾	Custom Alarm and Saturation Levels, Low Alarm (Requires C1 and Configuration Data Sheet)	★
C8 ⁽⁷⁾	Low Alarm (Standard Rosemount Alarm and Saturation Levels)	★
Ground screw		
Standard		Standard
D4 ⁽⁸⁾	External Ground Screw Assembly	★
Conduit plug		
Standard		Standard
DO	316 SST Conduit Plug	★
Product certifications		
Standard		Standard
E1	ATEX Flameproof	★
I1	ATEX Intrinsic Safety	★
N1	ATEX Type n	★
K1	ATEX Flameproof and Intrinsically Safe, Type n, Dust	★
ND	ATEX Dust	★
E4	TIIS Flameproof	★
E5	FM Explosion-proof, Dust Ignition-proof	★

Table 8. Rosemount 3051SAL Transmitter for ERS Applications ordering information

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

The Expanded offering is subject to additional delivery lead time.

I5	FM Intrinsically Safe; Nonincendive	★
K5	FM Explosion-proof, Dust Ignition-proof, Intrinsically Safe, Division 2	★
E6 ⁽⁹⁾	CSA Explosion-proof, Dust Ignition-proof, Division 2	★
I6	CSA Intrinsically Safe	★
K6 ⁽⁹⁾	CSA Explosion-proof, Dust Ignition-proof, Intrinsically Safe, Division 2	★
E7	IECEEx Flameproof	★
I7	IECEEx Intrinsic Safety	★
N7	IECEEx Type n	★
K7	IECEEx Flameproof, Intrinsic Safety, Type n	★
Standard		Standard
E2	INMETRO Flameproof	★
I2	INMETRO Intrinsically Safe	★
K2	INMETRO Flameproof, Intrinsic Safety	★
KA ⁽⁹⁾	ATEX and CSA Flameproof, Intrinsically Safe, Division 2	★
KB ⁽⁹⁾	FM and CSA Explosion-proof, Dust Ignition-proof, Intrinsically Safe, Division 2	★
KC	FM and ATEX Explosion-proof, Intrinsically Safe, Division 2	★
KD ⁽⁹⁾	FM, CSA, and ATEX Explosion-proof, Intrinsically Safe	★
Sensor fill fluid		
Standard		Standard
L1 ⁽¹⁰⁾	Inert Sensor Fill Fluid	★
O-ring		
Standard		Standard
L2	Graphite-filled PTFE o-ring	★
Bolting material		
Standard		Standard
L4	Austenitic 316 SST Bolts	★
L5	ASTM A 193, Grade B7M Bolts	★
L6	Alloy K-500 Bolts	★
L7 ⁽¹¹⁾	ASTM A 453, Class D, Grade 660 Bolts	★
L8	ASTM A 193, Class 2, Grade B8M Bolts	★
Display type (ERS Primary only)		
Standard		Standard
M5 ⁽⁷⁾	PlantWeb LCD display	★
M7 ⁽⁷⁾⁽¹²⁾	Remote Mount LCD display and Interface, PlantWeb housing, No Cable, SST Bracket	★
M8 ⁽⁷⁾	Remote Mount LCD display and Interface, PlantWeb housing, 50 ft. (15.2 m) Cable, SST Bracket	★
M9 ⁽⁷⁾	Remote Mount LCD display and Interface, PlantWeb housing, 100 ft. (30.5 m) Cable, SST Bracket	★
Special procedures		
Pressure testing		
Expanded		Expanded
P1	Hydrostatic Testing with Certificate	
Special cleaning		
Expanded		Expanded
P2	Cleaning for Special Services	
P3	Cleaning for Less than 1 PPM Chlorine/Fluorine	

Table 8. Rosemount 3051SAL Transmitter for ERS Applications ordering information

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

The Expanded offering is subject to additional delivery lead time.

Special certifications		
Calibration certification		
Standard		Standard
Q4	Calibration Certificate	★
QP	Calibration certificate with tamper evident seal	★
Material traceability certification		
Standard		Standard
Q8	Material traceability certification per EN 10204 3.1	★
Quality certification for safety		
Standard		Standard
QS	Prior-use certificate of FMEDA Data	★
Toolkit performance reports		
Standard		Standard
QZ ⁽¹³⁾	Remote Seal System Performance Calculation Report	★
Transient protection		
Standard		Standard
T1 ⁽⁷⁾	Transient Terminal Block	★
NACE Certificate		
Standard		Standard
Q15 ⁽¹⁴⁾	Certificate of Compliance to NACE MR0175/ISO 15156 for wetted materials	★
Q25 ⁽¹⁴⁾	Certificate of Compliance to NACE MR0103 for wetted materials	★
Typical model number: 3051SAL 1 P G 4A A 1A 1 0 20 D FF 7 1 DA 0 0 M5		

(1) For detailed specifications see ["Specifications" on page -82.](#)

(2) At ambient pressure of 14.7 psia (1 bar-a) and ambient temperature of 70°F (21°C). Temperature limits are reduced in vacuum service and may be limited by seal selection.

(3) Maximum process temperature is limited by heat transfer to the transmitter electronics and must be further derated if ambient temperature exceeds 70 °F (21 °C).

(4) This is a food grade fill fluid.

(5) Not suitable for vacuum applications.

(6) The pressure range should be specified based on the maximum static pressure, not differential pressure.

(7) Not available with Configuration Type code S.

(8) This assembly is included with options E1, N1, K1, ND, E4, E7, N7, K7, E2, KA, KC, KD, K2, and T1.

(9) Not available with M20 or G½ conduit entry size.

(10) Silicone fill fluid is standard.

(11) Bolts are not considered process wetted. In instances where NACE MR0175/ISO 15156 and NACE MR0103 conformance is required for bolting, L7 is the recommended bolting option.

(12) See the 3051S Reference Manual (document number 00809-0100-4801) for cable requirements. Contact an Emerson Process Management representative for additional information.

- (13) The QZ report quantifies the performance of the entire ERS system. One report is provided per ERS system. The QZ option is specified on the Primary Transmitter (Configuration Type code P).
- (14) Materials of construction comply with metallurgical requirements highlighted within NACE MR 0175 / 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 MR 0103 for sour refining environments.

Rosemount 3051S Scalable™ Level Transmitter



3051SAL In-Line with
"FF" Flanged Seal



3051SAL Coplanar with
"SS" Hygienic Tank Spud
Seal



Tuned-System Assembly
Comprised of 3051SAL
with
1199 Flanged Seal

Rosemount 3051S Level Transmitters combine the features and benefits of a high-performance 3051S pressure transmitter with the durability and reliability of a direct mount seal all in a single model number.

Level transmitters can also be ordered with an additional 1199 Remote Mount Seal to form a Tuned-System Assembly that offers improved performance and reduced costs compared to traditional symmetrical (balanced) assemblies.

Product features and capabilities include:

- Variety of process connections including flanged, threaded, and hygienic seals
- Quantified performance for the entire transmitter / seal assembly (QZ option)
- HART, FOUNDATION fieldbus, and Wireless protocols

Additional information

Specifications: [page 82](#)

Dimensional drawings: [page 111](#)

Rosemount 3051SAL Scalable Level Transmitter

A 3051SAL Scalable Level Transmitter consists of 3 parts. First, specify the transmitter model codes found on [page 64](#). Then, specify a direct mount seal found on [page 72](#). Finish the model number by specifying all desired options on [page 67](#).

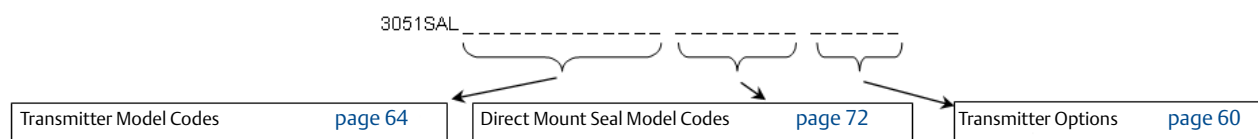


Table 9. Rosemount 3051SAL Scalable Level Transmitter ordering information

★ The Standard offering represents the most common options. The starred options (★) should be selected for best delivery.
The Expanded offering is subject to additional delivery lead time.

Model	Transmitter type		
3051SAL	Scalable Level Transmitter		
Performance class ⁽¹⁾			
Standard			Standard
1	Ultra: 0.055% span accuracy, 150:1 rangedown, 15-year limited warranty		★
2	Classic: 0.065% span accuracy, 150:1 rangedown		★
Configuration type			
Standard			Standard
C	Liquid Level Transmitter		★
Pressure module type		Pressure sensor type	
Standard			Standard
D	Coplanar	Differential	★
G	Coplanar	Gage	★
T	In-Line	Gage	★
E	In-Line	Absolute	★
Expanded			Expanded
A	Coplanar	Absolute	

Table 9. Rosemount 3051SAL Scalable Level Transmitter ordering information

★ The Standard offering represents the most common options. The starred options (★) should be selected for best delivery.
The Expanded offering is subject to additional delivery lead time.

Pressure range						
	Coplanar DP	Coplanar gage	In-line gage	In-line absolute	Coplanar absolute	
Standard						Standard
1A	N/A	N/A	-14.7 to 30 psig (-1,0 to 2,06 bar)	0 to 30 psia (0 to 2,06 bar)	0 to 30 psia (0 to 2,06 bar)	★
2A	-250 to 250 inH2O (-623 to 623 mbar)	-250 to 250 inH2O (-623 to 623 mbar)	-14.7 to 150 psig (-1,0 to 10,3 bar)	0 to 150 psia (0 to 10,34 bar)	0 to 150 psia (0 to 10,34 bar)	★
3A	-1000 to 1000 inH2O (-2,5 to 2,5 bar)	-393 to 1000 inH2O (-0,98 to 2,5 bar)	-14.7 to 800 psig (-1,0 to 55,2 bar)	0 to 800 psia (0 to 55,2 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 20,7 bar)	-14.7 to 4000 psig (-1,0 to 275,8 bar)	0 to 4000 psia (0 to 275,8 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)	-14.7 to 10000 psig (-1,0 to 689 bar)	0 to 10000 psia (0 to 689 bar)	N/A	★
Transmitter output						
Standard						Standard
A	4-20 mA with digital signal based on HART protocol					★
F ⁽²⁾	FOUNDATION fieldbus protocol					★
X ⁽³⁾	Wireless (Requires wireless options and wireless PlantWeb housing)					★
Housing style			Material	Conduit entry		
Standard						Standard
1A	PlantWeb housing		Aluminum	1/2–14 NPT		★
1B	PlantWeb housing		Aluminum	M20 x 1.5		★
1J	PlantWeb housing		SST	1/2–14 NPT		★
1K	PlantWeb housing		SST	M20 x 1.5		★
2A	Junction Box housing		Aluminum	1/2–14 NPT		★
2B	Junction Box housing		Aluminum	M20 x 1.5		★
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		★
2J	Junction Box housing		SST	1/2–14 NPT		★
5A ⁽⁴⁾	Wireless PlantWeb housing		Aluminum	1/2–14 NPT		★
5J ⁽⁴⁾	Wireless PlantWeb housing		SST	1/2–14 NPT		★
7J ⁽⁵⁾	Quick Connect (A size Mini, 4-pin male termination)		SST			★
Expanded						Expanded
1C	PlantWeb housing		Aluminum	G1/2		
1L	PlantWeb housing		316L SST	G1/2		
2C	Junction Box housing		Aluminum	G1/2		
2G	Junction Box with output for remote interface		Aluminum	G1/2		
Direct-mount extension (between transmitter flange and seal)						
Standard						Standard
10	No Extension					★
12	2-in. (50 mm) Extension					★
14	4-in. (100 mm) Extension					★
15 ⁽⁴⁾	Thermal Optimizer					★
Transmitter reference pressure connection						
Standard						Standard
00	None (Inline Module Type Only)					★
10 ⁽⁶⁾	Tuned-System Assembly, One Capillary Remote Seal (Requires separate 1199 model number)					★
20	316 L SST Isolator with SST Transmitter Flange					★
30	Alloy C-276 Isolator with SST Transmitter Flange					★

Table 9. Rosemount 3051SAL Scalable Level Transmitter ordering information

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

The Expanded offering is subject to additional delivery lead time.

Seal fill fluid		Specific gravity at 77 °F (25 °C)	Temperature limits ⁽⁷⁾				
			No extension	2-in. (50 mm) extension	4-in. (100 mm) extension	Thermal optimizer	
Standard							Standard
D	Silicone 200	0.93	-49 to 401 °F (-45 to 205 °C)	-49 to 401 °F (-45 to 205 °C)	-49 to 401 °F (-45 to 205 °C)	-49 to 401 °F (-45 to 205 °C)	★
F	Silicone 200 for Vacuum Applications	0.93	For use in vacuum applications below 14.7 psia (1 bar-a), refer to vapor pressure curves in Rosemount DP Level Fill Fluid Specification Technical Note (00840-2100-4016).				★
L	Silicone 704	1.07	32 to 401 °F (0 to 205 °C) ⁽⁸⁾	32 to 464 °F (0 to 240 °C) ⁽⁸⁾	32 to 500 °F (0 to 260 °C) ⁽⁸⁾	32 to 599 °F (0 to 315 °C)	★
C	Silicone 704 for Vacuum Applications	1.07	For use in vacuum applications below 14.7 psia (1 bar-a), refer to vapor pressure curves in Rosemount DP Level Fill Fluid Specification Technical Note (00840-2100-4016).				★
M	Silicone 705	1.09	68 to 401 °F (20 to 205 °C) ⁽⁸⁾	68 to 464 °F (20 to 240 °C) ⁽⁸⁾	68 to 500 °F (20 to 260 °C) ⁽⁸⁾	68 to 698 °F (20 to 370 °C) ⁽⁸⁾	★
V	Silicone 705 for Vacuum Applications	1.09	For use in vacuum applications below 14.7 psia (1 bar-a), refer to vapor pressure curves in Rosemount DP Level Fill Fluid Specification Technical Note (00840-2100-4016).				★
A	Syltherm XLT	0.85	-102 to 293 °F (-75 to 145 °C)	-102 to 293 °F (-75 to 145 °C)	102 to 293 °F (-75 to 145 °C)	102 to 293 °F (-75 to 145 °C)	★
H	Inert (Halocarbon)	1.85	-49 to 320 °F (-45 to 160 °C)	-49 to 320 °F (-45 to 160 °C)	-49 to 320 °F (-45 to 160 °C)	-49 to 320 °F (-45 to 160 °C)	★
G ⁽⁹⁾⁽¹⁰⁾	Glycerine and Water	1.13	5 to 203 °F (-15 to 95 °C)	5 to 203 °F (-15 to 95 °C)	5 to 203 °F (-15 to 95 °C)	5 to 203 °F (-15 to 95 °C)	★
N ⁽⁹⁾	Neobee M-20	0.92	5 to 401 °F (-15 to 205 °C) ⁽⁸⁾	5 to 437 °F (-15 to 225 °C)	5 to 437 °F (-15 to 225 °C)	5 to 437 °F (-15 to 225 °C)	★
P ⁽⁹⁾⁽¹⁰⁾	Propylene Glycol and Water	1.02	5 to 203 °F (-15 to 95 °C)	5 to 203 °F (-15 to 95 °C)	5 to 203 °F (-15 to 95 °C)	5 to 203 °F (-15 to 95 °C)	★

Continue specifying a completed model number by choosing a remote seal type below:

	page 72	FF Flush Flanged Seal	Process Connections: 2 in. / DN 50 / 50A 3 in. / DN 80 / 80A 4 in. / DN 100 / 100A
	page 74	EF Extended Flanged Seal	Process Connections: 3 in. / DN 80 / 80A 4 in. / DN 100 / 100A
	page 75	RF Remote Flanged Seal	Process Connections: 1 in. / DN 25 / 25A 1.5 in. / DN 40 / 40A
	page 77	RT Remote Threaded Seal	Process Connections: ¼ - 18 NPT ½ - 14 NPT ¾ - 14 NPT 1 - 11.5 NPT

Table 9. Rosemount 3051SAL Scalable Level Transmitter ordering information

★ The Standard offering represents the most common options. The starred options (★) should be selected for best delivery.
The Expanded offering is subject to additional delivery lead time.

	page 79	SC Hygienic Tri-Clamp Seal	Process Connections: 1.5 in. 2 in. 3 in.
	page 80	SS Hygienic Tank Spud Seal	Process Connections: 4 in.

Wireless options (requires option code X and wireless PlantWeb housing)

Update rate		
Standard		Standard
WA ⁽⁴⁾	User Configurable Update Rate	★
Operating frequency and protocol		
Standard		Standard
3	2.4 GHz DSSS, IEC 62591 (<i>WirelessHART</i>)	★
Omnidirectional wireless antenna		
Standard		Standard
WK ⁽⁴⁾	External Antenna	★
WM ⁽⁴⁾	Extended Range, External Antenna	★
Expanded		Expanded
WN	High-Gain, Remote Antenna	
SmartPower™		
Standard		Standard
1 ⁽¹¹⁾⁽¹²⁾	Adapter for Black Power Module (I.S. Power Module Sold Separately)	★

Other options (include with selected model number)

PlantWeb control functionality		
Standard		Standard
A01 ⁽¹²⁾⁽¹³⁾⁽¹⁴⁾	FOUNDATION fieldbus Advanced Control Function Block Suite	★
Hardware adjustments		
Standard		Standard
D01 ⁽¹²⁾⁽¹³⁾	FOUNDATION fieldbus Diagnostics Suite	★
DA2 ⁽¹⁵⁾	Advanced HART Diagnostics Suite	★
Software configuration		
Standard		Standard
C1 ⁽¹⁶⁾	Custom software configuration (Requires Configuration Data Sheet)	★
Gage pressure calibration		
Standard		Standard
C3	Gage pressure calibration on Rosemount 3051SAL_ _A4 only	★
Alarm limit		
Standard		Standard
C4 ⁽¹³⁾⁽¹⁶⁾	NAMUR alarm and saturation levels, high alarm	★
C5 ⁽¹³⁾⁽¹⁶⁾	NAMUR alarm and saturation levels, low alarm	★
C6 ⁽¹³⁾⁽¹⁶⁾	Custom alarm and saturation signal levels, high alarm (Requires C1 and Configuration Data Sheet)	★

Table 9. Rosemount 3051SAL Scalable Level Transmitter ordering information

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

The Expanded offering is subject to additional delivery lead time.

C7 ⁽¹³⁾⁽¹⁶⁾	Custom alarm and saturation signal levels, low alarm (Requires C1 and Configuration Data Sheet)	★
C8 ⁽¹³⁾⁽¹⁶⁾	Low alarm (standard Rosemount alarm and saturation levels)	★
Hardware adjustments		
Standard		Standard
D1 ⁽¹³⁾⁽¹⁶⁾⁽¹⁷⁾	Hardware adjustments (zero, span, alarm, security)	★
Flange adapter		
Standard		Standard
D2	1/2-14 NPT flange adapter	★
Expanded		
D9	RC 1/2 SST flange adapter	
Ground screw		
Standard		Standard
D4 ⁽¹⁸⁾	External ground screw assembly	★
Drain/vent valve		
Standard		Standard
D5	Delete transmitter drain/vent valves (install plugs)	★
Conduit plug		
Standard		Standard
DO ⁽¹⁹⁾	316 SST Conduit Plug	★
Product certifications⁽²⁰⁾		
Standard		Standard
E1	ATEX Flameproof	★
I1	ATEX Intrinsic Safety	★
IA	ATEX FISCO Intrinsic Safety (FOUNDATION fieldbus protocol only)	★
N1	ATEX Type n	★
K1	ATEX Flameproof, Intrinsic Safety, Type n, Dust	★
ND	ATEX Dust	★
E4	TIIS Flameproof	★
E5	FM Explosion-proof, Dust Ignition-proof	★
I5	FM Intrinsically Safe; Nonincendive	★
IE	FM FISCO Intrinsically Safe (FOUNDATION fieldbus protocol only)	★
K5	FM Explosion-proof, Dust Ignition-proof, Intrinsically Safe, Division 2	★
E6 ⁽²¹⁾	CSA Explosion-proof, Dust Ignition-proof, Division 2	★
I6	CSA Intrinsically Safe	★
IF	CSA FISCO Intrinsically Safe (FOUNDATION fieldbus protocol only)	★
K6 ⁽²¹⁾	CSA Explosion-proof, Dust Ignition-proof, Intrinsically Safe, Division 2	★
D3 ⁽²²⁾	Measurement Canada Accuracy Approval	★
E7	IECEx Flameproof, Dust Ignition-proof	★
I7	IECEx Intrinsic Safety	★
IG	IECEx FISCO Intrinsic Safety (FOUNDATION fieldbus protocol only)	★
N7	IECEx Type n	★
K7	IECEx Flameproof, Dust Ignition-proof, Intrinsic Safety, Type n	★
E2	INMETRO Flameproof	★
I2	INMETRO Intrinsic Safety	★
IB	INMETRO FISCO Intrinsic Safety	★
K2	INMETRO Flameproof, Intrinsic Safety	★
E3	China Flameproof	★

Table 9. Rosemount 3051SAL Scalable Level Transmitter ordering information

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

The Expanded offering is subject to additional delivery lead time.

I3	China Intrinsic Safety, Dust Ignition-proof	★
KA ⁽²¹⁾	ATEX and CSA Flameproof, Intrinsically Safe, Division 2	★
KB ⁽²¹⁾	FM and CSA Explosion-proof, Dust Ignition-proof, Intrinsically Safe, Division 2	★
KC	FM and ATEX Explosion-proof, Intrinsically Safe, Division 2	★
KD ⁽²¹⁾	FM, CSA, and ATEX Explosion-proof, Intrinsically Safe	★
Sensor fill fluid		
Standard		Standard
L1 ⁽²³⁾	Inert sensor fill fluid	★
O-ring		
Standard		Standard
L2	Graphite-filled PTFE o-ring	H
Bolting material		
Standard		Standard
L4	Austenitic 316 SST bolts	★
L5 ⁽²⁴⁾	ASTM A193, Grade B7M bolts	★
L6	Alloy K-500 bolts	★
L7 ⁽²⁴⁾	ASTM A453, Class D, Grade 660 bolts	★
L8	ASTM A193, Class 2, Grade B8M bolts	★
Display type⁽²⁵⁾		
Standard		Standard
M5 ⁽¹³⁾⁽²⁶⁾⁽²⁷⁾	PlantWeb LCD display	★
M7 ⁽¹³⁾⁽²⁶⁾	Remote mount LCD display and interface, PlantWeb housing, no cable, SST bracket	★
M8 ⁽¹³⁾⁽²⁶⁾	Remote mount LCD display and interface, PlantWeb housing, 50 ft. (15 m) cable, SST bracket	★
M9 ⁽¹³⁾⁽²⁶⁾	Remote mount LCD display and interface, PlantWeb housing, 100 ft. (31 m) cable, SST bracket	★
Pressure testing		
Expanded		Expanded
P1	Hydrostatic testing with certificate	
Special cleaning		
Expanded		Expanded
P2	Cleaning for special services	
P3	Cleaning for less than 1PPM Chlorine/Fluorine	
Calibration certification		
Standard		Standard
Q4	Calibration certificate	★
QP	Calibration certificate and tamper evident seal	★
Material traceability certification		
Standard		Standard
Q8	Material traceability certification per EN 10204 3.1	★
Quality certification for safety		
Standard		Standard
QS ⁽¹³⁾⁽¹⁶⁾	Prior-use certificate of FMEDA Data	★
QT ⁽²⁸⁾	Safety-certified to IEC 61508 with certificate of FMEDA data	★
Drinking water approval		
Standard		Standard
DW	NSF drinking water certification	★

Table 9. Rosemount 3051SAL Scalable Level Transmitter ordering information

★ The Standard offering represents the most common options. The starred options (★) should be selected for best delivery.
The Expanded offering is subject to additional delivery lead time.

Toolkit performance reports		
Standard		Standard
QZ	Remote Seal System Performance Calculation Report	★
Transient protection		
Standard		Standard
T1 ⁽²⁹⁾⁽³⁰⁾	Transient terminal block	★
Conduit electrical connector		
Standard		Standard
CE ⁽³¹⁾	M12, 4-pin, Male Connector (<i>eurofast</i>)	★
GM ⁽³¹⁾	A size Mini, 4-pin, Male Connector (<i>minifast</i>)	★
NACE Certificate		
Standard		Standard
Q15 ⁽²⁴⁾	Certificate of Compliance to NACE MR0175/ISO 15156 for wetted materials	★
Q25 ⁽²⁴⁾	Certificate of Compliance to NACE MR0103 for wetted materials	★
Typical model number: 3051SAL 1 C G 2A A 1A 10 20 D FF G 1 DA 0 0		

- (1) For detailed specifications see [“Specifications” on page -82.](#)
- (2) Requires PlantWeb housing.
- (3) Only intrinsically safe approval codes apply.
- (4) Only available with output code X.
- (5) Available with output code A only. Available approvals are FM Intrinsically Safe; Nonincendive (option code I5), CSA Intrinsically Safe (option code I6), ATEX Intrinsic Safety (option code I1), or IECEx Intrinsic Safety (option code I7). Contact an Emerson Process Management representative for additional information.
- (6) With option code 10, user must select Seal Location option code M in Table 7 of Rosemount DP Level PDS.
- (7) At ambient pressure of 14.7 psia (1 bar-a) and ambient temperature of 70 °F (21 °C). Temperature limits are reduced in vacuum service and may be limited by seal selection.
- (8) Maximum process temperature is limited by heat transfer to the transmitter and must be further derated if ambient temperature exceeds 70 °F (21 °C). See [“Temperature Limits” on page -66](#) for more information.
- (9) This is a food grade fill fluid.
- (10) Not suitable for vacuum applications.
- (11) Long-Life Power Module must be shipped separately, order Power Module 701PBKKF.
- (12) Not available with output code A.
- (13) Not available with output code X.
- (14) With option code 10, user must select Seal Location option code M in Table 7 of Rosemount DP Level PDS.
- (15) Requires PlantWeb housing and Output code A. Includes Hardware Adjustments as standard.
- (16) Not available with output code F.
- (17) Not available with housing style codes 2E, 2F, 2G, 2M, 5A, 5J, or 7J.
- (18) This assembly is included with options E1, N1, K1, ND, E4, E7, N7, K7, E2, E3, KA, KC, KD, IA, IB, IE, IF, IG, K2, and T1.
- (19) Transmitter is shipped with 316 SST conduit plug (uninstalled) in place of carbon steel conduit plug.

- (20) Valid when SuperModule Platform and housing have equivalent approvals.
- (21) Not available with M20 or G ½ conduit entry size.
- (22) Requires PlantWeb housing and Hardware Adjustments option code D1. Limited availability depending on transmitter type and range. Contact an Emerson Process Management representative for additional information.
- (23) Silicone fill fluid is standard.
- (24) Materials of construction comply with metallurgical requirements highlighted within NACE MR0175 / ISO 15156 for sour oil field production environments. Environmental limits apply to certain materials. Consult latest standard for details. Selected materials also conform to NACE MR0103 for sour refining environments. Order with Q15 or Q25 to receive a NACE certificate.
- (25) Not available with Housing code 01 or 7J.
- (26) Not available with output code F, option code DA2, or option code QT.
- (27) See the 3051S Reference Manual (document number 00809-0100-4801) for cable requirements. Contact an Emerson Process Management representative for additional information.
- (28) Not available with output code F or X. Not available with housing code 7J.
- (29) Not available with Housing code 5A, 5J, or 7J.
- (30) The T1 option is not needed with FISCO Product Certifications; transient protection is included in the FISCO product certification codes IA, IB, IE, IF, and IG.
- (31) Not available with Housing code 5A, 5J, or 7J. Available with Intrinsically Safe approvals only. For FM Intrinsically Safe; Nonincendive (option code I5) or FM FISCO Intrinsically Safe (option code IE), install in accordance with Rosemount drawing 03151-1009.

Direct mount seals for 3051SAL



Flush Flanged (FF) Seal

- Most common seal
- Good for use in general applications
- Easy installation on flanged connections ranging from 2-in. (DN 50) to 4-in. (DN 100)

Table 10. Flush Flanged (FF) Seal ordering information

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

The Expanded offering is subject to additional delivery lead time.

Model	Process connection			
FF	Flush Flanged Seal			
Process connection size				
Standard				Standard
G	2-in. / DN 50 / 50A			★
7	3-in. / 80A			★
J	DN 80			★
9	4-in. / DN 100 / 100A			★
Flange / pressure rating				
Standard				Standard
1	ANSI/ASME B16.5 Class 150			★
2	ANSI/ASME B16.5 Class 300			★
4	ANSI/ASME B16.5 Class 600			★
G	PN 40 per EN 1092-1			★
Expanded				Expanded
A	10K per JIS B2238			
B	20K per JIS B2238			
D	40K per JIS B2238			
E	PN 10/16 per EN 1092-1, Available with DN 100 only			
Materials of construction				
	Isolating diaphragm	Upper housing	Flange	
Standard				Standard
CA	316L SST	316L SST	CS	★
DA	316L SST	316L SST	316 SST	★
CB ⁽¹⁾	Alloy C-276	316L SST	CS	★
DB ⁽¹⁾	Alloy C-276	316L SST	316 SST	★
CC	Tantalum	316L SST	CS	★
DC	Tantalum	316L SST	316 SST	★
Flushing connection ring (lower housing) ⁽²⁾				
Standard				Standard
0	None			★
A	316 SST			★
B	Alloy C-276			★
Flushing connection quantity & size				
Standard				Standard
0	None			★
1	One ¹ / ₄ -18 NPT Flushing Connection			★
3	Two ¹ / ₄ -18 NPT Flushing Connections			★
7	One ¹ / ₂ -14 NPT Flushing Connection			★
9	Two ¹ / ₂ -14 NPT Flushing Connections			★

Table 10. Flush Flanged (FF) Seal ordering information

★ The Standard offering represents the most common options. The starred options (★) should be selected for best delivery.
The Expanded offering is subject to additional delivery lead time.

Options (include with selected model number)

Cold temperature remote seal applications		
Expanded		Expanded
SB	Extra Fill Fluid for Cold Temperature Applications	
Remote seal diaphragm thickness		
Expanded		Expanded
SC ⁽³⁾	0.006-in. (150 µm) Diaphragm Thickness	
Flushing connection ring plugs		
Standard		Standard
SD	Alloy C-276 Plug(s) for Flushing Connection(s)	★
SG	SST Plug(s) for Flushing Connection(s)	★
SH	SST Drain / Vent(s) for Flushing Connection(s)	★
Flushing connection ring gaskets		
Expanded		Expanded
SJ	PTFE Gasket	
SK	Barium Sulfate-Filled PTFE Gasket	
SN	Grafoil Gasket	
Additional options		
Remote seal diaphragm coating		
Expanded		Expanded
SZ ⁽³⁾	0.0002-in. (5 µm) Gold Plated Diaphragm	
SV	PTFE Coated Diaphragm for Non-Stick Purposes	

Complete the 3051SAL model number by specifying options as needed:

page 60	ERS Transmitter Options	
page 67	Scalable Level Transmitter Options	

(1) Not available with option code SC.

(2) Supplied with Thermo Tork TN9000 gasket if no other flushing connection ring gasket option is selected.

(3) Not available with Tantalum diaphragms (Material of Construction codes CC and DC).

**Extended Flanged (EF) Seal**

- Good for use in viscous applications with plugging issues
- Seal diaphragm installed flush with inner tank wall to prevent process plugging
- Easy installation on 3-in. (DN 80) and 4-in. (DN 100) flanged connections

Table 11. Extended Flanged (EF) Seal ordering information

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

The Expanded offering is subject to additional delivery lead time.

Model	Process connection			
EF	Extended Flanged Seal			
Process connection size				
Standard				Standard
7	3-in. / DN 80 / 80A			★
9	4-in. / DN 100 / 100A			★
Flange / pressure rating				
Standard				Standard
1	ANSI/ASME B16.5 Class 150			★
2	ANSI/ASME B16.5 Class 300			★
4	ANSI/ASME B16.5 Class 600			★
G	PN 40 per EN 1092-1			★
Expanded				Expanded
A	10K per JIS B2238			
B	20K per JIS B2238			
D	40K per JIS B2238			
E	PN 10/16 per EN 1092-1, Available with DN 100 only			
Materials of construction				
	Isolating diaphragm	Extension / gasket surface	Mounting flange	
Standard				Standard
CA	316L SST	316L SST	CS	★
DA	316L SST	316L SST	316 SST	★
CB	Alloy C-276	Alloy C-276	CS	★
DB	Alloy C-276	Alloy C-276	316 SST	★
Seal extension length				
Standard				Standard
20	2-in. (50 mm)			★
40	4-in. (100 mm)			★
60	6-in. (150 mm)			★

Options (include with selected model number)

Cold temperature remote seal applications		
Standard		Standard
SB	Extra Fill Fluid for Cold Temperature Applications	★
Remote seal diaphragm thickness		
Expanded		Expanded
SC	0.006-in. (150 μm) Diaphragm Thickness	
Remote seal diaphragm coating		
Expanded		Expanded
SZ	0.0002-in. (5 μm) Gold Plated Diaphragm	
SV	PTFE Coated Diaphragm for Non-Stick Purposes	

Complete the 3051SAL model number by specifying options as needed:

page 60	ERS Transmitter Options	
page 67	Scalable Level Transmitter Options	



Remote Flanged (RF) Seal

- Designed to improve performance on smaller process connections
- Easy installation on flanged connections ranging from 1-in. to 1.5-in. (DN 50 – DN 40)
- Lower housing / flushing ring required

Table 12. Remote Flanged (RF) Seal ordering information

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

The Expanded offering is subject to additional delivery lead time.

Model	Process connection			
RF	Remote Flanged Seal			
Process connection size				
Standard				Standard
2	1-in. / 25A			★
4	1.5-in. / 40A			★
D	DN 25			★
F	DN 40			★
Flange / pressure rating				
Standard				Standard
1	ANSI/ASME B16.5 Class 150			★
2	ANSI/ASME B16.5 Class 300			★
4	ANSI/ASME B16.5 Class 600			★
G	PN 40 per EN 1092-1			★
Expanded				Expanded
A	10K per JIS B2238			
B	20K per JIS B2238			
D	40K per JIS B2238			
Materials of construction				
	Isolating diaphragm	Upper housing	Flange	
Standard				Standard
CA	316L SST	316L SST	CS	★
DA	316L SST	316L SST	316 SST	★
CB	Alloy C-276	316L SST	CS	★
DB	Alloy C-276	316L SST	316 SST	★
CC	Tantalum	316L SST	CS	★
DC	Tantalum	316L SST	316 SST	★
Flushing connection ring material (lower housing) ⁽¹⁾				
Standard				Standard
A	316L SST			★
B	Alloy C-276			★
D	Plated CS			★
Number of flushing connections				
Standard				Standard
1	One ¼-18 NPT Flushing Connection			★
3	Two ¼-18 NPT Flushing Connections			★
5	None			★

Options (include with selected model number)

Cold temperature remote seal application				
Standard				Standard
SB	Extra Fill Fluid for Cold Temperature Applications			★

Table 12. Remote Flanged (RF) Seal ordering information

★ The Standard offering represents the most common options. The starred options (★) should be selected for best delivery.
The Expanded offering is subject to additional delivery lead time.

Remote seal diaphragm thickness		
Expanded		Expanded
SC ⁽²⁾	0.006-in. (150 µm) Diaphragm Thickness	
Remote seal flushing connection plug, drain/vent		
Standard		Standard
SD	Alloy C-276 Plug(s) for Flushing Connection(s)	★
SG	316 SST Plug(s) for Flushing Connection(s)	★
SH	316 SST Drain / Vent(s) for Flushing Connection(s)	★
Remote seal gasket material		
Standard		Standard
SJ	PTFE Gasket (for use with Flushing Connection Ring)	★
Expanded		Expanded
SK	Barium Sulfate-Filled PTFE Gasket (for use with Flushing Connection Ring)	
SN	Grafoil Gasket (for use with Flushing Connection Ring)	
Remote seal diaphragm coating		
Expanded		Expanded
SZ ⁽²⁾	0.0002-in. (5 µm) Gold Plated Diaphragm	
SV	PTFE Coated Diaphragm for Non-Stick Purposes	

Complete the 3051SAL model number by specifying options as needed:

page 60	ERS Transmitter Options	
page 67	Scalable Level Transmitter Options	

(1) Supplied with C4401 Aramid fiber gasket if no other remote seal gasket material is selected.

(2) Not available with Tantalum diaphragms (Material of Construction codes CC and DC).

**Remote Threaded (RT) Seal**

- For use with threaded process connections ($1/4$ -18 to 1-11.5 NPT)
- Rated for use in high-pressure applications (up to 2500 PSI)
- Optional flushing connections available

Table 13. RT Threaded Seal ordering information

★ The Standard offering represents the most common options. The starred options (★) should be selected for best delivery.
The Expanded offering is subject to additional delivery lead time.

Process connection style				
Standard				Standard
RT	Remote Threaded Seal			★
Process connection size				
Standard				Standard
3	1/2-14 NPT			★
4	3/4-14 NPT			★
5	1-11.5 NPT			★
Expanded				Expanded
1	1/4-18 NPT			
Pressure rating				
Standard				Standard
0	2500 psi			★
Isolating diaphragm material		Upper housing material	Flange	
Standard				Standard
CA	316L SST	316L SST	CS	★
DA	316L SST	316L SST	316 SST	★
CB	Alloy C-276	316L SST	CS	★
DB	Alloy C-276	316L SST	316 SST	★
CC	Tantalum	316L SST	CS	★
DC	Tantalum	316L SST	316 SST	★
Flushing connection ring material (lower housing) ⁽¹⁾⁽²⁾				
Standard				Standard
A	316L SST			★
B	Alloy C-276			★
Expanded				Expanded
D	Plated CS			
Number of flushing connections				
Standard				Standard
1	One 1/4-in. Flushing Connection			★
3	Two 1/4-in. Flushing Connections			★
5	None			★

Options (include with selected model number)

Cold temperature remote seal application		
Standard		Standard
SB	Extra Fill Fluid for Cold Temperature Applications	★
Remote seal diaphragm thickness		
Expanded		Expanded
SC ⁽³⁾	0.006-in. (150 μ m) Diaphragm Thickness	

Table 13. RT Threaded Seal ordering information

★ The Standard offering represents the most common options. The starred options (★) should be selected for best delivery.
The Expanded offering is subject to additional delivery lead time.

Remote seal flushing plug, drain/vent		
Standard		Standard
SD	Alloy C-276 Plug(s) for Flushing Connection(s)	★
SG	316 SST Plug(s) for Flushing Connection(s)	★
SH	316 SST Drain / Vent(s) for Flushing Connection(s)	★
Remote seal gasket material		
Standard		Standard
SJ	PTFE Gasket (for use with Flushing Connection Ring)	★
SN	Grafoil Gasket (for use with Flushing Connection Ring)	★
SR	Ethylene Propylene Gasket (for use with Flushing Connection Ring)	★
Expanded		Expanded
SK	Barium Sulfate-Filled PTFE Gasket (for use with Flushing Connection Ring)	
Remote seal bolt		
Standard		Standard
S3	304 SST Bolts	★
Expanded		Expanded
S4	316 SST Bolts	
Remote seal diaphragm coating		
Expanded		Expanded
SZ ⁽³⁾	0.0002-in. (5 µm) Gold Plated Diaphragm	
SV	PTFE Coated Diaphragm for Non-Stick Purposes	

Complete the 3051SAL model number by specifying options as needed:

page 60	ERS Transmitter Options	
page 67	Scalable Level Transmitter Options	

- (1) Supplied with C4401 aramid fiber gasket if no other remote seal gasket material is selected.
- (2) Flushing Connection Ring/ Lower Housing assembly bolts provided as standard are carbon steel.
- (3) Not available with Tantalum diaphragms (Material of Construction codes CC and DC).



Hygienic Tri-Clamp (SC) Seal

- Good for use in hygienic applications
- Easy installation on Tri-Clover style Tri-Clamp® connections (1.5-in. to 3-in.)
- Conforms to 3-A standard 74-03

Table 14. SC Hygienic Tri-Clover Style Tri-Clamp Seal ordering information

★ The Standard offering represents the most common options. The starred options (★) should be selected for best delivery.
The Expanded offering is subject to additional delivery lead time.

Process connection			
Standard			Standard
SC ⁽¹⁾	Tri-Clover Style Tri-Clamp Seal		★
Process connection size			
Standard			Standard
3 ⁽²⁾⁽³⁾	1½ in.		★
5 ⁽²⁾⁽⁴⁾	2 in.		★
7	3 in.		★
Maximum working pressure			
Standard			Standard
0	1000 PSI		★
Isolating diaphragm material		Upper housing material	
Standard			Standard
LA00	316L SST	316L SST	★
Expanded			Expanded
LB00	Alloy C-276	316L SST	

Options (include with selected model number)

Remote seal diaphragm polishing		
Expanded		Expanded
R6	Electropolishing	
Remote seal diaphragm surface finish		
Expanded		Expanded
RD	10 μin. (0.25 μm) R _a Diaphragm Surface Finish	
RG	15 μin. (0.375 μm) R _a Diaphragm Surface Finish	
RH	20 μin. (0.5 μm) R _a Diaphragm Surface Finish	
Surface finish certification		
Standard		Standard
Q16 ⁽⁵⁾	Surface Finish Certification for Hygienic Remote Seals	★

Complete the 3051SAL model number by specifying options as needed:

page 60	ERS Transmitter Options
page 67	Scalable Level Transmitter Options

(1) Clamp and gasket furnished by user. The maximum working pressure is dependent upon the clamp pressure rating.

(2) Consult factory for calibrated spans lower than 5 psi (345 mbar).

(3) Rosemount 1199 Remote Seal Minimum Span Summary calls out a minimum span of 1000 inH₂O or 2490 mbar for 1-1/2" SSCW.

(4) Rosemount 1199 Remote Seal Minimum Span Summary calls out a minimum span of 150 inH₂O or 373 mbar for 2" SSCW.

(5) Q16 is only available when the diaphragm seal has surface finish options (RD, RG, and RH).

**Hygienic Tank Spud (SS) Seal**

- Commonly used in hygienic level applications
- Seal diaphragm installed flush with inner tank wall
- Conforms to 3-A standard 74-03

Table 15. SS Hygienic Tank Spud Seal ordering information

★ The Standard offering represents the most common options. The starred options (★) should be selected for best delivery.
The Expanded offering is subject to additional delivery lead time.

Process connection			
Standard			Standard
SS ⁽¹⁾	Hygienic Tank Spud Seal		★
Process connection size			
Standard			Standard
A	4-in. Sch. 5 Tri-Clamp		★
Maximum working pressure (clamp rating)			
Standard			Standard
0	600 PSI (41 bar)		★
Upper housing			
Standard			Standard
A	316L SST		★
Diaphragm and wetted, extension material			
	Diaphragm and wetted	Extension	
Standard			Standard
AL	316L SST ⁽²⁾	316L SST ⁽²⁾	★
Expanded			Expanded
BB	Alloy C-276	316L SST	
Extension length			
Standard			Standard
2	2-in. (50 mm) Extension		★
6	6-in. (150 mm) Extension		★

Options (include with selected model number)

Remote seal diaphragm thickness		
Expanded		Expanded
SC	0.006-in. (150 μm) Diaphragm Thickness	
Tank spud included with shipment		
Standard		Standard
S1	Tank Spud Included with Shipment	
★		
Remote seal diaphragm polishing		
Expanded		Expanded
R6	Electropolishing	
Remote seal diaphragm surface finish		
Expanded		Expanded
RH	20 μin. (0.5 μm) R _a Diaphragm Surface Finish	
RG ⁽³⁾	15 μin. (0.375 μm) R _a Diaphragm Surface Finish	

Table 15. SS Hygienic Tank Spud Seal ordering information

★ The Standard offering represents the most common options. The starred options (★) should be selected for best delivery.
The Expanded offering is subject to additional delivery lead time.

Additional options

Surface finish certification		
Standard		Standard
Q16 ⁽⁴⁾	Surface Finishing Certification for Hygienic Remote Seals	★

Complete the 3051SAL model number by specifying options as needed:

page 60	ERS Transmitter Options
page 67	Scalable Level Transmitter Options

- (1) Clamp and Ethylene Propylene o-ring (conforms to 3-A standard 74 and USP class VI) supplied.
- (2) Diaphragm brazed and TIG-welded to extension.
- (3) Require Option code R6 (Electropolishing).
- (4) Q16 is only available when the diaphragm seal has surface finish options (RG and RH).

Specifications

Performance specifications

For zero-based spans, reference conditions, silicone oil fill, glass-filled PTFE o-rings, SST materials, Coplanar flange (3051SMV, 3051S_C) or $\frac{1}{2}$ in.-14 NPT (3051S_T) process connections, digital trim values set to equal range points.

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

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

Reference accuracy

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

For FOUNDATION fieldbus and wireless devices, use calibrated range in place of span.

Transmitter with coplanar sensor module (single variable)

Differential pressure (3051S_CD, 3051SMV__3 or 4) Gage pressure (3051S_CG, 3051SAM__G ⁽¹⁾)			
	Ultra	Classic	Ultra for Flow ⁽²⁾
Ranges 2 - 4	$\pm 0.025\%$ of span; For spans less than 10:1, $\pm [0.005 + 0.0035(\text{URL} / \text{Span})]\%$ of span	$\pm 0.035\%$ of span; For spans less than 10:1, $\pm [0.015 + 0.005(\text{URL} / \text{Span})]\%$ of span	$\pm 0.04\%$ of reading up to 8:1 DP turndown from URL; $\pm [0.04 + 0.0023(\text{URL} / \text{Reading})]\%$ of reading to 200:1 DP turndown from URL
Range 5	$\pm 0.05\%$ of span; For spans less than 10:1, $\pm [0.005 + 0.0045(\text{URL} / \text{Span})]\%$ of span	$\pm 0.065\%$ of span; For spans less than 10:1, $\pm [0.015 + 0.005(\text{URL} / \text{Span})]\%$ of span	Not Available
Range 1	$\pm 0.09\%$ of span; For spans less than 15:1, $\pm [0.015 + 0.005(\text{URL} / \text{Span})]\%$ of span	$\pm 0.10\%$ of span; For spans less than 15:1, $\pm [0.025 + 0.005(\text{URL} / \text{Span})]\%$ of span	Not Available
Range 0	$\pm 0.09\%$ of span; For spans less than 2:1, $\pm 0.045\%$ of URL	$\pm 0.10\%$ of span; For spans less than 2:1, $\pm 0.05\%$ of URL	Not Available
Absolute pressure (3051S_CA, 3051SAM__A ⁽¹⁾)			
	Ultra	Classic	
Ranges 1 - 4	$\pm 0.025\%$ of span; For spans less than 10:1, $\pm [0.004(\text{URL} / \text{Span})]\%$ of span	$\pm 0.035\%$ of span; For spans less than 10:1, $\pm [0.0065(\text{URL} / \text{Span})]\%$ of span	
Range 0	$\pm 0.075\%$ of span; For spans less than 5:1, $\pm [0.025 + 0.01(\text{URL} / \text{Span})]\%$ of span	$\pm 0.075\%$ of span; For spans less than 5:1, $\pm [0.025 + 0.01(\text{URL} / \text{Span})]\%$ of span	

(1) Specifications are for each gage / absolute pressure sensor of the ERS system and are not reflective of the DP calculation.

(2) Ultra for Flow is only available for 3051S_CD ranges 2-3. For calibrated spans from 1:1 to 2:1 of URL, add $\pm 0.005\%$ of span analog output error.

Transmitter with in-line sensor module

Absolute pressure (3051S_TA, 3051SAM__E ⁽¹⁾) Gage pressure (3051S_TG, 3051SAM__T ⁽¹⁾)		
	Ultra	Classic
Ranges 1 - 4	$\pm 0.025\%$ of span For spans less than 10:1, $\pm [0.004(\text{URL} / \text{Span})]\%$ of span	$\pm 0.035\%$ of span For spans less than 10:1, $\pm [0.0065(\text{URL} / \text{Span})]\%$ of span
Range 5:	$\pm 0.04\%$ of span. For spans less than 10:1 $\pm 0.004\%$ of URL.	$\pm 0.065\%$ of span. For spans less than 10:1 $\pm 0.0065\%$ of URL.

(1) Specifications are for each gage / absolute pressure sensor of the ERS system and are not reflective of the DP calculation.

Transmitter with multivariable sensor module

Differential pressure and static pressure (3051SMV__1 or 2)		
	Classic MV	Ultra for Flow⁽¹⁾
DP Ranges 2-3	±0.04% of span For spans less than 10:1, ±[0.01 + 0.004(URL / Span)]% of span	±0.04% of reading up to 8:1 DP turndown from URL ±[0.04 + 0.0023(URL / Reading)]% of reading to 200:1 DP turndown from URL
DP Range 4	±0.055% of span For spans less than 10:1, ±[0.015 + 0.005(URL/Span)]% of span	±0.05% of reading up to 3:1 DP turndown from URL ±[0.05 + 0.0145(URL/RDG)]% of reading to 100:1 DP turndown from URL
DP Range 5	±0.065% of span For spans less than 10:1, ±[0.015 + 0.005(URL/Span)]% of span	Not Available
DP Range 1	±0.10% of span For spans less than 15:1, ±[0.025 + 0.005(URL / Span)]% of span	Not Available
AP & GP Ranges 3-4 ⁽²⁾	±0.055% of span For spans less than 10:1, ±[0.0065(URL / Span)]% of span	±0.025% of span For spans less than 10:1, ±[0.004(URL / Span)]% of span

(1) Ultra for Flow is only available for 3051SMV DP ranges 2-4. For calibrated DP spans from 1:1 to 2:1 of URL, add ±0.005% of span analog output error.

(2) For DP range 4 or 5, Classic MV and Ultra for Flow static pressure accuracy is +/-0.055% of span. For spans less than 5:1, +/-[0.013(URL/Span)]% of span.

Liquid level transmitter

3051SAL		
	Ultra	Classic
Ranges 2 - 5	±0.055% of span For spans less than 10:1, ±[0.015 + 0.005(URL / Span)]% of span	±0.065% of span For spans less than 10:1, ±[0.015 + 0.005(URL / Span)]% of span

Process temperature RTD interface⁽¹⁾

Process temperature (3051SMV__1 or 3)	
±0.67 °F (0.37 °C)	

(1) Specifications for process temperature are for the transmitter portion only. The transmitter is compatible with any Pt 100 (100 ohm platinum) RTD. Examples of compatible RTDs include Rosemount series 68 and 78 RTD Temperature Sensors.

DP reference accuracy of 3051S ERS System⁽¹⁾

2 coplanar gage transmitters (3051SAM__G)		
	Ultra	Classic
Ranges 2-4	±0.035% of DP span	±0.078% of DP span
Range 5	±0.071% of DP span	±0.092% of DP span
2 coplanar absolute transmitters (3051SAM__A)		
	Ultra	Classic
Ranges 1-4	±0.035% of DP span	±0.078% of DP span
2 in-line gage transmitters (3051SAM__T) 2 in-line absolute transmitters (3051SAM__E)		
	Ultra	Classic
Ranges 1-4	±0.035% of DP span	±0.078% of DP span
2 Liquid level transmitters (3051SAL)		
	Ultra	Classic
Ranges 1-4	±0.092% of DP span	±0.092% of DP span

(1) Reference Accuracy specifications for ERS system assume that the configuration contains two transmitters with identical sensor ranges, each transmitter sensor is calibrated 0 – URL, and the DP Span = 10% of transmitter URL.

Transmitter total performance

Total performance is based on combined errors of reference accuracy, ambient temperature effect, and line pressure effect at normal operating conditions (70% of span typical reading, 740 psi (51 bar) line pressure).

Models		Ultra	Classic and Classic MV	Ultra for Flow ⁽¹⁾
3051S_CD	Ranges 2-3	±0.1% of span For ±50 °F (28 °C) temperature changes; 0-100% relative humidity, from 1:1 to 5:1 rangedown	±0.14% of span For ±50 F (28 °C) temperature changes, 0-100% relative humidity, from 1:1 to 5:1 rangedown	±0.15% of reading For ±50 °F (28 °C) temperature changes, 0-100% relative humidity, over 8:1 DP turndown from URL
3051S_CG	Ranges 2-5			
3051S_CA	Ranges 2-4			
3051S_T	Ranges 2-4			
3051SMV ⁽²⁾	DP Ranges 2-3			
3051SAM__G ⁽³⁾	Ranges 2-5			
3051SAM__A ⁽³⁾	Ranges 2-4			
3051SAM__T ⁽³⁾	Ranges 2-4			
3051SAM__E ⁽³⁾	Ranges 2-4			
3051SAL		Use Instrument Toolkit or the QZ Option to quantify the total performance of a remote seal assembly under operating conditions.		

(1) Ultra for Flow is only available for 3051S_CD Ranges 2-3 and 3051SMV DP Ranges 2-4.

(2) For 3051SMV, Transmitter Total Performance specification applies to differential pressure measurement only.

(3) Specifications are for each gage / absolute pressure sensor of the ERS system and are not reflective of the DP calculation.

MultiVariable flow performance⁽¹⁾

Mass, energy, actual volumetric, and totalized flow reference accuracy

Models	Ultra for Flow	Classic MV
3051SMV⁽²⁾		
DP Ranges 2-3	±0.65% of Flow Rate over a 14:1 flow range (200:1 DP range)	±0.70% of Flow Rate over 8:1 flow range (64:1 DP range)
DP Range 1	Not Available	±0.90% of Flow Rate over 8:1 flow range (64:1 DP range)
Annubar Flowmeter (3051SFA)		
Ranges 2-3	±0.80% of flow rate at 14:1 flow turndown	±1.15% of flow rate at 8:1 flow turndown
Compact Annubar Flowmeter (3051SFC_A)		
Ranges 2-3		
Uncalibrated	±1.55% of flow rate at 14:1 flow turndown	±1.60% of flow rate at 8:1 flow turndown
Calibrated	±0.80% of flow rate at 14:1 flow turndown	±1.00% of flow rate at 8:1 flow turndown
Compact Conditioning Orifice Flowmeter (3051SFC_C)		
Ranges 2-3		
β = 0.4	±0.75% of flow rate at 14:1 flow turndown	±1.10% of flow rate at 8:1 flow turndown
β = 0.65	±1.15% of flow rate at 14:1 flow turndown	±1.45% of flow rate at 8:1 flow turndown
Compact Orifice Flowmeter⁽³⁾ (3051SFC_P)		
Ranges 2-3		
β = 0.4	±1.30% of flow rate at 14:1 flow turndown	±1.45% of flow rate at 8:1 flow turndown
β = 0.65	±1.30% of flow rate at 14:1 flow turndown	±1.45% of flow rate at 8:1 flow turndown

MultiVariable flow performance⁽¹⁾

Mass, energy, actual volumetric, and totalized flow reference accuracy

Models	Ultra for Flow	Classic MV
Integral Orifice Flowmeter (3051SFP)		
Ranges 2-3		
$\beta < 0.1$	±2.60% of flow rate at 14:1 flow turndown	±2.65% of flow rate at 8:1 flow turndown
$0.1 < \beta < 0.2$	±1.40% of flow rate at 14:1 flow turndown	±1.60% of flow rate at 8:1 flow turndown
$0.2 < \beta < 0.6$	±0.95% of flow rate at 14:1 flow turndown	±1.25% of flow rate at 8:1 flow turndown
$0.6 < \beta < 0.8$	±1.60% of flow rate at 14:1 flow turndown	±1.80% of flow rate at 8:1 flow turndown

- (1) Flow performance specifications assume device is configured for full compensation of static pressure, process temperature, density, viscosity, gas expansion, discharge coefficient, and thermal correction variances over a specified operating range using MultiVariable Type M or Flowmeter Measurement Types 1 through 4.
- (2) Uncalibrated differential producer ($0.2 < \beta < 0.6$ Orifice) installed per ASME MFC 3M or ISO 5167-1. Uncertainties for discharge coefficient, producer bore, tube diameter, and gas expansion factor as defined in ASME MFC 3M or ISO 5167-1. Reference accuracy does not include RTD sensor accuracy.
- (3) For line sizes less than 2-in. (50mm) or greater than 8 in. (200 mm), see the Rosemount DP Flowmeters and Primary Elements Product Data Sheet (document number 00813-0100-4485).

Uncompensated flow performance

Flow performance specifications assume the device only uses DP readings without pressure and temperature compensation.

Models	Ultra	Classic	Ultra for Flow
Annubar Flowmeter (3051SFA)			
Ranges 2-3	±0.95% of flow rate at 8:1 flow turndown	±1.25% of flow rate at 8:1 flow turndown	±0.80% of flow rate at 14:1 flow turndown
Compact Conditioning Orifice Flowmeter (3051SFC_C)			
Ranges 2-3			
$\beta = 0.4$	±0.90% of flow rate at 8:1 flow turndown	±1.10% of flow rate at 8:1 flow turndown	±0.75% of flow rate at 14:1 flow turndown
$\beta = 0.65$	±1.25% of flow rate at 8:1 flow turndown	±1.40% of flow rate at 8:1 flow turndown	±1.15% of flow rate at 14:1 flow turndown
Compact Annubar Flowmeter (3051SFC_A)			
Ranges 2-3			
Uncalibrated	±1.65% of flow rate at 8:1 flow turndown	±1.70% of flow rate at 8:1 flow turndown	±1.55% of flow rate at 14:1 flow turndown
Calibrated	±0.95% of flow rate at 8:1 flow turndown	±1.25% of flow rate at 8:1 flow turndown	±0.80% of flow rate at 14:1 flow turndown
Compact Orifice Flowmeter⁽¹⁾ (3051SFC_P)			
Ranges 2-3			
$\beta = 0.4$	±1.35% of flow rate at 8:1 flow turndown	±1.80% of flow rate at 8:1 flow turndown	±1.30% of flow rate at 14:1 flow turndown
$\beta = 0.65$	±1.35% of flow rate at 8:1 flow turndown	±1.80% of flow rate at 8:1 flow turndown	±1.30% of flow rate at 14:1 flow turndown
Integral Orifice Flowmeter (3051SFP)			
Ranges 2-3			
$\beta < 0.1$	±2.65% of flow rate at 8:1 flow turndown	±2.70% of flow rate at 8:1 flow turndown	±2.60% of flow rate at 14:1 flow turndown
$0.1 < \beta < 0.2$	±1.45% of flow rate at 8:1 flow turndown	±1.80% of flow rate at 8:1 flow turndown	±1.40% of flow rate at 14:1 flow turndown
$0.2 < \beta < 0.6$	±1.10% of flow rate at 8:1 flow turndown	±1.50% of flow rate at 8:1 flow turndown	±0.95% of flow rate at 14:1 flow turndown
$0.6 < \beta < 0.8$	±1.70% of flow rate at 8:1 flow turndown	±2.00% of flow rate at 8:1 flow turndown	±1.60% of flow rate at 14:1 flow turndown

- (1) For line sizes less than 2-in. (50mm) or greater than 8 in. (200 mm), see the Rosemount DP Flowmeters and Primary Elements Product Data Sheet (document number 00813-0100-4485).

Long term stability

Pressure

Models		Ultra and Ultra for Flow ⁽¹⁾	Classic and Classic MV
3051S_CD	Ranges 2-5	±0.15% of URL for 15 years; for ±50 °F (28 °C) temperature changes, up to 1000 psi (68,9 bar) line pressure	±0.20% of URL for 15 years; for ±50 °F (28 °C) temperature changes, up to 1000 psi (68,9 bar) line pressure
3051S_CG	Ranges 2-5		
3051S_CA	Ranges 1-4		
3051S_T	Ranges 1-5		
3051SAM_G ⁽²⁾	Ranges 2-5		
3051SAM_A ⁽²⁾	Ranges 1-4		
3051SAM_T ⁽²⁾	Ranges 1-5		
3051SAM_E ⁽²⁾	Ranges 1-5		
3051SMV_3,4	Ranges 2-5	±0.20% of URL for 10 years; for ±50 °F (28 °C) temperature changes, up to 1000 psi (68,9 bar) line pressure	±0.125% of URL for 5 years; for ±50 °F (28 °C) temperature changes, up to 1000 psi (68,9 bar) line pressure
3051SF_D,3,4	Ranges 2-5		
3051SMV_1,2	DP Ranges 2-5		
3051SF_1,2	AP & GP Ranges 3-4		

(1) Ultra is only available for 3051S, 3051SMV_3 and 4, 3051SF_3, 4, 7, and D. Ultra for Flow is only available on 3051S_CD ranges 2-3, 3051SMV DP ranges 2-4, and 3051SF DP ranges 2-3.

(2) Specifications are for each gage / absolute pressure sensor of the ERS system and are not reflective of the DP calculation.

Process temperature⁽¹⁾

Models		
3051SMV 3051SF	RTD Interface ⁽¹⁾	The greater of ±0.185 °F (0.103 °C) or 0.1% of reading per year (excludes RTD sensor stability).

(1) Specifications for process temperature are for the transmitter portion only. The transmitter is compatible with any Pt 100 (100 ohm platinum) RTD. Examples of compatible RTDs include the Rosemount Series 68 and 78 RTD Temperature Sensors.

Warranty⁽¹⁾

Models	Ultra and Ultra for Flow	Classic and Classic MV
All 3051S Products ⁽¹⁾	15-year limited warranty ⁽²⁾	1-year limited warranty ⁽³⁾

(1) Warranty details can be found in Emerson Process Management Terms & Conditions of Sale, Document 63445, Rev G (10/06).

(2) Rosemount Ultra and Ultra for Flow transmitters have a limited warranty of fifteen (15) years from date of shipment. All other provisions of Emerson Process Management standard limited warranty remain the same.

(3) Goods are warranted for twelve (12) months from the date of initial installation or eighteen (18) months from the date of shipment by seller, whichever period expires first.

Dynamic performance

Total time response at 75 °F (24 °C), includes dead time⁽¹⁾⁽²⁾

3051S_C 3051SF_D	3051S_T	3051SMV_1 or 2 3051SF_1, 2, 5, or 6	3051SMV_3 or 4 3051SF_3, 4, or 7	ERS System (3051SAM)
DP Ranges 2-5: 100 ms Range 1: 255 ms Range 0: 700 ms	100 ms	DP Range 1: 310 ms DP Range 2: 170 ms DP Range 3: 155 ms AP & GP: 240 ms	DP Ranges 2-5: 145 ms DP Range 1: 300 ms DP Range 0: 745 ms	360 ms

(1) For FOUNDATION fieldbus (output code F), add 52 ms to stated values (not including segment macro-cycle). For option code DA2, add 45 ms (nominal) to stated values.

(2) Consult Instrument Toolkit for transmitter configurations with remote seals including 3051SAL.

Dead time⁽¹⁾

3051S_C 3051S_T 3051SF_D 3051SAL_C	3051SMV 3051SF_1-7	ERS System (includes 3051SAM, 3051SAL_P, and 3051SAL_S models)
45 ms (nominal)	DP: 100 ms AP & GP: 140 ms RTD Interface: 1 s	220 ms

(1) For option code DA2, dead time is 90 milliseconds (nominal).

Sensor update rate⁽¹⁾

3051S_C or T 3051SF_D 3051SAL_C	3051SMV 3051SF_1-7	ERS System (includes 3051SAM, 3051SAL_P, and 3051SAL_S models)
22 updates per sec.	DP: 22 updates per sec. AP & GP: 11 updates per sec. RTD Interface: 1 update per sec.	Calculated Variables: Mass / Volumetric Flow Rate: 22 updates per sec. Energy Flow Rate: 22 updates per sec. Totalized Flow: 1 update per sec.
		11 updates per sec.

(1) Does not apply to Wireless (output code X). See "IEC 62591 (WirelessHART)" on page -94 for wireless update rate.

Ambient temperature effect**Transmitter with coplanar sensor module (single variable)**

Differential pressure: (3051S_CD, 3051SMV_3 or 4) Gage pressure: (3051S_CG, 3051SAM_G ⁽¹⁾)			
	Ultra per 50 °F (28 °C)	Classic per 50 °F (28 °C)	Ultra for Flow ⁽²⁾ -40 to 185 °F (-40 to 85 °C)
Ranges 2 - 5 ⁽³⁾	±(0.009% URL + 0.025% 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 150:1	±0.13% of reading up to 8:1 DP turndown from URL; ±[0.13 + 0.0187(URL/Reading)]% of reading to 100:1 DP turndown from URL
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	Not Available
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	Not Available
Absolute pressure: (3051S_CA, 3051SAM_A ⁽¹⁾)			
	Ultra per 50 °F (28 °C)	Classic per 50 °F (28 °C)	
Ranges 2-4	±(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 150:1	
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	

(1) Specifications are for each gage / absolute pressure sensor of the ERS system and are not reflective of the DP calculation.

(2) Ultra for Flow is only available for 3051S_CD Ranges 2-3 and 3051SMV DP Ranges 2-3.

(3) Use Classic specification for 3051SMV DP Range 5 Ultra and 3051S_CD Range 5 Ultra.

Transmitter with in-line sensor module

Absolute pressure: (3051S_TA, 3051SAM__E ⁽¹⁾) Gage pressure: (3051S_TG, 3051SAM__T ⁽¹⁾)			
	Ultra per 50 °F (28 °C)	Classic per 50 °F (28 °C)	
Ranges 2-4	±(0.009% URL + 0.025% 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 150:1	
Range 5	±(0.05% URL + 0.075% span) from 1:1 to 10:1	±(0.05% URL + 0.075% span) from 1:1 to 10:1	
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	

(1) Specifications are for each gage / absolute pressure sensor of the ERS system and are not reflective of the DP calculation.

Transmitter with multivariable sensor module

Differential pressure and static pressure (3051SMV__1 or 2)		
Models	Classic MV Per 50 °F (28 °C)	Ultra for Flow -40 to 185 °F (-40 to 85 °C)
DP Ranges 2-3	±(0.0125% URL + 0.0625% span) from 1:1 to 5:1; ±(0.025% URL + 0.125% span) for >5:1 to 100:1	±0.13 reading up to 8:1 DP turndown from URL; ±[0.13 + 0.0187(URL/Reading)]% reading to 100:1 DP turndown from URL
DP Range 4	±(0.025% URL + 0.125% span) from 1:1 to 30:1 ±(0.035% URL + 0.125% span) from 30:1 to 100:1	±0.130% of reading less than or equal to 3:1 ±[0.050 + 0.065 (URL/RDG)]% of reading greater than 3:1
DP Range 5	±(0.025% URL + 0.125% span) from 1:1 to 30:1 ±(0.035% URL + 0.125% span) from 30:1 to 100:1	Not Available
DP Range 1	±(0.1% URL + 0.25% span) from 1:1 to 50:1	Not available
AP & GP	±(0.0125% URL + 0.0625% span) from 1:1 to 10:1; ±(0.025% URL + 0.125% span) for >10:1 to 100:1	±(0.009% URL + 0.025% span) from 1:1 to 10:1; ±(0.018% URL + 0.08% span) for >10:1 ⁽¹⁾

(1) For DP range 4 or 5, Ultra for Flow ambient temperature effect on static pressure is +/- (0.0125% URL + 0.0625% Span) from 1:1 to 10:1; +/- (0.025% URL + 0.125% Span) for >10:1.

Liquid level transmitter

3051SAL	
Ultra	Classic
See Instrument Toolkit	See Instrument Toolkit

Process temperature RTD interface⁽¹⁾

Process temperature (3051SMV__1 or 3)	
Classic MV Per 50 °F (28 °C) ⁽¹⁾	Ultra for Flow -40 to 185 °F (-40 to 85 °C)
±0.39 °F (0.216 °C) per 50 °F (28 °C)	±0.39 °F (0.216 °C) per 50 °F (28 °C)

(1) Specifications for process temperature are for the transmitter portion only. The transmitter is compatible with any Pt 100 (100 ohm platinum) RTD. Examples of compatible RTDs include Rosemount series 68 and 78 RTD Temperature Sensors.

Line pressure effect⁽¹⁾

3051S_CD 3051SMV (DP Measurement Only)	Ultra and Ultra for Flow	Classic and Classic MV
Zero Error⁽²⁾		
Range 2-3	± 0.025% URL per 1000 psi (69 bar)	± 0.05% URL per 1000 psi (69 bar)
Range 0	± 0.125% URL per 100 psi (6,9 bar)	± 0.125% URL per 100 psi (6,9 bar)
Range 1	± 0.25% URL per 1000 psi (69 bar)	± 0.25% URL per 1000 psi (69 bar)
Span Error⁽³⁾		
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 (6,9 bar)	± 0.15% of reading per 100 psi (6,9 bar)
Range 1	± 0.4% of reading per 1000 psi (69 bar)	± 0.4% of reading per 1000 psi (69 bar)

(1) For zero error specifications for line pressures above 2000 psi (137,9 bar) or line pressure effect specifications for DP Ranges 4-5, see the 3051SMV Reference Manual (document number 00809-0100-4803) or 3051S Reference Manual (document number 00809-0100-4801).

(2) Zero error can be removed by performing a zero trim at line pressure.

(3) Specifications for option code P0 are 2 times those shown above.

Mounting position effects

Models	Ultra, Ultra for Flow, Classic and Classic MV	
3051S_CD or CG 3051SMV__3 or 4 3051SF_3, 4, 7, or D 3051SAM__G	Zero shifts up to ±1.25 inH ₂ O (3,11 mbar), which can be zeroed Span: no effect	
3051S_CA 3051S_T 3051SAM__A, T, or E	Zero shifts to ±2.5 inH ₂ O (6,22 mbar), which can be zeroed Span: no effect	
3051SMV__1 or 2 3051SF_1, 2, 5, or 6	DP Sensor:	Zero shifts up to ±1.25 inH ₂ O (3,11 mbar), which can be zeroed Span: no effect
	GP/AP Sensor:	Zero shifts to ±2.5 inH ₂ O (6,22 mbar), which can be zeroed Span: no effect
3051SAL	With liquid level diaphragm in vertical plane, zero shift of up to ±1 inH ₂ O (2,5 mbar). With diaphragm in vertical plane, zero shift of up to ±5 inH ₂ O (12,4 mbar) plus extension length on extended units. All zero shifts can be zeroed. Span: no 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 0.21 mm displacement peak amplitude / 60-2000 Hz 3g).

For Housing Style codes 1J, 1K, 1L, 2J, and 2M:

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 0.15 mm displacement peak amplitude / 60-500 Hz 2g).

Power supply effect

Less than ±0.005% of calibrated span per volt change in voltage at the transmitter terminals

Electromagnetic compatibility (EMC)

Meets all relevant requirements of EN 61326 and NAMUR NE-21.⁽¹⁾⁽²⁾

- (1) NAMUR NE-21 does not apply to wireless output code X or ERS configurations.
- (2) 3051SMV and 3051SF_1, 2, 3, 4, 5, 6, 7 requires shielded cable for both temperature and loop wiring.

Transient protection (option T1)

Tested in accordance with IEEE C62.41.2-2002, Location Category B

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

Functional Specifications

Range and sensor limits

Transmitter with coplanar sensor module (single variable)

Range	DP Sensor ⁽¹⁾ (3051S_CD, 3051SMV__3, 4, or D 3051SF_3, 4, or 7, 3051SAL_CD)		GP Sensor (3051S_CG, 3051SAM__G, 3051SAL__G)		AP Sensor ⁽²⁾ (3051S_CA, 3051SAM__A, 3051SAL__A)	
	Lower (LRL) ⁽³⁾	Upper (URL)	Lower (LRL) ⁽⁴⁾	Upper (URL)	Lower (LRL)	Upper (URL)
0	-3 inH ₂ O (-7,5 mbar)	3 inH ₂ O (7,5 mbar)	N/A	N/A	0 psia (0 bar)	5 psia (0,34 bar)
1	-25 inH ₂ O (-62,3 mbar)	25 inH ₂ O (62,3 mbar)	-25 inH ₂ O (-62,3 mbar)	25 inH ₂ O (62,3 mbar)	0 psia (0 bar)	30 psia (2,07 bar)
2	-250 inH ₂ O (-0,62 bar)	250 inH ₂ O (0,62 bar)	-250 inH ₂ O (-0,62 bar)	250 inH ₂ O (0,62 bar)	0 psia (0 bar)	150 psia (10,34 bar)
3	-1000 inH ₂ O (-2,49 bar)	1000 inH ₂ O (2,49 bar)	-393 inH ₂ O (-979 mbar)	1000 inH ₂ O (2,49 bar)	0 psia (0 bar)	800 psia (55,16 bar)
4	-300 psi (-20,7 bar)	300 psi (20,7 bar)	-14.2 psig (-979 mbar)	300 psi (20,7 bar)	0 psia (0 bar)	4000 psia (275,8 bar)
5	-2000 psi (-137,9 bar)	2000 psi (137,9 bar)	-14.2 psig (-979 mbar)	2000 psi (137,9 bar)	N/A	N/A

(1) 3051SF flowmeters only available with ranges 1, 2, and 3.

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

(3) The Lower Range Limit (LRL) is 0 inH₂O (0 mbar) for Ultra for Flow Performance Class and 3051SF flowmeters.

(4) Assumes atmospheric pressure of 14.7 psia (1 bar-a).

Transmitter with in-line sensor module

Range	GP Sensor (3051S_TG, 3051SAM__T, 3051SAL__T)		AP Sensor (3051S_TA, 3051SAM__E, 3051SAL__E)	
	Lower (LRL) ⁽¹⁾	Upper (URL)	Lower (LRL)	Upper (URL)
1	-14.7 psig (-1,01 bar)	30 psig (2,07 bar)	0 psia (0 bar)	30 psia (2,07 bar)
2	-14.7 psig (-1,01 bar)	150 psig (10,34 bar)	0 psia (0 bar)	150 psia (10,34 bar)
3	-14.7 psig (-1,01 bar)	800 psig (55,16 bar)	0 psia (0 bar)	800 psia (55,16 bar)
4	-14.7 psig (-1,01 bar)	4000 psig (275,8 bar)	0 psia (0 bar)	4000 psia (275,8 bar)
5	-14.7 psig (-1,01 bar)	10000 psig (689,5 bar)	0 psia (0 bar)	10000 psia (689,5 bar)

(1) Assumes atmospheric pressure of 14.7 psia (1 bar-a).

Transmitter with multivariable sensor module

(3051SMV__1, 3051SMV__2, 3051SF_1, 3051SF_2, 3051SF_5, and 3051SF_6)

Range	DP Sensor	
	Lower (LRL) ⁽¹⁾	Upper (URL)
1	-25.0 inH ₂ O (-62,3 mbar)	25.0 inH ₂ O (62,3 mbar)
2	-250.0 inH ₂ O (-0,62 bar)	250.0 inH ₂ O (0,62 bar)
3	-1000.0 inH ₂ O (-2,49 bar)	1000.0 inH ₂ O (2,49 bar)
4	-150 psi (-10,34 bar)	150 psi (10,34 bar)
5	-2000 psi (-137,9 bar)	2000 psi (137,9 bar)

(1) Lower (LRL) is 0 inH₂O (0 mbar) for Ultra for Flow and 3051SF_Flowmeters.

Range	Static pressure sensor (GP/AP)	
	Lower (LRL)	Upper (URL) ⁽¹⁾
3	GP ⁽²⁾⁽³⁾ : -14.2 psig (-0,98 bar) AP: 0.5 psia (34,5 mbar)	GP: 800 psig (55,16 bar) AP: 800 psia (55,16 bar)
4	GP ⁽²⁾⁽³⁾ : -14.2 psig (-0,98 bar) AP: 0.5 psia (34,5 mbar)	GP: 3626 psig (250 bar) AP: 3626 psia (250 bar)

(1) For SP Range 4 with DP Range 1, the URL is 2000 psi (137,9 bar).

(2) Inert Fill: Minimum pressure = 1.5 psia (0,10 bar) or -13.2 psig (-0,91 bar).

(3) Assumes atmospheric pressure of 14.7 psia (1 bar-a).

Process temperature RTD Interface

(3051SMV__1 or 3, 3051SF_1, 3, 5 or 7)⁽¹⁾

Lower (LRL)	Upper (URL)
-328 °F (-200 °C)	1562 °F (850 °C)

(1) Transmitter is compatible with any Pt 100 RTD sensor. Examples of compatible RTDs include Rosemount Series 68 and 78 RTD Temperature Sensors.

Minimum span limits

Transmitter with coplanar sensor module (single variable)

Range	DP Sensor ⁽¹⁾ (3051S_CD, 3051SMV__3 or 4, 3051SF_D, 3, 4 or 7, 3051SAL__CD ⁽²⁾)		GP Sensor (3051S_CG, 3051SAM__G ⁽³⁾ , 3051SAL__G ⁽²⁾⁽³⁾)		AP Sensor (3051S_CA, 3051SAM__A ⁽³⁾ , 3051SAL__A ⁽²⁾⁽³⁾)	
	Ultra & Ultra for Flow	Classic	Ultra	Classic	Ultra	Classic
0	0.10 inH ₂ O (0,25 mbar)	0.10 inH ₂ O (0,25 mbar)	N/A	N/A	0.167 psia (11,49 mbar)	0.167 psia (11,49 mbar)
1	0.50 inH ₂ O (1,24 mbar)	0.50 inH ₂ O (1,24 mbar)	0.50 inH ₂ O (1,24 mbar)	0.50 inH ₂ O (1,24 mbar)	0.30 psia (20,68 mbar)	0.30 psia (20,68 mbar)
2	1.25 inH ₂ O (3,11 mbar)	1.67 inH ₂ O (4,14 mbar)	1.25 inH ₂ O (3,11 mbar)	1.67 inH ₂ O (4,14 mbar)	0.75 psia (51,71 mbar)	1.00 psia (68,95 mbar)
3	5.00 inH ₂ O (12,43 mbar)	6.67 inH ₂ O (16,58 mbar)	5.00 inH ₂ O (12,43 mbar)	6.67 inH ₂ O (16,58 mbar)	4.00 psia (275,79 mbar)	5.33 psia (367,72 mbar)
4	1.50 psi (103,42 mbar)	2.00 psi (137,90 mbar)	1.50 psig (103,42 mbar)	2.00 psig (137,90 mbar)	20.00 psia (1,38 bar)	26.67 psia (1,84 bar)
5	10.00 psi (689,48 mbar)	13.33 psi (0,92 bar)	10.00 psig (689,48 mbar)	13.33 psig (0,92 bar)	N/A	N/A

(1) 3051SF flowmeters only available with ranges 1, 2, and 3.

(2) For 3051SAL models, use Classic minimum span limits.

(3) Specifications are for each gage / absolute pressure sensor of the ERS system and are not reflective of the DP calculation.

Transmitter with in-line sensor module

Range	GP Sensor (3051S_TG, 3051SAM__T ⁽¹⁾ , 3051SAL__T ⁽²⁾)		AP Sensor (3051S_TA, 3051SAM__E ⁽¹⁾ , 3051SAL__E ⁽²⁾)	
	Ultra	Classic	Ultra	Classic
1	0.30 psig (20,68 mbar)	0.30 psig (20,68 mbar)	0.30 psia (20,68 mbar)	0.30 psia (20,68 mbar)
2	0.75 psig (51,71 mbar)	1.00 psig (68,95 mbar)	0.75 psia (51,71 mbar)	1.00 psia (68,95 mbar)
3	4.00 psig (275,79 mbar)	5.33 psig (367,72 mbar)	4.00 psia (275,79 mbar)	5.33 psia (367,72 mbar)
4	20.00 psig (1,38 bar)	26.67 psig (1,84 bar)	20.00 psia (1,38 bar)	26.67 psia (1,84 bar)
5	1000.00 psig (68,95 bar)	2000.00 psig (137,90 bar)	1000.00 psia (68,95 bar)	2000.00 psia (137,90 bar)

(1) Specifications are for each gage / absolute pressure sensor of the ERS system and are not reflective of the DP calculation.

(2) For 3051SAL models, use Classic minimum span limits.

Transmitter with multivariable sensor module**(3051SMV__1 or 2, 3051SF_1, 2, 5, or 6)**

Range	DP Sensor	
	Ultra for Flow	Classic MV
1	0.5 inH ₂ O (1,24 mbar)	0.5 inH ₂ O (1,24 mbar)
2	1.3 inH ₂ O (3,23 mbar)	2.5 inH ₂ O (6,23 mbar)
3	5.0 inH ₂ O (12,4 mbar)	10.0 inH ₂ O (24,9 mbar)
4	1.5 psi (103,4 mbar)	3.0 psi (206,84 mbar)
5	Not Available	20.0 psi (1,38 bar)
Range	Static pressure sensor (GP/AP)	
	Ultra for Flow	Classic MV
3	4.0 psi (276 mbar)	8.0 psi (522 mbar)
4	18.13 psi (1,25 bar)	36.26 psi (2,50 bar)

Process temperature RTD Interface**(3051SMV__1 or 3, 3051SF_1, 3, 5 or 7)**

Minimum Span = 52 °F (11 °C)

DP span considerations for electronic remote sensor applications

It is recommended that the DP rangedown (Operating Pressure/DP Span) for ERS applications not exceed 100:1. Consult with your Emerson Process Management sales representative when considering a 3051S ERS System for applications beyond 100:1 rangedown.

Service**3051S, 3051SMV_P, 3051SAM, and 3051SF_5, 6, 7, or D (direct process variable output):**

Liquid, gas, and vapor applications

3051SAL

Liquid level applications

3051SMV_M and 3051SF_1, 2, 3, or 4 (mass and energy flow output):

Some fluid types are only supported by certain measurement types

Fluid Compatibility with Pressure and Temperature Compensation

• Available

— Not available

Ordering code	Measurement type	Fluid types			
		Liquids	Saturated steam	Superheated steam	Gas and natural gas
1	DP / P / T (Full Compensation)	•	•	•	•
2	DP / P	•	•	•	•
3	DP / T	•	•	—	—
4	DP only	•	•	—	—

4–20 mA HART

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.

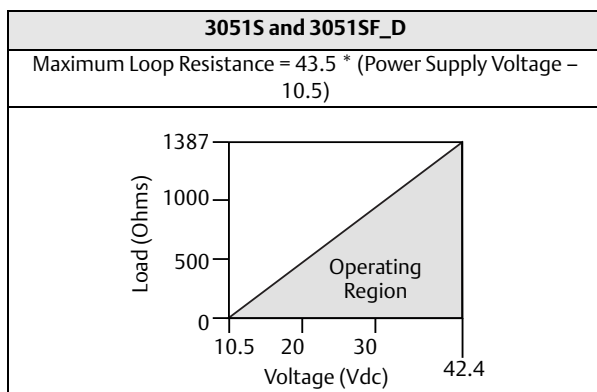
Power supply

External power supply required.

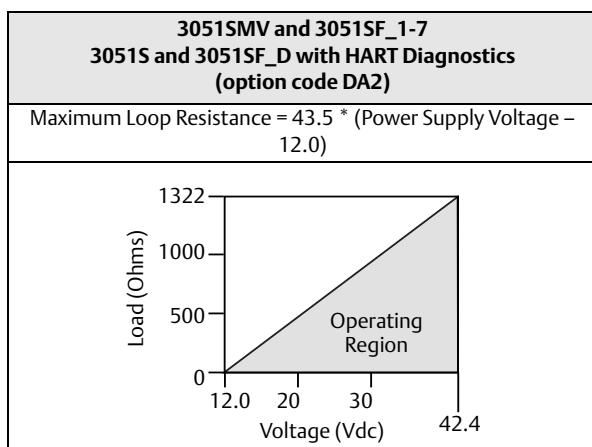
- 3051S and 3051SF_D: 10.5 to 42.4 Vdc with no load
- 3051S and 3051SF_D with Advanced HART Diagnostics Suite: 12 to 42.4 Vdc with no load
- 3051SMV and 3051SF_1-7: 12 to 42.4 Vdc with no load

Load limitations

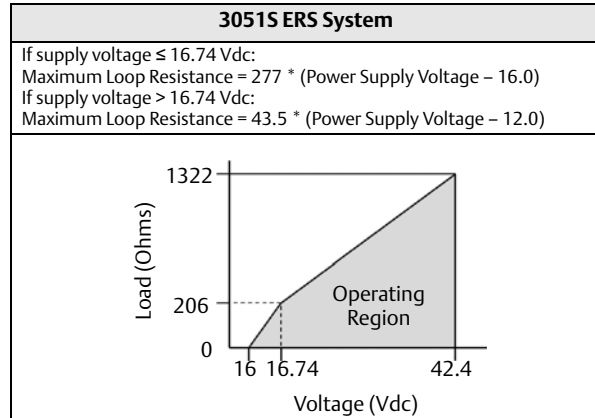
Maximum loop resistance is determined by the voltage level of the external power supply, as described by:



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



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



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

Advanced HART Diagnostics Suite (option code DA2)

Statistical Process Monitoring (SPM) provides statistical data (standard deviation, mean, coefficient of variation) that can be used to detect process and process equipment anomalies, including plugged impulse lines, air entrainment, pump cavitation, furnace flame instability, distillation column flooding and more. This diagnostic allows you to take preventative measures before abnormal process situations result in unscheduled downtime or rework.

Power Advisory diagnostic pro-actively detects and notifies you of degraded electrical loop integrity before it can affect your process operation. Example loop problems that can be detected include water in the terminal compartment, corrosion of terminals, improper grounding, and unstable power supplies.

The Device Dashboard presents the diagnostics in a graphical, task-based interface that provides single click access to critical process/device information and descriptive graphical troubleshooting.

Suite includes: Statistical Process Monitoring (SPM), Power Advisory, Status Log, Variable Log, Advanced Process Alerts, Service Alerts, and Time Stamp capability.

FOUNDATION fieldbus

Power supply

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

Current draw

17.5 mA for all configurations (including LCD display option)

FOUNDATION fieldbus parameters

Schedule Entries	14 (max.)
Links	30 (max.)
Virtual Communications Relationships (VCR)	20 (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 display block

- Configures the local display.

2 analog input blocks

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

PID block with auto-tune

- Contains all logic to perform PID control in the field including cascade and feedforward. Auto-tune capability allows for superior tuning for optimized control performance.

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.

Software upgrade in the Field

Software for the 3051S with FOUNDATION fieldbus is easy to upgrade in the field using the FOUNDATION fieldbus Common Device Software Download procedure.

PlantWeb alerts

Enable the full power of the PlantWeb digital architecture by diagnosing instrumentation issues, communicating advisory, maintenance, and failure details, and recommending a solution.

Advanced Control Function Block Suite (option code A01)

Input Selector Block

- Selects between inputs and generates an output using specific selection strategies such as minimum, maximum, midpoint, average, or first "good."
- Arithmetic Block
- Provides pre-defined application-based equations including flow with partial density compensation, electronic remote sensors, hydrostatic tank gauging, ratio control and others.
- Signal Characterizer Block
- Characterizes or approximates any function that defines an input/output relationship by configuring up to twenty X, Y coordinates. The block interpolates an output value for a given input value using the curve defined by the configured coordinates.
- Integrator Block
- Compares the integrated or accumulated value from one or two variables to pre-trip and trip limits and generates discrete output signals when the limits are reached. This block is useful for calculating total flow, total mass, or volume over time.
- Output Splitter Block
- Splits the output of one PID or other control block so that the PID will control two valves or other actuators.
- Control Selector Block
- Selects one of up to three inputs (highest, middle, or lowest) that are normally connected to the outputs of PID or other control function blocks.

Block	Execution time
Analog Input 1, 2	20 milliseconds
PID with Auto-tune	35 milliseconds
Input Selector	20 milliseconds
Arithmetic	20 milliseconds
Signal Characterizer	20 milliseconds
Integrator	20 milliseconds
Output Splitter	20 milliseconds
Control Selector	20 milliseconds

Fully compensated mass flow block (option code H01)

Calculates fully compensated mass flow based on differential pressure with external process pressure and temperature measurements over the fieldbus segment. Configuration for the mass flow calculation is easily accomplished using the Rosemount Engineering Assistant 5.5.1.

FOUNDATION fieldbus Diagnostics Suite (option code D01)

Statistical Process Monitoring (SPM) provides statistical data (standard deviation and mean) that can be used to detect process and process equipment anomalies, including plugged impulse lines, air entrainment, pump cavitation, furnace flame instability, distillation column flooding, and more. This diagnostic allows you to take preventative measures before abnormal process situations result in unscheduled downtime or rework.

The Device Dashboard presents the diagnostics in a graphical, task-based interface that provides single click access to critical process/device information and descriptive graphical troubleshooting.

Suite includes: Statistical Process Monitoring (SPM) and Plugged Impulse Line Detection (PIL).

IEC 62591 (WirelessHART)**Output**

IEC 62591 (WirelessHART), 2.4 GHz DSSS

Radio frequency power output from antenna

External Antenna (WK option): Maximum of 10 mW (10 dBm) EIRP

Extended Range, External Antenna (WM option): Maximum of 18 mW (12.5 dBm) EIRP

High-Gain, Remote Antenna (WN option): Maximum of 40 mW (16 dBm) EIRP

Local display

The optional seven-digit LCD display can display user-selectable information such as primary variable in engineering units, percent of range, sensor module temperature, and electronics temperature. The display updates based on the wireless update rate.

Update rate

User selectable 1 sec. to 60 min.

Block	Execution time
Resource	-
Transducer	-
LCD Display Block	-

Power module

Field replaceable, keyed connection eliminates the risk of incorrect installation, Intrinsically Safe Lithium-thionyl chloride Power Module with polybutadine terephthalate (PBT) enclosure. Ten-year life at one minute update rate.⁽¹⁾⁽²⁾

- (1) Reference conditions are 70 °F (21 °C), and routing data for three additional network devices.
Note: Continuous exposure to ambient temperature limits of -40 °F or 185 °F (-40 °C or 85 °C) may reduce specified life by less than 20 percent.

- (2) 6.5-year life at one minute update rates when used with 3051SMV.

Overpressure limits

Transmitters withstand the following limits without damage:

Coplanar sensor module (single variable)

Range	DP ⁽¹⁾ & GP	AP
	3051S_CD, 3051S_CG 3051SMV_3 or 4 3051SF_3, 4, 7, or D 3051SAM_G	3051S_CA 3051SAM_A
0	750 psi (51,7 bar)	60 psia (4,13 bar)
1	2000 psi (137,9 bar)	750 psia (51,7 bar)
2	3626 psi (250,0 bar)	1500 psia (103,4 bar)
3	3626 psi (250,0 bar)	1600 psia (110,3 bar)
4	3626 psi (250,0 bar)	6000 psia (413,7 bar)
5	3626 psi (250,0 bar)	N/A

- (1) The overpressure limit of a DP Sensor with the P9 option is 4500 psig (310,3 bar). The overpressure limit of a DP Sensor with the P0 option is 6092 psig (420 bar).

In-line sensor module

Range	GP	AP
	3051S_TG 3051SAM_T	3051S_TA 3051SAM_E
1	750 psi (51,7 bar)	
2	1500 psi (103,4 bar)	
3	1600 psi (110,3 bar)	
4	6000 psi (413,7 bar)	
5	15000 psi (1034,2 bar)	

Coplanar MultiVariable Sensor Module (3051SMV_1 or 2, 3051SF_1, 2, 5, or 6)

DP Range	Static pressure range (GP/AP)	
	3	4
1	1600 psi (110,3161 bar)	2000 psi (137,9137,8951 bar)
2	1600 psi (110,3161 bar)	3626 psi (250,0039 bar)
3	1600 psi (110,3161 bar)	3626 psi (250,0039 bar)
4	N/A	3626 psi (250,0039 bar)
5	N/A	3626 psi (250,0039 bar)

Liquid level transmitter (3051SAL)

Overpressure limit is dependent on the flange rating or sensor rating (whichever is lower). Use *Instrument Toolkit* to ensure the seal system meets all pressure and temperature limits.

Static pressure limits**Coplanar sensor module (single variable)**

Operates within specifications between static line pressures of:

Range	DP Sensor ⁽¹⁾
	3051S_CD 3051SMV_3 or 4 3051SF_3, 4, 7, or D
0	0.5 psia to 750 psig (0,03 to 51,71 bar)
1	0.5 psia to 2000 psig (0,03 to 137,9 bar)
2	0.5 psia to 3626 psig (0,03 to 250 bar)
3	0.5 psia to 3626 psig (0,03 to 250 bar)
4	0.5 psia to 3626 psig (0,03 to 250 bar)
5	0.5 psia to 3626 psig (0,03 to 250 bar)

- (1) The static pressure limit of a DP Sensor with the P9 option is 4500 psig (310,3 bar). The static pressure limit of a DP Sensor with the P0 option is 6092 psig (420 bar).

Coplanar multivariable sensor module (3051SMV_1 or 2, 3051SF_1, 2, 5, or 6)

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

DP Range	Static pressure range (GP/AP)	
	3	4
1	800 psi (57,91 bar)	2000 psi (137,9 bar)
2	800 psi (57,91 bar)	3626 psi (250 bar)
3	800 psi (57,91 bar)	3626 psi (250 bar)
4	N/A	3626 psi (250 bar)
5	N/A	3626 psi (250 bar)

Maximum working pressure limits

Maximum working pressure is the maximum pressure allowed for normal transmitter operation. For a differential pressure transmitter, the maximum working pressure is the static line pressure under which the transmitter can safely operate. If one side of the transmitter is exposed to the full static line pressure due to mis-valving, the transmitter will experience an output shift and must be re-zeroed. For a gage or absolute pressure transmitter, the maximum working pressure is the same as the Upper Range Limit (URL). The maximum working pressure of transmitters with assemble-to options is limited by the lowest maximum pressure rating of the individual components.

Table 16. 3051S maximum working pressure

Range	3051S_CD 3051SAL__D 3051SAM__D	3051S_CG 3051SAL__G 3051SAM__G	3051S_CA 3051SAL__A 3051SAM__A	3051S_TA 3051SAL__E 3051SAM__E	3051S_TG 3051SAL__T 3051SAM__T
0	750 psi 51.7 bar 5.17 mpa	N/A	5 psia 0.35 bar-a .035 mpa	N/A	N/A
1	2000 psi 138 bar 13.8 mpa	0.9 psi 0.062 bar 0.0062 mpa	30 psia 2.07 bar-a 0.207 mpa	30 psia 2.07 bar-a 0.207 mpa	30 psia 2.07 bar-a 0.207 mpa
2	3626 psi 250 bar 25 mpa	9 psi 0.62 bar 0.062 mpa	150 psia 10.3 bar 1.03 mpa	150 psia 10.3 bar-a 1.03 mpa	150 psi 10.3 bar 1.03 mpa
3	3626 psi 250 bar 25 mpa	36 psi 2.48 bar 0.248 mpa	800 psia 55.2 bar-a 5.52 mpa	800 psia 55.2 bar-a 5.52 mpa	800 psia 55.2 bar 5.52 mpa
4	3626 psi 250 bar 25 mpa	300 psi 20.7 bar 2.07 mpa	4000 psia 276 bar-a 27.6 mpa	4000 psia 276 bar-a 27.6 mpa	4000 psia 276 ba 27.6 mpa
5	3626 psi 250 bar 25 mpa	2000 psi 138 bar 13.8 mpa	N/A	10000psia 690 bar-a 69.0 mpa	10000psia 690 bar 69.0 mpa

Note

The maximum working pressure limit of a DP Sensor with the P9 option is 4500 psig (310.3 bar). The maximum working pressure limit of a DP Sensor with the P0 option is 6092 psig (420 bar).

Temperature limits**Ambient**

-40 to 185 °F (-40 to 85 °C)

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

With option code P0: -20 to 185 °F (-29 to 85 °C)

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

Table 17. 3051SMV maximum working pressure (3051SMV1M1[X]G[Y]R2E12A1A)

X = DP Range	Y = 3 (DP/AP Range)	Y = 4 (GP/AP Range)
1	800 psi 55.2 bar 5.52 mpa	2000 psi 138 bar 13.8 mpa
2	800 psi 55.2 bar 5.52 mpa	3626 psi 250 bar 25 mpa
3	800 psi 55.2 bar 5.52 mpa	3626 psi 250 bar 25 mpa

Burst pressure limits**Coplanar sensor module**

(3051S_C, 3051SMV, 3051SF, 3051SAM__G or A)

10000 psig (689,5 bar)

In-line sensor module

(3051S_T, 3051SAM__T or E)

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

Storage

-50 to 185 °F (-46 to 85 °C)

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

With Wireless Output: -40 to 185 °F (-40 to 85 °C)

Process temperature limits

At atmospheric pressures and above:

Coplanar sensor module 3051S_C, 3051SMV, 3051SF, 3051SAM__G or A	
Silicone Fill Sensor ⁽¹⁾⁽²⁾	
with Coplanar Flange	-40 to 250 °F (-40 to 121 °C) ⁽³⁾
with Traditional Flange	-40 to 300 °F (-40 to 149 °C) ⁽³⁾⁽⁴⁾
with Level Flange	-40 to 300 °F (-40 to 149 °C) ⁽³⁾
with 305 Integral Manifold	-40 to 300 °F (-40 to 149 °C) ⁽³⁾⁽⁴⁾
Inert Fill Sensor ⁽¹⁾⁽⁵⁾	-40 to 185 °F (-40 to 85 °C) ⁽⁶⁾⁽⁷⁾
In-line sensor module 3051S_T, 3051SAM__T or E	
Silicone Fill Sensor ⁽¹⁾	-40 to 250 °F (-40 to 121 °C) ⁽³⁾
Inert Fill Sensor ⁽¹⁾	-22 to 250 °F (-30 to 121 °C) ⁽³⁾
3051SAL level transmitter	
Syltherm® XLT	-102 to 293 °F (-75 to 145 °C)
Silicone 704 ⁽⁸⁾	32 to 401 °F (0 to 205 °C)
Silicone 200	-49 to 401 °F (-45 to 205 °C)
Inert (Halocarbon)	-49 to 320 °F (-45 to 160 °C)
Glycerin and Water	5 to 203 °F (-15 to 95 °C)
Neobee M-20 ⁽⁹⁾	5 to 401 °F (-15 to 205 °C)
Propylene Glycol and Water	5 to 203 °F (-15 to 95 °C)

- (1) Process temperatures above 185 °F (85 °C) require derating the ambient limits by a 1.5:1 ratio. For example, for process temperature of 195 °F (91 °C), new ambient temperature limit is equal to 170 °F (77 °C). This can be determined as follows:
 $(195\text{ °F} - 185\text{ °F}) \times 1.5 = 15\text{ °F}$
 $185\text{ °F} - 15\text{ °F} = 170\text{ °F}$
- (2) 212 °F (100 °C) is the upper process temperature limit for DP Range 0.
- (3) 220 °F (104 °C) limit in vacuum service; 130 °F (54 °C) for pressures below 0.5 psia.
- (4) -20 °F (-29 °C) is the lower process temperature limit with option code P0.
- (5) 32 °F (0 °C) is the lower process temperature limit for DP Range 0.
- (6) For 3051S_C, 160 °F (71 °C) limit in vacuum service.
For 3051SMV__ 1, 2, 140 °F (60 °C) limit in vacuum service.
- (7) Not available for 3051S_CA.
- (8) Upper temperature limit is 464 °F (240 °C) for a 2-in. direct-mount extension, 500 °F (260 °C) for a 4-in. direct-mount extension, and 599 °F (315 °C) for an In-Line Thermal Optimizer direct-mount connection.
- (9) Upper temperature limit is 437 °F (225 °C) for a 2-in. direct-mount extension or greater.

Humidity limits

0–100% relative humidity

Turn-on time⁽¹⁾

When power is applied to the transmitter during startup, performance will be within specifications per the time period described below:

Transmitter	Turn-on time (typical)
3051S, 3051SF_D, 3051SAL__C	2 seconds
Diagnostics	5 seconds
3051SMV, 3051SF_1-7	5 seconds
3051S ERS System	6 seconds

- (1) Does not apply to wireless option code X.

Volumetric displacement

Less than 0.005 in³ (0,08 cm³)

Damping⁽¹⁾

Analog output response time to a step change is user-selectable from 0 to 60 seconds for one time constant. For 3051SMV, 3051SF_1-7, each variable can be individually adjusted. Software damping is in addition to sensor module response time.

- (1) Does not apply to wireless option code X.

Failure mode alarm

4-20 mA HART (output option code A)

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 [Alarm configuration](#) below).

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

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	3.4 - 3.8 mA

- (1) Analog output levels are compliant with NAMUR recommendation NE 43, 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) For 3051SMV and option code DA2, low alarm custom values are 3.6 - 3.8 mA.

Safety-certified transmitter failure values⁽¹⁾

Device Safety accuracy: $\pm 2.0\%$ of analog output span⁽²⁾

Device Safety response time: 1.5 seconds

- (1) Does not apply to wireless option code X.
- (2) Trip values in the DCS or safety logic solver should be derated by this device safety accuracy.

Physical specifications

Electrical connections

$\frac{1}{2}$ -14 NPT, $G\frac{1}{2}$, and M20 $\times$ 1.5 conduit. HART interface connections fixed to terminal block for Output code A and X.

Process connections

Coplanar sensor module (3051S_C, 3051SMV, 3051SF, 3051SAM__G or A)	
Standard	$\frac{1}{4}$ -18 NPT on 2 $\frac{1}{8}$ -in. centers
Flange Adapters	$\frac{1}{2}$ -14 NPT and RC $\frac{1}{2}$ on 2-in. (50.8 mm), 2 $\frac{1}{8}$ -in. (54.0 mm), or 2 $\frac{1}{4}$ -in. (57.2 mm) centers
In-line sensor module (3051S_T, 3051SAM__T or E)	
Standard	$\frac{1}{2}$ -14 NPT Female
F11 Code	Non-threaded instrument flange (available in SST for sensor ranges 1-4 only)
G11 Code	G $\frac{1}{2}$ A DIN 16288 male (available in SST for sensor ranges 1-4 only)
H11 Code	Autoclave type F-250C (Pressure relieved 9/16-18 gland thread; $\frac{1}{4}$ OD high pressure tube 60° cone; available in SST for sensor range 5 only)
Level transmitter (3051SAL)	
FF Seal	2-in. (DN 50), 3-in. (DN 80), or 4-in. (DN 100); ANSI Class 150, 300, or 600 flange; JIS 10K, 20K, or 40K flange; PN 10/16 or PN 40 flange
EF Seal	
RF Seal	1-in. (DN 25) or 1.5-in. (DN 40); ANSI Class 150, 300, or 600 flange; JIS 10K, 20K, or 40K flange; PN 40 flange
RT Seal	$\frac{1}{4}$ -18, $\frac{1}{2}$ -14, $\frac{3}{4}$ -14, or 1-11.5 NPT Female
SC Seal	1.5-in, 2-in, or 3-in. Hygienic Tri-Clover Style Tri-Clamp
SS Seal	4-in. Hygienic Tank Spud

Process-wetted parts

Process isolating diaphragms

Coplanar sensor module (3051S_C, 3051SMV)	
316L SST (UNS S31603), Alloy C-276 (UNS N10276), Alloy 400 (UNS N04400), Tantalum (UNS R05440), Gold-Plated Alloy 400, Gold-plated 316L SST	
B11 Code	Low side process connection is SST
In-line sensor module (3051S_T)	
316L SST (UNS S31603), Alloy C-276 (UNS N10276)	
Level transmitter (3051SAL)	
FF Seal	316L SST, Alloy C-276, Tantalum
EF Seal	
RF Seal	
RT Seal	
SC Seal	316L SST, Alloy C-276
SS Seal	

Drain/vent valves

316 SST, Alloy C-276, or Alloy 400/K-500⁽¹⁾ material
(Drain vent seat: Alloy 400, Drain vent stem: Alloy K-500)

- (1) Alloy 400/K-500 is not available with 3051SAL.

Process flanges and flange adapters

Plated carbon steel

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

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

Cast Alloy 400: M-30C per ASTM A494

Wetted o-rings

Glass-filled PTFE

(Graphite-filled PTFE with Isolating Diaphragm code 6)

3051SAL mounting flange

Zinc-cobalt plated CS or 316 SST

3051SAL seal extension

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

CW-12MW (Cast C-276, material per ASTM A494)

Non-wetted parts

Electronics housing

Low-copper aluminum alloy or CF-8M (Cast 316 SST)

NEMA 4X, IP 66, IP 68 (66 ft (20 m) for 168 hours)

Note: IP 68 not available with Wireless Output.

Coplanar sensor module housing

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

Bolts

Plated carbon steel per ASTM A449, Type 1

Austenitic 316 SST per ASTM F593

ASTM A453, Class D, Grade 660 SST

ASTM A193, Grade B7M alloy steel

ASTM A193, Class 2, Grade B8M SST

Alloy K-500

Sensor module fill fluid

Silicone is standard.

Inert is available as option code (L1).⁽¹⁾

Inert for In-Line series uses Fluorinert[®] FC-43.

Inert for Coplanar series uses Halocarbon.

Seal fill fluid (liquid level only)

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

Paint for aluminum housing

Polyurethane

Cover o-rings

Buna-N

Wireless antenna

External Antenna (WK / WM): PBT/PC integrated omnidirectional antenna

Remote Antenna (WN): Fiberglass omnidirectional antenna

Power module

Field replaceable, keyed connection eliminates the risk of incorrect installation, Intrinsically Safe Lithium-thionyl chloride Power Module with PBT enclosure

(1) Inert is not available with 3051S_CA.

Shipping weights**Sensor module weights**

Coplanar sensor module⁽¹⁾
3.1 lb (1,4 kg)
In-line sensor module
1.4 lb (0,6 kg)

(1) Flange and bolts not included.

Transmitter weights⁽¹⁾

Transmitter with coplanar sensor module (3051S_C, 3051SMV, 3051SAM_G or A)	
Junction Box housing, SST Flange	6.3 lb (2,8 kg)
PlantWeb housing, SST Flange	6.7 lb (3,1 kg)
Wireless PlantWeb housing, SST Flange	7.3 lb (3,3 kg)
Transmitter with in-line sensor module (3051S_T, 3051SAM_T or E)	
Junction Box housing	3.2 lb (1,4 kg)
PlantWeb housing	3.7 lb (1,7 kg)
Wireless PlantWeb housing	4.2 lb (1,9 kg)

(1) Fully functional transmitter with sensor module, housing, terminal block, and covers. Does not include LCD display.

Transmitter option weights

Option code	Option	Add lb (kg)
1J, 1K, 1L	SST PlantWeb housing	3.5 (1,6)
2J	SST Junction Box housing	3.4 (1,5)
7J	SST Quick Connect	0.4 (0,2)
2A, 2B, 2C	Aluminum Junction Box housing	1.1 (0,5)
1A, 1B, 1C	Aluminum PlantWeb housing	1.1 (0,5)
M5	LCD display for Aluminum PlantWeb housing ⁽¹⁾ , LCD display for SST PlantWeb housing ⁽¹⁾	0.8 (0,4) 1.6 (0,7)
B4	SST Mounting Bracket for Coplanar Flange	1.2 (0,5)
B1, B2, B3	Mounting Bracket for Traditional Flange	1.7 (0,8)
B7, B8, B9	Mounting Bracket for Traditional Flange with SST Bolts	1.7 (0,8)
BA, BC	SST Bracket for Traditional Flange	1.6 (0,7)
B4	SST Mounting Bracket for In-Line	1.3 (0,6)
F12, F22	SST Traditional Flange with SST Drain Vents ⁽²⁾	3.2 (1,5)
F13, F23	Cast C-276 Traditional Flange with Alloy C-276 Drain Vents ⁽²⁾	3.6 (1,6)
E12, E22	SST Coplanar Flange with SST Drain Vents ⁽²⁾	1.9 (0,9)
F14, F24	Cast Alloy 400 Traditional Flange with Alloy 400/K-500 Drain Vents ⁽²⁾	3.6 (1,6)
F15, F25	SST Traditional Flange with Alloy C-276 Drain Vents ⁽²⁾	3.2 (1,5)
G21	Level Flange—3 in., 150	12.6 (5,7)
G22	Level Flange—3 in., 300	15.9 (7,2)
G11	Level Flange—2 in., 150	6.8 (3,1)

Option code	Option	Add lb (kg)
G12	Level Flange—2 in., 300	8.2 (3,7)
G31	DIN Level Flange, SST, DN 50, PN 40	7.8 (3,5)
G41	DIN Level Flange, SST, DN 80, PN 40	13.0 (5,9)

(1) Includes LCD display and display cover.

(2) Includes mounting bolts.

Transmitter component weights

Item	Weight in lb. (kg)
Aluminum Standard Cover	0.4 (0,2)
SST Standard Cover	1.3 (0,6)
Aluminum Display Cover	0.7 (0,3)
SST Display Cover	1.5 (0,7)
Wireless Extended Cover	0.7 (0,3)
LCD Display ⁽¹⁾	0.1 (0,04)
Junction Box Terminal Block	0.2 (0,1)
PlantWeb Terminal Block	0.2 (0,1)
Power Module	0.5 (0,2)

(1) Display only

3051SAL weights without supermodule platform, housing, or transmitter options

Flange	Flush lb. (kg)	2-in. Ext. lb (kg)	4-in. Ext. lb (kg)	6-in. Ext. lb (kg)
2-in., 150	9.5 (4,3)	—	—	—
3-in., 150	15.7 (7,1)	16.4 (7,4)	17.6 (8,0)	18.9 (8,6)
4-in., 150	21.2 (9,6)	20.9 (9,5)	22.1 (10,0)	23.4 (10,6)
2-in., 300	11.3 (5,1)	—	—	—
3-in., 300	19.6 (8,9)	20.3 (9,2)	21.5 (9,8)	22.8 (10,3)
4-in., 300	30.4 (13,8)	30.3 (13,7)	31.5 (14,3)	32.8 (14,9)
2-in., 600	12.8 (5,8)	—	—	—
3-in., 600	22.1 (10,0)	22.8 (10,3)	24.0 (10,9)	25.3 (11,5)
DN 50 / PN 40	11.3 (5,1)	—	—	—
DN 80 / PN 40	16.0 (7,3)	16.7 (7,6)	17.9 (8,1)	19.2 (8,7)
DN 100 / PN 10/16	11.2 (5,1)	11.9 (5,4)	13.1 (5,9)	14.4 (6,5)
DN 100 / PN 40	12.6 (5,7)	13.3 (6,0)	14.5 (6,6)	15.8 (7,1)

Rosemount 3051S/3051SFx (Measurement Type D)/ 3051S ERS Certifications

European Directive Information

A copy of the EC Declaration of Conformity can be found at the end of the Quick Start Guide. The most recent revision of the EC Declaration of Conformity can be found at www.rosemount.com.

Ordinary Location Certification from FM Approvals

As standard, the transmitter has been examined and tested to determine that the design meets the basic electrical, mechanical, and fire protection requirements by FM Approvals, a nationally recognized test laboratory (NRTL) as accredited by the Federal Occupational Safety and Health Administration (OSHA).

North America

The US National Electrical Code (NEC) and the Canadian Electrical Code (CEC) permit the use of Division marked equipment in Zones and Zone marked equipment in Divisions. The markings must be suitable for the area classification, gas, and temperature class. This information is clearly defined in the respective codes.

United States of America

- E5** FM Explosionproof (XP) and Dust-Ignitionproof (DIP)
Certificate: 3008216
Standards: FM Class 3600 – 2011, FM Class 3615 – 2006, FM Class 3810 – 2005, ANSI/NEMA 250 – 2003
Markings: XP CL I, DIV 1, GP B, C, D; DIP CL II, DIV 1, GP E, F, G; CL III; T5(-50 °C ≤ Ta ≤ +85 °C); Factory Sealed; Type 4X
- I5** FM Intrinsic Safety (IS) and Nonincendive (NI)
Certificate: 3012350
Standards: FM Class 3600 – 2011, FM Class 3610 – 2010, FM Class 3611 – 2004, FM Class 3810 – 2005, NEMA 250 – 2003
Markings: IS CL I, DIV 1, GP A, B, C, D; CL II, DIV 1, GP E, F, G; Class III; Class 1, Zone 0 AEx ia IIC T4; NI CL 1, DIV 2, GP A, B, C, D; T4(-50 °C ≤ Ta ≤ +70 °C) [HART]; T4(-50 °C ≤ Ta ≤ +60 °C) [fieldbus]; when connected per Rosemount drawing 03151-1006; Type 4x

Special Condition for Safe Use (X):

- The Model 3051S/3051S ERS Pressure Transmitter contains aluminum and is considered to constitute a potential risk of ignition by impact or friction. Care must be taken into account during installation and use to prevent impact and friction.

Note

Transmitters marked with NI CL 1, DIV 2 can be installed in Division 2 locations using general Division 2 wiring methods or Nonincendive Field Wiring (NIFW). See Drawing 03051-1006.

- IE** FM FISCO Field Device
Certificate: 3012350
Standards: FM Class 3600 – 2011, FM Class 3610 – 2010, FM Class 3611 – 2004, FM Class 3810 – 2005, NEMA 250 – 2003
Markings: IS CL I, DIV 1, GP A, B, C, D; (-50 °C ≤ Ta ≤ +60 °C); when connected per Rosemount drawing 03151-1006; Type 4x

Special Condition for Safe Use (X):

- The Model 3051S/3051S ERS Pressure Transmitter contains aluminum and is considered to constitute a potential risk of ignition by impact or friction. Care must be taken into account during installation and use to prevent impact and friction.

Canada

- E6** CSA Explosionproof, Dust-Ignitionproof, and Division 2
Certificate: 143113
Standards: CAN/CSA C22.2 No. 0-10, CSA Std C22.2 No. 25-1966, CSA Std C22.2 No. 30-M1986, CAN/CSA C22.2 No. 94-M91, CSA Std C22.2 No. 142-M1987, CSA Std C22.2 No. 213-M1987, ANSI/ISA 12.27.01-2003, CSA Std C22.2 No. 60529:05
Markings: Explosionproof Class I, Division 1, Groups B, C, D; Dust-Ignitionproof Class II, Division 1, Groups E, F, G; Class III; suitable for Class I, Zone 1, Group IIB+H2, T5; suitable for Class I, Division 2, Groups A, B, C, D; suitable for Class I, Zone 2, Group IIC, T5; when connected per Rosemount drawing 03151-1013; Type 4x
- I6** CSA Intrinsically Safe
Certificate: 1143113
Standards: CAN/CSA C22.2 No. 0-10, CSA Std C22.2 No. 30-M1986, CAN/CSA C22.2 No. 94-M91, CSA Std C22.2 No. 142-M1987, CSA Std C22.2 No. 157-92, ANSI/ISA 12.27.01-2003, CSA Std C22.2 No. 60529:05
Markings: Intrinsically Safe Class I, Division 1; suitable for Class 1, Zone 0, IIC, T3C; when connected per Rosemount drawing 03151-1016; Type 4x
- IF** CSA FISCO Field Device
Certificate: 1143113
Standards: CAN/CSA C22.2 No. 0-10, CSA Std C22.2 No. 30-M1986, CAN/CSA C22.2 No. 94-M91, CSA Std C22.2 No. 142-M1987, CSA Std C22.2 No. 157-92, ANSI/ISA 12.27.01-2003, CSA Std C22.2 No. 60529:05
Markings: FISCO Intrinsically Safe Class I, Division 1; suitable for Class I, Zone 0; T3C; when installed per Rosemount drawing 03151-1016; Type 4X

Europe

- E1** ATEX Flameproof
Certificate: KEMA 00ATEX2143X
Standards: EN 60079-0:2012, EN 60079-1: 2007, EN 60079-26:2007
Markings:  II 1/2 G Ex d IIC T6...T4 Ga/Gb, T6(-60 °C ≤ Ta ≤ +70 °C), T5/T4(-60 °C ≤ Ta ≤ +80 °C)

Temperature class	Process temperature
T6	-60 °C to +70 °C
T5	-60 °C to +80 °C
T4	-60 °C to +120 °C

Special Conditions for Safe Use (X):

1. The 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.
 2. For information on the dimensions of the flameproof joints, the manufacturer shall be contacted.
- I1** ATEX Intrinsic Safety
 Certificate: BAS01ATEX1303X
 Standards: EN 60079-0: 2012, EN 60079-11: 2012
 Markings:  II 1 G Ex ia IIC T4 Ga, T4(-60 °C ≤ Ta ≤ +70 °C)

	HART	Fieldbus	RTD (for 3051SFx)
Voltage U_i	30 V	30 V	5 V
Current I_i	300 mA	300 mA	500 mA
Power P_i	1 W	1.3 W	0.63 W
Capacitance C_i	12 nF	0	0
Inductance L_i	0	0	0

Special Conditions for Safe Use (X):

1. The Model 3051S Transmitters fitted with transient protection are not capable of withstanding the 500V test as defined in Clause 6.3.13 of EN 60079-11:2012. This must be taken into account during installation.
 2. The terminal pins of the Model 3051S SuperModule must be provided with a degree of protection of at least IP20 in accordance with IEC/EN 60529.
- IA** ATEX FISCO Field Device
 Certificate: BAS01ATEX1303X
 Standards: EN 60079-0: 2012, EN 60079-11: 2012
 Markings:  II 1 G Ex ia IIC T4 Ga, T4(-60 °C ≤ Ta ≤ +70 °C)

	FISCO
Voltage U_i	17.5 V
Current I_i	380 mA
Power P_i	5.32 W
Capacitance C_i	0
Inductance L_i	0

Special Conditions for Safe Use (X):

1. The Model 3051S Transmitters fitted with transient protection are not capable of withstanding the 500V test as defined in Clause 6.3.13 of EN 60079-11:2012. This must be taken into account during installation.
 2. The terminal pins of the Model 3051S SuperModule must be provided with a degree of protection of at least IP20 in accordance with IEC/EN 60529.
- ND** ATEX Dust
 Certificate: BAS01ATEX1374X
 Standards: EN 60079-0: 2012, EN 60079-31: 2009
 Markings:  II 1 D Ex ta IIIC T105 °C T₅₀₀95 °C Da, (-20 °C ≤ Ta ≤ +85 °C), V_{max} = 42.4V

Special Conditions for Safe Use (X):

1. Cable entries must be used which maintain the ingress protection of the enclosure to at least IP66.
2. Unused cable entries must be filled with suitable blanking plugs which maintain the ingress protection of the enclosure to at least IP66.

3. Cable entries and blanking plugs must be suitable for the ambient temperature range of the apparatus and capable of withstanding a 7J impact test.
4. The SuperModule(s) must be securely screwed in place to maintain the ingress protection of the enclosure(s).

N1 ATEX Type n
 Certificate: BAS01ATEX3304X
 Standards: EN 60079-0: 2012, EN 60079-15: 2010
 Markings:  II 3 G Ex nA IIC T5 Gc, (-40 °C ≤ Ta ≤ +85 °C), V_{max} = 45V

Special Condition for Safe Use (X):

1. The equipment is not capable of withstanding the 500V insulation test required by clause 6.5 of EN 60079-15:2010. This must be taken into account when installing the equipment.

Note

RTD Assembly is not included with the 3051SFx Type n Approval.

International

- E7** IECEx Flameproof and Dust
 Certificate: IECEx KEM 08.0010X (Flameproof)
 Standards: IEC 60079-0:2011, IEC 60079-1: 2007, IEC 60079-26:2006, IEC 60079-31:2008
 Markings: Ex d IIC T6...T4 Ga/Gb, T6(-60 °C ≤ Ta ≤ +70 °C), T5/T4(-60 °C ≤ Ta ≤ +80 °C)

Temperature class	Process temperature
T6	-60 °C to +70 °C
T5	-60 °C to +80 °C
T4	-60 °C to +120 °C

Special Conditions for Safe Use (X):

1. The 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.
2. For information on the dimensions of the flameproof joints the manufacturer shall be contacted.

Certificate: IECEx BAS 09.0014X (Dust)
 Standards: IEC 60079-0:2011, IEC 60079-31:2008
 Markings: Ex ta IIIC T105 °C T₅₀₀95 °C Da, (-20 °C ≤ Ta ≤ +85 °C), V_{max} = 42.4V

Special Conditions for Safe Use (X):

1. Cable entries must be used which maintain the ingress protection of the enclosure to at least IP66.
2. Unused cable entries must be filled with suitable blanking plugs which maintain the ingress protection of the enclosure to at least IP66.
3. Cable entries and blanking plugs must be suitable for the ambient temperature range of the apparatus and capable of withstanding a 7J impact test.
4. The 3051S- SuperModule must be securely screwed in place to maintain the ingress protection of the enclosure.

- I7** IECEx Intrinsic Safety
 Certificate: IECEx BAS 04.0017X
 Standards: IEC 60079-0: 2011, IEC 60079-11: 2011
 Markings: Ex ia IIC T4 Ga, T4(-60 °C ≤ Ta ≤ +70 °C)

	HART	Fieldbus	RTD (for 3051Sfx)
Voltage U _i	30 V	30 V	5 V
Current I _i	300 mA	300 mA	500 mA
Power P _i	1 W	1.3 W	0.63 W
Capacitance C _i	12 nF	0	0
Inductance L _i	0	0	0

Special Conditions for Safe Use (X):

1. The Model 3051S Transmitters fitted with transient protection are not capable of withstanding the 500V test as defined in Clause 6.3.13 of IEC 60079-11:2011. This must be taken into account during installation.
2. The terminal pins of the Model 3051S SuperModule must be provided with a degree of protection of at least IP20 in accordance with IEC/EN 60529.
3. The Model 3051S enclosure may be made of aluminum alloy and given a protective polyurethane paint finish; however, care should be taken to protect it from impact or abrasion if located in a zone 0 area.

- IG** IECEx FISCO
 Certificate: IECEx BAS 04.0017X
 Standards: IEC 60079-0: 2011, IEC 60079-11: 2011
 Markings: Ex ia IIC T4 Ga, T4(-60 °C ≤ Ta ≤ +70 °C)

	FISCO
Voltage U _i	17.5 V
Current I _i	380 mA
Power P _i	5.32 W
Capacitance C _i	0
Inductance L _i	0

Special Conditions for Safe Use (X):

1. The Model 3051S Transmitters fitted with transient protection are not capable of withstanding the 500V test as defined in Clause 6.3.13 of IEC 60079-11:2011. This must be taken into account during installation.
2. The terminal pins of the Model 3051S SuperModule must be provided with a degree of protection of at least IP20 in accordance with IEC/EN 60529.
3. The Model 3051S enclosure may be made of aluminum alloy and given a protective polyurethane paint finish; however, care should be taken to protect it from impact or abrasion if located in a zone 0 area.

- N7** IECEx Type n
 Certificate: IECEx BAS 04.0018X
 Standards: IEC 60079-0: 2011, IEC 60079-15: 2010
 Markings: Ex nA IIC T5 Gc, (-40 °C ≤ Ta ≤ +85 °C)

Special Conditions for Safe Use (X):

1. The equipment is not capable of withstanding the 500V insulation test required by clause 6.5 of IEC 60079-15:2010. This must be taken into account when installing the equipment.

Brazil

- E2** INMETRO Flameproof
 Certificate: CEPEL 03.0140X [Mfg USA, Singapore, Germany],
 CEPEL 07.1413X [Mfg Brazil]
 Standards: ABNT NBR IEC 60079-0:2008, ABNT NBR IEC 60079-1:2009, ABNT NBR IEC 60529:2009
 Markings: Ex d IIC T* Ga/Gb, T6(-40 °C ≤ Ta ≤ +65 °C), T5(-40 °C ≤ Ta ≤ +80 °C), IP66(Al)/IP66W(SST)

Special Conditions for Safe Use (X):

1. For ambient temperature above 60 °C, cable wiring must have minimum isolation temperature of 90 °C, to be in accordance to equipment operation temperature.
2. The 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.

- I2** INMETRO Intrinsic Safety
 Certificate: CEPEL 05.0722X [Mfg USA, Singapore, Germany],
 CEPEL 07.1414X [Mfg Brazil]
 Standards: ABNT NBR IEC 60079-0:2008, ABNT NBR IEC 60079-11:2009, ABNT NBR IEC 60079-26:2008, ABNT NBR IEC 60529:2009
 Markings: Ex ia IIC T4 Ga, T4(-20 °C ≤ Ta ≤ +70 °C), IP66(Al)/IP66W(SST)

Special Conditions for Safe Use (X):

1. The Model 3051S Transmitters fitted with transient protection are not capable of withstanding the 500V test as defined in Clause 6.4.12 of IEC 60079-11. This must be taken into account during installation.

	HART	Fieldbus	RTD (for 3051Sfx)
Voltage U _i	30 V	30 V	5 V
Current I _i	300 mA	300 mA	500 mA
Power P _i	1 W	1.3 W	0.63 W
Capacitance C _i	12 nF	0	0
Inductance L _i	0	0	0

- IB** INMETRO FISCO
 Certificate: CEPEL 05.0722X [Mfg USA, Singapore, Germany],
 CEPEL 07.1414X [Mfg Brazil]
 Standards: ABNT NBR IEC 60079-0:2008, ABNT NBR IEC 60079-11:2009, ABNT NBR IEC 60079-26:2008, ABNT NBR IEC 60529:2009
 Markings: Ex ia IIC T4 Ga, T4(-20 °C ≤ Ta ≤ +40 °C), IP66(Al)/IP66W(SST)

	FISCO
Voltage U _i	17.5 V
Current I _i	380 mA
Power P _i	5.32 W
Capacitance C _i	0
Inductance L _i	0

Special Condition for Safe Use (X):

1. The Model 3051S Transmitters fitted with transient protection are not capable of withstanding the 500V test as defined in Clause 6.4.12 of IEC 60079-11. This must be taken into account during installation.

China

- E3** China Flameproof and Dust Ignition-proof
 Certificate: 3051S: GYJ091035 [Mfg USA], GYJ111400X [Mfg China, Singapore]
 3051SF: GYJ071086 [Mfg USA, China, Singapore]
 Standards: 3051S: GB3836.1-2000, GB3836.2-2000, GB12476.1-2000, GB3836.1-2000, GB3836.2-2000, GB12476.1-2000
 Markings: 3051S: Ex d IIC T5/T6; DIP A20T_A 105°C; IP66
 3051SF: Ex d IIC T5/T6; Ex d IIB+H₂T3~T5; DIP A21 T_A T3~T5

Special Conditions for Safe Use (X):

- Only the pressure transmitters, consisting of 3051SC Series, 3051ST Series, 3051SL Series and 300S Series, are certified.
- The ambient temperature range is (-20 ~+60) °C.
- The relation between temperature class and maximum temperature of process medium is as follows:

Temperature class	Temperature of process medium (°C)
T5	≤ 95 °C
T4	≤ 130 °C
T3	≤ 190 °C

- The earth connection facility in the enclosure should be connected reliably.
- During installation, use and maintenance of transmitter, observe the warning "Don't open the cover when the circuit is alive."
- During installation, there should be no mixture harm to flameproof housing.
- Cable entry, certified by NEPSI with type of protection Ex d IIC in accordance with GB3836.1-2000 and GB3836.2-2000, should be applied when installation in hazardous location. 5 full threads should be in engagement when the cable entry is assembled onto the transmitter. When pressure transmitter is used in the presence of combustible dust, the ingress of protection of the cable entry should be IP66.
- The diameter of cable should observe the instruction manual of cable entry. The compressing nut should be fastened. The aging of seal ring should be changed in time.
- Maintenance should be done in non-hazardous location.
- End users are not permitted to change any components inside.
- When installation, use and maintenance of transmitter, observe following standards:
 - GB3836.13-1997 "Electrical apparatus for explosive gas atmospheres Part 13: Repair and overhaul for apparatus used in explosive gas atmospheres"
 - GB3836.15-2000 "Electrical apparatus for explosive gas atmospheres Part 15: Electrical installations in hazardous area (other than mines)"
 - GB50257-1996 "Code for construction and acceptance of electric device for explosion atmospheres and fire hazard electrical equipment installation engineering"
 - GB15577-1995 "Safe regulation for explosive dust atmospheres"
 - GB12476.2-2006 "Electrical apparatus for use in the presence of combustible dust – Part 1-2: Electrical apparatus protected by enclosures and surface temperature limitation – Selection, installation and maintenance"

I3 China Intrinsic Safety

Certificate: 3051S: GYJ111401X [Mfg USA, China, Singapore]
 3051SF: GYJ11.1707X [Mfg USA, China, Singapore]
 Standards: 3051S: GB3836.1-2000, GB3836.4-2000
 3051SF: GB3836.1/4-2010, GB3836.20-2010, GB12476.1-2000
 Markings: 3051S: Ex ia IIC T4
 3051SF: Ex ia IIC T4 Ga, DIP A20 T_A 105 °C IP66

Special Conditions for Safe Use (X):

- Symbol "X" is used to denote specific conditions of use:
 For output code A and F: This apparatus is not capable of withstanding the 500V r.m.s. insulation test required by Clause 6.4.12 of GB3836.4-2000.

- The ambient temperature range is:

Output code	Ambient temperature
A	-50 °C ≤ Ta ≤ +70 °C
F	-50 °C ≤ Ta ≤ +60 °C

- Intrinsically safe parameters:

Output code	Housing code	Display code	Maximum input voltage: U _i (V)	Maximum input current: I _i (mA)	Maximum input power: P _i (W)	Maximum internal parameters: C _i (nF)	Maximum internal parameters: L _i (uH)
A	=00	/	30	300	1	38	0
A	≠00	/	30	300	1	11.4	2.4
A	≠00	M7/M8/M9	30	300	1	0	58.2
F	≠00	/	30	300	1.3	0	0
F FISCO	≠00	/	17.5	500	5.5	0	0

- The product should be used with Ex-certified associated apparatus to establish explosion protection system that can be used in explosive gas atmospheres. Wiring and terminals should comply with the instruction manual of the product and associated apparatus.
- The cable between this product and associated apparatus should be shielded cables (the cables must have insulated shield). The shield has to be grounded reliably in non-hazardous area.
- The product complies to the requirements for FISCO field devices specified in IEC60079-27:2008. For the connection of an intrinsically safe circuit in accordance FISCO model, FISCO parameters of this product are as above.
- End users are not permitted to change any components inside, but to settle the problem in conjunction with manufacturer to avoid damage to the product.
- When installation, use and maintenance of this product, observe the following standards:
 - GB3836.13-1997 "Electrical apparatus for explosive gas atmospheres Part 13: Repair and overhaul for apparatus used in explosive gas atmospheres"
 - GB3836.15-2000 "Electrical apparatus for explosive gas atmospheres Part 15: Electrical installations in hazardous area (other than mines)"
 - GB3836.16-2006 "Electrical apparatus for explosive gas atmospheres Part 16: Inspection and maintenance of electrical installation (other than mines)"
 - GB50257-1996 "Code for construction and acceptance of electric device for explosion atmospheres and fire hazard electrical equipment installation engineering"

N3 China Type n

Certificate: 3051S: GYJ101112X [Mfg China]
 3051SF: GYJ101125X [Mfg China]
 Standards: GB3836.1-2000, GB3836.8-2003
 Markings: Ex nL IIC T5

Special Conditions for Safe Use (X):

1. Symbol "X" is used to denote specific conditions of use: The apparatus is not capable of withstanding the 500V test to earth for one minute. This must be taken into consideration during installation.
2. The ambient temperature range is: $-40^{\circ}\text{C} \leq T_a \leq 70^{\circ}\text{C}$.
3. Cable glands, conduit or blanking plugs, certified by NEPSI with Ex e or Ex n protection type and IP66 degree of protection provided by enclosure, should be used on external connections and redundant cable entries.
4. Energy limiting parameters:

Model	Terminal	Maximum input voltage: U_i (V)	Maximum input current: I_i (mA)	Maximum input power: P_i (W)	Maximum internal parameters: C_i (nF)	Maximum internal parameters: L_i (uH)
3051S-C/T	1 to 5	30	300	1	30	0
3051S HART, 4-20mA/SIS	+, - and CAN	30	300	1	11.4	0
3051S fieldbus/Profibus	+ and -	30	300	1.3	0	0
3051S FISCO	+ and -	17.5	380	5.32	0	0
Remote Mount Housing	+ and -	30	300	1	24	60

Note

Remote Mount Housing is for direct connection to the Model 3051S HART Terminals +, - and CAN by a cable whose maximum capacitance and inductance do not exceed 24nF and 60uH respectively.

5. 3051S type Pressure Transmitter comply to the requirements for FISCO field devices specified in IEC60079-27:2008. For the connection of an intrinsically safe circuit in accordance FISCO model, FISCO parameters of 3051S type Pressure Transmitter are listed in the table above.
6. The product should be used with associated energy-limited apparatus certified by NEPSI in accordance with GB 3836.1-2000 and GB 3836.8-2003 to establish explosion protection system that can be used in explosive gas atmospheres.
7. The cables between this product and associated energy-limited apparatus should be shielded cables (the cables must have insulated shield). The shielded has to be grounded reliably in non-hazardous area.
8. Maintenance should be done in non-hazardous location.
9. End users are not permitted to change any components inside, but to settle the problem in conjunction with manufacturer to avoid damage to the product.
10. When installation, use and maintenance of this product, observe following standards:
 - GB3836.13-1997 "Electrical apparatus for explosive gas atmospheres Part 13: Repair and overhaul for apparatus used in explosive gas atmospheres"
 - GB3836.15-2000 "Electrical apparatus for explosive gas atmospheres Part 15: Electrical installations in hazardous area (other than mines)"

- GB3836.16-2006 "Electrical apparatus for explosive gas atmospheres Part 16: Inspection and maintenance of electrical installation (other than mines)"
- GB50257-1996 "Code for construction and acceptance of electric device for explosion atmospheres and fire hazard electrical equipment installation engineering".

Japan**E4** Japan Flameproof

Certificate: TC15682, TC15683, TC15684, TC15685, TC15686, TC15687, TC15688, TC15689, TC15690, TC17099, TC17100, TC17101, TC17102, TC18876

Markings: Ex d IIC T6

Combinations

- K1** Combination of E1, I1, N1, and ND
- K2** Combination of E2 and I2
- K5** Combination of E5 and I5
- K6** Combination of E6 and I6
- K7** Combination of E7, I7, and N7
- KA** Combination of E1, I1, E6, and I6
- KB** Combination of E5, I5, E6, and I6
- KC** Combination of E1, I1, E5, and I5
- KD** Combination of E1, I1, E5, I5, E6, and I6
- KG** Combination of IA, IE, IF, and IG

Additional Certifications

- SBS** American Bureau of Shipping (ABS) Type Approval
 Certificate: 00-HS145383-6-PDA
 Intended Use: Measure gauge or absolute pressure of liquid, gas or vapor applications on ABS classed vessels, marine, and offshore installations.
 ABS Rules: 2013 Steel Vessels Rules 1-1-4/7.7, 1-1-A3, 4-8-3/1.7, 4-8-3/1.11.1, 4-8-3/13.1
- D3** Custody Transfer – Measurement Canada Accuracy Approval
 Certificate: AG-0501, AV-2380C

Rosemount 3051S and 3051SMV Wireless Certifications

European Directive Information

A copy of the EC Declaration of Conformity can be found at the end of the Quick Start Guide. The most recent revision of the EC Declaration of Conformity can be found at www.rosemount.com.

Telecommunication compliance

All wireless devices require certification to ensure that they adhere to regulations regarding the use of the RF spectrum. Nearly every country requires this type of product certification. Emerson is working with governmental agencies around the world to supply fully compliant products and remove the risk of violating country directives or laws governing wireless device usage.

FCC and IC

This device complies with Part 15 of the FCC Rules. Operation is subject to the following conditions: This device may not cause harmful interference. This device must accept any interference received, including interference that may cause undesired operation. This device must be installed to ensure a minimum antenna separation distance of 20 cm from all persons.

Ordinary Location Certification from FM Approvals

As standard, the transmitter has been examined and tested to determine that the design meets the basic electrical, mechanical, and fire protection requirements by FM Approvals, a nationally recognized test laboratory (NRTL) as accredited by the Federal Occupational Safety and Health Administration (OSHA).

North America

The US National Electrical Code (NEC) and the Canadian Electrical Code (CEC) permit the use of Division marked equipment in Zones and Zone marked equipment in Divisions. The markings must be suitable for the area classification, gas, and temperature class. This information is clearly defined in the respective codes.

United States of America

- I5** FM Intrinsic Safety (IS) and Nonincendive (NI)
 Certificate: 3027705
 Standards: FM Class 3600 – 2011, FM Class 3610 – 2010, FM Class 3611 – 2004, FM Class 3810 – 2005, NEMA 250 – 2003
 Markings: IS CL 1, DIV 1, GP 1, B, C, D; CL II, DIV 1, GP E, F, G; CL III; CL 1, ZONE 0 AEx ia IIC T4; NI CL 1, DIV2, GPA, B, C, D, T4; DIP CL II, DIV 1, GP E, F, G; CL III, T5; T4 (-50 °C ≤ Ta ≤ +70 °C)/T5 (-50 °C ≤ Ta ≤ +85 °C); when connected per Rosemount drawing 03151-1000; Type 4X

Special Conditions for Safe Use (X):

1. The model 3051SMV Wireless PDP Transmitter shall only be used with the 701PBKKF Rosemount SmartPower Battery Pack.
2. The transmitter may contain more than 10% aluminum and is considered a potential risk of ignition by impact or friction.
3. The surface resistivity of the antenna is greater than $1\text{G}\Omega$. To avoid electrostatic charge build-up, it must not be rubbed or cleaned with solvents or a dry cloth.

Note

Transmitters marked with NI CL 1, DIV 2 can be installed in Division 2 locations using general Division 2 wiring methods or Nonincendive Field Wiring (NIFW). See Drawing 03051-1000.

Canada

- I6** CSA Intrinsically Safe
 Certificate: 1143113
 Standards: CAN/CSA C22.2 No. 0-10, CSA Std C22.2 No. 30-M1986, CAN/CSA C22.2 No. 94-M91, CSA Std C22.2 No. 142-M1987, CSA Std C22.2 No. 157-92, ANSI/ISA 12.27.01-2003, CSA Std C22.2 No. 60529:05
 Markings: Intrinsically Safe Class I, Division 1; suitable for Class 1, Zone 0, IIC, T3C; when connected per Rosemount drawing 03151-1010; Type 4X

Europe

- I1** ATEX Intrinsic Safety
 Certificate: Baseefa13ATEX0127X
 Standards: EN 60079-0: 2012, EN 60079-11: 2012
 Markings:  II 1 G Ex ia IIC T4 Ga, T4(-60 °C ≤ Ta ≤ +70 °C)

Special Conditions for Safe Use (X):

1. The Model 3051S Wireless and Model 3051SMV Wireless enclosure may be made of aluminum alloy and given a protective polyurethane paint finish; however, care should be taken to protect it from impact or abrasion if located in a zone 0 area.
2. The surface resistivity of the antenna is greater than $1\text{G}\Omega$. To avoid electrostatic charge build-up, it must not be rubbed or cleaned with solvents or dry cloth.

International

- I7** IECEx Intrinsic Safety
 Certificate: IECEx BAS 13.0068X
 Standards: IEC 60079-0: 2011, IEC 60079-11: 2011
 Markings: Ex ia IIC T4 Ga, T4(-60 °C ≤ Ta ≤ +70 °C)

Special Conditions for Safe Use (X):

1. The Model 3051S Wireless and Model 3051SMV Wireless enclosure may be made of aluminum alloy and given a protective polyurethane paint finish; however, care should be taken to protect it from impact or abrasion if located in a zone 0 area.
2. The surface resistivity of the antenna is greater than $1\text{G}\Omega$. To avoid electrostatic charge build-up, it must not be rubbed or cleaned with solvents or dry cloth.

Brazil

- I2** INMETRO Intrinsic Safety
 Certificate: CEPEL 08.1618
 Standards: ABNT NBR IEC60079-0:2008, ABNT NBR IEC60079-11:2009, ABNT NBR IEC 60079-26:2008, ABNT NBR IEC 60529:2009
 Markings: Ex ia IIC T5/T4 Ga, T5(-60 °C ≤ Ta ≤ +40 °C), T4(-60 °C ≤ Ta ≤ +70 °C), IP66(AI)/IP66W(SST)

Note

Not currently available on the 3051S MultiVariable Wireless Transmitter.

China

- I3** China Intrinsic Safety
Certificate: GYJ11.1401X; GYJ11.1707X
Standards: GB3836.1-2010, GB3836.4-2010, GB3836.20-2010,
GB12476.1-2000
Markings: Ex ia IIC T4(-50 °C~+70 °C)

Special Condition for Safe Use (X):

1. See appropriate certificate.

Note

Not currently available on the 3051S MultiVariable Wireless Transmitter.

Japan

- I4** TIIS Intrinsically Safe
Certificate: TC18649, TC18650, TC18657
Markings: Ex ia IIC T4, T4 -20 ~ 60 °C

Note

Not currently available on the 3051S MultiVariable Wireless Transmitter.

Rosemount 3051SMV/3051SFx (Measurement Type 1-7) Certifications

European Directive Information

A copy of the EC Declaration of Conformity can be found at the end of the Quick Start Guide. The most recent revision of the EC Declaration of Conformity can be found at www.rosemount.com.

Ordinary Location Certification from FM

Approvals

As standard, the transmitter has been examined and tested to determine that the design meets the basic electrical, mechanical, and fire protection requirements by FM Approvals, a nationally recognized test laboratory (NRTL) as accredited by the Federal Occupational Safety and Health Administration (OSHA).

North America

The US National Electrical Code (NEC) and the Canadian Electrical Code (CEC) permit the use of Division marked equipment in Zones and Zone marked equipment in Divisions. The markings must be suitable for the area classification, gas, and temperature class. This information is clearly defined in the respective codes.

United States of America

- E5** FM Explosionproof (XP) and Dust-Ignitionproof (DIP)
Certificate: 3008216
Standards: FM Class 3600 – 2011, FM Class 3615 – 2006, FM Class 3810 – 2005, ANSI/NEMA 250 – 2003
Markings: XP CL I, DIV 1, GP B, C, D; DIP CL II, DIV 1, GP E, F, G; CL III; T5(-50°C ≤ Ta ≤ +85°C); Factory Sealed; Type 4X
- I5** FM Intrinsic Safety (IS) and Nonincendive (NI)
Certificate: 3031960
Standards: FM Class 3600 – 1998, FM Class 3610 – 2007, FM Class 3611 – 2004, FM Class 3810 – 2005, NEMA 250 – 1991
Markings: IS CL I, DIV 1, GP A, B, C, D; CL II, DIV 1, GP E, F, G; Class III; Class 1, Zone 0 AEx ia IIC T4; NI CL 1, DIV 2, GP A, B, C, D; T4(-50°C ≤ Ta ≤ +70°C); when connected per Rosemount drawing 03151-1206; Type 4x

Note

Transmitters marked with NI CL 1, DIV 2 can be installed in Division 2 locations using general Division 2 wiring methods or Nonincendive Field Wiring (NIFW). See Drawing 03051-1206.

Canada

- E6** CSA Explosionproof, Dust-Ignitionproof, and Division 2
Certificate: 1143113
Standards: CAN/CSA C22.2 No. 0-10, CSA Std C22.2 No. 25-1966, CSA Std C22.2 No. 30-M1986, CAN/CSA C22.2 No. 94-M91, CSA Std C22.2 No. 142-M1987, CSA Std C22.2 No. 213-M1987, ANSI/ISA 12.27.01-2003, CSA Std C22.2 No. 60529:05
Markings: Explosionproof Class I, Division 1, Groups B, C, D; Dust-Ignitionproof Class II, Division 1, Groups E, F, G; Class III; suitable for Class I, Division 2, Groups A, B, C, D; Type 4x

- I6** CSA Intrinsically Safe
Certificate: 1143113
Standards: CAN/CSA C22.2 No. 0-10, CSA Std C22.2 No. 30-M1986, CAN/CSA C22.2 No. 94-M91, CSA Std C22.2 No. 142-M1987, CSA Std C22.2 No. 157-92, ANSI/ISA 12.27.01-2003, CSA Std C22.2 No. 60529:05
Markings: Intrinsically Safe Class I, Division 1; suitable for Class 1, Zone 0, IIC, T3C; when connected per Rosemount drawing 03151-1207; Type 4x

Europe

- E1** ATEX Flameproof
Certificate: KEMA 00ATEX2143X
Standards: EN 60079-0:2012, EN 60079-1: 2007, EN 60079-26:2007
Markings: II 1/2 G Ex d IIC T6...T4 Ga/Gb, T6(-60 °C ≤ Ta ≤ +70 °C), T5/T4(-60 °C ≤ Ta ≤ +80 °C)

Temperature class	Process temperature
T6	-60 °C to +70 °C
T5	-60 °C to +80 °C
T4	-60 °C to +120 °C

Special Conditions for Safe Use (X):

- The 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.
- For information on the dimensions of the flameproof joints the manufacturer shall be contacted.

- I1** ATEX Intrinsic Safety
Certificate: Baseefa08ATEX0064X
Standards: EN 60079-0: 2012, EN 60079-11: 2012
Markings:  II 1 G Ex ia IIC T4 Ga, T4(-60°C ≤ Ta ≤ +70°C)

	HART	RTD (for 3051SFx)
Voltage U _i	30 V	30 V
Current I _i	300 mA	2.31 mA
Power P _i	1 W	17.32 mW
Capacitance C _i	14.8 nF	0
Inductance L _i	0	0

Special Conditions for Safe Use (X):

- If the equipment is fitted with the optional 90V transient suppressor, it is incapable of withstanding the 500V isolation from earth test and this must be taken into account during installation.
- The enclosure may be made of aluminum alloy and given a protective polyurethane paint finish; however, care should be taken to protect it from impact or abrasion if located in a Zone 0 environment.

ND ATEX Dust
 Certificate: BAS01ATEX1374X
 Standards: EN 60079-0: 2012, EN 60079-31: 2009
 Markings:  II 1 D Ex ta IIIC T105°C T₅₀₀95 °C Da, (-20 °C ≤ Ta ≤ +85 °C), V_{max} = 42.4V

Special Conditions for Safe Use (X):

1. Cable entries must be used which maintain the ingress protection of the enclosure to at least IP66.
2. Unused cable entries must be filled with suitable blanking plugs which maintain the ingress protection of the enclosure to at least IP66.
3. Cable entries and blanking plugs must be suitable for the ambient temperature range of the apparatus and capable of withstanding a 7J impact test.
4. The SuperModule(s) must be securely screwed in place to maintain the ingress protection of the enclosure(s).

N1 ATEX Type n
 Certificate: Baseefa08ATEX0065X
 Standards: EN 60079-0: 2012, EN 60079-15: 2010
 Markings:  II 3 G Ex nA IIC T4 Gc, (-40 °C ≤ Ta ≤ 70 °C), V_{max} = 45V

Special Condition for Safe Use (X):

1. If fitted with a 90V transient suppressor, the equipment is not capable of withstanding the 500V electrical strength test as defined in Clause 6.5.1 of EN 60079-15:2010. This must be taken into account during installation.

International

E7 IECEx Flameproof and Dust
 Certificate: IECEx KEM 08.0010X (Flameproof)
 Standards: IEC 60079-0:2011, IEC 60079-1: 2007, IEC 60079-26:2006
 Markings: Ex d IIC T6...T4 Ga/Gb, T6(-60°C ≤ Ta ≤ +70°C), T5/T4(-60°C ≤ Ta ≤ +80°C)

Temperature class	Process temperature
T6	-60 °C to +70 °C
T5	-60 °C to +80 °C
T4	-60 °C to +120 °C

Special Conditions for Safe Use (X):

1. The 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.
2. For information on the dimensions of the flameproof joints the manufacturer shall be contacted.

Certificate: IECEx BAS 09.0014X (Dust)
 Standards: IEC 60079-0:2011, IEC 60079-31:2008
 Markings: Ex ta IIIC T105 °C T₅₀₀95 °C Da, (-20 °C ≤ Ta ≤ +85 °C), V_{max} = 42.4V

Special Conditions for Safe Use (X):

1. Cable entries must be used which maintain the ingress protection of the enclosure to at least IP66.
2. Unused cable entries must be filled with suitable blanking plugs which maintain the ingress protection of the enclosure to at least IP66.

3. Cable entries and blanking plugs must be suitable for the ambient temperature range of the apparatus and capable of withstanding a 7J impact test.
4. The 3051S- SuperModule must be securely screwed in place to maintain the ingress protection of the enclosure.

I7 IECEx Intrinsic Safety
 Certificate: IECEx BAS 08.0025X
 Standards: IEC 60079-0: 2011, IEC 60079-11: 2011
 Markings: Ex ia IIC T4 Ga, T4(-60 °C ≤ Ta ≤ +70 °C)

	HART	RTD (for 3051SFx)
Voltage U _i	30 V	30 V
Current I _i	300 mA	2.31 mA
Power P _i	1 W	17.32 mW
Capacitance C _i	14.8 nF	0
Inductance L _i	0	0

Special Conditions for Safe Use (X):

1. If the equipment is fitted with the optional 90V transient suppressor, it is incapable of withstanding the 500V isolation from earth test and this must be taken into account during installation.
2. The enclosure may be made of aluminum alloy and given a protective polyurethane paint finish; however, care should be taken to protect it from impact or abrasion if located in a Zone 0 environment.

N7 IECEx Type n
 Certificate: IECEx BAS 08.0026X
 Standards: IEC 60079-0: 2011, IEC 60079-15: 2010
 Markings: Ex nA IIC T5 Gc, (-40 °C ≤ Ta ≤ 70 °C)

Special Condition for Safe Use (X):

1. If fitted with a 90V transient suppressor, the equipment is not capable of withstanding the 500V electrical strength test as defined in Clause 6.5.1 of IEC 60079-15:2010. This must be taken into account during installation.

Brazil

E2 INMETRO Flameproof
 Certificate: CEPEL 03.0140X [Mfg USA, Singapore, Germany], CEPEL 07.1413X [Mfg Brazil]
 Standards: ABNT NBR IEC 60079-0:2008, ABNT NBR IEC 60079-1:2009, ABNT NBR IEC 60529:2009
 Markings: Ex d IIC T* Ga/Gb, T6(-40 °C ≤ T_a ≤ +65 °C), T5(-40 °C ≤ T_a ≤ +80 °C), IP66(Al)/IP66W(SST)

Special Conditions for Safe Use (X):

1. For ambient temperature above 60 °C, cable wiring must have minimum isolation temperature of 90 °C, to be in accordance to equipment operation temperature.
2. The 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.

I2 INMETRO Intrinsic Safety
 Certificate: NCC 12.1158X [Mfg USA, Germany]
 Standards: ABNT NBR IEC 60079-0:2008, ABNT NBR IEC 60079-11:2009, ABNT NBR IEC 60079-26:2008
 Markings: Ex ia IIC T4 Ga, T4(-60 °C ≤ T_a ≤ +70 °C), IP66(Al)/IP66W(SST)

Special Conditions for Safe Use (X):

1. If the equipment is fitted with the optional 90V transient suppressor, it is incapable of withstanding the 500V isolation from earth test and this must be taken into account during installation.
2. For processes with temperatures above 135 °C, the user must assess whether the SuperModule temperature class is suitable for such applications, because in this situation there is a risk of the SuperModule temperature being above T4.

	HART	SuperModule only	RTD (for 3051SFx)
Voltage U_i	30 V	7.14 V	30 V
Current I_i	300 mA	300 mA	2.31 mA
Power P_i	1 W	887 mW	17.32 mW
Capacitance C_i	12 nF	0.11 μ F	0
Inductance L_i	0	0	0

China

- E3** China Flameproof and Dust Ignition-proof
 Certificate: 3051SMV: GYJ14.1039X [Mfg USA, China, Singapore]
 3051SFx: GYJ071086 [Mfg USA, China, Singapore]
 Standards: 3051SMV: GB3836.1-2010, GB3836.2-2010, GB3836.20-2010
 3051SFx: GB3836.1-2000, GB3836.2-2000, GB12476.1-2000
 Markings: 3051SMV: Ex d IIC T6/T5 Ga/Gb
 3051SFx: Ex d IIC T6/T5; Ex d IIB+H2T3~T5; DIP A21 T_A T3~T5
- I3** China Intrinsic Safety
 Certificate: 3051SMV: GYJ14.1040X [Mfg USA, China, Singapore]
 3051SFx: GYJ11.1707X [Mfg USA, China, Singapore]
 Standards: 3051SMV: GB3836.1-2010, GB3836.4-2010, GB3836.20-2010
 3051SFx: GB3836.1/4-2010, GB3836.20-2010, GB12476.1-2000
 Markings: 3051SMV: Ex ia IIC T4 Ga
 3051SFx: Ex ia IIC T4 Ga, DIP A20 T_A 105°C IP66

Japan

- E4** Japan Flameproof
 Certificate: TC19070, TC19071, TC19072, TC19073
 Markings: Ex d IIC T6

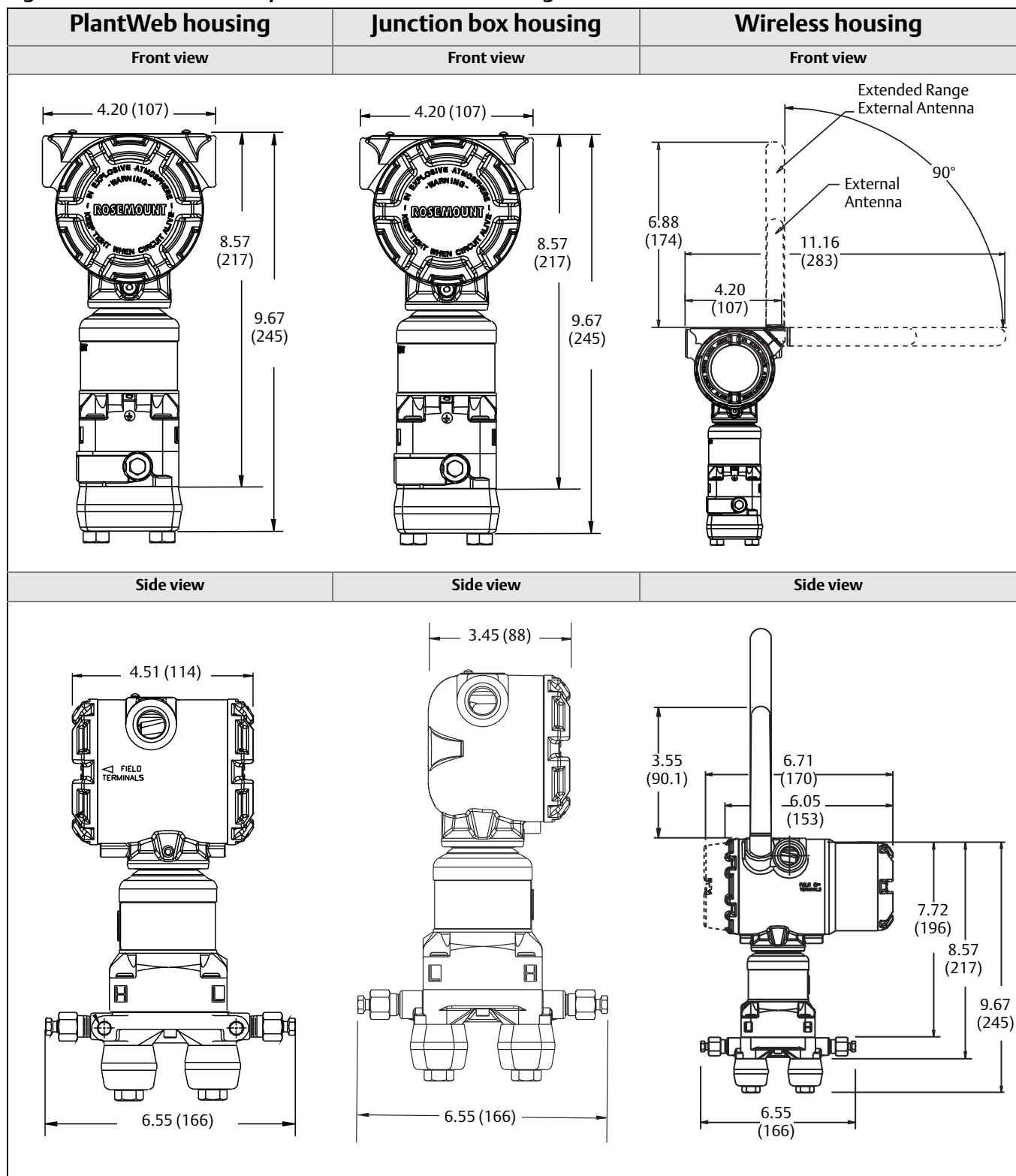
Combinations

- K1** Combination of E1, I1, N1, and ND
K2 Combination of E2 and I2
K5 Combination of E5 and I5
K6 Combination of E6 and I6
K7 Combination of E7, I7, and N7
KA Combination of E1, I1, E6, and I6
KB Combination of E5, I5, E6, and I6
KC Combination of E1, I1, E5, and I5
KD Combination of E1, I1, E5, I5, E6, and I6

Additional Certifications

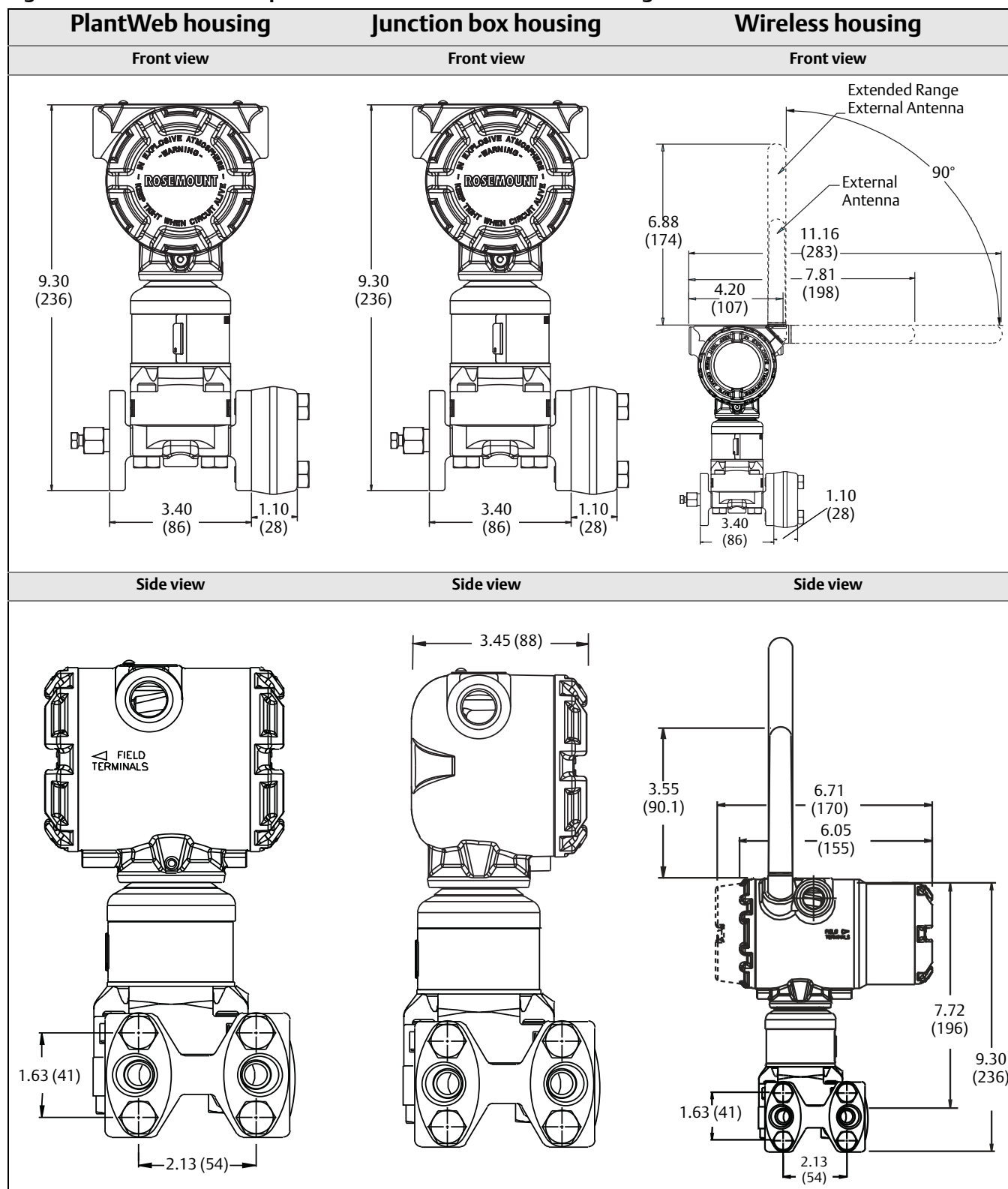
- SBS** American Bureau of Shipping (ABS) Type Approval
 Certificate: 00-HS145383-6-PDA
 Intended Use: Measure gauge or absolute pressure of liquid, gas or vapor applications on ABS classed vessels, marine, and offshore installations.
 ABS Rules: 2013 Steel Vessels Rules 1-1-4/7.7, 1-1-A3, 4-8-3/1.7, 4-8-3/1.11.1, 4-8-3/13.1
- D3** Custody Transfer – Measurement Canada Accuracy Approval
 Certificate: AG-0501, AV-2380C

Dimensional Drawings

Figure 1. Transmitter with coplanar sensor module and flange


Dimensions are in inches (millimeters).

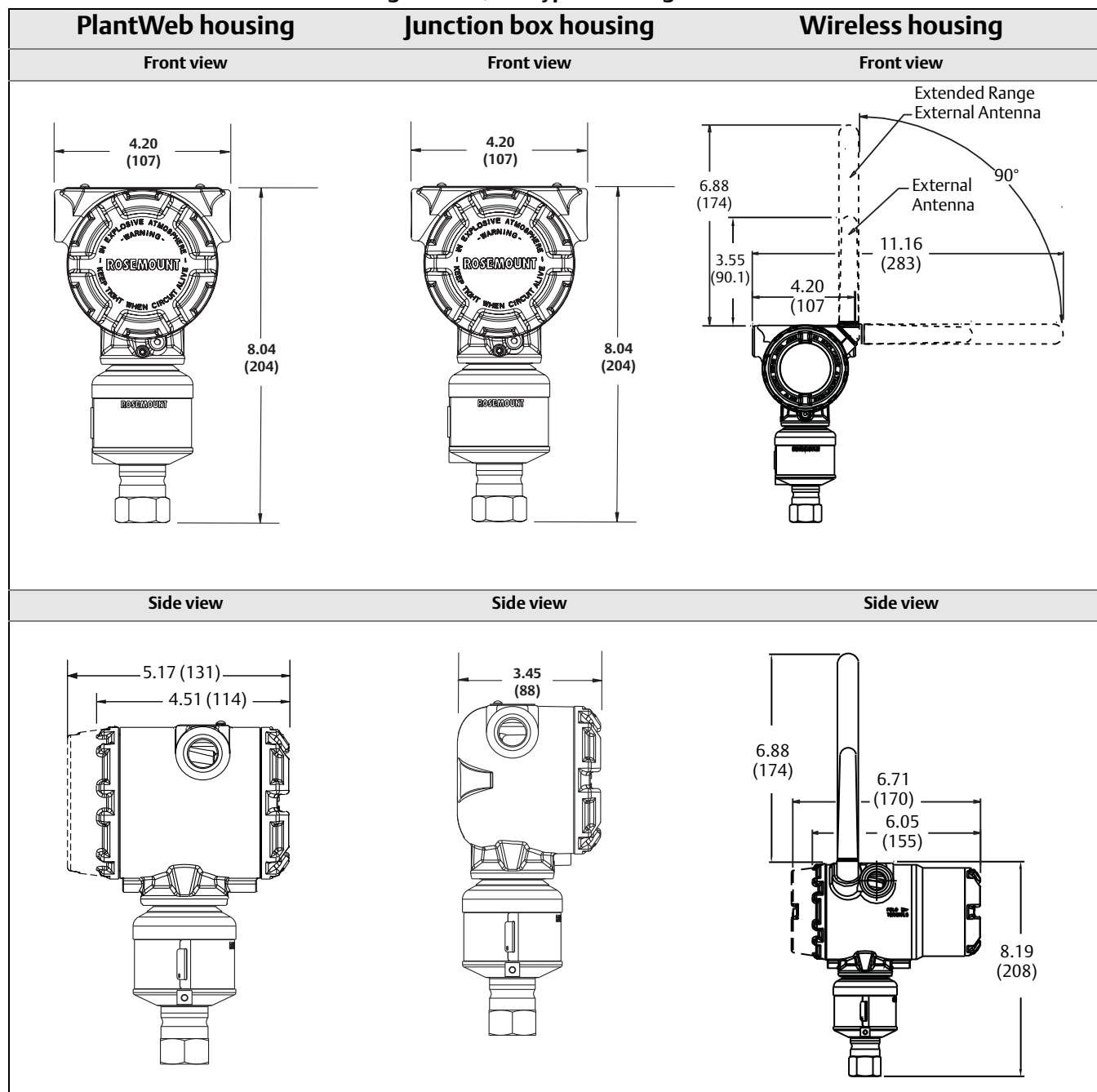
Figure 2. Transmitter with coplanar sensor module and traditional flange



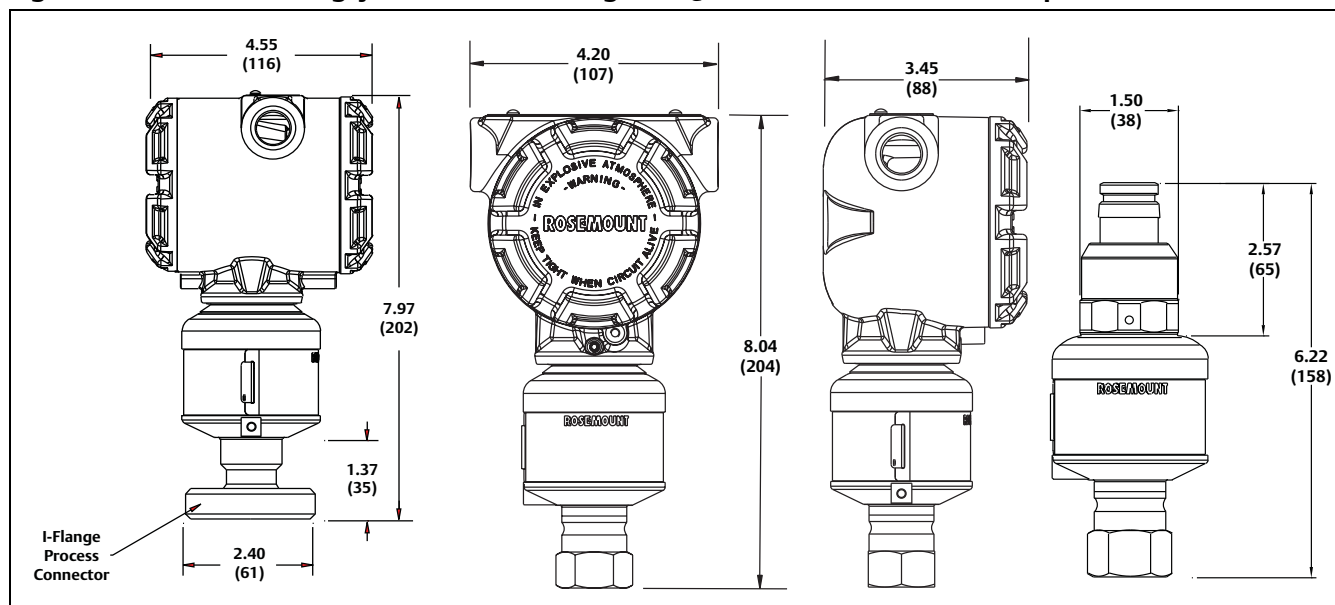
Dimensions are in inches (millimeters).

Figure 3. Transmitter with in-line sensor module (for ranges 1A-4A, 1/2" NPT 316L SST process wetted connection).

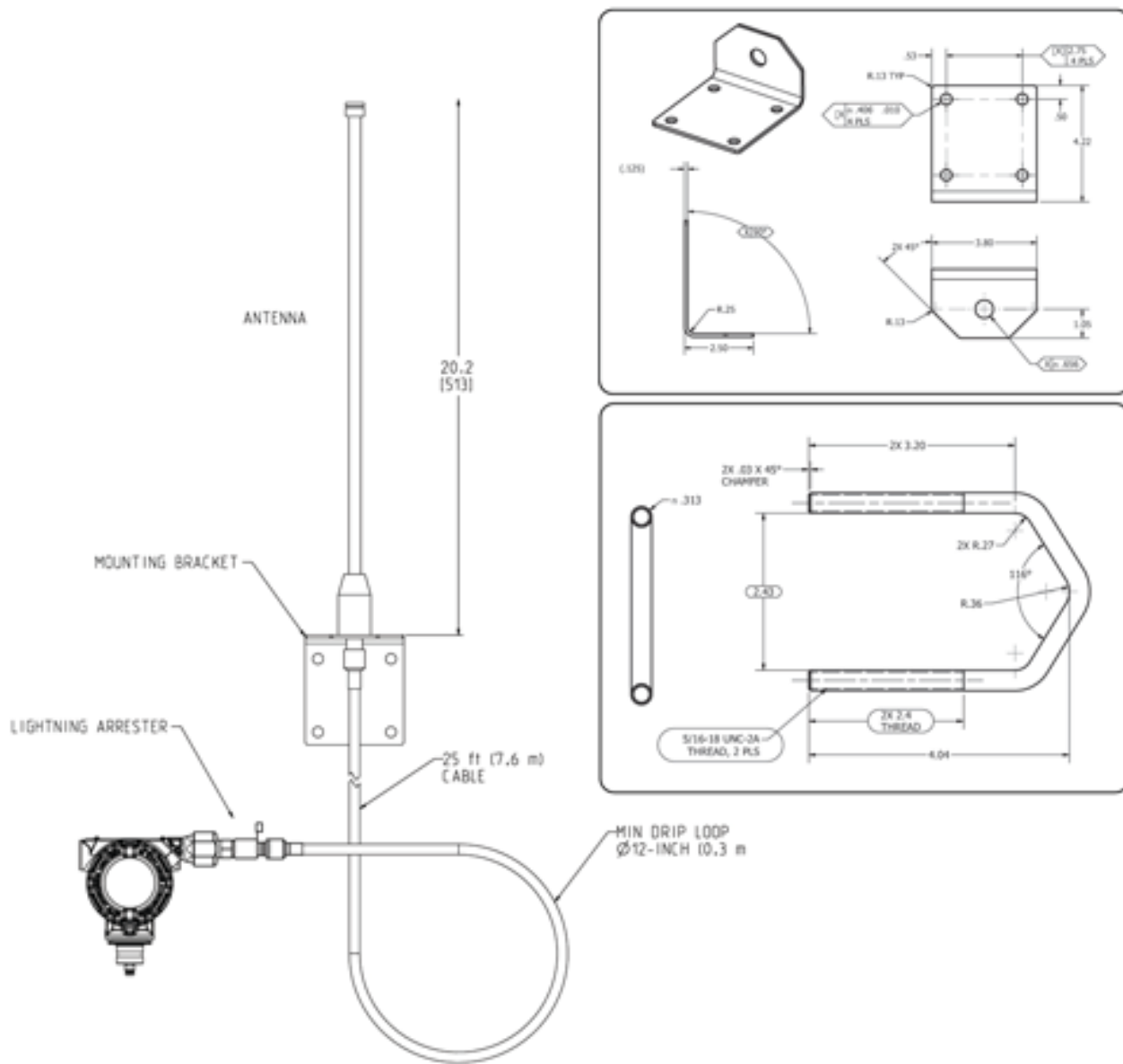
For detailed dimensions on other configurations, see Type I drawings at rosemount.com.



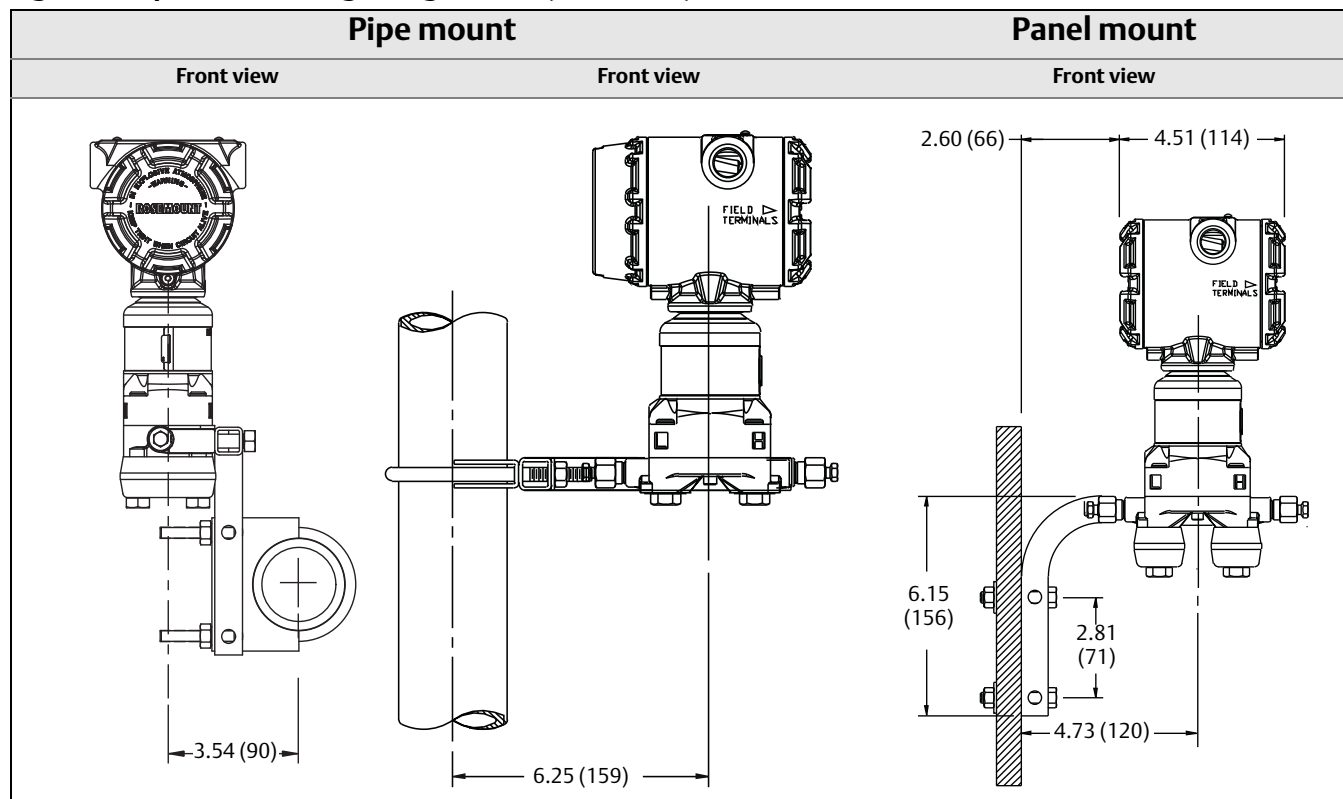
Dimensions are in inches (millimeters).

Figure 4. PlantWeb Housing, Junction Box Housing, and Quick Connect with In-Line SuperModule Platform

Dimensions are in inches (millimeters).

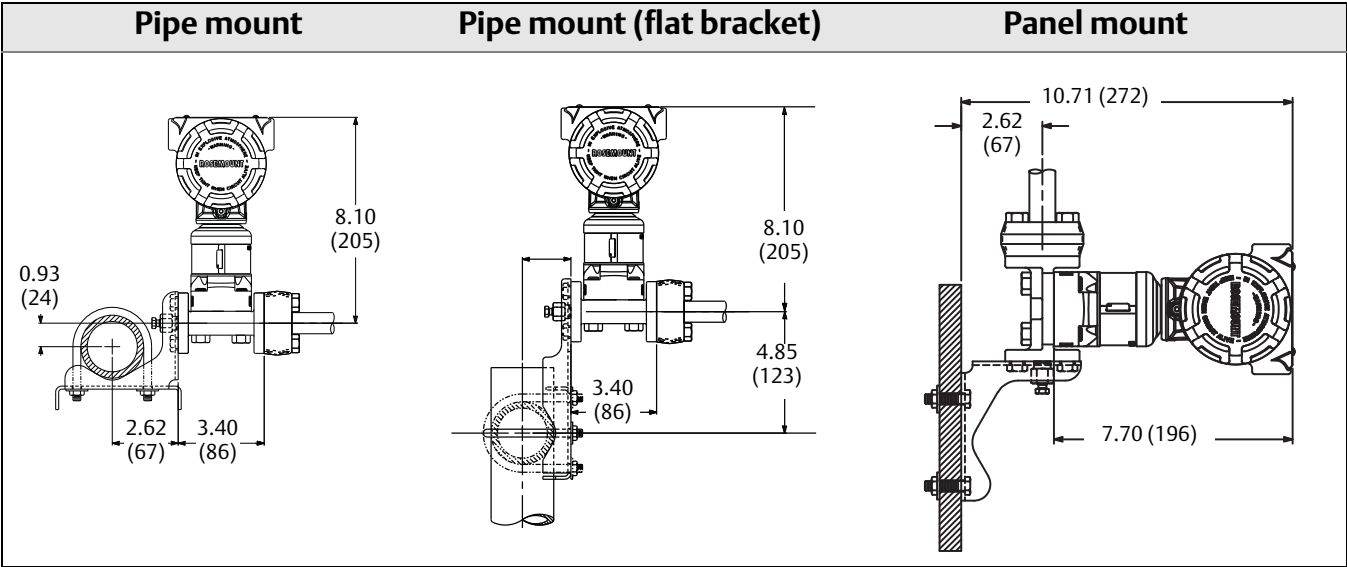
Figure 5. High Gain, Remote Mount Antenna (WN option)

Dimensions are in inches (millimeters).

Figure 6. Coplanar mounting configurations (B4 Bracket)

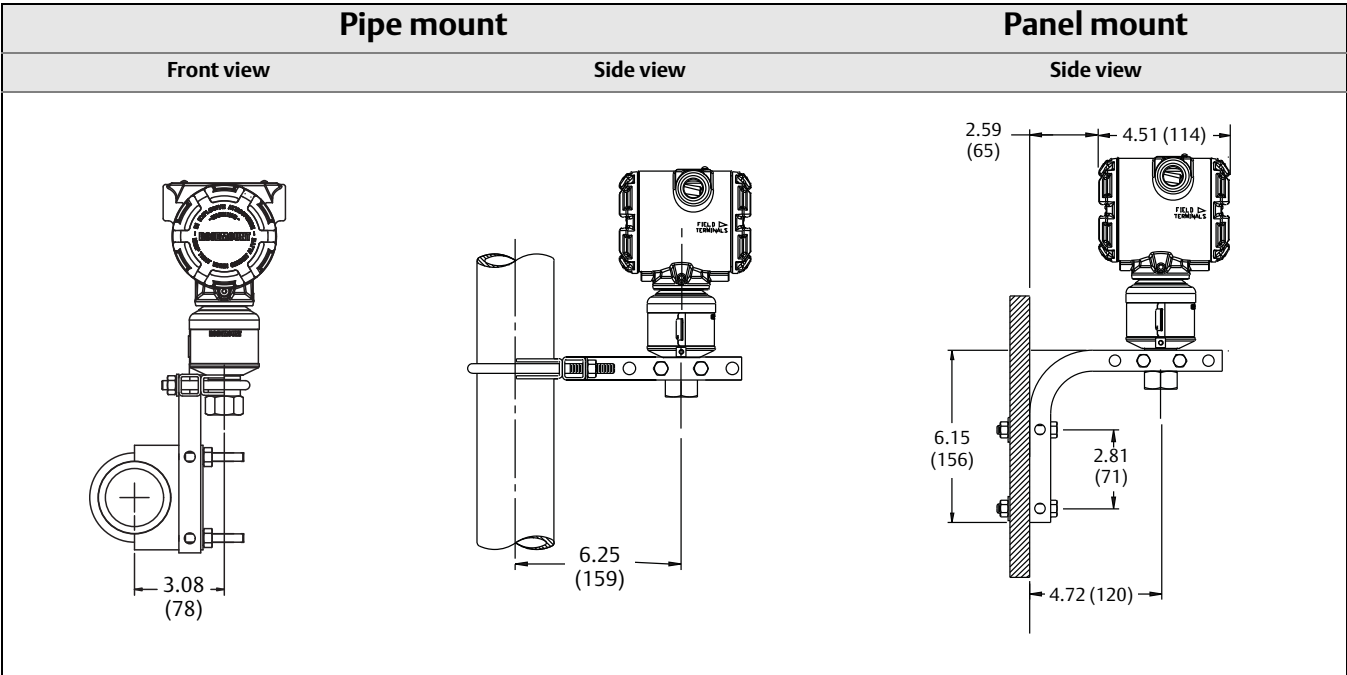
Dimensions are in inches (millimeters).

Figure 7. Traditional mounting configurations

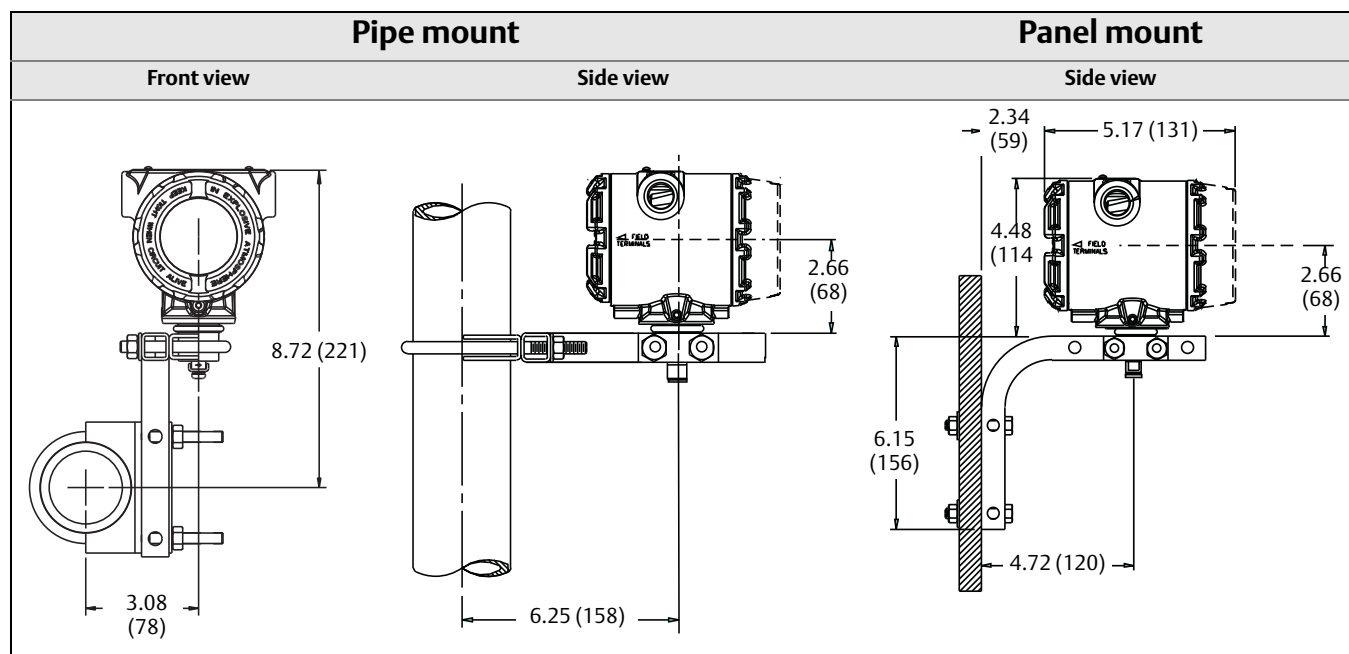


Dimensions are in inches (millimeters).

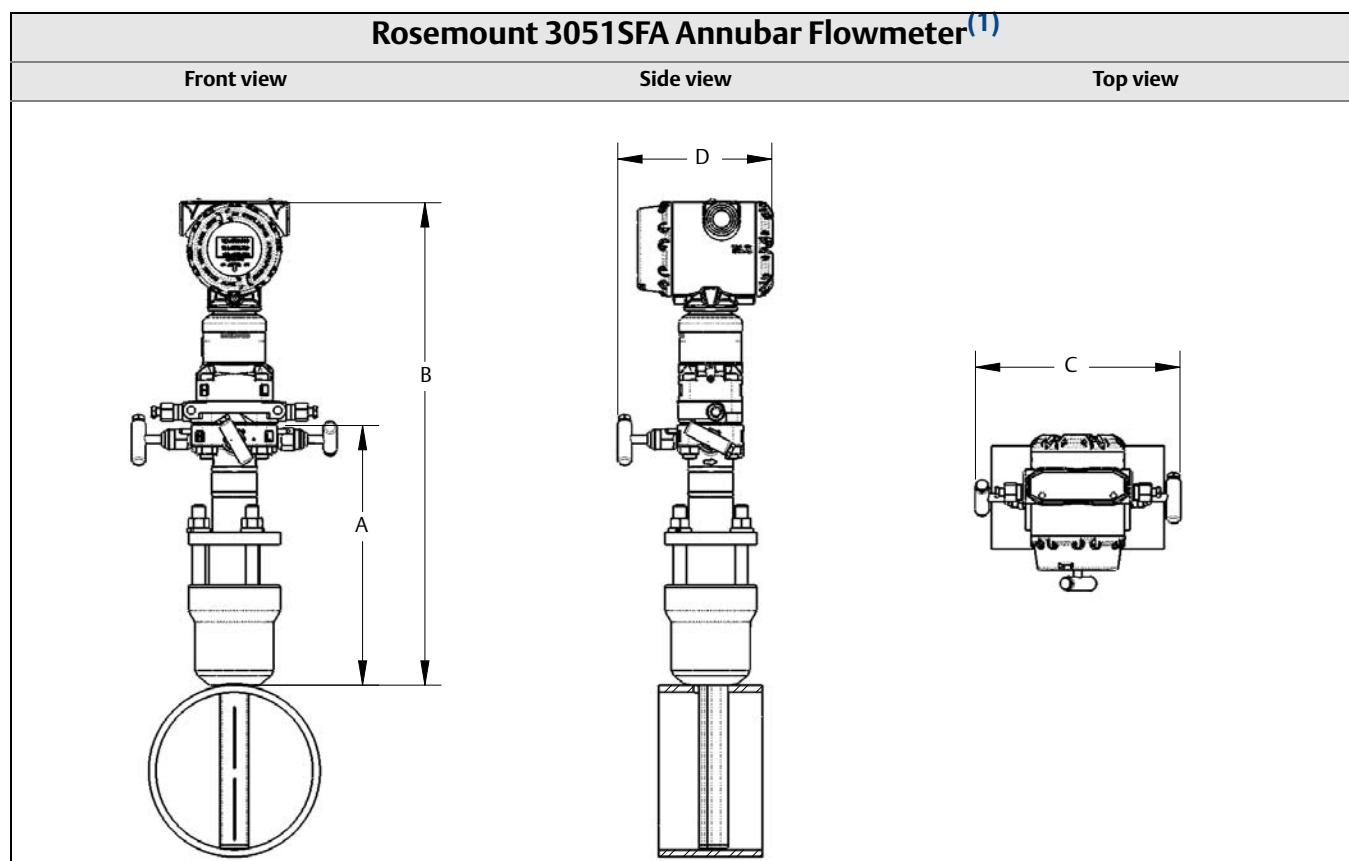
Figure 8. In-line mounting configurations (B4 Bracket)



Dimensions are in inches (millimeters).

Figure 9. Remote display mounting configurations (B4 Bracket)

Dimensions are in inches (millimeters).

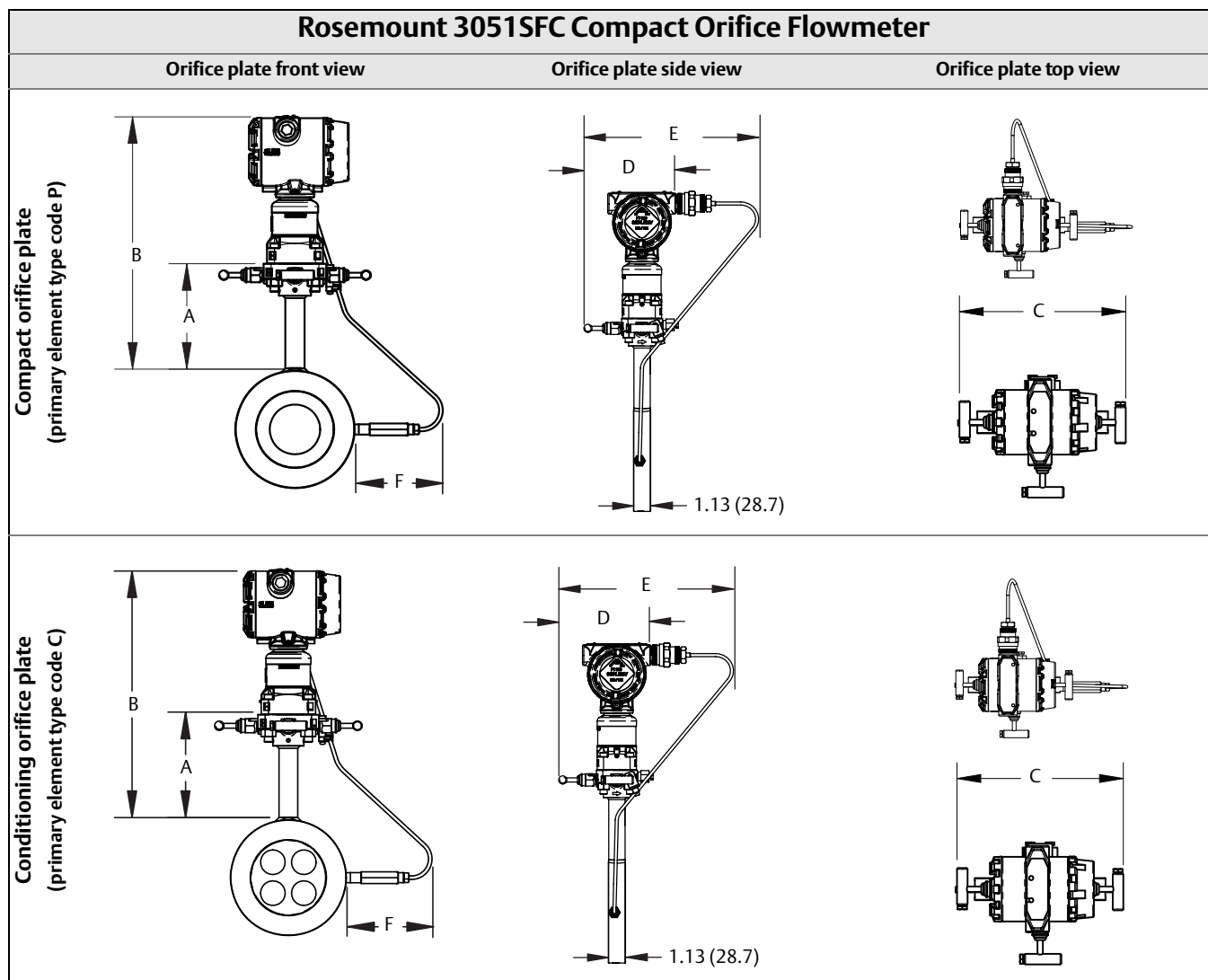
Figure 10. Rosemount 3051SFA Annubar Flowmeter

(1) The Pak-Lok Annubar model is available up to 600# ANSI [1440 psig at 100 °F (99 bar at 38 °C)].

Table 18. 3051CFA Annubar Flowmeter dimensional data

Sensor size	A (Max)	B (Max)	C (Max)	D (Max)
1	8.50(215.9)	17.10 (434.3)	8.66 (220.0)	7.00 (177.8)
2	11.00(279.4)	19.60 (497.8)	8.66 (220.0)	7.00 (177.8)
3	12.00 (304.8)	20.60 (523.2)	8.66 (220.0)	7.00 (177.8)

Dimensions are in inches (millimeters)

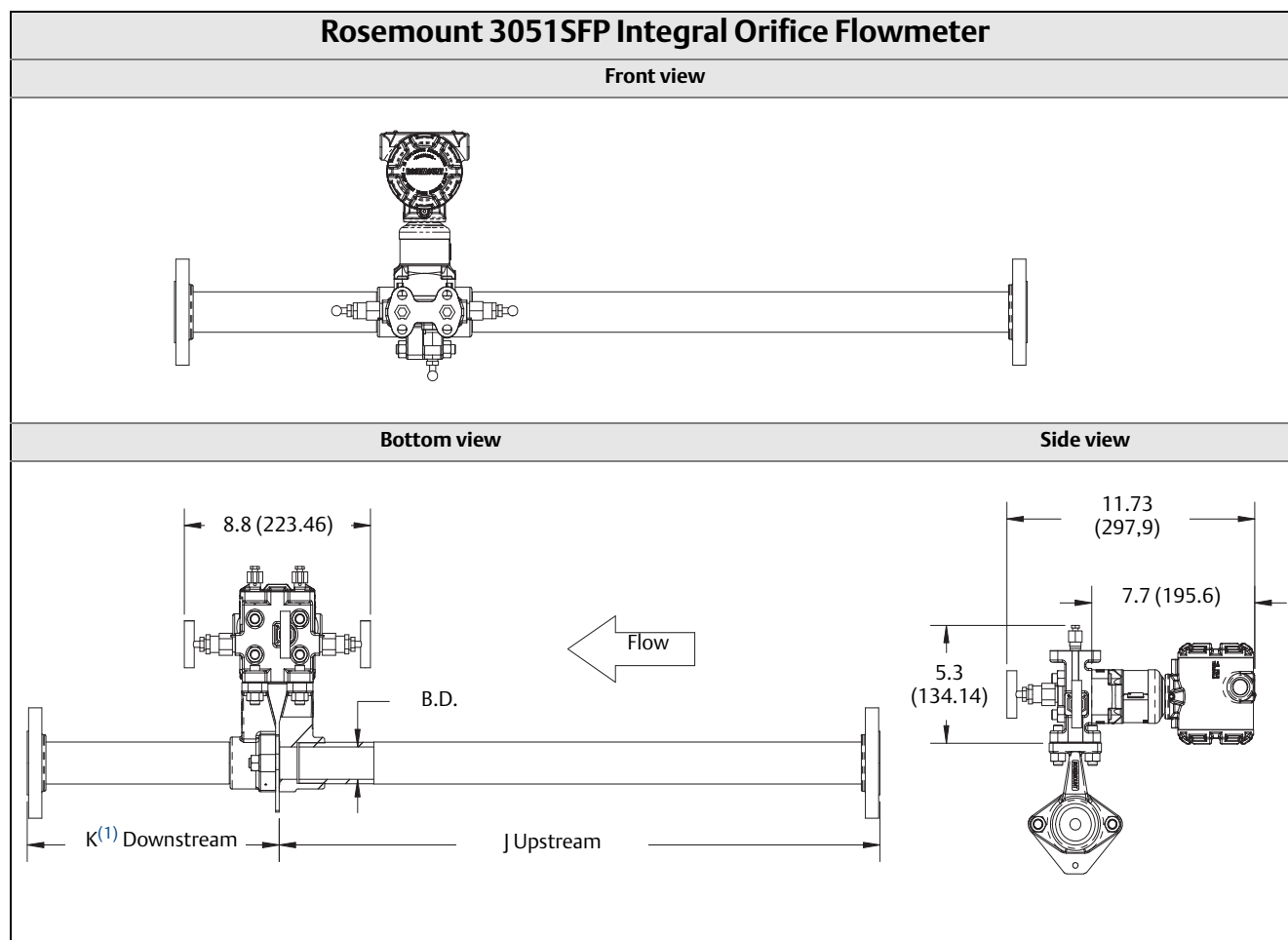
Figure 11. Rosemount 3051SFC Compact Orifice Flowmeter

Dimensions are in inches (millimeters).

Table 19. Dimensional drawings

Primary element type	A	B	Transmitter height	C	D	E	F
Type P and C	5.62 (143)	Transmitter Height + A	7.70 (196)	7.75 (197) - closed 8.25 (210) - open	6.00 (152) - closed 6.25 (159) - open	10.2 (257.8) - closed 10.4 (264.2) - open	Max of 7.2 (184)

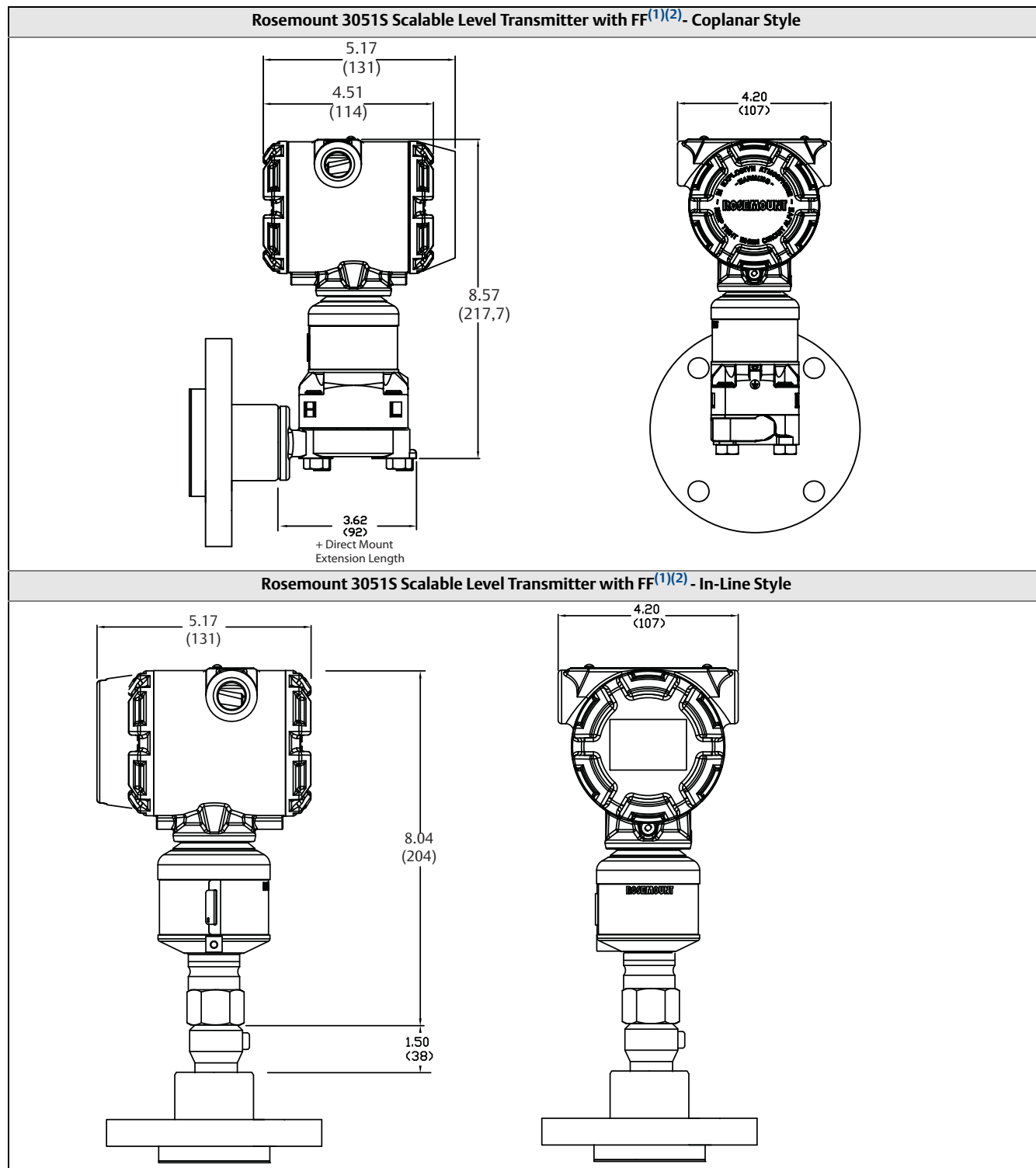
Dimensions are in inches (millimeters).

Figure 12. Rosemount 3051SFP Integral Orifice Flowmeter

Dimensions are in inches (millimeters).

Dimension	Line size		
	1/2-in. (15 mm)	1-in. (25 mm)	1 1/2-in. (40 mm)
J (Beveled/Threaded pipe ends)	12.54 (318.4)	20.24 (514.0)	28.44 (722.4)
J (RF slip-on, RTJ slip-on, RF-DIN slip on)	12.62 (320.4)	20.32 (516.0)	28.52 (724.4)
J (RF 150#, weld neck)	14.37 (364.9)	22.37 (568.1)	30.82 (782.9)
J (RF 300#, weld neck)	14.56 (369.8)	22.63 (574.7)	31.06 (789.0)
J (RF 600#, weld neck)	14.81 (376.0)	22.88 (581.0)	31.38 (797.1)
K (Beveled/Threaded pipe ends)	5.74 (145.7)	8.75 (222.2)	11.91 (302.6)
K (RF slip-on, RTJ slip-on, RF-DIN slip on) ⁽¹⁾	5.82 (147.8)	8.83 (224.2)	11.99 (304.6)
K (RF 150#, weld neck)	7.57 (192.3)	10.88 (276.3)	14.29 (363.1)
K (RF 300#, weld neck)	7.76 (197.1)	11.14 (282.9)	14.53 (369.2)

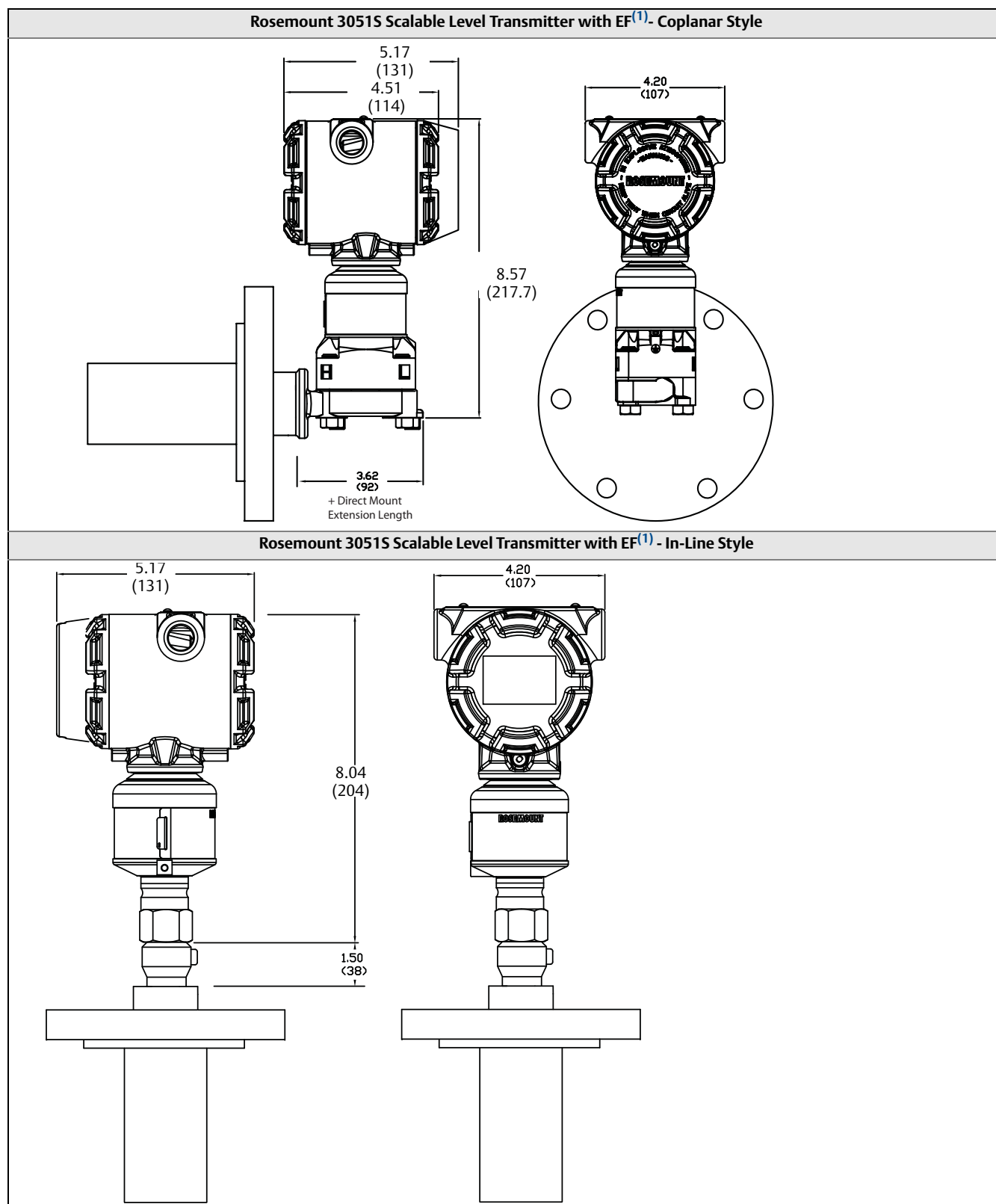
(1) Downstream length shown here includes plate thickness of 0.162-in. (4.11 mm).

Figure 13. Rosemount 3051S Scalable Level Transmitter with FF Seal

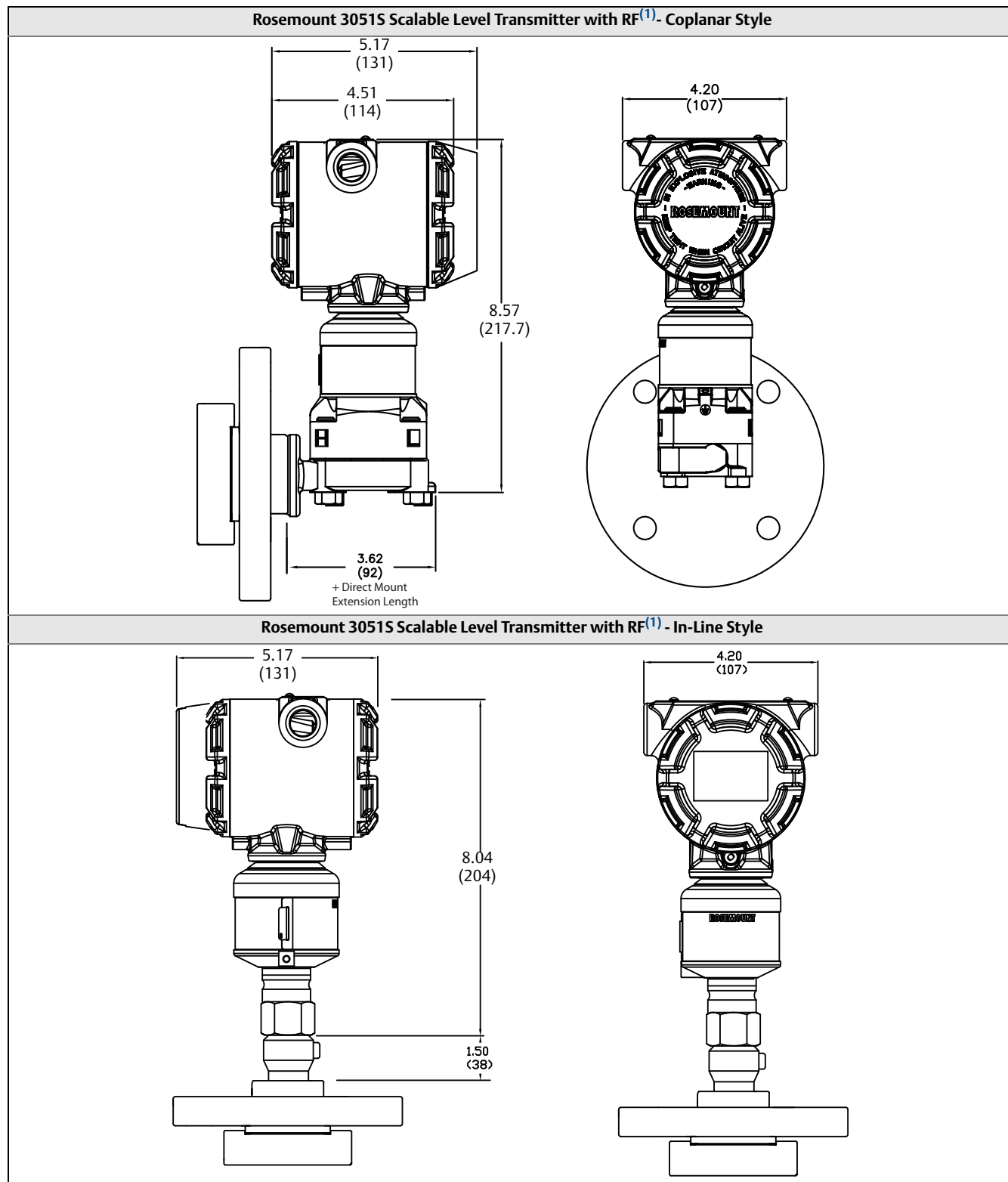
Dimensions are in inches (millimeters).

(1) FF (FFW) seal dimensions and pressure ratings can be found in the Rosemount DP Level Transmitters and 1199 Remote Seals Product Data Sheet, (00813-0100-4016).

(2) Lower housing (flushing ring) is available with FFW style flange.

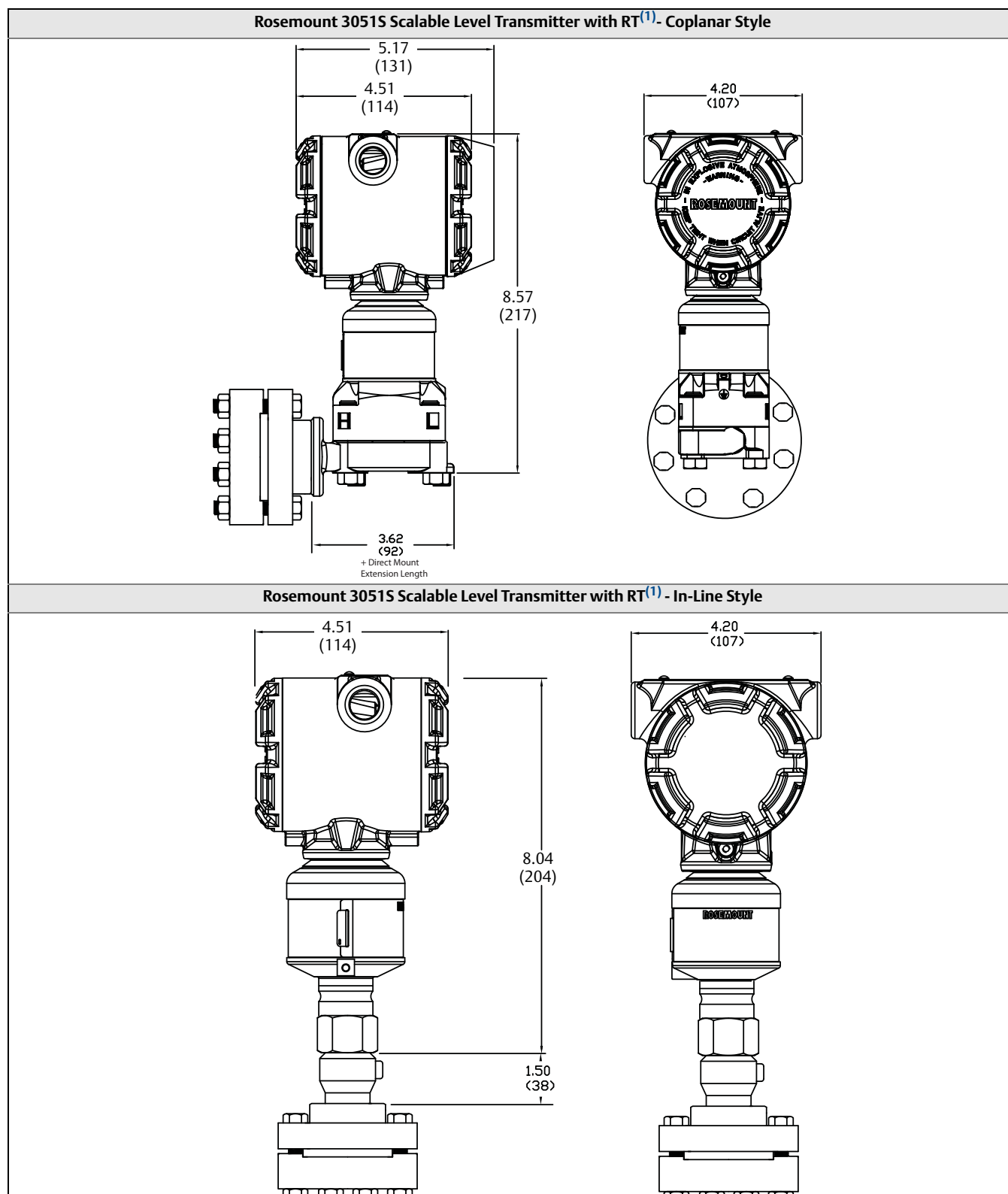
Figure 14. Rosemount 3051S Scalable Level Transmitter with EF Seal

(1) EF (EFW) seal dimensions and pressure ratings can be found in the Rosemount DP Level Transmitters and 1199 Remote Seals Product Data Sheet, (00813-0100-4016).

Figure 15. Rosemount 3051S Scalable Level Transmitter with RF Seal

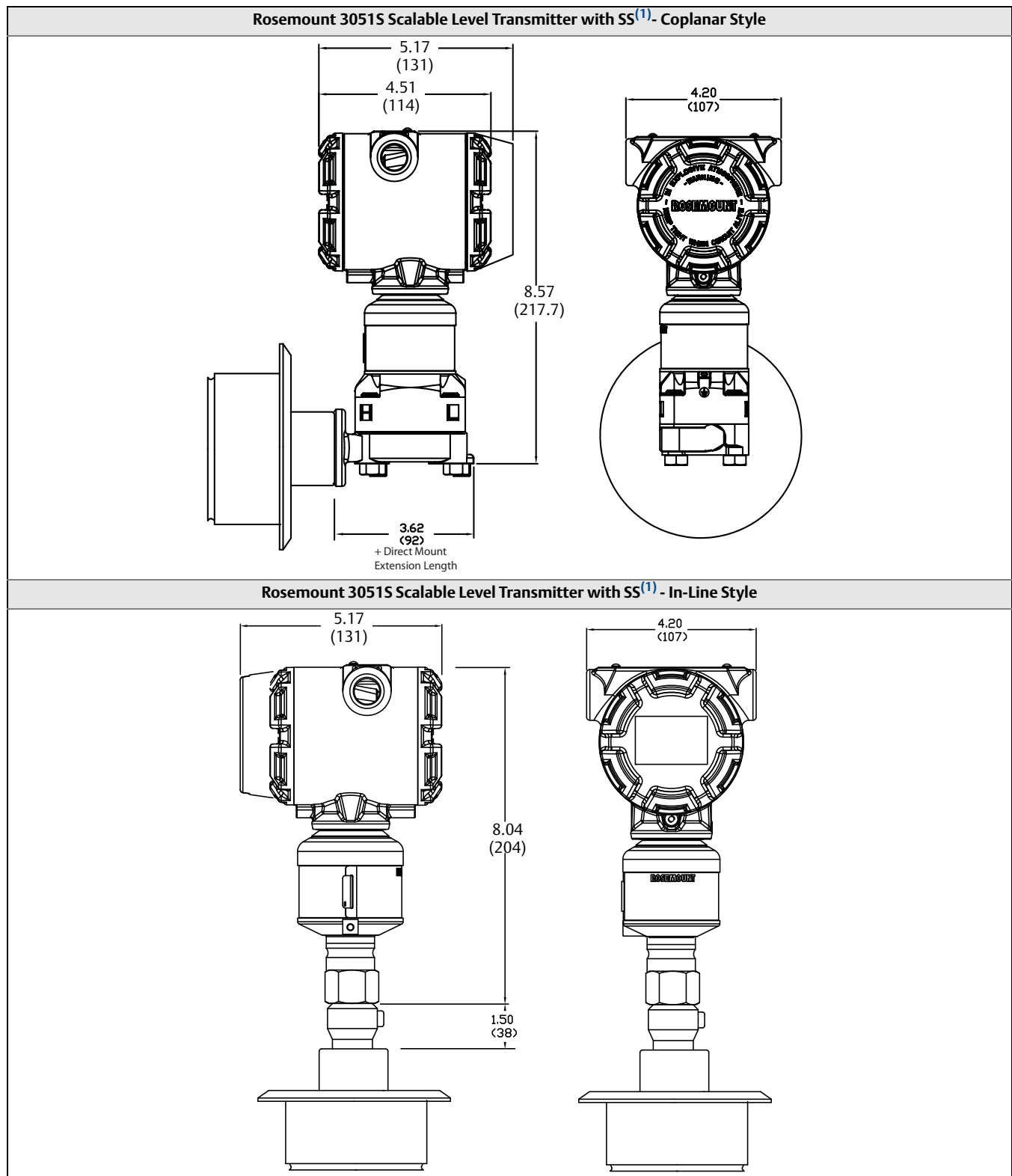
Dimensions are in inches (millimeters).

(1) RF (RFW) seal dimensions and pressure ratings can be found in the Rosemount DP Level Transmitters and 1199 Remote Seals Product Data Sheet, (00813-0100-4016).

Figure 16. Rosemount 3051S Scalable Level Transmitter with RT Seal

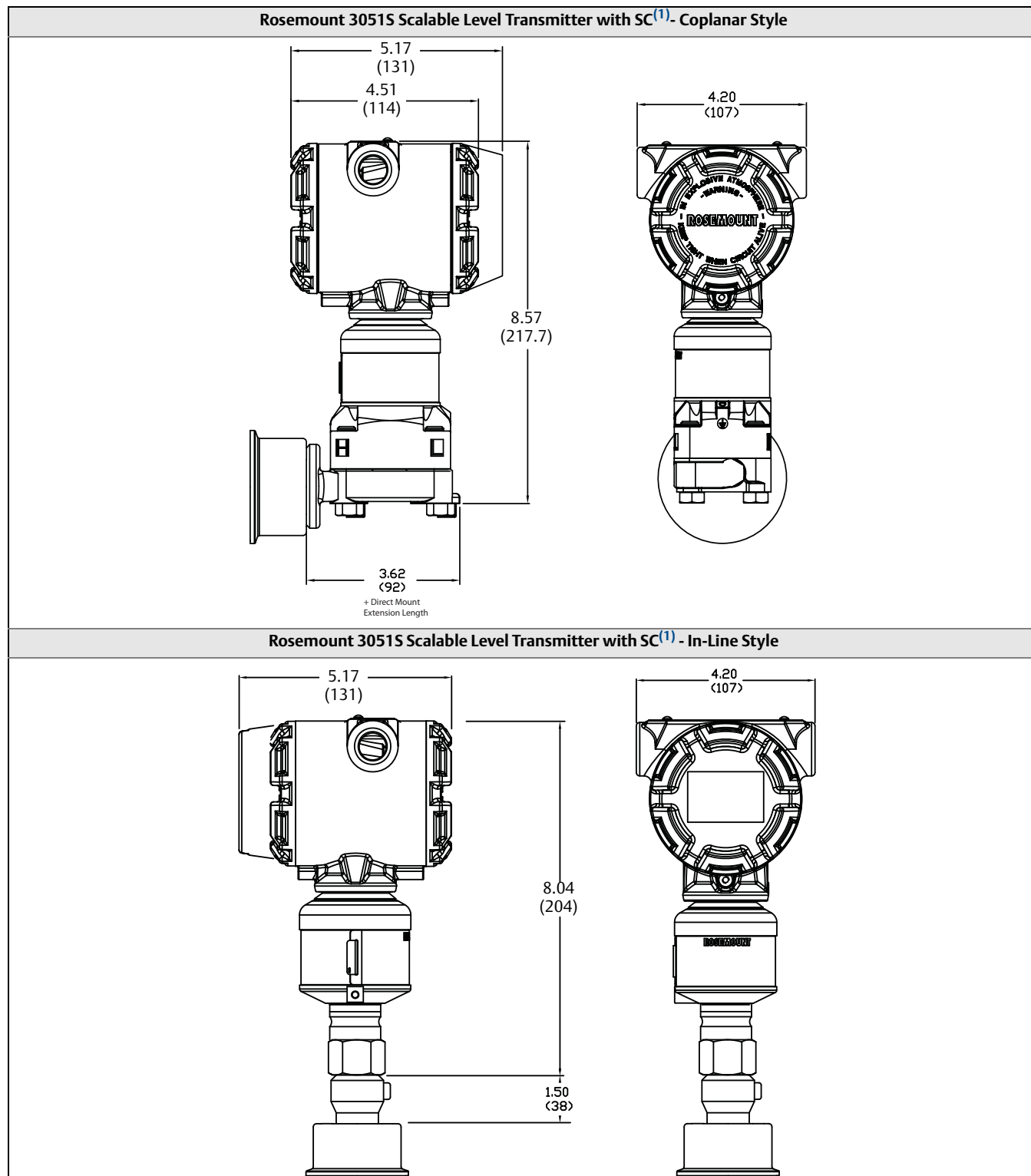
Dimensions are in inches (millimeters).

(1) RT (RTW) seal dimensions can be found in the Rosemount DP Level Transmitters and 1199 Remote Seals Product Data Sheet, (00813-0100-4016).

Figure 17. Rosemount 3051S Scalable Level Transmitter with SS Seal

Dimensions are in inches (millimeters).

(1) SS (SSW) seal dimensions and pressure ratings can be found in the Rosemount DP Level Transmitters and 1199 Remote Seals Product Data Sheet, (00813-0100-4016).

Figure 18. Rosemount 3051S Scalable Level Transmitter with SC Seal

Dimensions are in inches (millimeters).

(1) SC (SCW) seal dimensions and pressure ratings can be found in the Rosemount DP Level Transmitters and 1199 Remote Seals Product Data Sheet, (00813-0100-4016).

Accessories

Rosemount Engineering Assistant (EA) software packages

The Rosemount Engineering Assistant software supports flow configuration for the 3051S MultiVariable and 3051S FOUNDATION fieldbus Fully Compensated Mass Flow Block (H01 option). The package is available with or without modem and connecting cables. All configurations are packaged separately. For best performance of the EA Software, the following computer hardware and software is recommended:

Note

Engineering Assistant version 6.1 or later requires the use of Microsoft®.NET Framework version 2.0 or later. If .NET version 2.0 is not currently installed, the software will be automatically installed during the Engineering Assistant installation. Microsoft.NET version 2.0 requires an additional 200 MB of disk space.

Minimum system requirements for Engineering Assistant 5.5.1 for the 3051S FOUNDATION fieldbus with fully compensated mass flow block (H01 option)

- PC Compatible Pentium 400 or above
- Operating System: Windows XP Professional (32-bit) or Windows Vista (32-bit)
- 256 MB RAM
- 535 MB free hard disk space
- RS232 serial port or USB port (for use with HART modem)
- CD-ROM

Minimum system requirements for Engineering Assistant 6 for the 3051SMV

- Pentium-grade Processor: 500MHz or faster
- Operating System: Microsoft Windows 2000 (32-bit), Windows XP Professional (32-bit), or Windows 7
- 256 MB RAM
- 100 MB of available hard disk space
- RS232 serial port or USB port (for use with HART modem)
- CD-ROM

Engineering Assistant software packages

Code	Product description
EA	Engineering Assistant Software Program
Code	Software media
2	EA Rev. 5 (Compatible with 3095, 3051S FOUNDATION fieldbus, and 333)
3	EA Rev. 6 (Compatible with 3051SMV only)
Code	Language
E	English
Code	Modem and connecting cables
0	None
H	Serial Port HART Modem and Cables
B	USB Port HART Modem and Cables
C	FOUNDATION fieldbus PCM-CIA Interface Card and Cables
Code	License
N1	Single PC license
N2	Site license
Typical model number: EA 2 E 0 N1	

Accessories

Item description	Part number
Serial Port HART Modem and Cables Only	03095-5105-0001
USB Port HART Modem and Cables Only ⁽¹⁾	03095-5105-0002
FOUNDATION fieldbus PCM-CIA Interface Card and Cables Only	03095-5108-0001
Long-life Power Module for Wireless option	701PBKKF

(1) Supported by Snap-On EA with AMS Device Manager version 6.2 or higher.

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) 906 8889
www.rosemount.com

**Emerson Process Management
Latin America**

1300 Concord Terrace, Suite 400
Sunrise Florida 33323 USA
Tel + 1 954 846 5030

**Emerson Process Management Asia
Pacific Pte Ltd**

1 Pandan Crescent
Singapore 128461
Tel +65 6777 8211
Fax +65 6777 0947
Service Support Hotline : +65 6770 8711
Email : Enquiries@AP.EmersonProcess.com

Emerson Process Management

Blegistrasse 23
P.O. Box 1046
CH 6341 Baar
Switzerland
Tel +41 (0) 41 768 6111
Fax +41 (0) 41 768 6300

Emerson FZE

P.O. Box 17033
Jebel Ali Free Zone
Dubai UAE
Tel +971 4 811 8100
Fax +971 4 886 5465

Standard Terms and Conditions of Sale can be found at www.rosemount.com/terms_of_sale

The Emerson logo is a trade mark and service mark of Emerson Electric Co.

Rosemount and the Rosemount logotype are registered trademarks of Rosemount Inc.

PlantWeb is a registered trademark of one of the Emerson Process Management group of companies.

HART and WirelessHART are registered trademarks of the HART Communication Foundation

All other marks are the property of their respective owners.

© 2014 Rosemount Inc. All rights reserved.



ROSEMOUNT


EMERSON
Process Management