Product Data Sheet
April 2014
00813-0100-4001, Rev RC

Rosemount® 3051 Pressure Transmitter

With the Rosemount 3051 Pressure Transmitter, you'll gain more control over your plant. You'll be able to reduce product variation and complexity as well as your total cost of ownership by leveraging one device across a number of pressure, level and flow applications. You'll have access to information you can use to diagnose, correct and even prevent issues. And with unparalleled reliability and experience, the Rosemount 3051 is the industry standard that will help you perform at higher levels of efficiency and safety so you can remain globally competitive.

ROSEMOUNT

EMERSON. Process Management

Setting the standard for pressure measurement

Proven best-in-class performance, reliability and safety

- Over 7 million installed
- Reference accuracy 0.04% of span
- Installed total performance of 0.14% of span
- 5-year stability of 0.125% of URL
- SIL2/3 certified (IEC 61508)

Maximize installation and application flexibility with the Coplanar™ Platform

- Improve reliability and performance with integrated DP Flowmeters, DP Level solutions and integral manifolds
- Easy installation with all solutions fully assembled, leak-tested and calibrated
- Meet your application needs with an unsurpassed offering

Advanced Functionality

Power advisory diagnostics

- Detect on-scale failures caused by electrical loop issues before they impact your process operation
- This capability is safety certified for your most critical applications

Local operator interface

- Straightforward menus and built-in configuration buttons allow you commission the device in less than a minute
- Configure in hazardous-area locations without removing the transmitter cover using external buttons

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Industry leading capabilities extended to IEC 62591 (WirelessHART®)

- Cost effectively implement wireless on the industry's most proven platform
- Optimize safety with the industry's only intrinsically safe Power Module
- Eliminate wiring design and construction complexities to lower costs by 40-60%
- Quickly deploy new pressure, level and flow measurements in 70% less time

Innovative, integrated DP Flowmeters

- Fully assembled, configured, and leak tested for out-of-the-box installation
- Reduce straight pipe requirements, lower permanent pressure loss and achieve accurate measurement in small line sizes
- Up to 1.65% volumetric flow accuracy at 8:1 turndown

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
- Operate at higher temperature and in vacuum applications
- 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 assembly
- Offers a variety of styles, materials and configurations

Rosemount 3051C Coplanar Pressure Transmitter

3051C Coplanar
Pressure Transmitter

Rosemount 3051C Coplanar Pressure Transmitters are the industry standard for Differential, Gage, and Absolute pressure measurement. The Coplanar Platform enables seamless integration with manifolds, flow and level solutions. Capabilities include:

- Power Advisory can proactively detect degraded electrical loop integrity issues (Option Code **DA0**)
- Local Operator Interface with straightforward menus and built-in configuration buttons (Option Code **M4**)
- Scaled variable, process alerts and selectable HART® (Option Code **HR5** or **HR7**)
- Safety Certification (Option Code **QT**)

See Specifications and options for more details on each configuration.

Additional information
Specifications: page 47
Certifications: page 57
Dimensional Drawings page 63

Table 1. 3051C Coplanar Pressure Transmitters 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			
3051C	Coplanar Pressure Transmitter			
Measurement type				
Standard				**Standard**
D	Differential			★
G	Gage			★
Expanded				
A(1)	Absolute			
Pressure range				
	Differential (3051CD)	**Gage (3051CG)**	**Absolute (3051CA)**	
Standard				**Standard**
1	−25 to 25 inH_2O (-62,16 to 62,16 mbar)	−25 to 25 inH_2O (-62,16 to 62,16 mbar)	0 to 30 psia (0 to 2,07 bar)	★
2	−250 to 250 inH2O (-621,60 to 621,60 mbar)	−250 to 250 inH_2O (-621,60 to 621,60 mbar)	0 to 150 psia (0 to 10,34 bar)	★
3	−1000 to 1000 inH_2O (-2,49 to 2,49 bar)	−393 to 1000 inH_2O (-0,98 to 2,49 bar)	0 to 800 psia (0 to 55,16 bar)	★
4	−300 to 300 psi (-20,68 to 20,68 bar)	−14.2 to 300 psi (-0,98 to 20,68 bar)	0 to 4000 psia (0 to 275,79 bar)	★
5	−2000 to 2000 psi (-137,90 to 137,90 bar)	−14.2 to 2000 psi (-0,98 to 137,90 bar)	N/A	★
Expanded				
0(2)	−3 to 3 inH_2O (-7,46 to 7,46 mbar)	N/A	N/A	

Table 1. 3051C Coplanar Pressure Transmitters ordering information

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Transmitter output				
Standard				**Standard**
A[3]	4–20 mA with Digital Signal Based on HART Protocol			★
F	FOUNDATION fieldbus Protocol			★
W[4]	PROFIBUS PA Protocol			★
X[5]	Wireless (Requires wireless options and engineered polymer housing)			★
Expanded				
M[6]	Low-Power, 1-5 Vdc with Digital Signal Based on HART Protocol (See Option C2 for 0.8-3.2 Vdc Output)			
Materials of construction				
	Process flange type	**Flange material**	**Drain/vent**	
Standard				**Standard**
2	Coplanar	SST	SST	★
3[7]	Coplanar	Cast C-276	Alloy C-276	★
4	Coplanar	Alloy 400	Alloy 400/K-500	★
5	Coplanar	Plated CS	SST	★
7[7]	Coplanar	SST	Alloy C-276	★
8[7]	Coplanar	Plated CS	Alloy C-276	★
0	Alternate Process Connection			★
Isolating diaphragm				
Standard				**Standard**
2[7]	316L SST			★
3[7]	Alloy C-276			★
Expanded				
4[8]	Alloy 400			
5[8]	Tantalum (Available on 3051CD and CG, Ranges 2–5 only. Not available on 3051CA)			
6[8]	Gold-plated Alloy 400 (Use in combination with O-ring Option Code B.)			
7[8]	Gold-plated 316 SST			
O-ring				
Standard				**Standard**
A	Glass-filled PTFE			★
B	Graphite-filled PTFE			★
Sensor fill fluid				
Standard				**Standard**
1	Silicone			★
2[8]	Inert (Differential and Gage only)			★
Housing material			**Conduit entry size**	
Standard				**Standard**
A	Aluminum		½–14 NPT	★
B	Aluminum		M20 × 1.5	★
J	SST		½–14 NPT	★
K	SST		M20 × 1.5	★
P[9]	Engineered Polymer		No Conduit Entries	★
Expanded				
D	Aluminum		G½	
M	SST		G½	

Table 1. 3051C Coplanar Pressure Transmitters ordering information

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

Wireless options (Requires wireless output code X and Engineered Polymer housing code P)

Wireless transmit rate, operating frequency, and protocol		
Standard		**Standard**
WA3	User Configurable Transmit Rate, 2.4GHz WirelessHART	★
Antenna and SmartPower		
Standard		**Standard**
WP5	Internal Antenna, Compatible with Green Power Module (I.S. Power Module Sold Separately)	★

HART revision configuration (Requires HART Protocol output code A)

Standard		**Standard**
HR5[10][13]	Configured for HART Revision 5	★
HR7[11][13]	Configured for HART Revision 7	★

Options (Include with selected model number)

PlantWeb™ control functionality		
Standard		**Standard**
A01	FOUNDATION fieldbus Advanced Control Function Block Suite	★
PlantWeb diagnostic functionality		
Standard		**Standard**
DA0[12][13]	Power Advisory HART Diagnostic	★
D01	FOUNDATION fieldbus® Diagnostics Suite	★
Alternate flange[14]		
Standard		**Standard**
H2	Traditional Flange, 316 SST, SST Drain/Vent	★
H3[7]	Traditional Flange, Alloy C, Alloy C-276 Drain/Vent	★
H4	Traditional Flange, Cast Alloy 400, Alloy 400/K-500 Drain/Vent	★
H7[7]	Traditional Flange, 316 SST, Alloy C-276 Drain/Vent	★
HJ	DIN-Compliant Traditional Flange,SST,7/16 in. Adapter/Manifold Bolting	★
FA	Level Flange, SST, 2 in., ANSI Class 150, Vertical Mount 316 SST drain/vent	★
FB	Level Flange, SST, 2 in., ANSI Class 300, Vertical Mount 316 SST drain/vent	★
FC	Level Flange, SST, 3 in., ANSI Class 150, Vertical Mount 316 SST drain/vent	★
FD	Level Flange, SST, 3 in., ANSI Class 300, Vertical Mount 316 SST drain/vent	★
FP	DIN Level Flange, SST, DN 50, PN 40, Vertical Mount 316 SST drain/vent	★
FQ	DIN Level Flange, SST, DN 80, PN 40, Vertical Mount 316 SST drain/vent	★
Expanded		
HK[15]	DIN Compliant Traditional Flange, SST, 10 mm Adapter/Manifold Bolting 316 SST	
HL	DIN Compliant Traditional Flange, SST, 12mm Adapter/Manifold Bolting (Not available on 3051CD0) 316 SST	
Manifold assembly[16]		
Standard		**Standard**
S5	Assemble to Rosemount 305 Integral Manifold	★
S6	Assemble to Rosemount 304 Manifold or Connection System	★
Integral mount primary element[15][16]		
Standard		**Standard**
S3	Assemble to Rosemount 405 Compact Orifice Plate	★
S4[17]	Assemble to Rosemount Annubar™ or Rosemount 1195 Integral Orifice	★

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Seal assemblies[16]		
Standard		**Standard**
S1[18]	Assemble to one Rosemount 1199 seal	★
S2[19]	Assemble to two Rosemount 1199 seals	★
Mounting bracket[20]		
Standard		**Standard**
B4	Coplanar flange bracket, all SST, 2-in. pipe and panel	★
B1	Traditional flange bracket, CS, 2-in. pipe	★
B2	Traditional flange bracket, CS, panel	★
B3	Traditional flange flat bracket, CS, 2-in. pipe	★
B7	Traditional flange bracket, B1 with SST bolts	★
B8	Traditional flange bracket, B2 with SST bolts	★
B9	Traditional flange bracket, B3 with SST bolts	★
BA	Traditional flange bracket, B1, all SST	★
BC	Traditional flange bracket, B3, all SST	★
Product certifications		
Standard		**Standard**
E8	ATEX Flameproof and Dust Certification	★
I1[21]	ATEX Intrinsic Safety and Dust	★
IA	ATEX FISCO Intrinsic Safety; for FOUNDATION fieldbus protocol only	★
N1	ATEX Type n Certification and Dust	★
K8	ATEX Flameproof, Intrinsic Safety, Type n, Dust (combination of E8, I1 and N1)	★
E4[22]	TIIS Flame-proof	★
I4[23]	TIIS Intrinsic Safety	★
E5	FM Explosion-proof, Dust Ignition-Proof	★
I5[24]	FM Intrinsically Safe, Division 2	★
IE	FM FISCO Intrinsically Safe; for FOUNDATION fieldbus protocol only	★
K5	FM Explosion-proof, Dust Ignition-Proof, Intrinsically Safe, and Division 2	★
C6	CSA Explosion-proof, Dust Ignition-proof, Intrinsically Safe, and Division 2	★
I6 [9]	CSA Intrinsic Safety	★
K6	CSA and ATEX Explosion-proof, Intrinsically Safe, and Division 2 (combination of C6, E8, and I1)	★
E7	IECEx Flameproof, Dust Ignition-proof	★
I7	IECEx Intrinsic Safety	★
N7	IECEx Type n Certification	★
K7	IECEx Flame-proof, Dust Ignition-proof, Intrinsic Safety, and Type n (combination of I7, N7, and E7)	★
E2	INMETRO Flameproof	★
I2	INMETRO Intrinsic Safety	★
K2	INMETRO Flameproof, Instrinsic Safety	★
E3	China Flameproof	★
I3	China Intrinsic Safety	★
N3	China Type n	★
KB	FM and CSA Explosion-proof, Dust Ignition Proof, Intrinsically Safe, and Division 2 (combination of K5 and C6)	★
KD	FM, CSA, and ATEX Explosion-proof, Intrinsically Safe (combination of K5, C6, I1, and E8)	★
Drinking water approval		
Standard		**Standard**
DW[25]	NSF drinking water approval	★

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Shipboard approvals		
Standard		**Standard**
SBS[8]	American Bureau of Shipping	★
Custody transfer		
Standard		**Standard**
C5[12]	Measurement Canada Accuracy Approval *(Limited availability depending on transmitter type and range. Contact an Emerson Process Management representative)*	★
Bolting material		
Standard		**Standard**
L4	Austenitic 316 SST Bolts	★
L5	ASTM A 193, Grade B7M Bolts	★
L6	Alloy K-500 Bolts	★
Display and interface options		
Standard		**Standard**
M4[26]	LCD Display with Local Operator Interface	★
M5	LCD Display	★
Calibration certificate		
Standard		**Standard**
Q4	Calibration Certificate	★
QG	Calibration Certificate and GOST Verification Certificate	★
QP	Calibration certification and tamper evident seal	★
Material traceability certification		
Standard		**Standard**
Q8	Material Traceability Certification per EN 10204 3.1	★
Quality certification for safety		
Standard		**Standard**
QS[12]	Prior-use certificate of FMEDA data	★
QT[12][13]	Safety certified to IEC 61508 with certificate of FMEDA	★
Configuration buttons		
Standard		**Standard**
D4[12]	Analog Zero and Span	★
DZ[27]	Digital Zero Trim	★
Transient protection		
Standard		**Standard**
T1[8][28]	Transient Protection Terminal Block	★
Software configuration		
Standard		**Standard**
C1	Custom Software Configuration (Completed CDS 00806-0100-4007 for wired and 00806-0100-4100 for Wireless required with order)	★
Expanded		
C2	0.8-3.2 Vdc Output with Digital Signal Based on HART Protocol (Available with Output code M only)	★
Gage pressure calibration		
Standard		**Standard**
C3	Gage Calibration (Model 3051CA4 only)	★

Table 1. 3051C Coplanar Pressure Transmitters ordering information

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Alarm levels		
Standard		**Standard**
C4[12][29]	Analog Output Levels Compliant with NAMUR Recommendation NE 43, Alarm High	★
CN[12][29]	Analog Output Levels Compliant with NAMUR Recommendation NE 43, Alarm Low	★
CR[12][13]	Custom alarm and saturation signal levels, high alarm (requires C1 and Configuration Data Sheet)	★
CS[12][13]	Custom alarm and saturation signal levels, low alarm (requires C1 and Configuration Data Sheet)	★
CT[12][13]	Low alarm (standard Rosemount alarm and saturation levels)	★
Pressure testing		
Expanded		
P1	Hydrostatic Testing with Certificate	
Cleaning process area		
Expanded		
P2	Cleaning for Special Service	
P3	Cleaning for <1 PPM Chlorine/Fluorine	
Pressure calibration		
Expanded		
P4	Calibrate at Line Pressure (Specify Q48 on order for corresponding certificate)	
High accuracy		
Standard		**Standard**
P8[30]	0.04% Accuracy to 5:1 turndown	★
Flange adapters		
Standard		**Standard**
DF[31]	1/2 -14 NPT flange adapter(s)	★
Vent/drain valves		
Expanded		
D7	Coplanar Flange Without Drain/Vent Ports	
Conduit plug		
Standard		**Standard**
DO[8][32]	316 SST Conduit Plug	★
RC1/4 RC1/2 process connection		
Expanded		
D9[33]	RC ¼ Flange with RC ½ Flange Adapter - SST	
Max static line pressure		
Standard		**Standard**
P9	4500 psig (310,26 bar) Static Pressure Limit (3051CD Ranges 2–5 only)	★

Ground screw		
Standard		**Standard**
V5[8][34]	External Ground Screw Assembly	★
Surface finish		
Standard		**Standard**
Q16	Surface finish certification for sanitary remote seals	★

Table 1. 3051C Coplanar Pressure Transmitters ordering information

★ The Standard offering represents the most common options. The starred options (★) should be selected for best delivery.
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Toolkit total system performance reports		
Standard		**Standard**
QZ	Remote Seal System Performance Calculation Report	★
Conduit electrical connector		
Standard		**Standard**
GE(8)	M12, 4-pin, Male Connector (eurofast®)	★
GM(8)	A size Mini, 4-pin, Male Connector (minifast®)	★
NACE Certificate		
Standard		**Standard**
Q15(35)	Certificate of Compliance to NACE MR0175/ISO 15156 for wetted materials	★
Q25(35)	Certificate of Compliance to NACE MR0103 for wetted materials	★
Typical model number: 3051CD 2 A 2 2 A 1 A B4		

(1) Wireless output (Code X) available in absolute measurement type (Code A) with only range 1-4, 316L SST isolating diaphragm material (Code 2), silicone fill fluid (Code 1), and housing code (Code P).

(2) 3051CD0 is available only with Output Code A and X. Output Code A only available with Process Flange Code 0 (Alternate Flange H2, H7, HJ, or HK), Isolating Diaphragm Code 2, O-ring Code A, and Bolting Option L4. Output Code X and draft range 0 only available with Silicone Fill Fluid Code 1 and Process Flange Code 0 (Alternate Flange H2), Isolating Diaphragm Code 2, O-ring Code A, and Bolting Option L4.

(3) HART Revision 5 is the default HART output. The Enhanced 3051 can be factory or field configured to HART Revision 7. To order HART Revision 7 factory configured, add option code HR7.

(4) For local addressing and configuration, M4 (Local Operator Interface) is required.

(5) Available approvals are FM Intrinsically Safe, (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 C6, E2, E5, I5, K5, KB and E8 approval. Not available with GE, GM, P8, SBS, DA0, M4, D4, DZ, QT, HR5, HR7, CR, CS, CT.

(7) Materials of Construction comply with recommendations per NACE MR0175/ISO 15156 for sour oil field production environments. Environmental limits apply to certain materials. Consult latest standard for details. Selected materials also conform to NACE MR0103 for sour refining environments.

(8) Not Available with Wireless output (output code X).

(9) Only available with Wireless output (output code X).

(10) Configures the HART output to HART Revision 5. The device can be field configured to HART Revision 7 if needed.

(11) Configures the HART output to HART Revision 7. The device can be field configured to HART Revision 5 if needed.

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

(13) Select Configuration Buttons (option code D4 or DZ) or Local Operator Interface (option code M4) if local configuration buttons are required.

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

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

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

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

(18) Not valid with optional code D9 for RC $^{1}/_{2}$ Adapters.

(19) Not valid for optional codes DF and D9 for Adapters.

(20) Panel mounting bolts are not supplied.

(21) Dust approval not applicable to output code X. See "IEC 62591 (WirelessHART Protocol)" on page 62 for wireless approvals.

(22) Available only with output codes A - 4-20 mA HART and F - FOUNDATION fieldbus.

(23) Available only with 3051CD and 3051CG and output code A - 4-20 mA HART.

(24) Intrinsically Safe only available with Wireless.

(25) Not available with Alloy C-276 isolator (3 code), tantalum isolator (5 code), all cast C-276 flanges, all plated CS flanges, all DIN flanges, all Level flanges, assemble-to manifolds (S5 and S6 codes), assemble-to seals (S1 and S2 codes), assemble-to primary elements (S3 and S4 codes), surface finish certification (Q16 code), and remote seal system report (QZ code).

(26) Not available with FOUNDATION fieldbus (output code F), Wireless (output code X), or Low Power Output (output code M).

(27) Only available with HART 4-20 mA output (output code A) and Wireless output (output code X)

(28) The T1 option is not needed with FISCO Product Certifications; transient protection is included in the FISCO product certification codes IA and IE.

(29) NAMUR-Compliant operation is pre-set at the factory and cannot be changed to standard operation in the field for the standard 3051.

(30) Only available with Standard 3051 range 2-4. See specification section for more information.

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

(32) Transmitter is shipped with a 316 SST Conduit plug (uninstalled) in place of standard carbon steel conduit plug.

(33) Not available with Alternate Process Connection; DIN Flanges and Level Flanges.

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

(35) NACE compliant wetted materials are identified by Footnote (7).

Rosemount 3051T In-Line Pressure Transmitter

3051T In-Line
Pressure Transmitter

Rosemount 3051T In-line Pressure Transmitters are the industry standard 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:

- Power Advisory can proactively detect degraded electrical loop integrity issues (Option Code **DA0**)
- Local Operator Interface with straightforward menus and built-in configuration buttons (Option Code **M4**)
- Scaled variable, process alerts and selectable HART (Option Code **HR5** or **HR7**)
- Safety Certification (Option Code **QT**)

See "Specifications" on page 47 and options for more details on each configuration.

Additional Information

Specifications: page 47
Certifications: page 57
Dimensional Drawings: page 63

Table 2. 3051T 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		
3051T	In-Line Pressure Transmitter		
Pressure type			
Standard			**Standard**
G	Gage		★
A[1]	Absolute		★
Pressure range			
	Gage (3051TG)[2]	**Absolute (3051TA)**	
Standard			**Standard**
1	-14.7 to 30 psi (-1,01 to 2,07 bar)	0 to 30 psia (0 to 2,07 bar)	★
2	-14.7 to 150 psi (-1,01 to 10,34 bar)	0 to 150 psia (0 to 10,34 bar)	★
3	-14.7 to 800 psi (-1,01 to 55,16 bar)	0 to 800 psia (0 to 55,16 bar)	★
4	-14.7 to 4000 psi (-1,01 to 275,79 bar)	0 to 4000 psia (0 to 275,79 bar)	★
5	-14.7 to 10000 psi (-1,01 to 689,48 bar)	0 to 10000 psia (0 to 689,48 bar)	★
Transmitter output			
Standard			**Standard**
A[3]	4–20 mA with Digital Signal Based on HART Protocol		★
F	FOUNDATION fieldbus Protocol		★
W[4]	PROFIBUS PA Protocol		★
X[5]	Wireless (Requires wireless options and engineered polymer housing)		★
Expanded			
M[6]	Low-Power 1-5 Vdc with Digital Signal Based on HART Protocol (See Option C2 for 0.8-3.2 Vdc Output)		

Table 2. 3051T In-Line Pressure Transmitter ordering information

★ The Standard offering represents the most common options. The starred options (★) should be selected for best delivery.
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Process connection style			
Standard			**Standard**
2B	1/2–14 NPT Female		★
2C[7]	G½ A DIN 16288 Male (Range 1–4 only)		★
Expanded			
2F[8]	Coned and Threaded, Compatible with Autoclave Type F-250-C (Range 5 only)		
61[8]	Non-threaded Instrument flange (Range 1-4 only)		
Isolating diaphragm		**Process connection wetted parts material**	
Standard			**Standard**
2[9]	316L SST	316L SST	★
3[9]	Alloy C-276	Alloy C-276	★
Sensor fill fluid			
Standard			**Standard**
1	Silicone		★
2[8]	Inert		★
Housing material		**Conduit entry size**	
Standard			**Standard**
A	Aluminum	½–14 NPT	★
B	Aluminum	M20 × 1.5	★
J	SST	½–14 NPT	★
K	SST	M20 × 1.5	★
P[10]	Engineered polymer	No conduit entries	★
Expanded			
D	Aluminum	G½	
M	SST	G½	

Wireless options (Requires wireless output code X and Engineered Polymer housing code P)

Wireless transmit rate, operating frequency, and protocol		
Standard		**Standard**
WA3	User Configurable Transmit Rate, 2.4GHz WirelessHART	★
Antenna and SmartPower		
Standard		**Standard**
WP5	Internal Antenna, Compatible with Green Power Module (I.S. Power Module Sold Separately)	★

HART Revision Configuration (Requires HART Protocol output code A)

Standard		**Standard**
HR5[13][11]	Configured for HART Revision 5	★
HR7[13][12]	Configured for HART Revision 7	★

Options (Include with selected model number)

PlantWeb control functionality		
Standard		**Standard**
A01	FOUNDATION fieldbus Advanced Control Function Block Suite	★
PlantWeb Diagnostic functionality		
Standard		**Standard**
DA0[13][20]	Power Advisory HART Diagnostic	★
D01	FOUNDATION fieldbus Diagnostics Suite	★

Table 2. 3051T 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.**

Integral assembly		
Standard		**Standard**
S5[14]	Assemble to Rosemount 306 Integral Manifold	★
Diaphragm seal assemblies		
Standard		**Standard**
S1[14]	Assemble to one Rosemount 1199 seal	★
Mounting bracket[15]		
Standard		**Standard**
B4	Bracket for 2-in. Pipe or Panel Mounting, All SST	★
Product certifications		
Standard		**Standard**
E8	ATEX Flameproof and Dust Certification	★
I1[16]	ATEX Intrinsic Safety and Dust	★
IA	ATEX Intrinsic Safety for FISCO; for FOUNDATION fieldbus protocol only	★
N1	ATEX Type n Certification and Dust	★
K8	ATEX Flame-proof, Intrinsic Safety, Type n, Dust (combination of E8, I1 and N1)	★
E4[17]	TIIS Flameproof	★
E5	FM Explosion-proof, Dust Ignition-proof	★
I5[18]	FM Intrinsically Safe, Division 2	★
IE	FM FISCO Intrinsically Safe; for FOUNDATION fieldbus protocol only	★
K5	FM Explosion-proof, Dust Ignition-proof, Intrinsically Safe, and Division 2	★
C6	CSA Explosion-proof, Dust Ignition-proof, Intrinsically Safe, and Division 2	★
I6 [10]	CSA Intrinsic Safety	★
K6	CSA and ATEX Explosion-proof, Intrinsically Safe, and Division 2 (combination of C6, E8, and I1)	★
E7	IECEx Flameproof, Dust Ignition-proof	★
I7	IECEx Intrinsic Safety	★
N7	IECEx Type n Certification	★
K7	IECEx Flameproof, Dust Ignition-proof, Intrinsic Safety, and Type n (combination of I7, N7, and E7)	★
E2	INMETRO Flameproof	★
I2	INMETRO Intrinsic Safety	★
K2	INMETRO Flameproof, Intrinsic Safety	★
E3	China Flameproof	★
I3	China Intrinsic Safety	★
N3	China Type n	★
KB	FM and CSA Explosion-proof, Dust Ignition-proof, Intrinsically Safe, and Division 2 (combination of K5 and C6)	★
KD	FM, CSA, and ATEX Explosion-proof, Intrinsically Safe (combination of K5, C6, I1, and E8)	★
Drinking water approval		
Standard		**Standard**
DW[19]	NSF drinking water approval	★
Shipboard approvals		
Standard		**Standard**
SBS[8]	American Bureau of Shipping	★
Custody transfer		
Standard		**Standard**
C5	Measurement Canada Accuracy Approval (Limited availability depending on transmitter type and range. Contact an Emerson Process Management representative)	★

Table 2. 3051T 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.

Calibration certification		
Standard		**Standard**
Q4	Calibration Certificate	★
QG	Calibration Certificate and GOST Verification Certificate	★
QP	Calibration Certification and tamper evident seal	★
Material traceability certification		
Standard		**Standard**
Q8	Material Traceability Certification per EN 10204 3.1	★
Quality certification for safety		
Standard		**Standard**
QS[(20)]	Prior-use certificate of FMEDA Data	★
QT[(13)(20)]	Safety certified to IEC 61508 with certificate of FMEDA	★
Configuration buttons		
Standard		**Standard**
D4[(20)]	Analog Zero and Span	★
DZ[(21)]	Digital Zero Trim	★
Display and interface options		
Standard		**Standard**
M4[(22)]	LCD Display with Local Operator Interface	★
M5	LCD Display	★
Wireless SST sensor module		
Standard		**Standard**
WSM[(10)]	Wireless SST Sensor Module	★
Conduit Plug		
Standard		**Standard**
DO[(8)(23)]	316 SST Conduit Plug	★
Transient terminal block		
Standard		**Standard**
T1[(8)(24)]	Transient Protection Terminal Block	★
Software configuration		
Standard		**Standard**
C1[(21)]	Custom Software Configuration (Completed CDS 00806-0100-4007 for wired and 00806-0100-4100 for wireless required with order)	★
Expanded		
C2	0.8-3.2 Vdc Output with Digital Signal Based on HART Protocol (Available with Output code M only)	★
Alarm levels		
Standard		**Standard**
C4[(20)(25)]	Analog Output Levels Compliant with NAMUR Recommendation NE 43, Alarm High	★
CN[(20)(25)]	Analog Output Levels Compliant with NAMUR Recommendation NE 43, Low Alarm	★
CR[(13)(20)]	Custom alarm and saturation signal levels, high alarm (requires C1 and Configuration Data Sheet)	★
CS[(13)(20)]	Custom alarm and saturation signal levels, low alarm (requires C1 and Configuration Data Sheet)	★
CT[(13)(20)]	Low alarm (standard Rosemount alarm and saturation levels)	★
Pressure testing		
Expanded		
P1	Hydrostatic Testing with Certificate	

Table 2. 3051T 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.

Cleaning process area[26]		
Expanded		
P2	Cleaning for Special Service	
P3	Cleaning for <1 PPM Chlorine/Fluorine	
High accuracy		
Standard		**Standard**
P8[27]	0.04% Accuracy to 5:1 turndown	★
Ground screw		
Standard		**Standard**
V5[8][28]	External Ground Screw Assembly	★
Surface finish		
Standard		**Standard**
Q16	Surface finish certification for sanitary remote seals	★
Toolkit total system performance reports		
Standard		**Standard**
QZ	Remote Seal System Performance Calculation Report	★
Conduit electrical connector		
Standard		**Standard**
GE[8]	M12, 4-pin, Male Connector (eurofast®)	★
GM[8]	A size Mini, 4-pin, Male Connector (minifast®)	★
NACE Certificate		
Standard		**Standard**
Q15[29]	Certificate of Compliance to NACE MR0175/ISO 15156 for wetted materials	★
Q25[29]	Certificate of Compliance to NACE MR0103 for wetted materials	★
Typical model number:	**3051T G 5 F 2A 2 1 A B4**	

(1) Wireless output (code X) only available in absolute measurement type (code A) in range 1-5 with 1/2 14 NPT process connection (code 2B), and housing code P).

(2) 3051TG lower range limit varies with atmospheric pressure.

(3) HART Revision 5 is the default HART output. The Enhanced 3051 can be factory or field configured to HART Revision 7. To order HART Revision 7 factory configured, add option code HR7.

(4) For local addressing and configuration, M4 (Local Operator Interface) is required.

(5) Available approvals are FM Intrinsically Safe, (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 C6, E2, E5, I5, K5, KB and E8 approval. Not available with GE, GM, P8, SBS, DA0, M4, D4, DZ, QT, HR5, HR7, CR, CS, CT.

(7) Wireless output (code X) only available in G1/2 A DIN 16288 Male process connection (code 2C) with range 1-4, 316 SST isolating diaphragm (code 2), silicone fill fluid (code 1) and housing code (code P).

(8) Not available with Wireless output (output code X).

(9) Materials of Construction comply with recommendations per NACE MR0175/ISO 15156 for sour oil field production environments. Environmental limits apply to certain materials. Consult latest standard for details. Selected materials also conform to NACE MR0103 for sour refining environments.

(10) Only available with Wireless output (output code X).

(11) Configures the HART output to HART Revision 5. The device can be field configured to HART Revision 7 if needed.

(12) Configures the HART output to HART Revision 7. The device can be field configured to HART Revision 5 if needed.

(13) Select Configuration Buttons (option code D4 or DZ) or Local Operator Interface (option code M4) if local configuration buttons are required.

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

(15) Panel mounting bolts are not supplied.

(16) Dust approval not applicable to output code X. See "IEC 62591 (WirelessHART Protocol)" on page 62 for wireless approvals.

(17) Only available with output codes A - 4-20 mA HART and F - FOUNDATION fieldbus

(18) Intrinsically Safe only available with Wireless.

(19) Not available with Alloy C-276 isolator (3 code), assemble-to manifolds (S5 code), assemble-to seals (S1 code), surface finish certification (Q16 code), and remote seal system report (QZ code).

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

(21) Only available with HART 4-20 mA output (output code A) and Wireless output (output code X).

(22) Not available with FOUNDATION Fieldbus (output code F) and Wireless output (output code X) or Low Power (output code M).

(23) Transmitter is shipped with 316 SST conduit plug (uninstalled) in place of standard carbon steel conduit plug.

(24) The T1 option is not needed with FISCO Product Certifications; transient protection is included in the FISCO product certification codes IA and IE.

(25) NAMUR-Compliant operation is pre-set at the factory and cannot be changed to standard operation in the field for the standard 3051.

(26) Not valid with Alternate Process Connection S5.

(27) Only available with Standard 3051 range 2- 4. See specification section for more information.

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

(29) NACE compliant wetted materials are identified by Footnote (9).

Rosemount 3051CF Flowmeter Selection Guide

Rosemount 3051CF Flowmeters combine the proven Rosemount 3051 pressure transmitter and the latest primary element technologies. All flowmeters are fully assembled, calibrated, configured, and leak tested for out-of-the-box installation and are available with wired or wireless capabilities to meet all of your application needs.

Rosemount 3051CFA Annubar Flowmeter

Rosemount Annubar technology minimizes permanent pressure loss while delivering best in class accuracy.

- Lowest material costs for large line sizes
- Flo-tap enables installation without process shutdown
- Realize up up to 96% less permanent pressure loss compared to traditional orifice plate installations

Rosemount 3051CFC Compact Conditioning Flowmeter

Rosemount Compact Conditioning technologies provide unprecedented performance with minimal straight-run requirements. Solutions include Conditioning Orifice Plate or Annubar primary elements.

- Conditioning Orifice requires only 2 pipe diameters up and downstream
- Eliminate swirl and regular profiles resulting in more stable and accurate flow measurement
- Save up to 55% when compared to a traditional orifice plate installation can be realized

Rosemount 3051CFP Integral Orifice Flowmeter

Rosemount Integral Orifice Flowmeters deliver highly accurate small-bore flow measurement capability with minimal installation and maintenance requirements.

- Best performance for small line sizes $^{1}/_{2}$” (15 mm) to 1 $^{1}/_{2}$” (40 mm)
- Precision honed pipe section and tight machining tolerances deliver higher installed performance
- Reduces uncertainty by up to 5% compared to traditional orifice plate installation

Rosemount 3051CFA Annubar Flowmeter

The Rosemount 3051CFA Annubar Flowmeter utilizes the patented T-shaped sensor design that delivers best in class accuracy and performance. Main Capabilities include: while meeting the needs of diverse process applications, whether it is high accuracy for precision control or high strength for severe flow applications.

- Up to 1.8% of flow rate accuracy
- Available in 2 to 96-in. (50 - 2400 mm) line sizes
- Fully assembled and leak tested for out-of-the-box installation
- Power Advisory can proactively detect degraded electrical loop integrity issues (Option Code **DA0)**
- Local Operator Interface with straightforward menus and built-in configuration buttons (Option Code **M4**)
- Scaled variable, process alerts and selectable HART (Option Code HR5 or HR7)

See "Specifications" on page 47 and options for more details on each configuration.

Additional information

Specifications: page 47
Certifications: page 57
Dimensional Drawings: page 70

Table 3. Rosemount 3051CFA 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	
3051CFA	Annubar Flowmeter	
Measurement type		
Standard		**Standard**
D	Differential Pressure	★
Fluid type		
Standard		**Standard**
L	Liquid	★
G	Gas	★
S	Steam	★
Line size		
Standard		**Standard**
020	2-in. (50 mm)	★
025	2 1/2-in. (63.5 mm)	★
030	3-in. (80 mm)	★
035	3 1/2-in. (89 mm)	★
040	4-in. (100 mm)	★
050	5-in. (125 mm)	★
060	6-in. (150 mm)	★
070	7-in. (175 mm)	★
080	8-in. (200 mm)	★
100	10-in. (250 mm)	★
120	12-in. (300 mm)	★

Table 3. Rosemount 3051CFA Annubar Flowmeter ordering information

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

Expanded		
140	14-in. (350 mm)	
160	16-in. (400 mm)	
180	18-in. (450 mm)	
200	20-in. (500 mm)	
240	24-in. (600 mm)	
300	30-in. (750 mm)	
360	36-in. (900 mm)	
420	42-in. (1066 mm)	
480	48-in. (1210 mm)	
600	60-in. (1520 mm)	
720	72-in. (1820 mm)	
780	78-in (1950 mm)	
840	84-in. (2100 mm)	
900	90-in. (2250 mm)	
960	96-in (2400 mm)	
Pipe I.D. range		
Standard		**Standard**
C	Range C from the Pipe I.D. table	★
D	Range D from the Pipe I.D. table	★
Expanded		
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 inches	
Pipe material / mounting assembly material		
Standard		**Standard**
C	Carbon steel (A105)	★
S	316 Stainless Steel	★
0	No Mounting (Customer Supplied)	★
Expanded		
G	Chrome-Moly Grade F-11	
N	Chrome-Moly Grade F-22	
J	Chrome-Moly Grade F-91	
Piping orientation		
Standard		**Standard**
H	Horizontal Piping	★
D	Vertical Piping with Downwards Flow	★
U	Vertical Piping with Upwards Flow	★
Annubar type		
Standard		**Standard**
P	Pak-Lok	★
F	Flanged with opposite side support	★
Expanded		
L	Flange-Lok	
G	Gear-Drive Flo-Tap	
M	Manual Flo-Tap	
Sensor material		
Standard		**Standard**
S	316 Stainless Steel	★

Table 3. Rosemount 3051CFA Annubar Flowmeter ordering information

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

Expanded				
H	Alloy C-276			
Sensor size				
Standard				**Standard**
1	Sensor size 1 — Line sizes 2-in. (50 mm) to 8-in. (200 mm)			★
2	Sensor size 2 — Line sizes 6-in. (150 mm) to 96-in. (2400 mm)			★
3	Sensor size 3 — Line sizes greater than 12-in. (300 mm)			★
Mounting type				
Standard				**Standard**
T1	Compression or Threaded Connection			★
A1	150# RF ANSI			★
A3	300# RF ANSI			★
A6	600# RF ANSI			★
D1	DN PN16 Flange			★
D3	DN PN40 Flange			★
D6	DN PN100 Flange			★
Expanded				
A9[(1)]	900# RF ANSI			
AF[(1)]	1500# RF ANSI			
AT[(1)]	2500 # RF ANSI			
R1	150# RTJ Flange			
R3	300# RTJ Flange			
R6	600# RTJ Flange			
R9[(1)]	900# RTJ Flange			
RF[(1)]	1500# RTJ Flange			
RT[(1)]	2500# RTJ Flange			
Opposite side support or packing gland				
Standard				**Standard**
0	No opposite side support or packing gland (Required for Pak-Lok and Flange-Lok models)			★
	Opposite Side Support – Required for Flanged Models			
C	NPT Threaded Opposite Support Assembly – Extended Tip			★
D	Welded Opposite Support Assembly – Extended Tip			★
Expanded				
	Packing Gland – Required for Flo-Tap Models			
	Packing Gland Material	*Rod Material*	*Packing Material*	
J[(2)]	Stainless Steel Packing Gland / Cage Nipple	Carbon Steel	PTFE	
K[(2)]	Stainless Steel Packing Gland / Cage Nipple	Stainless Steel	PTFE	
L[(2)]	Stainless Steel Packing Gland / Cage Nipple	Carbon Steel	Graphite	
N[(2)]	Stainless Steel Packing Gland / Cage Nipple	Stainless Steel	Graphite	
R	Alloy C-276 Packing Gland / Cage Nipple	Stainless Steel	Graphite	
Isolation valve for Flo-Tap Models				
Standard				**Standard**
0	Not Applicable or Customer Supplied			★
Expanded				
1	Gate Valve, Carbon Steel			
2	Gate Valve, Stainless Steel			
5	Ball Valve, Carbon Steel			
6	Ball Valve, Stainless Steel			

Table 3. Rosemount 3051CFA 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.

Temperature measurement			
Standard			**Standard**
T	Integral RTD – not available with Flanged model greater than class 600#		★
0	No Temperature Sensor		★
Expanded			
R	Remote Thermowell and RTD		
Transmitter connection platform			
Standard			**Standard**
3	Direct-mount, Integral 3-valve Manifold– not available with Flanged model greater than class 600		★
5	Direct -mount, 5-valve Manifold – not available with Flanged model greater than class 600		★
7	Remote-mount NPT Connections ($^1/_2$-in. NPT)		★
Expanded			
6	Direct-mount, high temperature 5-valve Manifold – not available with Flanged model greater than class 600		
8	Remote-mount SW Connections ($^1/_2$-in.)		
Differential pressure range			
Standard			**Standard**
1	0 to 25 in H_2O (0 to 62,16 mbar)		★
2	0 to 250 in H_2O (0 to 621,60 mbar)		★
3	0 to 1000 in H_2O (0 to 2,49 bar)		★
Transmitter output			
Standard			**Standard**
A[3]	4–20 mA with digital signal based on HART Protocol		★
F	FOUNDATION fieldbus Protocol		★
W[4]	PROFIBUS PA Protocol		★
X[5]	Wireless (Requires wireless options and engineered polymer housing)		★
Expanded			
M[6]	Low-Power 1-5 Vdc with Digital Signal Based on HART Protocol (see Option C2 for 0.8-3.2 Vdc Output)		
Transmitter housing material		**Conduit entry size**	
Standard			**Standard**
A	Aluminum	$^1/_2$-14 NPT	★
B	Aluminum	M20 x 1.5	★
J	SST	$^1/_2$-14 NPT	★
K	SST	M20 x 1.5	★
P[7]	Engineered polymer	No conduit entries	★
Expanded			
D	Aluminum	G$^1/_2$	
M	SST	G$^1/_2$	
Transmitter Performance Class			
Standard			**Standard**
1	1.8% flow rate accuracy, 8:1 flow turndown, 5-yr. stability		★

Wireless options (Requires Wireless output code X and Engineered Polymer housing code P)

Wireless Transmit Rate, operating frequency, and protocol		
Standard		**Standard**
WA3	User Configurable Transmit Rate, 2.4GHz WirelessHART	★
Antenna and SmartPower		
Standard		**Standard**
WP5	Internal Antenna, Compatible with Green Power Module (I.S. Power Module Sold Separately)	★

Table 3. Rosemount 3051CFA 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.

HART Revision configuration (Requires HART Protocol output code A)

Standard		Standard
HR5[8][15]	Configured for HART Revision 5	★
HR7[9][15]	Configured for HART Revision 7	★

Options (Include with selected model number)

Pressure testing		
Expanded		
P1[10]	Hydrostatic Testing with Certificate	
PX[10]	Extended Hydrostatic Testing	
Special cleaning		
Expanded		
P2	Cleaning for Special Services	
PA	Cleaning per ASTM G93 Level D (Section 11.4)	
Material testing		
Expanded		
V1	Dye Penetrant Exam	
Material examination		
Expanded		
V2	Radiographic Examination	
Flow calibration		
Expanded		
W1	Flow Calibration (Average K)	
Special inspection		
Standard		**Standard**
QC1	Visual & Dimensional Inspection with Certificate	★
QC7	Inspection & Performance Certificate	★
Surface finish		
Standard		**Standard**
RL	Surface finish for Low Pipe Reynolds # in Gas & Steam	★
RH	Surface finish for High Pipe Reynolds # in Liquid	★
Material traceability certification		
Standard		**Standard**
Q8[11]	Material Traceability Certification per EN 10474:2004 3.1	★
Code conformance[12]		
Expanded		
J2	ANSI/ASME B31.1	
J3	ANSI/ASME B31.3	
Materials conformance		
Expanded		
J5[13]	NACE MR-0175 / ISO 15156	
Country certification		
Standard		**Standard**
J6	European Pressure Directive (PED)	★
Expanded		
J1	Canadian Registration	

Table 3. Rosemount 3051CFA 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.

Installed in flanged pipe spool section		
Expanded		
H3	150# Flanged Connection with Rosemount Standard Length and Schedule	
H4	300# Flanged Connection with Rosemount Standard Length and Schedule	
H5	600# Flanged Connection with Rosemount Standard Length and Schedule	
Instrument connections for remote mount options		
Standard		**Standard**
G2	Needle Valves, Stainless Steel	★
G6	OS&Y Gate Valve, Stainless Steel	★
Expanded		
G1	Needle Valves, Carbon Steel	
G3	Needle Valves, Alloy C-276	
G5	OS&Y Gate Valve, Carbon Steel	
G7	OS&Y Gate Valve, Alloy C-276	
Special shipment		
Standard		**Standard**
Y1	Mounting Hardware Shipped Separately	★
Special dimensions		
Expanded		
VM	Variable Mounting	
VT	Variable Tip	
VS	Variable length Spool Section	
PlantWeb control functionality		
Standard		**Standard**
A01[14]	FOUNDATION fieldbus Advanced Control Function Block Suite	★
PlantWeb diagnostic functionality		
Standard		**Standard**
DA0[15][16]	Power Advisory HART Diagnostic	★
D01[14]	FOUNDATION fieldbus Diagnostics Suite	★
Product certifications		
Standard		**Standard**
E8	ATEX Flameproof, Dust	★
I1[17]	ATEX Intrinsic Safety and Dust	★
IA	ATEX FISCO Intrinsic Safety; for FOUNDATION fieldbus protocol only	★
N1	ATEX Type n and Dust	★
K8	ATEX Flameproof, Intrinsic Safety, Type n, Dust (combination of E8, I1 and N1)	★
E5	FM Explosion-proof, Dust Ignition-proof	★
I5[18]	FM Intrinsically Safe, Division 2	★
IE	FM FISCO Intrinsically Safe; for FOUNDATION fieldbus protocol only	★
K5	FM Explosion-proof, Dust Ignition-proof, Intrinsically Safe, and Division 2 (combination of E5 and I5)	★
C6	CSA Explosion-proof, Dust Ignition-proof, Intrinsically Safe, and Division 2	★
I6[7]	CSA Intrinsically Safe (Wireless only)	★
K6	CSA and ATEX Explosion-proof, Intrinsically Safe, and Division 2 (combination of C6, E8, and I1)	★
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 I7, N7 and E7)	★
E2	INMETRO Flameproof	★
I2	INMETRO Intrinsic Safety	★

Table 3. Rosemount 3051CFA 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.

Standard		**Standard**
K2	INMETRO Flameproof, Intrinsic Safety	★
E3	China Flameproof	★
I3	China Intrinsic Safety	★
KB	FM and CSA Explosion-proof, Dust Ignition-proof, Intrinsically Safe, and Division 2	★
KD	CSA, FM, and ATEX Explosion-proof, Intrinsically Safe	★
Sensor fill fluid and o-ring options		
Standard		**Standard**
L1[19]	Inert Sensor Fill Fluid *Note: Silicone fill fluid is standard.*	★
L2	Graphite-Filled (PTFE) O-ring	★
LA[19]	Inert Sensor Fill Fluid and Graphite-Filled (PTFE) O-ring	★
Shipboard approvals		
Standard		**Standard**
SBS[19]	American Bureau of Shipping	★
Display and interface options		
Standard		**Standard**
M4[20]	LCD Display with Local Operator Interface	★
M5	LCD Display	★
Transmitter calibration certification		
Standard		**Standard**
Q4	Calibration Certificate for Transmitter	★
Quality certification for safety		
Standard		**Standard**
QS[16]	Prior-use certificate of FMEDA data	★
QT[15][16]	Safety certified to IEC 61508 with certificate of FMEDA	★
Transient protection		
Standard		**Standard**
T1[19][21]	Transient terminal block	★
Manifold for remote mount option		
Standard		**Standard**
F2	3-Valve Manifold, Stainless Steel	★
F6	5-Valve Manifold, Stainless Steel	★
Expanded		
F1	3-Valve Manifold, Carbon Steel	
F3	3-Valve Manifold, Alloy C-276	
F5	5-Valve Manifold, Carbon Steel	
F7	5-Valve Manifold, Alloy C-276	
Software configuration		
Standard		**Standard**
C1	Custom Software Configuration (Completed CDS 00806-0100-4007 for wired and 00806-0100-4100 for Wireless required with order)	★
Expanded		
C2	0.8-3.2 Vdc Output with Digital Signal based on HART Protocol (Available with Output code M only)	
Alarm levels		
Standard		**Standard**
C4[16][22]	NAMUR Alarm and Saturation Levels, High Alarm	★
CN[16][22]	NAMUR Alarm and Saturation Levels, Low Alarm	★
CR[15][16]	Custom alarm and saturation signal levels, high alarm (requires C1 and Configuration Data Sheet)	★

Table 3. Rosemount 3051CFA 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.

Standard		**Standard**
CS[15][16]	Custom alarm and saturation signal levels, low alarm (requires C1 and Configuration Data Sheet)	★
CT[15][16]	Low alarm (standard Rosemount alarm and saturation levels)	★
Configuration buttons		
Standard		**Standard**
D4[16]	Analog Zero and Span	★
DZ[23]	Digital Zero Trim	★
Ground screw		
Standard		**Standard**
V5[19][24]	External Ground Screw Assembly	★
Typical model number: 3051CFA D L 060 D C H P S 2 T1 0 0 0 3 2 A A 1		

(1) Available in remote mount applications only.

(2) The cage nipple is constructed of 304 SST.

(3) HART Revision 5 is the default HART output. The Enhanced 3051 can be factory or field configured to HART Revision 7. To order HART Revision 7 factory configured, add option code HR7.

(4) For local addressing and configuration, M4 (Local Operator Interface) is required.

(5) Available approvals are FM Intrinsically Safe, (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 C6, E2, E5, I5, K5, KB and E8 approval. Not available with GE, GM, P8, SBS, DA0, M4, D4, DZ, QT, HR5, HR7, CR, CS, CT.

(7) Only available with Wireless output (output code X).

(8) Configures the HART output to HART Revision 5. The device can be field configured to HART Revision 7 if needed.

(9) Configures the HART output to HART Revision 7. The device can be field configured to HART Revision 5 if needed.

(10) Applies to assembled flowmeter only, mounting not tested.

(11) Instrument Connections for Remote Mount Options and Isolation Valves for Flo-tap Models are not included in the Material Traceability Certification.

(12) Not available with Transmitter Connection Platform 6.

(13) 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.

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

(15) Select Configuration Buttons (option code D4 or DZ) or Local Operator Interface (option code M4) if local configuration buttons are required.

(16) Only available with 4-20 mA HART output (output Code A).

(17) Dust approval not applicable to output code X. See "IEC 62591 (WirelessHART Protocol)" on page 62 for wireless approvals

(18) Intrinsically Safe only available with Wireless.

(19) Not available with Wireless output (output code X).

(20) Not available with FOUNDATION fieldbus (Output Code F) or Wireless output (Output Code X).

(21) The T1 option is not needed with FISCO Product Certifications, transient protection is included with the FISCO Product Certification code IA.

(22) NAMUR-Compliant operation is pre-set at the factory and cannot be changed to standard operation in the field for the standard 3051.

(23) Only available with 4-20 mA Hart output (Output Code A) and Wireless output (Output Code X).

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

Rosemount 3051CFC Compact Flowmeter

Rosemount 3051CFC Compact Flowmeters provide a quick, reliable installation between existing raised face flanges. Depending on your application needs, you can reduce energy loss with the Compact Annubar or minimize straight run requirements with the Conditioning Orifice.

- Up to 1.8% of flow rate accuracy
- Available in 1/2to 12-in. (15 - 300 mm) line sizes
- Fully assembled and leak tested for out-of-the-box installation
- Power Advisory can proactively detect degraded electrical loop integrity issues. (Option Code **DA0**)
- Local Operator Interface with straightforward menus and built-in configuration buttons (Option Code **M4**)
- Scaled variable, process alerts and selectable HART (Option Code **HR5** or **HR7**)

See "Specifications" on page 47 and options for more details on each configuration.

Additional information

Specifications: page 47
Certifications: page 57
Dimensional Drawings: page 71

Table 4. Rosemount 3051CFC Compact 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	
3051CFC	Compact Flowmeter	
Measurement type		
Standard		**Standard**
D	Differential Pressure	★
Primary element technology		
Standard		**Standard**
A	Annubar Averaging Pitot Tube	★
C	Conditioning Orifice Plate	★
P	Orifice Plate	★
Material type		
Standard		**Standard**
S	316 SST	★
Line Size		
Standard		**Standard**
005(1)	1/2-in. (15 mm)	★
010(1)	1-in. (25 mm)	★
015(1)	1 1/2-in. (40 mm)	★
020	2-in. (50 mm)	★
030	3-in. (80 mm)	★
040	4-in. (100 mm)	★
060	6-in. (150 mm)	★
080	8-in. (200 mm)	★
100(2)	10-in. (250 mm)	★
120(2)	12-in. (300 mm)	★

Table 4. Rosemount 3051CFC Compact 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.

Primary element type			
Standard			**Standard**
N000	Annubar Sensor Size 1		★
N040	0.40 Beta Ratio		★
N065[3]	0.65 Beta Ratio		★
Temperature measurement			
Standard			**Standard**
0	No Temperature Sensor		★
Expanded			
R	Remote Thermowell and RTD		
Transmitter connection platform			
Standard			**Standard**
3	Direct-mount		★
7	Remote-mount, NPT Connections		★
Differential pressure range			
Standard			**Standard**
1	0 to 25 in H_2O (0 to 62,16 mbar)		★
2	0 to 250 in H_2O (0 to 621,60 mbar)		★
3	0 to 1000 in H_2O (0 to 2,49 bar)		★
Transmitter output			
Standard			**Standard**
A[4]	4–20 mA with digital signal based on HART Protocol		★
F	FOUNDATION fieldbus Protocol		★
W[5]	PROFIBUS PA Protocol		★
X[6]	Wireless (Requires wireless options and engineered polymer housing)		★
Expanded			
M[7]	Low-Power 1-5 Vdc with Digital Signal Based on HART Protocol (see Option C2 for 0.8-3.2 Vdc Output)		
Transmitter housing material		**Conduit entry size**	
Standard			**Standard**
A	Aluminum	1/2-14 NPT	★
B	Aluminum	M20 x 1.5	★
J	SST	1/2-14 NPT	★
K	SST	M20 x 1.5	★
P[8]	Engineered polymer	No conduit entries	★
Expanded			
D	Aluminum	G1/2	
M	SST	G1/2	
Transmitter performance class			
Standard			**Standard**
1	Up to ±1.65% flow rate accuracy, 8:1 flow turndown, 5-year stability		★

Wireless options (Requires wireless output code X and Engineered Polymer housing code P)

Wireless transmit rate, operating frequency, and protocol		
Standard		**Standard**
WA3	User Configurable Transmit Rate, 2.4GHz WirelessHART	★
Antenna and SmartPower		
Standard		**Standard**
WP5	Internal Antenna, Compatible with Green Power Module (I.S. Power Module Sold Separately)	★

Table 4. Rosemount 3051CFC Compact 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.

HART Revision Configuration (Requires HART Protocol output code A)

Standard		Standard
HR5[9][15]	Configured for HART Revision 5	★
HR7[10][15]	Configured for HART Revision 7	★

Options (Include with selected model number)

Installation accessories		
Standard		**Standard**
AB	ANSI Alignment Ring (150#) (Only required for 10-in. (250 mm) and 12-in. (300mm) line sizes)	★
AC	ANSI Alignment Ring (300#) (Only required for 10-in. (250 mm) and 12-in. (300mm) line sizes)	★
AD	ANSI Alignment Ring (600#) (Only required for 10-in. (250 mm) and 12-in. (300mm) line sizes)	★
DG	DIN Alignment Ring (PN16)	★
DH	DIN Alignment Ring (PN40)	★
DJ	DIN Alignment Ring (PN100)	★
Expanded		
JB	JIS Alignment Ring (10K)	
JR	JIS Alignment Ring (20K)	
JS	JIS Alignment Ring (40K)	
Remote adapters		
Standard		**Standard**
FE	Flange Adapters 316 SST (1/2-in NPT)	★
High temperature application		
Expanded		
HT	Graphite Valve Packing (Tmax = 850 °F)	
Flow calibration		
Expanded		
WC[11]	Flow Calibration, 3 pt, Conditioning Orifice Option C (all pipe schedules)	
WD[11][12]	Flow Calibration, 10 pt, Conditioning Option C (All Schedules), Annubar Option A (Schedule 40)	
Pressure testing		
Expanded		
P1	Hydrostatic Testing with Certificate	
Special cleaning		
Expanded		
P2[13]	Cleaning for Special Services	
PA	Cleaning per ASTM G93 Level D (Section 11.4)	
Special inspection		
Standard		**Standard**
QC1	Visual & Dimensional Inspection with Certificate	★
QC7	Inspection and Performance Certificate	★
Transmitter calibration certification		
Standard		**Standard**
Q4	Calibration Certificate for Transmitter	★
Quality certification for safety		
Standard		**Standard**
QS[14]	Prior-use certificate of FMEDA data	★
QT[14][15]	Safety certified to IEC 61508 with certificate of FMEDA	★
Material traceability certification		
Standard		**Standard**
Q8	Material Traceability Certification per EN 10204:2004 3.1	★

Table 4. Rosemount 3051CFC Compact Flowmeter ordering information

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

Code conformance		
Expanded		
J2	ANSI/ASME B31.1	
J3	ANSI/ASME B31.3	
J4	ANSI/ASME B31.8	
Materials conformance		
Expanded		
J5[16]	NACE MR-0175 / ISO 15156	
Country certification		
Expanded		
J1	Canadian Registration	
Product certifications		
Standard		**Standard**
E8	ATEX Flameproof, Dust	★
I1[17]	ATEX Intrinsic Safety and Dust	★
IA	ATEX FISCO Intrinsic Safety; for FOUNDATION fieldbus protocol only	★
N1	ATEX Type n and Dust	★
K8	ATEX Flameproof, Intrinsic Safety, Type n, Dust (combination of E8, I1 and N1)	★
E5	FM Explosion-proof, Dust Ignition-proof	★
I5[18]	FM Intrinsically Safe, Division 2	★
IE	FM FISCO Intrinsically Safe; for FOUNDATION fieldbus protocol only	★
K5	FM Explosion-proof, Dust Ignition-proof, Intrinsically Safe, and Division 2 (combination of E5 and I5)	★
C6	CSA Explosion-proof, Dust Ignition-proof, Intrinsically Safe, and Division 2	★
I6[8]	CSA Intrinsically Safe (Wireless only)	★
K6	CSA and ATEX Explosion-proof, Intrinsically Safe, and Division 2 (combination of C6, E8, and I1)	★
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 I7, N7 and E7)	★
E2	INMETRO Flameproof	★
I2	INMETRO Intrinsic Safety	★
K2	INMETRO Flameproof, Intrinsic Safety	★
E3	China Flameproof	★
I3	China Intrinsic Safety	★
KB	FM and CSA Explosion-proof, Dust Ignition-proof, Intrinsically Safe, and Division 2	★
KD	CSA, FM, and ATEX Explosion-proof, Intrinsically Safe	★
Sensor fill fluid and o-ring options		
Standard		**Standard**
L1[19]	Inert Sensor Fill Fluid	★
L2	Graphite-Filled (PTFE) O-ring	★
LA[19]	Inert Sensor Fill Fluid and Graphite-Filled (PTFE) O-ring	★
Shipboard approvals		
Standard		**Standard**
SBS[19]	American Bureau of Shipping	★
Display and interface options		
Standard		**Standard**
M4[20]	LCD Display with Local Operator Interface	★
M5	LCD Display	★

Table 4. Rosemount 3051CFC Compact 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.

Transient protection		
Standard		**Standard**
T1[19][21]	Transient terminal block	★
Manifold for remote mount option		
Standard		**Standard**
F2	3-Valve Manifold, Stainless Steel	★
F6	5-Valve Manifold, Stainless Steel	★
PlantWeb control functionality		
Standard		**Standard**
A01[22]	FOUNDATION fieldbus Advanced Control Function Block Suite	★
PlantWeb diagnostic functionality		
Standard		**Standard**
DA0[14][15]	Power Advisory HART Diagnostic	★
D01[22]	FOUNDATION fieldbus Diagnostic Suite	★
Software configuration		
Standard		**Standard**
C1	Custom Software Configuration (Completed CDS 00806-0100-4007 for wired and 00806-0100-4100 for Wireless required with order)	★
Expanded		
C2	0.8-3.2 Vdc Output with Digital Signal Based on HART Protocol (Available with Output code M only)	
Alarm levels		
Standard		**Standard**
C4[14][23]	NAMUR Alarm and Saturation Levels, High Alarm	★
CN[14][23]	NAMUR Alarm and Saturation Levels, Low Alarm	★
CR[15][23]	Custom alarm and saturation signal levels, high alarm (requires C1 and Configuration Data Sheet)	★
CS[15][23]	Custom alarm and saturation signal levels, low alarm (requires C1 and Configuration Data Sheet)	★
CT[15][23]	Low alarm (standard Rosemount alarm and saturation levels)	★
Ground screw		
Standard		**Standard**
V5[19][24]	External Ground Screw Assembly	★
Configuration buttons		
Standard		**Standard**
D4[14]	Analog Zero and Span	★
DZ[25]	Digital Zero Trim	★
Typical model number: 3051CFC D C S 060 N 065 0 3 2 A A 1 WC E5 M5		

(1) Available with Primary Element Technology P only.

(2) 10-in. (250 mm) and 12-in. (300 mm) line sizes not available with Primary Element Technology A.

(3) For 2-in. (50 mm) line sizes the Primary Element Type is 0.6 for Primary Element Technology Code C.

(4) HART Revision 5 is the default HART output. The Enhanced 3051 can be factory or field configured to HART Revision 7. To order HART Revision 7 factory configured, add option code HR7.

(5) For local addressing and configuration, M4 (Local Operator Interface) is required.

(6) Available approvals are FM Intrinsically Safe, (option code I5), CSA Intrinsically Safe (option code I6), ATEX Intrinsic Safety (option code I1), and IECEx Intrinsic Safety (option code I7).

(7) Only available with C6, E2, E5, I5, K5, KB and E8 approval. Not available with GE, GM, P8, SBS, DA0, M4, D4, DZ, QT, HR5, HR7, CR, CS, CT.

(8) Only available with Wireless output (output code X).

(9) Configures the HART output to HART Revision 5. The device can be field configured to HART Revision 7 if needed.

(10) Configures the HART output to HART Revision 7. The device can be field configured to HART Revision 5 if needed.

(11) Available with Primary Element Technology C only.

(12) For Annubar option A, consult factory for pipe schedules other than schedule 40.

(13) Available with Primary Element Technology C or P only.

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

(15) Select Configuration Buttons (option code D4 or DZ) or Local Operator Interface (option code M4) if local configuration buttons are required.

(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) Dust approval not applicable to output code X. See "IEC 62591 (WirelessHART Protocol)" on page 62 for wireless approvals

(18) Intrinsically Safe only available with Wireless.

(19) Not available with Wireless output (output code X).

(20) Not available with output code F - FOUNDATION Fieldbus or Wireless output (output code X).

(21) The T1 option is not needed with FISCO Product Certifications, transient protection is included with the FISCO Product Certification code IA.

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

(23) NAMUR-Compliant operation is pre-set at the factory and cannot be changed to standard operation in the field for the standard 3051.

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

(25) Only available with 4-20 mA HART Output (output code A) and Wireless output (output code X).

Rosemount 3051CFP Integral Orifice Flowmeter

Rosemount 3051CFP Integral Orifice Flowmeters enable highly accurate flow measurement in small line sizes. Integral Orifice utilize precision honed pipe section for increased accuracy and self-centering plate design to prevent alignment errors that magnify measurement inaccuracies in small line sizes.

- Up to 1.75% of flow rate accuracy
- Available in 1/2 to 1 1/2-in. (15 - 40 mm) line sizes
- Fully assembled and leak tested for out-of-the-box installation
- Power Advisory can proactively detect degraded electrical loop integrity issues. (Option Code **DA0**)
- Local Operator Interface with straightforward menus and built-in configuration buttons (Option Code **M4**)
- Scaled variable, process alerts and selectable HART (Option Code **HR5** or **HR7**)

See "Specifications" on page 47 and options for more details on each configuration.

Additional information

Specifications: page 47
Certifications: page 57
Dimensional Drawings: page 72

Table 5. Rosemount 3051CFP 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	
3051CFP	Integral Orifice Flowmeter	
Measurement type		
Standard		**Standard**
D	Differential Pressure	★
Body material		
Standard		**Standard**
S	316 SST	★
Line Size		
Standard		**Standard**
005	1/2-in. (15 mm)	★
010	1-in. (25 mm)	★
015	1 1/2-in. (40 mm)	★
Process connection		
Standard		**Standard**
T1	NPT Female Body (Not Available with Remote Thermowell and RTD)	★
S1(1)	Socket Weld Body (Not Available with Remote Thermowell and RTD)	★
P1	Pipe Ends: NPT Threaded	★
P2	Pipe ends: Beveled	★
D1	Pipe Ends: Flanged, DIN PN16, slip-on	★
D2	Pipe Ends: Flanged, DIN PN40, slip-on	★
D3	Pipe Ends: Flanged, DIN PN100, slip-on	★
W1	Pipe Ends: Flanged, RF, ANSI Class 150, weld-neck	★
W3	Pipe Ends: Flanged, RF, ANSI Class 300, weld-neck	★
W6	Pipe Ends: Flanged, RF, ANSI Class 600, weld-neck	★

Table 5. Rosemount 3051CFP 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.

Expanded		
A1	Pipe Ends: Flanged, RF, ANSI Class 150, slip-on	
A3	Pipe Ends: Flanged, RF, ANSI Class 300, slip-on	
A6	Pipe Ends: Flanged, RF, ANSI Class 600, slip-on	
R1	Pipe Ends: Flanged, RTJ, ANSI Class 150, slip-on	
R3	Pipe Ends: Flanged, RTJ, ANSI Class 300, slip-on	
R6	Pipe Ends: Flanged, RTJ, ANSI Class 600, slip-on	
Orifice plate material		
Standard		**Standard**
S	316 SST	★
Expanded		
H	Alloy C-276	
M	Alloy 400	
Bore size option		
Standard		**Standard**
0066	0.066-in. (1.68 mm) for 1/2-in. Pipe	★
0109	0.109-in. (2.77 mm) for 1/2-in. Pipe	★
0160	0.160-in. (4.06 mm) for 1/2-in. Pipe	★
0196	0.196-in. (4.98 mm) for 1/2-in. Pipe	★
0260	0.260-in. (6.60 mm) for 1/2-in. Pipe	★
0340	0.340-in. (8.64 mm) for 1/2-in. Pipe	★
0150	0.150-in. (3.81 mm) for 1-in. Pipe	★
0250	0.250-in. (6.35 mm) for 1-in. Pipe	★
0345	0.345-in. (8.76 mm) for 1-in. Pipe	★
0500	0.500-in. (12.70 mm) for 1-in. Pipe	★
0630	0.630-in. (16.00 mm) for 1-in. Pipe	★
0800	0.800-in. (20.32 mm) for 1-in. Pipe	★
0295	0.295-in. (7.49 mm) for 1 1/2-in. Pipe	★
0376	0.376-in. (9.55 mm) for 1 1/2-in. Pipe	★
0512	0.512-in. (13.00 mm) for 1 1/2-in. Pipe	★
0748	0.748-in. (19.00 mm) for 1 1/2-in. Pipe	★
1022	1.022-in. (25.96 mm) for 1 1/2-in. Pipe	★
1184	1.184-in. (30.07 mm) for 1 1/2-in. Pipe	★
Expanded		
0010	0.010-in. (0.25 mm) for 1/2-in. Pipe	
0014	0.014-in. (0.36 mm) for 1/2-in. Pipe	
0020	0.020-in. (0.51 mm) for 1/2-in. Pipe	
0034	0.034-in. (0.86 mm) for 1/2-in. Pipe	
Transmitter connection platform		
Standard		**Standard**
D3	Direct-mount, 3-Valve Manifold, SST	★
D5	Direct-mount, 5-Valve Manifold, SST	★
R3	Remote-mount, 3-Valve Manifold, SST	★
R5	Remote-mount, 5-Valve Manifold, SST	★
Expanded		
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	

Table 5. Rosemount 3051CFP 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.

Differential pressure ranges			
Standard			**Standard**
1	0 to 25 in H_2O (0 to 62,16 mbar)		★
2	0 to 250 in H_2O (0 to 621,60 mbar)		★
3	0 to 1000 in H_2O (0 to 2,49 bar)		★
Transmitter output			
Standard			**Standard**
A[2]	4–20 mA with digital signal based on HART Protocol		★
F	FOUNDATION fieldbus Protocol		★
W[3]	PROFIBUS PA Protocol		★
X[4]	Wireless (Requires wireless options and engineered polymer housing)		★
Expanded			
M[5]	Low-Power 1-5 Vdc with Digital Signal Based on HART Protocol (see Option C2 for 0.8-3.2 Vdc Output)		
Transmitter housing material		**Conduit entry size**	
Standard			**Standard**
A	Aluminum	1/2-14 NPT	★
B	Aluminum	M20 x 1.5	★
J	SST	1/2-14 NPT	★
K	SST	M20 x 1.5	★
P[6]	Engineered polymer	No conduit entries	★
Expanded			
D	Aluminum	G1/2	
M	SST	G1/2	
Transmitter performance class			
Standard			**Standard**
1	up to ±1.8% flow rate accuracy, 8:1 flow turndown, 5-year stability		★

Wireless options (Requires wireless output code X and Engineered Polymer housing code P)

Wireless transmit rate, operating frequency, and protocol		
Standard		**Standard**
WA3	User Configurable Transmit Rate, 2.4GHz WirelessHART	★
Antenna and SmartPower		
Standard		**Standard**
WP5	Internal Antenna, Compatible with Green Power Module (I.S. Power Module Sold Separately)	★

HART Revision Configuration (Requires HART Protocol output code A)

Standard		**Standard**
HR5[15][7]	Configured for HART Revision 5	★
HR7[15][8]	Configured for HART Revision 7	★

Options (Include with selected model number)

Transmitter body / bolt material		
Expanded		
GT	High Temperature (850 °F / 454 °C)	
Temperature sensor		
Expanded		
RT[9]	Thermowell and RTD	
Optional connection		
Standard		**Standard**
G1	DIN 19213 Transmitter Connection	★

Table 5. Rosemount 3051CFP 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.

Pressure testing		
Expanded		
P1[10]	Hydrostatic Testing with Certificate	
Special cleaning		
Expanded		
P2	Cleaning for Special Services	
PA	Cleaning per ASTM G93 Level D (Section 11.4)	
Material testing		
Expanded		
V1	Dye Penetrant Exam	
Material examination		
Expanded		
V2	Radiographic Examination	
Flow calibration		
Expanded		
WD[11]	Discharge Coefficient Verification	
Special inspection		
Standard		**Standard**
QC1	Visual & Dimensional Inspection with Certificate	★
QC7	Inspection and Performance Certificate	★
Material traceability certification		
Standard		**Standard**
Q8	Material Traceability Certification per EN 10204:2004 3.1	★
Code conformance		
Expanded		
J2[12]	ANSI/ASME B31.1	
J3[12]	ANSI/ASME B31.3	
J4[12]	ANSI/ASME B31.8	
Materials conformance		
Expanded		
J5[13]	NACE MR-0175 / ISO 15156	
Country certification		
Standard		**Standard**
J6	European Pressure Directive (PED)	★
Expanded		
J1	Canadian Registration	
Transmitter calibration certification		
Standard		**Standard**
Q4	Calibration Certificate for Transmitter	★
Quality certification for safety		
Standard		**Standard**
QS[14]	Prior-use certificate of FMEDA data	★
QT[14][15]	Safety certified to IEC 61508 with certificate of FMEDA	★

Table 5. Rosemount 3051CFP 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.

Product certifications		
Standard		**Standard**
E8	ATEX Flameproof, Dust	★
I1[16]	ATEX Intrinsic Safety and Dust	★
IA	ATEX FISCO Intrinsic Safety; for FOUNDATION fieldbus protocol only	★
N1	ATEX Type n and Dust	★
K8	ATEX Flameproof, Intrinsic Safety, Type n, Dust (combination of E8, I1 and N1)	★
E5	FM Explosion-proof, Dust Ignition-proof	★
I5[17]	FM Intrinsically Safe, Division 2	★
IE	FM FISCO Intrinsically Safe; for FOUNDATION fieldbus protocol only	★
K5	FM Explosion-proof, Dust Ignition-proof, Intrinsically Safe, and Division 2 (combination of E5 and I5)	★
C6	CSA Explosion-proof, Dust Ignition-proof, Intrinsically Safe, and Division 2	★
I6[6]	CSA Intrinsically Safe	★
K6	CSA and ATEX Explosion-proof, Intrinsically Safe, and Division 2 (combination of C6, E8, and I1)	★
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 I7, N7 and E7)	★
E2	INMETRO Flameproof	★
I2	INMETRO Intrinsic Safety	★
K2	INMETRO Flameproof, Intrinsic Safety	★
E3	China Flameproof	★
I3	China Intrinsic Safety	★
KB	FM and CSA Explosion-proof, Dust Ignition-proof, Intrinsically Safe, and Division 2	★
KD	CSA, FM, and ATEX Explosion-proof, Intrinsically Safe	★
Sensor fill fluid and o-ring options		
Standard		**Standard**
L1[18]	Inert Sensor Fill Fluid	★
L2	Graphite-Filled (PTFE) O-ring	★
LA[18]	Inert Sensor Fill Fluid and Graphite-Filled (PTFE) O-ring	★
Shipboard approvals		
Standard		**Standard**
SBS[18]	American Bureau of Shipping	★
Display and interface options		
Standard		**Standard**
M4[19]	LCD Display with Local Operator Interface	★
M5	LCD Display	★
Transient protection		
Standard		**Standard**
T1[18][20]	Transient terminal block	★
PlantWeb control functionality		
Standard		**Standard**
A01[21]	FOUNDATION fieldbus Advanced Control Function Block Suite	★
PlantWeb diagnostic functionality		
Standard		**Standard**
DA0[14][15]	Power Advisory HART Diagnostic	★
D01[21]	FOUNDATION fieldbus Diagnostic Suite	★

Table 5. Rosemount 3051CFP 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.

Software configuration		
Standard		**Standard**
C1	Custom Software Configuration (Completed CDS 00806-0100-4007 for wired and 00806-0100-4100 for Wireless required with order)	★
Expanded		
C2	0.8-3.2 Vdc Output with Digital Signal Based on HART Protocol (Available with Output code M only)	
Alarm levels		
Standard		**Standard**
C4[(14)(22)]	NAMUR Alarm and Saturation Levels, High Alarm	★
CN[(14)(22)]	NAMUR Alarm and Saturation Levels, Low Alarm	★
CR[(14)(15)]	Custom alarm and saturation signal levels, high alarm (requires C1 and Configuration Data Sheet)	★
CS[(14)(15)]	Custom alarm and saturation signal levels, low alarm (requires C1 and Configuration Data Sheet)	★
CT[(14)(15)]	Low alarm (standard Rosemount alarm and saturation levels)	★
Ground screw		
Standard		**Standard**
V5[(18)(23)]	External Ground Screw Assembly	★
Configuration buttons		
Standard		**Standard**
D4[(14)]	Analog Zero and Span	★
DZ[(24)]	Digital Zero Trim	★
Typical model number: 3051CFP D S 010 W1 S 0500 D3 2 A A 1 E5 M5		

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

(2) HART Revision 5 is the default HART output. The Enhanced 3051 can be factory or field configured to HART Revision 7. To order HART Revision 7 factory configured, add option code HR7.

(3) For local addressing and configuration, M4 (Local Operator Interface) is required.

(4) Available approvals are FM Intrinsically Safe, (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 C6, E2, E5, I5, K5, KB and E8 approval. Not available with GE, GM, P8, SBS, DA0, M4, D4, DZ, QT, HR5, HR7, CR, CS, CT.

(6) Only available with Wireless output (output code X).

(7) Configures the HART output to HART Revision 5. The device can be field configured to HART Revision 7 if needed.

(8) Configures the HART output to HART Revision 7. The device can be field configured to HART Revision 5 if needed.

(9) Thermowell Material is the same as the body material.

(10) Does not apply to Process Connection codes T1 and S1.

(11) Not available for bore sizes 0010, 0014, 0020, 0034, 0066, or 0109.

(12) Not available with DIN Process Connection codes D1, D2, or D3.

(13) 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.

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

(15) Select Configuration Buttons (option code D4 or DZ) or Local Operator Interface (option code M4) if local configuration buttons are required.

(16) Dust approval not applicable to output code X. See "IEC 62591 (WirelessHART Protocol)" on page 62 for wireless approvals

(17) Intrinsically Safe only available with Wireless.

(18) Not available with Wireless output (output code X).

(19) Not available with FOUNDATION fieldbus (Output Code F) or Wireless output (output code X).

(20) The T1 option is not needed with FISCO Product Certifications, transient protection is included with the FISCO Product Certification code IA.

(21) Only valid with FOUNDATION fieldbus Output Code F.

(22) NAMUR-Compliant operation is pre-set at the factory and cannot be changed to standard operation in the field for the standard 3051.

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

(24) Only available with 4-20 mA output (Output Code A) and Wireless output (Output Code X).

Rosemount 3051L Level Transmitter

3051L Level Transmitter

The Rosemount 3051L Level transmitter combines the performance and capabilities of Rosemount 3051 transmitters with the reliability and quality of a direct mount seal in one model number. 3051L Level transmitters offer a variety of process connections, configurations, and fill fluid types to meet a breadth of level applications. Capabilities of a Rosemount 3051L Level transmitter include:

- Quantify and optimize total system performance (Option code **QZ**)
- Tuned-System Assembly (Option code **S1**)
- Power Advisory can proactively detect degraded electrical loop integrity issues (Option Code **DA0**)
- Local Operator Interface with straightforward menus and built-in configuration buttons (Option Code **M4**)
- Scaled variable, process alerts and selectable HART (Option Code **HR5** or **HR7**)

See Specifications and options for more details on each configuration.

Additional information
Specifications: page 47
Certifications: page 57
Dimensional Drawings: page 63

Table 6. Rosemount 3051L Level Transmitter ordering information

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

Model	Transmitter type	
3051L	Level Transmitter	
Pressure range		
Standard		**Standard**
2	–250 to 250 inH_2O (-621,60 to 621,60 mbar)	★
3	–1000 to 1000 inH_2O (-2,49 to 2,49 bar)	★
4	–300 to 300 psi (-20,68 to 20,68 bar)	★
Transmitter output		
Standard		**Standard**
A(1)	4–20 mA with Digital Signal Based on HART Protocol	★
F	FOUNDATION fieldbus Protocol	★
W(2)	PROFIBUS PA Protocol	★
X(3)	Wireless (Requires wireless options and engineered polymer housing)	★
Expanded		
M(4)	Low-Power 1-5 Vdc with Digital Signal Based on *HART* Protocol (see Option Code C2 for 0.8-3.2 Vdc Output)	

Table 6. Rosemount 3051L Level Transmitter ordering information

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

Process connection size, material, extension length (high side)				
Standard				**Standard**
Code	**Process connection size**	**Material**	**Extension length**	
G0[5]	2-in./DN 50/A	316L SST	Flush Mount Only	★
H0[5]	2-in./DN 50	Alloy C-276	Flush Mount Only	★
J0	2-in./DN 50	Tantalum	Flush Mount Only	★
A0[5]	3-in./DN 80	316L SST	Flush Mount	★
A2[5]	3-in./DN 80	316L SST	2-in./50 mm	★
A4[5]	3-in./DN 80	316L SST	4-in./100 mm	★
A6[5]	3-in./DN 80	316L SST	6-in./150 mm	★
B0[5]	4-in./DN 100	316L SST	Flush Mount	★
B2[5]	4-in./DN 100	316L SST	2-in./50 mm	★
B4[5]	4-in./DN 100	316L SST	4-in./100 mm	★
B6[5]	4-in./DN 100	316L SST	6-in./150 mm	★
C0[5]	3-in./DN 80	Alloy C-276	Flush Mount	★
C2[5]	3-in./DN 80	Alloy C-276	2-in./50 mm	★
C4[5]	3-in./DN 80	Alloy C-276	4-in./100 mm	★
C6[5]	3-in./DN 80	Alloy C-276	6-in./150 mm	★
D0[5]	4-in./DN 100	Alloy C-276	Flush Mount	★
D2[5]	4-in./DN 100	Alloy C-276	2-in./50 mm	★
D4[5]	4-in./DN 100	Alloy C-276	4-in./100 mm	★
D6[5]	4-in./DN 100	Alloy C-276	6-in./150 mm	★
E0	3-in./DN 80	Tantalum	Flush Mount Only	★
F0	4-in./DN 100	Tantalum	Flush Mount Only	★
Mounting flange size, rating, material (high side)				
	Size	**Rating**	**Material**	
Standard				**Standard**
M	2-in.	ANSI/ASME B16.5 Class 150	CS	★
A	3-in.	ANSI/ASME B16.5 Class 150	CS	★
B	4-in.	ANSI/ASME B16.5 Class 150	CS	★
N	2-in.	ANSI/ASME B16.5 Class 300	CS	★
C	3-in.	ANSI/ASME B16.5 Class 300	CS	★
D	4-in.	ANSI/ASME B16.5 Class 300	CS	★
P	2-in.	ANSI/ASME B16.5 Class 600	CS	★
E	3-in.	ANSI/ASME B16.5 Class 600	CS	★
X[5]	2-in.	ANSI/ASME B16.5 Class 150	316 SST	★
F[5]	3-in.	ANSI/ASME B16.5 Class 150	316 SST	★
G[5]	4-in.	ANSI/ASME B16.5 Class 150	316 SST	★
Y[5]	2-in.	ANSI/ASME B16.5 Class 300	316 SST	★
H[5]	3-in.	ANSI/ASME B16.5 Class 300	316 SST	★
J[5]	4-in.	ANSI/ASME B16.5 Class 300	316 SST	★
Z[5]	2-in.	ANSI/ASME B16.5 Class 600	316 SST	★
L[5]	3-in.	ANSI/ASME B16.5 Class 600	316 SST	★
Q	DN 50	PN 10-40 per EN 1092-1	CS	★
R	DN 80	PN 40 per EN 1092-1	CS	★
S	DN 100	PN 40 per EN 1092-1	CS	★
V	DN 100	PN 10/16 per EN 1092-1	CS	★
K[5]	DN 50	PN 10-40 per EN 1092-1	316 SST	★
T[5]	DN 80	PN 40 per EN 1092-1	316 SST	★
U[5]	DN 100	PN 40 per EN 1092-1	316 SST	★

Table 6. Rosemount 3051L Level Transmitter ordering information

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

Mounting flange size, rating, material (high side)					
	Size	**Rating**		**Material**	
Standard					**Standard**
W[5]	DN 100	PN 10/16 per EN 1092-1		316 SST	★
7[5]	4 in.	ANSI/ASME B16.5 Class 600		316 SST	★
Expanded					
1	—	10K per JIS B2238		CS	
2	—	20K per JIS B2238		CS	
3	—	40K per JIS B2238		CS	
4[5]	—	10K per JIS B2238		316 SST	
5[5]	—	20K per JIS B2238		316 SST	
6[5]	—	40K per JIS B2238		316 SST	
Seal fill fluid (high side)		**Specific gravity**	**Temperature limits (ambient temperature of 70° F (21° C))**		
Standard					**Standard**
A	Syltherm XLT	0.85	-102 to 293 °F (-75 to 145 °C)		★
C	Silicone 704	1.07	32 to 401 °F (0 to 205 °C)		★
D	Silicone 200	0.93	-49 to 401 °F (-45 to 205 °C)		★
H	Inert (Halocarbon)	1.85	-49 to 320 °F (-45 to 160 °C)		★
G	Glycerine and Water	1.13	5 to 203 °F (-15 to 95 °C)		★
N	Neobee M-20	0.92	5 to 401 °F (-15 to 205 °C)		★
P	Propylene Glycol and Water	1.02	5 to 203 F (-15 to 95 °C)		★
Low Pressure Side					
	Configuration	**Flange adapter**	**Diaphragm material**	**Sensor fill fluid**	
Standard					**Standard**
11[5]	Gage	SST	316L SST	Silicone	★
21	Differential	SST	316L SST	Silicone	★
22[5]	Differential	SST	Alloy C-276	Silicone	★
2A[6]	Differential	SST	316L SST	Inert (Halocarbon)	★
2B[5][6]	Differential	SST	Alloy C-276	Inert (Halocarbon)	★
31[5]	Tuned-System Assembly with Remote Seal	None	316L SST	Silicone (Requires Option Code S1)	★
O-ring					
Standard					**Standard**
A	Glass-filled PTFE				★
Housing material			**Conduit entry size**		
Standard					**Standard**
A	Aluminum		½–14 NPT		★
B	Aluminum		M20 × 1.5		★
J	SST		½–14 NPT		★
K	SST		M20 × 1.5		★
P[7]	Engineered polymer		No conduit entries		★
Expanded					
D	Aluminum		G½		
M	SST		G½		

Table 6. Rosemount 3051L Level Transmitter ordering information

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

Wireless options (Requires wireless output code X and Engineered Polymer housing code P)

Wireless transmit rate, operating frequency, and protocol		
Standard		**Standard**
WA3	User Configurable Transmit Rate, 2.4GHz Wir	★
Antenna and SmartPower		
Standard		**Standard**
WP5	Internal Antenna, Compatible with Green Power Module (I.S. Power Module Sold Separately)	★

HART Revision configuration (Requires HART Protocol output code A)

Standard		Standard
HR5[8][11]	Configured for HART Revision 5	★
HR7[9][11]	Configured for HART Revision 7	★

Options (Include with selected model number)

PlantWeb control functionality		
Standard		**Standard**
A01[10]	FOUNDATION fieldbus Advanced Control Function Block Suite	★
PlantWeb diagnostic functionality		
Standard		**Standard**
DA0[11][17]	Power Advisory HART Diagnostic	★
D01[10]	FOUNDATION fieldbus Diagnostics Suite	★
Seal assemblies		
Standard		**Standard**
S1[12]	Assembled to One Rosemount 1199 Seal (Requires 1199M)	★
Product certifications		
Standard		**Standard**
E8	ATEX Flameproof and Dust Certification	★
I1[13]	ATEX Intrinsic Safety and Dust	★
IA	ATEX FISCO Intrinsic Safety; for FOUNDATION fieldbus protocol only	★
N1	ATEX Type n Certification and Dust	★
K8	ATEX Flameproof, Intrinsic Safety, Type n, Dust (combination of E8, I1 and N1)	★
E4[14]	TIIS Flameproof	★
E5	FM Explosion-proof, Dust Ignition-proof	★
I5[15]	FM Intrinsically Safe, Division 2	★
IE	FM FISCO Intrinsically Safe; for FOUNDATION fieldbus protocol only	★
K5	FM Explosion-proof, Dust Ignition-Proof, Intrinsically Safe, and Division 2	★
C6	CSA Explosion-proof, Dust Ignition-proof, Intrinsically Safe, and Division 2	★
I6 [7]	CSA Intrinsic Safety	★
K6	CSA and ATEX Explosion-proof, Intrinsically Safe, and Division 2 (combination of C6, E8, and I1)	★
E7	IECEx Flameproof, Dust Ignition-proof	★
I7	IECEx Intrinsic Safety	★
N7	IECEx Type n Certification	★
K7	IECEx Flameproof, Dust Ignition-proof, Intrinsic Safety, and Type n (combination of I7, N7 and E7)	★
E2	INMETRO Flameproof	★
I2	INMETRO Intrinsic Safety	★
K2	INMETRO Flameproof, Intrinsic Safety	★
E3	China Flameproof	★
I3	China Intrinsic Safety	★

Table 6. Rosemount 3051L Level Transmitter ordering information

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

Product certifications		
Standard		**Standard**
N3	China Type n	★
KB	FM and CSA Explosion-proof, Dust Ignition Proof, Intrinsically Safe, and Division 2 (combination of K5 and C6)	★
KD	FM, CSA, and ATEX Explosion-proof, Intrinsically Safe (combination of K5, C6, I1, and E8)	★
Shipboard approvals		
Standard		**Standard**
SBS[6]	American Bureau of Shipping	★
Bolting material		
Standard		**Standard**
L4	Austenitic 316 SST Bolts	★
L5	ASTM A 193, Grade B7M bolts	★
L6	Alloy K-500 Bolts	★
L8	ASTM A 193 Class 2, Grade B8M Bolts	★
Display and interface options		
Standard		**Standard**
M4[16]	LCD Display with Local Operator Interface	★
M5	LCD Display	★
Calibration certification		
Standard		**Standard**
Q4	Calibration Certificate	★
QP	Calibration Certificate and tamper evident seal	★
QG	Calibration Certificate and GOST Verification Certificate	★
Material traceability certification		
Standard		**Standard**
Q8	Material Traceability Certification per EN 10204 3.1	★
Quality certification for safety		
Standard		**Standard**
QS[17]	Prior-use certificate of FMEDA data	★
QT[11][17]	Safety certified to IEC 61508 with certificate of FMEDA	★
Toolkit total system performance reports		
Standard		**Standard**
QZ	Seal System Performance Calculation Report	★
Conduit electrical connector		
Standard		**Standard**
GE[6]	M12, 4-pin, Male Connector (eurofast)	★
GM[6]	A size Mini, 4-pin, Male Connector (minifast)	★
Configuration buttons		
Standard		**Standard**
D4[17]	Analog Zero and Span	★
DZ[18]	Digital Zero Trim	★
Transient protection		
Standard		**Standard**
T1[6][19]	Transient Protection	★

Table 6. Rosemount 3051L Level Transmitter ordering information

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

Software configuration				
Standard				**Standard**
C1[18]	Custom Software Configuration (Completed CDS 00806-0100-4007 for wired and 00806-0100-4100 for wireless required with order)			★
Expanded				
C2	0.8-3.2 Vdc Output with Digital Signal Based on HART Protocol (Available with Output code M only)			
Alarm levels				
Standard				**Standard**
C4[17][20]	NAMUR alarm and saturation levels, high alarm			★
CN[17][20]	NAMUR alarm and saturation levels, low alarm			★
CR[11][17]	Custom alarm and saturation signal levels, high alarm (requires C1 and Configuration Data Sheet)			★
CS[11][17]	Custom alarm and saturation signal levels, low alarm (requires C1 and Configuration Data Sheet)			★
CT[11][17]	Low alarm (standard Rosemount alarm and saturation levels)			★
Conduit plug				
Standard				**Standard**
DO[6]	316 SST Conduit Plug			★
Ground screw				
Standard				**Standard**
V5[6][21]	External Ground Screw Assembly			★
Lower housing flushing connection options				
	Ring material	**Number**	**Size (NPT)**	
Standard				**Standard**
F1	316 SST	1	1/4-18 NPT	★
F2	316 SST	2	1/4-18 NPT	★
F3	Alloy C-276	1	1/4-18 NPT	★
F4	Alloy C-276	2	1/4-18 NPT	★
F7	316 SST	1	1/2-14 NPT	★
F8	316 SST	2	1/2-14 NPT	★
F9	Alloy C-276	1	1/2-14 NPT	★
F0	Alloy C-276	2	1/2-14 NPT	★
NACE Certificate				
Standard				**Standard**
Q15[22]	Certificate of Compliance to NACE MR0175/ISO 15156 for wetted materials			★
Q25[22]	Certificate of Compliance to NACE MR0103 for wetted materials			★
Typical model number: 3051L 2 A A0 D 21 A A F1				

(1) HART Revision 5 is the default HART output. The Enhanced 3051 can be factory or field configured to HART Revision 7. To order HART Revision 7 factory configured, add option code HR7.

(2) Option code M4 - LCD Display with Local Operator Interface required for local addressing and configuration.

(3) Available approvals are FM Intrinsically Safe, (option code I5), CSA Intrinsically Safe (option code I6), ATEX Intrinsic Safety (option code I1), and IECEx Intrinsic Safety (option code I7).

(4) Only available with C6, E2, E5, I5, K5, KB and E8 approval. Not available with GE, GM, P8, SBS, DA0, M4, D4, DZ, QT, HR5, HR7, CR, CS, CT.

(5) Materials of Construction comply with metallurgical requirements highlighted within NACE MR0175/ISO 15156 for sour oil field production environments. Environmental limits apply to certain materials. Consult latest standard for details. Selected materials also conform to NACE MR0103 for sour refining environments.

(6) Not available with Wireless output (output code X).

(7) Only available with Wireless output (output code X).

(8) Configures the HART output to HART Revision 5. The device can be field configured to HART Revision 7 if needed.

(9) Configures the HART output to HART Revision 7. The device can be field configured to HART Revision 5 if needed.

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

(11) Select Configuration Buttons (option code D4 or DZ) or Local Operator Interface (option code M4) if local configuration buttons are required.

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

(13) Dust approval not applicable to output code X. See "IEC 62591 (WirelessHART Protocol)" on page 62 for wireless approvals.

(14) Available only with output codes A - 4-20 mA HART and F - FOUNDATION fieldbus.

(15) Intrinsically Safe only available with Wireless.

(16) Not available with FOUNDATION fieldbus (Output Code F) or Wireless output (Output Code X) or Low Power (Output Code M).

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

(18) Only available with 4-20 mA HART output (Output Code A) and Wireless output (Output Code X).

(19) The T1 option is not needed with FISCO Product Certifications; transient protection is included in the FISCO product certification codes IA and IE.

(20) NAMUR-Compliant operation is pre-set at the factory and cannot be changed to standard operation in the field for the standard 3051.

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

(22) NACE compliant wetted materials are identified by Footnote (5).

Specifications

Performance specifications

This product data sheet covers HART, Wireless, FOUNDATION fieldbus, and PROFIBUS PA protocols unless specified.

Conformance to specification (±3σ (Sigma))

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

Reference accuracy

Stated reference accuracy equations include terminal based linearity, hysteresis, and repeatability.
For Wireless, FOUNDATION fieldbus and PROFIBUS PA devices, use calibrated range in place of span.

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

(1) High accuracy option P8 is not required for the Enhanced 3051.

(2) Level system total accuracy varies by application.

Flow performance - flow reference accuracy[1]

3051CFA Annubar Flowmeter (for 3051 and enhanced 3051)		
Ranges 2-3		±1.80% of Flow Rate at 8:1 flow turndown
3051CFC_A Compact Annubar Flowmeter – Annubar Option A		
Ranges 2-3	Uncalibrated	±2.10% of Flow Rate at 8:1 flow turndown
	Calibrated	±1.80% of Flow Rate at 8:1 flow turndown
3051CFC Compact Orifice Flowmeter – Conditioning Option C		
Ranges 2-3	β =0.4	±1.75% of Flow Rate at 8:1 flow turndown
	β =0.65	±1.95% of Flow Rate at 8:1 flow turndown
3051CFC Compact Orifice Flowmeter – orifice type option P[2]		
Ranges 2-3	β =0.4	±2.00% of Flow Rate at 8:1 flow turndown
	β =0.65	±2.00% of Flow Rate at 8:1 flow turndown
3051CFP Integral Orifice Flowmeter		
	β <0.1	±3.00% of Flow Rate at 8:1 flow turndown
Ranges 2-3	0.1< β <0.2	±1.95% of Flow Rate at 8:1 flow turndown
	0.2< β <0.6	±1.75% of Flow Rate at 8:1 flow turndown
	0.6< β <0.8	±2.15% of Flow Rate at 8:1 flow turndown

(1) Accuracy over range of use is always application dependent.

(2) For smaller line sizes, see Rosemount Compact Orifice.

Total performance

Total Performance is based on combined errors of reference accuracy, ambient temperature effect, and static pressure effect at normal operating conditions (70% of span typical reading, 740 psi (51.02 bar) line pressure).

For ±50 °F (28 °C) temperature changes; 0-100% relative humidity, from 1:1 to 5:1 rangedown		
Models	**3051 Standard**	**Enhanced 3051**
3051C Ranges 2-5	±0.15% of span	± 0.14% of span
3051T Ranges 1-4	±0.15% of span	± 0.14% of span

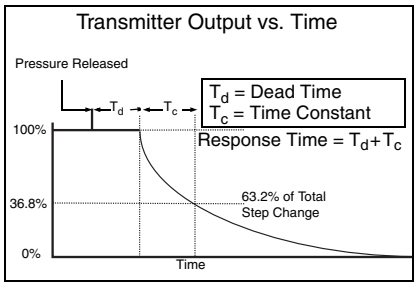
Long term stability

Models	Long term stability (for 3051 and enhanced 3051)
3051C Ranges 2-5	±0.125% of URL for 5 years ±50 °F (28 °C) temperature changes, and up to 1000 psi (68,95 bar) line pressure.
3051CD, 3051CG Low/Draft Range Ranges 0-1	±0.2% of URL for 1 year
3051CA Low Range Range 1	±0.125% of URL for 5 years ±50 °F (28 °C) temperature changes, and up to 1000 psi (68,95 bar) line pressure.
3051T Ranges 1-4	±0.125% of URL for 5 years ±50 °F (28 °C) temperature changes, and up to 1000 psi (68,95 bar) line pressure.

Dynamic performance

	4 - 20 mA HART[1]	FOUNDATION fieldbus and PROFIBUS PA protocols[3]	Typical HART Transmitter response time
Total Response Time ($T_d + T_c$)[2]:			
3051C, Ranges 2-5:	100 ms	152 ms	
Range 1:	255 ms	307 ms	
Range 0:	700 ms	N/A	
3051T:	100 ms	152 ms	
3051L:	See Instrument Toolkit®	See Instrument Toolkit	
Dead Time (Td)	45 ms (nominal)	97 ms	
Update Rate[4]	22 times per second	22 times per second	

(1) Dead time and update rate apply to all models and ranges; analog output only
(2) Nominal total response time at 75 °F (24 °C) reference conditions.
(3) Transducer block response time, Analog Input block execution time not included.
(4) Does not apply to wireless (output Code X). See "Wireless (output code X)" on page 53 for wireless update rate.



Line pressure effect per 1000 psi (68,95 bar)

For line pressures above 2000 psi (137,90 bar) and Ranges 4-5, see user manual (Document number 00809-0100-4007 for enhanced 3051 HART, 00809-0100-4001 for HART, 00809-0100-4100 for WirelessHART 00809-0100-4774 for FOUNDATION™ fieldbus, and 00809-0100-4797 for PROFIBUS PA).

Models	Line pressure effect (for 3051 and enhanced 3051)
3051CD, 3051CF	Zero Error
Ranges 2-3	±0.05% of URL/1000 psi (68,95 bar) for line pressures from 0 to 2000 psi (0 to 137,90 bar)
Range 1	±0.25% of URL/1000 psi (68,95 bar) for line pressures from 0 to 2000 psi (0 to 137,90 bar)
Range 0	±0.125% of URL/100 psi (6,89 bar) for line pressures from 0 to 750 psi (0 to 51,71 bar)
	Span Error
Ranges 2-3	±0.1% of reading/1000 psi (68,95 bar)
Range 1	±0.4% of reading/1000 psi (68,95 bar)
Range 0	±0.15% of reading/100 psi (68,95 bar)

Ambient temperature effect per 50 °F (28 °C)

Models	Ambient temperature effect (for 3051 and enhanced 3051)
3051C	
Ranges 2-5	±(0.0125% URL + 0.0625% span) from 1:1 to 5:1 ±(0.025% URL + 0.125% span) from 5:1 to 150:1
Range 1	±(0.1% URL + 0.25% span) from 1:1 to 30:1 ±(0.14% URL + 0.15% span) from 30:1 to 50:1
Range 0	±(0.25% URL + 0.05% span) from 1:1 to 30:1
3051CA	
Ranges 1-4	±(0.025% URL + 0.125% span) from 1:1 to 30:1
	±(0.035% URL + 0.125% span) from 30:1 to 150:1
3051T	
Range 2-4	±(0.025% URL + 0.125% span) from 1:1 to 30:1 ±(0.035% URL + 0.125% span) from 30:1 to 150:1
Range 1	±(0.025% URL + 0.125% span) from 1:1 to 10:1 ±(0.05% URL + 0.125% span) from 10:1 to 100:1
Range 5	±(0.1% URL + 0.15% span) from 1:1 to 5:1
3051L	See Instrument Toolkit software.

Mounting position effects

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

Vibration effect

Less than ±0.1% of URL when tested per the requirements of IEC60770-1: 1999 field or pipeline with high vibration level (10-60 Hz
0.21 mm displacement peak amplitude / 60-2000 Hz 3g).

Power supply effect

Less than ±0.005% of calibrated span per volt change.

Electromagnetic compatibility (EMC)

Meets all relevant requirements of EN 61326 and Namur NE-21.[(1)]

(1) NAMUR NE-21 does not apply to wireless output code X.

Transient protection (option code T1)

Meets IEEE C62.41, Category Location B
- 6 kV crest (0.5 μs - 100 kHz)
- 3 kA crest (8 × 20 μs)
- 6 kV crest (1.2 × 50 μs)

Functional specifications

Range and sensor limits

Table 7. 3051CD, 3051CG, 3051CF, and 3051L range and sensor limits

Range	Minimum span		Range and sensor limits				
				Lower (LRL)			
	Enhanced 3051CD, 3051CG, 3051CF, 3051L	Standard 3051CD, 3051CG, 3051CF, 3051L	Upper (URL)	3051CD differential 3051CF Flowmeters	3051CG gage[1]	3051L differential	3051Lgage[1]
0 [2] [3]	0.10 inH_2O (0,25 mbar)	0.10 inH_2O (0,25 mbar)	3.00 inH_2O (7,46 mbar)	-3.00 inH_2O (-7,46 mbar)	N/A	N/A	N/A
1[3]	0.50 inH_2O (1,24 mbar)	0.50 inH_2O (1,24 mbar)	25.00 inH_2O (62,16 mbar)	-25.00 inH_2O (-62,16 mbar)	-25.00 inH_2O (-62,16 mbar)	N/A	N/A
2[3]	1.67 inH_2O (4,14 mbar)	2.50 inH_2O (6,22 mbar)	250.00 inH_2O (621,60 mbar)	-250.00 inH_2O (-621,60 mbar)	-250.00 inH_2O (-621,60 mbar)	-250.00 inH_2O (-621,60 mbar)	-250.00 inH_2O (-621,60 mbar)
3[3]	6.67 inH_2O (16,58 mbar)	10.00 inH_2O (24,86 mbar)	1000.00 inH_2O (2,49 bar)	-1000.00 inH_2O (-2,49 bar)	0.50 psia (34,47 mbar)	-1000.00 inH_2O (-2,49 bar)	0.50 psia (34,47 mbar)
4[3]	2.00 psi (137,90 mbar)	3.00 psi (0,21 bar)	300.00 psi (20,68 bar)	-300.00 psi (-20,68 bar)	0.50 psia (34,47 mbar)	-300.00 psi (-20,68 bar)	0.50 psia (34,47 mbar)
5[3]	13.33 psi (919,30 mbar)	20.00 psi (1,38 bar)	2000.00 psi (137,90 bar)	- 2000.00 psi (-137,90 bar)	0.50 psia (34,47 mbar)	N/A	N/A

(1) Assumes atmospheric pressure of -14.7 psig.

(2) Range 0 only available with 3051CD. Range 1 only available with 3051CD, 3051CG, or 3051CF. Range 5 not available with 3051L Differential and 3051 Gage.

(3) inH_2O referenced at 68 degrees Fahrenheit.

Table 8. 3051CA and 3051T range and sensor limits

Range	3051CA				Range	3051T				
	Minimum span		Range and sensor limits			Minimum span		Range and sensor limits		
	Enhanced	Standard	Upper (URL)	Lower (LRL)		Enhanced	Standard	Upper (URL)	Lower (LRL) (Absolute)	Lower[1] (LRL) (Gage)
1	0.30 psi (20,68 mbar)	0.30 psi (20,68 mbar)	30 psia (2,07 bar)	0 psia (0 bar)	1	0.30 psi (20,68 mbar)	0.30 psi (20,68 mbar)	30.00 psi (2,07 bar)	0 psia (0 bar)	-14.70 psig (-1,01 bar)
2	1.00 psi (68,95 mbar)	1.50 psi (0,10 bar)	150 psia (10,34 bar)	0 psia (0 bar)	2	1.00 psi (68,95 mbar)	1.50 psi (0,10 bar)	150.00 psi (10,34 bar)	0 psia (0 bar)	-14.70 psig (-1,01 bar)
3	5.33 psi (367,27 mbar)	8.00 psi (0,55 bar)	800 psia (55,16 bar)	0 psia (0 bar)	3	5.33 psi (367,27 mbar)	8.00 psi (0,55 bar)	800.00 psi (55,16 bar)	0 psia (0 bar)	-14.70 psig (-1,01 bar)
4	26.67 psi (1,84 bar)	40.00 psi (2,76 bar)	4000 psia (275,79 bar)	0 psia (0 bar)	4	26.67 psi (1,84 bar)	40.00 psi (2,76 bar)	4000.00 psi (275,79 bar)	0 psia (0 bar)	-14.70 psig (-1,01 bar)
					5	2000.00 psi (137,90 bar)	2000.00 psi (137,90 bar)	10000.00 psi (689,48 bar)	0 psia (0 bar)	-14.70 psig (-1,01 bar)

(1) Assumes atmospheric pressure of 14.7 psig.

Service

Liquid, gas, and vapor applications

4-20 mA HART (output code A)

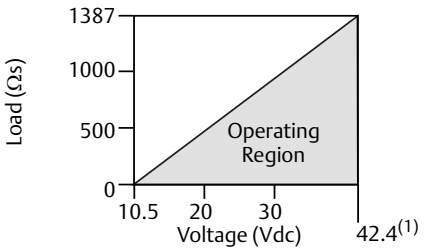
Power Supply

External power supply required. Standard transmitter (4-20mA) operates on 10.5-42.4 Vdc with no load

Load limitations

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

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



Communication requires a minimum loop resistance of 250 ohms.

(1) For CSA approval, power supply must not exceed 42.4 V.

Indication

Optional two line LCD Display/LOI Display

Zero and span adjustment requirements

Zero and span values can be set anywhere within the range limits stated in Table 7 and Table 8.

Span must be greater than or equal to the minimum span stated in Table 7 and Table 8.

Output

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

3051
Digital communications based on HART Revision 5 protocol.

Enhanced 3051
The Enhanced 3051 comes with Selectable HART Revisions. Digital communications based on HART Revision 5 (default) or Revision 7 (option code HR7) protocol can be selected. The HART revision can be switched in the field using any HART based configuration tool or the optional local operator interface (M4).

Enhanced 3051 features

Power Advisory Diagnostics
Power Advisory Diagnostics proactively detect and notify 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.

Local operator interface
The LOI utilizes a 2 button menu with internal and external configuration buttons. Internal buttons are always configured for Local Operator Interface. External Buttons can be configured for either LOI (option code M4), Analog Zero and Span (option code D4) or Digital Zero Trim (option code DZ). See enhanced 3051 product manual (00809-0100-4007) for LOI configuration menu.

FOUNDATION fieldbus (output code F)

Power supply

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

Current draw

17.5 mA for all configurations (including LCD display option)

Indication

Optional two line LCD display

FOUNDATION fieldbus Function Block execution times

Block	Execution Time
Resource	-
Transducer	-
LCD Display Block	-
Analog Input 1, 2	30 milliseconds
PID	45 milliseconds
Input Selector	30 milliseconds
Arithmetic	35 milliseconds
Signal Characterizer	40 milliseconds
Integrator	35 milliseconds

FOUNDATION fieldbus parameters

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

Standard function blocks

Resource Block
Contains hardware, electronics, and diagnostic information.

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

LCD Display Block
Configures the local display.

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

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

Backup Link Active Scheduler (LAS)

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

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 seals, 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.

FOUNDATION fieldbus Diagnostics Suite (option code D01)

The 3051C FOUNDATION fieldbus Diagnostics provide Abnormal Situation Prevention (ASP) indication. The integral statistical process monitoring (SPM) technology calculates the mean and standard deviation of the process variable 22 times per second. The 3051C ASP algorithm uses these values and highly flexible configuration options for customization to many user-defined or application specific abnormal situations. The detection of plugged impulse lines is the first available predefined application.

PROFIBUS PA (output code W)

Profile version

3.02

Power supply

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

Current draw

17.5 mA for all configurations (including LCD display option)

Output update rate

Four times per second

Standard function blocks

Analog Input (AI Block)
The AI function block processes the measurements and makes them available to the host device. The output value from the AI block is in engineering units and contains a status indicating the quality of the measurement.

Physical Block
The physical block defines the physical resources of the device including type of memory, 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.

Indication

Optional two line LCD display

Local operator interface

The LOI utilizes a 2 button menu with external configuration buttons.

Wireless (output code X)

Output

IEC 62591 (WirelessHART), 2.4 GHz DSSS

Wireless radio (internal antenna, WP5 option)

- Frequency: 2.400 - 2.485 GHz
- Channels: 15
- Modulation: IEEE 802.15.4 compliant DSSS
- Transmission: Maximum of 10 dBm EIRP

Local display

The optional 3-line, 7-digit LCD display can display user-selectable information such as primary variable in engineering units, scaled variable, percent of range, sensor module temperature, and electronics temperature. The display updates based on the wireless update rate.

Digital zero trim

Digital Zero trim (option DZ) is an offset adjustment to compensate for mounting position effects, up to 5% of URL.

Update rate

User selectable 1 sec. to 60 min.

Wireless sensor module for in-line transmitters

The 3051 Wireless transmitter requires the engineered polymer housing to be selected. The standard sensor module will come with aluminum material. If stainless steel is required, the option WSM must be selected.

Power module

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

(1) Reference conditions are 70 °F (21 °C), and routing data for three additional network devices.

NOTE: Continuous exposure to ambient temperature limits of -40 °F or 185 °F (-40 °C or 85 °C) may reduce specified life by less than 20 percent.

Low power output

1-5 Vdc HART Low Power (output code M)

Output:
Three-wire 1-5 Vdc (option code C2) user-selectable output. Also user selectable for linear or square root output configuration. Digital process variable superimposed on voltage signal, available to any host conforming to the HART protocol. Low-power transmitter operates on 6-12 Vdc with no load.

Power consumption:
3.0 mA, 18-36 mW

Minimum load impedance
100 kΩ (V_{out} wiring)

Indication
Optional 5-digit LCD display

Overpressure limits

Rosemount 3051CD/CG/CF

- Range 0: 750 psi (51,71 bar)
- Range 1: 2000 psig (137,90 bar)
- Ranges 2-5: 3626 psig (250,00 bar)
  4500 psig (310,26 bar) for option code P9

Rosemount 3051CA

- Range 1: 750 psia (51,71 bar)
- Range 2: 1500 psia (103,42 bar)
- Range 3: 1600 psia (110,32 bar)
- Range 4: 6000 psia (413,69 bar)

Rosemount 3051TG/TA

- Range 1: 750 psi (51,71 bar)
- Range 2: 1500 psi (103,42 bar)
- Range 3: 1600 psi (110,32 bar)
- Range 4: 6000 psi (413,69 bar)
- Range 5: 15000 psi (1034,21 bar)

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

Table 9. 3051L and level flange rating limits

Standard	Type	CS rating	SST rating
ANSI/ASME	Class 150	285 psig	275 psig
ANSI/ASME	Class 300	740 psig	720 psig
ANSI/ASME	Class 600	1480 psig	1440 psig
At 100 °F (38 °C), the rating decreases with increasing temperature, per ANSI/ASME B16.5.			
DIN	PN 10-40	40 bar	40 bar
DIN	PN 10/16	16 bar	16 bar
DIN	PN 25/40	40 bar	40 bar
At 248 °F (120 °C), the rating decreases with increasing temperature, per DIN 2401.			

Static pressure limit

Rosemount 3051CD Only

Operates within specifications between static line pressures of 0.5 psia and 3626 psig (4500 psig (310, 26 bar) for Option Code P9).
Range 0: 0.5 psia and 750 psig (0,03 bar and 20 bar)
Range 1: 0.5 psia and 2000 psig (0,03 bar and 137, 90 bar)

Burst pressure limits

3051C, 3051CF coplanar or traditional process flange

10081 psig (695,06 bar)

3051T Inline

Ranges 1-4: 11016 psi (759,53 bar)
Range 5: 26016 psig (1793,74 bar)

Failure mode alarm

HART 4-20 mA (output option code A)

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

	High alarm	Low alarm
Default	≥ 21.75 mA	≤ 3.75 mA
NAMUR compliant[1]	≥ 22.5 mA	≤ 3.6 mA
Custom levels[2]	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.

If the device is configured for HART7 Revision 7, failure information will be passed as a status along with the Process Variable.

Output code M

If self-diagnostics detect a gross transmitter failure, the analog signal will be driven either below 0.94 V or above 5.4 V to alert the user (below 0.75 V or above 4.4 V for Option C2). High or low alarm signal is user-selectable by internal jumper.

Output code F, W, and X

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

Temperature limits

Ambient

-40 to 185 °F (-40 to 85 °C)
With LCD display[1][2]: -40 to 176 °F (-40 to 80 °C)

(1) For the standard 3051, LCD display may not be readable and LCD display updates will be slower at temperatures below -22 °F (-30 °C).

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

Storage[1]

-50 to 230 °F (-46 to 110 °C)
With LCD display: -40 to 185 °F (-40 to 85 °C)
With Wireless Output: -40 °F to 185 °F (-40 °C to 85 °C)

(1) If storage temperature is above 85°C, perform a sensor trim prior to installation.

Process

At atmospheric pressures and above. See Table 10.

Table 10. 3051 process temperature limits

3051CD, 3051CG, 3051CF, 3051CA	
Silicone Fill Sensor[1]	
with Coplanar Flange	–40 to 250 °F (–40 to 121 °C)[2]
with Traditional Flange	–40 to 300 °F (–40 to 149 °C)[2][3]
with Level Flange	–40 to 300 °F (–40 to 149 °C)[2]
with 305 Integral Manifold	–40 to 300 °F (–40 to 149 °C)[2]
Inert Fill Sensor[1][4]	–40 to 185 °F (–40 to 85 °C)[5][6]
3051T (Process Fill Fluid)	
Silicone Fill Sensor[1]	–40 to 250 °F (–40 to 121 °C)[2]
Inert Fill Sensor[1]	–22 to 250 °F (–30 to 121 °C)[2]
3051L Low-Side Temperature Limits	
Silicone Fill Sensor[1]	–40 to 250 °F (–40 to 121 °C)[2]
Inert Fill Sensor[1]	-40 to 185 °F (–40 to 85 °C)[5]
3051L High-Side Temperature Limits (Process Fill Fluid)	
Syltherm® XLT	–102 to 293 °F (–75 to 145 °C)
D.C. Silicone 704®	32 to 401 °F (0 to 205 °C)
D.C. Silicone 200	–49 to 401 °F (–45 to 205 °C)
Inert	–49 to 320 °F (–45 to 160 °C)
Glycerin and Water	5 to 203 °F (–15 to 95 °C)
Neobee M-20	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.

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

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

(4) Inert fill with traditional flange on Range 0: limits are 32 to 185°F (0 to 85°C).

(5) 160 °F (71 °C) limit in vacuum service.

(6) Not available for 3051CA.

Humidity limits

0–100% relative humidity

Turn-on time

Performance within specifications less than 2.0 seconds (10.0 s for PROFIBUS PA protocol) after power is applied to the transmitter.[1]

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

Volumetric displacement

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

Damping

4-20 mA HART

Enhanced 3051
Analog output response to a step input change is user-enterable from 0.0 to 60 seconds for one time constant. This software damping is in addition to sensor module response time.

Standard 3051
Analog output response to a step input change is user-selectable from 0 to 36 seconds for one time constant. This software damping is in addition to sensor module response time.

FOUNDATION fieldbus

Transducer block: 0.4 seconds fixed
AI Block: User configurable

PROFIBUS PA

AI Block only: User configurable

Physical specifications

Electrical connections

$^1/_2$–14 NPT, G$^1/_2$, and M20 × 1.5 conduit. The polymer housing (housing code P) has no conduit entries. *HART* interface connections fixed to terminal block for output code A and to 701P Power Module for Output Code X.

Process connections

Rosemount 3051C

$^1/_4$–18 NPT on 2$^1/_8$-in. centers
$^1/_2$–14 NPT on 2-, 2$^1/_8$-, or 2$^1/_4$-in. centers

Rosemount 3051L

High pressure side: 2-, 3-, or 4-in., ASME B 16.5 (ANSI) Class 150, 300 or 600 flange; 50, 80 or 100 mm, PN 40 or 10/16 flange
Low pressure side: $^1/_4$–18 NPT on flange $^1/_2$–14 NPT on adapter

Rosemount 3051T

$^1/_2$–14 NPT female.
G$^1/_2$A DIN 16288 Male (Range 1–4 only)
Autoclave type F-250-C (Pressure relieved $^9/_{16}$–18 gland thread; $^1/_4$ OD high pressure tube 60° cone; available in SST for Range 5 transmitters only).

Rosemount 3051CF

For 3051CFA, see 00813-0100-4485 Rosemount 485 Annubar
For 3051CFC, see 00813-0100-4485 Rosemount 405 Compact Orifice Plate
For 3051CFP, see 00813-0100-4485 Rosemount 1195 Integral Orifice

Process-wetted parts

Drain/vent valves

316 SST, Alloy C-276, or Alloy 400 material (Alloy 400 not available with 3051L)

Process flanges and 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 or Graphite-filled PTFE

Process isolating diaphragms

Isolating diaphragm material	3051CD 3051CG	3051T	3051CA
316L SST (UNS S31603)	•	•	•
Alloy C-276 (UNS N10276)	•	•	•
Alloy 400 (UNS N04400)	•		•
Tantalum (UNS R05440)	•		
Gold-plated Alloy 400	•		•
Gold-plated 316L SST	•		•

Rosemount 3051L process wetted parts

Flanged process connection (transmitter high side)

Process diaphragms, including process gasket surface
316L SST, Alloy C-276, or Tantalum

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

Mounting flange
Zinc-cobalt plated CS or SST

Reference process connection (transmitter low side)

Isolating diaphragms
316L SST or Alloy C-276

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

Non-wetted parts

Electronics housing

Low-copper aluminum or CF-8M (Cast version of 316 SST). Enclosure Type 4X, IP 65, IP 66, IP 68
Housing Material Code P: PBT/PC with NEMA 4X and IP66/67/68

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 A193, Grade B7M alloy steel
Alloy K-500

Sensor module fill fluid

Coplanar: silicone or Inert Halocarbon
In-line: silicone or Fluorinert® FC-43

Process fill fluid (3051L only)

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

Paint

Polyurethane

Cover O-rings

Buna-N
Silicone (for wireless option code X)

Power module

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

Shipping weights

Table 11. Transmitter weights without options[(1)]

Transmitter	Standard 3051 In lb. (kg)	Wireless In lb. (kg)
3051C	6.0 (2,7)	3.9 (1,8)
3051T	3.0 (1,4)	1.9 (0,86)
3051L	Table 12	Table 12

(1) Transmitter weights include the sensor module and housing only (aluminum for standard 3051 and polymer for wireless).

Table 12. 3051L weights without options

Flange	Flush lb. (kg)	2-in. Ext. lb. (kg)	4-in. Ext. lb. (kg)	6-in. Ext. lb. (kg)
2-in., 150	12.5 (5,7)	—	—	—
3-in., 150	17.5 (7,9)	19.5 (8,8)	20.5 (9,3)	21.5 (9,7)
4-in., 150	23.5 (10,7)	26.5 (12,0)	28.5 (12,9)	30.5 (13,8)
2-in., 300	17.5 (7,9)	—	—	—
3-in., 300	22.5 (10,2)	24.5 (11,1)	25.5 (11,6)	26.5 (12,0)
4-in., 300	32.5 (14,7)	35.5 (16,1)	37.5 (17,0)	39.5 (17,9)
2-in., 600	15.3 (6,9)	—	—	—
3-in., 600	25.2 (11,4)	27.2 (12,3)	28.2 (12,8)	29.2 (13,2)
DN 50/PN 40	13.8 (6,2)	—	—	—
DN 80/PN 40	19.5 (8,8)	21.5 (9,7)	22.5 (10,2)	23.5 (10,6)
DN 100/ PN 10/16	17.8 (8,1)	19.8 (9,0)	20.8 (9,5)	21.8 (9,9)
DN 100/ PN 40	23.2 (10,5)	25.2 (11,5)	26.2 (11,9)	27.2 (12,3)

Table 13. Transmitter option weights

Code	Option	Add lb. (kg)
J, K, L, M	Stainless Steel Housing (T)	3.9 (1,8)
J, K, L, M	Stainless Steel Housing (C, L, H, P)	3.1 (1,4)
M4/M5	LCD Display for wired transmitter	0.5 (0,2)
M5	LCD Display for Wireless Output	0.1 (0,04)
B4	SST Mounting Bracket for Coplanar Flange	1.0 (0,5)
B1, B2, B3	Mounting Bracket for Traditional Flange	2.3 (1,0)
B7, B8, B9	Mounting Bracket for Traditional Flange	2.3 (1,0)
BA, BC	SST Bracket for Traditional Flange	2.3 (1,0)
H2	Traditional Flange	2.4 (1,1)
H3	Traditional Flange	2.7 (1,2)
H4	Traditional Flange	2.6 (1,2)
H7	Traditional Flange	2.5 (1,1)
FC	Level Flange—3 in., 150	10.8 (4,9)
FD	Level Flange—3 in., 300	14.3 (6,5)
FA	Level Flange—2 in., 150	10.7 (4,8)
FB	Level Flange—2 in., 300	14.0 (6,3)
FP	DIN Level Flange, SST, DN 50, PN 40	8.3 (3,8)
FQ	DIN Level Flange, SST, DN 80, PN 40	13.7 (6,2)
WSM	SST Sensor Module	1.0 (0,45)
	Power Module (701PGNKF)	0.4 (0,18)

Product certifications

Approved manufacturing locations

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

European directive information

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

Ordinary location certification for factory mutual

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

HART Protocol

E5 Explosion-Proof and Dust Ignition Proof
Certificate No: 0T2H0.AE
Applicable Standards: FM Class 3600 – 1998, FM Class 3615 – 2006, FM Class 3810 – 2005, ANSI/NEMA 250 - 2003

Markings: Explosion-Proof for Class I, Division 1, Groups B, C, and D.

Dust-Ignition-Proof for Class II, Division 1, Groups E, F, G; and Class III, Division 1.
T5 (Ta = -50 °C to +85 °C), Factory Sealed, Enclosure Type 4x

I5 Intrinsically Safe and Non-Incendive
Certificate No: 1Q4A4.AX
Applicable Standards: FM Class 3600 – 1998, FM Class 3610 – 2010, FM Class 3611 – 2004, FM Class 3810 – 2005
Markings: Intrinsically Safe for use in Class I, Division 1, Groups A, B, C, and D; Class II, Division 1, Groups E, F, and G; Class III, Division 1 when connected per Rosemount drawing 03031-1019 and 00375-1130 (When used with a Field Communicator);
Non-incendive for Class I, Division 2, Groups A, B, C, and D.
Temperature Code: T4 (Ta = -50 °C to +70 °C), T5 (Ta = -50 °C to +40 °C), Enclosure Type 4x.

Special Conditions for Safe Use:

1.) The Model 3051 transmitter housing contains aluminum and is considered a potential risk of ignition by impact or friction. Care must be taken into account during installation and use to prevent impact and friction.

2.) The Model 3051 transmitter with the transient terminal block (Option code T1) will not pass the 500Vrms dielectric strength test and this must be taken into account during installation.

CSA international

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

C6 Explosionproof, Dust-Ignitionproof, Intrinsically Safe and Division 2
Certificate No.: 1053834
Applicable Standards: ANSI/ISA 12.27.01-2003, CSA Std. C22.2 No. 30 -M1986, CSA Std. C22.2 No.142-M1987, CSA Std. C22.2. No.157-92, CSA Std. C22.2 No. 213 - M1987
Markings: Explosionproof for Class I, Division 1, Groups B, C and D. Dust-Ignitionproof for Class II and Class III, Division 1, Groups E, F and G.
Intrinsically safe for Class I, Division 1, Groups A, B, C and D when connected in accordance with Rosemount drawing 03031-1024. Temperature Code T3C.
Suitable for Class I, Division 2 Groups A, B, C, and D.
Enclosure type 4X, factory sealed. Single Seal (See Drawing 03031-1053).

European certifications

E8 ATEX Flame-Proof and Dust
Certification No.: KEMA00ATEX2013X, Baseefa11ATEX0275
Applicable Standards: EN60079-0: 2012, EN60079-1: 2007, EN60079-26: 2007, IEC 60079-0:2011, EN60079-31:2009
Markings: ⟨Ex⟩ II 1/2 G, Ex d IIC T6 (–50 ≤ Ta ≤ 65 °C) Ga/Gb, Ex d IIC T5 (–50 ≤ Ta ≤ 80 °C) Ga/Gb,
⟨Ex⟩ II D Ex ta IIIC T50°C T_{500} 60°C Da
CE 1180

Process temp	Ambient temp	Temp class
-50 to 65	-50 to 65	T6
-50 to 80	-50 to 80	T5

Special Conditions for Safe Use (X):

1.) In case of repair, contact the manufacturer for information on the dimensions of the flameproof joints.

2.) 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.

3.) The capacitance of the wrap around label to the enclosure, 1.6E-9 F, exceeds the limit in Table 9 of IEC 60079-0. The user shall determine suitability for the specific application.

4.) Wait at least 2 minutes after powering down device before opening covers, when a hazardous atmosphere is present.

I1 ATEX Intrinsic Safety and Dust
Certificate No.: BAS 97ATEX1089X
Applicable Standards: IEC60079-0:2011, EN60079-11: 2012, EN60079-31: 2009,
Markings: ⟨Ex⟩ II 1 GD, Ex ia IIC T4 Ga (–60 ≤ Ta ≤ +70 °C), Ex ia IIC T5 Ga (–60 ≤ Ta ≤ +40 °C)
Ex ta IIIC T50 °C T_{500} 60°C Da
IP66,
CE 1180

Table 14. Input parameters

U_i = 30V
I_i = 200 mA
P_i = 0.9 W
C_i = 0.012 µF

Special Conditions for Safe Use (X):

1.) The apparatus is not capable of withstanding the 500 V insulation test required by EN60079-11. This must be taken into account when installing the apparatus.

2.) The enclosure may be made of aluminum alloy and given a protective polyurethane paint finish; however care should be taken to protect it from impact or abrasion if located in Zone 0.

I4 TIIS Intrinsic Safety
Certification No.: TC16406
Markings: Ex ia IIC T4

IECEx certifications

E7 IECEx Flame-proof and Dust
Certification No.: IECEx KEM 09.0034X, IECEx BAS 10.0034
Applicable Standards: IEC60079-0:2011, IEC60079-1:2007, IEC60079-26:2006, IEC60079-31:2008
Markings: Ex d IIC T5...T6 Ga/Gb, T5 (-50 °C ≤ Ta ≤ 80 °C)/T6 (-50 °C ≤ Ta ≤ 65 °C), Ex ta IIIC T50°C T_{500}60°C Da

Process temp	Ambient temp	Temp class
-50 to 65	-50 to 65	T6
-50 to 80	-50 to 80	T5

***Conditions of certification (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 information on the dimensions of the flameproof joints the manufacturer shall be contacted.

3.) The capacitance of the wrap around label to the enclosure, 1.6E-9 F, exceeds the limit in Table 9 of IEC 60079-0. The user shall determine suitability for the specific application.

4.) Wait at least 2 minutes after powering down device before opening covers, when a hazardous atmosphere is present.

I7 IECEx Intrinsic Safety
Certification No.: IECEx BAS 09.0076X
Applicable Standards: IEC60079-0:2011, IEC 60079-11: 2011
Markings: Ex ia IIC T5 Ga (-60°C ≤ Ta ≤ 40°C), Ex ia IIC T4 Ga (-60°C ≤ Ta ≤ 70°C)

Table 15. Input parameters

U_i = 30 V
I_i = 200 mA
P_i = 0.9 W
C_i = 0.012 µF
L_i = 0

Conditions of certification *(X):*

1.) If the apparatus is fitted with an optional 90V transient suppressor, it is not capable of withstanding the 500V insulation test required by IEC 60079-11. This must be taken into account when installing the apparatus.

2.) The enclosure may be made of aluminum alloy and given a protective polyurethane paint finish; however, care should be taken to protect it from impact or abrasion if located in Zone 0.

N7 IECEx Type 'n'
Certification No.: IECEx BAS 09.0077X
Applicable Standards: IEC60079-0:2011, IEC60079-15:2010
Markings: Ex nA IIC T5 Gc (-40 ≤ Ta ≤ 70 °C)

Conditions of certification (X):

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

Inmetro certifications

E2 Flameproof
Certificate No: CEPEL 97.0073X (Mfg USA and Singapore)
Certificate No: CEPEL 07.1383X (Mfg Brazil)
Applicable Standards: IEC60079-0:2008, IEC60079-1:2009, IEC60079-26:2008, IEC60529:2009
Markings: Ex d IIC T6 Ga/Gb (-50°C ≤ T_a ≤ +65°C)
Ex d IIC T5 Ga/Gb (-50°C ≤ T_a ≤ +80°C)
IP66W

I2 Intrinsic Safety
Certificate No.: CEPEL 97.0072X (Mfg USA and Singapore)
Certificate No.: CEPEL 07.1412X (Mfg Brazil)
Applicable Standards: IEC60079-0:2008, IEC60079-11:2009, IEC60079-26:2008, IEC60529:2009
Markings: Ex ia IIC Ga T5 (-20°C ≤ T_a ≤ +40°C)
Ex ia IIC Ga T4 (-20°C ≤ T_a ≤ +70°C)
IP66W

Table 16. Input parameters

U_i = 30 V
I_i = 200 mA
P_i = 0.9 W
C_i = 0.012 µF
L_i = Desprezivel

Special Condition for Safe Use (X):

See Certificate.

China certifications

E3 Flameproof and Dust
NEPSI Certificate No.: GYJ091065X
Applicable Standards: GB3836.1-2000, GB3836.4-2000,GB4208-1993, GB12476-2000
Markings: Ex d II C T5/T6, -50°~+80°C (T5), -50°~+65°C (T6), DIP A21 TA T90°C, IP66

Special Conditions for Safe Use (X):

Refer to Appendix B of the Rosemount 3051 reference manual (00809-0100-4001).

I3 Intrinsic Safety and Dust
NEPSI Certificate No: GYJ091066X
Applicable Standards: GB3836.1-2000, GB3836.2-2000,GB4208-1993, GB12476-2000
Markings: Ex ia II C T4/T5, -60°~+40°C (T5), -60°~+70°C (T4), DIP A21 TA T80°C

Special Conditions for Safe Use (X):

Refer to Appendix B of the Rosemount 3051 reference manual (00809-0100-4001).

FOUNDATION™ Fieldbus and Profibus PA protocols

Hazardous locations certifications

North American certifications

FM approvals

E5 Explosion-Proof and Dust Ignition Proof
Certificate No: 0T2H0.AE
Applicable Standards: FM Class 3600 – 1998, FM Class 3615 – 2006, FM Class 3810 – 2005, ANSI/NEMA 250 - 2003
Markings: Explosion-Proof for Class I, Division 1, Groups B, C, and D.
Dust-Ignition-Proof for Class II, Division 1, Groups E, F, G, and Class III, Division 1.
T5 (T_a = -50 °C to +85 °C), Factory Sealed, Enclosure Type 4x.

I5 Intrinsically Safe and Non-Incendive
Certificate No: 1Q4A4.AX
Applicable Standards: FM Class 3600 – 1998, FM Class 3610 – 2010, FM Class 3611 – 2004, FM Class 3810 – 2005
Markings: Intrinsically Safe for use in Class I, Division 1, Groups A, B, C, and D; Class II, Division 1, Groups E, F, and G; Class III, Division 1 when connected per Rosemount drawing 03031-1019 and 00375-1130 (When used with a Field Communicator);
Non-incendive for Class I, Division 2, Groups A, B, C, and D.
Temperature Code: T4 (Ta = -50 °C to +60 °C), Enclosure Type 4x.

Special Conditions for Safe Use (X):

1.) The Model 3051 transmitter housing contains aluminum and is considered a potential risk of ignition by impact or friction. Care must be taken into account during installation and use to prevent impact and friction.

2.) The Model 3051 transmitter with the transient terminal block (Option code T1) will not pass the 500Vrms dielectric strength test and this must be taken into account during installation.

Canadian Standards Association (CSA)

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

C6 Explosionproof, Dust-Ignitionproof, Intrinsically Safe and Division 2
Certificate No.: 1053834
Applicable Standards: ANSI/ISA 12.27.01-2003, CSA Std. C22.2 No. 30 -M1986, CSA Std. C22.2 No.142-M1987, CSA Std. C22.2. No.157-92, CSA Std. C22.2 No. 213 - M1987
Markings: Explosionproof for Class I, Division 1, Groups B, C and D. Dust-Ignitionproof for Class II and Class III, Division 1, Groups E, F and G.
Intrinsically safe for Class I, Division 1, Groups A, B, C and D when connected in accordance with Rosemount drawing 03031-1024.
Temperature Code T3C.
Suitable for Class I, Division 2 Groups A, B, C, and D.
Enclosure type 4X, factory sealed. Single Seal (See Drawing 03031-1053).

European certifications

I1 ATEX Intrinsic Safety and Dust
Certificate No.: BAS 97ATEX1089X
Applicable Standards: IEC60079-0:2011, EN60079-11: 2012, EN60079-31: 2009,
Markings: ⟨Ex⟩ II 1 GD, Ex ia IIC T4 Ga (–60 ≤ Ta ≤ +60 °C), Ex ta IIIC T50 °C T_{500} 60 °C Da,
CE 1180

Table 17. Input parameters

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

Special Conditions for Safe Use (X):

1.) The apparatus is not capable of withstanding the 500 V insulation test required by EN60079-11. This must be taken into account when installing the apparatus.

2.) The enclosure may be made of aluminum alloy and given a protective polyurethane paint finish; however care should be taken to protect it from impact or abrasion if located in Zone 0.

IA ATEX FISCO Intrinsic Safety
Certificate No.: BAS 97ATEX1089X
Applicable Standards: IEC60079-0:2011, EN60079-11: 2012, EN60079-31: 2009,
Markings: ⟨Ex⟩ II 1 GD, Ex ia IIC T4 Ga (–60 ≤ Ta ≤ +60 °C), Ex ta IIIC T50 °C T_{500} 60 °C Da, Ui = 30 V Ii = 200 mA Pi = 0.9 W Ci = 0.012 µF, IP66,
CE 1180

Table 18. Input parameters

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

Special Conditions for Safe Use (X):

1.) The apparatus is not capable of withstanding the 500 V insulation test required by EN60079-11. This must be taken into account when installing the apparatus.

2.) The enclosure may be made of aluminum alloy and given a protective polyurethane paint finish; however care should be taken to protect it from impact or abrasion if located in Zone 0.

N1 ATEX Non-incendive/Type n and Dust
Certification No.: BAS 00ATEX3105X
Applicable Standards: IEC60079-0:2011, EN60079-15:2010, EN60079-31:2009
Markings: ⟨Ex⟩ II 3 GD, Ex nA IIC Gc T5 (–40 ≤ Ta ≤ 70 °C), Ex ta IIIC T50 °C T_{500} 60 °C Da, IP66
CE

Special Conditions for Safe Use (X):

1.) The apparatus is not capable of withstanding the 500 V insulation test required by EN60079-15. This must be taken into account when installing the apparatus.

2.) 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. In case of repair, contact the manufacturer for more information on the dimensions of the flameproof joints.

E8 ATEX Flameproof and Dust
Certification No.: KEMA00ATEX2013X, Baseefa11ATEX0275
Applicable Standards: EN60079-0: 2012, IEC60079-0:2011, EN60079-1:2007, EN60079-26:2007, EN60079-31:2009
Markings: Ⓔx II 1/2 G, Ex d IIC T6 (–50 ≤ Ta ≤ 65 °C) Ga/Gb, Ex d IIC T5 (–50 ≤ Ta ≤ 80 °C) Ga/Gb, Ⓔx II 1 D, Ex ta IIIC T50 °C T_{500}60 °C Da
CE1180

Process temp	Ambient temp	Temp class
-50 to 65	-50 to 65	T6
-50 to 80	-50 to 80	T5

Special Conditions for Safe Use (X):

1.) In case of repair, contact the manufacturer for information on the dimensions of the flameproof joints.

2.) 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.

3.) The capacitance of the wrap around label to the enclosure, 1.6E-9 F, exceeds the limit in Table 9 of IEC 60079-0. The user shall determine suitability for the specific application.

4.) Wait at least 5 minutes after powering down device before opening covers, when a hazardous atmosphere is present.

IECEx certifications

I7 IECEx Intrinsic Safety
Certification No.: IECEx BAS 09.0076X
Applicable Standards: IEC60079-0:2011, IEC 60079-11:2011
Markings: Ex ia IIC T4 Ga (-60 °C ≤ Ta ≤ 60 °C)

Table 19. Input parameters

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

Special Conditions for Safe Use (X):

1.) If the apparatus is fitted with an optional 90V transient suppressor, it is not capable of withstanding the 500V insulation test required by IEC 60079-11. This must be taken into account when installing the apparatus.

2.) The enclosure may be made of aluminum alloy and given a protective polyurethane paint finish; however, care should be taken to protect it from impact or abrasion if located in Zone 0.

E7 IECEx Flame-proof
Certification No.: IECEx KEM 09.0034X
Applicable Standards: IEC60079-0:2011, IEC60079-1:2007-04, IEC60079-26:2006,
Markings: Ex d IIC T5...T6 Ga/Gb, T5 (-50 °C ≤ Ta ≤ 80 °C)/T6 (-50 °C ≤ Ta ≤ 65 °C)

Process temp	Ambient temp	Temp class
-50 to 65	-50 to 65	T6
-50 to 80	-50 to 80	T5

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

3.) The capacitance of the wrap around label to the enclosure, 1.6E-9 F, exceeds the limit in Table 9 of IEC 60079-0. The user shall determine suitability for the specific application.

4.) Wait at least 5 minutes after powering down device before opening covers, when a hazardous atmosphere is present.

N7 IECEx Type 'n'
Certification No.: IECEx BAS 09.0077X
Applicable Standards: IEC60079-0:2011, IEC60079-15:2010
Markings: Ex nA IIC T5 Gc (-40 ≤ Ta ≤ 70 °C)

Special Condition for Safe Use (X):

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

TIIS certifications

E4 TIIS Flame-Proof
Ex d IIC T6

Certificate	Description
TC15852	3051C/D/1 FOUNDATION Fieldbus — no display
TC15853	3051C/D/1 FOUNDATION Fieldbus — with display
TC15858	3051T/G/1 FOUNDATION Fieldbus, SST, Silicon — no display
TC15859	3051T/G/1 FOUNDATION Fieldbus, Alloy C-276, Silicon — no display
TC15860	3051T/G/1 FOUNDATION Fieldbus, SST, Silicon — with display
TC15861	3051T/G/1 FOUNDATION Fieldbus, Alloy C-276, Silicon — with display

Inmetro certifications

E2 Flameproof
Certificate No: CEPEL 97.0073X (Mfg USA and Singapore)
Certificate No: CEPEL 07.1383X (Mfg Brazil)
Applicable Standards: IEC60079-0:2008, IEC60079-1:2009, IEC60079-26:2008, IEC60529:2009
Markings: Ex d IIC T6 Ga/Gb (-50 °C ≤ Ta ≤ +65 °C)
Ex d IIC T5 Ga/Gb (-50 °C ≤ Ta ≤ +80 °C)
IP66W

I2 Intrinsic Safety
Certificate No.: CEPEL 97.0072X (Mfg USA and Singapore)
Certificate No.: CEPEL 07.1412X (Mfg Brazil)
Applicable Standards: IEC60079-0:2008, IEC60079-11:2009, IEC60079-26:2008, IEC60529:2009
Markings: Ex ia IIC Ga T4 (-20 °C ≤ Ta ≤ +60 °C)
IP66W

Table 20. Input parameters

U_i = 30 V
I_i = 300 mA
P_i = 1.3 W
C_i = 0.012 µF
L_i = desprezivel

Special Condition for Safe Use (X):

See Certificate.

China certifications

E3 Flameproof
NEPSI Certificate No.: GYJ091065X
Applicable Standards: GB3836.1-2000, GB3836.4-2000,GB4208-1993, GB12476-2000
Markings: Ex d II C T5/T6, -50°C +80 °C (T5), -50 °C+65 °C (T6), DIP A21 TA T90°C, IP66

Special Condition for Safe Use (X):

Refer to Appendix B of Rosemount 3051 reference manual (00809-0100-4001).

I3 Intrinsic Safety
NEPSI Certificate No: GYJ091067X
Applicable Standards: GB3836.1-2000, GB3836.2-2000,GB4208-1993, GB12476-2000
Markings: Ex ia IIC T4 (-60 °C ≤+60 °C), DIP A20 TA T70 °C

Special Condition for Safe Use (X):

Refer to Appendix B of Rosemount 3051 reference manual (00809-0100-4001).

N3 China Type n - Non-Sparking
NEPSI Certificate No.: GYJ101111X
Applicable Standards: GB3836.1-2000, GB3836.8-2003
Markings: Ex nA nL IIC T5 (-40 °C ≤ TA < 70 °C)

Special Condition for Safe Use (X):
Refer to Appendix B of the Rosemount 3051 reference manual (00809-0100-4001).

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.

K5 – E5, I5

K6 – C6, E8, I1

K7 – E7, I7, N7

K8 – E8, I1, N1

KB – E5, I5, C6

KD – E5, I5, C6, E8, I1

K2 – I2, E2

IEC 62591 (WirelessHART Protocol)

Approved manufacturing locations

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

European directive information

The most recent revision of the EC declaration of conformity can be found at www.rosemount.com.

Telecommunication compliance

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

FCC and IC

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

Ordinary location certification 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).

North American certifications

Factory Mutual (FM) approvals

I5 FM Intrinsically Safe
Certificate No: 3045342
Applicable Standards: Class 3600:2011, Class 3610:2010, Class 3810: 2005
Markings: Intrinsically Safe for Class I, Division I, Groups A, B, C, D
Zone Marking: Class I Zone 0, AEx ia IIC
T4 (-40 °C to 70 °C)
Intrinsically Safe when installed according to Rosemount Drawing 03031-1062
Enclosure Type 4X/IP66/IP68

Special Conditions for Safe Use:

1.) The inline pressure sensor may contain more than 10% aluminum and is considered a potential risk of ignition by impact or friction. Care must be taken into account during installation and use to prevent impact and friction.

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

3.) The Model 3051 Wireless pressure Transmitter shall only be used with the 701PGNKF Rosemount Smartpower Battery Pack.

CSA - Canadian Standards Association

I6 CSA Intrinsically Safe
Certificate No: 2526009
Applicable Standards: CSA C22.2 No. 0-M91, CSA C22.2 No. 159-92
Markings: Intrinsically Safe For Class I, Division I, Groups A, B, C, D T4 (-40 °C to 70 °C)
Intrinsically safe when installed according to Rosemount drawing 03031-1063
Enclosure Type 4X/IP66/IP68

European certifications

I1 ATEX Intrinsic Safety
Certificate No: Baseefa12ATEX0228X
Applicable Standards: EN60079-11:2012, EN60079-0:2012
Markings: Ex ia IIC T4 Ga (-40 °C ≤ Ta ≤ 70 °C)
Ⓔx II 1G
IP66/68
CE 1180

Special Conditions for Safe Use (X):

The plastic enclosure may constitute a potential electrostatic ignition risk and must not be rubbed or cleaned with a dry cloth.

For use with Rosemount 701PGNKF only

I7 IECEx Intrinsic Safety
Certificate No: IECEx BAS 12.0124X
Applicable Standards: IEC60079-11:2011, IEC60079-0:2011
Markings: Ex ia IIC T4 Ga (-40 °C ≤ Ta ≤ 70 °C)
IP66/68

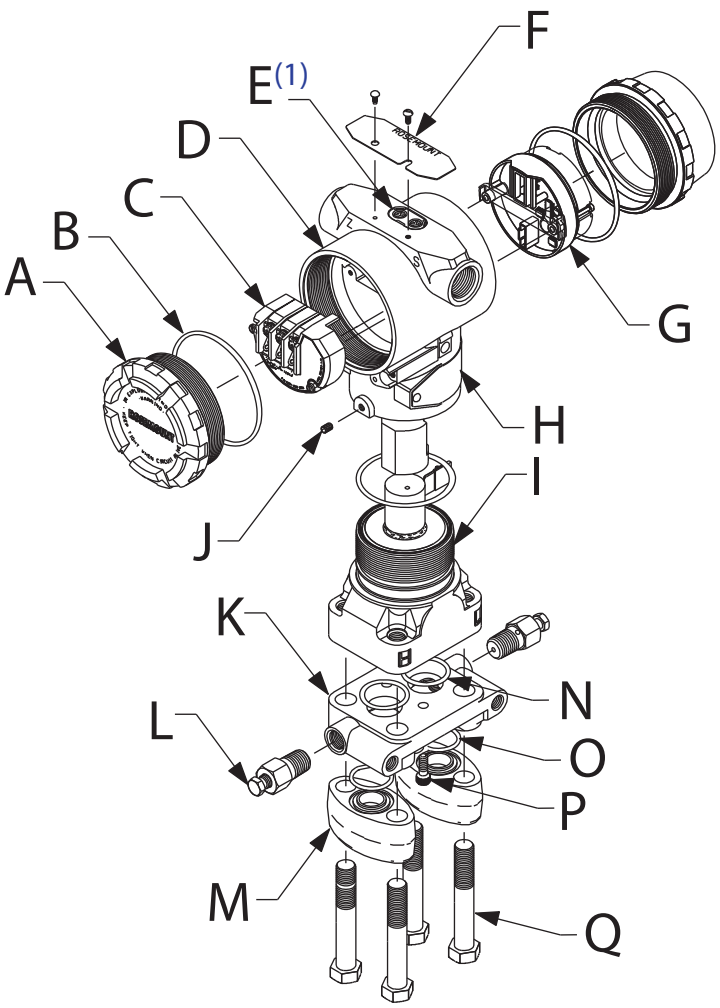
Special Conditions for Safe Use:

The plastic enclosure may constitute a potential electrostatic ignition risk and must not be rubbed or cleaned with a dry cloth.

For Use with Rosemount 701PGNKF only.

Standard 3051 dimensional drawings

Standard 3051C exploded view

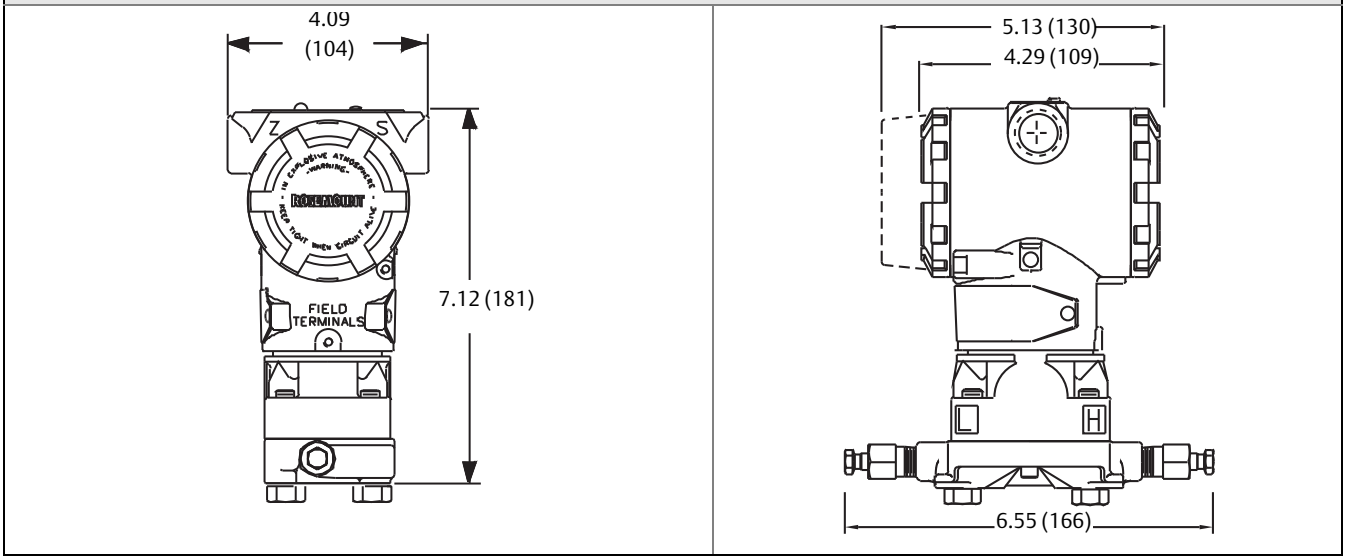


1) Span and Zero Adjustment Buttons are standard with 4-20 mA. Local Operator Interface buttons are optional for PROFIBUS PA protocol. Local Configuration Buttons are not available with FOUNDATION fieldbus.

Standard 3051C exploded view labels

A. Cover	G. Electronics Board	M. Flange Adapters
B. Cover O-ring	H. Name Plate	N. Process O-Ring
C. Terminal Block	I.Sensor Module	O. Flange Adapter O-Ring
D. Electronics Housing	J. Housing Rotation Set Screw (180 degree maximum rotation without further disassembly)	P. Flange Alignment Screw (not pressure retaining)
E. Local Configuration Buttons	K. Coplanar Flange	Q. Flange Bolts
F. Certification Label	L. Drain/Vent Valve	

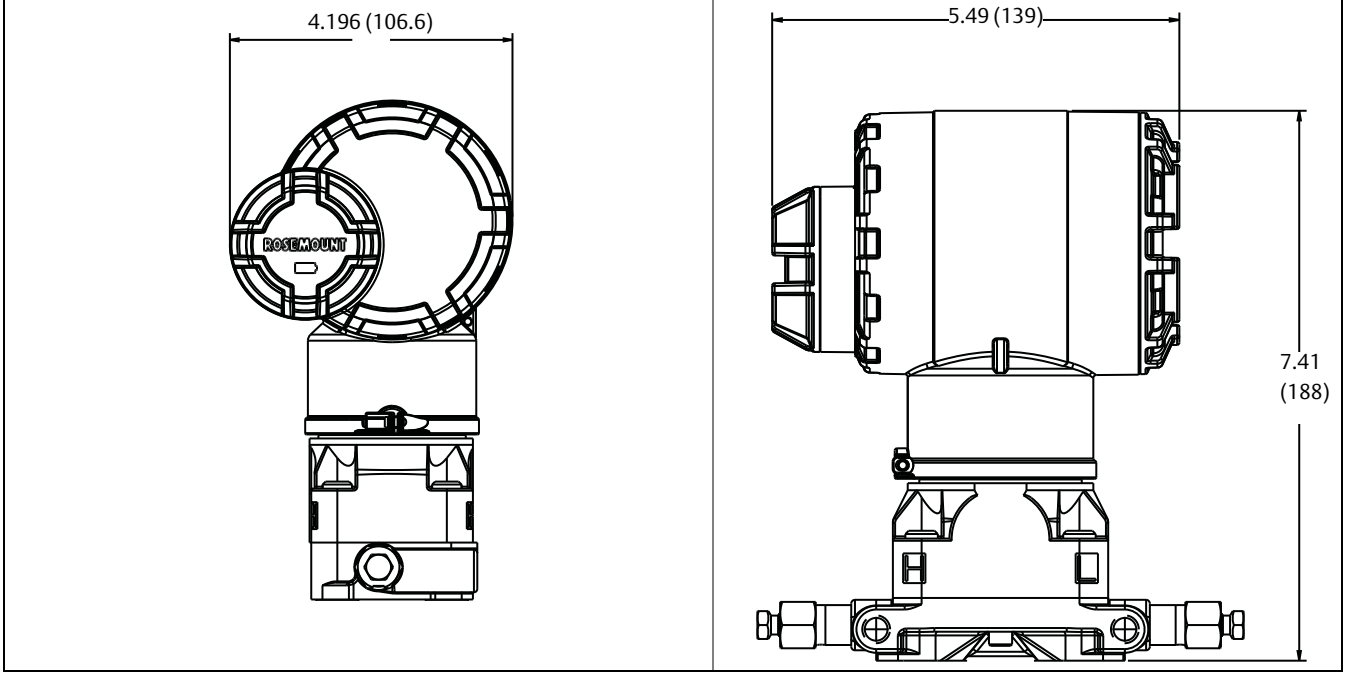
Standard 3051C Coplanar Flange(1)



Dimensions are in inches (millimeters).

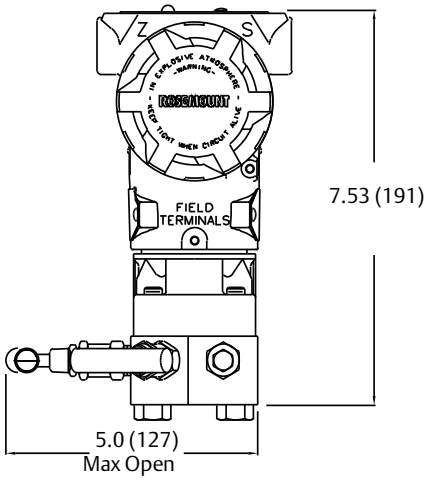
(1) For FOUNDATION fieldbus and PROFIBUS PA transmitters with LCD Display, housing length is 5.59 in. (142 mm).

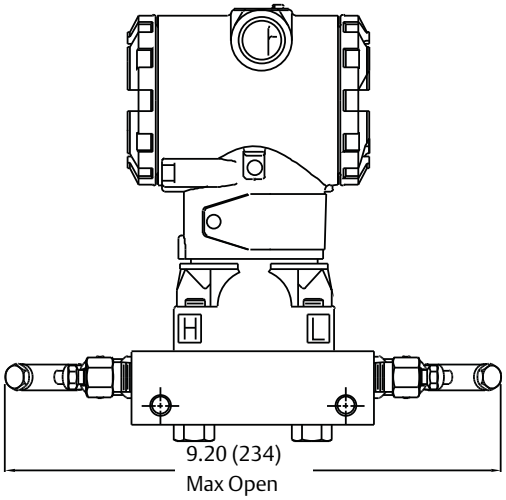
3051 Wireless housing with coplanar flange



Dimensions are in inches (millimeters).

Standard 3051C Coplanar Flange with Rosemount 305 3-Valve Coplanar Integral Manifold

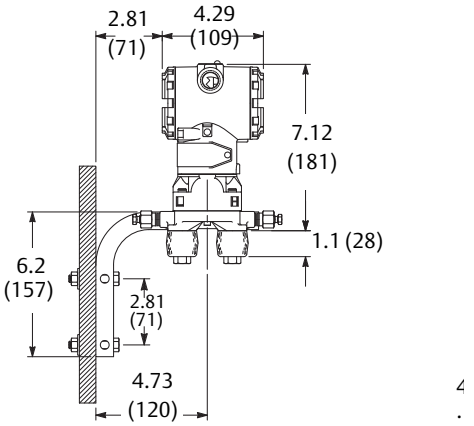


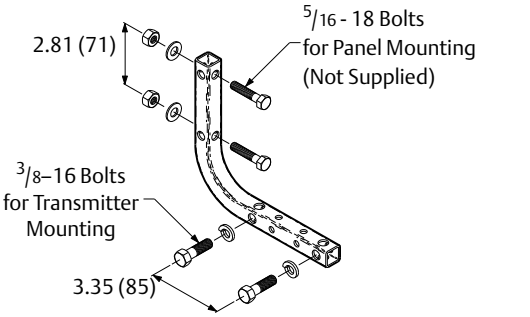


Dimensions are in inches (millimeters).

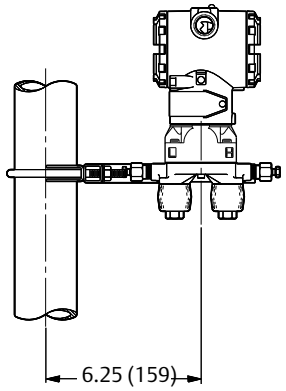
Coplanar flange mounting configurations with optional bracket (B4) for 2-in. pipe or panel mounting

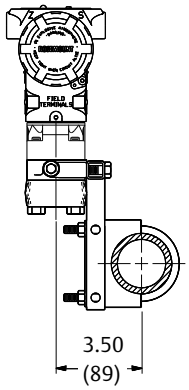
PANEL MOUNTING

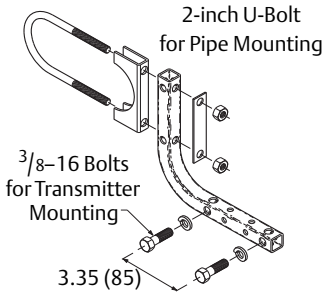




PIPE MOUNTING

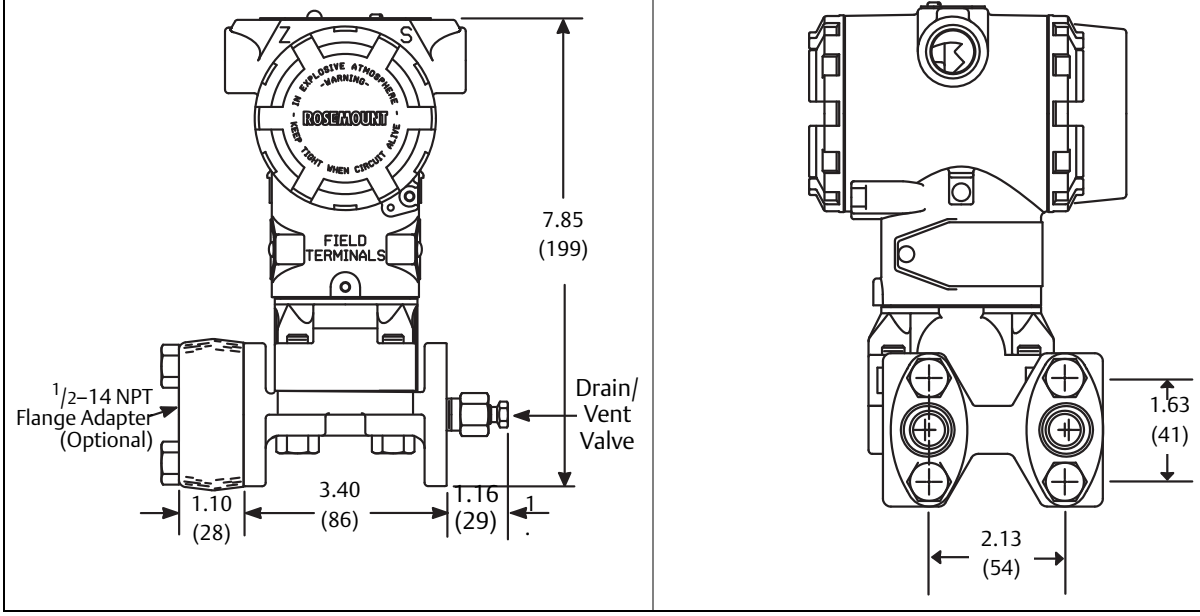






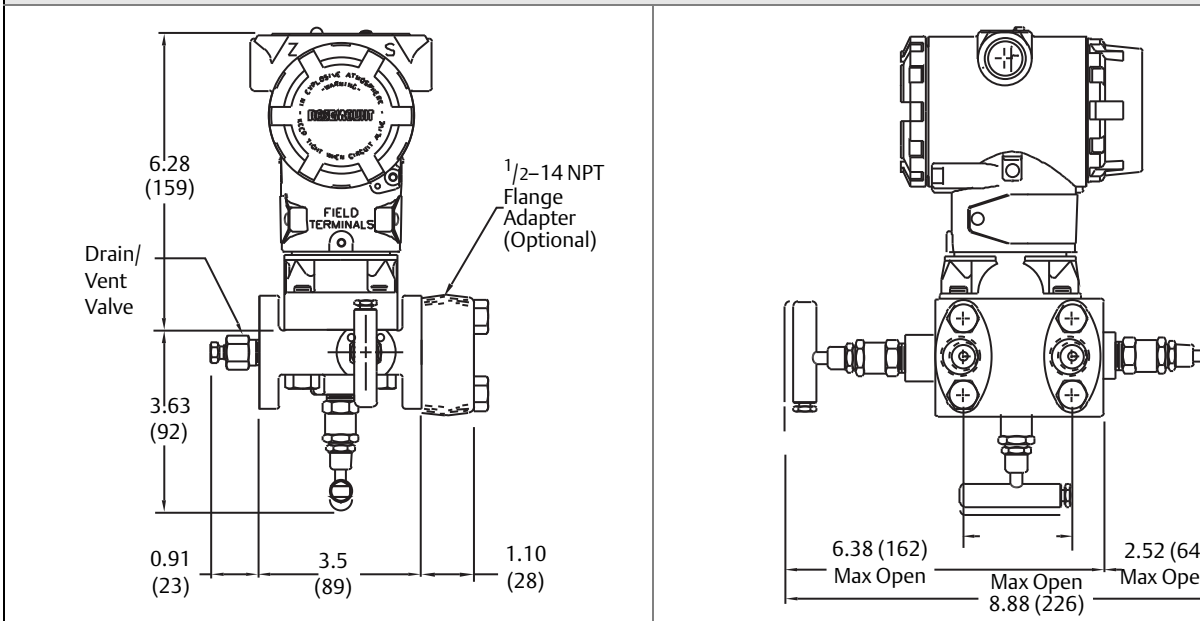
Dimensions are in inches (millimeters).

Standard 3051C Coplanar with traditional flange



Dimensions are in inches (millimeters).

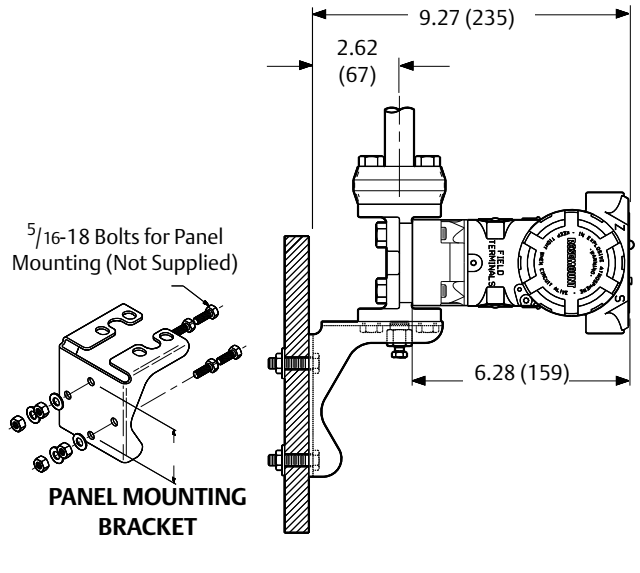
Standard 3051C Coplanar with Rosemount 305 3-Valve Traditional Integral Manifold



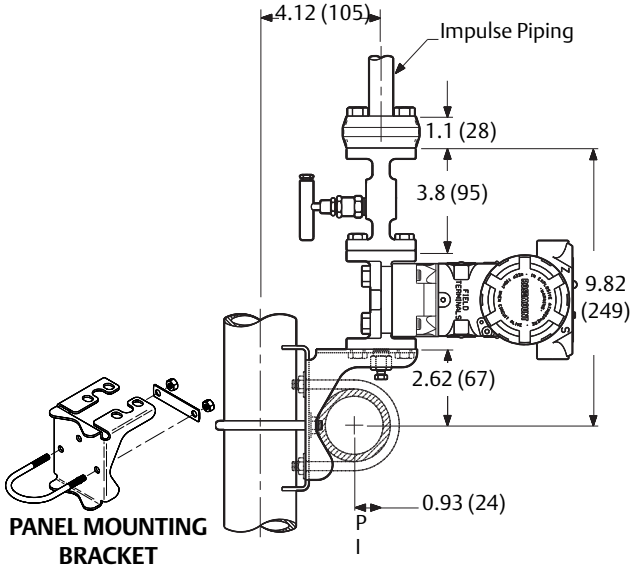
Dimensions are in inches (millimeters).

Traditional flange mounting configurations with optional brackets for 2-in. pipe or panel mounting

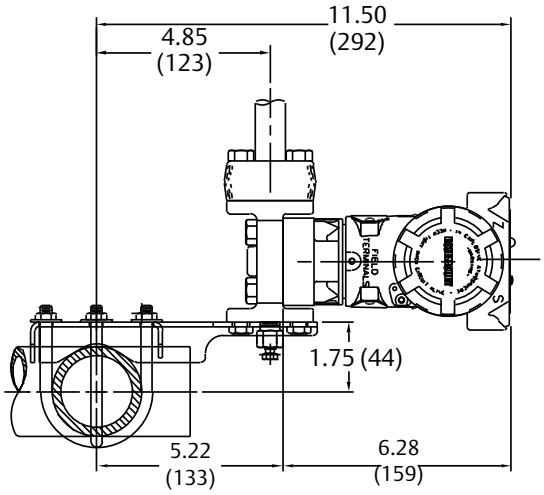
Panel mounting bracket (option B2/B8)



2-in. Pipe mounting bracket (option B1/B7/BA)

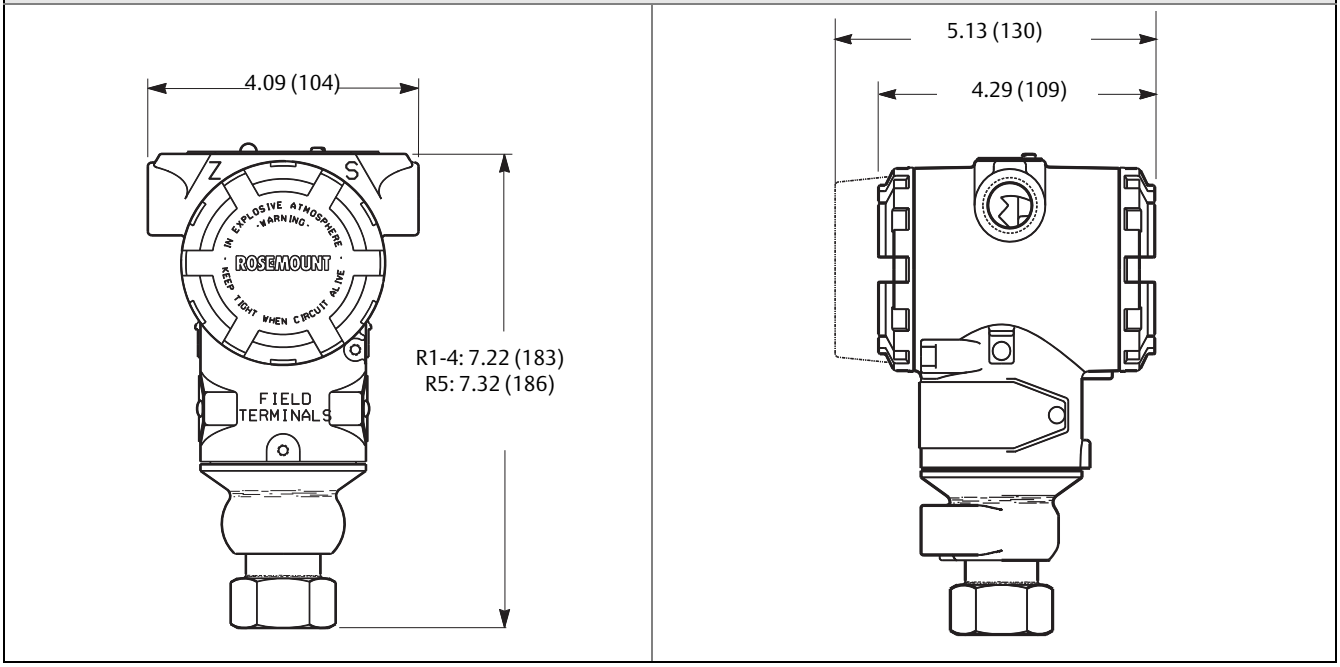


2-in. Pipe mounting bracket (option B3/B9/BC)



Dimensions are in inches (millimeters).

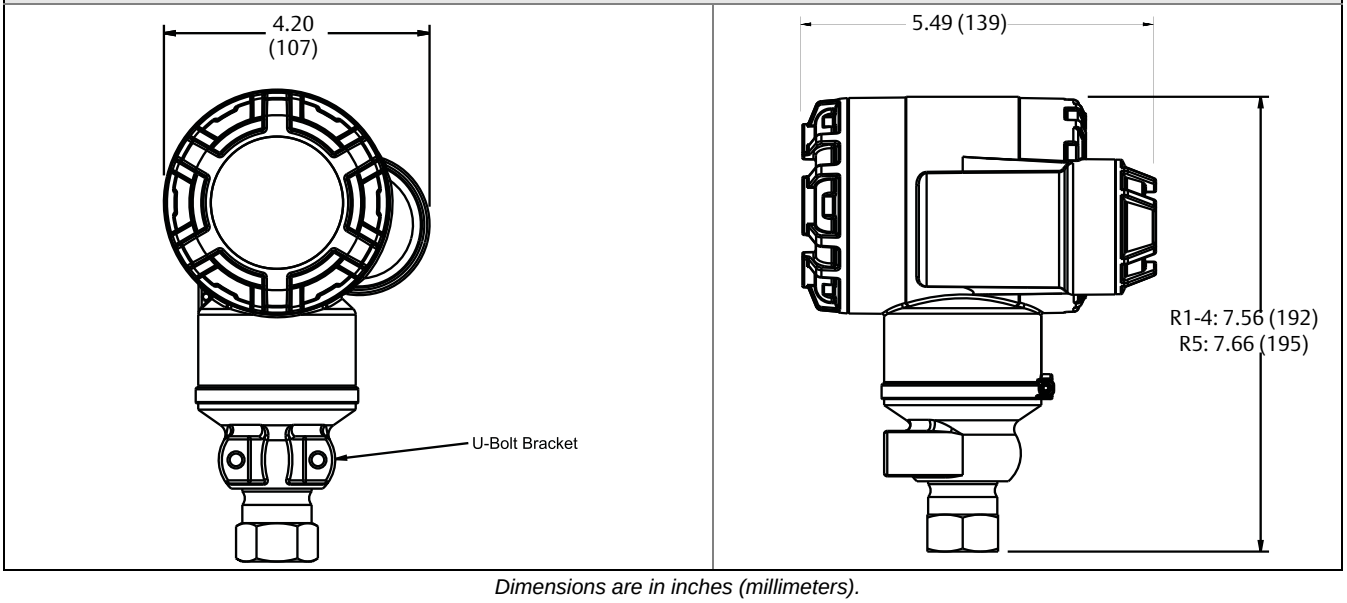
Standard 3051T dimensional drawings(1)



Dimensions are in inches (millimeters).

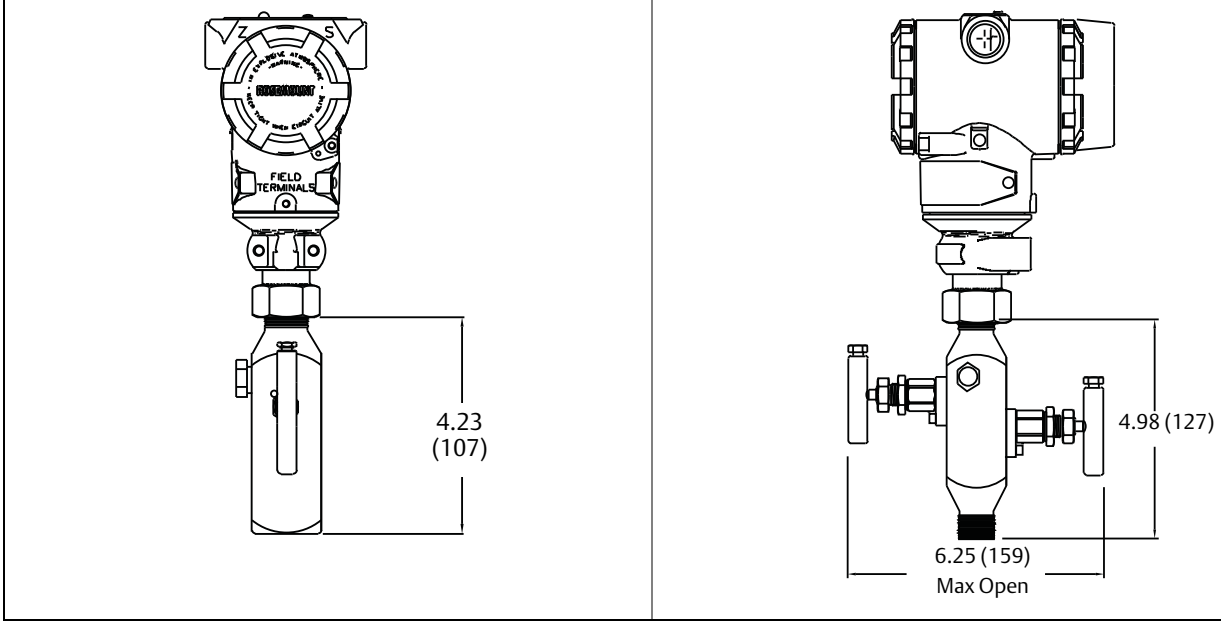
(1) For FOUNDATION fieldbus and PROFIBUS PA transmitters with LCD Display, housing length is 5.78 in. (146 mm).

3051T wireless housing dimensional drawings



Dimensions are in inches (millimeters).

Standard 3051T with Rosemount 306 2-Valve I Integral Manifold

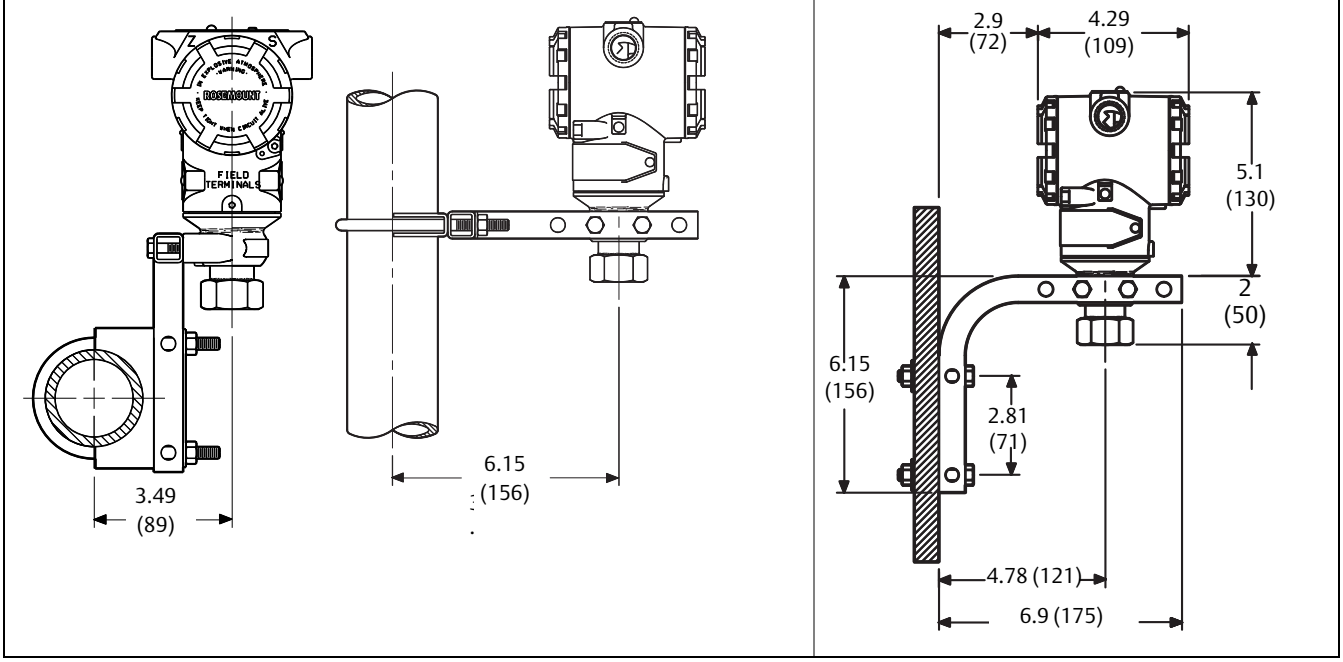


Dimensions are in inches (millimeters).

Standard 3051T typical mounting configurations with optional mounting bracket

Pipe mounting

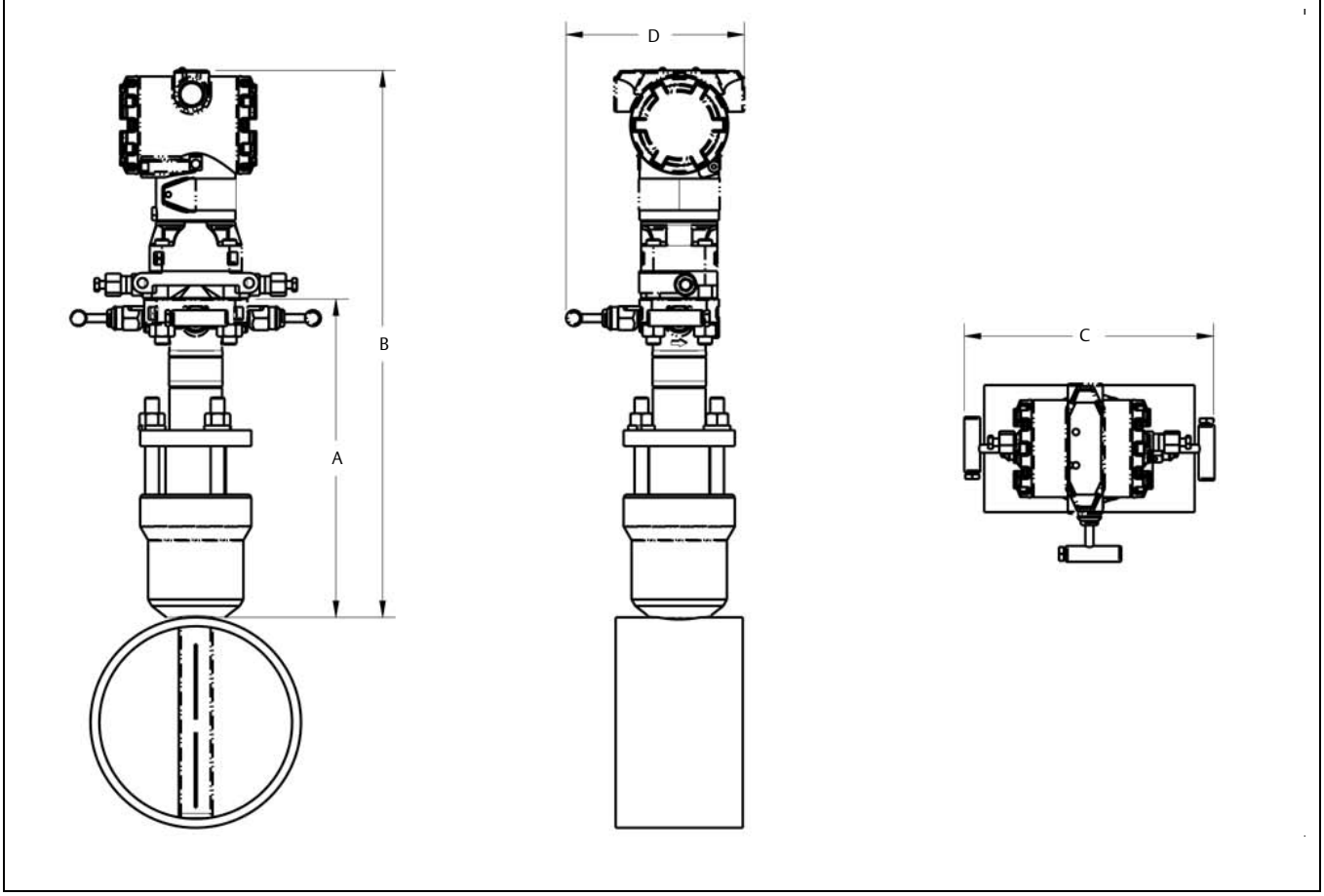
Panel mounting



Dimensions are in inches (millimeters).

Rosemount Standard 3051CFA Pak-Lok Annubar Flowmeter(1)

Front view	Side view	Top view



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

Table 21. Standard 3051CFA Pak-Lok Annubar Flowmeter dimensional data

Sensor size	A (Max)	B (Max)	C (Max)	D (Max)
1	8.50 (215.9)	7.1+8.5=15.6 (396.9)	9.00 (228.6)	6.00 (152.4)
2	11.0 (279.4)	7.1+11=18.1 (460.4)	9.00 (228.6)	6.00 (152.4)
3	12.00 (304.8)	7.1+12=19.1 (485.8)	9.00 (228.6)	6.00 (152.4)

Dimensions are in inches (millimeters).

Rosemount Standard 3051CFC Compact Orifice Flowmeter

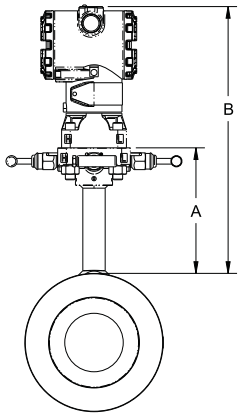
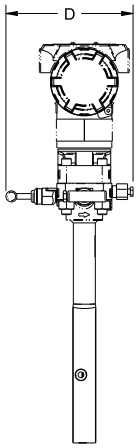
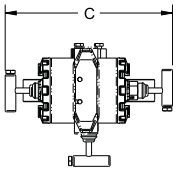
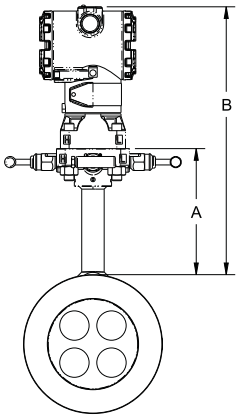
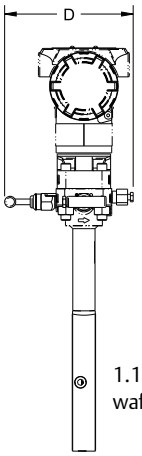
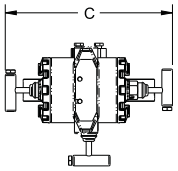
	Orifice Plate Side View	Orifice plate front view	Orifice plate top view
Compact orifice plate (Primary element type code P)			
Conditioning orifice plate (Primary element type code C)		 1.13-in. (28.7 mm) wafer thickness	

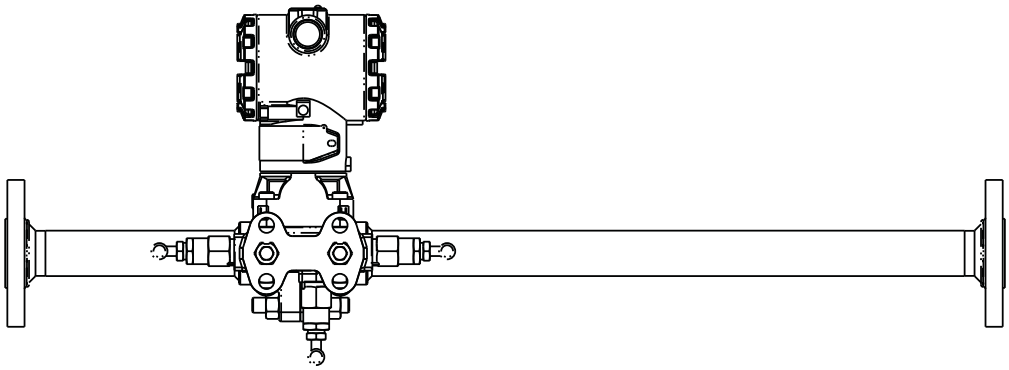
Table 22. Dimensional drawings

Primary element type	A	B	Transmitter height	C	D
Type P and C	5.62 (142.7)	Transmitter Height + A	6.55 (166)	8.06 (205) both closed min 8.82 (224) both open max	6.00 (152) - closed 6.25 (159) - open

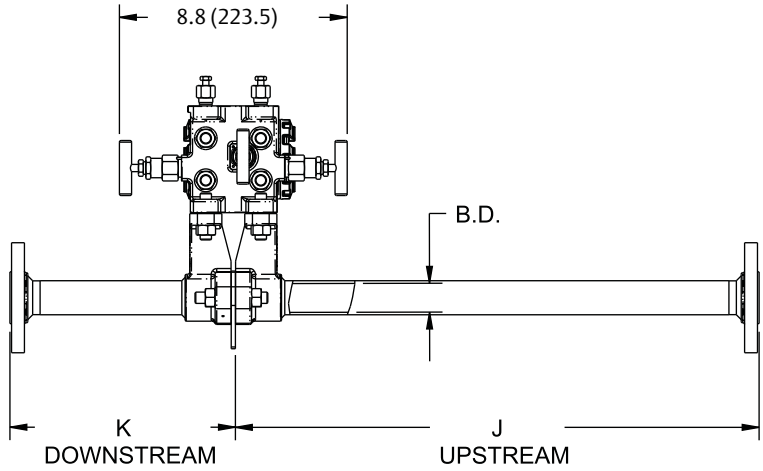
Dimensions are in inches (millimeters).

Rosemount Standard 3051CFP Integral Orifice Flowmeter

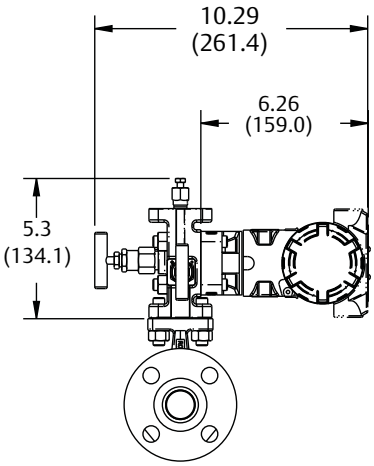
Side view



Bottom view



Front view



Dimensions are in inches (millimeters).

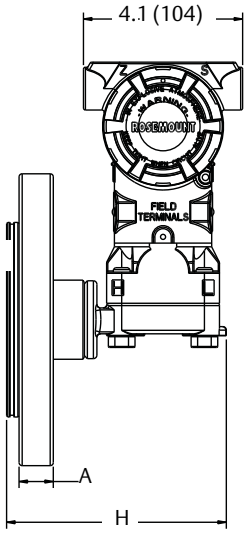
	Line size		
Dimension	**1/2-in. (15 mm)**	**1-in. (25 mm)**	**1 1/2-in. (40 mm)**
J (Beveled/Threaded pipe ends)	12.54 (318.4)	20.24 (514.0)	28.44 (722.4)
J (RF slip-on, RTJ slip-on, RF-DIN slip on)	12.62 (320.4)	20.32 (516.0)	28.52 (724.4)
J (RF 150#, weld neck)	14.37 (364.9)	22.37 (568.1)	30.82 (782.9)
J (RF 300#, weld neck)	14.56 (369.8)	22.63 (574.7)	31.06 (789.0)
J (RF 600#, weld neck)	14.81 (376.0)	22.88 (581.0)	31.38 (797.1)
K (Beveled/Threaded pipe ends)	5.74 (145.7)	8.75 (222.2)	11.91 (302.6)
K (RF slip-on, RTJ slip-on, RF-DIN slip on)(1)	5.82 (147.8)	8.83 (224.2)	11.99 (304.6)
K (RF 150#, weld neck)	7.57 (192.3)	10.88 (276.3)	14.29 (363.1)
K (RF 300#, weld neck)	7.76 (197.1)	11.14 (282.9)	14.53 (369.2)
K (RF 600#, weld neck)	8.01 (203.4)	11.39 (289.2)	14.85 (377.2)
B.D. (Bore Diameter)	0.664 (16.9)	1.097 (17.9)	1.567 (39.80)

Dimensions are in inches (millimeters).

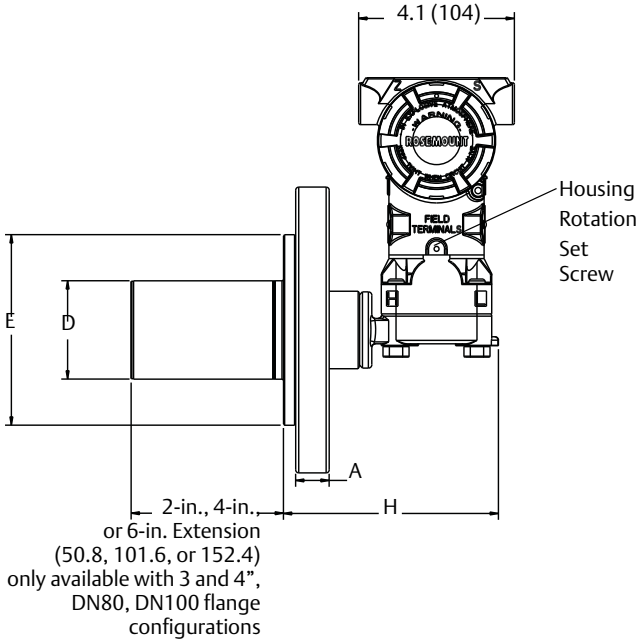
(1) Downstream length shown here includes plate thickness of 0.162-in. (4.11 mm).

Standard 3051L dimensional drawings

2-in. Flange configuring (flush mount only)



3- and 4-in. Flange configuration

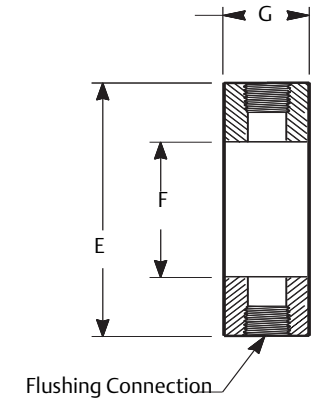


Dimensions are in inches (millimeters).

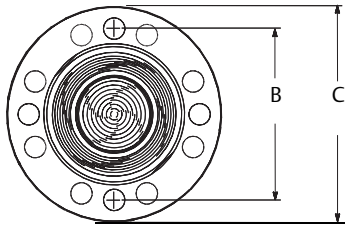
Standard 3051L dimensional drawings

2-in. Flange configuring (flush mount only)

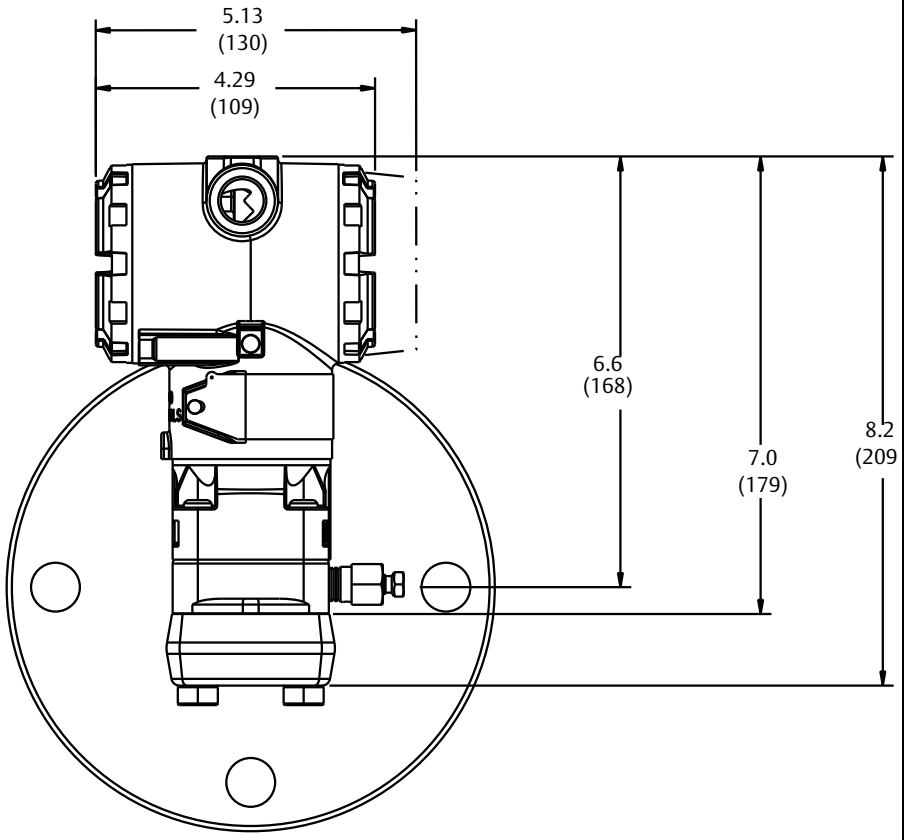
Optional flushing connection ring (lower housing)



Diaphragm assembly and mounting flange



3- and 4-in. Flange configuration



Dimensions are in inches (millimeters).

Table 23. 3051L Dimensional specifications

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

Dimensions are in inches (millimeters).

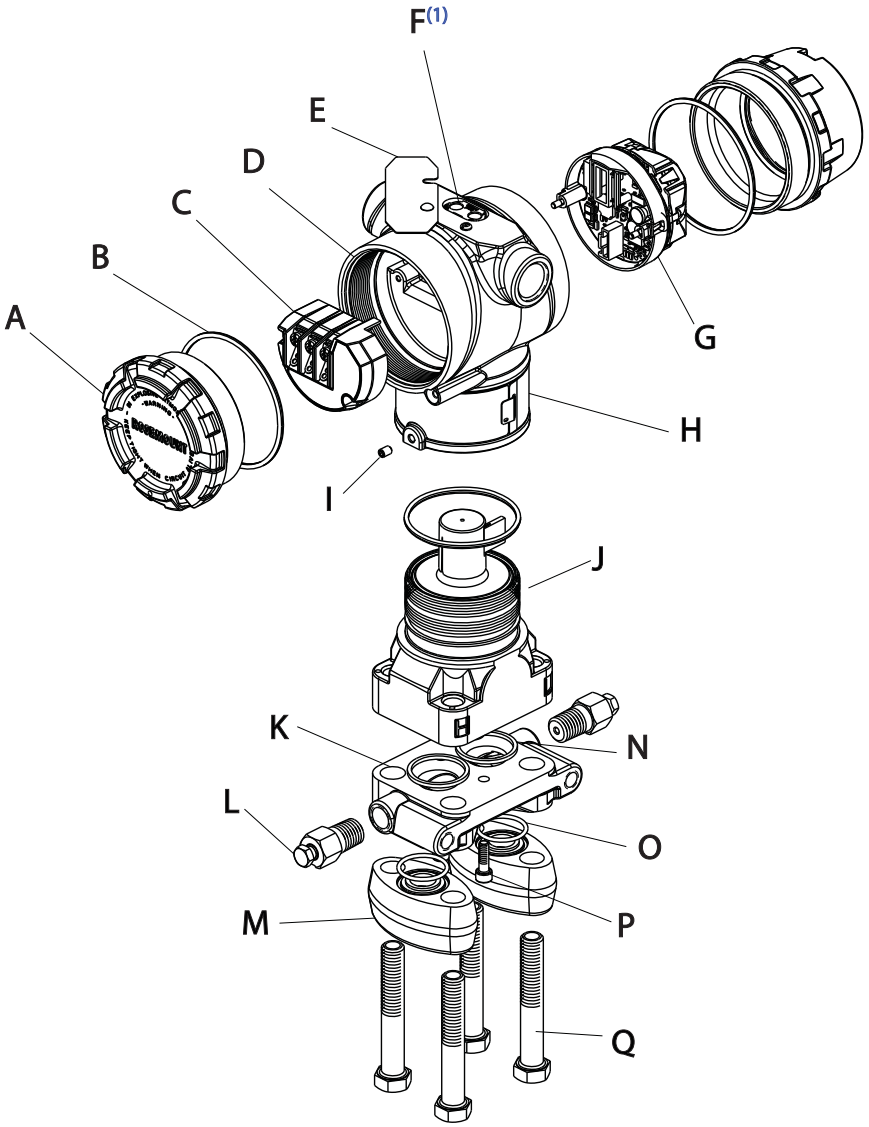
(1) Tolerance is 0.040 (1.02), - 0.020 (0.51).

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

(1) Tolerance is0.040 (1.02), –0.020 (0.51).

Enhanced 3051 dimensional drawings

Enhanced 3051C exploded view

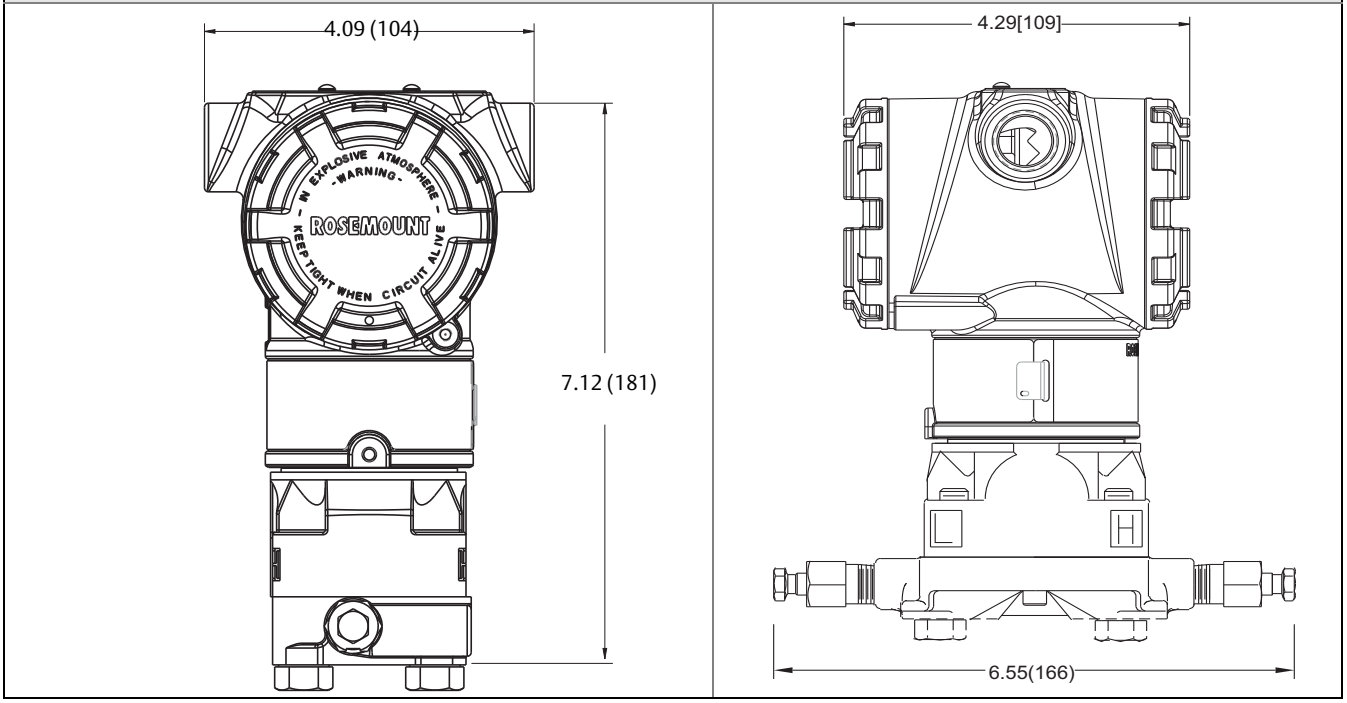


1) Local Configuration Buttons are optional on the enhanced 3051, and can be ordered as Analog Zero and Span, Digital Zero or LOI buttons.

Enhanced 3051C exploded view labels

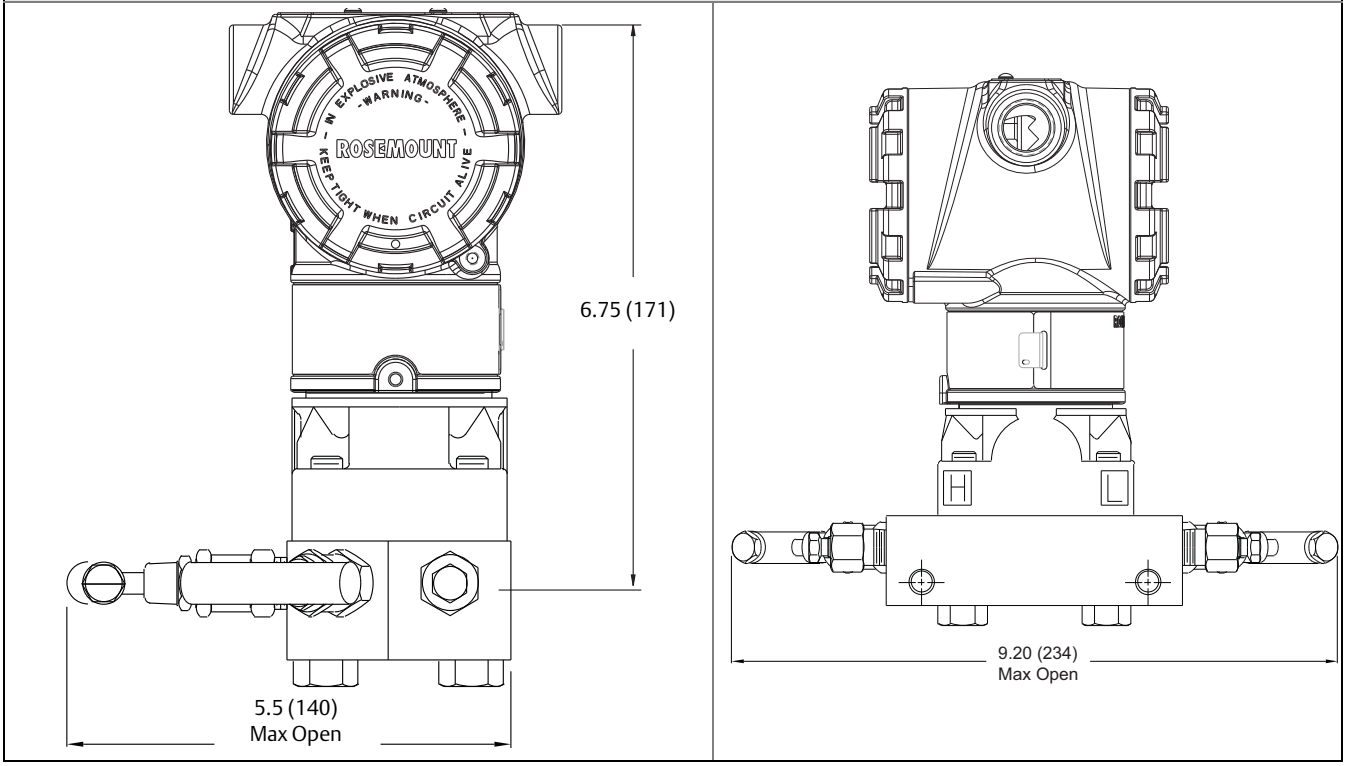
A. Cover
B. Cover O-ring
C. Terminal Block
D. Electronics Housing
E. Configuration Buttons Cover
F. Local Configuration Buttons
G. Electronics Board
H. Name Plate
I. Housing Rotation Set Screw (180 degree maximum rotation without further disassembly)
J. Sensor Module
K. Coplanar Flange
L. Drain/Vent Valve
M. Flange Adapters
N. Process O-Ring
O. Flange Adapter O-Ring
P. Flange Alignment Screw (not pressure retaining)
Q. Flange Bolts

Enhanced 3051C Coplanar Flange



Dimensions are in inches (millimeters).

Enhanced 3051C Coplanar Flange with Rosemount 305 3-Valve Coplanar Integral Manifold

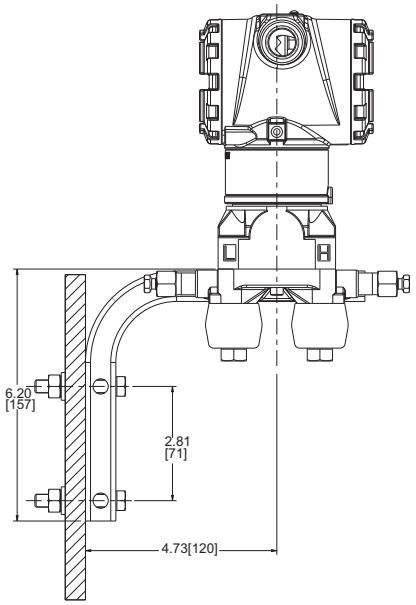


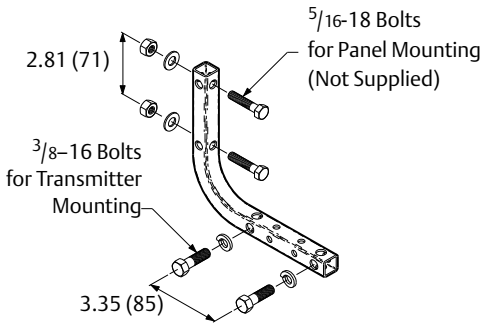
Dimensions are in inches (millimeters).

Coplanar Flange mounting configurations with optional bracket (B4) for 2-in. pipe or panel mounting

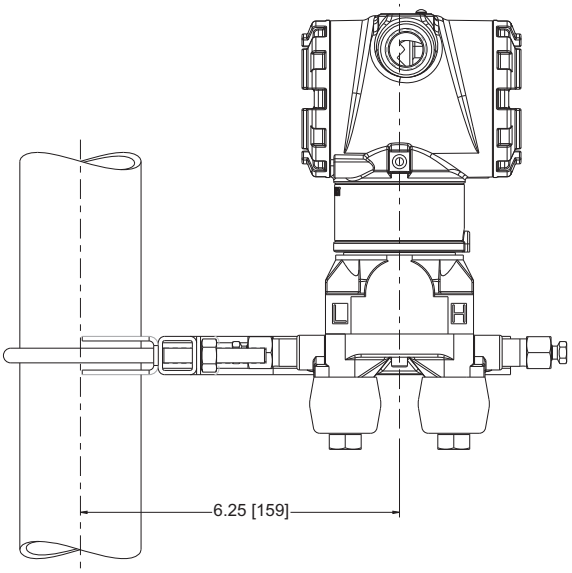
Panel mounting

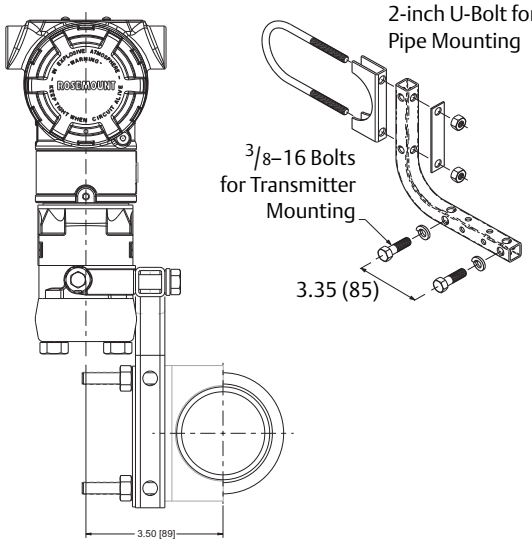
PANEL MOUNTING





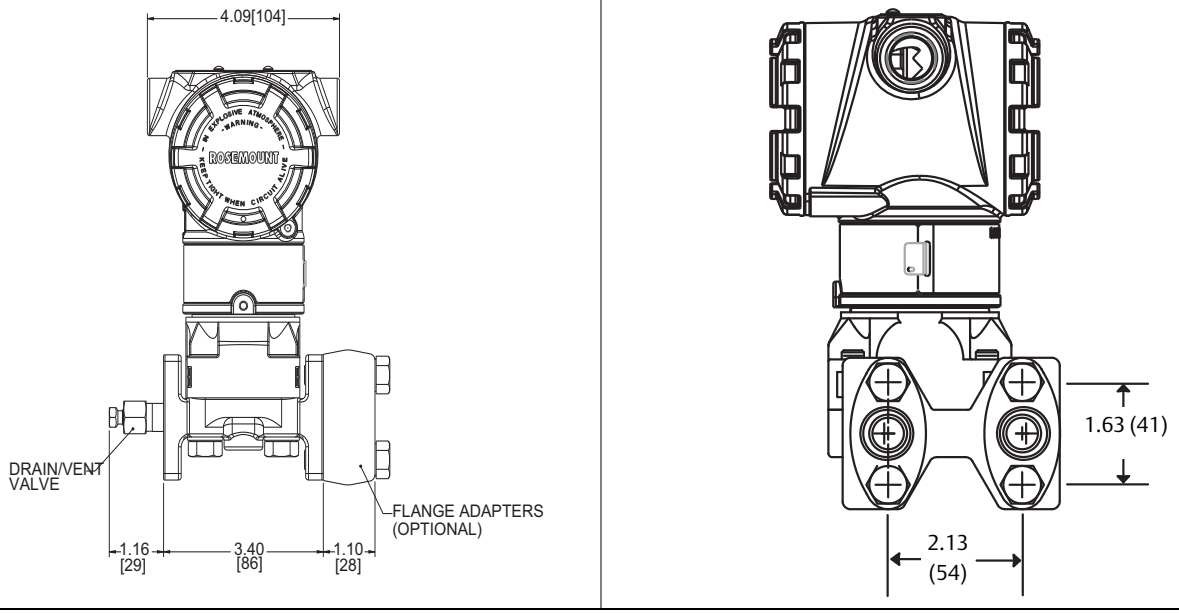
Pipe mounting





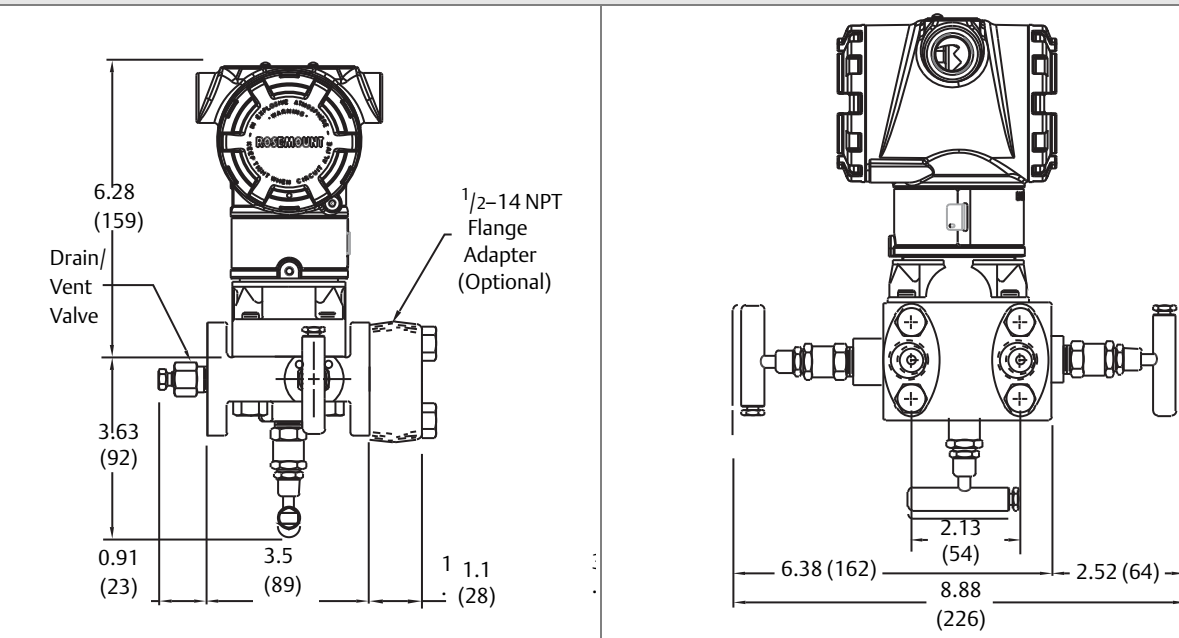
Dimensions are in inches (millimeters).

Enhanced 3051C Coplanar with traditional flange



Dimensions are in inches (millimeters).

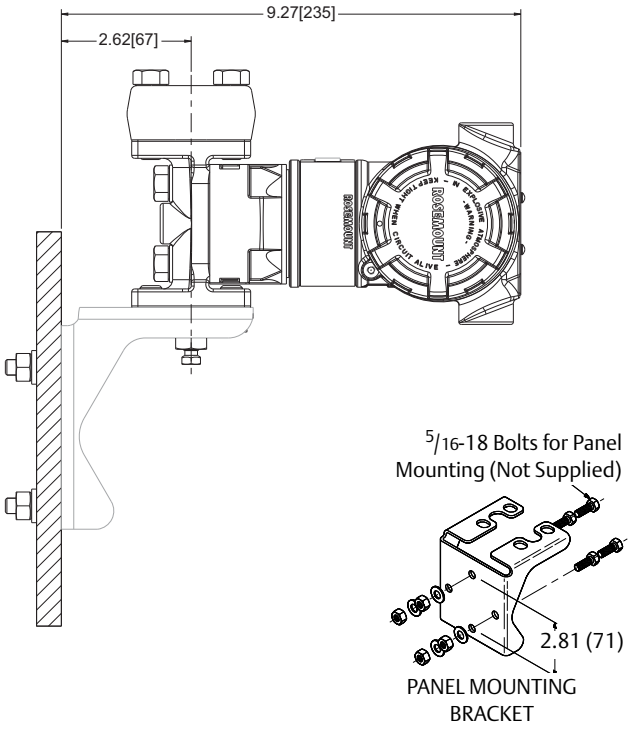
Enhanced 3051C Coplanar with Rosemount 305 3-Valve Traditional Integral Manifold



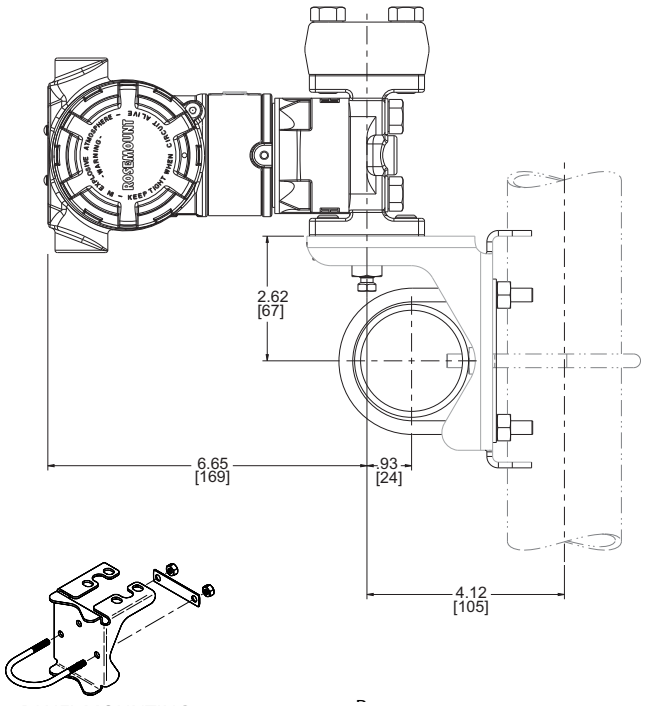
Dimensions are in inches (millimeters).

Traditional flange mounting configurations with optional brackets for 2-in. pipe or panel mounting

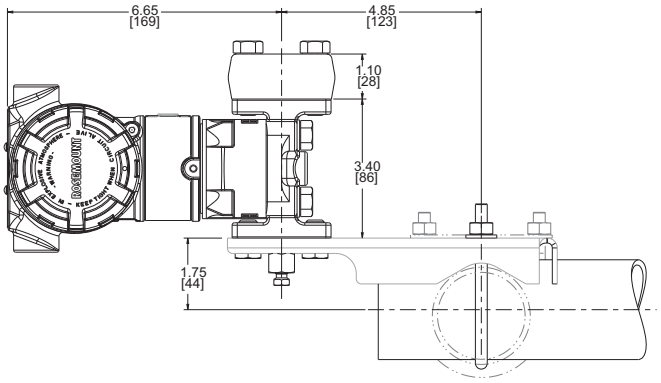
Panel mounting bracket (option B2/B8)



2-in. Pipe mounting bracket (option B1/B7/BA)

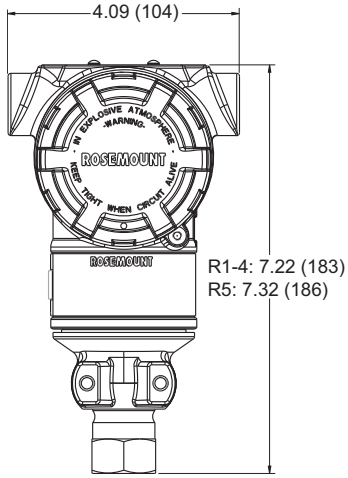


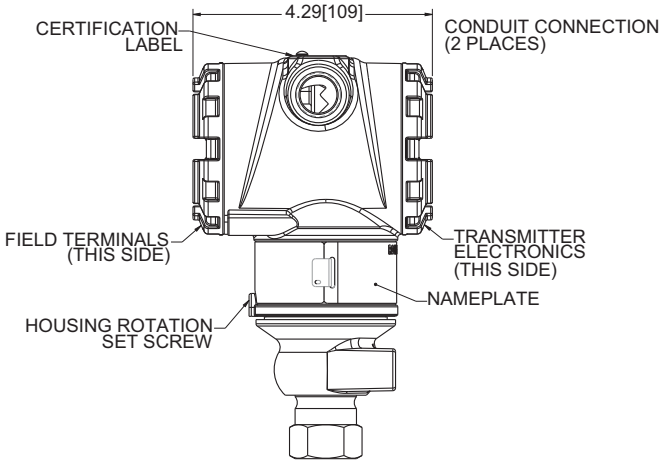
2-in. Pipe mounting bracket (option B3/B9/BC)



Dimensions are in inches (millimeters).

Enhanced 3051T dimensional drawings





Dimensions are in inches (millimeters).

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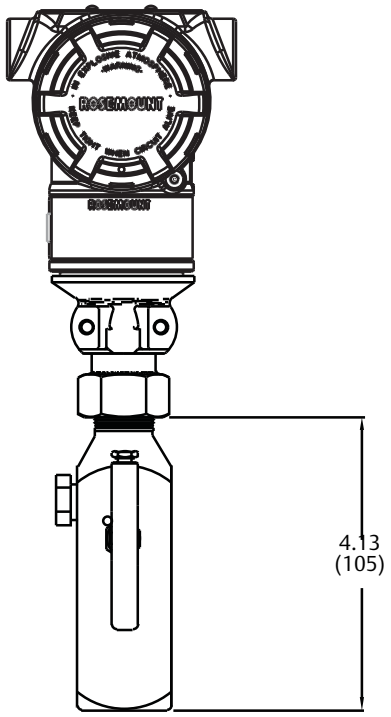
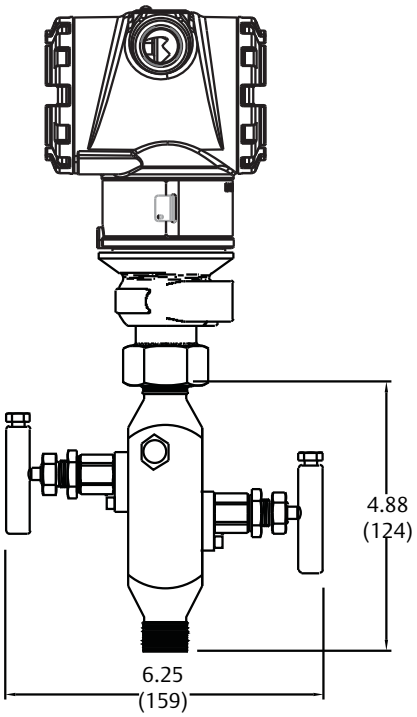
Enhanced 3051T with Rosemount 306 2-Valve I Integral Manifold

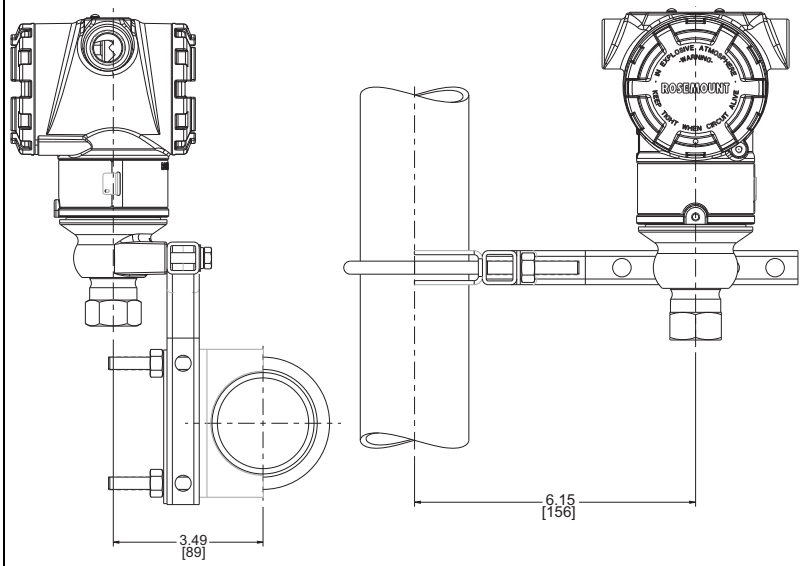




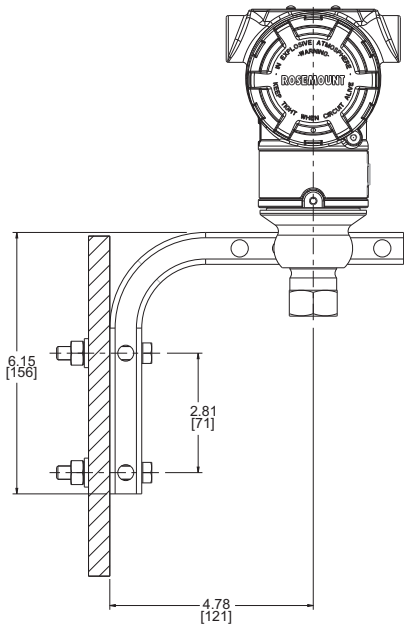
Dimensions are in inches (millimeters).

Enhanced 3051T typical mounting configurations with optional mounting bracket

Pipe mounting

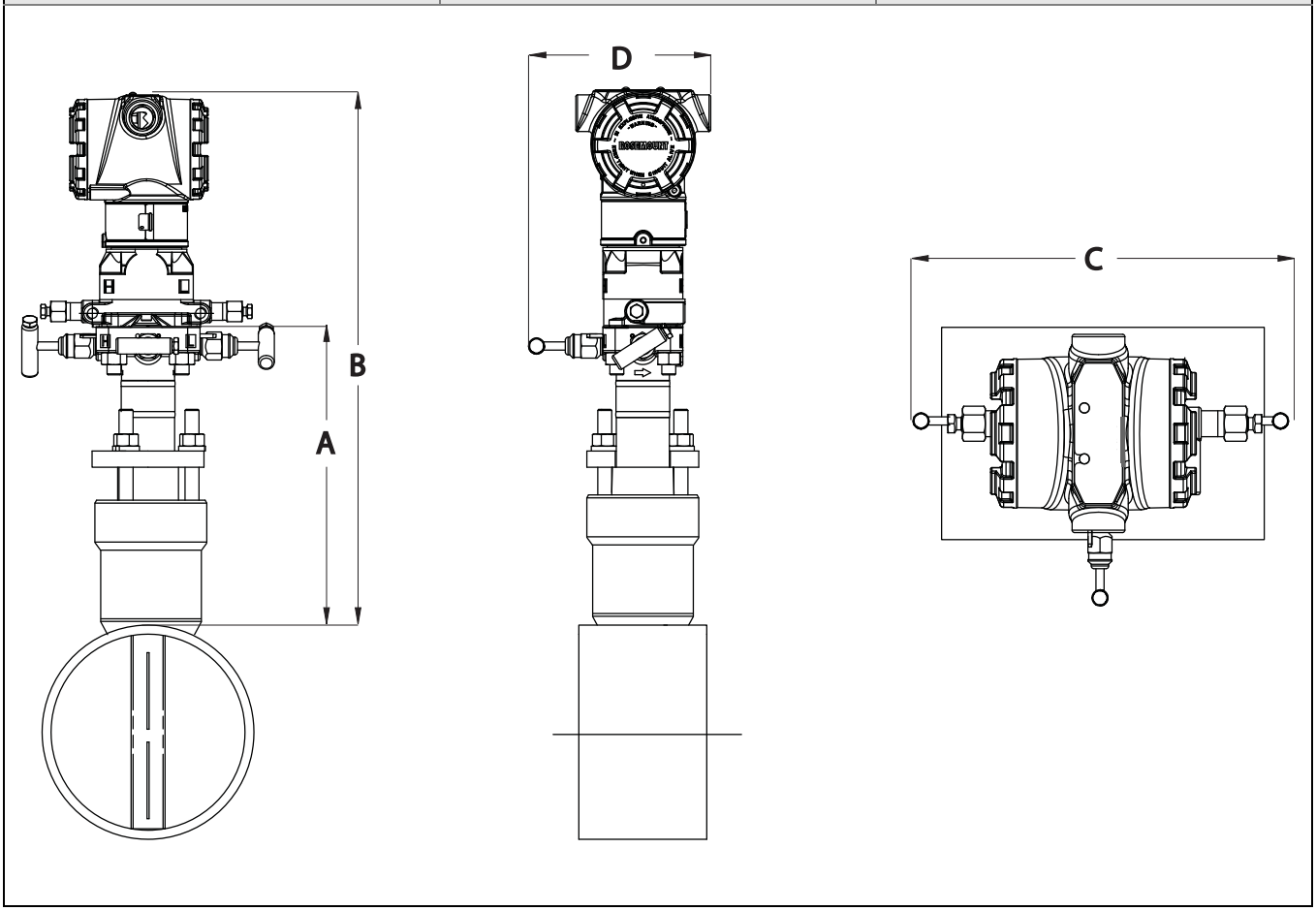


Panel mounting



Dimensions are in inches (millimeters).

Rosemount Enhanced 3051CFA Pak-Lok Annubar Flowmeter(1)



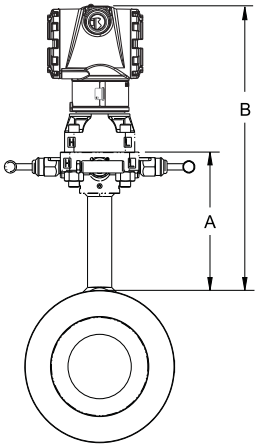
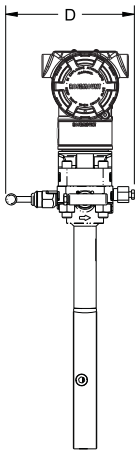
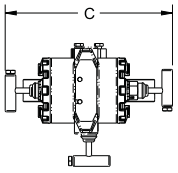
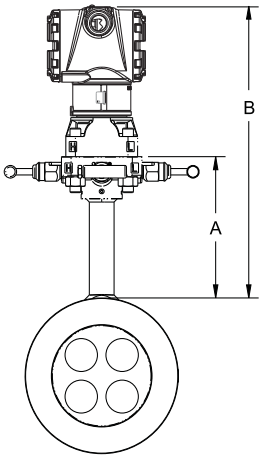
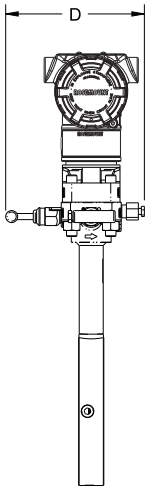
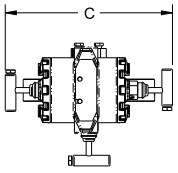
(1) The Pak-Lok Annubar model is available up to 600# ANSI (1440 psig at 100 °F (99 bar at 38 °C)).

Table 24. Enhanced 3051CFA Pak-Lok Annubar Flowmeter dimensional data

Sensor size	A (Max)	B (Max)	C (Max)	D (Max)
1	8.50 (215.9)	7.1+8.5=15.6 (396.9)	9.00 (228.6)	6.00 (152.4)
2	11.0 (279.4)	7.1+11=18.1 (460.4)	9.00 (228.6)	6.00 (152.4)
3	12.00 (304.8)	7.1+12=19.1 (485.8)	9.00 (228.6)	6.00 (152.4)

Dimensions are in inches (millimeters).

Rosemount Enhanced 3051CFC Compact Orifice Flowmeter

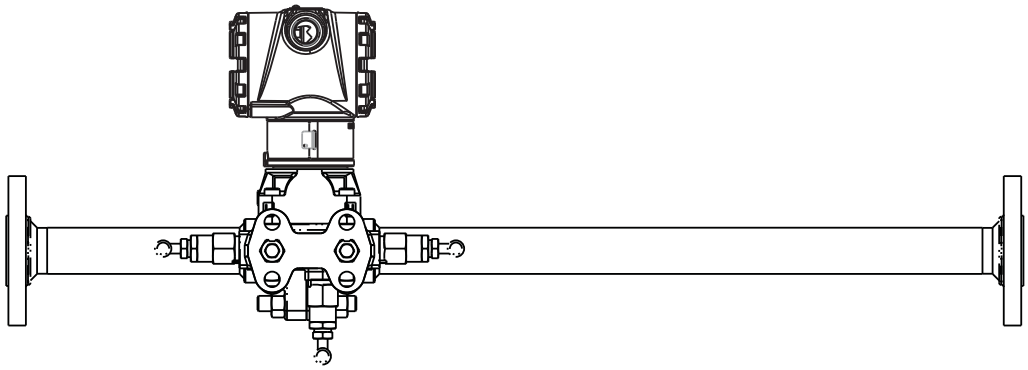
	Orifice plate side view	Orifice plate front view	Orifice plate top view
Compact orifice plate (Primary element type code P)			
Conditioning orifice plate (Primary element type code C)			

Primary element type	A	B	Transmitter height	C	D
Type P and C	5.62 (143)	Transmitter Height + A	6.27 (159)	7.75 (197) - closed 8.25 (210) - open	6.00 (152) - closed 6.25 (159) - open

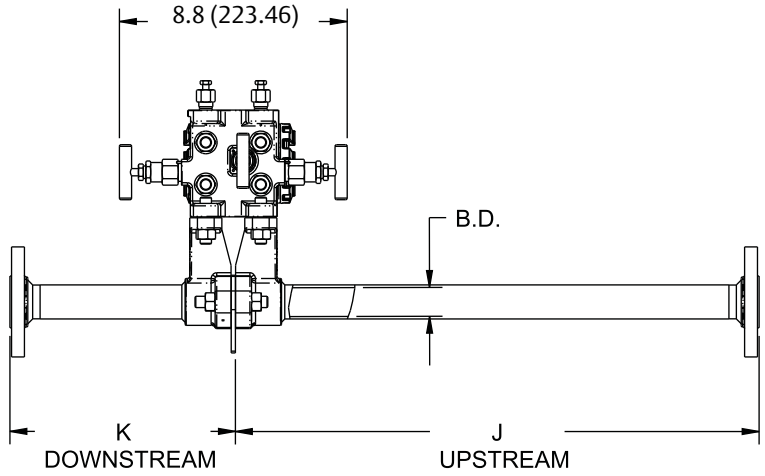
Dimensions are in inches (millimeters).

Rosemount Enhanced 3051CFP Integral Orifice Flowmeter

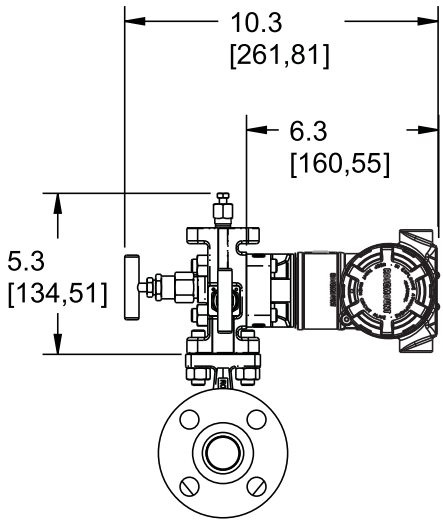
Side view



Bottom view



Front view



Dimensions are in inches (millimeters).

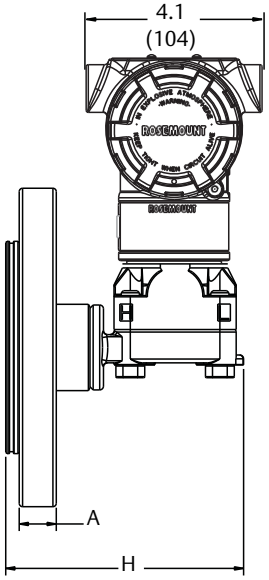
	Line size		
Dimension	**1/2-in. (15 mm)**	**1-in. (25 mm)**	**1 1/2-in. (40 mm)**
J (Beveled/Threaded pipe ends)	12.54 (318.4)	20.24 (514.0)	28.44 (722.4)
J (RF slip-on, RTJ slip-on, RF-DIN slip on)	12.62 (320.4)	20.32 (516.0)	28.52 (724.4)
J (RF 150#, weld neck)	14.37 (364.9)	22.37 (568.1)	30.82 (782.9)
J (RF 300#, weld neck)	14.56 (369.8)	22.63 (574.7)	31.06 (789.0)
J (RF 600#, weld neck)	14.81 (376.0)	22.88 (581.0)	31.38 (797.1)
K (Beveled/Threaded pipe ends)	5.74 (145.7)	8.75 (222.2)	11.91 (302.6)
K (RF slip-on, RTJ slip-on, RF-DIN slip on)(1)	5.82 (147.8)	8.83 (224.2)	11.99 (304.6)
K (RF 150#, weld neck)	7.57 (192.3)	10.88 (276.3)	14.29 (363.1)
K (RF 300#, weld neck)	7.76 (197.1)	11.14 (282.9)	14.53 (369.2)
K (RF 600#, weld neck)	8.01 (203.4)	11.39 (289.2)	14.85 (377.2)
B.D. (Bore Diameter)	0.664 (16.87)	1.097 (27.86)	1.567 (39.80)

Dimensions are in inches (millimeters).

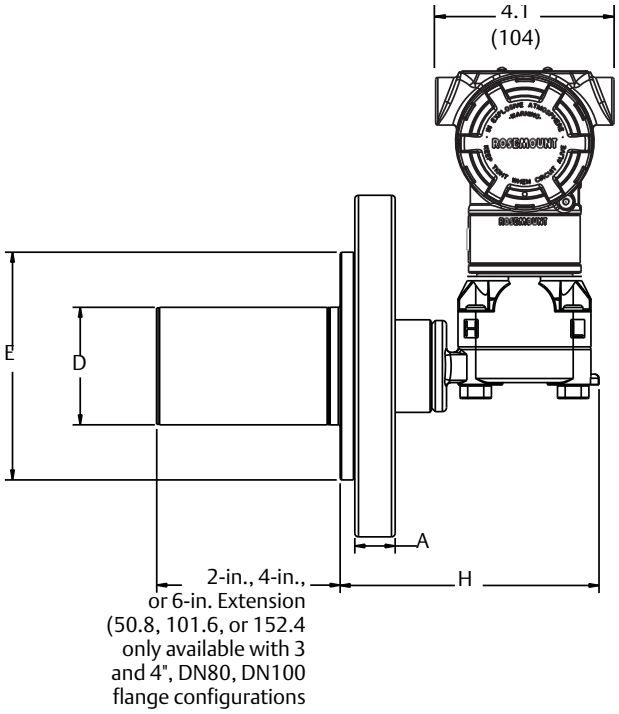
(1) Downstream length shown here includes plate thickness of 0.162-in. (4.11 mm).

Enhanced 3051L dimensional drawings

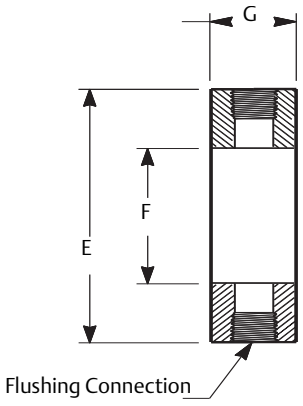
2-in. Flange configuring (flush mount only)



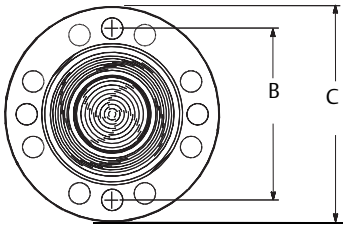
3- and 4-in. Flange configuration

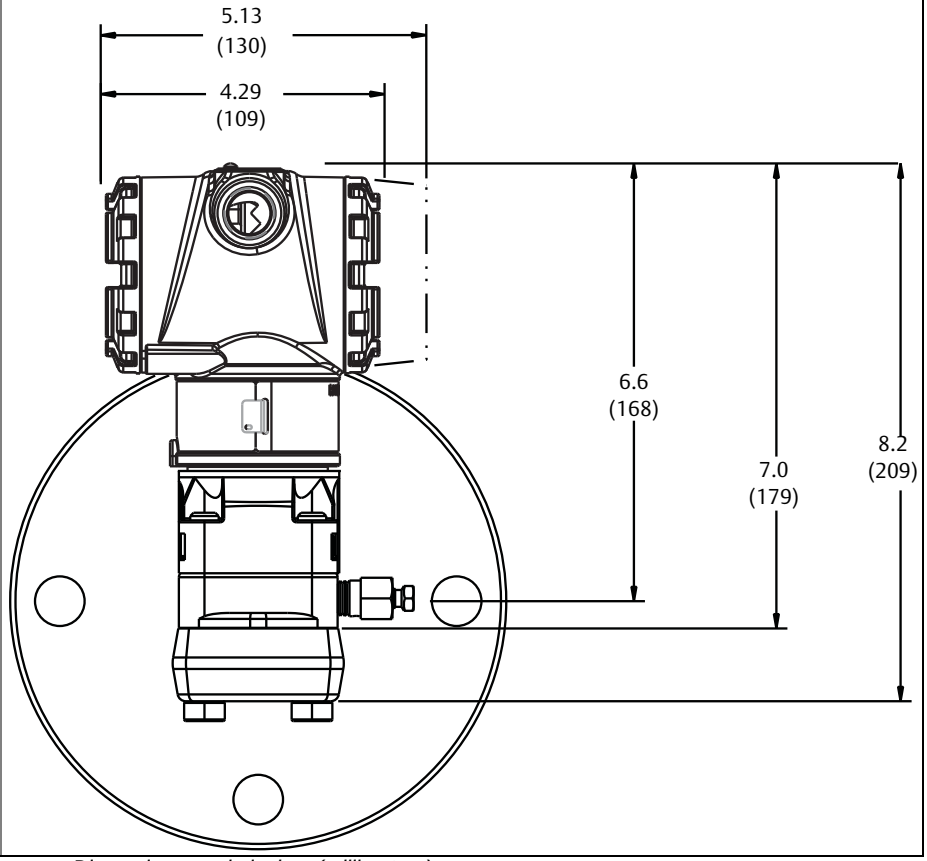


Optional flushing connection ring (lower housing)



Diaphragm assembly and mounting flange





Dimensions are in inches (millimeters).

Table 25. 3051L dimensional specifications

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

Dimensions are in inches (millimeters).

(1) Tolerance is 0.040 (1.02), - 0.020 (0.51).

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

(1) Tolerance is 0.040 (1.02), –0.020 (0.51).

Options

Standard configuration

Unless otherwise specified, transmitter is shipped as follows:

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

(1) Not applicable to FOUNDATION fieldbus, PROFIBUS PA, or wireless.

Custom configuration[(1)]

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

- Output Information
- Transmitter Information
- LCD Display Configuration
- Hardware Selectable Information
- Signal Selection
- Wireless Information
- Scaled Variable
- and more

Refer to the "Rosemount 3051 Configuration Data Sheet" document number 00806-0100-4007 for enhanced 3051, or 00806-0100-4001 for 3051.
For Wireless refer to the "Rosemount 3051 Wireless Configuration Data Sheet" document number 00806-0100-4100.

Tagging (3 options available)

- Standard SST hardware tag is wired to the transmitter. Tag character height is 0.125 in. (3,18 mm), 56 characters maximum.
- Tag may be permanently stamped on transmitter nameplate upon request, 56 characters maximum.
- Tag may be stored in transmitter memory. Character limit is dependent on protocol.
  - HART Revision 5: 8 characters
  - HART Revision 7 and Wireless: 32 characters
  - FOUNDATION fieldbus: 32 characters
  - PROFIBUS PA: 32 characters

Commissioning tag[(2)]

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

(1) Not applicable to FOUNDATION fieldbus or PROFIBUS PA protocols.

(2) Only applicable to FOUNDATION fieldbus.

Optional Rosemount 304, 305 or 306 Integral Manifolds

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

Other seals

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

Output information

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

Pressure			
atm	inH_2O@4 °C[(1)]	g/cm^2	psi
mbar	mmH_2O	kg/cm^2	torr
bar	mmHg	Pa	cmH_2O@4 °C[(1)]
inH_20	mmH_2O@4 °C[(1)]	kPa	cmH_2O@0 °C[(1)]
inHg	ftH_20	MPa[(1)(2)]	cmH_2O@60 °F[(1)]
hPa[(1)]	inH_2O@60 °F[(1)]	kg/SqM[(1)]	mH_2O@4 °F[(1)]
mHg@0 °C[(1)]	Psf[(1)]	ftH_2O@4 °C[(1)]	
Flow[(2)] [(3)]			
bbl	kg	cm^3	
ft^3	lb	m^3	
gal	L	ton	
Level[(3)]			
%	ft	cm	
in	mm		

(1) Available with enhanced 3051 and Wireless. Field configurable only, not available for factory calibration or custom configuration (option code C1 "Software configuration").

(2) Available on PROFIBUS PA.

(3) All flow units are available per second, minute, hour or day.

Display and interface options

M4 Digital Display with Local Operator Interface (LOI)

- Available for enhanced 4-20 mA HART and PROFIBUS PA

M5 Digital Display

- 2-Line, 5-Digit LCD display for standard 4-20 mA HART
- 2-Line, 8-Digit LCD display for enhanced 4-20 mA HART, FOUNDATION fieldbus and PROFIBUS PA
- 3-Line, 7-Digit LCD display for Wireless
- Direct reading of digital data for higher accuracy
- Displays user-defined flow, level, volume, or pressure units
- Displays diagnostic messages for local troubleshooting
- 90-degree rotation capability for easy viewing

Configuration buttons

Rosemount Standard 3051 will ship with Analog Zero and Span buttons standard unless otherwise specified. Enhanced Rosemount 3051 will ship with no buttons unless option D4 (Analog Zero and Span), DZ (Digital Zero), or M4 (LOI) for local configuration buttons are specified. The Rosemount 3051 Wireless Transmitter is available with a Digital Zero button installed with or without the LCD display digital display.

Transient protection

T1 Integral Transient Protection Terminal Block
Meets IEEE C62.41, Category Location B
6 kV crest (0.5 μs - 100 kHz)
3 kA crest (8 × 20 μs)
6 kV crest (1.2 × 50 μs)

Bolts for flanges and adapters

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

L4 Austenitic 316 Stainless Steel Bolts
L5 ASTM A 193, Grade B7M Bolts
L6 Alloy K-500 Bolts

Conduit plug

DO 316 SST Conduit Plug
Single 316 SST conduit plug replaces carbon steel plug

Rosemount 3051C Coplanar Flange and 3051T Bracket Option

B4 Bracket for 2-in. Pipe or Panel Mounting

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

Rosemount 3051C Traditional Flange Bracket Options

B1 Bracket for 2-in. Pipe Mounting

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

B2 Bracket for Panel Mounting

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

B3 Flat Bracket for 2-in. Pipe Mounting

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

B7 B1 Bracket with SST Bolts

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

B8 B2 Bracket with SST Bolts

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

B9 B3 Bracket with SST Bolts

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

BA Stainless Steel B1 Bracket with SST Bolts

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

BC Stainless Steel B3 Bracket with SST Bolts

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

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