

# Rosemount 3051S Series of Instrumentation Scalable Pressure, Flow, and Level Solutions

- *3051S Series delivers highest field performance and reliability*
- *SuperModule® Platform provides a foundation for integrated pressure, flow, and level solutions*
- *IEC 62591 (WirelessHART™) Protocol enables cost effective installations*
- *MultiVariable™ technology enables fully compensated mass and energy flow*
- *Advanced Diagnostics provides coverage from the process to the host system*
- *Innovative DP Flowmeters integrate a primary element and transmitter into a single device*
- *Electronic Remote Sensors and Tuned-System™ Assemblies provide cost efficient, optimized level measurement*



WirelessHART

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# Rosemount 3051S Series

## Achieve More with Rosemount 3051S Series of Instrumentation



### The Foundation for Pressure, Flow, and Level Measurement

- SuperModule® Platform delivers the highest field reliability with all-welded hermetic SST design
- Ultra and Ultra for Flow provide industry leading performance, 10-year stability, and a 12-year limited warranty
- Simplify compliance with IEC 61508 safety certification



### The World's Only Scalable Platform

- Optimize performance, functionality, and process connections for your application
- MultiVariable, Advanced Diagnostics, Wireless, Electronic Remote Sensors, and enhanced FOUNDATION™ fieldbus capabilities enable better plant performance
- Seamless integration of flanges, manifolds, remote mount seals, and flow elements



### Industry Leading Capabilities Extended To IEC 62591 (WirelessHART)

- Cost effectively implement wireless on the proven SuperModule platform
- Realize a decade of virtually maintenance-free performance
- Optimize safety with the industry's only intrinsically safe Power Module
- Implement wireless using existing tools and practices
- Installation-ready integrated wireless pressure, flow, and level solutions



### Advanced Diagnostics Provides Coverage from the Process to the Host

- Proactively monitor for loop wiring and power supply issues
- Predict and prevent abnormal process conditions
- Log process characteristics and device health
- Extend diagnostic coverage to Safety Instrumented Systems

## Product Data Sheet

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### Advanced MultiVariable Technology

- Dynamically calculate mass or volumetric, energy, and totalized flow through real time compensation of over 25 variables
- Customize the level of compensation with the scalable platform
- Easily configure flow and device parameters with Engineering Assistant™ software.
- Achieve up to  $\pm 0.65\%$  flow accuracy over a 14:1 flow turndown



### Innovative, Integrated DP Flowmeters

- Fully assembled and leak tested for out-of-the-box installation
- Lower installed costs by replacing 10 devices with one integrated flowmeter
- Reduce straight pipe requirements, lower permanent pressure loss, and achieve accurate measurement in small line sizes
- Measure up to 14:1 flow turndown with % of reading performance



### Proven, Reliable, and Innovative DP Level Technologies

- Connect to virtually any process with a comprehensive offering of process connections, fill fluids, direct mount or capillary connections, and materials
- Quantify and optimize total system performance with QZ option
- Achieve success on tall vessels and distillation towers with Electronic Remote Sensor digital architecture
- Optimize level measurement with cost efficient Tuned-System Assemblies



### Instrument Manifolds – Quality, Convenient, and Easy

- Designed and engineered for optimal performance with Rosemount transmitters
- Save installation time and money with factory assembled manifolds
- Offers a variety of styles, materials, and configurations
- Enable “flange-less” valve integration with Coplanar™ design



# Rosemount 3051S Series

## Rosemount 3051S Scalable Coplanar Pressure Transmitter



3051S Scalable Coplanar Pressure Transmitter

Rosemount 3051S Scalable 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
- HART/4-20 mA, 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

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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			
<b>Performance Class</b>				
<b>Standard</b>				<b>Standard</b>
1	Ultra: 0.025 percent span accuracy, 200:1 rangedown, 10-yr stability, 12-yr limited warranty			★
3 <sup>(1)</sup>	Ultra for Flow: 0.04 percent reading accuracy, 200:1 turndown, 10-yr stability, 12-yr ltd warranty			★
2	Classic: 0.055 percent span accuracy, 100:1 rangedown, 5-yr stability			★
<b>Connection Type</b>				
<b>Standard</b>				<b>Standard</b>
C	Coplanar			★
<b>Measurement Type<sup>(2)</sup></b>				
<b>Standard</b>				<b>Standard</b>
D	Differential			★
G	Gage			★
<b>Expanded</b>				
A	Absolute			
<b>Pressure Range</b>				
	<b>Differential</b>	<b>Gage</b>	<b>Absolute</b>	
<b>Standard</b>				<b>Standard</b>
1A	-25 to 25 inH <sub>2</sub> O (-62,2 to 62,2 mbar)	-25 to 25 inH <sub>2</sub> O (-62,2 to 62,2 mbar)	0 to 30 psia (0 to 2,06 bar)	★
2A	-250 to 250 inH <sub>2</sub> O (-623 to 623 mbar)	-250 to 250 inH <sub>2</sub> O (-623 to 623 mbar)	0 to 150 psia (0 to 10,34 bar)	★
3A	-1000 to 1000 inH <sub>2</sub> O (-2,5 to 2,5 bar)	-393 to 1000 inH <sub>2</sub> 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 21 bar)	0 to 4000 psia (0 to 275,8 bar)	★
5A	-2000 to 2000 psi (-137,9 to 137,9 bar)	-14.2 to 2000 psig (-0,98 to 137,9 bar)	N/A	★
<b>Expanded</b>				
0A <sup>(3)</sup>	-3 to 3 inH <sub>2</sub> O (-7,47 to 7,47 mbar)	N/A	0 to 5 psia (0 to 0,34 bar)	
<b>Isolating Diaphragm</b>				
<b>Standard</b>				<b>Standard</b>
2 <sup>(4)</sup>	316L SST			★
3 <sup>(4)</sup>	Alloy C-276			★
<b>Expanded</b>				
4	Alloy 400			
5 <sup>(5)</sup>	Tantalum			
6	Gold-Plated Alloy 400 (includes Graphite-Filled PTFE o-ring)			
7	Gold-plated 316L SST			

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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.

Process Connection		Size	Materials of Construction			
			Flange Material	Drain Vent	Bolting	
<b>Standard</b>						<b>Standard</b>
000	None					★
A11 <sup>(6)</sup>	Assemble to Rosemount 305 Integral Manifold					★
A12 <sup>(6)</sup>	Assemble to Rosemount 304 or AMF Manifold and SST traditional flange					★
B11 <sup>(6)(7)(8)</sup>	Assemble to one Rosemount 1199 Seal		SST			★
B12 <sup>(6)(7)(8)</sup>	Assemble to two Rosemount 1199 Seals		SST			★
C11 <sup>(6)</sup>	Assemble to Rosemount 405 Primary Element					★
D11 <sup>(6)</sup>	Assemble to Rosemount 1195 integral orifice and Rosemount 305 Integral Manifold					★
EA2 <sup>(6)</sup>	Assemble to Rosemount Annubar <sup>®</sup> Primary Element with Coplanar flange		SST	316 SST		★
EA3 <sup>(6)</sup>	Assemble to Rosemount Annubar Primary Element with Coplanar flange		Cast C-276	Alloy C-276		★
EA5 <sup>(6)</sup>	Assemble to Rosemount 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 <sup>(4)</sup>	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 <sup>(4)</sup>	Coplanar flange	1/4-18 NPT	SST	Alloy C-276		★
E16 <sup>(4)</sup>	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 <sup>(4)</sup>	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 <sup>(4)</sup>	Coplanar flange	RC 1/4	SST	Alloy C-276		★
E26 <sup>(4)</sup>	Coplanar flange	RC 1/4	CS	Alloy C-276		★
F12	Traditional flange	1/4-18 NPT	SST	316 SST		★
F13 <sup>(4)</sup>	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 <sup>(4)</sup>	Traditional flange	1/4-18 NPT	SST	Alloy C-276		★
F22	Traditional flange	RC 1/4	SST	316 SST		★
F23 <sup>(4)</sup>	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 <sup>(4)</sup>	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	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		★
<b>Expanded</b>						
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	
<b>Transmitter Output</b>						
<b>Standard</b>						<b>Standard</b>
A	4-20 mA with digital signal based on HART <sup>®</sup> protocol					★
F <sup>(9)</sup>	FOUNDATION <sup>™</sup> fieldbus protocol					★
X <sup>(10)</sup>	Wireless (Requires wireless options and wireless PlantWeb housing)					★

# Rosemount 3051S Series

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.

Housing Style		Material	Conduit Entry Size	
<b>Standard</b>				<b>Standard</b>
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 <sup>(11)</sup>	Wireless PlantWeb housing	Aluminum	1/2-14 NPT	★
5J <sup>(11)</sup>	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 <sup>(12)</sup>	Quick Connect (A size Mini, 4-pin male termination)	SST		★
<b>Expanded</b>				
1C	PlantWeb housing	Aluminum	G <sup>1</sup> / <sub>2</sub>	
1L	PlantWeb housing	SST	G <sup>1</sup> / <sub>2</sub>	
2C	Junction Box housing	Aluminum	G <sup>1</sup> / <sub>2</sub>	
2G	Junction Box Housing with output for remote display and interface	Aluminum	G <sup>1</sup> / <sub>2</sub>	

## Wireless Options (Requires option code X and wireless PlantWeb housing)

<b>Update Rate</b>				
<b>Standard</b>				<b>Standard</b>
WA	User Configurable Update Rate			★
<b>Operating Frequency and Protocol</b>				
<b>Standard</b>				<b>Standard</b>
3	2.4 GHz DSSS, IEC 62591 (WirelessHART)			★
<b>Omnidirectional Wireless Antenna</b>				
<b>Standard</b>				<b>Standard</b>
WK	External Antenna			★
WM	Extended Range, External Antenna			★
<b>Expanded</b>				
WN	High-Gain, Remote Antenna			
<b>SmartPower™</b>				
<b>Standard</b>				<b>Standard</b>
1 <sup>(13)</sup>	Adapter for Black Power Module (I.S. Power Module Sold Separately)			★

## Other Options (Include with selected model number)

<b>PlantWeb Control Functionality</b>				
<b>Standard</b>				<b>Standard</b>
A01 <sup>(14)</sup>	FOUNDATION fieldbus Advanced Control Function Block Suite			★
<b>PlantWeb Diagnostic Functionality</b>				
<b>Standard</b>				<b>Standard</b>
D01 <sup>(14)</sup>	FOUNDATION fieldbus Diagnostics Suite			★
DA2 <sup>(14)(15)</sup>	Advanced HART Diagnostics Suite			★
<b>PlantWeb Enhanced Measurement Functionality</b>				
<b>Standard</b>				<b>Standard</b>
H01 <sup>(14)(16)</sup>	FOUNDATION fieldbus Fully Compensated Mass Flow Block			★
<b>Mounting Bracket<sup>(17)</sup></b>				
<b>Standard</b>				<b>Standard</b>
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			★

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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	★
<b>Software Configuration</b>		
<b>Standard</b>		<b>Standard</b>
C1 <sup>(18)</sup>	Custom software configuration (Requires Configuration Data Sheet)	★
C2	Custom flow configuration (Requires H01 and Configuration Data Sheet)	★
<b>Gage Pressure Calibration</b>		
<b>Standard</b>		<b>Standard</b>
C3	Gage pressure calibration on Rosemount 3051S_CA4 only	★
<b>Alarm Limit</b>		
<b>Standard</b>		<b>Standard</b>
C4 <sup>(14)(18)</sup>	NAMUR alarm and saturation levels, high alarm	★
C5 <sup>(14)(18)</sup>	NAMUR alarm and saturation levels, low alarm	★
C6 <sup>(14)(18)</sup>	Custom alarm and saturation signal levels, high alarm (Requires C1 and Configuration Data Sheet)	★
C7 <sup>(14)(18)</sup>	Custom alarm and saturation signal levels, low alarm (Requires C1 and Configuration Data Sheet)	★
C8 <sup>(14)(18)</sup>	Low alarm (standard Rosemount alarm and saturation levels)	★
<b>Hardware Adjustments</b>		
<b>Standard</b>		<b>Standard</b>
D1 <sup>(14)(18)(19)</sup>	Hardware adjustments (zero, span, alarm, security)	★
<b>Flange Adapter</b>		
<b>Standard</b>		<b>Standard</b>
D2 <sup>(17)</sup>	1/2-14 NPT flange adapter	★
<b>Expanded</b>		
D9 <sup>(17)</sup>	RC 1/2 SST flange adapter	
<b>Custody Transfer</b>		
<b>Standard</b>		<b>Standard</b>
D3 <sup>(20)</sup>	Measurement Canada Accuracy Approval	★
<b>Ground Screw</b>		
<b>Standard</b>		<b>Standard</b>
D4	External ground screw assembly	★
<b>Drain/Vent Valve</b>		
<b>Standard</b>		<b>Standard</b>
D5 <sup>(17)</sup>	Delete transmitter drain/vent valves (install plugs)	★
<b>Expanded</b>		
D7 <sup>(17)</sup>	SST Coplanar flange without drain/vent ports	
<b>Conduit Plug</b>		
<b>Standard</b>		<b>Standard</b>
DO <sup>(21)</sup>	316 SST Conduit Plug	★
<b>Product Certifications<sup>(22)</sup></b>		
<b>Standard</b>		<b>Standard</b>
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 <sup>(11)</sup>	TIIS Intrinsic Safety	★
E5	FM Explosion-proof, Dust Ignition-proof	★
I5	FM Intrinsically Safe, Division 2	★
IE	FM FISCO Intrinsically Safe (FOUNDATION™ fieldbus protocol only)	★
K5	FM Explosion-proof, Dust Ignition-proof, Intrinsically Safe, Division 2	★

# Rosemount 3051S Series

Table 1. Rosemount 3051S Scalable Coplanar Pressure Transmitter Ordering Information

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E6 <sup>(23)</sup>	CSA Explosion-proof, Dust Ignition-proof, Division 2	★
I6	CSA Intrinsically Safe	★
IF	CSA FISCO Intrinsically Safe (FOUNDATION™ fieldbus protocol only)	★
K6 <sup>(23)</sup>	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	★
K2	INMETRO Flameproof, Intrinsic Safety	★
E3	China Flameproof	★
I3	China Intrinsic Safety	★
N3	China Type n	★
KA <sup>(23)</sup>	ATEX and CSA Flameproof, Intrinsically Safe, Division 2	★
KB <sup>(23)</sup>	FM and CSA Explosion-proof, Dust Ignition-proof, Intrinsically Safe, Division 2	★
KC	FM and ATEX Explosion-proof, Intrinsically Safe, Division 2	★
KD <sup>(23)</sup>	FM, CSA, and ATEX Explosion-proof, Intrinsically Safe	★
<b>Shipboard Approvals</b>		
<b>Standard</b>		<b>Standard</b>
SBS	American Bureau of Shipping	★
<b>Sensor Fill Fluid</b>		
<b>Standard</b>		<b>Standard</b>
L1 <sup>(24)</sup>	Inert sensor fill fluid	★
<b>O-ring</b>		
<b>Standard</b>		<b>Standard</b>
L2	Graphite-filled PTFE o-ring	★
<b>Bolting Material</b>		
<b>Standard</b>		<b>Standard</b>
L4 <sup>(17)</sup>	Austenitic 316 SST bolts	★
L5 <sup>(4)(17)</sup>	ASTM A 193, Grade B7M bolts	★
L6 <sup>(17)</sup>	Alloy K-500 bolts	★
L7 <sup>(4)(17)</sup>	ASTM A453, Class D, Grade 660 bolts	★
L8 <sup>(17)</sup>	ASTM A193, Class 2, Grade B8M bolts	★
<b>Display Type<sup>(25)</sup></b>		
<b>Standard</b>		<b>Standard</b>
M5	PlantWeb LCD Display	★
M7 <sup>(14)(26)(27)</sup>	Remote mount LCD display and interface, PlantWeb housing, no cable, SST bracket	★
M8 <sup>(14)(26)</sup>	Remote mount LCD display and interface, PlantWeb housing, 50 ft. (15 m) cable, SST bracket	★
M9 <sup>(14)(26)</sup>	Remote mount LCD display and interface, PlantWeb housing, 100 ft. (31 m) cable, SST bracket	★
<b>Pressure Testing</b>		
<b>Expanded</b>		
P1 <sup>(28)</sup>	Hydrostatic testing with certificate	
<b>Special Cleaning</b>		
<b>Expanded</b>		
P2 <sup>(17)</sup>	Cleaning for special services	
P3 <sup>(17)</sup>	Cleaning for less than 1PPM chlorine/fluorine	
<b>Maximum Static Line Pressure</b>		
<b>Standard</b>		<b>Standard</b>
P9	4500 psig (310 bar) static pressure limit (Rosemount 3051S_CD only)	★
P0 <sup>(29)</sup>	6092 psig (420 bar) static pressure limit (Rosemount 3051S2CD only)	★
<b>Calibration Certification</b>		
<b>Standard</b>		<b>Standard</b>
Q4	Calibration certificate	★
QP	Calibration certificate and tamper evident seal	★



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Table 1. Rosemount 3051S Scalable Coplanar Pressure Transmitter Ordering Information

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Material Traceability Certification		
<b>Standard</b>		<b>Standard</b>
Q8	Material traceability certification per EN 10204 3.1	★
Quality Certification for Safety		
<b>Standard</b>		<b>Standard</b>
QS <sup>(14)(18)</sup>	Prior-use certificate of FMEDA Data	★
QT <sup>(30)</sup>	Safety-certified to IEC 61508 with certificate of FMEDA data	★
Transient Protection		
<b>Standard</b>		<b>Standard</b>
T1 <sup>(31)(32)</sup>	Transient terminal block	★
Drinking Water Approval		
<b>Standard</b>		<b>Standard</b>
DW <sup>(33)</sup>	NSF Drinking Water Approval	★
Surface Finish Certification		
<b>Standard</b>		<b>Standard</b>
Q16	Surface finish certification for sanitary remote seals	★
Toolkit Total System Performance Reports		
<b>Standard</b>		<b>Standard</b>
QZ	Remote Seal System Performance Calculation Report	★
Conduit Electrical Connector		
<b>Standard</b>		<b>Standard</b>
GE <sup>(34)</sup>	M12, 4-pin, Male Connector (eurofast <sup>®</sup> )	★
GM <sup>(34)</sup>	A size Mini, 4-pin, Male Connector (minifast <sup>®</sup> )	★
<b>Typical Model Number: 3051S1CD 2A 2 E12 A 1A DA2 B4 M5</b>		

- (1) This option is only available with range codes 2A and 3A, 316L SST or Alloy C-276 isolating diaphragm and silicone fill fluid.
- (2) Performance Class code 3 is available with Measurement Type code D only.
- (3) 3051S\_CD0 is only available with traditional flange, 316L SST diaphragm material, and Bolting option L4.
- (4) 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.
- (5) Tantalum diaphragm material is only available for ranges 2A - 5A, differential and gage.
- (6) "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.
- (7) Consult an Emerson Process Management representative for performance specifications.
- (8) Not available with performance class code 3.
- (9) Requires PlantWeb housing.
- (10) Available approvals are FM Intrinsically Safe, Division 2 (option code I5), CSA Intrinsically Safe (option code I6), ATEX Intrinsic Safety (option code I1), and IECEx Intrinsic Safety (option code I7).
- (11) Only available with output code X.
- (12) Available with output code A only. Available approvals are FM Intrinsically Safe, Division 2 (option code I5), ATEX Intrinsic Safety (option code I1), or IECEx Intrinsic Safety (option code I7). Contact an Emerson Process Management representative for additional information.
- (13) Long-Life Power Module must be shipped separately, order Part #00753-9220-0001.
- (14) Not available with output code X.
- (15) Requires PlantWeb housing and output code A. Includes Hardware Adjustments as standard.
- (16) Requires Rosemount Engineering Assistant to configure.
- (17) Not available with process connection option code A11.
- (18) Not available with output code F.
- (19) Not available with housing style codes 00, 2E, 2F, 2G, 2M, 5A, 5J, or 7J.
- (20) 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.
- (21) Transmitter is shipped with 316 SST conduit plug (uninstalled) in place of standard carbon steel conduit plug.

# Rosemount 3051S Series

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- (22) Valid when SuperModule Platform and housing have equivalent approvals.
- (23) Not available with M20 or G ½ conduit entry size.
- (24) Only available on differential and gage measurement types. Silicone fill fluid is standard.
- (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) P1 is not available with 3051S\_CA0.
- (29) 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.
- (30) Not available with output code F or X. Not available with housing code 7J.
- (31) Not available with Housing code 00, 5A, 5J, or 7J.
- (32) The T1 option is not needed with FISCO Product Certifications; transient protection is included in the FISCO product certification codes IA, IE, IF, and IG.
- (33) Requires 316L SST diaphragm material, glass-filled PTFE O-ring (standard), and Process Connection code E12 or F12.
- (34) Not available with Housing code 00, 5A, 5J, or 7J. Available with Intrinsically Safe approvals only. For FM Intrinsically Safe, Division 2 (option code I5) or FM FISCO Intrinsically Safe (option code IE), install in accordance with Rosemount drawing 03151-1009 to maintain outdoor rating (NEMA 4X and IP66).

## Rosemount 3051S Scalable In-Line Pressure Transmitter



**3051S Scalable In-Line Pressure Transmitter**

Rosemount 3051S Scalable 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
- HART/4-20 mA, 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

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Certifications: page 86

Dimensional Drawings: page 100

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		
<b>Performance Class</b>			
<b>Standard</b>			<b>Standard</b>
1	Ultra: 0.025 percent span accuracy, 200:1 rangedown, 10-yr stability, 12-yr limited warranty		★
2	Classic: 0.055 percent span accuracy, 100:1 rangedown, 5-yr stability		★
<b>Connection Type</b>			
<b>Standard</b>			<b>Standard</b>
T	In-Line		★
<b>Measurement Type</b>			
<b>Standard</b>			<b>Standard</b>
G	Gage		★
A	Absolute		★
<b>Pressure Range</b>			
	<b>Gage</b>	<b>Absolute</b>	
<b>Standard</b>			<b>Standard</b>
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)	★
<b>Isolating Diaphragm</b>			
<b>Standard</b>			<b>Standard</b>
2 <sup>(1)</sup>	316L SST		★
3 <sup>(1)</sup>	Alloy C-276		★
<b>Process Connection</b>			
<b>Standard</b>			<b>Standard</b>
A11 <sup>(2)</sup>	Assemble to Rosemount 306 Integral Manifold		★
B11 <sup>(2)(3)</sup>	Assemble to one Rosemount 1199 Seal		★
E11	1/2-14 NPT female		★
G11	G 1/2 A DIN 16288 male (Range 1-4 only)		★
<b>Expanded</b>			
F11	Non-threaded instrument flange (I-flange) (Range 1-4 only)		

# Rosemount 3051S Series

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.

Transmitter Output				
<b>Standard</b>				<b>Standard</b>
A	4–20 mA with digital signal based on HART® protocol			★
F <sup>(4)</sup>	FOUNDATION™ fieldbus protocol			★
X <sup>(5)</sup>	Wireless (Requires wireless options and wireless PlantWeb housing)			★
Housing Style		Material	Conduit Entry Size	
<b>Standard</b>				<b>Standard</b>
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 <sup>(6)</sup>	Wireless PlantWeb housing	Aluminum	1/2–14 NPT	★
5J <sup>(6)</sup>	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 <sup>(7)</sup>	Quick Connect (A size Mini, 4-pin male termination)	SST		★
<b>Expanded</b>				
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	

## Wireless Options (Requires option code X and wireless PlantWeb housing)

Update Rate				
<b>Standard</b>				<b>Standard</b>
WA	User Configurable Update Rate			★
Operating Frequency and Protocol				
<b>Standard</b>				<b>Standard</b>
3	2.4 GHz DSSS, IEC 62591 (WirelessHART)			★
Omnidirectional Wireless Antenna				
<b>Standard</b>				<b>Standard</b>
WK	External Antenna			★
WM	Extended Range, External Antenna			★
<b>Expanded</b>				
WN	High-Gain, Remote Antenna			
SmartPower™				
<b>Standard</b>				<b>Standard</b>
1 <sup>(8)</sup>	Adapter for Black Power Module (I.S. Power Module Sold Separately)			★

## Other Options (Include with selected model number)

PlantWeb Control Functionality				
<b>Standard</b>				<b>Standard</b>
A01 <sup>(9)</sup>	FOUNDATION fieldbus Advanced Control Function Block Suite			★
PlantWeb Diagnostic Functionality				
<b>Standard</b>				<b>Standard</b>
D01 <sup>(9)</sup>	FOUNDATION fieldbus Diagnostics Suite			★
DA2 <sup>(9)(10)</sup>	Advanced HART Diagnostics Suite			★
Mounting Bracket <sup>(11)</sup>				
<b>Standard</b>				<b>Standard</b>
B4	Bracket, all SST, 2-in. pipe and panel			★
Software Configuration				
<b>Standard</b>				<b>Standard</b>
C1 <sup>(12)</sup>	Custom software configuration (Requires Configuration Data Sheet)			★

# Product Data Sheet

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# Rosemount 3051S Series

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.

Alarm Limit		
<b>Standard</b>		<b>Standard</b>
C4 <sup>(9)(12)</sup>	NAMUR alarm and saturation levels, high alarm	★
C5 <sup>(9)(12)</sup>	NAMUR alarm and saturation levels, low alarm	★
C6 <sup>(9)(12)</sup>	Custom alarm and saturation signal levels, high alarm (Requires C1 and Configuration Data Sheet)	★
C7 <sup>(9)(12)</sup>	Custom alarm and saturation signal levels, low alarm (Requires C1 and Configuration Data Sheet)	★
C8 <sup>(9)(12)</sup>	Low alarm (standard Rosemount alarm and saturation levels)	★
<b>Hardware Adjustments</b>		
<b>Standard</b>		<b>Standard</b>
D1 <sup>(9)(12)(13)</sup>	Hardware adjustments (zero, span, alarm, security)	★
<b>Custody Transfer</b>		
<b>Standard</b>		<b>Standard</b>
D3 <sup>(14)</sup>	Measurement Canada Accuracy Approval	★
<b>Ground Screw</b>		
<b>Standard</b>		<b>Standard</b>
D4	External ground screw assembly	★
<b>Conduit Plug</b>		
<b>Standard</b>		<b>Standard</b>
DO <sup>(15)</sup>	316 SST Conduit Plug	★
<b>Product Certifications<sup>(16)</sup></b>		
<b>Standard</b>		<b>Standard</b>
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 <sup>(6)</sup>	TIIS Intrinsic Safety	★
E5	FM Explosion-proof, Dust Ignition-proof	★
I5	FM Intrinsically Safe, Division 2	★
IE	FM FISCO Intrinsically Safe (FOUNDATION™ fieldbus protocol only)	★
K5	FM Explosion-proof, Dust Ignition-proof, Intrinsically Safe, Division 2	★
E6 <sup>(17)</sup>	CSA Explosion-proof, Dust Ignition-proof, Division 2	★
I6	CSA Intrinsically Safe	★
IF	CSA FISCO Intrinsically Safe (FOUNDATION™ fieldbus protocol only)	★
K6 <sup>(17)</sup>	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	★
K2	INMETRO Flameproof, Intrinsic Safety	★
E3	China Flameproof	★
I3	China Intrinsic Safety	★
N3	China Type n	★
KA <sup>(17)</sup>	ATEX and CSA Flameproof, Intrinsically Safe, Division 2	★
KB <sup>(17)</sup>	FM and CSA Explosion-proof, Dust Ignition-proof, Intrinsically Safe, Division 2	★
KC	FM and ATEX Explosion-proof, Intrinsically Safe, Division 2	★
KD <sup>(17)</sup>	FM, CSA, and ATEX Explosion-proof, Intrinsically Safe	★
<b>Shipboard Approvals</b>		
<b>Standard</b>		<b>Standard</b>
SBS	American Bureau of Shipping	★

# Rosemount 3051S Series

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.

<b>Sensor Fill Fluid</b>		
<b>Standard</b>		<b>Standard</b>
L1 <sup>(18)</sup>	Inert sensor fill fluid	★
<b>Display Type<sup>(19)</sup></b>		
<b>Standard</b>		<b>Standard</b>
M5	PlantWeb LCD Display	★
M7 <sup>(9)(20)(21)</sup>	Remote mount LCD display and interface, PlantWeb housing, no cable, SST bracket	★
M8 <sup>(9)(20)</sup>	Remote mount LCD display and interface, PlantWeb housing, 50 ft. (15 m) cable, SST bracket	★
M9 <sup>(9)(20)</sup>	Remote mount LCD display and interface, PlantWeb housing, 100 ft. (31 m) cable, SST bracket	★
<b>Pressure Testing</b>		
<b>Expanded</b>		
P1	Hydrostatic testing with certificate	
<b>Special Cleaning</b>		
<b>Expanded</b>		
P2 <sup>(11)</sup>	Cleaning for special services	
P3 <sup>(11)</sup>	Cleaning for less than 1PPM chlorine/fluorine	
<b>Calibration Certification</b>		
<b>Standard</b>		<b>Standard</b>
Q4	Calibration certificate	★
QP	Calibration certificate and tamper evident seal	★
<b>Material Traceability Certification</b>		
<b>Standard</b>		<b>Standard</b>
Q8	Material traceability certification per EN 10204 3.1	★
<b>Quality Certification for Safety</b>		
<b>Standard</b>		<b>Standard</b>
QS <sup>(9)(12)</sup>	Prior-use certificate of FMEDA Data	★
QT <sup>(22)</sup>	Safety-certified to IEC 61508 with certificate of FMEDA data	★
<b>Transient Protection</b>		
<b>Standard</b>		<b>Standard</b>
T1 <sup>(23)(24)</sup>	Transient terminal block	★
<b>Drinking Water Approval</b>		
<b>Standard</b>		<b>Standard</b>
DW <sup>(25)</sup>	NSF Drinking Water Approval	★
<b>Surface Finish Certification</b>		
<b>Standard</b>		<b>Standard</b>
Q16	Surface finish certification for sanitary remote seals	★
<b>Toolkit Total System Performance Reports</b>		
<b>Standard</b>		<b>Standard</b>
QZ	Remote Seal System Performance Calculation Report	★
<b>Conduit Electrical Connector</b>		
<b>Standard</b>		<b>Standard</b>
GE <sup>(26)</sup>	M12, 4-pin, Male Connector (eurofast <sup>®</sup> )	★
GM <sup>(26)</sup>	A size Mini, 4-pin, Male Connector (minifast <sup>®</sup> )	★
<b>Typical Model Number: 3051S1TG 2A 2 E11 A 1A DA2 B4 M5</b>		

- (1) 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.
- (2) "Assemble to" items are specified separately and require a completed model number.
- (3) Consult an Emerson Process Management representative for performance specifications.
- (4) Requires PlantWeb housing.
- (5) Available approvals are FM Intrinsically Safe, Division 2 (option code I5), CSA Intrinsically Safe (option code I6), ATEX Intrinsic Safety (option code I1), and IECEx Intrinsic Safety (option code I7).
- (6) Only available with output code X.

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- (7) Available with output code A only. Available approvals are FM Intrinsically Safe, Division 2 (option code I5), ATEX Intrinsic Safety (option code I1), or IECEx Intrinsic Safety (option code I7). Contact an Emerson Process Management representative for additional information.
- (8) Long-Life Power Module must be shipped separately, order Part #00753-9220-0001.
- (9) Not available with output code X.
- (10) Requires PlantWeb housing and output code A. Includes Hardware Adjustments as standard.
- (11) Not available with process connection option code A11.
- (12) Not available with output code F.
- (13) Not available with housing style codes 00, 01, 2E, 2F, 2G, 2M, 5A, 5J, or 7J.
- (14) 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.
- (15) Transmitter is shipped with 316 SST conduit plug (uninstalled) in place of standard carbon steel conduit plug.
- (16) Valid when SuperModule Platform and housing have equivalent approvals.
- (17) Not available with M20 or G ½ conduit entry size.
- (18) Silicone fill fluid is standard.
- (19) Not available with Housing code 7J.
- (20) Not available with output code F, option code DA2, or option code QT.
- (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 or X. Not available with housing code 7J.
- (23) Not available with Housing code 00, 5A, 5J, or 7J.
- (24) The T1 option is not needed with FISCO Product Certifications; transient protection is included in the FISCO product certification codes IA, IE, IF, and IG.
- (25) Requires 316L SST diaphragm material and Process Connection code E11 or G11.
- (26) Not available with Housing code 00, 5A, 5J, or 7J. Available with Intrinsically Safe approvals only. For FM Intrinsically Safe, Division 2 (option code I5) or FM FISCO Intrinsically Safe (option code IE), install in accordance with Rosemount drawing 03151-1009 to maintain outdoor rating (NEMA 4X and IP66).

# Rosemount 3051S Series

## Rosemount 3051S Scalable MultiVariable Transmitter



**3051S Scalable  
MultiVariable Transmitter**

The Rosemount 3051S Scalable 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

### Additional Information

Specifications: page 68

Certifications: page 93

Dimensional Drawings: page 98

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	
<b>Performance Class</b>		
<b>Standard</b>		<b>Standard</b>
<b>3051SMV MultiVariable SuperModule, Measurement Types 1 and 2</b>		
3 <sup>(1)</sup>	Ultra for Flow: 0.04% reading DP accuracy, 200:1 rangedown, 10-year stability, 12-year limited warranty	★
5	Classic MV: 0.04% span DP accuracy, 100:1 rangedown, 5-year stability	★
<b>3051SMV Single Variable SuperModule, Measurement Types 3 and 4</b>		
1 <sup>(2)</sup>	Ultra: 0.025% span DP accuracy, 200:1 rangedown, 10-year stability, 12-year limited warranty	★
2	Classic: 0.055% span DP accuracy, 100:1 rangedown, 5-year stability	★
3 <sup>(1)</sup>	Ultra for Flow: 0.04% reading DP accuracy, 200:1 rangedown, 10-year stability, 12-year limited warranty	★
<b>MultiVariable Type</b>		
<b>Standard</b>		<b>Standard</b>
M	MultiVariable Measurement with Fully Compensated Mass and Energy Flow	★
P	MultiVariable Measurement with Direct Process Variable Output	★
<b>Measurement Type</b>		
<b>Standard</b>		<b>Standard</b>
1	Differential Pressure, Static Pressure, and Temperature	★
2	Differential Pressure and Static Pressure	★
3	Differential Pressure and Temperature	★
4	Differential Pressure	★
<b>Differential Pressure Range</b>		
<b>Standard</b>		<b>Standard</b>
0 <sup>(2)(3)</sup>	-3 to 3 inH <sub>2</sub> O (-7,47 to 7,47 mbar)	★
1	-25 to 25 inH <sub>2</sub> O (-62,2 to 62,2 mbar)	★
2	-250 to 250 inH <sub>2</sub> O (-623 to 623 mbar)	★
3	-1000 to 1000 inH <sub>2</sub> O (-2,5 to 2,5 bar)	★
4 <sup>(2)</sup>	-300 to 300 psi (-20,7 to 20,7 bar)	★
5 <sup>(2)</sup>	-2000 to 2000 psi (-137,9 to 137,9 bar)	★



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.

Static Pressure Type					
Standard					Standard
N <sup>(4)</sup>	None				★
A	Absolute				★
G	Gage				★
Static Pressure Range		Absolute	Gage		
Standard					Standard
N <sup>(4)</sup>	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 <sup>(5)</sup>	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 <sup>(6)</sup>	None				★
R <sup>(7)</sup>	RTD Input (Type Pt 100, -328 to 1562 °F (-200 to 850 °C))				★
Isolating Diaphragm					
Standard					Standard
2 <sup>(8)</sup>	316L SST				★
3 <sup>(8)</sup>	Alloy C-276				★
Expanded					
5 <sup>(9)</sup>	Tantalum				
7	Gold-Plated 316L SST				
Process Connection		Size	Material Type		
			Flange Material	Drain Vent	Bolting
Standard					Standard
000	None				★
A11 <sup>(10)</sup>	Assemble to Rosemount 305/306 Integral Manifold				★
A12 <sup>(10)</sup>	Assemble to Rosemount 304 or AMF Manifold with SST Traditional Flange				★
B11 <sup>(10)(11)</sup>	Assemble to one Rosemount 1199 Seal				★
B12 <sup>(10)(11)</sup>	Assemble to two Rosemount 1199 Seals				★
C11 <sup>(10)</sup>	Assemble to Rosemount 405 Primary Element				★
D11 <sup>(10)</sup>	Assemble to Rosemount 1195 Integral Orifice and Rosemount 305 Integral Manifold				★
EA2 <sup>(10)</sup>	Assemble to Rosemount Annubar Primary Element with Coplanar flange		SST	316 SST	★
EA3 <sup>(10)</sup>	Assemble to Rosemount Annubar Primary Element with Coplanar flange		Cast C-276	Alloy C-276	★
EA5 <sup>(10)</sup>	Assemble to Rosemount 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 <sup>(8)</sup>	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 <sup>(8)</sup>	Coplanar flange	1/4-18 NPT	SST	Alloy C-276	★
E16 <sup>(8)</sup>	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 <sup>(8)</sup>	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 <sup>(8)</sup>	Coplanar flange	RC 1/4	SST	Alloy C-276	★
E26 <sup>(8)</sup>	Coplanar flange	RC 1/4	Carbon Steel	Alloy C-276	★

# Rosemount 3051S Series

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.

F12	Traditional flange	1/4-18 NPT	SST	316 SST		★
F13 <sup>(8)</sup>	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 <sup>(8)</sup>	Traditional flange	1/4-18 NPT	SST	Alloy C-276		★
F22	Traditional flange	RC 1/4	SST	316 SST		★
F23 <sup>(8)</sup>	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 <sup>(8)</sup>	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 <sup>(8)</sup>	Vertical mount level flange	2-in. ANSI class 150	Cast C-276			★
G15 <sup>(8)</sup>	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			★
<b>Expanded</b>						
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			
<b>Transmitter Output</b>						
<b>Standard</b>						<b>Standard</b>
A	4-20 mA with digital signal based on HART protocol					★
<b>Housing Style</b>			<b>Material</b>	<b>Conduit Entry Size</b>		
<b>Standard</b>						<b>Standard</b>
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		★
<b>Expanded</b>						
1C	PlantWeb housing		Aluminum	G1/2		
1L	PlantWeb housing		SST	G1/2		

## Options (Include with selected model number)

<b>RTD Cable (RTD Sensor must be ordered separately)</b>						
<b>Standard</b>						<b>Standard</b>
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					★
C20 <sup>(12)</sup>	RTD Input with 27 in. (69 cm) of Armored Shielded Cable					★
C21	RTD Input with 4 ft. (1.22 m) of Armored Shielded Cable					★
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					★
C30 <sup>(12)</sup>	RTD Input with 25 in. (64 cm) of ATEX/IECEx Flameproof 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					★
C40 <sup>(12)</sup>	RTD Input with 34 in. (86.36 cm) Shielded Cable and 24 in. (60.96 cm) FM Approved Coupling Flex					★
C41 <sup>(12)</sup>	RTD Input with 40 in. (101.60 cm) Shielded Cable and 30 in. (76.20 cm) FM Approved Coupling Flex					★

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# Rosemount 3051S Series

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.

<b>Mounting Brackets<sup>(13)</sup></b>		
<b>Standard</b>		<b>Standard</b>
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	★
<b>Software Configuration</b>		
<b>Standard</b>		<b>Standard</b>
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)	★
<b>Special Configuration</b>		
<b>Standard</b>		<b>Standard</b>
D2 <sup>(13)</sup>	1/2-14 NPT flange adapter	★
D4	External ground screw assembly	★
D5 <sup>(13)</sup>	Delete transmitter drain/vent valves (install plugs)	★
<b>Expanded</b>		
D9 <sup>(13)</sup>	RC 1/2 SST flange adapter	
D7 <sup>(13)</sup>	Coplanar flange without drain/vent ports	
<b>Product Certifications</b>		
<b>Standard</b>		<b>Standard</b>
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	★
K4	TIIS Flameproof and Intrinsic Safety (combination E4 and I4)	★
E5	FM Explosion-proof, Dust Ignition-proof	★
I5	FM Intrinsically Safe, Division 2	★
K5	FM Explosion-proof, Dust Ignition-proof, Intrinsically Safe, Division 2 (combination of E5 and I5)	★
E6 <sup>(14)</sup>	CSA Explosion-proof, Dust Ignition-proof, Division 2	★
I6	CSA Intrinsically Safe	★
K6 <sup>(14)</sup>	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	★

# Rosemount 3051S Series

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.

KA <sup>(14)(15)</sup>	ATEX and CSA Explosion-proof, Intrinsically Safe, Division 2 (combination of E1, E6, I1, and I6)	★
KB <sup>(14)(15)</sup>	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 <sup>(14)(15)</sup>	FM, CSA, and ATEX Explosion-proof, Intrinsically Safe (combination of E5, E6, E1, I5, I6, and I1)	★
DW <sup>(16)</sup>	NSF Drinking Water Certification	★
<b>Alternate Materials of Construction</b>		
<b>Standard</b>		<b>Standard</b>
L1	Inert sensor fill fluid (Differential and Gage sensors only) <i>Note: Silicone fill fluid is standard.</i>	★
L2	Graphite-filled PTFE O-ring	★
L4 <sup>(13)</sup>	Austenitic 316 SST bolts	★
L5 <sup>(8)(13)</sup>	ASTM A193, Grade B7M bolts	★
L6 <sup>(13)</sup>	Alloy K-500 bolts	★
L7 <sup>(8)(13)</sup>	ASTM A453, Class D, Grade 660 bolts	★
L8 <sup>(13)</sup>	ASTM A193, Class 2, Grade B8M bolts	★
<b>Digital Display</b>		
<b>Standard</b>		<b>Standard</b>
M5	PlantWeb LCD Display	★
<b>Special Procedures</b>		
<b>Standard</b>		<b>Standard</b>
P1 <sup>(17)</sup>	Hydrostatic testing with certificate	★
P9 <sup>(2)</sup>	4500 psig (310 bar) static pressure limit	★
P0 <sup>(2)(18)</sup>	6092 psig (420 bar) static pressure limit	★
<b>Expanded</b>		
P2 <sup>(13)</sup>	Cleaning for special services	
P3 <sup>(13)</sup>	Cleaning for less than 1PPM chlorine/fluorine	
<b>Special Certifications</b>		
<b>Standard</b>		<b>Standard</b>
Q4	Calibration Certificate	★
QP	Calibration Certificate and Tamper Evident Seal	★
Q8	Material Traceability Certification per EN 10204 3.1	★
Q16	Surface Finish Certification for Sanitary Remote Seals	★
QZ	Remote Seal System Performance Calculation Report	★
<b>Transient Protection</b>		
<b>Standard</b>		<b>Standard</b>
T1	Transient terminal block	★
<b>Conduit Electrical Connector</b>		
<b>Standard</b>		<b>Standard</b>
GE <sup>(19)</sup>	M12, 4-pin, Male Connector (eurofast <sup>®</sup> )	★
GM <sup>(19)</sup>	A size Mini, 4-pin, Male Connector (minifast <sup>®</sup> )	★
<b>Cold Temperature</b>		
<b>Standard</b>		<b>Standard</b>
BRR	-60 °F (-51 °C) Cold Temperature Start-up	★
<b>Typical Model Number: 3051SMV 3 M 1 2 G 4 R 2 E12 A 1A B4 C2 M5</b>		

(1) Only available with DP range codes 2 and 3, 316L SST or Alloy C-276 isolating diaphragm and silicone fill fluid.

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

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

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

(5) For Measurement Type 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).

(6) Required for Measurement Type codes 2 and 4.

(7) Required for Measurement Type codes 1 and 3. RTD Sensor must be ordered separately.

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- (8) *Materials of Construction comply with metallurgical requirements highlighted within NACE MR0175/ISO 15156 for sour oil field production environments. Environmental limits apply to certain materials. Consult latest standard for details. Selected materials also conform to NACE MR0103 for sour refining environments.*
- (9) *Tantalum diaphragm material is only available for DP ranges 2-5.*
- (10) *"Assemble to" items are specified separately and require a completed model number.*
- (11) *Consult an Emerson Process Management representative for performance specifications.*
- (12) *For use with Flowmeters with integral RTDs.*
- (13) *Not available with process connection option code A11.*
- (14) *Not available with M20 or G ½ conduit entry size.*
- (15) *RTD cable not available with this option.*
- (16) *Requires 316L SST diaphragm material, glass-filled PTFE O-ring (standard), and Process Connection code E12 or F12.*
- (17) *Not available with DP range 0.*
- (18) *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.*
- (19) *Available with Intrinsically Safe approvals only. For FM Intrinsically Safe, Non-Incendive approval (option code I5), install in accordance with Rosemount drawing 03151-1009 to maintain outdoor rating (NEMA 4X and IP66).*

# Rosemount 3051S Series

## Rosemount 3051SF DP Flowmeters



Rosemount 3051SF Flowmeters integrate industry leading transmitters 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)
- HART 4-20, 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 68

Dimensional Drawings: page 103



### 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	•	•	
<b>Measurement Type</b>				
<b>Standard</b>				<b>Standard</b>
1	MultiVariable (Fully Compensated Mass & Energy Flow) – Differential & Static Pressures w/ Temperature	—	•	★
2	MultiVariable (Compensated Flow) – Differential & Static Pressures	—	•	★
3	MultiVariable (Compensated Flow) – Differential Pressure & Temperature	—	•	★
4	MultiVariable (Compensated Flow) – Differential Pressure	—	•	★
5	MultiVariable (Direct Measurement) – Differential & Static Pressures with Temperature	—	•	★
6	MultiVariable (Direct Measurement) – Differential & Static Pressures	—	•	★
7	MultiVariable (Direct Measurement) – Differential Pressure & Temperature	—	•	★
D	Differential Pressure	•	—	★
<b>Fluid Type</b>				
<b>Standard</b>				<b>Standard</b>
L	Liquid	•	•	★
G	Gas	•	•	★
S	Steam	•	•	★

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# Rosemount 3051S Series

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.

Line Size		D	1-7	
<b>Standard</b>				<b>Standard</b>
020	2-in. (50 mm)	•	•	★
025	2 <sup>1</sup> / <sub>2</sub> -in. (63.5 mm)	•	•	★
030	3-in. (80 mm)	•	•	★
035	3 <sup>1</sup> / <sub>2</sub> -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)	•	•	★
<b>Expanded</b>				
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)	•	•	
<b>Pipe I.D. Range</b>				
<b>Standard</b>				<b>Standard</b>
C	Range C from the Pipe I.D. table	•	•	★
D	Range D from the Pipe I.D. table	•	•	★
<b>Expanded</b>				
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)	•	•	
<b>Pipe Material / Mounting Assembly Material</b>				
<b>Standard</b>				<b>Standard</b>
C	Carbon steel (A105)	•	•	★
S	316 Stainless Steel	•	•	★
0 <sup>(1)</sup>	No Mounting (Customer Supplied)	•	•	★
<b>Expanded</b>				
G	Chrome-Moly Grade F-11	•	•	
N	Chrome-Moly Grade F-22	•	•	
J	Chrome-Moly Grade F-91	•	•	
<b>Piping Orientation</b>				
<b>Standard</b>				<b>Standard</b>
H	Horizontal Piping	•	•	★
D	Vertical Piping with Downwards Flow	•	•	★
U	Vertical Piping with Upwards Flow	•	•	★

# Rosemount 3051S Series

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.

Annubar Type				D	1-7	
<b>Standard</b>						<b>Standard</b>
P	Pak-Lok			•	•	★
F	Flanged with opposite side support			•	•	★
<b>Expanded</b>						
L	Flange-Lok			•	•	
G	Gear-Drive Flo-Tap			•	•	
M	Manual Flo-Tap			•	•	
<b>Sensor Material</b>						
<b>Standard</b>						<b>Standard</b>
S	316 Stainless Steel			•	•	★
<b>Expanded</b>						
H	Alloy C-276			•	•	
<b>Sensor Size</b>						
<b>Standard</b>						<b>Standard</b>
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)			•	•	★
<b>Mounting Type</b>						
<b>Standard</b>						<b>Standard</b>
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			•	•	★
<b>Expanded</b>						
AG <sup>(2)</sup>	900# RF ANSI			•	•	
AF <sup>(2)</sup>	1500# RF ANSI			•	•	
AT <sup>(2)</sup>	2500 # RF ANSI			•	•	
R1	150# RTJ Flange			•	•	
R3	300# RTJ Flange			•	•	
R6	600# RTJ Flange			•	•	
R9 <sup>(2)</sup>	900# RTJ Flange			•	•	
RF <sup>(2)</sup>	1500# RTJ Flange			•	•	
RT <sup>(2)</sup>	2500# RTJ Flange			•	•	
<b>Opposite Side Support or Packing Gland</b>						
<b>Standard</b>						<b>Standard</b>
0	No opposite side support or packing gland (Required for Pak-Lok and Flange-Lok models)			•	•	★
<b>Opposite Side Support – Required for Flanged Models</b>						
C	NPT Threaded Opposite Support Assembly – Extended Tip			•	•	★
D	Welded Opposite Support Assembly – Extended Tip			•	•	★
<b>Expanded</b>						
<b>Packing Gland – Required for Flo-Tap Models</b>						
	<i>Packing Gland Material</i>	<i>Rod Material</i>	<i>Packing Material</i>			
J	Stainless Steel Packing Gland / Cage Nipple	Carbon Steel	PTFE	•	•	
K	Stainless Steel Packing Gland / Cage Nipple	Stainless Steel	PTFE	•	•	
L	Stainless Steel Packing Gland / Cage Nipple	Carbon Steel	Graphite	•	•	
N	Stainless Steel Packing Gland / Cage Nipple	Stainless Steel	Graphite	•	•	
R	Alloy C-276 Packing Gland / Cage Nipple	Stainless Steel	Graphite	•	•	



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# Rosemount 3051S Series

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.

Isolation Valve for Flo-Tap Models				D	1-7	
<b>Standard</b>						<b>Standard</b>
0 <sup>(1)</sup>	Not Applicable or Customer Supplied			•	•	★
<b>Expanded</b>						
1	Gate Valve, Carbon Steel			•	•	
2	Gate Valve, Stainless Steel			•	•	
5	Ball Valve, Carbon Steel			•	•	
6	Ball Valve, Stainless Steel			•	•	
<b>Temperature Measurement</b>						
<b>Standard</b>						<b>Standard</b>
T <sup>(3)</sup>	Integral RTD – not available with Flanged model greater than class 600#			•	•	★
0 <sup>(4)</sup>	No Temperature Sensor			•	•	★
<b>Expanded</b>						
R <sup>(3)</sup>	Remote Thermowell and RTD			•	•	
<b>Transmitter Connection Platform</b>						
<b>Standard</b>						<b>Standard</b>
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)			•	•	★
<b>Expanded</b>						
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.)			•	•	
<b>Differential Pressure Range</b>						
<b>Standard</b>						<b>Standard</b>
1	0 to 25 in H <sub>2</sub> O (0 to 62.3 mbar)			•	•	★
2	0 to 250 in H <sub>2</sub> O (0 to 623 mbar)			•	•	★
3	0 to 1000 in H <sub>2</sub> O (0 to 2.5 bar)			•	•	★
<b>Static Pressure Range</b>						
<b>Standard</b>						<b>Standard</b>
A <sup>(5)</sup>	None			•	•	★
D	Absolute 0 to 800 psia (0 to 55.2 bar)			—	•	★
E <sup>(6)</sup>	Absolute 0 to 3626 psia (0 to 250 bar)			—	•	★
J	Gage -14.2 to 800 psig (-0.979 to 55.2 bar)			—	•	★
K <sup>(6)</sup>	Gage -14.2 to 3626 psig (-0.979 to 250 bar)			—	•	★
<b>Transmitter Output</b>						
<b>Standard</b>						<b>Standard</b>
A	4–20 mA with digital signal based on HART protocol			•	•	★
F	FOUNDATION fieldbus protocol (requires PlantWeb housing)			•	—	★
X <sup>(7)</sup>	Wireless (Requires wireless options and Wireless Plantweb housing)			•	—	★
<b>Transmitter Housing Style</b>		<b>Material</b>	<b>Conduit Entry Size</b>			
<b>Standard</b>						<b>Standard</b>
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	•	—	★

# Rosemount 3051S Series

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.

2F	Junction Box housing with output for remote display and interface	Aluminum	M20 x 1.5	•	—	★
2J	Junction Box Housing	SST	<sup>1</sup> / <sub>2</sub> -14 NPT	•	—	★
2M	Junction Box housing with output for remote display and interface	SST	<sup>1</sup> / <sub>2</sub> -14 NPT	•	—	★
5A <sup>(8)</sup>	Wireless PlantWeb housing	Aluminum	<sup>1</sup> / <sub>2</sub> -14 NPT	•	—	★
5J <sup>(8)</sup>	Wireless PlantWeb housing	SST	<sup>1</sup> / <sub>2</sub> -14 NPT	•	—	★
7J <sup>(7)(9)</sup>	Quick Connect (A size Mini, 4-pin male termination)			•	—	★
<b>Expanded</b>						
1C	PlantWeb Housing	Aluminum	G <sup>1</sup> / <sub>2</sub>	•	•	
1L	PlantWeb Housing	SST	G <sup>1</sup> / <sub>2</sub>	•	•	
2C	Junction Box Housing	Aluminum	G <sup>1</sup> / <sub>2</sub>	•	—	
2G	Junction Box housing with output for remote display and interface	Aluminum	G <sup>1</sup> / <sub>2</sub>	•	—	
<b>Transmitter Performance Class</b>				<b>D</b>	<b>1-7</b>	
<b>Standard</b>						<b>Standard</b>
<b>3051S MultiVariable SuperModule, Measurement Types 1, 2, 5, and 6</b>						
3	Ultra for Flow: 0.8% flow rate accuracy, 14:1 flow turndown, 10-year stability, limited 12-year warranty			•	•	★
5	Classic MV: 1.15% flow rate accuracy, 8:1 flow turndown, 5-yr. stability			—	•	★
<b>3051S Single Variable SuperModule, Measurement Types 3, 4, 7, and D</b>						
1	Ultra: up to 0.95% flow rate accuracy, 8:1 flow turndown, 10-year stability, limited 12-year warranty			•	—	★
2	Classic: up to 1.4% flow rate accuracy, 8:1 flow turndown, 5-year stability			•	—	★
3 <sup>(10)</sup>	Ultra for Flow: 0.8% flow rate accuracy, 14:1 flow turndown, 10-year stability, limited 12-year warranty			•	•	★

## Wireless Options (Requires option code X and wireless PlantWeb housing)

<b>Update Rate, Operating Frequency and Protocol</b>						
<b>Standard</b>						<b>Standard</b>
WA	User Configurable Update Rate			•	—	★
<b>Operating Frequency and Protocol</b>						
<b>Standard</b>						
3	2.4 GHz DSSS, IEC 62591 (WirelessHART)			•	—	★
<b>Omnidirectional Wireless Antenna</b>						
<b>Standard</b>						
WK	External Antenna			•	—	★
WM	Extended Range, External Antenna			•	—	★
<b>Expanded</b>						
WN	High-Gain, Remote Antenna			•	—	
<b>SmartPower™</b>						
<b>Standard</b>						
1 <sup>(11)</sup>	Adapter for Black Power Module (I.S. Power Module Sold Separately)			•	—	★

## Other Options (Include with selected model number)

<b>Pressure Testing</b>						
<b>Expanded</b>						
P1 <sup>(12)</sup>	Hydrostatic Testing with Certificate			•	•	
PX <sup>(12)</sup>	Extended Hydrostatic Testing			•	•	
<b>Special Cleaning</b>						
<b>Expanded</b>						
P2	Cleaning for Special Services			•	•	
PA	Cleaning per ASTM G93 Level D (section 11.4)			•	•	
<b>Material Testing</b>						
<b>Expanded</b>						
V1	Dye Penetrant Exam			•	•	

# Product Data Sheet

00813-0100-4801, Rev PA

April 2011

# Rosemount 3051S Series

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.

Material Examination		D	1-7	
<b>Expanded</b>				
V2	Radiographic Examination	•	•	
<b>Flow Calibration</b>				
<b>Expanded</b>				
W1	Flow Calibration (Average K)	•	•	
WZ	Special Calibration	•	•	
<b>Special Inspection</b>				
<b>Standard</b>				<b>Standard</b>
QC1	Visual & Dimensional Inspection with Certificate	•	•	★
QC7	Inspection & Performance Certificate	•	•	★
<b>Surface Finish</b>				
<b>Standard</b>				<b>Standard</b>
RL	Surface finish for Low Pipe Reynolds Number in Gas & Steam	•	•	★
RH	Surface finish for High Pipe Reynolds Number in Liquid	•	•	★
<b>Material Traceability Certification</b>				
<b>Standard</b>				<b>Standard</b>
Q8 <sup>(13)</sup>	Material Traceability Certificate per EN 10204:2004 3.1	•	•	★
<b>Code Conformance</b>				
<b>Expanded</b>				
J2 <sup>(14)</sup>	ANSI / ASME B31.1	•	•	
J3 <sup>(14)</sup>	ANSI / ASME B31.3	•	•	
<b>Material Conformance</b>				
<b>Expanded</b>				
J5 <sup>(15)</sup>	NACE MR-0175 / ISO 15156	•	•	
<b>Country Certification</b>				
<b>Standard</b>				<b>Standard</b>
J6	European Pressure Directive (PED)	•	•	★
<b>Expanded</b>				
J1	Canadian Registration	•	•	
<b>Installed in Flanged Pipe Spool Section</b>				
<b>Expanded</b>				
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	•	•	
<b>Instrument Connections for Remote Mount Option</b>				
<b>Standard</b>				<b>Standard</b>
G2	Needle Valves, Stainless Steel	•	•	★
G6	OS&Y Gate Valve, Stainless Steel	•	•	★
<b>Expanded</b>				
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	•	•	
<b>Special Shipment</b>				
<b>Standard</b>				<b>Standard</b>
Y1	Mounting Hardware Shipped Separately	•	•	★
<b>Attach To</b>				
<b>Expanded</b>				
H1	Attach to Transmitter	•	•	
<b>Special Dimensions</b>				
<b>Expanded</b>				
VM	Variable Mounting	•	•	
VT	Variable Tip	•	•	
VS	Variable length Spool Section	•	•	

# Rosemount 3051S Series

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.

<b>Transmitter Calibration Certification</b>				
<b>Standard</b>				<b>Standard</b>
Q4	Calibration Certificate for Transmitter	•	•	★
QP	Calibration Certificate & Tamper Evident Seal	•	•	★
<b>Quality Certification For Safety</b>		<b>D</b>	<b>1-7</b>	
<b>Standard</b>				<b>Standard</b>
QS <sup>(18)(24)</sup>	Prior-use Certificate of FMEDA data	•	—	★
QT <sup>(17)(18)(24)</sup>	Safety certified to IEC 61508 with certificate of FMEDA data	•	—	★
<b>Product Certifications</b>				
<b>Standard</b>				<b>Standard</b>
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, Division 2	•	•	★
K5	FM Explosion-proof, Dust Ignition-proof, Intrinsically Safe, Division 2 (combination of E5 and I5)	•	•	★
E6 <sup>(16)</sup>	CSA Explosion-proof, Dust Ignition-proof, Division 2	•	•	★
I6	CSA Intrinsically Safe	•	•	★
K6 <sup>(16)</sup>	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 <sup>(16)</sup>	ATEX and CSA Explosion-proof, Intrinsically Safe, Division 2 (combination of E1, I1, E6, and I6)	•	•	★
KB <sup>(16)</sup>	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 <sup>(16)</sup>	FM, CSA, and ATEX Explosion-proof, Intrinsically Safe (combination of E5, I5, E6, I6, E1, and I1)	•	•	★
<b>Shipboard Approvals</b>				
<b>Standard</b>				<b>Standard</b>
SBS	American Bureau of Shipping	•	•	★
<b>Sensor Fill Fluid and O-ring Options</b>				
<b>Standard</b>				<b>Standard</b>
L1	Inert Sensor Fill Fluid	•	•	★
L2	Graphite-Filled (PTFE) O-ring	•	•	★
LA	Inert Sensor Fill Fluid and Graphite-Filled (PTFE) O-ring	•	•	★
<b>Digital Display<sup>(17)</sup></b>				
<b>Standard</b>				<b>Standard</b>
M5	PlantWeb LCD display (Requires PlantWeb housing)	•	•	★
M7 <sup>(18)(19)(20)</sup>	Remote mount LCD display and interface, PlantWeb housing, no cable; SST bracket	•	•	★
M8 <sup>(18)(19)</sup>	Remote mount LCD display and interface, PlantWeb housing, 50 ft. (15 m) cable; SST bracket	•	•	★
M9 <sup>(18)(19)</sup>	Remote mount LCD display and interface, PlantWeb housing, 100 ft. (31 m) cable; SST bracket	•	•	★
<b>Transient Protection</b>				
<b>Standard</b>				<b>Standard</b>
T1 <sup>(21)</sup>	Transient terminal block	•	•	★
<b>Manifold for Remote Mount Option</b>				
<b>Standard</b>				<b>Standard</b>
F2	3-Valve Manifold, Stainless Steel	•	•	★
F6	5-Valve Manifold, 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.

<b>Expanded</b>				
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	•	•	
<b>PlantWeb Control Functionality</b>		<b>D</b>	<b>1-7</b>	
<b>Standard</b>				<b>Standard</b>
A01	FOUNDATION fieldbus Advanced Control Function Block Suite	•	—	★
<b>PlantWeb Diagnostic Functionality</b>				
<b>Standard</b>				<b>Standard</b>
D01	FOUNDATION fieldbus Diagnostics Suite	•	—	★
DA2 <sup>(22)</sup>	Advanced HART Diagnostic Suite	•	—	★
<b>PlantWeb Enhanced Measurement Functionality</b>				
<b>Standard</b>				<b>Standard</b>
H01 <sup>(23)</sup>	FOUNDATION fieldbus Fully Compensated Mass Flow Block	•	—	★
<b>Cold Temperature</b>				
<b>Standard</b>				<b>Standard</b>
BRR	-60 °F (-51 °C) Cold Temperature Start-up	—	•	★
<b>Alarm Limit<sup>(18)(24)</sup></b>				
<b>Standard</b>				<b>Standard</b>
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)	•	•	★
<b>Hardware Adjustments and Ground Screw</b>				
<b>Standard</b>				<b>Standard</b>
D1 <sup>(18)(24)(25)</sup>	Hardware Adjustments (zero, span, alarm, security)	•	—	★
D4	External Ground Screw Assembly	•	•	★
DA <sup>(18)(24)(25)</sup>	Hardware Adjustments (zero, span, alarm, security) & External Ground Screw Assembly	•	—	★
<b>Conduit Plug</b>				
<b>Standard</b>				<b>Standard</b>
DO	316 SST Conduit Plug (standard for all 3051SF Models)	•	•	★
<b>Conduit Electrical Connector</b>				
<b>Standard</b>				<b>Standard</b>
GE <sup>(26)</sup>	M12, 4-pin, Male Connector (eurofast <sup>®</sup> )	•	•	★
GM <sup>(26)</sup>	A size Mini, 4-pin, Male Connector (minifast <sup>®</sup> )	•	•	★
<b>Typical Model Number: 3051SFA D L 060 D C H P S 2 T1 0 0 0 3 2A A 1A 3</b>				

- (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) Temperature Measurement Option code T or R is required for Measurement Type codes 1, 3, 5, and 7.
- (4) Required for Measurement Type codes 2, 4, 6, and D.
- (5) Required for Measurement Type codes 3, 4, 7, and D.
- (6) For Measurement Type 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).
- (7) Available approvals are FM Intrinsically Safe, Division 2 (option code I5), CSA Intrinsically Safe (option code I6), ATEX Intrinsic Safety (option code I1), and IECEx Intrinsic Safety (option code I7).
- (8) Only available with output code X.
- (9) Available with output code A only.
- (10) Only available with differential pressure ranges 2 and 3, and silicone fill fluid.
- (11) Long-life Power Module must be shipped separately, order Part No. 00753-9220-0001.
- (12) Applies to assembled flowmeter only, mounting not tested.

# Rosemount 3051S Series

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- (13) Instrument Connections for Remote Mount Options and Isolation Valves for Flo-tap Models are not included in the Material Traceability Certification.*
- (14) Not available with Transmitter Connection Platform 6.*
- (15) 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.*
- (16) Not available with M20 or G ½ conduit entry size.*
- (17) Not available with housing code 7J.*
- (18) Not available with output code X.*
- (19) Not available with output code F, option code DA2, or option code QT.*
- (20) See the 3051S Reference Manual (document number 00809-0100-4801) for cable requirements. Contact an Emerson Process Management representative for additional information.*
- (21) 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, transient protection is included with the FISCO Product Certification code IA.*
- (22) Includes Hardware Adjustments (option code D1) as standard. Not available with output code X.*
- (23) Requires Rosemount Engineering Assistant version 5.5.1 to configure.*
- (24) Not available with Output Protocol code F.*
- (25) Not available with housing style codes 2E, 2F, 2G, 2M, 5A, 5J, or 7J.*
- (26) Not available with Housing code 5A, 5J, or 7J. Available with Intrinsically Safe approvals only. For FM Intrinsically Safe, Division 2 (option code I5) or FM FISCO Intrinsically Safe (option code IE), install in accordance with Rosemount drawing 03151-1009 to maintain outdoor rating (NEMA 4X and IP66).*

# Product Data Sheet

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# Rosemount 3051S Series



## 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	•	•	
<b>Transmitter Feature Board Measurement Type</b>				
<b>Standard</b>				
1	MultiVariable (Fully Compensated Mass & Energy Flow) – Differential & Static Pressure w/ Temperature	—	•	★
2	MultiVariable (Compensated Flow) – Differential & Static Pressures	—	•	★
3	MultiVariable (Compensated Flow) – Differential Pressure & Temperature	—	•	★
4	MultiVariable (Compensated Flow) – Differential Pressure	—	•	★
5	MultiVariable (Direct Measurement) – Differential & Static Pressures with Temperature	—	•	★
6	MultiVariable (Direct Measurement) – Differential & Static Pressures	—	•	★
7	MultiVariable (Direct Measurement) – Differential Pressure & Temperature	—	•	★
D	Differential Pressure	•	—	★
<b>Primary Element Technology</b>				
<b>Standard</b>				
C	Conditioning Orifice Plate	•	•	★
P	Orifice Plate	•	•	★
<b>Material Type</b>				
<b>Standard</b>				
S	316 SST	•	•	★
<b>Line Size</b>				
<b>Standard</b>				
005 <sup>(1)</sup>	1/2-in. (15 mm)	•	•	★
010 <sup>(1)</sup>	1-in. (25 mm)	•	•	★
015 <sup>(1)</sup>	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	10-in. (250 mm)	•	•	★
120	12-in. (300 mm)	•	•	★
<b>Primary Element Style</b>				
<b>Standard</b>				
N	Square Edged	•	•	★
<b>Primary Element Type</b>				
<b>Standard</b>				
040	0.40 Beta Ratio ( $\beta$ )	•	•	★
065 <sup>(2)</sup>	0.65 Beta Ratio ( $\beta$ )	•	•	★
<b>Temperature Measurement</b>				
<b>Standard</b>				
T <sup>(4)</sup>	Integral RTD	—	•	★
0 <sup>(3)</sup>	No Temperature Sensor	•	•	★

# Rosemount 3051S Series

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.

<b>Expanded</b>						
R <sup>(4)</sup>	Remote Thermowell and RTD			•	•	
<b>Transmitter Connection Platform</b>				<b>D</b>	<b>1-7</b>	
<b>Standard</b>						<b>Standard</b>
3	Direct-mount, 3-valve Integral Manifold, SST			•	•	★
7	Remote-mount, 1/4-in. NPT Connections			•	•	★
<b>Differential Pressure Range</b>						
<b>Standard</b>						<b>Standard</b>
1	0 to 25 inH <sub>2</sub> O (0 to 62.3 mbar)			•	•	★
2	0 to 250 inH <sub>2</sub> O (0 to 623 mbar)			•	•	★
3	0 to 1000 inH <sub>2</sub> O (0 to 2.5 bar)			•	•	★
<b>Static Pressure Range</b>						
<b>Standard</b>						<b>Standard</b>
A <sup>(5)</sup>	None			•	•	★
D	Absolute 0 to 800 psia (0 to 55.2 bar)			—	•	★
E <sup>(6)</sup>	Absolute 0 to 3626 psia (0 to 250 bar)			—	•	★
J	Gage -14.2 to 800 psig (-0.979 to 55.2 bar)			—	•	★
K <sup>(6)</sup>	Gage -14.2 to 3626 psig (-0.979 to 250 bar)			—	•	★
<b>Transmitter Output</b>						
<b>Standard</b>						<b>Standard</b>
A	4–20 mA with digital signal based on HART protocol			•	•	★
F <sup>(7)</sup>	FOUNDATION fieldbus protocol			•	—	★
X <sup>(8)(9)</sup>	Wireless			•	—	★
<b>Transmitter Housing Style</b>		<b>Material</b>	<b>Conduit Entry Size</b>			
<b>Standard</b>						<b>Standard</b>
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 <sup>(10)</sup>	Wireless PlantWeb housing		Aluminum	1/2-14 NPT	•	—
5J <sup>(10)</sup>	Wireless PlantWeb housing		SST	1/2-14 NPT	•	—
7J <sup>(8)(11)</sup>	Quick Connect (A size Mini, 4-pin male termination)				•	—
<b>Expanded</b>						
1C	PlantWeb Housing		Aluminum	G <sup>1</sup> / <sub>2</sub>	•	•
1L	PlantWeb Housing		SST	G <sup>1</sup> / <sub>2</sub>	•	•
2C	Junction Box Housing		Aluminum	G <sup>1</sup> / <sub>2</sub>	•	—
2G	Junction Box housing with output for remote display and interface		Aluminum	G <sup>1</sup> / <sub>2</sub>	•	—
<b>Transmitter Performance Class</b>						
<b>Standard</b>						<b>Standard</b>
<b>3051S MultiVariable SuperModule, Measurement Types 1, 2, 5, and 6</b>				•	•	
3	Ultra for Flow: 0.75% flow rate accuracy, 14:1 flow turndown, 10-yr stability, limited 12-yr warranty			•	•	★
5	Classic MV: 1.10% flow rate accuracy, 8:1 flow turndown, 5-yr stability			—	•	★



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.

<b>3051S Single Variable SuperModule, Measurement Types 3, 4, 7, and D</b>		•	•	
1	Ultra: 0.90% flow rate accuracy, 8:1 flow turndown, 10-yr stability, limited 12-yr warranty	•	—	★
2	Classic: 1.40% flow rate accuracy, 8:1 flow turndown, 5-yr stability	•	—	★
3 <sup>(12)</sup>	Ultra for Flow: 0.75% flow rate accuracy, 14:1 flow turndown, 10-yr stability, limited 12-yr warranty	•	•	★

**Wireless Options** (Requires option code X and wireless PlantWeb housing)

<b>Update Rate, Operating Frequency, and Protocol</b>				
<b>Standard</b>				<b>Standard</b>
WA	User Configurable Update Rate	•	—	★
<b>Operating Frequency and Protocol</b>				
<b>Standard</b>				
3	2.4 GHz DSSS, IEC 62591 (WirelessHART)	•	—	★
<b>Omnidirectional Wireless Antenna</b>				
<b>Standard</b>				
WK	External Antenna	•	—	★
WM	Extended Range, External Antenna	•	—	★
<b>Expanded</b>				
WN	High-Gain, Remote Antenna	•	—	
<b>SmartPower™</b>				
<b>Standard</b>				
1 <sup>(13)</sup>	Adapter for Black Power Module (I.S. Power Module Sold Separately)	•	—	★

**Other Options** (Include with selected model number)

<b>Installation Accessories</b>				
<b>Standard</b>				<b>Standard</b>
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)	•	•	★
<b>Expanded</b>				
B	JIS Alignment Ring (10K)	•	•	
R	JIS Alignment Ring (20K)	•	•	
S	JIS Alignment Ring (40K)	•	•	
<b>Remote Adapters</b>				
<b>Standard</b>				<b>Standard</b>
E	Flange adapters 316 SST (1/2-in. NPT)	•	•	★
<b>High Temperature Applications</b>				
<b>Expanded</b>				
T	Graphite Valve Packing (Tmax = 850 °F)	•	•	
<b>Flow Calibration</b>				
<b>Expanded</b>				
WC	Discharge Coefficient Verification (3 point)	•	•	
WD	Discharge Coefficient Verification (full 10 point)	•	•	
<b>Pressure Testing</b>				
<b>Expanded</b>				
P1	Hydrostatic Testing with Certificate	•	•	
<b>Special Cleaning</b>				
<b>Expanded</b>				
P2	Cleaning for Special Processes	•	•	
PA	Cleaning per ASTM G93 Level D (section 11.4)	•	•	

# Rosemount 3051S Series

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.

<b>Special Inspection</b>				
<b>Standard</b>				<b>Standard</b>
QC1	Visual & Dimensional Inspection with Certificate	•	•	★
QC7	Inspection & Performance Certificate	•	•	★
<b>Transmitter Calibration Certification</b>				
<b>Standard</b>				<b>Standard</b>
Q4	Calibration Data Certificate for Transmitter	•	•	★
QP	Calibration Certificate and Tamper Evident Seal	•	•	★
<b>Quality Certification for Safety</b>		<b>D</b>	<b>1-7</b>	
<b>Standard</b>				<b>Standard</b>
QS <sup>(14)(15)</sup>	Prior-use certificate of FMEDA data	•	—	★
QT <sup>(14)(15)(18)</sup>	Safety Certified to IEC 61508 with certificate of FMEDA data	•	—	★
<b>Material Traceability Certifications</b>				
<b>Standard</b>				<b>Standard</b>
Q8	Material Traceability Certification per EN 10204:2004 3.1	•	•	★
<b>Code Conformance</b>				
<b>Expanded</b>				
J2	ANSI / ASME B31.1	•	•	
J3	ANSI / ASME B31.3	•	•	
J4	ANSI / ASME B31.8	•	•	
<b>Material Conformance</b>				
<b>Expanded</b>				
J5 <sup>(16)</sup>	NACE MR-0175 / ISO 15156	•	•	
<b>Country Certification</b>				
<b>Expanded</b>				
J1	Canadian Registration	•	•	
<b>Product Certifications</b>				
<b>Standard</b>				<b>Standard</b>
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, Division 2	•	•	★
K5	FM Explosion-proof, Dust Ignition-proof, Intrinsically Safe, Division 2 (combination of E5 and I5)	•	•	★
E6 <sup>(17)</sup>	CSA Explosion-proof, Dust Ignition-proof, Division 2	•	•	★
I6	CSA Intrinsically Safe	•	•	★
K6 <sup>(17)</sup>	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 <sup>(17)</sup>	ATEX and CSA Flameproof, Intrinsically Safe, Division 2 (combination of E1, I1, E6, and I6)	•	•	★
KB <sup>(17)</sup>	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 <sup>(17)</sup>	FM, CSA, and ATEX Explosion-proof, Intrinsically Safe (combination of E5, E6, E1, I5, I6, and I1)	•	•	★

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# Rosemount 3051S Series

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.

Shipboard Approvals				
<b>Standard</b>				
SBS	American Bureau of Shipping	•	•	★
<b>Sensor Fill Fluid and O-ring Options</b>		<b>D</b>	<b>1-7</b>	
<b>Standard</b>				<b>Standard</b>
L1	Inert Sensor Fill Fluid	•	•	★
L2	Graphite-filled (PTFE) O-ring	•	•	★
LA	Inert sensor fill fluid and graphite-filled (PTFE) O-ring	•	•	★
<b>Digital Display<sup>(18)</sup></b>				
<b>Standard</b>				<b>Standard</b>
M5	PlantWeb LCD display	•	•	★
M7 <sup>(15)(19)(20)</sup>	Remote mount LCD display and interface, PlantWeb housing, no cable, SST bracket	•	•	★
M8 <sup>(15)(19)</sup>	Remote mount LCD display and interface, PlantWeb housing, 50 ft. (15m) cable, SST bracket	•	•	★
M9 <sup>(15)(19)</sup>	Remote mount LCD display and interface, PlantWeb housing, 100 ft. (31m) cable, SST bracket	•	•	★
<b>Transient Protection</b>				
<b>Standard</b>				<b>Standard</b>
T1 <sup>(21)</sup>	Transient terminal block	•	•	★
<b>Manifold for Remote Mount Option</b>				
<b>Standard</b>				<b>Standard</b>
F2	3-Valve Manifold, SST	•	•	★
F6	5-Valve Manifold, SST	•	•	★
<b>PlantWeb Control Functionality</b>				
<b>Standard</b>				<b>Standard</b>
A01	FOUNDATION fieldbus Advanced Control Function Block Suite	•	—	★
<b>PlantWeb Diagnostic Functionality</b>				
<b>Standard</b>				<b>Standard</b>
D01	FOUNDATION fieldbus Diagnostics Suite	•	—	★
DA2 <sup>(22)</sup>	Advanced HART Diagnostic Suite	•	—	★
<b>PlantWeb Enhanced Measurement Functionality</b>				
<b>Standard</b>				<b>Standard</b>
H01 <sup>(23)</sup>	FOUNDATION fieldbus Fully Compensated Mass Flow Block	•	—	★
<b>Cold Temperature</b>				
<b>Standard</b>				<b>Standard</b>
BRR	-60 °F (-51 °C) Cold Temperature Start-up	•	•	★
<b>Alarm Limit<sup>(14)(15)</sup></b>				
<b>Standard</b>				<b>Standard</b>
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)	•	•	★
<b>Hardware Adjustments and Ground Screw</b>				
<b>Standard</b>				<b>Standard</b>
D1 <sup>(14)(15)(24)</sup>	Hardware Adjustments (zero, span, alarm, security).	•	—	★
D4	External ground screw assembly	•	•	★
DA <sup>(14)(15)(24)</sup>	Hardware adjustments (zero, span, alarm, security) and external ground screw assembly	•	—	★
<b>Conduit Plug</b>				
<b>Standard</b>				<b>Standard</b>
DO	316 SST Conduit Plug	•	•	★
<b>Conduit Electrical Connector</b>				
<b>Standard</b>				<b>Standard</b>
ZE <sup>(25)</sup>	M12, 4-pin, Male Connector (eurofast)	•	•	★
ZM <sup>(25)</sup>	A size Mini, 4-pin, Male Connector (minifast)	•	•	★
<b>Typical Model Number: 3051SFC 1 C S 060 N 065 T 3 2 J A 1A 3</b>				

# Rosemount 3051S Series

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- (1) Not available for Primary Element Technology code C.
- (2) For 2-in. (50 mm) line sizes the Primary Element Type is 0.6 for Primary Element Technology Code C.
- (3) Required for Measurement Type codes 2, 4, 6, and D.
- (4) Only available with Transmitter Feature Board Measurement Type: 1, 3, 5, 7.
- (5) Required for Measurement Type codes 3, 4, 7, and D.
- (6) For Measurement Type 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).
- (7) Requires PlantWeb housing.
- (8) Available approvals are FM Intrinsically Safe, Division 2 (option code I5), CSA Intrinsically Safe (option code I6), ATEX Intrinsic Safety (option code I1), and IECEx Intrinsic Safety (option code I7).
- (9) Requires wireless options and wireless PlantWeb housing.
- (10) Only available with output code X.
- (11) Available with output code A only.
- (12) Only available with differential pressure ranges 2 and 3, and silicone fill fluid.
- (13) Long-life Power Module must be shipped separately, order Part No. 00753-9220-0001.
- (14) Not available with Output Protocol code F.
- (15) Not available with output code X.
- (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 M20 or G ½ conduit entry size.
- (18) Not available with housing code 7J.
- (19) Not available with output code F, option code DA2, or option code QT.
- (20) See the 3051S Reference Manual (document number 00809-0100-4801) for cable requirements. Contact an Emerson Process Management representative for additional information.
- (21) 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, transient protection is included with the FISCO Product Certification code IA.
- (22) Includes Hardware Adjustments (option code D1) as standard. Not available with output code X.
- (23) Requires Rosemount Engineering Assistant version 5.5.1 to configure.
- (24) Not available with housing style codes 2E, 2F, 2G, 2M, 5A, 5J, or 7J.
- (25) Not available with Housing code 5A, 5J, or 7J. Available with Intrinsically Safe approvals only. For FM Intrinsically Safe, Division 2 (option code I5) or FM FISCO Intrinsically Safe (option code IE), install in accordance with Rosemount drawing 03151-1009 to maintain outdoor rating (NEMA 4X and IP66).

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# Rosemount 3051S Series



## 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	•	•	
<b>Measurement Type</b>				
<b>Standard</b>				<b>Standard</b>
1	MultiVariable (Fully Compensated Mass & Energy Flow) – Differential & Static Pressures w/ Temperature	—	•	★
2	MultiVariable (Compensated Flow) – Differential and Static Pressures	—	•	★
3	MultiVariable (Compensated Flow) – Differential Pressure and Temperature	—	•	★
4	MultiVariable (Compensated Flow) – Differential Pressure	—	•	★
5	MultiVariable (Direct Measurement) – Differential and Static Pressures with Temperature	—	•	★
6	MultiVariable (Direct Measurement) – Differential and Static Pressures	—	•	★
7	MultiVariable (Direct Measurement) – Differential Pressure and Temperature	—	•	★
D	Differential Pressure	•	—	★
<b>Body Material</b>				
<b>Standard</b>				<b>Standard</b>
S	316 SST	•	•	★
<b>Line Size</b>				
<b>Standard</b>				<b>Standard</b>
005	1/2-in. (15 mm)	•	•	★
010	1-in. (25 mm)	•	•	★
015	1 1/2-in. (40 mm)	•	•	★
<b>Process Connection</b>				
<b>Standard</b>				<b>Standard</b>
T1	NPT Female Body (Not Available with Remote Thermowell and RTD)	•	•	★
S1 <sup>(1)</sup>	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	•	•	★
<b>Expanded</b>				
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	•	•	
<b>Orifice Plate Material</b>				
<b>Standard</b>				<b>Standard</b>
S	316 SST	•	•	★

# Rosemount 3051S Series

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.

<b>Expanded</b>				
H	Alloy C-276	•	•	
M	Alloy 400	•	•	
<b>Bore Size Option</b>		<b>D</b>	<b>1-7</b>	
<b>Standard</b>				<b>Standard</b>
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	•	•	★
<b>Expanded</b>				
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	•	•	
<b>Transmitter Connection Platform</b>				
<b>Standard</b>				<b>Standard</b>
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	•	•	★
<b>Expanded</b>				
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	•	•	
<b>Differential Pressure Range</b>				
<b>Standard</b>				<b>Standard</b>
1	0 to 25 inH <sub>2</sub> O (0 to 62.3 mbar)	•	•	★
2	0 to 250 inH <sub>2</sub> O (0 to 623 mbar)	•	•	★
3	0 to 1000 inH <sub>2</sub> O (0 to 2.5 bar)	•	•	★
<b>Static Pressure Range</b>				
<b>Standard</b>				<b>Standard</b>
A <sup>(2)</sup>	None	•	•	★
D	Absolute 0 to 800 psia (0 to 55.2 bar)	—	•	★
E <sup>(3)</sup>	Absolute 0 to 3626 psia (0 to 250 bar)	—	•	★
J	Gage -14.2 to 800 psig (-0.979 to 55.2 bar)	—	•	★
K <sup>(3)</sup>	Gage -14.2 to 3626 psig (-0.979 to 250 bar)	—	•	★

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# Rosemount 3051S Series

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.

Transmitter Output				D	1-7	
<b>Standard</b>						<b>Standard</b>
A	4–20 mA with digital signal based on HART protocol			•	•	★
F	FOUNDATION fieldbus (Requires PlantWeb housing)			•	—	★
X <sup>(4)</sup>	Wireless (Requires wireless options and wireless PlantWeb housing)			•	—	★
Transmitter Housing Style		Material	Conduit Entry Size			
<b>Standard</b>						<b>Standard</b>
00	None (Customer-supplied electrical connection)			•	—	★
1A	PlantWeb Housing	Aluminum	<sup>1</sup> / <sub>2</sub> -14 NPT	•	•	★
1B	PlantWeb Housing	Aluminum	M20 x 1.5	•	•	★
1J	PlantWeb Housing	SST	<sup>1</sup> / <sub>2</sub> -14 NPT	•	•	★
1K	PlantWeb Housing	SST	M20 x 1.5	•	•	★
2A	Junction Box Housing	Aluminum	<sup>1</sup> / <sub>2</sub> -14 NPT	•	—	★
2B	Junction Box Housing	Aluminum	M20 x 1.5	•	—	★
2E	Junction Box Housing with output for remote display and interface	Aluminum	<sup>1</sup> / <sub>2</sub> -14 NPT	•	—	★
2F	Junction Box Housing with output for remote display and interface	Aluminum	M20 x 1.5	•	—	★
2J	Junction Box Housing	SST	<sup>1</sup> / <sub>2</sub> -14 NPT	•	—	★
2M	Junction Box Housing with output for remote display and interface	SST	<sup>1</sup> / <sub>2</sub> -14 NPT	•	—	★
5A <sup>(5)</sup>	Wireless PlantWeb Housing	Aluminum	<sup>1</sup> / <sub>2</sub> -14 NPT	•	—	★
5J <sup>(5)</sup>	Wireless PlantWeb Housing	SST	<sup>1</sup> / <sub>2</sub> -14 NPT	•	—	★
7J <sup>(4)(6)</sup>	Quick Connect (A size Mini, 4-pin male termination)			•	—	★
<b>Expanded</b>						
1C	PlantWeb Housing	Aluminum	G <sup>1</sup> / <sub>2</sub>	•	•	
1L	PlantWeb Housing	SST	G <sup>1</sup> / <sub>2</sub>	•	•	
2C	Junction Box Housing	Aluminum	G <sup>1</sup> / <sub>2</sub>	•	—	
2G	Junction Box Housing with output for remote display and interface	Aluminum	G <sup>1</sup> / <sub>2</sub>	•	—	
Transmitter Performance Class						
<b>Standard</b>						<b>Standard</b>
<b>3051S MultiVariable SuperModule, Measurement Types 1, 2, 5, and 6</b>						
3 <sup>(7)</sup>	Ultra for Flow: 0.95% flow rate accuracy, 14:1 flow turndown, 10-year stability, limited 12-year warranty			•	•	★
5	Classic MV: 1.25% flow rate accuracy, 8:1 flow turndown, 5-year stability			—	•	★
<b>3051S Single Variable SuperModule, Measurement Types 3, 4, 7, and D</b>						
1	Ultra: 1.05% flow rate accuracy, 8:1 flow turndown, 10-year stability, limited 12-year warranty			•	•	★
2	Classic: 1.50% flow rate accuracy, 8:1 flow turndown, 5-year stability			•	•	★
3 <sup>(7)</sup>	Ultra for Flow: 0.95% flow rate accuracy, 14:1 flow turndown, 10-year stability, limited 12-year warranty			•	•	★

## Wireless Options (Requires option code X and wireless PlantWeb housing)

Update Rate, Operating Frequency and Protocol						
<b>Standard</b>						<b>Standard</b>
WA	User Configurable Update Rate			•	—	★
Operating Frequency and Protocol						
<b>Standard</b>						
3	2.4 GHz DSSS, IEC 62591 (WirelessHART)			•	—	★
Omnidirectional Wireless Antenna						
<b>Standard</b>						
WK	External Antenna			•	—	★
WM	Extended Range, External Antenna			•	—	★

# Rosemount 3051S Series

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.

<b>Expanded</b>			
WN	High-Gain, Remote Antenna	•	—
<b>SmartPower™</b>			
<b>Standard</b>			
1 <sup>(8)</sup>	Adapter for Black Power Module (I.S. Power Module Sold Separately)	•	— ★

## Other Options (Include with selected model number)

<b>Transmitter / Body Bolt Material</b>		<b>D</b>	<b>1-7</b>	
<b>Expanded</b>				
G <sup>(9)</sup>	High temperature Option (850 °F (454 °C))	•	•	
<b>Temperature Sensor</b>				
<b>Standard</b>				<b>Standard</b>
T <sup>(10)</sup>	Thermowell and RTD	•	•	★
<b>Optional Connection</b>				
<b>Standard</b>				<b>Standard</b>
G1	DIN 19213 Transmitter Connection	•	•	★
<b>Pressure Testing</b>				
<b>Expanded</b>				
P1 <sup>(11)</sup>	Hydrostatic Testing with Certificate	•	•	
<b>Special Cleaning</b>				
<b>Expanded</b>				
P2	Cleaning for Special Services	•	•	
PA	Cleaning per ASTM G93 Level D (Section 11.4)	•	•	
<b>Material Testing</b>				
<b>Expanded</b>				
V1	Dye Penetrant Exam	•	•	
<b>Material Examination</b>				
<b>Expanded</b>				
V2	Radiographic Examination (available only with Process Connection code W1, W3, and W6)	•	•	
<b>Flow Calibration</b>				
<b>Expanded</b>				
WD <sup>(12)</sup>	Discharge Coefficient Verification	•	•	
WZ <sup>(12)</sup>	Special Calibration	•	•	
<b>Special Inspection</b>				
<b>Standard</b>				<b>Standard</b>
QC1	Visual & Dimensional Inspection with Certificate	•	•	★
QC7	Inspection & Performance Certificate	•	•	★
<b>Material Traceability Certification</b>				
<b>Standard</b>				<b>Standard</b>
Q8	Material certification per EN 10204:2004 3.1	•	•	★
<b>Code Conformance</b>				
<b>Expanded</b>				
J2 <sup>(13)</sup>	ANSI / ASME B31.1	•	•	
J3 <sup>(13)</sup>	ANSI / ASME B31.3	•	•	
J4 <sup>(13)</sup>	ANSI / ASME B31.8	•	•	
<b>Materials Conformance</b>				
<b>Expanded</b>				
J5 <sup>(14)</sup>	NACE MR-0175 / ISO 15156	•	•	
<b>Country Certification</b>				
<b>Standard</b>				<b>Standard</b>
J6	European Pressure Directive (PED)	•	•	★
<b>Expanded</b>				
J1	Canadian Registration	•	•	



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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.

<b>Transmitter Calibration Certification</b>				
<b>Standard</b>				<b>Standard</b>
Q4	Calibration Data Certificate for Transmitter	•	•	★
<b>Quality Certification for Safety</b>				
<b>Standard</b>				<b>Standard</b>
QS <sup>(15)(16)</sup>	Prior-use Certificate of FMEDA data	•	—	★
QT <sup>(15)(16)(18)</sup>	Safety-certified to IEC 61508 with Certificate of FMEDA data	•	—	★
<b>Product Certifications</b>				<b>D 1-7</b>
<b>Standard</b>				<b>Standard</b>
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, Division 2	•	•	★
K5	FM Explosion-proof, Dust Ignition-proof, Intrinsically Safe, Division 2 (combination of E5 and I5)	•	•	★
E6 <sup>(17)</sup>	CSA Explosion-proof, Dust Ignition-proof, Division 2	•	•	★
I6	CSA Intrinsically Safe	•	•	★
K6 <sup>(17)</sup>	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 <sup>(17)</sup>	ATEX and CSA Flameproof, Intrinsically Safe, Division 2 (combination of E1, I1, E6, and I6)	•	•	★
KB <sup>(17)</sup>	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 <sup>(17)</sup>	FM, CSA, and ATEX Explosion-proof, Intrinsically Safe (combination of E5, I5, E6, I6, E1, and I1)	•	•	★
<b>Shipboard Approvals</b>				
<b>Standard</b>				<b>Standard</b>
SBS	American Bureau of Shipping	•	•	★
<b>Sensor Fill Fluid and O-ring Options</b>				
<b>Standard</b>				<b>Standard</b>
L1	Inert Sensor Fill Fluid	•	•	★
L2	Graphite-filled (PTFE) O-ring	•	•	★
LA	Inert sensor fill fluid and graphite-filled (PTFE) O-ring	•	•	★
<b>Digital Display<sup>(18)</sup></b>				
<b>Standard</b>				<b>Standard</b>
M5	PlantWeb LCD display (Requires PlantWeb housing)	•	•	★
M7 <sup>(15)(19)(20)</sup>	Remote mount LCD display and interface, PlantWeb housing, no cable, SST bracket	•	—	★
M8 <sup>(15)(20)</sup>	Remote mount LCD display and interface, PlantWeb housing, 50 ft. (15 m) cable, SST bracket	•	—	★
M9 <sup>(15)(20)</sup>	Remote mount LCD display and interface, PlantWeb housing, 100 ft. (31 m) cable, SST bracket	•	—	★
<b>Transient Protection</b>				
<b>Standard</b>				<b>Standard</b>
T1 <sup>(21)</sup>	Transient terminal block	•	•	★
<b>PlantWeb Control Functionality</b>				
<b>Standard</b>				<b>Standard</b>
A01	FOUNDATION fieldbus Advanced Control Function Block Suite	•	—	★

# Rosemount 3051S Series

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.

PlantWeb Diagnostic Functionality				
<b>Standard</b>				<b>Standard</b>
D01	FOUNDATION fieldbus Diagnostics Suite	•	—	★
DA2 <sup>(22)</sup>	Advanced HART Diagnostics Suite	•	—	★
PlantWeb Enhanced Measurement Functionality				
<b>Standard</b>				<b>Standard</b>
H01 <sup>(23)</sup>	FOUNDATION fieldbus Fully Compensated Mass Flow Block	•	—	★
Cold Temperature				
<b>Standard</b>				<b>Standard</b>
BRR	-60 °F (-51 °C) Cold Temperature Start-up	—	•	★
Alarm Limit <sup>(15)(16)</sup>				
<b>Standard</b>				<b>Standard</b>
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				
<b>Standard</b>				<b>Standard</b>
D1 <sup>(15)(16)(24)</sup>	Hardware Adjustments (zero, span, alarm, security)	•	—	★
D4	External ground screw assembly	•	•	★
DA <sup>(15)(16)(24)</sup>	Hardware adjustments (zero, span, alarm, security) & External Ground Screw Assembly	•	—	★
Conduit Plug				
DO	316 SST Conduit Plug			
Conduit Electrical Connector				
<b>Expanded</b>				
GE <sup>(25)</sup>	M12, 4-pin, Male Connector ( <i>euromast</i> <sup>®</sup> )	•	•	
GM <sup>(25)</sup>	A size Mini, 4-pin, Male Connector ( <i>minifast</i> <sup>®</sup> )	•	•	
<b>Typical Model Number: 3051SFP 1 S 010 W3 S 0150 D3 1 J A 1A 3 M5</b>				

- (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 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) Available approvals are FM Intrinsically Safe, Division 2 (option code I5), CSA Intrinsically Safe (option code I6), ATEX Intrinsic Safety (option code I1), and IECEx Intrinsic Safety (option code I7).
- (5) Only available with output code X.
- (6) Only available with output code A.
- (7) Only available with differential pressure ranges 2 and 3, and silicone fill fluid.
- (8) Long-life Power Module must be shipped separately, order Part No. 00753-9220-0001.
- (9) Not available with 1 1/2-in. (38 mm) line size.
- (10) Thermowell material is the same as the body material.
- (11) Does not apply to Process Connection codes T1 and S1.
- (12) Not available for bore sizes 0010, 0014, 0020, or 0034.
- (13) Not available with DIN Process Connection codes D1, D2, or D3.
- (14) 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.
- (15) Not available with output code X.
- (16) Not available with Output Protocol code F.
- (17) Not available with M20 or G 1/2 conduit entry size.
- (18) Not available with housing code 7J.

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# Rosemount 3051S Series

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- (19) See the 3051S Reference Manual (document number 00809-0100-4801) for cable requirements. Contact an Emerson Process Management representative for additional information.*
- (20) Not available with output code F, option code DA2, or option code QT.*
- (21) Not available with Housing code 5A, 5J, or 7J. The T1 option is not needed with FISCO Product Certifications, transient protection is included with the FISCO Product Certification code IA.*
- (22) Includes Hardware Adjustments (option code D1) as standard. Not available with output code X.*
- (23) Requires Rosemount Engineering Assistant version 5.5.1 to configure.*
- (24) Not available with housing style codes 2E, 2F, 2G, 2M, 5A, 5J, or 7J.*
- (25) Not available with Housing code 5A, 5J, or 7J. Available with Intrinsically Safe approvals only. For FM Intrinsically Safe, Division 2 (option code I5) or FM FISCO Intrinsically Safe (option code IE), install in accordance with Rosemount drawing 03151-1009 to maintain outdoor rating (NEMA 4X and IP66).*

# Rosemount 3051S Series

## Rosemount 3051S Electronic Remote Sensors



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

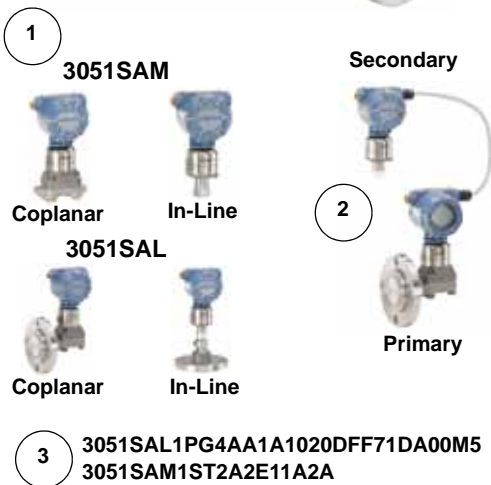
1. Choose two ERS transmitter models. These may be any combination of 3051SAM and 3051SAL models.
2. Decide which model will be the ERS Primary (4-20 mA loop termination and optional LCD) and which will be the ERS Secondary. This will be specified by the “Configuration Type” code in each model number.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

### Additional Information

Specifications: page 68

Certifications: page 96

Dimensional Drawings: page 98



### 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 10-year stability and limited 12-year warranty

Table 7. 3051SAM Scalable Advanced Measurement Transmitter for ERS Applications Ordering Information

★ The Standard offering represents the most common models and 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	
<b>Performance Class</b>		
<b>Standard</b>		<b>Standard</b>
1	Ultra: 0.025% span accuracy, 200:1 rangedown, 10-year stability, 12-year limited warranty	★
2	Classic: 0.055% span accuracy, 100:1 rangedown, 5-year stability	★
<b>Configuration Type</b>		
<b>Standard</b>		<b>Standard</b>
P	Electronic Remote Sensor - Primary	★
S	Electronic Remote Sensor - Secondary	★

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# Rosemount 3051S Series

Table 7. 3051SAM Scalable Advanced Measurement Transmitter for ERS Applications Ordering Information

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

Pressure Module Type		Pressure Sensor Type			
<b>Standard</b>					<b>Standard</b>
G	Coplanar	Gage			★
T	In-Line	Gage			★
E	In-Line	Absolute			★
<b>Expanded</b>					
A	Coplanar	Absolute			
<b>Pressure Range<sup>(1)</sup></b>					
	<b>Coplanar Gage</b>	<b>In-Line Gage</b>	<b>In-Line Absolute</b>	<b>Coplanar Absolute</b>	
<b>Standard</b>					<b>Standard</b>
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	★
<b>Isolating Diaphragm</b>					
<b>Standard</b>					<b>Standard</b>
2 <sup>(2)</sup>	316L SST				★
3 <sup>(2)</sup>	Alloy C-276				★
<b>Expanded</b>					
4 <sup>(3)</sup>	Alloy 400				
5 <sup>(3)(4)</sup>	Tantalum				
6 <sup>(3)</sup>	Gold-plated Alloy 400 (includes Graphite-Filled PTFE O-Ring)				
7 <sup>(3)</sup>	Gold-plated 316L SST				
<b>Process Connection</b>					
	<b>Coplanar Module Type</b>	<b>In-Line Module Type</b>			
<b>Standard</b>					<b>Standard</b>
000	None		N/A		★
A11 <sup>(5)</sup>	Assemble to Rosemount 305 Manifold		Assemble to Rosemount 306 Manifold		★
A12 <sup>(5)</sup>	Assemble to Rosemount 304 or AMF Manifold with SST Traditional Flange		N/A		★
B11 <sup>(5)(6)</sup>	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 <sup>(2)</sup>	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 <sup>(2)</sup>	Coplanar Flange (SST), ¼-18 NPT, Alloy C-276 Drain Vents		N/A		★
E16 <sup>(2)</sup>	Coplanar Flange (CS), ¼-18 NPT, Alloy C-276 Drain Vents		N/A		★
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 <sup>(2)</sup>	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 <sup>(2)</sup>	Coplanar Flange (SST), RC ¼, Alloy C-276 Drain Vents		N/A		★
E26 <sup>(2)</sup>	Coplanar Flange (CS), RC ¼, Alloy C-276 Drain Vents		N/A		★

# Rosemount 3051S Series

Table 7. 3051SAM Scalable Advanced Measurement Transmitter for ERS Applications Ordering Information

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

F12	Traditional Flange (SST), 1/4-18 NPT, 316 SST Drain Vents	N/A	★
F13 <sup>(2)</sup>	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 <sup>(2)</sup>	Traditional Flange (SST), 1/4-18 NPT, Alloy C-276 Drain Vents	N/A	★
F22	Traditional Flange (SST), RC 1/4, 316 SST Drain Vents	N/A	★
F23 <sup>(2)</sup>	Traditional Flange (Cast C-276), RC 1/4, Alloy C-276 Drain Vents	N/A	★
F24	Traditional Flange (Cast Alloy 400), RC 1/4, Alloy 400/K500 Drain Vents	N/A	★
F25 <sup>(2)</sup>	Traditional Flange (SST), RC 1/4, 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	★
<b>Expanded</b>			
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 1/4, 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	
<b>Transmitter Output</b>			
<b>Standard</b>			<b>Standard</b>
A	4–20 mA with digital signal based on HART protocol		★
<b>Housing Style</b>		<b>Material</b>	<b>Conduit Entry Size</b>
<b>Standard</b>			<b>Standard</b>
<i>Housings for ERS Primary - Configuration Type code P</i>			
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
<i>Housings for ERS Secondary - Configuration Type code S</i>			
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

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# Rosemount 3051S Series

Table 7. 3051SAM Scalable Advanced Measurement Transmitter for ERS Applications Ordering Information

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

<b>Expanded</b>			
<i>Housings for ERS Primary - Configuration Type code P</i>			
1C	PlantWeb Housing	Aluminum	G <sup>1/2</sup>
1L	PlantWeb Housing	SST	G <sup>1/2</sup>
2G	Junction Box with Remote Display Output	Aluminum	G <sup>1/2</sup>
<i>Housings for ERS Secondary - Configuration Type code S</i>			
2C	Junction Box	Aluminum	G <sup>1/2</sup>

## Options (Include with selected model number)

<b>Electronic Remote Sensor Connection Cable</b>			<b>Standard</b>
<b>Standard</b>			<b>Standard</b>
R05	50 ft. (15.2 m) Spool of Electronic Remote Sensor Cable		★
R10	100 ft. (30.5 m) Spool of Electronic Remote Sensor Cable		★
<b>Mounting Bracket</b>			<b>Standard</b>
<b>Standard</b>			<b>Standard</b>
B1 <sup>(3)</sup>	Traditional flange bracket, CS, 2-in. pipe		★
B2 <sup>(3)</sup>	Traditional flange bracket, CS, panel		★
B3 <sup>(3)</sup>	Traditional flange flat bracket, CS, 2-in. pipe		★
B4	Bracket, all SST, 2-in. Pipe and Panel		★
B7 <sup>(3)</sup>	Traditional flange bracket, B1 with SST bolts		★
B8 <sup>(3)</sup>	Traditional flange bracket, B2 with SST bolts		★
B9 <sup>(3)</sup>	Traditional flange bracket, B3 with SST bolts		★
BA <sup>(3)</sup>	Traditional flange bracket, B1, all SST		★
BC <sup>(3)</sup>	Traditional flange bracket, B3, all SST		★
<b>Special Configuration (Software)</b>			<b>Standard</b>
<b>Standard</b>			<b>Standard</b>
C1 <sup>(7)</sup>	Customer Software Configuration ("Configuration Data Sheet" Must Be Completed)		★
C3	Gage Pressure Calibration on Rosemount 3051SAM__A4 only		★
C4 <sup>(7)</sup>	NAMUR Alarm and Saturation Levels, High Alarm		★
C5 <sup>(7)</sup>	NAMUR Alarm and Saturation Levels, Low Alarm		★
C6 <sup>(7)</sup>	Custom Alarm and Saturation Levels, High Alarm (Requires C1 and Configuration Data Sheet)		★
C7 <sup>(7)</sup>	Custom Alarm and Saturation Levels, Low Alarm (Requires C1 and Configuration Data Sheet)		★
C8 <sup>(7)</sup>	Low alarm (standard Rosemount alarm and saturation levels)		★
<b>Special Configuration (Hardware)</b>			<b>Standard</b>
<b>Standard</b>			<b>Standard</b>
D2 <sup>(8)</sup>	1/2-14 NPT Flange Adapters		★
D4	External ground screw assembly		★
D5 <sup>(8)</sup>	Delete transmitter drain/vent valves (install plugs)		★
<b>Expanded</b>			
D7 <sup>(8)</sup>	Coplanar flange without drain/vent ports		
D9 <sup>(8)</sup>	RC 1/2 Flange Adapters		
<b>Product Certifications</b>			<b>Standard</b>
<b>Standard</b>			<b>Standard</b>
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, Division 2		★
K5	FM Explosion-proof, Dust Ignition-proof, Intrinsically Safe, Division 2		★
E6 <sup>(9)</sup>	CSA Explosion-proof, Dust Ignition-proof, Division 2		★
I6	CSA Intrinsically Safe		★
K6 <sup>(9)</sup>	CSA Explosion-proof, Dust Ignition-proof, Intrinsically Safe, Division 2		★
E7	IECEx Flameproof		★
I7	IECEx Intrinsic Safety		★

## Rosemount 3051S Series

Table 7. 3051SAM Scalable Advanced Measurement Transmitter for ERS Applications Ordering Information

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

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	★
KA <sup>(9)</sup>	ATEX and CSA Flameproof, Intrinsically Safe, Division 2	★
KB <sup>(9)</sup>	FM and CSA Explosion-proof, Dust Ignition-proof, Intrinsically Safe, Division 2	★
KC	FM and ATEX Explosion-proof, Intrinsically Safe, Division 2	★
KD <sup>(9)</sup>	FM, CSA, and ATEX Explosion-proof, Intrinsically Safe	★
<b>Special Certifications</b>		
<b>Standard</b>		<b>Standard</b>
Q4	Calibration certificate	★
QP	Calibration Certificate and Tamper Evident Seal	★
Q8	Material Traceability Certification per EN 10204 3.1B	★
Q16	Surface Finish Certification for Hygienic Remote Seals	★
QZ <sup>(10)</sup>	Remote Seal System Performance Calculation Report	★
<b>Terminal Blocks</b>		
<b>Standard</b>		<b>Standard</b>
T1 <sup>(7)</sup>	Transient Terminal Block	★
<b>Alternate Materials of Construction</b>		
<b>Standard</b>		<b>Standard</b>
L1 <sup>(11)</sup>	Inert Sensor Fill Fluid	★
L2	Graphite-Filled PTFE O-Ring	★
L4 <sup>(8)</sup>	Austenitic 316 SST Bolts	★
L5 <sup>(2)(8)</sup>	ASTM A 193, Grade B7M Bolts	★
L6 <sup>(8)</sup>	Alloy K-500 Bolts	★
L7 <sup>(2)(8)</sup>	ASTM A 453, Class D, Grade 660 Bolts	★
L8 <sup>(8)</sup>	ASTM A 193, Class 2, Grade B8M Bolts	★
<b>Display Type (ERS Primary Only)</b>		
<b>Standard</b>		<b>Standard</b>
M5 <sup>(7)</sup>	PlantWeb LCD Display	★
M7 <sup>(7)</sup>	Remote Mount LCD Display and Interface, PlantWeb Housing, No Cable, SST Bracket	★
M8 <sup>(7)</sup>	Remote Mount LCD Display and Interface, PlantWeb Housing, 50 ft. (15.2 m) Cable, SST Bracket	★
M9 <sup>(7)</sup>	Remote Mount LCD Display and Interface, PlantWeb Housing, 100 ft. (30.5 m) Cable, SST Bracket	★
<b>Special Procedures</b>		
<b>Expanded</b>		
P1	Hydrostatic Testing with Certificate	
P2 <sup>(8)</sup>	Cleaning for Special Services	
P3 <sup>(8)</sup>	Cleaning for Less than 1 PPM Chlorine/Fluorine	
<b>Typical Model Number: 3051SAM 1 S T 2A 2 E11 A 2A</b>		

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

(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.

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

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

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

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

(7) Not available with Configuration Type code S.

(8) Not available with Process Connection code A11.

(9) Not available with M20 or G ½ conduit entry size.

(10) 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).

(11) Silicone fill fluid is standard.





### Rosemount 3051SAL Level Transmitter for ERS Applications

- Integrated transmitter and remote seal in a single model number
- Variety of process connections including flanged, threaded, and hygienic remote seals
- Available with 10-year stability and limited 12-year warranty

A 3051SAL Transmitter consists of 3 parts. First, specify the transmitter model codes found on page 49. Then, specify a remote seal found on page 59. Finish the model number by specifying all desired options on page 51.

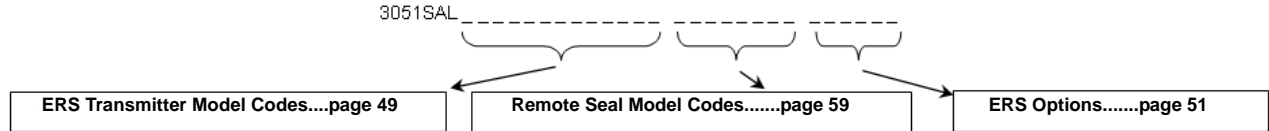


Table 8. 3051SAL Scalable Advanced Level Transmitter for ERS Applications Ordering Information

★ The Standard offering represents the most common models and options. These 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				
<b>Performance Class</b>					
<b>Standard</b>					<b>Standard</b>
1	Ultra: 0.065% span accuracy, 100:1 rangedown, 12-year limited warranty				★
2	Classic: 0.065% span accuracy, 100:1 rangedown				★
<b>Configuration Type</b>					
<b>Standard</b>					<b>Standard</b>
P	Electronic Remote Sensor - Primary				★
S	Electronic Remote Sensor - Secondary				★
<b>Pressure Module Type</b>		<b>Pressure Sensor Type</b>			
<b>Standard</b>					
G	Coplanar	Gage			★
T	In-Line	Gage			★
E	In-Line	Absolute			★
<b>Expanded</b>					
A	Coplanar	Absolute			
<b>Pressure Range<sup>(5)</sup></b>					
	<b>Coplanar Gage</b>	<b>In-Line Gage</b>	<b>In-Line Absolute</b>	<b>Coplanar Absolute</b>	
<b>Standard</b>					
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	★
<b>Transmitter Output</b>					
<b>Standard</b>					<b>Standard</b>
A	4-20 mA with Digital Signal Based on HART Protocol				★
<b>Housing Style</b>		<b>Material</b>		<b>Conduit Entry Size</b>	
<b>Standard</b>					
<i>Housings for ERS Primary - Configuration Type code P</i>					
1A	PlantWeb Housing	Aluminum	<sup>1</sup> / <sub>2</sub> -14 NPT		★
1B	PlantWeb Housing	Aluminum	M20 x 1.5 (CM 20)		★
1J	PlantWeb Housing	SST	<sup>1</sup> / <sub>2</sub> -14 NPT		★

# Rosemount 3051S Series

Table 8. 3051SAL Scalable Advanced Level Transmitter for ERS Applications Ordering Information

★ The Standard offering represents the most common models and options. These options should be selected for best delivery.  
The Expanded offering is subject to additional delivery lead time.

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				★
<i>Housings for ERS Secondary - Configuration Type code S</i>							
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				★
<b>Expanded</b>							
<i>Housings for ERS Primary - Configuration Type code P</i>							
1C	PlantWeb Housing	Aluminum	G <sup>1/2</sup>				
1L	PlantWeb Housing	SST	G <sup>1/2</sup>				
2G	Junction Box with Remote Display Output	Aluminum	G <sup>1/2</sup>				
<i>Housings for ERS Secondary - Configuration Type code S</i>							
2C	Junction Box	Aluminum	G <sup>1/2</sup>				
<b>Seal System Type</b>							
<b>Standard</b>							<b>Standard</b>
1	Direct-Mount Seal System						★
<b>Direct-Mount Extension (Between Transmitter Flange and Seal)</b>							
<b>Standard</b>							<b>Standard</b>
0	No Extension						★
2	2-in. (50 mm) Extension						★
4	4-in. (100 mm) Extension						★
5	4-in. (100 mm) Thermal Optimizer Extension						★
<b>Transmitter Reference Pressure Connection</b>							
<b>Standard</b>							<b>Standard</b>
00	None (In-Line Style Sensor)						★
20	316L SST Isolator / SST Transmitter Flange						★
30	Alloy C-276 Isolator / SST Transmitter Flange						★
<b>Seal Fill Fluid</b>		<b>Specific Gravity at 77 °F (25 °C)</b>	<b>Temperature Limits<sup>(1)</sup></b>				
			<b>No Extension</b>	<b>2-in. (50 mm) Extension</b>	<b>4-in. (100 mm) Extension</b>	<b>Thermal Optimizer</b>	
<b>Standard</b>							
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)	★
C	Silicone 704	1.07	32 to 401 °F <sup>(2)</sup> (0 to 205 °C)	32 to 464 °F <sup>(2)</sup> (0 to 240 °C)	32 to 500 °F <sup>(2)</sup> (0 to 260 °C)	32 to 599 °F (0 to 315 °C)	★
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)	★
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 <sup>(3)(4)</sup>	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 <sup>(3)</sup>	Neobee M-20	0.92	5 to 401 °F <sup>(2)</sup> (-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 <sup>(3)(4)</sup>	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)	★







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

	page 59	FF Flush Flanged Seal	Process Connections: 2 in. / DN 50 / 50A 3 in. / DN 80 / 80A 4 in. / DN 100 / 100A
	page 61	EF Extended Flanged Seal	Process Connections: 3 in. / DN 80 / 80A 4 in. / DN 100 / 100A
	page 62	RF Remote Flanged Seal	Process Connections: 1 in. / DN 25 / 25A 1.5 in. / DN 40 / 40A
	page 64	RT Remote Threaded Seal	Process Connections: ¼ - 18 NPT ½ - 14 NPT ¾ - 14 NPT 1 - 11.5 NPT
	page 66	SC Hygienic Tri-Clamp Seal	Process Connections: 1.5 in. 2 in. 3 in.
	page 67	SS Hygienic Tank Spud Seal	Process Connections: 4 in.

## Options (Include with selected model number)

<b>Electronic Remote Sensor Connection Cable</b>		
<b>Standard</b>		<b>Standard</b>
R05	50 ft. (15.2 m) Spool of Electronic Remote Sensor Cable	★
R10	100 ft. (30.5 m) Spool of Electronic Remote Sensor Cable	★
<b>Special Configuration (Software)</b>		
<b>Standard</b>		<b>Standard</b>
C1 <sup>(6)</sup>	Customer Software Configuration ("Configuration Data Sheet" Must Be Completed)	★
C3	Gage Pressure Calibration on Rosemount 3051SAL__A4 only	★
C4 <sup>(6)</sup>	NAMUR Alarm and Saturation Levels, High Alarm	★
C5 <sup>(6)</sup>	NAMUR Alarm and Saturation Levels, Low Alarm	★
C6 <sup>(6)</sup>	Custom Alarm and Saturation Levels, High Alarm (Requires C1 and Configuration Data Sheet)	★
C7 <sup>(6)</sup>	Custom Alarm and Saturation Levels, Low Alarm (Requires C1 and Configuration Data Sheet)	★
C8 <sup>(6)</sup>	Low Alarm (Standard Rosemount Alarm and Saturation Levels)	★
<b>Special Configuration (Hardware)</b>		
<b>Standard</b>		<b>Standard</b>
D4	External Ground Screw Assembly	★
<b>Product Certifications</b>		
<b>Standard</b>		<b>Standard</b>
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, Division 2	★

## Rosemount 3051S Series

K5	FM Explosion-proof, Dust Ignition-proof, Intrinsically Safe, Division 2	★
E6 <sup>(7)</sup>	CSA Explosion-proof, Dust Ignition-proof, Division 2	★
I6	CSA Intrinsically Safe	★
K6 <sup>(7)</sup>	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	★
KA <sup>(7)</sup>	ATEX and CSA Flameproof, Intrinsically Safe, Division 2	★
KB <sup>(7)</sup>	FM and CSA Explosion-proof, Dust Ignition-proof, Intrinsically Safe, Division 2	★
KC	FM and ATEX Explosion-proof, Intrinsically Safe, Division 2	★
KD <sup>(7)</sup>	FM, CSA, and ATEX Explosion-proof, Intrinsically Safe	★
<b>Alternate Materials of Construction</b>		
<b>Standard</b>		<b>Standard</b>
L1 <sup>(8)</sup>	Inert Sensor Fill Fluid	★
L2	Graphite-Filled PTFE O-Ring	★
L4	Austenitic 316 SST Bolts	★
L5 <sup>(9)</sup>	ASTM A 193, Grade B7M Bolts	★
L6	Alloy K-500 Bolts	★
L7 <sup>(9)</sup>	ASTM A 453, Class D, Grade 660 Bolts	★
L8	ASTM A 193, Class 2, Grade B8M Bolts	★
<b>Display Type (ERS Primary Only)</b>		
<b>Standard</b>		<b>Standard</b>
M5 <sup>(6)</sup>	PlantWeb LCD Display	★
M7 <sup>(6)</sup>	Remote Mount LCD Display and Interface, PlantWeb Housing, No Cable, SST Bracket	★
M8 <sup>(6)</sup>	Remote Mount LCD Display and Interface, PlantWeb Housing, 50 ft. (15.2 m) Cable, SST Bracket	★
M9 <sup>(6)</sup>	Remote Mount LCD Display and Interface, PlantWeb Housing, 100 ft. (30.5 m) Cable, SST Bracket	★
<b>Special Procedures</b>		
<b>Expanded</b>		
P1	Hydrostatic Testing with Certificate	
P2	Cleaning for Special Services	
P3	Cleaning for Less than 1 PPM Chlorine/Fluorine	
<b>Special Certifications</b>		
<b>Standard</b>		<b>Standard</b>
Q4	Calibration Certificate	★
QP	Calibration certificate with tamper evident seal	★
Q8	Material traceability certification per EN 10204 3.1	★
QZ <sup>(10)</sup>	Remote Seal System Performance Calculation Report	★
<b>Transient Protection</b>		
<b>Standard</b>		<b>Standard</b>
T1 <sup>(6)</sup>	Transient Terminal Block	★
<b>Typical Model Number: 3051SAL 1 P G 4A A 1A 1 0 20 D FF 7 1 DA 0 0 M5</b>		

(1) At ambient pressure of 14.7 psia (1 bar-a) and ambient temperature of 70°F (21°C).

(2) Maximum process temperature is limited by heat transfer to the transmitter electronics and must be further derated if ambient.

(3) This is a food grade fill fluid.

(4) Not suitable for vacuum applications.

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

(6) Not available with Configuration Type code S.

(7) Not available with M20 or G ½ conduit entry size.

(8) Silicone fill fluid is standard.

(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.

(10) 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).

## Rosemount 3051S Liquid 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 liquid level transmitters combine the scalable features and benefits of a high-performance 3051S transmitter with the durability and reliability of a remote diaphragm seal all in a single model number.

Level transmitters can also be ordered with an additional 1199 remote 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 68

Dimensional Drawings: page 98

### Rosemount 3051SAL Liquid Level Transmitter

A 3051SAL Transmitter consists of 3 parts. First, specify the transmitter model codes found on page 53. Then, specify a remote seal found on page 59. Finish the model number by specifying all desired options on page 55.

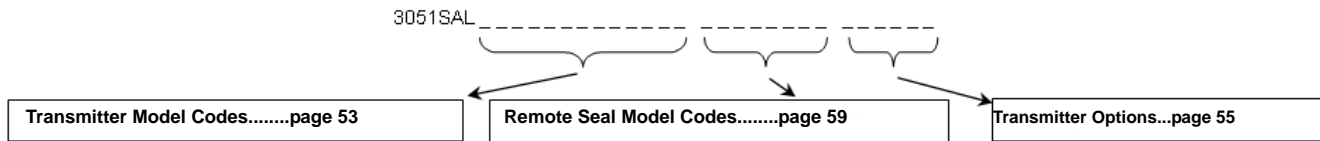


Table 9. Rosemount 3051S Liquid Level Ordering Information

★ The Standard offering represents the most common models and options. These 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 for Liquid Level Applications		
<b>Performance Class</b>			
<b>Standard</b>			<b>Standard</b>
1	Ultra: 0.065% Span Accuracy, 100:1 Rangedown, 12-Year Limited Warranty		★
2	Classic: 0.065% Span Accuracy, 100:1 Rangedown		★
<b>Configuration Type</b>			
<b>Standard</b>			<b>Standard</b>
C	Liquid Level Transmitter		★
<b>Pressure Module Type</b>		<b>Pressure Sensor Type</b>	
<b>Standard</b>			<b>Standard</b>
D	Coplanar	Differential	★
G	Coplanar	Gage	★
T	In-Line	Gage	★
E	In-Line	Absolute	★
<b>Expanded</b>			
A	Coplanar	Absolute	

# Rosemount 3051S Series

Table 9. Rosemount 3051S Liquid Level Ordering Information

★ The Standard offering represents the most common models and options. These options should be selected for best delivery.  
The Expanded offering is subject to additional delivery lead time.

<b>Pressure Range</b>						
	<b>Coplanar DP</b>	<b>Coplanar Gage</b>	<b>In-Line Gage</b>	<b>In-Line Absolute</b>	<b>Coplanar Absolute</b>	
<b>Standard</b>						<b>Standard</b>
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	★
<b>Transmitter Output</b>						
<b>Standard</b>						<b>Standard</b>
A	4-20 mA with digital signal based on HART protocol					★
F <sup>(10)</sup>	FOUNDATION fieldbus protocol					★
X <sup>(11)</sup>	Wireless (Requires wireless options and wireless PlantWeb housing)					★
<b>Housing Style</b>			<b>Material<sup>(17)</sup></b>	<b>Conduit Entry</b>		
<b>Standard</b>						<b>Standard</b>
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 <sup>(5)</sup>	Wireless PlantWeb housing		Aluminum	1/2-14 NPT		★
5J <sup>(5)</sup>	Wireless PlantWeb housing		SST	1/2-14 NPT		★
7J <sup>(12)</sup>	Quick Connect (A size Mini, 4-pin male termination)		SST			★
<b>Expanded</b>						
1C	PlantWeb housing		Aluminum	G <sup>1</sup> /2		
1L	PlantWeb housing		316L SST	G <sup>1</sup> /2		
2C	Junction Box housing		Aluminum	G <sup>1</sup> /2		
2G	Junction Box with output for remote interface		Aluminum	G <sup>1</sup> /2		
<b>Direct-Mount Extension (Between Transmitter Flange and Seal)</b>						
<b>Standard</b>						<b>Standard</b>
10	No Extension					★
12	2-in. (50 mm) Extension					★
14	4-in. (100 mm) Extension					★
15	4-in. (100 mm) Thermal Optimizer Extension					★
<b>Transmitter Reference Pressure Connection</b>						
<b>Standard</b>						<b>Standard</b>
00	None (Inline Module Type Only)					★
10 <sup>(13)</sup>	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					★

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# Rosemount 3051S Series

Table 9. Rosemount 3051S Liquid Level Ordering Information

★ The Standard offering represents the most common models and options. These 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 <sup>(1)</sup>				Thermal Optimizer	Standard
			No Extension	2-in. (50 mm) Extension	4-in. (100 mm) Extension			
<b>Standard</b>								
A	Syltherm XLT	0.85	-102 to 293 °F (-75 to 145 °C)	-102 to 293 °F	102 to 293 °F (-75 to 145 °C)	102 to 293 °F (-75 to 145 °C)	★	
C	Silicone 704	1.07	32 to 401 °F (0 to 205 °C) <sup>(2)</sup>	32 to 464 °F (0 to 240 °C) <sup>(2)</sup>	32 to 500 °F (0 to 260 °C) <sup>(2)</sup>	32 to 599 °F (0 to 315 °C)	★	
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)	★	
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 <sup>(3)(4)</sup>	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 <sup>(3)</sup>	Neobee M-20	0.92	5 to 401 °F (-15 to 205 °C) <sup>(2)</sup>	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 <sup>(3)(4)</sup>	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 59	FF Flush Flanged Seal	Process Connections: 2 in. / DN 50 / 50A 3 in. / DN 80 / 80A 4 in. / DN 100 / 100A
	page 61	EF Extended Flanged Seal	Process Connections: 3 in. / DN 80 / 80A 4 in. / DN 100 / 100A
	page 62	RF Remote Flanged Seal	Process Connections: 1 in. / DN 25 / 25A 1.5 in. / DN 40 / 40A
	page 64	RT Remote Threaded Seal	Process Connections: ¼ - 18 NPT ½ - 14 NPT ¾ - 14 NPT 1 - 11.5 NPT
	page 66	SC Hygienic Tri-Clamp Seal	Process Connections: 1.5 in. 2 in. 3 in.
	page 67	SS Hygienic Tank Spud Seal	Process Connections: 4 in.

## Wireless Options (Requires option code X and wireless PlantWeb housing)

Update Rate		
Standard		Standard
WA	User Configurable Update Rate	★
Operating Frequency and Protocol		
Standard		
3	2.4 GHz DSSS, IEC 62591 (WirelessHART)	★

# Rosemount 3051S Series

Omnidirectional Wireless Antenna		
<b>Standard</b>		
WK	External Antenna	★
WM	Extended Range, External Antenna	★
<b>Expanded</b>		
WN	High-Gain, Remote Antenna	
<b>SmartPower™</b>		
<b>Standard</b>		
1 <sup>(6)</sup>	Adapter for Black Power Module (I.S. Power Module Sold Separately)	★

## Other Options (Include with selected model number)

PlantWeb Control Functionality		
<b>Standard</b>		<b>Standard</b>
A01 <sup>(7)(8)</sup>	FOUNDATION fieldbus Advanced Control Function Block Suite	★
PlantWeb Diagnostic Functionality		
<b>Standard</b>		<b>Standard</b>
D01 <sup>(7)(8)</sup>	FOUNDATION fieldbus Diagnostics Suite	★
DA2 <sup>(9)</sup>	Advanced HART Diagnostics Suite	★
Special Configuration (Software)		
<b>Standard</b>		
C1 <sup>(14)</sup>	Custom software configuration (Requires Configuration Data Sheet)	★
C3	Gage pressure calibration on Rosemount 3051SAL__A4 only	★
C4 <sup>(7)(14)</sup>	NAMUR alarm and saturation levels, high alarm	★
C5 <sup>(7)(14)</sup>	NAMUR alarm and saturation levels, low alarm	★
C6 <sup>(7)(14)</sup>	Custom alarm and saturation signal levels, high alarm (Requires C1 and Configuration Data Sheet)	★
C7 <sup>(7)(14)</sup>	Custom alarm and saturation signal levels, low alarm (Requires C1 and Configuration Data Sheet)	★
C8 <sup>(7)(14)</sup>	Low alarm (standard Rosemount alarm and saturation levels)	★
Special Configuration (Hardware)		
<b>Standard</b>		
DO <sup>(15)</sup>	316 SST Conduit Plug	★
D1 <sup>(7)(14)(16)</sup>	Hardware adjustments (zero, span, alarm, security)	★
D2	1/2-14 NPT flange adapter	★
D4	External ground screw assembly	★
D5	Delete transmitter drain/vent valves (install plugs)	★
D9	RC 1/2 SST flange adapter	★
Product Certifications <sup>(17)</sup>		
<b>Standard</b>		
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, Division 2	★
IE	FM FISCO Intrinsically Safe (FOUNDATION fieldbus protocol only)	★
K5	FM Explosion-proof, Dust Ignition-proof, Intrinsically Safe, Division 2	★
E6 <sup>(18)</sup>	CSA Explosion-proof, Dust Ignition-proof, Division 2	★
I6	CSA Intrinsically Safe	★
IF	CSA FISCO Intrinsically Safe (FOUNDATION fieldbus protocol only)	★
K6 <sup>(18)</sup>	CSA Explosion-proof, Dust Ignition-proof, Intrinsically Safe, Division 2	★
D3 <sup>(19)</sup>	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	★



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K7	IECEx Flameproof, Dust Ignition-proof, Intrinsic Safety, Type n	★
E2	INMETRO Flameproof	★
I2	INMETRO Intrinsic Safety	★
K2	INMETRO Flameproof, Intrinsic Safety	★
E3	China Flameproof	★
I3	China Intrinsic Safety	★
KA <sup>(18)</sup>	ATEX and CSA Flameproof, Intrinsically Safe, Division 2	★
KB <sup>(18)</sup>	FM and CSA Explosion-proof, Dust Ignition-proof, Intrinsically Safe, Division 2	★
KC	FM and ATEX Explosion-proof, Intrinsically Safe, Division 2	★
KD <sup>(18)</sup>	FM, CSA, and ATEX Explosion-proof, Intrinsically Safe	★
<b>Alternate Materials of Construction</b>		
<b>Standard</b>		<b>Standard</b>
L1 <sup>(20)</sup>	Inert sensor fill fluid	★
L2	Graphite-filled PTFE o-ring	★
L4	Austenitic 316 SST bolts	★
L5 <sup>(21)</sup>	ASTM A193, Grade B7M bolts	★
L6	Alloy K-500 bolts	★
L7 <sup>(21)</sup>	ASTM A453, Class D, Grade 660 bolts	★
L8	ASTM A193, Class 2, Grade B8M bolts	★
<b>Display Type<sup>(22)</sup></b>		
<b>Standard</b>		
M5	PlantWeb LCD Display	★
M7 <sup>(7)</sup>	Remote mount LCD display and interface, PlantWeb housing, no cable, SST bracket	★
M8 <sup>(7)</sup>	Remote mount LCD display and interface, PlantWeb housing, 50 ft. (15 m) cable, SST bracket	★
M9 <sup>(7)</sup>	Remote mount LCD display and interface, PlantWeb housing, 100 ft. (31 m) cable, SST bracket	★
<b>Special Procedures</b>		
<b>Expanded</b>		
P1	Hydrostatic testing with certificate	
P2	Cleaning for special services	
P3	Cleaning for less than 1PPM chlorine/fluorine	
<b>Special Certification</b>		
<b>Standard</b>		
Q4	Calibration certificate	★
QP	Calibration certificate and tamper evident seal	★
Q8	Material traceability certification per EN 10204 3.1.B	★
QS <sup>(7)(14)</sup>	Prior-use certificate of FMEDA Data	★
QT <sup>(23)</sup>	Safety-certified to IEC 61508 with certificate of FMEDA data	★
QZ	Remote Seal System Performance Calculation Report	★
<b>Transient Protection</b>		
<b>Standard</b>		
T1 <sup>(24)(25)</sup>	Transient terminal block	★
<b>Conduit Electrical Connector</b>		
<b>Standard</b>		
GE <sup>(26)</sup>	M12, 4-pin, Male Connector ( <i>eurofast</i> <sup>®</sup> )	★
GM <sup>(26)</sup>	A size Mini, 4-pin, Male Connector ( <i>minifast</i> <sup>®</sup> )	★
<b>Typical Model Number: 3051SAL 1 C G 2A A 1A 10 20 D FF G 1 DA 0 0</b>		

(1) At ambient pressure of 14.7 psia (1 bar-a) and ambient temperature of 70°F (21°C)

(2) Maximum process temperature is limited by heat transfer to the transmitter

(3) This is a food grade fill fluid.

(4) Not suitable for vacuum applications.

(5) Only available with output code X.

(6) Long-Life Power Module must be shipped separately, order Part #00753-9220-0001.

(7) Not available with output code X.

(8) Not available with output code A.

(9) Requires PlantWeb housing and Output code A. Includes Hardware Adjustments as standard.

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- (10) Requires PlantWeb housing.
- (11) Available approvals are FM Intrinsically Safe, Division 2 (option code I5), CSA Intrinsically Safe (option code I6), ATEX Intrinsic Safety (option code I1), and IECEx Intrinsic Safety (option code I7).
- (12) Available with output code A only. Available approvals are FM Intrinsically Safe, Division 2 (option code I5), ATEX Intrinsic Safety (option code I1), or IECEx Intrinsic Safety (option code I7). Contact an Emerson Process Management representative for additional information.
- (13) With option code 10, user must select Seal Location option code M in Table 7 of Rosemount DP Level PDS.
- (14) Not available with output code F.
- (15) Transmitter is shipped with 316 SST conduit plug (uninstalled) in place of carbon steel conduit plug.
- (16) Not available with housing style codes 2E, 2F, 2G, 2M, 5A, 5J, or 7J.
- (17) Valid when SuperModule Platform and housing have equivalent approvals.
- (18) Not available with M20 or G ½ conduit entry size.
- (19) 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.
- (20) Silicone fill fluid is standard.
- (21) 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.
- (22) Not available with Housing code 01 or 7J.
- (23) Not available with output code F or X. Not available with housing code 01 or 7J.
- (24) Not available with Housing code 00, 01, 5A, or 7J.
- (25) The T1 option is not needed with FISCO Product Certifications; transient protection is included in the FISCO product certification codes IA, IE, IF, and IG.
- (26) Not available with Housing code 00, 01, 5A, or 7J. Available with Intrinsically Safe approvals only. For FM Intrinsically Safe, Division 2 (option code I5) or FM FISCO Intrinsically Safe (option code IE), install in accordance with Rosemount drawing 03151-1009 to maintain outdoor rating (NEMA 4X and IP66).

## 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 models and options. These options should be selected for best delivery. The Expanded offering is subject to additional delivery lead time.

Model	Process Connection			
FF	Flush Flanged Seal			
<b>Process Connection Size</b>				
<b>Standard</b>				<b>Standard</b>
G	2-in. / DN 50 / 50A			★
7	3-in. / 80A			★
J	DN 80			★
9	4-in. / DN 100 / 100A			★
<b>Flange / Pressure Rating</b>				
<b>Standard</b>				<b>Standard</b>
1	Class 150 per ANSI/ASME B16.5			★
2	Class 300 per ANSI/ASME B16.5			★
4	Class 600 per ANSI/ASME B16.5			★
G	PN 40 per EN 1092-1			★
<b>Expanded</b>				
A	10K per JIS B2238			
B	20K per JIS B2238			
D	40K per JIS B2238			
E	PN 10/16 per EN 1092-1 (DN 100 only)			
<b>Materials of Construction</b>				
	Isolating Diaphragm	Upper Housing	Flange	
<b>Standard</b>				<b>Standard</b>
CA	316L SST	316L SST	CS	★
DA	316L SST	316L SST	316 SST	★
CB <sup>(1)</sup>	Alloy C-276	316L SST	CS	★
DB <sup>(1)</sup>	Alloy C-276	316L SST	316 SST	★
CC	Tantalum	316L SST	CS	★
DC	Tantalum	316L SST	316 SST	★
<b>Flushing Connection Ring (Lower Housing)<sup>(2)</sup></b>				
<b>Standard</b>				<b>Standard</b>
0	None			★
A	316 SST			★
B	Alloy C-276			★
<b>Flushing Connection Quantity &amp; Size</b>				
<b>Standard</b>				<b>Standard</b>
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			★

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Table 10. Flush Flanged (FF) Seal Ordering Information

★ The Standard offering represents the most common models and options. These options should be selected for best delivery.  
The Expanded offering is subject to additional delivery lead time.

**Options** (Include with selected model number)

<b>Flushing Connection Ring Plugs</b>		
<b>Standard</b>		<b>Standard</b>
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)	★
<b>Flushing Connection Ring Gaskets</b>		
<b>Expanded</b>		
SK	Barium Sulfate-Filled PTFE Gasket	
SN	Grafoil Gasket	
<b>Additional Options</b>		
<b>Expanded</b>		
SB	Extra Fill Fluid for Cold Temperature Applications	
SJ	PTFE Gasket	
SC <sup>(3)</sup>	0.006-in. (150 µm) Diaphragm Thickness	
ST <sup>(4)</sup>	Wetted Materials Compliance to NACE MR 0175 / ISO 1516, MR 0103	
SU <sup>(3)</sup>	0.001-in. (25 µm) Gold Plated Diaphragm	
SV <sup>(5)</sup>	PTFE Coated Diaphragm for Non-Stick Purposes	

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

ERS Transmitter Options, see page 51	
Liquid Level Transmitter Options, see page 55	

- (1) Not available with option code SC.
- (2) Supplied with Thermo Tork TN9000 gasket.
- (3) Not available with Tantalum diaphragms (Material of Construction codes CC and DC).
- (4) 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.
- (5) Not available with transmitter option code Q8 (Material Traceability per EN 10204 3.1)

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## 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 models and options. These options should be selected for best delivery.  
The Expanded offering is subject to additional delivery lead time.

Model	Process Connection			
EF	Extended Flanged Seal			
<b>Process Connection Size</b>				
<b>Standard</b>				<b>Standard</b>
7	3-in. / DN 80 / 80A			★
9	4-in. / DN 100 / 100A			★
<b>Flange / Pressure Rating</b>				
<b>Standard</b>				<b>Standard</b>
1	Class 150 per ANSI/ASME B16.5			★
2	Class 300 per ANSI/ASME B16.5			★
4	Class 600 per ANSI/ASME B16.5			★
G	PN 40 per EN 1092-1			★
<b>Expanded</b>				
A	10K per JIS B2238			
B	20K per JIS B2238			
D	40K per JIS B2238			
E	PN 10/16 per EN 1092-1 (DN 100 only)			
<b>Materials of Construction</b>				
	Isolating Diaphragm	Extension / Gasket Surface	Mounting Flange	
<b>Standard</b>				<b>Standard</b>
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	★
<b>Seal Extension Length</b>				
<b>Standard</b>				<b>Standard</b>
20	2-in. (50 mm)			★
40	4-in. (100 mm)			★
60	6-in. (150 mm)			★

## Options (Include with selected model number)

Standard		Standard
ST <sup>(1)</sup>	Wetted Materials Compliance per NACE MR 0175 / ISO 1516, MR 0103	★
SB	Extra Fill Fluid for Cold Temperature Applications	★
<b>Expanded</b>		
SC	0.0016-in. (150 µm) Diaphragm Thickness	
SU	0.001-in. (25 µm) Gold Plated Diaphragm	
SV <sup>(2)</sup>	PTFE Coated Diaphragm for Non-Stick Purposes	

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

ERS Transmitter Options, see page 51	
Liquid Level Transmitter Options, see page 55	

(1) Materials of construction comply with metallurgical requirements highlighted within NACE MR0175 / ISO 1516 for sour oil field production environments. Environmental limits apply to certain materials. Consult latest standard for details. Selected materials also conform to NACE MR0103 for sour refining environments.

(2) Not available with transmitter option code Q8 (Material Traceability per EN 10204 3.1)

# Rosemount 3051S Series



## 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 models and options. These options should be selected for best delivery.  
The Expanded offering is subject to additional delivery lead time.

Model	Process Connection			
RF	Remote Flanged Seal			
<b>Process Connection Size</b>				
<b>Standard</b>				<b>Standard</b>
2	1-in. / 25A			★
4	1.5-in. / 40A			★
D	DN 25			★
F	DN 40			★
<b>Flange / Pressure Rating</b>				
<b>Standard</b>				<b>Standard</b>
1	Class 150 per ANSI/ASME B16.5			★
2	Class 300 per ANSI/ASME B16.5			★
4	Class 600 per ANSI/ASME B16.5			★
G	PN 40 per EN 1092-1			★
<b>Expanded</b>				
A	10K per JIS B2238			
B	20K per JIS B2238			
D	40K per JIS B2238			
<b>Materials of Construction</b>				
	Isolating Diaphragm	Upper Housing	Flange	
<b>Standard</b>				<b>Standard</b>
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	★
<b>Flushing Connection Ring Material (Lower Housing)<sup>(1)</sup></b>				
<b>Standard</b>				<b>Standard</b>
A	316L SST			★
B	Alloy C-276			★
D	Plated CS			★
<b>Number of Flushing Connections</b>				
<b>Standard</b>				<b>Standard</b>
1	One ¼-18 NPT Flushing Connection			★
3	Two ¼-18 NPT Flushing Connections			★
5	None			★

## Options (Include with selected model number)

<b>Flushing Connection Ring Plugs</b>				
<b>Standard</b>				
SD	Alloy C-276 Plugs			★
SG	316 SST Plugs			★
SH	316 SST Drain / Vents			★
<b>Flushing Connection Ring Gaskets</b>				
<b>Standard</b>				
SJ	PTFE Gasket			★

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Table 12. Remote Flanged (RF) Seal Ordering Information

★ The Standard offering represents the most common models and options. These options should be selected for best delivery. The Expanded offering is subject to additional delivery lead time.

Expanded		
SK	Barium Sulfate-Filled PTFE Gasket	
SN	Grafoil Gasket	
SR	Ethylene Propylene Gasket	
Additional Options		
Standard		Standard
ST <sup>(2)</sup>	Wetted Materials Compliance per NACE MR 0175 / ISO 1516, MR 0103	★
SB	Extra Fill Fluid for Cold Temperature Applications	★
Expanded		
SC <sup>(3)</sup>	0.006-in. (150 µm) Diaphragm Thickness	
SU <sup>(3)</sup>	0.001-in. (25 µm) Gold Plated Diaphragm	
SV <sup>(4)</sup>	PTFE Coated Diaphragm for Non-Stick Purposes	

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

ERS Transmitter Options, see page 51	
Liquid Level Transmitter Options, see page 55	

(1) Supplied with C4401 Aramid fiber gasket.

(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.

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

(4) Not available with transmitter option code Q8 (Material Traceability per EN 10204 3.1)

# Rosemount 3051S Series



## 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 models and options. These options should be selected for best delivery.  
The Expanded offering is subject to additional delivery lead time.

Process Connection Style				
<b>Standard</b>				<b>Standard</b>
RT	Remote Threaded Seal			★
Process Connection Size				
<b>Standard</b>				<b>Standard</b>
3	$1/2$ -14 NPT			★
4	$3/4$ -14 NPT			★
5	1-11.5 NPT			★
<b>Expanded</b>				
1	$1/4$ -18 NPT			
Pressure Rating				
<b>Standard</b>				<b>Standard</b>
0	2500 psi			★
Isolating Diaphragm Material		Upper Housing Material		Flange
<b>Standard</b>				<b>Standard</b>
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) <sup>(1) (2)</sup>				
<b>Standard</b>				<b>Standard</b>
A	316L SST			★
B	Alloy C-276			★
<b>Expanded</b>				
D	Plated CS			
Number of Flushing Connections				
<b>Standard</b>				<b>Standard</b>
1	One $1/4$ -in. Flushing Connection			★
3	Two $1/4$ -in. Flushing Connections			★
5	No Flushing Connection			★

## Options (Include with selected model number)

Flushing Connection Ring Plugs				
<b>Standard</b>				<b>Standard</b>
SD	Alloy C-276 Plugs			★
SG	316 SST Plugs			★
SH	316 SST Drain / Vents			★
Flushing Connection Ring Gaskets				
<b>Standard</b>				<b>Standard</b>
SJ	PTFE Gasket			★
SN	Grafoil Gasket			★
SR	Ethylene Propylene Gasket			★



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Table 13. RT Threaded Seal Ordering Information

★ The Standard offering represents the most common models and options. These options should be selected for best delivery.  
The Expanded offering is subject to additional delivery lead time.

<b>Expanded</b>		
SK	Barium Sulfate-Filled PTFE Gasket	
<b>Bolting</b>		
<b>Standard</b>		<b>Standard</b>
S3	304 SST Bolts	★
<b>Expanded</b>		
S4	S16 SST Bolts	
<b>Additional Options</b>		
<b>Standard</b>		<b>Standard</b>
ST <sup>(3)</sup>	Wetted Materials Compliance per NACE MR 0175 / ISO 1516, MR 0103	★
SB	Extra Fill Fluid for Cold Temperature Applications	★
<b>Expanded</b>		
SC <sup>(4)</sup>	0.006-in. (150 µm) Diaphragm Thickness	
SU <sup>(4)</sup>	0.001-in. (25 µm) Gold Plated Diaphragm	
SV <sup>(5)</sup>	PTFE Coated Diaphragm for Non-Stick Purposes	

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

ERS Transmitter Options, see page 51	
Liquid Level Transmitter Options, see page 55	

(1) Supplied with C4401 aramid fiber gasket.

(2) Flushing Connection Ring/ Lower Housing assembly bolts provided as standard are carbon steel.

(3) 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.

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

(5) Not available with transmitter option code Q8 (Material Traceability per EN 10204 3.1)

# Rosemount 3051S Series



## 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 models and options. These options should be selected for best delivery.  
The Expanded offering is subject to additional delivery lead time.

Process Connection		
<b>Standard</b>		<b>Standard</b>
SC <sup>(1)</sup>	Tri-Clover Style Tri-Clamp Seal	★
Process Connection Size		
<b>Standard</b>		<b>Standard</b>
3 <sup>(2)</sup>	1½ in.	★
5 <sup>(2)</sup>	2 in.	★
7	3 in.	★
Maximum Working Pressure		
<b>Standard</b>		<b>Standard</b>
0	1000 PSI	★
Isolating Diaphragm Material		Upper Housing Material
<b>Standard</b>		<b>Standard</b>
LA00	316L SST	316L SST
<b>Expanded</b>		
LB00	Alloy C-276	316L SST

## Options (Include with selected model number)

Diaphragm Surface Finish and Polishing		
<b>Expanded</b>		
R6	Electropolishing	
RD	10 µin. (0.25 µm) R <sub>a</sub> Diaphragm Surface Finish	
RG	15 µin. (0.375 µm) R <sub>a</sub> Diaphragm Surface Finish	
RH	20 µin. (0.5 µm) R <sub>a</sub> Diaphragm Surface Finish	
Certifications		
<b>Standard</b>		<b>Standard</b>
Q16	Surface Finish Certification	★

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

ERS Transmitter Options, see page 51
Liquid Level Transmitter Options, see page 55

(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).

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# Rosemount 3051S Series



## 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 models and options. These options should be selected for best delivery. The Expanded offering is subject to additional delivery lead time.

Process Connection			
<b>Standard</b>			<b>Standard</b>
SS <sup>(1)</sup>	Hygienic Tank Spud Seal		★
Process Connection Size			
<b>Standard</b>			<b>Standard</b>
A	4-in. Sch. 5 Tri-Clamp		★
Maximum Working Pressure (Clamp Rating)			
<b>Standard</b>			<b>Standard</b>
0	600 PSI (41 bar)		★
Upper Housing			
<b>Standard</b>			<b>Standard</b>
A	316L SST		★
Diaphragm and Wetted, Extension Material			
	Diaphragm and Wetted	Extension	
<b>Standard</b>			<b>Standard</b>
AL	316L SST <sup>(2)</sup>	316L SST <sup>(2)</sup>	★
<b>Expanded</b>			
BB	Alloy C-276	316L SST	
Extension Length			
<b>Standard</b>			<b>Standard</b>
2	2 in. (50 mm) Extension		★
6	6 in. (150 mm) Extension		★

## Options (Include with selected model number)

Diaphragm Surface Finish and Polishing			
<b>Expanded</b>			
R6	Electropolishing		
RH	20 μin. (0.5 μm) R <sub>a</sub> Diaphragm Surface Finish		
RG <sup>(3)</sup>	15 μin. (0.375 μm) R <sub>a</sub> Diaphragm Surface Finish		
Additional Options			
<b>Standard</b>			<b>Standard</b>
Q16	Surface Finishing Certification		★
S1	Tank Spud Included with Shipment		★
<b>Expanded</b>			
SC	0.006-in. (150 μm) Diaphragm Thickness		

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

ERS Transmitter Options, see page 51

Liquid Level Transmitter Options, see page 55

(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).

## 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 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 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)

<b>Differential Pressure (3051S_CD) Gage Pressure (3051S_CG, 3051SAM_G<sup>(1)</sup>)</b>			
	<b>Ultra</b>	<b>Classic</b>	<b>Ultra for Flow<sup>(2)</sup></b>
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	$\pm 0.055\%$ 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
<b>Absolute Pressure (3051S_CA, 3051SAM_A<sup>(1)</sup>)</b>			
	<b>Ultra</b>	<b>Classic</b>	
Ranges 1 - 4	$\pm 0.025\%$ of span; For spans less than 10:1, $\pm[0.004(\text{URL} / \text{Span})]\%$ of span	$\pm 0.055\%$ 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 and 3051SMV DP 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**

<b>Absolute Pressure (3051S_TA, 3051SAM_E<sup>(1)</sup>) Gage Pressure (3051S_TG, 3051SAM_T<sup>(1)</sup>)</b>		
	<b>Ultra</b>	<b>Classic</b>
Ranges 1 - 4	±0.025% of span For spans less than 10:1, ±[0.004(URL / Span)]% of span	±0.055% of span For spans less than 10:1, ±[0.0065(URL / Span)]% of span
Range 5	±0.04% of span	±0.065% of span

(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**

<b>Differential Pressure and Static Pressure (3051SMV_ _1 or 2)</b>		
	<b>Classic MV</b>	<b>Ultra for Flow<sup>(1)</sup></b>
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 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	±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 2-3. For calibrated DP spans from 1:1 to 2:1 of URL, add ±0.005% of span analog output error.

**Liquid Level Transmitter**

<b>3051SAL</b>		
	<b>Ultra</b>	<b>Classic</b>
	±0.065% 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<sup>(1)</sup>**

<b>Process Temperature (3051SMV_ _1 or 3)</b>
±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<sup>(1)</sup>**

<b>2 Coplanar Gage Transmitters (3051SAM_ _G)</b>		
	<b>Ultra</b>	<b>Classic</b>
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
<b>2 Coplanar Absolute Transmitters (3051SAM_ _A)</b>		
	<b>Ultra</b>	<b>Classic</b>
Ranges 1-4	±0.035% of DP span	±0.078% of DP span
<b>2 In-Line Gage Transmitters (3051SAM_ _T) 2 In-Line Absolute Transmitters (3051SAM_ _E)</b>		
	<b>Ultra</b>	<b>Classic</b>
Ranges 1-4	±0.035% of DP span	±0.078% of DP span
<b>2 Liquid Level Transmitters (3051SAL)</b>		
	<b>Ultra</b>	<b>Classic</b>
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.

# Rosemount 3051S Series

## Transmitter Total Performance

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

Models		Ultra	Classic and Classic MV	Ultra for Flow <sup>(1)</sup>
3051S_CD	Ranges 2-3	±0.1% of span  For ±50 °F (28 °C) temperature changes; 0-100% relative humidity, up to 740 psi (51 bar) line pressure (DP only) from 1:1 to 5:1 rangedown	±0.15% of span  For ±50 F (28 °C) temperature changes, 0-100% relative humidity, up to 740 psi (51 bar) line pressure (DP only) from 1:1 to 5:1 rangedown	±0.15% of reading  For ±50 °F (28 °C) temperature changes, 0-100% relative humidity, up to 740 psi (51 bar) line pressure (DP only) over 8:1 DP turndown from URL
3051S_CG	Ranges 2-5			
3051S_CA	Ranges 2-4			
3051S_T	Ranges 2-4			
3051SMV <sup>(2)</sup>	DP Ranges 2-3			
3051SAM__G <sup>(3)</sup>	Ranges 2-5			
3051SAM__A <sup>(3)</sup>	Ranges 2-4			
3051SAM__T <sup>(3)</sup>	Ranges 2-4			
3051SAM__E <sup>(3)</sup>	Ranges 2-4			
3051SAL		Use <i>Instrument Toolkit</i> or the <i>QZ Option</i> 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 2-3.

(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<sup>(1)</sup>

### Mass, Energy, Actual Volumetric, and Totalized Flow Reference Accuracy

Models	Ultra for Flow	Classic MV
<b>3051SMV<sup>(2)</sup></b>		
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)
<b>Annubar Flowmeter (3051SFA)</b>		
Ranges 2-3	±0.80% of flow rate at 14:1 flow turndown	±1.15% of flow rate at 8:1 flow turndown
<b>Compact Conditioning Orifice Flowmeter (3051SFC_C)</b>		
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
<b>Compact Orifice Flowmeter<sup>(3)</sup> (3051SFC_P)</b>		
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
<b>Integral Orifice Flowmeter (3051SFP)</b>		
Ranges 2-3		
β < 0.1	±2.50% of flow rate at 14:1 flow turndown	±2.65% of flow rate at 8:1 flow turndown
0.1 < β < 0.2	±1.40% of flow rate at 14:1 flow turndown	±1.60% of flow rate at 8:1 flow turndown
0.2 < β < 0.6	±0.95% of flow rate at 14:1 flow turndown	±1.25% of flow rate at 8:1 flow turndown
0.6 < β < 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.

(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
<b>Annubar Flowmeter (3051SFA)</b>			
Ranges 2-3	±0.95% of flow rate at 8:1 flow turndown	±1.4% of flow rate at 8:1 flow turndown	±0.80% of flow rate at 14:1 flow turndown
<b>Compact Conditioning Orifice Flowmeter (3051SFC_C)</b>			
Ranges 2-3			
$\beta = 0.4$	±0.90% of flow rate at 8:1 flow turndown	±1.40% 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	±1.65% of flow rate at 8:1 flow turndown	±1.15% of flow rate at 14:1 flow turndown
<b>Compact Orifice Flowmeter<sup>(1)</sup> (3051SFC_P)</b>			
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
<b>Integral Orifice Flowmeter (3051SFP)</b>			
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
$0.2 < \beta < 0.6$	±1.05% 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 <sup>(1)</sup>	Classic and Classic MV
3051S_CD	Ranges 2-5	±0.125% of URL for 5 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	
3051SMV	DP Ranges 2-5	
3051SF	AP & GP Ranges 3-4	
3051SAM__G <sup>(2)</sup>	Ranges 2-5	
3051SAM__A <sup>(2)</sup>	Ranges 1-4	
3051SAM__T <sup>(2)</sup>	Ranges 1-5	
3051SAM__E <sup>(2)</sup>	Ranges 1-5	

(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 2-3, 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<sup>(1)</sup>**

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

(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.

# Rosemount 3051S Series

## Warranty<sup>(1)</sup>

Models	Ultra and Ultra for Flow	Classic and Classic MV
All 3051S Products	12-year limited warranty <sup>(2)</sup>	1-year limited warranty <sup>(3)</sup>

(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 twelve (12) 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<sup>(1)(2)</sup>

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<sup>(1)</sup>

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).

### Update Rate<sup>(1)</sup>

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.	<u>Calculated Variables:</u> 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 80 for wireless update rate.



**Ambient Temperature Effect**

**Transmitter with Coplanar Sensor Module (Single Variable)**

<b>Differential Pressure: (3051S_CD, 3051SMV__3 or 4)</b> <b>Gage Pressure: (3051S_CG, 3051SAM__G<sup>(1)</sup>)</b>			
	<b>Ultra per 50 °F (28 °C)</b>	<b>Classic per 50 °F (28 °C)</b>	<b>Ultra for Flow<sup>(2)</sup> -40 to 185 °F (-40 to 85 °C)</b>
Ranges 2 - 5 <sup>(3)</sup>	±(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 100:1	±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
<b>Absolute Pressure: (3051S_CA, 3051SAM__A<sup>(1)</sup>)</b>			
	<b>Ultra per 50 °F (28 °C)</b>	<b>Classic per 50 °F (28 °C)</b>	
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 100:1	
Range 0	±(0.1% URL + 0.25% span) from 1:1 to 30:1	±(0.1% URL + 0.25% span) from 1:1 to 30:1	
Range 1	±(0.0125% URL + 0.0625% span) from 1:1 to 5:1; ±(0.025% URL + 0.125% span) from >5:1 to 100:1	±(0.0125% URL + 0.0625% span) from 1:1 to 5:1; ±(0.025% URL + 0.125% span) from >5:1 to 100:1	

- (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**

<b>Absolute Pressure: (3051S_TA, 3051SAM__E<sup>(1)</sup>)</b> <b>Gage Pressure: (3051S_TG, 3051SAM__T<sup>(1)</sup>)</b>			
	<b>Ultra per 50 °F (28 °C)</b>	<b>Classic per 50 °F (28 °C)</b>	
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 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	
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.

# Rosemount 3051S Series

## Ambient Temperature Effect (continued)

### 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	±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 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	±(0.009% URL + 0.025% span) from 1:1 to 10:1; ±(0.018% URL + 0.08% span) for >10:1

### Liquid Level Transmitter

3051SAL			
		Ultra	Classic
		See <i>Instrument Toolkit</i>	See <i>Instrument Toolkit</i>

### Process Temperature RTD Interface<sup>(1)</sup>

Process Temperature (3051SMV_ _1 or 3)			
		Classic MV Per 50 °F (28 °C)	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<sup>(1)</sup>

3051S_CD 3051SMV (DP Measurement Only)	Ultra and Ultra for Flow	Classic and Classic MV
<b>Zero Error<sup>(2)</sup></b>		
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)
<b>Span Error<sup>(3)</sup></b>		
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 $\pm 1.25$ inH <sub>2</sub> O (3,11 mbar), which can be zeroed Span: no effect	
3051S_CA 3051S_T 3051SAM__A, T, or E	Zero shifts to $\pm 2.5$ inH <sub>2</sub> 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 $\pm 1.25$ inH <sub>2</sub> O (3,11 mbar), which can be zeroed Span: no effect
	GP/AP Sensor:	Zero shifts to $\pm 2.5$ inH <sub>2</sub> O (6,22 mbar), which can be zeroed Span: no effect
3051SAL	With liquid level diaphragm in vertical plane, zero shift of up to $\pm 1$ inH <sub>2</sub> O (2,5 mbar). With diaphragm in vertical plane, zero shift of up to $\pm 5$ inH <sub>2</sub> O (12,4 mbar) plus extension length on extended units. All zero shifts can be zeroed. Span: no effect	

**Vibration Effect**

Less than  $\pm 0.1\%$  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  $\pm 0.1\%$  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  $\pm 0.005\%$  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.<sup>(1)(2)</sup>

- (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  $\mu$ s - 100 kHz)
- 3 kA crest (8  $\times$  20 microseconds)
- 6 kV crest (1.2  $\times$  50 microseconds)

# Rosemount 3051S Series

## FUNCTIONAL SPECIFICATIONS

### Range and Sensor Limits

#### Transmitter with Coplanar Sensor Module (Single Variable)

Range	DP Sensor <sup>(1)</sup> (3051S_CD, 3051SMV__3, 4, or D 3051SF_3, 4, or 7, 3051SAL_CD)		GP Sensor (3051S_CG, 3051SAM__G, 3051SAL__G)		AP Sensor <sup>(2)</sup> (3051S_CA, 3051SAM__A, 3051SAL__A)	
	Lower (LRL) <sup>(3)</sup>	Upper (URL)	Lower (LRL) <sup>(4)</sup>	Upper (URL)	Lower (LRL)	Upper (URL)
0	-3 inH <sub>2</sub> O (-7,5 mbar)	3 inH <sub>2</sub> O (7,5 mbar)	N/A	N/A	0 psia (0 bar)	5 psia (0,34 bar)
1	-25 inH <sub>2</sub> O (-62,3 mbar)	25 inH <sub>2</sub> O (62,3 mbar)	-25 inH <sub>2</sub> O (-62,3 mbar)	25 inH <sub>2</sub> O (62,3 mbar)	0 psia (0 bar)	30 psia (2,07 bar)
2	-250 inH <sub>2</sub> O (-0,62 bar)	250 inH <sub>2</sub> O (0,62 bar)	-250 inH <sub>2</sub> O (-0,62 bar)	250 inH <sub>2</sub> O (0,62 bar)	0 psia (0 bar)	150 psia (10,34 bar)
3	-1000 inH <sub>2</sub> O (-2,49 bar)	1000 inH <sub>2</sub> O (2,49 bar)	-393 inH <sub>2</sub> O (-979 mbar)	1000 inH <sub>2</sub> 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 inH<sub>2</sub>O (0 mbar) for Ultra for Flow performance class and 3051SF flowmeters.  
(4) Assumes atmospheric pressure of 14.7 psig (1 bar).

#### 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) <sup>(1)</sup>	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 psig (1 bar).

#### Transmitter with MultiVariable Sensor Module (3051SMV\_\_1, 3051SMV\_\_2, 3051SF\_1, 3051SF\_2, 3051SF\_5, and 3051SF\_6)

Range	DP Sensor	
	Lower (LRL) <sup>(1)</sup>	Upper (URL)
1	-25.0 inH <sub>2</sub> O (-62,3 mbar)	25.0 inH <sub>2</sub> O (62,3 mbar)
2	-250.0 inH <sub>2</sub> O (-0,62 bar)	250.0 inH <sub>2</sub> O (0,62 bar)
3	-1000.0 inH <sub>2</sub> O (-2,49 bar)	1000.0 inH <sub>2</sub> O (2,49 bar)

- (1) Lower (LRL) is 0 inH<sub>2</sub>O (0 mbar) for Ultra for Flow and 3051SF\_ Flowmeters.

Range	Static Pressure Sensor (GP/AP)	
	Lower (LRL)	Upper (URL) <sup>(1)</sup>
3	GP <sup>(2)(3)</sup> : -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 <sup>(2)(3)</sup> : -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 psig (1 bar).

**Process Temperature RTD Interface**  
**(3051SMV\_\_1 or 3, 3051SF\_1, 3, 5 or 7)<sup>(1)</sup>**

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 <sup>(1)</sup> (3051S_CD, 3051SMV__3 or 4, 3051SF_D, 3, 4 or 7, 3051SAL__CD)		GP Sensor (3051S_CG, 3051SAM__G, 3051SAL__G <sup>(2)</sup> )		AP Sensor (3051S_CA, 3051SAM__A, 3051SAL__A <sup>(2)</sup> )	
	Ultra & Ultra for Flow	Classic	Ultra	Classic	Ultra	Classic
	0	0.1 inH <sub>2</sub> O (0,25 mbar)	0.1 inH <sub>2</sub> O (0,25 mbar)	N/A	N/A	0.167 psia (11,5 mbar)
1	0.5 inH <sub>2</sub> O (1,24 mbar)	0.5 inH <sub>2</sub> O (1,24 mbar)	0.5 inH <sub>2</sub> O (1,24 mbar)	0.5 inH <sub>2</sub> O (1,24 mbar)	0.3 psia (20,7 mbar)	0.3 psia (20,7 mbar)
2	1.3 inH <sub>2</sub> O (3,23 mbar)	2.5 inH <sub>2</sub> O (6,23 mbar)	1.3 inH <sub>2</sub> O (3,23 mbar)	2.5 inH <sub>2</sub> O (6,23 mbar)	0.75 psia (51,7 mbar)	1.5 psia (103,4 mbar)
3	5.0 inH <sub>2</sub> O (12,4 mbar)	10.0 inH <sub>2</sub> O (24,9 mbar)	5.0 inH <sub>2</sub> O (12,4 mbar)	10.0 inH <sub>2</sub> O (24,9 mbar)	4 psia (275,8 mbar)	8 psia (0,55 bar)
4	1.5 psi (103,4 mbar)	3.0 psi (206,8 mbar)	1.5 psig (103,4 mbar)	3.0 psig (206,8 mbar)	20 psia (275,8 mbar)	40 psia (2,76 bar)
5	10.0 psi (689,5 mbar)	20.0 psi (1,38 bar)	10.0 psig (689,5 mbar)	20.0 psig (1,38 bar)	N/A	N/A

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

(2) 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, 3051SAL__T <sup>(1)</sup> )		AP Sensor (3051S_TA, 3051SAM__E, 3051SAL__E <sup>(1)</sup> )	
	Ultra	Classic	Ultra	Classic
1	0.3 psig (20,7 mbar)	0.3 psig (20,7 mbar)	0.3 psia (20,7 mbar)	0.3 psia (20,7 mbar)
2	0.75 psig (51,7 mbar)	1.5 psig (103,4 bar)	0.75 psia (51,7 mbar)	1.5 psia (103,4 bar)
3	4 psig (275,8 mbar)	8 psig (0,55 bar)	4 psia (275,8 mbar)	8 psia (0,55 bar)
4	20 psig (1,58 bar)	40 psig (2,76 bar)	20 psia (1,58 bar)	40 psia (2,76 bar)
5	1000 psig (68,9 bar)	2000 psig (137,9 bar)	1000 psia (68,9 bar)	2000 psia (137,9 bar)

(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**

**(3051SMV\_\_1 or 2, 3051SF\_1, 2, 5, or 6)**

Range	DP Sensor	
	Ultra for Flow	Classic MV
1	0.5 inH <sub>2</sub> O (1,24 mbar)	0.5 inH <sub>2</sub> O (1,24 mbar)
2	1.3 inH <sub>2</sub> O (3,23 mbar)	2.5 inH <sub>2</sub> O (6,23 mbar)
3	5.0 inH <sub>2</sub> O (12,4 mbar)	10.0 inH <sub>2</sub> O (24,9 mbar)
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)

# Rosemount 3051S Series

## Process Temperature RTD Interface (3051SMV\_\_1 or 3, 3051SF\_1, 3, 5 or 7)

Minimum Span = 50 °F (28 °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	•	•	—	—

## HART / 4–20 mA

### 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.

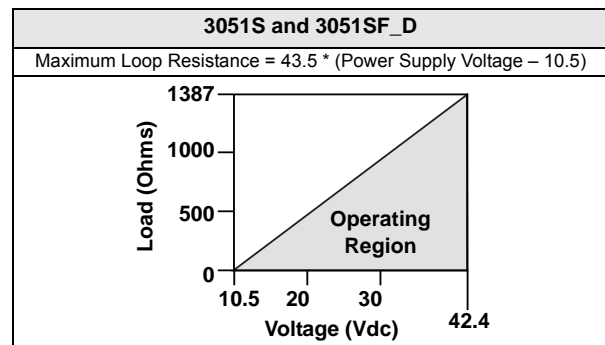
### Power Supply

External power supply required.

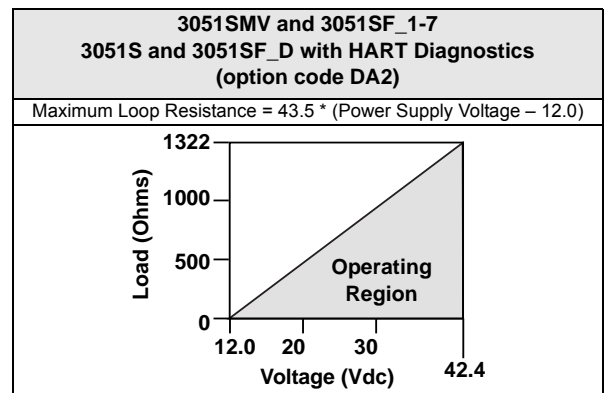
- 3051S and 3051SF\_D: 10.5 to 42.4 Vdc with no load
- 3051S and 3051SF\_D with Advanced HART Diagnostics Suite: 12 to 42.4 Vdc with no load
- 3051SMV and 3051SF\_1-7: 12 to 42.4 Vdc with no load

### 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  $250\Omega$  for communication.



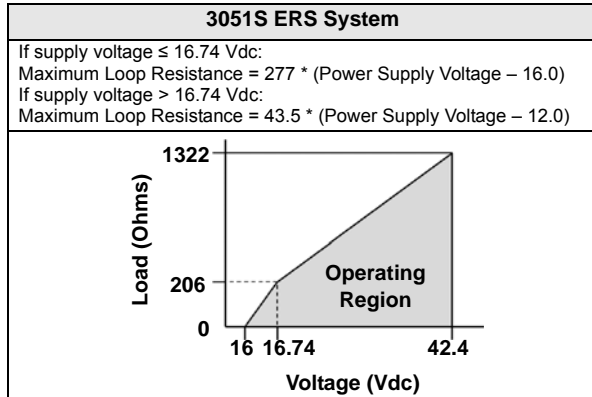
The Field Communicator requires a minimum loop resistance of  $250\Omega$  for communication.

# Product Data Sheet

00813-0100-4801, Rev PA

April 2011

# Rosemount 3051S Series



The Field Communicator requires a minimum loop resistance of  $250\Omega$  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 proactively 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 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.

# Rosemount 3051S Series

Block	Execution Time
Resource	-
Transducer	-
LCD Block	-
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

#### Local Display

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

#### Update Rate

IEC 62591 (WirelessHART), user selectable 4 sec. to 60 min.

#### 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.<sup>(1)</sup>

<sup>(1)</sup> 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.



## Overpressure Limits

Transmitters withstand the following limits without damage:

### Coplanar Sensor Module (Single Variable)

Range	DP <sup>(1)</sup> & 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)

Static Pressure	Differential Pressure		
	Range 1	Range 2	Range 3
Range 3 GP/AP	1600 psi (110,3 bar)	1600 psi (110,3 bar)	1600 psi (110,3 bar)
Range 4 GP/AP	2000 psi (137,9 bar)	3626 psi (250 bar)	3626 psi (250 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 <sup>(1)</sup>
	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:

Static Pressure	Differential Pressure		
	Range 1	Range 2	Range 3
Range 3 GP/AP	800 psi (57,91 bar)	800 psi (57,91 bar)	800 psi (57,91 bar)
Range 4 GP/AP	2000 psi (137,9 bar)	3626 psi (250 bar)	3626 psi (250 bar)

## 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)

## Temperature Limits

### Ambient

-40 to 185 °F (-40 to 85 °C)

With LCD display<sup>(1)</sup>: -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 updates will be slower at temperatures below -4 °F (-20 °C).

### 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)

# Rosemount 3051S Series

## Process Temperature Limits

At atmospheric pressures and above:

Coplanar Sensor Module 3051S_C, 3051SMV, 3051SF, 3051SAM_ _G or A	
Silicone Fill Sensor <sup>(1)(2)</sup>	
with Coplanar Flange	-40 to 250 °F (-40 to 121 °C) <sup>(3)</sup>
with Traditional Flange	-40 to 300 °F (-40 to 149 °C) <sup>(3)(4)</sup>
with Level Flange	-40 to 300 °F (-40 to 149 °C) <sup>(3)</sup>
with 305 Integral Manifold	-40 to 300 °F (-40 to 149 °C) <sup>(3)(4)</sup>
Inert Fill Sensor <sup>(1)(5)</sup>	-40 to 185 °F (-40 to 85 °C) <sup>(6)(7)</sup>
In-Line Sensor Module 3051S_T, 3051SAM_ _T or E	
Silicone Fill Sensor <sup>(1)</sup>	-40 to 250 °F (-40 to 121 °C) <sup>(3)</sup>
Inert Fill Sensor <sup>(1)</sup>	-22 to 250 °F (-30 to 121 °C) <sup>(3)</sup>
3051SAL Level Transmitter	
Syltherm <sup>®</sup> XLT	-102 to 293 °F (-75 to 145 °C)
Silicone 704 <sup>(8)</sup>	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 <sup>®(9)</sup>	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<sup>(1)</sup>

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 in<sup>3</sup> (0,08 cm<sup>3</sup>)

## Damping<sup>(1)</sup>

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

### HART 4-20 mA (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 <sup>(1)</sup>	≥ 22.5 mA	≤ 3.6 mA
Custom levels <sup>(2)(3)</sup>	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<sup>(1)</sup>

Safety accuracy: 2.0%<sup>(2)</sup>

Safety response time: 1.5 seconds

- (1) Does not apply to wireless option code X.
- (2) A 2% variation of the transmitter mA output is allowed before a safety trip. Trip values in the DCS or safety logic solver should be derated by 2%.

## PHYSICAL SPECIFICATIONS

### Electrical Connections

$1/2$ -14 NPT, G $1/2$ , and M20 × 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	$1/4$ -18 NPT on 2 $1/8$ -in. centers
Flange Adapters	$1/2$ -14 NPT and RC $1/2$ on 2-in. (50.8 mm), 2 $1/8$ -in. (54.0 mm), or 2 $1/4$ -in. (57.2 mm) centers
In-Line Sensor Module (3051S_T, 3051SAM_T or E)	
Standard	$1/2$ -14 NPT Female
F11 Code	Non-threaded instrument flange (available in SST for sensor ranges 1-4 only)
G11 Code	G $1/2$ 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; $1/4$ 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);
EF Seal	ANSI Class 150, 300, or 600 flange; JIS 10K, 20K, or 40K flange; PN 10/16 or PN 40 flange
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	$1/4$ -18, $1/2$ -14, $3/4$ -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<sup>(1)</sup> 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 or inert halocarbon (Inert is not available with 3051S\_CA). In-Line series uses Fluorinert® FC-43.

#### 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

PBT/ polycarbonate (PC) integrated omnidirectional antenna

#### Power Module

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

# Rosemount 3051S Series

## Shipping Weights

### Sensor Module Weights

<b>Coplanar Sensor Module<sup>(1)</sup></b>
3.1 lb (1,4 kg)
<b>In-Line Sensor Module</b>
1.4 lb (0,6 kg)

(1) Flange and bolts not included.

### Transmitter Weights<sup>(1)</sup>

<b>Transmitter with Coplanar Sensor Module (3051S_C, 3051SMV, 3051SAM__G or A)</b>	
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)
<b>Transmitter with In-Line Sensor Module (3051S_T, 3051SAM__T or E)</b>	
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 <sup>(1)</sup> , LCD Display for SST PlantWeb Housing <sup>(1)</sup>	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 <sup>(2)</sup>	3.2 (1,5)
F13, F23	Cast C-276 Traditional Flange with Alloy C-276 Drain Vents <sup>(2)</sup>	3.6 (1,6)
E12, E22	SST Coplanar Flange with SST Drain Vents <sup>(2)</sup>	1.9 (0,9)
F14, F24	Cast Alloy 400 Traditional Flange with Alloy 400/K-500 Drain Vents <sup>(2)</sup>	3.6 (1,6)
F15, F25	SST Traditional Flange with Alloy C-276 Drain Vents <sup>(2)</sup>	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)
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.

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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 <sup>(1)</sup>	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 Certifications

### Approved Manufacturing Locations

Rosemount Inc. — Chanhassen, Minnesota USA  
 Emerson Process Management GmbH & Co. — Wessling, Germany  
 Emerson Process Management Asia Pacific Private Limited — Singapore  
 Beijing Rosemount Far East Instrument Co., LTD — Beijing, China  
 Emerson Process Management LTDA — Sorocaba, Brazil  
 Emerson Process Management (India) Pvt. Ltd. — Mumbai, India  
 Emerson Process Management, Emerson FZE — Dubai, United Arab Emirates

### Ordinary Location Certification for FM

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

### European Directive Information

The EC declaration of conformity for all applicable European directives for this product can be found at [www.rosemount.com](http://www.rosemount.com). A hard copy may be obtained by contacting an Emerson Process Management representative.

#### *ATEX Directive (94/9/EC)*

Emerson Process Management complies with the ATEX Directive.

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

Models 3051S\_CA4; 3051S\_CD2, 3, 4, 5; (also with P9 option)  
 Pressure Transmitters — QS Certificate of Assessment - EC No. 59552-2009-CE-HOU-DNV, Module H Conformity Assessment

All other Model 3051S Pressure Transmitters  
 — Sound Engineering Practice

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

Primary Elements, Flowmeter  
 — See appropriate Primary Element QIG

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

EN 61326-1:2006  
 EN 61326-2-3:2006

### HART & FOUNDATION Fieldbus Hazardous Locations Certifications

#### North American Certifications

##### *FM Approvals*

**E5** Explosion-proof for Class I, Division 1, Groups B, C, and D, T5 ( $T_a = 85\text{ }^\circ\text{C}$ ); Dust Ignition-proof for Class II and Class III, Division 1, Groups E, F, and G, T5 ( $T_a = 85\text{ }^\circ\text{C}$ ); hazardous locations; enclosure Type 4X, conduit seal not required when installed according to Rosemount drawing 03151-1003.

**15/IE** Intrinsically Safe for use in Class I, Division 1, Groups A, B, C, and D, T4 ( $T_a = 70\text{ }^\circ\text{C}$  for output options A or X;  $T_a = 60\text{ }^\circ\text{C}$  for output option F); Class II, Division 1, Groups E, F, and G; Class III, Division 1; Class I, Zone 0 AEx ia IIC T4 ( $T_a = 70\text{ }^\circ\text{C}$  for output options A or X;  $T_a = 60\text{ }^\circ\text{C}$  for output option F) when connected in accordance with Rosemount drawing 03151-1006; Non-Incendive for Class I, Division 2, Groups A, B, C, and D; T4 ( $T_a = 70\text{ }^\circ\text{C}$  for output options A or X;  $T_a = 60\text{ }^\circ\text{C}$  for output option F) Enclosure Type 4X  
 For entity parameters see control drawing 03151-1006.

##### *Canadian Standards Association (CSA)*

All CSA hazardous approved transmitters are certified per ANSI/ISA 12.27.01-2003.

**E6** Explosion-proof for Class I, Division 1, Groups B, C, and D; Dust Ignition-proof for Class II and Class III, Division 1, Groups E, F, and G; suitable for Class I, Division 2, Groups A, B, C, and D, when installed per Rosemount drawing 03151-1013, CSA Enclosure Type 4X; conduit seal not required; Dual Seal.

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

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# Rosemount 3051S Series

## European Certifications

### I1/IA ATEX Intrinsic Safety

Certificate No.: BAS01ATEX1303X  II 1G  
 Ex ia IIC T4 ( $T_a = -60\text{ °C}$  to  $70\text{ °C}$ ) -HART/Remote  
 Display/Quick Connect/HART Diagnostics  
 Ex ia IIC T4 ( $T_a = -60\text{ °C}$  to  $70\text{ °C}$ ) -FOUNDATION fieldbus  
 Ex ia IIC T4 ( $T_a = -60\text{ °C}$  to  $40\text{ °C}$ ) -FISCO  
**CE** 1180


### Input Parameters

Loop / Power	Groups
$U_i = 30\text{ V}$	HART / FOUNDATION fieldbus/ Remote Display / Quick Connect / HART Diagnostics
$U_i = 17.5\text{ V}$	FISCO
$I_i = 300\text{ mA}$	HART / FOUNDATION fieldbus/ Remote Display / Quick Connect / HART Diagnostics
$I_i = 380\text{ mA}$	FISCO
$P_i = 1.0\text{ W}$	HART / Remote Display / Quick Connect / HART Diagnostics
$P_i = 1.3\text{ W}$	FOUNDATION fieldbus
$P_i = 5.32\text{ W}$	FISCO
$C_i = 30\text{ nF}$	SuperModule Platform
$C_i = 11.4\text{ nF}$	HART / HART Diagnostics / Quick Connect
$C_i = 0$	FOUNDATION fieldbus / Remote Display / FISCO
$L_i = 0$	HART / FOUNDATION fieldbus/ FISCO / Quick Connect / HART Diagnostics
$L_i = 60\text{ }\mu\text{H}$	Remote Display
<b>RTD Assembly (3051SFx Option T or R)</b>	
$U_i = 5\text{ Vdc}$	
$I_i = 500\text{ mA}$	
$P_i = 0.63\text{ W}$	

### Special conditions for safe use (x)

- The apparatus, excluding the Types 3051 S-T and 3051 S-C (In-line and Coplanar SuperModule Platforms respectively), is not capable of withstanding the 500V test as defined in Clause 6.4.12 of EN 60079-11. This must be considered during installation.
- The terminal pins of the Types 3051 S-T and 3051 S-C must be protected to IP20 minimum.


### N1 ATEX Type n

Certificate No.: BAS01ATEX3304X  II 3 G  
 Ex nL IIC T4 ( $T_a = -40\text{ °C}$  TO  $70\text{ °C}$ )  
 $U_i = 45\text{ Vdc max}$   
 $C_i = 11.4\text{ nF}$  (Transmitter Output Option A)  
 $C_i = 0$  (Transmitter Output Option F)  
 $L_i = 0$   
 For remote display,  $C_i = 0$ ,  $L_i = 60\text{ }\mu\text{H}$   
 IP66  
**CE**

### Special conditions for safe use (x)

The apparatus is not capable of withstanding the 500V insulation test required by Clause 6.8.1 of EN 60079-15. This must be taken into account when installing the apparatus.


### ND ATEX Dust

Certificate No.: BAS01ATEX1374X  II 1 D  
 Ex tD A20 IP66 T105°C ( $-20\text{ °C} \leq T_{amb} \leq 85\text{ °C}$ )  
 $V_{max} = 42.4\text{ volts max}$   
 IP66  
**CE** 1180

### Special conditions for safe use (x)

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

### E1 ATEX Flameproof

Certificate No.: KEMA00ATEX2143X  II 1/2 G  
 Ex d IIC T6 ( $-50\text{ °C} \leq T_{amb} \leq 65\text{ °C}$ )  
 Ex d IIC T5 ( $-50\text{ °C} \leq T_{amb} \leq 80\text{ °C}$ )  
 $V_{max} = 42.4\text{ V}$   
**CE** 1180

### Special conditions for safe use (x)

- The Ex d blanking elements, cable glands and wiring shall be suitable for a temperature of  $90\text{ °C}$ .
- The 3051S SuperModule 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 maintenance shall be followed in detail to assure safety during its expected lifetime.
- In case of repair, contact the manufacturer for information on the dimensions of the flameproof joints.

## NOTE

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

### Japanese Certifications

**E4** TIIS Flameproof  
Ex d IIC T6

Certificate	Description
TC15682	Coplanar with Junction Box Housing
TC15683	Coplanar with PlantWeb Housing
TC15684	Coplanar with PlantWeb Housing and LCD Display
TC15685	In-Line SST with Junction Box Housing
TC15686	In-Line Alloy C-276 with Junction Box Housing
TC15687	In-Line SST with PlantWeb Housing
TC15688	In-Line Alloy C-276 with PlantWeb Housing
TC15689	In-Line SST with PlantWeb Housing and LCD Display
TC15690	In-Line Alloy C-276 with PlantWeb Housing and LCD Display
TC17102	Remote Display
TC17099	3051SFA/C/P SST/Alloy C-276 with PlantWeb Housing and LCD Display
TC17100	3051SFA/C/P SST/Alloy C-276 with PlantWeb Housing and Remote Display
TC17101	3051SFA/C/P SST/Alloy C-276 with Junction Box Housing

### China Certifications

**E3** China Flameproof, Dust Ignition-proof  
NEPSI Certificate No. (manufactured in Chanhassen, MN): GYJ091035  
Certificate No. (manufactured in Beijing, China): GYJ06366  
Certificate No. (manufactured in Singapore): GYJ06364  
Certificate No. (3051SFx RTC, BMMC, SMMC): GYJ071086  
Ex d IIB+H<sub>2</sub> T3~T5  
DIP A21 T<sub>A</sub> T3~T5 IP66

#### NOTE

Refer to Appendix B of the 3051S Reference Manual (document number 00809-0100-4801) for Special Conditions for Safe Use.

**I3** China Intrinsic Safety, Dust Ignition-proof  
NEPSI Certificate No. (manufactured in Chanhassen, MN): GYJ081078  
Certificate No. (manufactured in Beijing, China): GYJ06367  
Certificate No. (manufactured in Singapore): GYJ06365  
Certificate No. (3051SFx RTC, BMMC, SMMC): GYJ071293  
Ex ia IIC T4  
DIP A21 T<sub>A</sub> T4 IP66

#### NOTE

Refer to Appendix B of the 3051S Reference Manual (document number 00809-0100-4801) for Special Conditions for Safe Use.

### Input Parameters

Loop / Power	Groups
$U_i = 30\text{ V}$	HART / FOUNDATION fieldbus / Remote Display / Quick Connect / HART Diagnostics
$I_i = 300\text{ mA}$	HART / FOUNDATION fieldbus / Remote Display / Quick Connect / HART Diagnostics
$P_i = 1.0\text{ W}$	HART / Remote Display / Quick Connect / HART Diagnostics
$P_i = 1.3\text{ W}$	FOUNDATION fieldbus
$C_i = 38\text{ nF}$	SuperModule Platform
$C_i = 11.4\text{ nF}$	HART / HART Diagnostics / Quick Connect
$C_i = 0$	FOUNDATION fieldbus / Remote Display
$L_i = 0$	SuperModule Platform / FOUNDATION fieldbus
$L_i = 2.4\text{ }\mu\text{H}$	HART / Quick Connect / HART Diagnostics
$L_i = 58.2\text{ }\mu\text{H}$	Remote Display
RTD Assembly (3051SFx Option T or R)	
$U_i = 5\text{ Vdc}$	
$I_i = 500\text{ mA}$	
$P_i = 0.63\text{ W}$	

**N3** China Type n - Energy Limited  
NEPSI Certificate No.: GYJ101112X  
Ex nL IIC T5 (-40 °C ≤ T<sub>a</sub> ≤ 70 °C)  
IP66

Loop / Power	Transmitter Output
$U_i = 30\text{ V}$	HART / FOUNDATION fieldbus
$I_i = 300\text{ mA}$	HART / FOUNDATION fieldbus
$P_i = 1.0\text{ W}$	HART
$P_i = 1.3\text{ W}$	FOUNDATION fieldbus
$C_i = 11.4\text{ nF}$	HART
$C_i = 0\text{ nF}$	FOUNDATION fieldbus
$L_i = 0\text{ }\mu\text{H}$	HART <sup>(1)</sup> / FOUNDATION fieldbus

(1) For remote meter option (M7, M8, M9),  $L_i = 60\text{ }\mu\text{H}$ .

#### NOTE

Refer to Appendix B of the 3051S Reference Manual (document number 00809-0100-4801) for Special Conditions for Safe Use.

### Brazil Certifications

**I2** INMETRO Intrinsic Safety  
Certificate number: CEPEL-EX-0722/05X  
(manufacturing in Chanhassen, MN and Singapore)  
Certificate number: CEPEL-EX-1414/07X  
(manufacturing in Brazil)  
INMETRO Marking: BR-Ex ia IIC T4 IP66W

#### Special conditions for safe use (x)

The apparatus, excluding the Types 3051S-T and 3051S-C (In-line and Coplanar SuperModule Platforms respectively), is not capable of withstanding the 500V test as defined in Clause 6.4.12 of IEC60079-11. This must be considered during installation.



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### E2 INMETRO Flameproof

Certificate number: CEPEL-EX-140/2003X  
(manufacturing in Chanhassen, MN and Singapore)

Certificate number: CEPEL-EX-1413/07X  
(manufacturing in Brazil)

INMETRO Marking: BR-Ex d IIC T5/T6 IP66W

#### Special conditions for safe use (x)

1. This device contains a thin wall diaphragm. Installation, maintenance, and use shall take into account the environmental conditions to which the diaphragm will be subjected. The manufacturer's instructions for installation and maintenance shall be followed in detail to assure safety during its expected lifetime.
2. For ambient temperature above 60 °C, cable wiring must have minimum isolation temperature of 90 °C, to be in accordance to equipment operation temperature.
3. The accessory of cable entries or conduit must be certified as flameproof and needs to be suitable for use conditions.
4. Where electrical entry is via conduit, the required sealing device must be assembled immediately close to enclosure.

### IECEX Certifications

#### E7 IECEX Flameproof and Dust (each listed separately)

IECEX Flameproof

Certificate No.: IECEXKEM08.0010X

Ex d IIC T5 or T6 Ga/Gb

T6 (-50 °C ≤ T<sub>amb</sub> ≤ 65 °C)

T5 (-50 °C ≤ T<sub>amb</sub> ≤ 80 °C)

V<sub>max</sub> = 42.4V

#### Special conditions for safe use (x)

1. The Ex d blanking elements, cable glands and wiring shall be suitable for a temperature of 90 °C.
2. The 3051S SuperModule 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 maintenance shall be followed in detail to assure safety during its expected lifetime.
3. In case of repair, contact the manufacturer for information on the dimensions of the flameproof joints.

IECEX Dust

Certificate No. IECEXBAS09.0014X

Ex tD A20 IP66 T105 °C (-20 °C ≤ T<sub>a</sub> ≤ 85 °C)

V<sub>max</sub> = 42.4 V

A = 22 mA

IP66

#### 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 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. (The 3051S SuperModule must be properly assembled to the 3051S housing to maintain ingress protection.)

# Rosemount 3051S Series

**I7/IG** IECEx Intrinsic Safety

Certificate No.: IECExBAS04.0017X  
 Ex ia IIC T4 ( $T_a = -60\text{ °C to }70\text{ °C}$ ) -HART/Remote  
 Display/Quick Connect/HART Diagnostics  
 Ex ia IIC T4 ( $T_a = -60\text{ °C to }70\text{ °C}$ ) -FOUNDATION fieldbus  
 Ex ia IIC T4 ( $T_a = -60\text{ °C to }40\text{ °C}$ ) -FISCO  
 IP66

**Input Parameters**

Loop / Power	Groups
$U_i = 30\text{ V}$	HART / FOUNDATION fieldbus/ Remote Display / Quick Connect / HART Diagnostics
$U_i = 17.5\text{ V}$	FISCO
$I_i = 300\text{ mA}$	HART / FOUNDATION fieldbus/ Remote Display / Quick Connect / HART Diagnostics
$I_i = 380\text{ mA}$	FISCO
$P_i = 1.0\text{ W}$	HART / Remote Display / Quick Connect / HART Diagnostics
$P_i = 1.3\text{ W}$	FOUNDATION fieldbus
$P_i = 5.32\text{ W}$	FISCO
$C_i = 30\text{ nF}$	SuperModule Platform
$C_i = 11.4\text{ nF}$	HART / HART Diagnostics / Quick Connect
$C_i = 0$	FOUNDATION fieldbus / Remote Display / FISCO
$L_i = 0$	HART / FOUNDATION fieldbus/ FISCO / Quick Connect / HART Diagnostics
$L_i = 60\text{ }\mu\text{H}$	Remote Display
<b>RTD Assembly (3051SFx Option T or R)</b>	
$U_i = 5\text{ Vdc}$	
$I_i = 500\text{ mA}$	
$P_i = 0.63\text{ W}$	

**Special conditions for safe use (x)**

- The 3051S HART 4-20 mA, 3051S FOUNDATION fieldbus, and 3051S FISCO 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.
- The terminal pins of the Types 3051S-T and 3051S-C must be protected to IP20 minimum.

**N7** IECEx Type n

Certificate No.: IECExBAS04.0018X  
 Ex nC IIC T4 ( $-40\text{ °C} \leq T_a \leq +70\text{ °C}$ )  
 IP66

**Special conditions for safe use (x)**

The apparatus is not capable of withstanding the 500 V insulation test required by Clause 8 of IEC 60079-15:1987.

**Combinations of Certifications**

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

- K1** Combination of E1, I1, N1, and ND
- 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, I6, and E6
- KC** Combination of E5, E1, I5, and I1
- KD** Combination of E5, I5, E6, I6, E1, and I1

## **Rosemount 3051S Wireless Certifications**

### **Approved Manufacturing Locations**

Rosemount Inc. — Chanhassen, Minnesota USA  
Emerson Process Management GmbH & Co. — Wessling, Germany  
Emerson Process Management Asia Pacific Private Limited — Singapore  
Beijing Rosemount Far East Instrument Co., LTD — Beijing, China  
Emerson Process Management LTDA — Sorocaba, Brazil  
Emerson Process Management (India) Pvt. Ltd. — Mumbai, India

*Electro Magnetic Compatibility (EMC) (2004/108/EC)*  
EN 61326-1:2006  
EN 61326-2-3:2006

*Radio and Telecommunications Terminal Equipment Directive (R&TTE)(1999/5/EC)*  
Emerson Process Management complies with the R&TTE Directive.

### **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 Approvals**

This device complies with Part 15 of the FCC Rules. Operation is subject to the following conditions: This device may not cause harmful interference and 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 for FM**

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

### **European Directive Information**

The EC declaration of conformity for all applicable European directives for this product can be found at [www.rosemount.com](http://www.rosemount.com). A hard copy may be obtained by contacting an Emerson Process Management representative.

#### *ATEX Directive (94/9/EC)*

Emerson Process Management complies with the ATEX Directive.

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

Models 3051S\_CA4; 3051S\_CD2, 3, 4, 5; (also with P9 option)  
Pressure Transmitters — QS Certificate of Assessment - EC No. 59552-2009-CE-HOU-DNV, Module H Conformity Assessment

All other Model 3051S Pressure Transmitters — Sound Engineering Practice

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

Primary Elements, Flowmeter

— See appropriate Primary Element QIG

### **Hazardous Locations Certifications**

#### **North American Certifications**

##### *Factory Mutual (FM) Approvals*

- 15** FM Intrinsically Safe, Non-Incendive, and Dust Ignition-proof.  
Intrinsically Safe for Class I/II/III, Division 1, Groups A, B, C, D, E, F, and G.  
Zone Marking: Class I, Zone 0, AEx ia IIC  
Temperature Codes T4 ( $T_{amb} = -50$  to  $70$  °C)  
Non-Incendive for Class I, Division 2, Groups A, B, C, and D.  
Dust Ignition-proof for Class II/III, Division 1, Groups E, F, and G.  
Ambient temperature limits:  $-50$  to  $85$  °C  
For use with Rosemount SmartPower options 00753-9220-0001 only.  
Enclosure Type 4X / IP66

#### **CSA - Canadian Standards Association**


##### **Process Sealing**

All CSA hazardous approved transmitters are certified per ANSI/ISA 12.27.01-2003.

- 16** CSA Intrinsically Safe  
Intrinsically Safe for Class I, Division 1, Groups A, B, C, and D.  
Temp Code T3C  
Enclosure Type 4X / IP66  
For use with Rosemount SmartPower options 00753-9220-0001 only.

# Rosemount 3051S Series

## European Certifications

**I1** ATEX Intrinsic Safety  
 Certificate No.: BAS01ATEX1303X  II 1G  
 Ex ia IIC T4 (T<sub>a</sub> = -60 °C to 70 °C)  
 IP66  
 For use with Rosemount SmartPower options  
 00753-9220-0001 only.

**Special conditions for safe use (x)**

The surface resistivity of the antenna is greater than one gigaohm. To avoid electrostatic charge build-up, it must not be rubbed or cleaned with solvents or a dry cloth.

CE 1180



Country	Restriction
Bulgaria	General authorization required for outdoor use and public service
France	Outdoor use limited to 10mW e.i.r.p.
Italy	If used outside of own premises, general authorization is required.
Norway	May be restricted in the geographical area within a radius of 20 km from the center of Ny-Alesund.
Romania	Use on a secondary basis. Individual license required.

## IECEX Certifications

**I7** IECEX Intrinsic Safety  
 Certificate No.: IECEX BAS 04.0017X  
 Ex ia IIC T4 (T<sub>a</sub> = -60 °C to 70 °C)  
 For use with Rosemount SmartPower options  
 00753-9220-0001 only.  
 IP66

**Special conditions for safe use (x)**

The surface resistivity of the antenna is greater than one gigaohm. To avoid electrostatic charge build-up, it must not be rubbed or cleaned with solvents or a dry cloth.

## Rosemount 3051S MultiVariable Certifications

### Approved Manufacturing Locations

Rosemount Inc. — Chanhassen, Minnesota USA  
Emerson Process Management GmbH & Co. — Wessling, Germany  
Emerson Process Management Asia Pacific Private Limited — Singapore

### Ordinary Location Certification for FM

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

### European Directive Information

The EC declaration of conformity for all applicable European directives for this product can be found at [www.rosemount.com](http://www.rosemount.com). A hard copy may be obtained by contacting an Emerson Process Management representative.

#### ATEX Directive (94/9/EC)

Emerson Process Management complies with the ATEX Directive.

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

Models with Differential Pressure Ranges = 2 through 5 and/or Static Pressure Range 4 or options P0 and P9.

QS Certificate of Assessment - EC No. 59552-2009-CE-HOU-DNV,

Module H Conformity Assessment  
— Sound Engineering Practice

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

Primary Elements, Flowmeter  
— See appropriate Primary Element QIG

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

EN 61326-1:2006 and EN 61326-2-3:2006

### Hazardous Locations Certifications

#### North American Certifications

##### FM Approvals



- E5** Explosion-proof for Class I, Division 1, Groups B, C, and D; dust-ignition proof for Class II and Class III, Division 1, Groups E, F, and G;  $T_a = 85^\circ\text{C}$ ; hazardous locations; enclosure Type 4X, conduit seal not required.
- I5** Intrinsically Safe for use in Class I, Division 1, Groups A, B, C, and D; Class II, Division 1, Groups E, F, and G; Class III, Division 1; Class I, Zone 0 AEx ia IIC when connected in accordance with Rosemount drawing 03151-1206;  $T_a = 70^\circ\text{C}$ ;  
Non-incendive for Class I, Division 2, Groups A, B, C, and D Enclosure Type 4X  
For entity parameters see control drawing 03151-1206.

##### Canadian Standards Association (CSA)

All CSA hazardous approved transmitters are certified per ANSI/ISA 12.27.01-2003.

- E6** Explosion-proof for Class I, Division 1, Groups B, C, and D; Dust-Ignition-Proof for Class II and Class III, Division 1, Groups E, F, and G; suitable for Class I, Division 2, Groups A, B, C, and D, CSA Enclosure Type 4X; conduit seal not required. Dual Seal. T5 ( $T_a = -40^\circ\text{C}$  to  $85^\circ\text{C}$ ).
- I6** Intrinsically Safe for Class I, Division 1, Groups A, B, C, and D, T3C; when connected in accordance with Rosemount drawings 03151-1207; Dual Seal.  
For entity parameters see control drawing 03151-1207.

### European Certifications

- I1** ATEX Intrinsic Safety  
Certificate No.: Baseefa 08ATEX0064X  II 1G  
Ex ia IIC T4 ( $-60^\circ\text{C} \leq T_{amb} \leq +70^\circ\text{C}$ )  
 1180

#### Field Connection / 4-20 mA Loop Parameters



$U_i = 30\text{ V}$   
 $I_i = 300\text{ mA}$   
 $P_i = 1.0\text{ W}$   
 $C_i = 14.8\text{ nF}$   
 $L_i = 0$

#### RTD Connection Parameters

$U_O = 30\text{ V}$   
 $I_O = 2.31\text{ mA}$   
 $P_O = 17.32\text{ mW}$   
 $C_i = 0$   
 $L_i = 0$



#### Special conditions for safe use (x)

If the equipment is fitted with the optional 90 V transient suppressor, it is incapable of withstanding the 500 V isolation from earth test and this must be taken into account during installation.

- N1** ATEX Type n  
Certificate No.: Baseefa 08ATEX0065X  II 3 G  
Ex nA nL IIC T4 ( $-40^\circ\text{C} \leq T_{amb} \leq +70^\circ\text{C}$ )  
 $U_i = 45\text{ Vdc max}$   
 $U_O = 30\text{ V}$  (RTD Connection)  
IP66  


#### Special conditions for safe use (x)

If fitted with a 90 V transient suppressor, the equipment is not capable of withstanding the 500 V electrical strength test as defined in Clause 6.8.1 of EN 60079-15:2005. This must be taken into account during installation.


- ND** ATEX Dust  
Certificate No.: BAS01ATEX1374X  II 1 D  
Ex tD A20 IP66 T105°C ( $-20^\circ\text{C} \leq T_{amb} \leq 85^\circ\text{C}$ )  
IP66  


# Rosemount 3051S Series

## 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.

## E1 ATEX Flameproof

Certificate No.: KEMA00ATEX2143X  II 1/2 G  
Ex d IIC T6 (-50 °C ≤ T<sub>amb</sub> ≤ 65 °C)  
Ex d IIC T5 (-50 °C ≤ T<sub>amb</sub> ≤ 80 °C)  
V<sub>max</sub> = 42.4V  
CE 1180

## Special conditions for safe use (x)

1. The Ex d blanking elements, cable glands and wiring shall be suitable for a temperature of 90 °C.
2. Transmitter Model 3051S 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 maintenance shall be followed in detail to assure safety during its expected lifetime.
3. In case of repair, contact the manufacturer for information on the dimensions of the flameproof joints.

## Japanese Certifications

### E4 TIIS Flameproof

Ex d IIC T6  
TC19070 With RTD and LCD Display  
TC19071 With LCD  
TC19072 RTD without LCD Display  
TC19073 Without LCD

## Brazil Certifications

### E2 INMETRO Flameproof

Certificate number: NCC 5886/09X  
BR-Ex d IIC T5/T6 Gb IP66W  
T6 (-50 °C to 65 °C)  
T5 (-50 °C to 80 °C)

## Special conditions for safe use (x)

For processes with temperatures above 135 °C, the user should evaluate whether the SuperModule temperature class is suitable for the application. The temperatures of the SuperModule may be above class T4, considering that this temperature depends on the type of ventilation used on the equipment.

## I2 INMETRO Intrinsic Safety

Certificate No. NCC 5870/09X  
BR-Ex ia IIC T4 (-60 °C ≤ T<sub>a</sub> ≤ 70 °C) Ga IP66W

## Field Connection / 4-20 mA Loop Parameters

U<sub>i</sub> = 30 V  
I<sub>i</sub> = 300 mA  
P<sub>i</sub> = 1.0 W  
C<sub>i</sub> = 14.8 nF  
L<sub>i</sub> = 0

## RTD Connection Parameters

U<sub>O</sub> = 30 V  
I<sub>O</sub> = 2.31 mA  
P<sub>O</sub> = 17.32 mW  
C<sub>i</sub> = 0  
L<sub>i</sub> = 0

## Special conditions for safe use (x)

1. If the equipment is fitted with the option 90 V transient suppressor, it is incapable of withstanding the 500 V isolation from earth test and this must be taken into account during installation.
2. For processes with temperatures above 135 °C, the user should evaluate whether the SuperModule temperature class is suitable for the application. The temperatures of the SuperModule may be above class T4, considering that this temperature depends on the type of ventilation used on the equipment.

## China Certifications

### E3 China Flameproof

NEPSI Certificate No.: GYJ091001  
Ex d IIC T5/T6  
T6 (-50 °C to 65 °C)  
T5 (-50 °C to 80 °C)

## NOTE

Refer to Appendix B of the 3051S MultiVariable Reference Manual (document number 00809-0100-4803) for Special Conditions for Safe Use.

## I3 China Intrinsic Safety

NEPSI Certificate No.: GYJ091002X  
Ex ia IIC T4 (-60 °C to 70 °C)

## Field Connection / 4-20 mA Loop Parameters

U<sub>i</sub> = 30 V  
I<sub>i</sub> = 300 mA  
P<sub>i</sub> = 1.0 W  
C<sub>i</sub> = 14.8 nF  
L<sub>i</sub> = 0

## RTD Connection Parameters

U<sub>O</sub> = 30 V  
I<sub>O</sub> = 2.31 mA  
P<sub>O</sub> = 17.32 mW  
C<sub>i</sub> = 0  
L<sub>i</sub> = 0

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# Rosemount 3051S Series

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### NOTE

Refer to Appendix B of the 3051S MultiVariable Reference Manual (document number 00809-0100-4803) for Special Conditions for Safe Use.

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### IECEX Certifications

**I7** IECEX Intrinsic Safety  
Certificate No.: IECEXBAS08.0025X  
Ex ia IIC T4(-60 °C ≤ T<sub>a</sub> ≤ 70 °C)  
IP66

#### Field Connection / 4-20 mA Loop Parameters

U<sub>i</sub> = 30 V  
I<sub>i</sub> = 300 mA  
P<sub>i</sub> = 1.0 W  
C<sub>i</sub> = 14.8 nF  
L<sub>i</sub> = 0

#### RTD Connection Parameters

U<sub>O</sub> = 30 V  
I<sub>O</sub> = 2.31 mA  
P<sub>O</sub> = 17.32 mW  
C<sub>i</sub> = 0  
L<sub>i</sub> = 0

#### Special conditions for safe use (x)

If the equipment is fitted with the optional 90 V transient suppressor, it is incapable of withstanding the 500 V isolation from earth test and this must be taken into account during installation.

**N7** IECEX Type n  
Certificate No.: IECEXBAS08.0026X  
Ex nAnL IIC T4 (-40 °C ≤ T<sub>a</sub> ≤ 70 °C)  
U<sub>i</sub> = 45 Vdc MAX  
U<sub>O</sub> = 30 V (RTD Connection)  
IP66

#### Special conditions for safe use (x)

If fitted with a 90 V transient suppressor, the equipment is not capable of withstanding the 500 V electrical strength test as defined in Clause 6.8.1 of EN 60079-15:2005. This must be taken into account during installation.

**E7** IECEX Flameproof  
Certificate No.: IECEXKEM08.0010X  
Ex d IIC T6 (-50 °C ≤ T<sub>amb</sub> ≤ 65 °C)  
Ex d IIC T5 (-50 °C ≤ T<sub>amb</sub> ≤ 80 °C)

#### Special conditions for safe use (x)

1. The Ex d blanking elements, cable glands and wiring shall be suitable for a temperature of 90 °C.
2. Transmitter Model 3051S 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 maintenance shall be followed in detail to assure safety during its expected lifetime.
3. In case of repair, contact the manufacturer for information on the dimensions of the flameproof joints.

### Combinations of Certifications

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

**K1** Combination of E1, I1, N1, and ND  
**K4** Combination of E4 and I4  
**K5** Combination of E5 and I5  
**K6** Combination of E6 and I6  
**K7** Combination of E7, I7, and N7  
**KA** Combination of E1, E6, I1, and I6  
**KB** Combination of E5, E6, I5, and I6  
**KC** Combination of E5, E1, I5, and I1  
**KD** Combination of E5, E6, E1, I5, I6, and I1

# Rosemount 3051S Series

## 3051S ERS System Certifications

### Approved Manufacturing Locations

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

### Ordinary Location Certification for FM Approvals

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

### European Directive Information

Consult your Emerson Process Management sales representative for more information about the EC declaration of conformity.

### Hazardous Locations Certifications

#### North American Certifications

##### FM Approvals


- E5** Explosion-proof for Class I, Division 1, Groups B, C, and D; Dust Ignition-proof for Class II and Class III, Division 1, Groups E, F, and G; hazardous locations; enclosure Type 4X, conduit seal not required.
- I5** Intrinsically Safe for use in Class I, Division 1, Groups A, B, C, and D; Class II, Division 1, Groups E, F, and G; Class III, Division 1; Class I, Zone 0 AEx ia IIC when connected in accordance with Rosemount drawing 03151-1306; Non-Incendive for Class I, Division 2, Groups A, B, C, and D Enclosure Type 4X  
For entry parameters see control drawing 03151-1306.

##### Canadian Standards Association (CSA)

All CSA hazardous approved transmitters are certified per ANSI/ISA 12.27.01-2003.


- E6** Explosion-proof for Class I, Division 1, Groups B, C, and D; Dust Ignition-Proof for Class II and Class III, Division 1, Groups E, F, and G; suitable for Class I, Division 2, Groups A, B, C, and D, CSA Enclosure Type 4X; conduit seal not required; Dual Seal.
- I6** Intrinsically Safe for Class I, Division 1, Groups A, B, C, and D when connected in accordance with Rosemount Drawings 03151-1316; Dual Seal.  
For entry parameters see control drawing 03151-1316.

### European Certifications

- I1** ATEX Intrinsic Safety  
Consult factory for availability.
- N1** ATEX Type n  
Consult factory for availability.
- ND** ATEX Dust  
Certificate No.: BAS01ATEX1374X  II 1 D  
Ex tD A20 IP66 T105 °C (-20 °C ≤ T<sub>amb</sub> ≤ 85 °C)  
V<sub>max</sub> = 42.4 V max  
IP66  
CE 1180

#### 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 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 range of the apparatus and capable of withstanding a 7J impact test.
4. Each 3051S ERS transmitter must be securely screwed in place to maintain the ingress protection of the enclosure. (The 3051S Super Module must be properly assembled to the 3051S housing to maintain ingress protection.)

- E1** ATEX Flameproof  
Certificate No.: KEMA00ATEX2143X  II 1/2 G  
Ex d IIC T6 (-50 °C ≤ T<sub>amb</sub> ≤ 65 °C)  
Ex d IIC T5 (-50 °C ≤ T<sub>amb</sub> ≤ 80 °C)  
V<sub>max</sub> = 42.4 V  
CE 1180

#### Special Conditions for safe use (X):

1. The Ex d blanking elements, cable glands and wiring shall be suitable for a temperature of 90 °C.
2. Transmitter Model 3051S 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 maintenance shall be followed in detail to assure safety during its expected lifetime.
3. In case of repair, contact the manufacturer for information on the dimensions of the flameproof joints.

### Japanese Certifications

- E4** TIIS Flameproof: Consult factory for availability

### INMETRO Certifications

- E2** INMETRO Flameproof: Consult factory for availability

- I2** INMETRO Intrinsic Safety: Consult factory for availability

### China Certifications

- E3** China Flameproof: Consult factory for availability

- I3** China Intrinsically Safe: Consult factory for availability



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### IECEX Certifications

**I7** IECEX Intrinsic Safety  
Consult factory for availability.

**N7** IECEX Type n  
Consult factory for availability.

**E7** IECEX Flameproof and Dust (each listed separately)

IECEX Flameproof

Certificate No.: IECEXKEM08.0010X

Ex d IIC T6 (-50 °C ≤ T<sub>amb</sub> ≤ 65 °C)

Ex d IIC T5 (-50 °C ≤ T<sub>amb</sub> ≤ 80 °C)

V<sub>max</sub> = 42.4 V

#### Special conditions for safe use (X)

1. The Ex d blanking elements, cable glands and wiring shall be suitable for a temperature of 90 °C.
2. Transmitter Model 3051S 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 maintenance shall be followed in detail to assure safety during its expected lifetime.
3. In case of repair, contact the manufacturer for information on the dimensions of the flameproof joints.

IECEX Dust

Certificate No. IECEXBAS09.0014X

Ex tD A20 IP66 T105°C (-20 °C ≤ T<sub>amb</sub> ≤ 85 °C)

V<sub>max</sub> = 42.4 V

A = 22 mA

IP66

#### 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 range of the apparatus and capable of withstanding a 7J impact test.
4. Each 3051S ERS sensor must be securely screwed in place to maintain the ingress protection of the enclosure. (Each sensor module must be properly assembled to the housing to maintain ingress protection.)

### Combinations of Certifications

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

**K1** Combination of **E1**, **I1**, **N1**, and **ND**

**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**, **E6**, **I1**, and **I6**

**KB** Combination of **E5**, **E6**, **I1**, and **I6**

**KC** Combination of **E5**, **E1**, **I5**, and **I1**

**KD** Combination of **E5**, **E6**, **E1**, **I5**, **I6**, and **I1**

## Dimensional Drawings

Figure 1. Transmitter with Coplanar Sensor Module and Flange

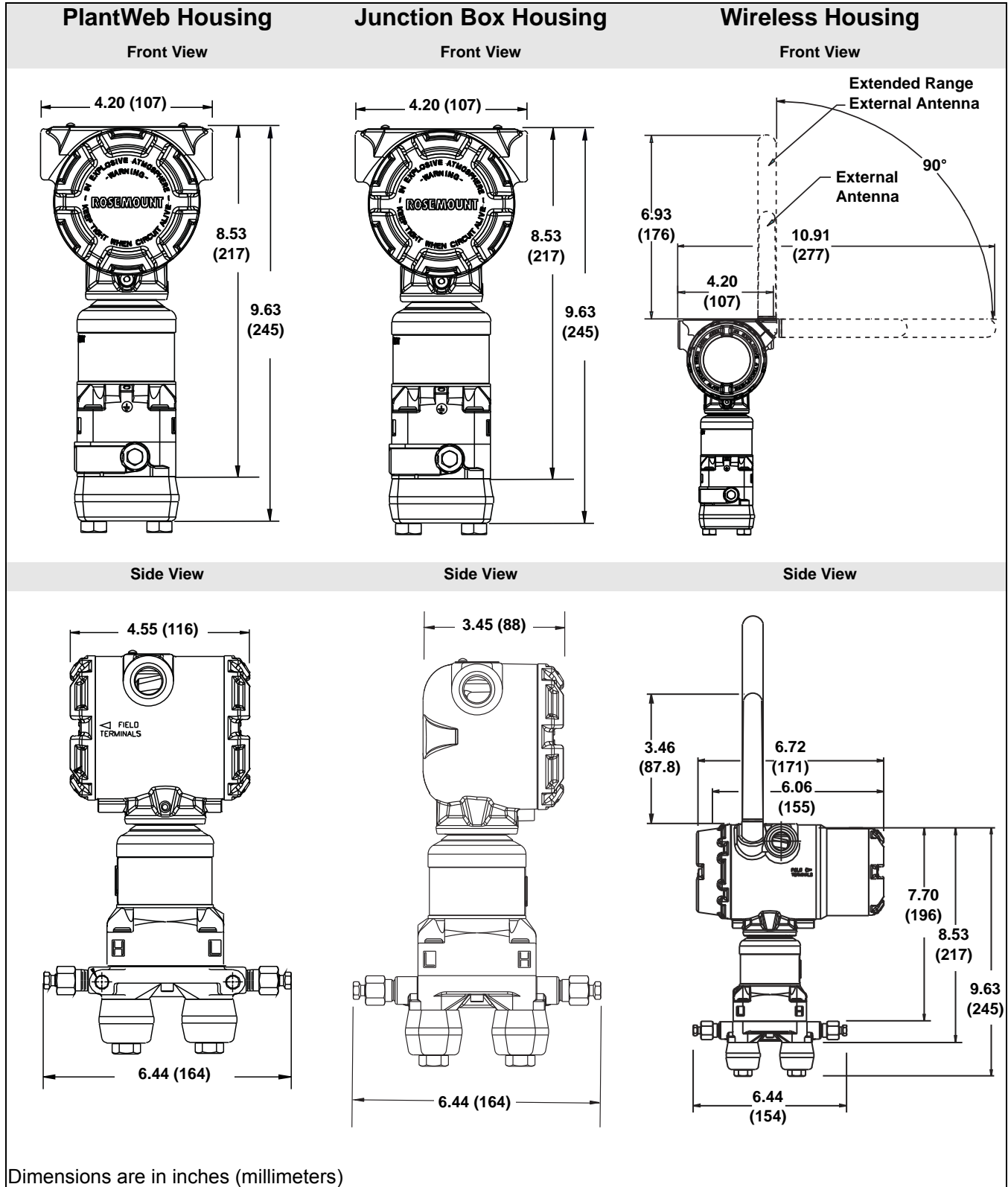
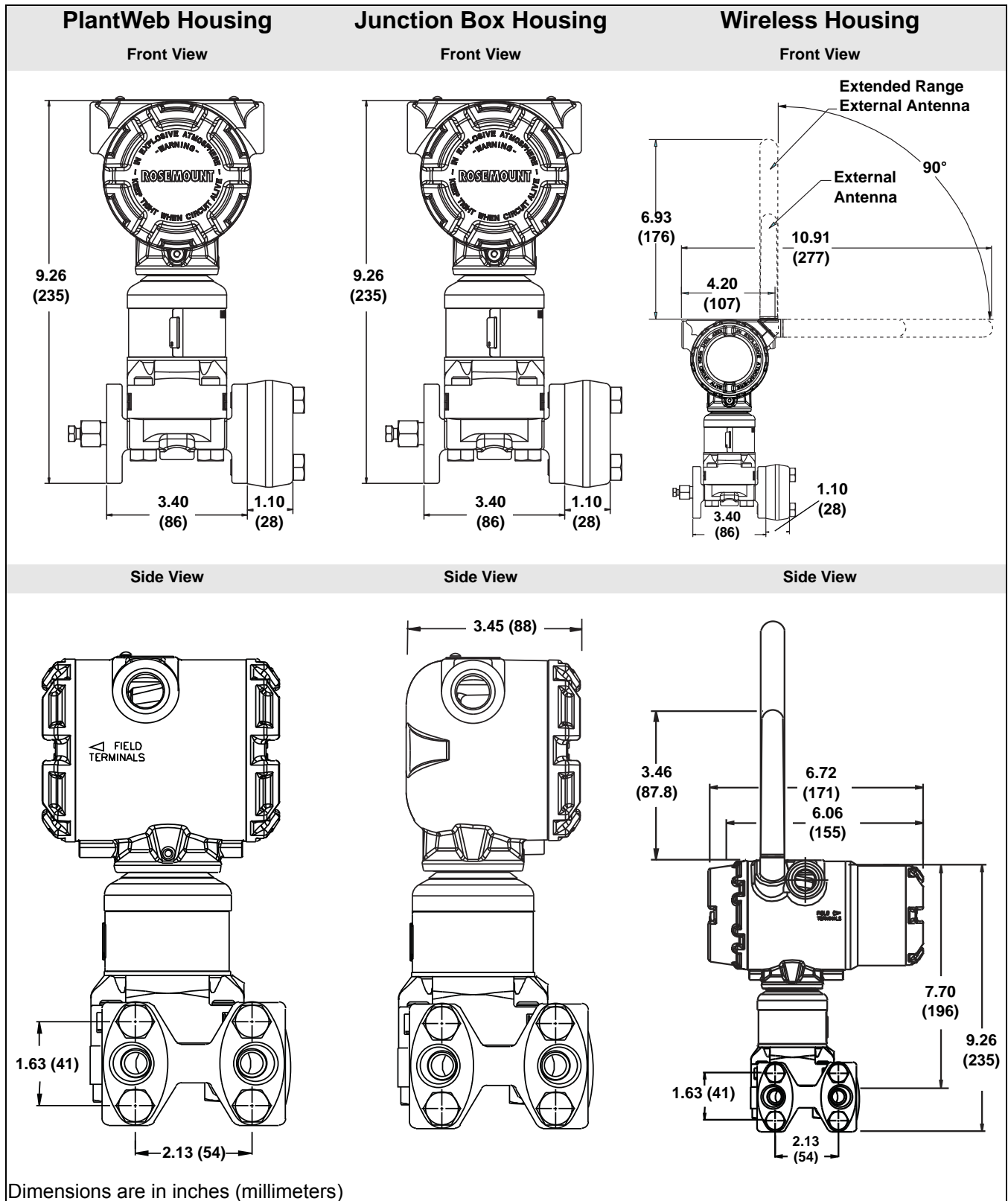


Figure 2. Transmitter with Coplanar Sensor Module and Traditional Flange



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Figure 3. Transmitter with In-Line Sensor Module

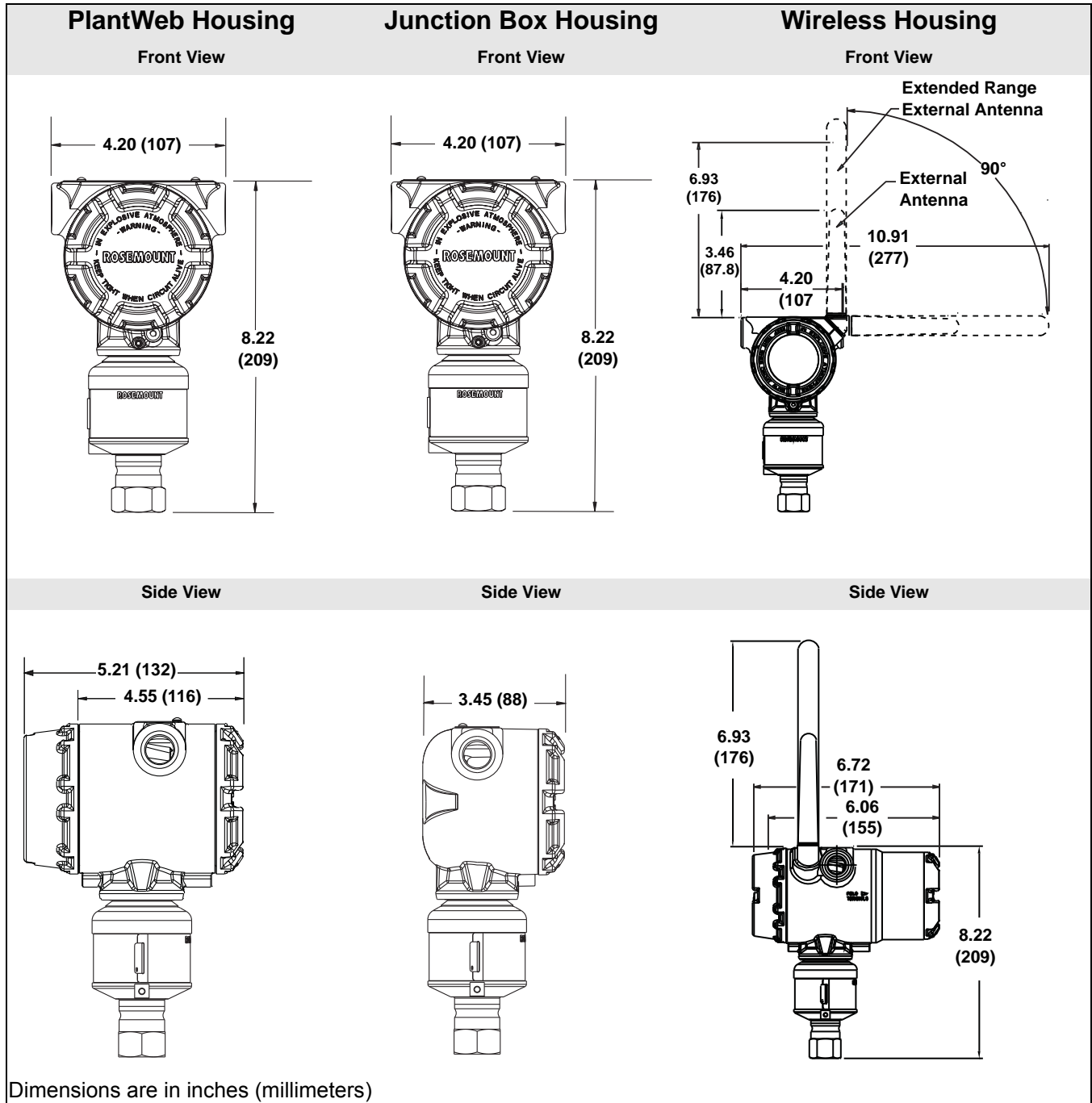


Figure 4. Coplanar Mounting Configurations (B4 Bracket)

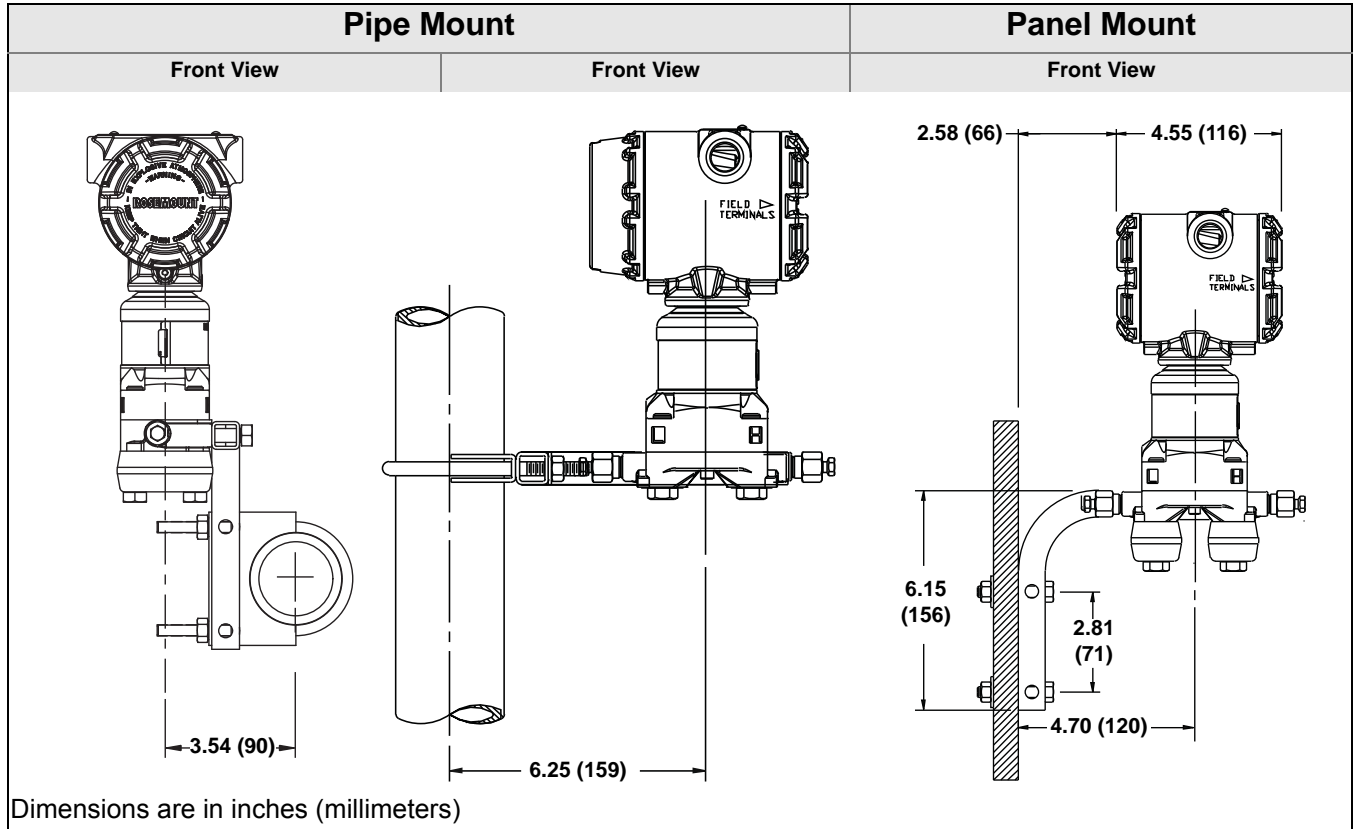
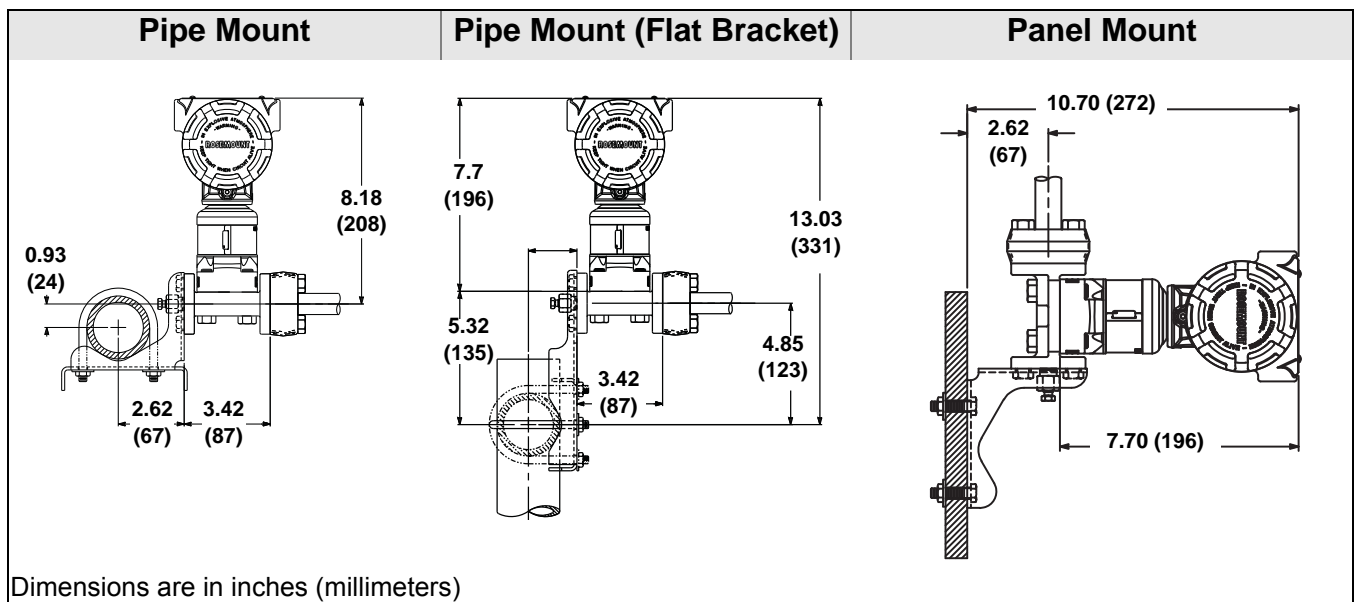


Figure 5. Traditional Mounting Configurations



# Rosemount 3051S Series

Figure 6. In-Line Mounting Configurations (B4 Bracket)

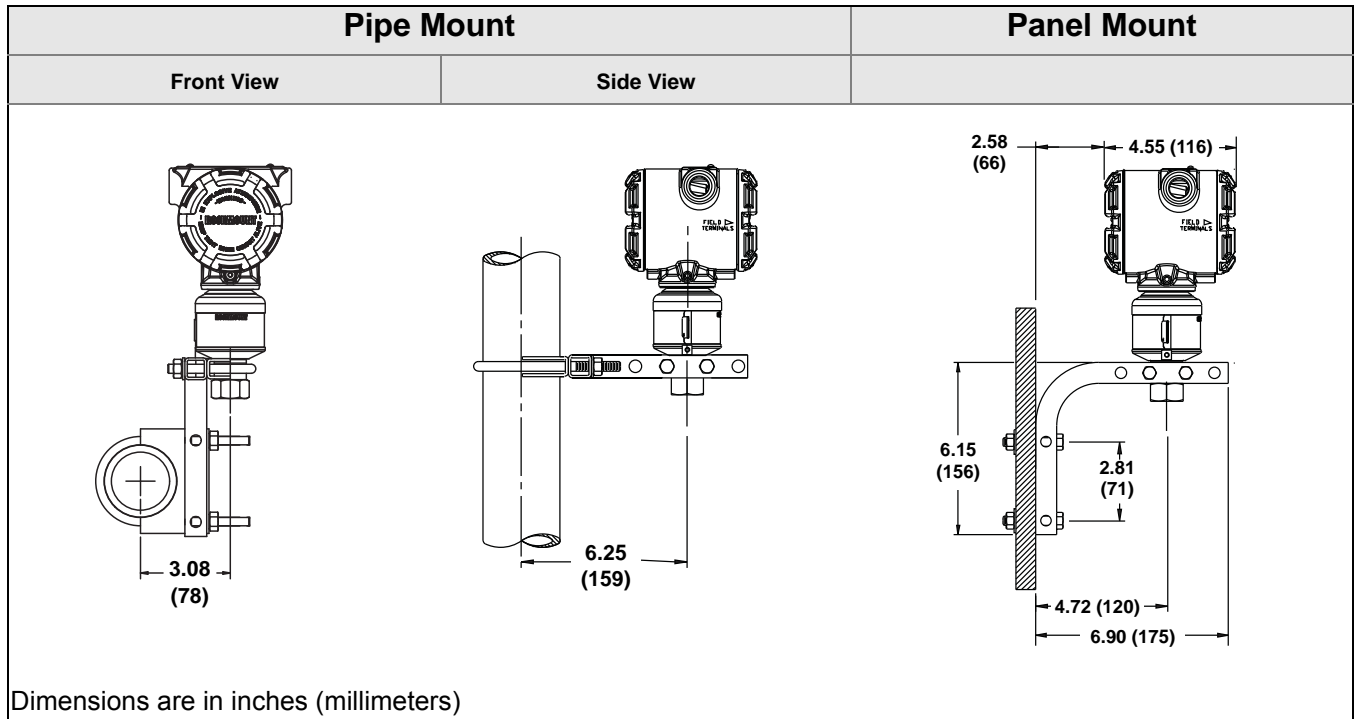


Figure 7. Remote Display Mounting Configurations (B4 Bracket)

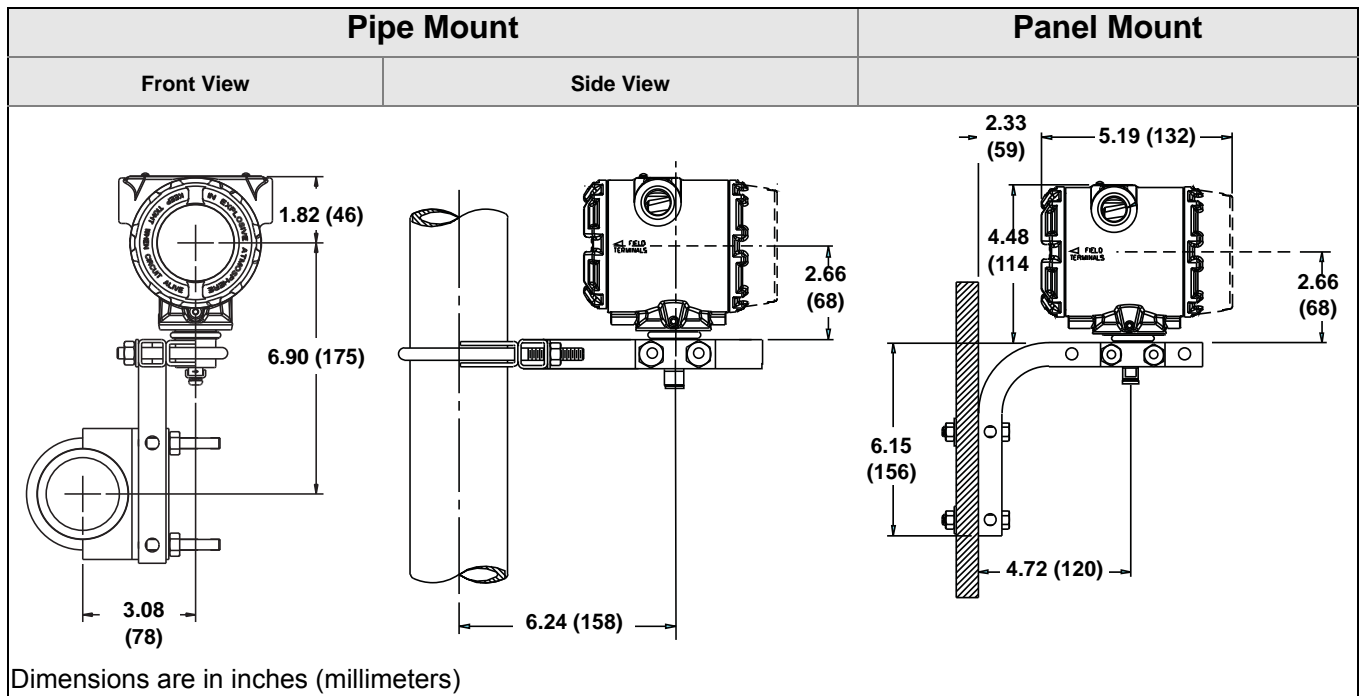
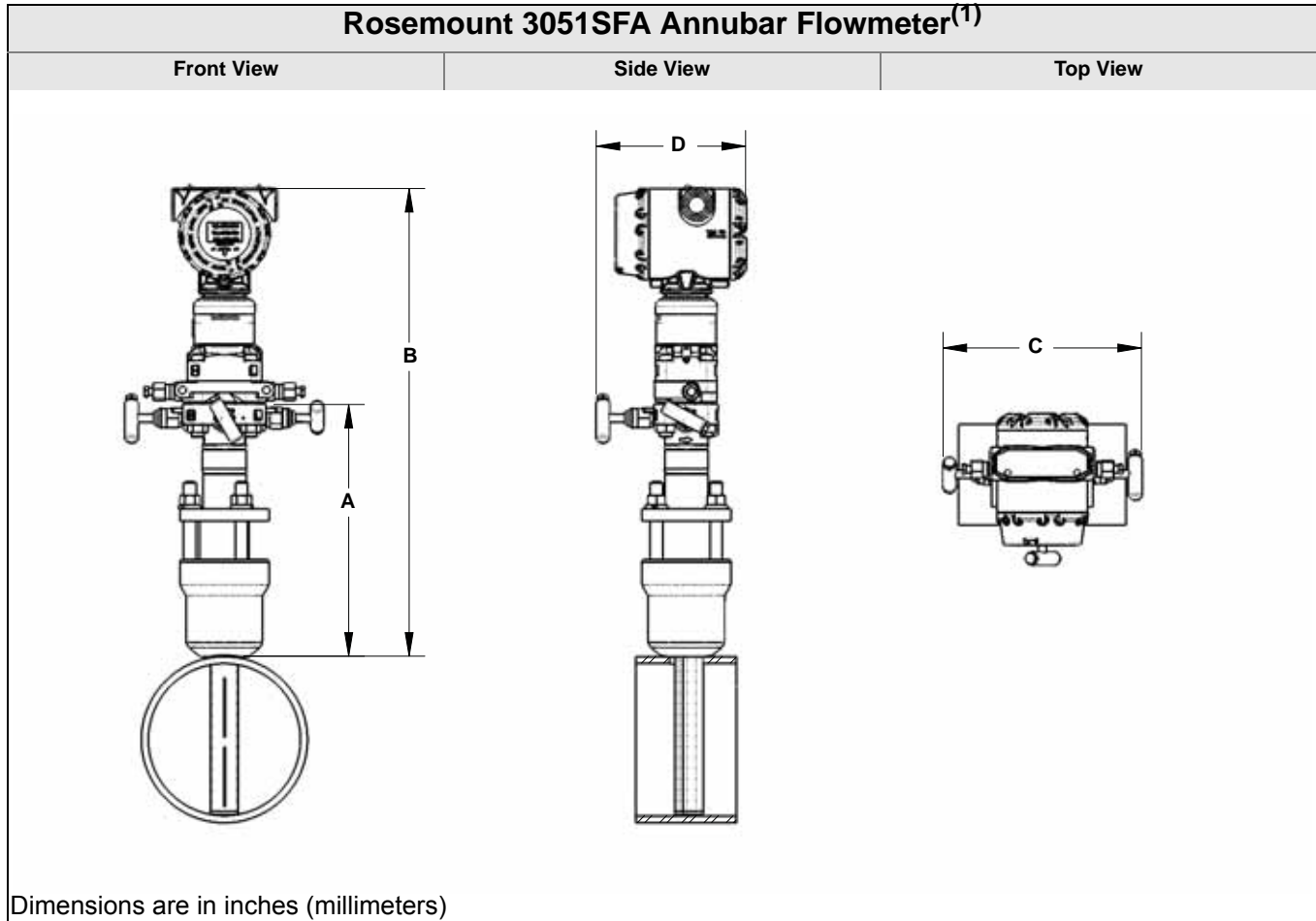


Figure 8. Rosemount 3051SFA Annubar Flowmeter



Dimensions are in inches (millimeters)

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

Table 16. 3051CFA Annubar Flowmeter Dimensional Data

Sensor Size	A (Max)	B (Max)	C (Max)	D (Max)
1	7.50 (190.5)	16.03 (407.2)	9.00 (228.6)	6.90 (175.3)
2	9.25 (235.0)	17.78 (451.6)	9.00 (228.6)	6.90 (175.3)
3	12.00 (304.8)	20.53 (521.5)	9.00 (228.6)	6.90 (175.3)

*Dimensions are in inches (millimeters)*

# Rosemount 3051S Series

Figure 9. Rosemount 3051SFC Compact Orifice Flowmeter

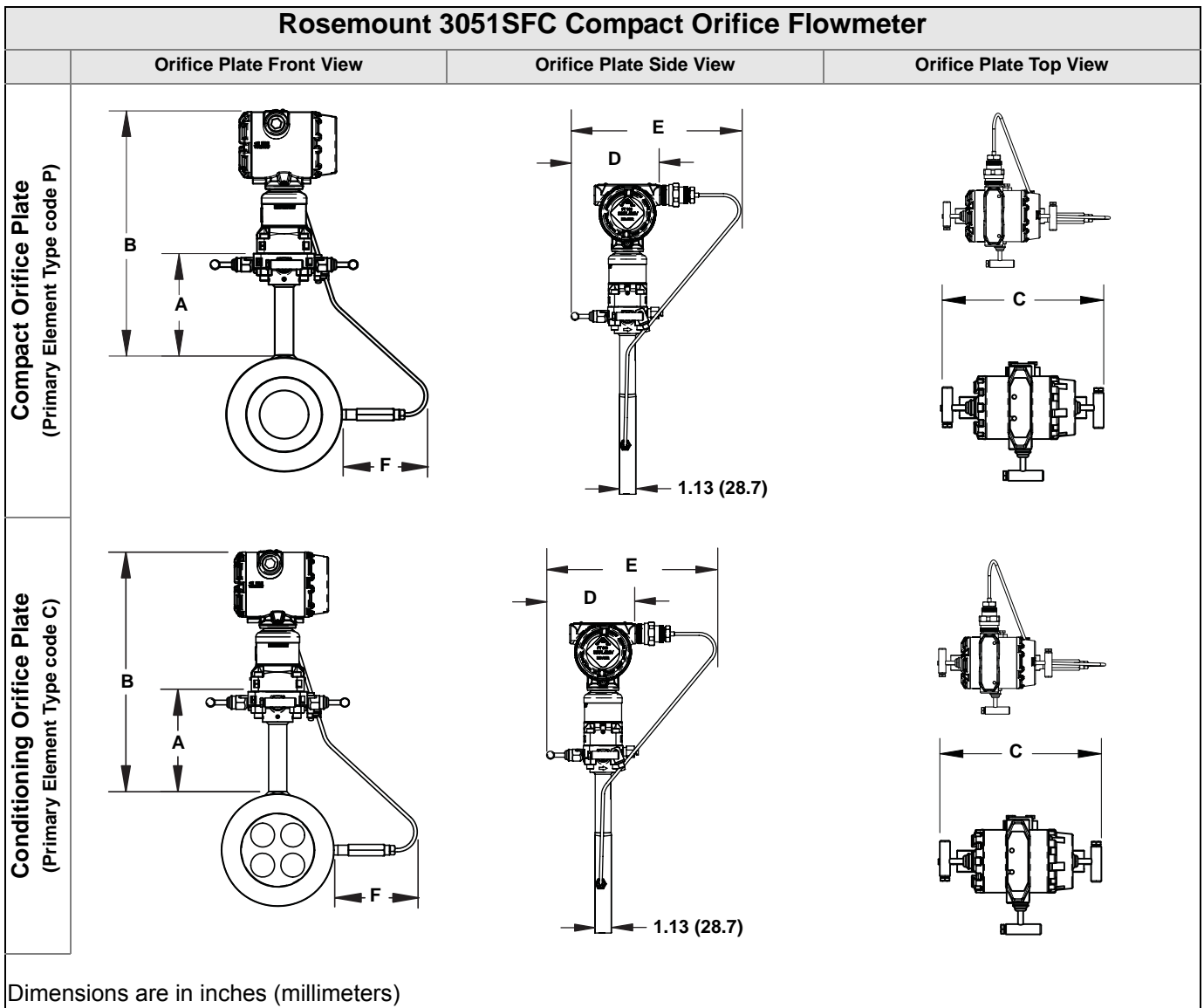


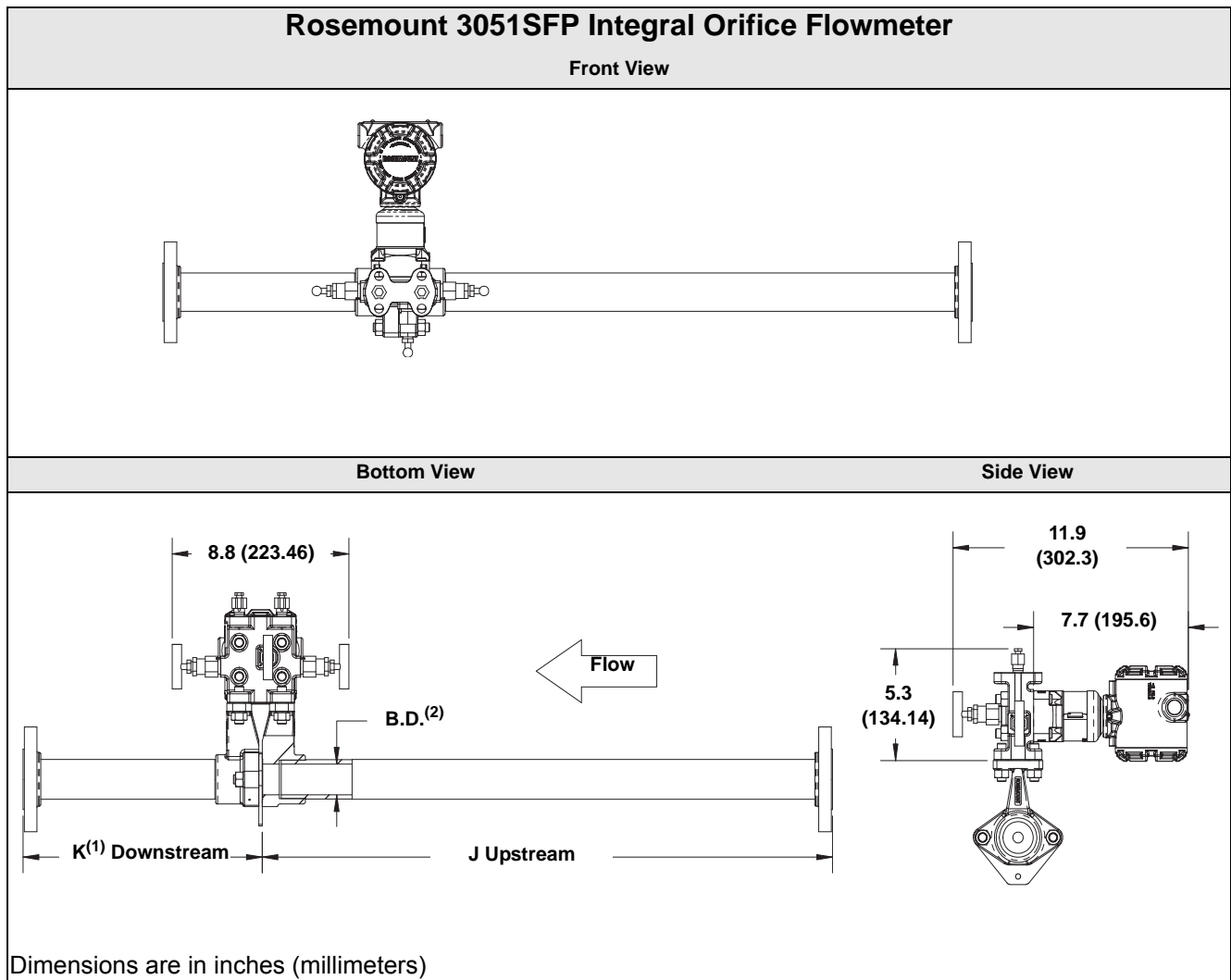
Table 17. Dimensional Drawings<sup>(1)</sup>

Primary <sup>(1)</sup> 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 6.7 (71)

<sup>(1)</sup> Measurement in inches (millimeters).



Figure 10. Rosemount 3051SFP Integral Orifice Flowmeter

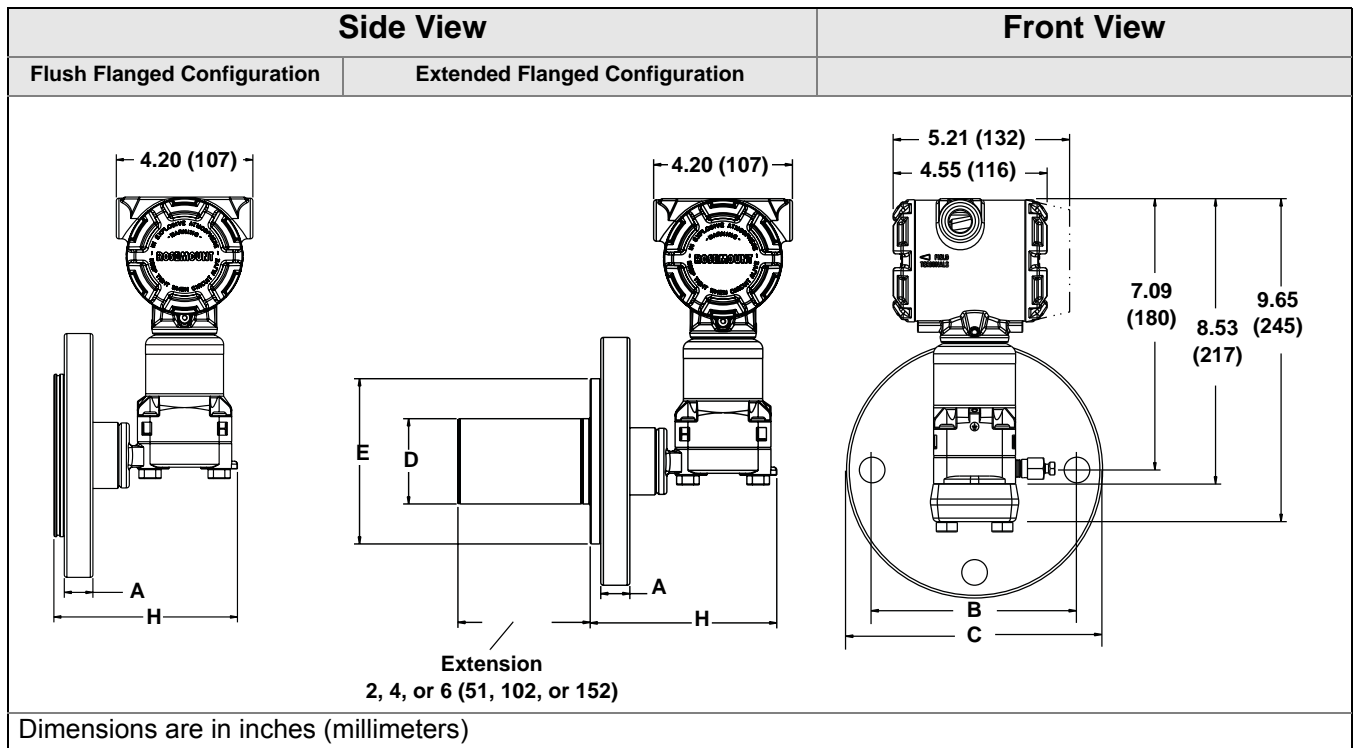


Dimension	Line Size		
	1/2-in. (15 mm)	1-in. (25 mm)	1 1/2-in. (40 mm)
J (Beveled/Threaded pipe ends)	12.54 (318.4)	20.24 (514.0)	28.44 (722.4)
J (RF slip-on, RTJ slip-on, RF-DIN slip on)	12.62 (320.4)	20.32 (516.0)	28.52 (724.4)
J (RF 150#, weld neck)	14.37 (364.9)	22.37 (568.1)	30.82 (782.9)
J (RF 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) <sup>(1)</sup>	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).

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Figure 11. Rosemount 3051SAL Liquid Level Transmitter



Class	Pipe Size	Flange Thickness A	Bolt Circle Diameter B	Outside Diameter C	No. of Bolts	Bolt Hole Diameter	Extension Diameter <sup>(1)</sup> D	E	H
ASME B16.5 (ANSI) 150	2 (51)	0.69 (18)	4.75 (121)	6.0 (152)	4	0.75 (19)	N/A	3.6 (92)	5.65 (143)
	3 (76)	0.88 (22)	6.0 (152)	7.5 (191)	4	0.75 (19)	2.58 (66)	5.0 (127)	5.65 (143)
	4 (102)	0.88 (22)	7.5 (191)	9.0 (229)	8	0.75 (19)	3.5 (89)	6.2 (158)	5.65 (143)
ASME B16.5 (ANSI) 300	2 (51)	0.82 (21)	5.0 (127)	6.5 (165)	8	0.75 (19)	N/A	3.6 (92)	5.65 (143)
	3 (76)	1.06 (27)	6.62 (168)	8.25 (210)	8	0.88 (22)	2.58 (66)	5.0 (127)	5.65 (143)
	4 (102)	1.19 (30)	7.88 (200)	10.0 (254)	8	0.88 (22)	3.5 (89)	6.2 (158)	5.65 (143)
ASME B16.5 (ANSI) 600	2 (51)	1.00 (25)	5.0 (127)	6.5 (165)	8	0.75 (19)	N/A	3.6 (92)	7.65 (194)
	3 (76)	1.25 (32)	6.62 (168)	8.25 (210)	8	0.88 (22)	2.58 (66)	5.0 (127)	7.65 (194)
DIN 2501 PN 10-40	DN 50	20 mm	125 mm	165 mm	4	18 mm	N/A	4.0 (102)	5.65 (143)
DIN 2501 PN 25/40	DN 80	24 mm	160 mm	200 mm	8	18 mm	66 mm	5.4 (138)	5.65 (143)
	DN 100	24 mm	190 mm	235 mm	8	22 mm	89 mm	6.2 (158)	5.65 (143)
DIN 2501 PN 10/16	DN 100	20 mm	180 mm	220 mm	8	18 mm	89 mm	6.2 (158)	5.65 (143)

(1) Tolerances are 0.040 (1.02), -0.020 (0.51).

## 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:

#### 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 (32-bit)
- 256 MB RAM
- 100 MB of available hard disk space
- RS232 serial port or USB port (for use with HART modem)
- CD-ROM

#### 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

### 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
<b>Typical Model Number: EA 2 E 0 N1</b>	

### Accessories

Item Description	Part Number
Serial Port HART Modem and Cables Only	03095-5105-0001
USB Port HART Modem and Cables Only <sup>(1)</sup>	03095-5105-0002
FOUNDATION fieldbus PCM-CIA Interface Card and Cables Only	03095-5108-0001
Long-life Power Module for Wireless option	00753-9220-0001

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

# Rosemount 3051S Series

**Product Data Sheet**  
00813-0100-4801, Rev PA  
April 2011

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