Product Data Sheet
00813-0100-4001, Rev LA
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Rosemount 3051 Pressure Transmitter

THE PROVEN INDUSTRY LEADER IN PRESSURE MEASUREMENT

- *Best-in-Class performance with up to 0.04% reference accuracy*
- *Industry first installed five-year stability*
- *Unmatched Dynamic Performance*
- *Coplanar™ platform enables integrated pressure, flow, and level solutions*
- *Advanced PlantWeb® Functionality to increase plant productivity*

Contents

Setting the Standard for Pressure Measurement

Proven best-in-class performance, reliability and safety

- Over 4 million installed
- Meet your application needs with extensive offering
- Real world total performance of ±0.15%
- Reference accuracy of ±0.04%

Flow

Pressure

Level

Maximize Installation Flexibility with Coplanar Platform

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

Unlock the Value of Devices with the Smart Wireless THUM™ Adapter

- Gain access to field intelligence and improve quality, safety, availability, operations and maintenance costs
- Remotely manage devices and monitor health
- Enable new wireless measurement points
- Utilize existing loop power

Innovative, Integrated DP Flowmeters

- Fully assembled 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

- Design 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

Industry's best total performance, a flexible Coplanar platform, and installed five-year stability has made Rosemount 3051 the standard for Differential, Gage, and Absolute pressure measurement. Select from the following capabilities for seamless integration:

- Performance up to 0.04% accuracy
- Manifolds, Primary Elements and Seal Solutions
- 4-20 mA HART, 1-5 Vdc HART low power, FOUNDATION fieldbus, and Profibus PA protocols
- Calibrated spans/ranges from 0.1 inH2O to 4000 psi (0,25 mbar to 276 bar)
- 316 SST, Alloy C-276, Alloy 400, Tantalum, Gold-Plated Alloy 400 or 316L SST wetted materials

Additional Information
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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	Absolute			
Pressure Range				
	3051CD	**3051CG**	**3051CA**	
Standard				**Standard**
1	–25 to 25 inH_2O (–62.2 to 62.2 mbar)	–25 to 25 inH_2O (–62,1 to 62.2 mbar)	0 to 30 psia (0 to 2.1 bar)	★
2	–250 to 250 inH2O (–623 to 623 mbar)	–250 to 250 inH_2O (–621 to 623 mbar)	0 to 150 psia (0 to 10.3 bar)	★
3	–1000 to 1000 inH_2O (–2.5 to 2.5 bar)	–393 to 1000 inH_2O (–0.98 to 2.5 bar)	0 to 800 psia (0 to 55.2 bar)	★
4	–300 to 300 psi (–20.7 to 20.7 bar)	–14.2 to 300 psi (–0.98 to 20.7 bar)	0 to 4000 psia (0 to 275.8 bar)	★
5	–2000 to 2000 psi (–137.9 to137.9 bar)	–14.2 to 2000 psi (–0.98 to 137.9 bar)	Not Applicable	★
Expanded				
0[1]	–3 to 3 inH_2O (–7.5 to 7.5 mbar)	Not Applicable	Not Applicable	
Transmitter Output				
Standard				**Standard**
A	4–20 mA with Digital Signal Based on HART Protocol			★
F	FOUNDATION fieldbus Protocol			★
W[2]	Profibus PA Protocol			★

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Expanded				
M	Low-Power, 1–5 V dc with Digital Signal Based on HART Protocol *(See Option C2 for 0.8–3.2 V dc)*			
Materials of Construction				
	Process Flange Type	**Flange Material**	**Drain/Vent**	
Standard				**Standard**
2	Coplanar	SST	SST	★
3(3)	Coplanar	Cast C-276	Alloy C-276	★
4	Coplanar	Cast Alloy 400	Alloy 400/K-500	★
5	Coplanar	Plated CS	SST	★
7(3)	Coplanar	SST	Alloy C-276	★
8(3)	Coplanar	Plated CS	Alloy C-276	★
0	Alternate Process Connection			★
Isolating Diaphragm				
Standard				**Standard**
2(3)	316L SST			★
3(3)	Alloy C-276			★
Expanded				
4	Alloy 400			
5	Tantalum (Available on 3051CD and CG, Ranges 2–5 only. Not available on 3051CA)			
6	Gold-plated Alloy 400 (Use in combination with O-ring Option Code B.)			
7	Gold-plated SST			
O-ring				
Standard				**Standard**
A	Glass-filled PTFE			★
B	Graphite-filled PTFE			★
Sensor Fill Fluid				
Standard				**Standard**
1	Silicone			★
2	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	★
Expanded				
D	Aluminum		G½	
M	SST		G½	

Options (Include with selected model number)

Plantweb Control Functionality		
Standard		**Standard**
A01	FOUNDATION fieldbus Advanced Control Function Block Suite	★
Plantweb Diagnostic Functionality		
Standard		**Standard**
D01	FOUNDATION fieldbus Diagnostics Suite	★

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Alternate Flange[4]		
Standard		**Standard**
H2	Traditional Flange, 316 SST, SST Drain/Vent	★
H3[3]	Traditional Flange, Alloy C, Alloy C-276 Drain/Vent	★
H4	Traditional Flange, Cast Alloy 400, Alloy 400/K-500 Drain/Vent	★
H7[3]	Traditional Flange, 316 SST, Alloy C-276 Drain/Vent	★
HJ	DIN Compliant Traditional Flange, SST, 1/16 in. Adapter/Manifold Bolting	★
FA	Level Flange, SST, 2 in., ANSI Class 150, Vertical Mount	★
FB	Level Flange, SST, 2 in., ANSI Class 300, Vertical Mount	★
FC	Level Flange, SST, 3 in., ANSI Class 150, Vertical Mount	★
FD	Level Flange, SST, 3 in., ANSI Class 300, Vertical Mount	★
FP	DIN Level Flange, SST, DN 50, PN 40, Vertical Mount	★
FQ	DIN Level Flange, SST, DN 80, PN 40, Vertical Mount	★
Expanded		
HK[5]	DIN Compliant Traditional Flange, SST, 10 mm Adapter/Manifold Bolting	
HL	DIN Compliant Traditional Flange, SST, 12mm Adapter/Manifold Bolting (Not available on 3051CD0)	
Manifold Assembly[5][9]		
Standard		**Standard**
S5	Assemble to Rosemount 305 Integral Manifold	★
S6	Assemble to Rosemount 304 Manifold or Connection System	★
Integral Mount Primary Element[5][9]		
Standard		**Standard**
S4[6]	Assemble to Rosemount Annubar or Rosemount 1195 Integral Orifice	★
S3	Assemble to Rosemount 405 Compact Orifice Plate	★
Seal Assemblies[9]		
Standard		**Standard**
S1[7]	Assemble to one Rosemount 1199 seal	★
S2[8]	Assemble to two Rosemount 1199 seals	★
All-Welded Seal Assemblies (for high vacuum applications)[9]		
Standard		**Standard**
S0	One Seal, All-Welded System (Direct Mount Connection Type)	★
S7	One Seal, All-Welded System (Capillary Connection Type)	★
S8	Two Seals, All-Welded System (Capillary Connection Type)	★
S9	Two Seals, All-Welded System (One Direct Mount and One Capillary Connection Type)	★
Mounting Bracket		
Standard		**Standard**
B1	Traditional Flange Bracket for 2-in. Pipe Mounting, CS Bolts	★
B2	Traditional Flange Bracket for Panel Mounting, CS Bolts	★
B3	Traditional Flange Flat Bracket for 2-in. Pipe Mounting, CS Bolts	★
B4	Coplanar Flange Bracket for 2-in. Pipe or Panel Mounting, all SST	★
B7	B1 Bracket with Series 300 SST Bolts	★
B8	B2 Bracket with Series 300 SST Bolts	★
B9	B3 Bracket with Series 300 SST Bolts	★
BA	SST B1 Bracket with Series 300 SST Bolts	★
BC	SST B3 Bracket with Series 300 SST Bolts	★

Table 1. 3051C Coplanar Pressure Transmitters Ordering Information

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Product Certifications		
Standard		**Standard**
C6	CSA Explosion-proof, Dust Ignition-proof, Intrinsically Safe, and Division 2	★
E2[11]	INMETRO Flameproof	★
E3[11]	China Flameproof	★
E4[10]	TIIS Flame-proof	★
E5	FM Explosion-proof, Dust Ignition-Proof	★
E7[11]	IECEx Flameproof, Dust Ignition-proof	★
E8	ATEX Flameproof and Dust Certification	★
I1[11]	ATEX Intrinsic Safety and Dust	★
I2[11]	INMETRO Intrinsic Safety	★
I3	China Intrinsic Safety	★
I4[12]	TIIS Intrinsic Safety	★
I5	FM Intrinsically Safe, Division 2	★
I7[11]	IECEx Intrinsic Safety	★
IA	ATEX FISCO Intrinsic Safety; for FOUNDATION fieldbus protocol only	★
IE	FM FISCO Intrinsically Safe; for FOUNDATION fieldbus protocol only	★
K2[11]	INMETRO Flameproof, Instrinsic Safety	★
K5	FM Explosion-proof, Dust Ignition-Proof, Intrinsically Safe, and Division 2	★
K6[11]	CSA and ATEX Explosion-proof, Intrinsically Safe, and Division 2 (combination of C6 and K8)	★
K7[11]	IECEx Flame-proof, Dust Ignition-proof, Intrinsic Safety, and Type n (combination of I7, N7, and E7)	★
K8[11]	ATEX Flameproof, Intrinsic Safety, Type n, Dust (combination of E8, I1 and N1)	★
KB	FM and CSA Explosion-proof, Dust Ignition Proof, Intrinsically Safe, and Division 2 (combination of K5 and C6)	★
KD[11]	FM, CSA, and ATEX Explosion-proof, Intrinsically Safe (combination of K5, C6, I1, and E8)	★
N1[11]	ATEX Type n Certification and Dust	★
N3	China Type n	★
N7[11]	IECEx Type n Certification	★
Drinking Water Approval		
Standard		**Standard**
DW[13]	NSF drinking water approval	★
Shipboard Approvals		
Standard		**Standard**
SBS	American Bureau of Shipping	★
Custody Transfer		
Standard		**Standard**
C5[16]	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[14]	LCD Display with Local Operator Interface	★
M5	LCD Display for Aluminum Housing (Housing Codes A, B, C, and D only)	★
M6	LCD Display for SST Housing (Housing Codes J, K, L, and M only)	★

Table 1. 3051C Coplanar Pressure Transmitters Ordering Information

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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.B	★
Quality Certification for Safety		
Standard		**Standard**
QS[15]	Prior-use certificate of FMEDA data	★
Hardware Adjustments		
Standard		**Standard**
J1[16][17]	Local Zero Adjustment Only	★
J3[16][17]	No Local Zero or Span Adjustment	★
Transient Protection Terminal Block		
Standard		**Standard**
T1[18]	Transient Protection Terminal Block	★
Software Configuration		
Standard		**Standard**
C1[16]	Custom Software Configuration (Completed CDS 00806-0100-4001 required with order)	★
Low Power Output		
Expanded		
C2	0.8–3.2 V dc Output with Digital Signal Based on HART Protocol (Output Code M only)	
Gage Pressure Calibration		
Standard		**Standard**
C3	Gage Calibration (Model 3051CA4 only)	★
Alarm Limit		
Standard		**Standard**
C4[16][19]	Analog Output Levels Compliant with NAMUR Recommendation NE 43, Alarm High	★
CN[16][19]	Analog Output Levels Compliant with NAMUR Recommendation NE 43, Alarm Low	★
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)*	
Performance		
Standard		**Standard**
P8[20]	High Performance Option	★

Table 1. 3051C Coplanar Pressure Transmitters Ordering Information

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Flange Adapters		
Standard		**Standard**
DF(21)	1/2 -14 NPT flange adapter(s)	★
Vent/Drain Valves		
Expanded		
D7	Coplanar Flange Without Drain/Vent Ports	
Conduit Plug		
Standard		**Standard**
DO(22)	316 SST Conduit Plug	★
RC1/4 RC1/2 Process Connection		
Expanded		
D9(23)	RC ¼ Flange with RC ½ Flange Adapter - SST	
Max Static Line Pressure		
Standard		**Standard**
P9	4500 psig (310 bar) Static Pressure Limit (3051CD Ranges 2–5 only)	★
Ground Screw		
Standard		**Standard**
V5(24)	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	M12, 4-pin, Male Connector (eurofast®)	★
GM	A size Mini, 4-pin, Male Connector (minifast®)	★
Typical Model Number: 3051CD 2 A 2 2 A 1 A B4		

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

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

(3) 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.

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

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

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

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

(8) Not valid for optional codes DF and D9 for Adaptors.

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

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

(11) Not available with Low Power code M.

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

(13) 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).

(14) Available only with output code W - Profibus PA.

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

(16) Not available with Fieldbus (output code F) or Profibus (output code W).

(17) Local zero and span adjustments are standard unless Option Code J1 or J3 is specified

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

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

(20) High Performance Option includes 0.04% Reference Accuracy. See Performance Specifications for details.

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

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

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

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

Rosemount 3051T In-Line Pressure Transmitter

3051T In-Line Pressure Transmitter

Rosemount 3051T In-line Pressure transmitters provide reliable Gage and Absolute pressure measurement in a compact in-line design. Select from the following capabilities for seamless integration:

- Performance up to 0.04% accuracy
- Manifolds and Seal Solutions
- 4-20 mA HART, 1-5 Vdc HART low power, FOUNDATION fieldbus, and Profibus PA protocols
- Calibrated spans/ranges from 0.3 to 10,000 psi (10,3 mbar to 689 bar)
- 316 SST and Alloy C-276 process isolators

Additional Information
Specifications: page 35
Certifications: page 44
Dimensional Drawings: page 49

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	Absolute		★
Pressure Range			
	3051TG(1)	**3051TA**	
Standard			**Standard**
1	-14.7 to 30 psi (-1.0 to 2.1 bar)	0 to 30 psia (0 to 2.1 bar)	★
2	-14.7 to 150 psi (-1.0 to 10.3 bar)	0 to 150 psia (0 to 10.3 bar)	★
3	-14.7 to 800 psi (-1.0 to 55 bar)	0 to 800 psia (0 to 55 bar)	★
4	-14.7 to 4000 psi (-1.0 to 276 bar)	0 to 4000 psia (0 to 276 bar)	★
5	-14.7 to 10000 psi (-1.0 to 689 bar)	0 to 10000 psia (0 to 689 bar)	★
Transmitter Output			
Standard			**Standard**
A	4–20 mA with Digital Signal Based on HART Protocol		★
F	FOUNDATION fieldbus Protocol		★
W(2)	Profibus PA Protocol		★
Expanded			
M	Low-Power 1–5 V dc with Digital Signal Based on HART Protocol		
Process Connection Style			
Standard			**Standard**
2B	1/2–14 NPT Female		★
2C	G½ A DIN 16288 Male (Available in SST for Range 1–4 only)		★
Expanded			
2F	Coned and Threaded, Compatible with Autoclave Type F-250-C		
61	Non-threaded Instrument flange (Range 1-4 only)		
Isolating Diaphragm		**Process Connection Wetted Parts Material**	
Standard			**Standard**
2(3)	316L SST	316L SST	★
3(3)	Alloy C-276	Alloy C-276	★

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Sensor Fill Fluid			
Standard			**Standard**
1	Silicone		★
2	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	★
Expanded			
D	Aluminum	G½	
M	SST	G½	

Options (Include with selected model number)

PlantWeb Control Functionality		
Standard		**Standard**
A01	Advanced Control Function Block Suite	★
PlantWeb Diagnostic Functionality		
Standard		**Standard**
D01	FOUNDATION fieldbus Diagnostics Suite	★
Manifold Assemblies		
Standard		**Standard**
S5[4]	Assemble to Rosemount 306 Integral Manifold	★
Seal Assemblies		
Standard		**Standard**
S1[4]	Assemble to one Rosemount 1199 seal	★
Mounting Bracket		
Standard		**Standard**
B4	Bracket for 2-in. Pipe or Panel Mounting, All SST	★
Product Certifications		
Standard		**Standard**
C6	CSA Explosion-proof, Dust Ignition-proof, Intrinsically Safe, and Division 2	★
E2	INMETRO Flameproof	★
E3	China Flameproof	★
E4[5]	TIIS Flameproof	★
E5	FM Explosion-proof, Dust Ignition-proof	★
E7[5]	IECEx Flameproof, Dust Ignition-proof	★
E8	ATEX Flameproof and Dust Certification	★
I1[5]	ATEX Intrinsic Safety and Dust	★
I2	INMETRO Intrinsic Safety	★
I3	China Intrinsic Safety	★
I5	FM Intrinsically Safe, Division 2	★
I7[5]	IECEx Intrinsic Safety	★
IA	ATEX Intrinsic Safety for FISCO; for *FOUNDATION* fieldbus protocol only	★
IE	FM FISCO Intrinsically Safe; for FOUNDATION fieldbus protocol only	★
K2	INMETRO Flameproof, Intrinsic Safety	★
K5	FM Explosion-proof, Dust Ignition-proof, Intrinsically Safe, and Division 2	★
K6[5]	CSA and ATEX Explosion-proof, Intrinsically Safe, and Division 2 (combination of C6 and K8)	★
K7[5]	IECEx Flameproof, Dust Ignition-proof, Intrinsic Safety, and Type n (combination of I7, N7, and E7)	★
K8[5]	ATEX Flame-proof, Intrinsic Safety, Type n, Dust (combination of E8, I1 and N1)	★
KB	FM and CSA Explosion-proof, Dust Ignition-proof, Intrinsically Safe, and Division 2 (combination of K5 and C6)	★
KD[5]	FM, CSA, and ATEX Explosion-proof, Intrinsically Safe (combination of K5, C6, I1, and E8)	★
N1[5]	ATEX Type n Certification and Dust	★
N3	China Type n	★
N7[5]	IECEx Type n Certification	★

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Drinking Water Approval		
Standard		**Standard**
DW[6]	NSF drinking water approval	★
Shipboard Approvals		
Standard		**Standard**
SBS	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)*	★
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.B	★
Quality Certification for Safety		
Standard		**Standard**
QS[7]	Prior-use certificate of FMEDA Data	★
Zero/Span Adjustment		
Standard		**Standard**
J1[8][9]	Local Zero Adjustment Only	★
J3[8][9]	No Local Zero or Span Adjustment	★
Expanded		
D1	Hardware adjustments (zero, span, alarm, security)	
Display and Interface Options		
Standard		**Standard**
M4[10]	LCD Display with Local Operator Interface	★
M5	LCD Display	★
M6	LCD Display for SST Housing (Housing Codes J, K, L and M only)	★
Conduit Plug		
Standard		**Standard**
DO[11]	316 SST Conduit Plug	★
Transient Terminal Block		
Standard		**Standard**
T1[12]	Transient Protection Terminal Block	★
Software Configuration		
Standard		**Standard**
C1[8]	Custom Software Configuration (Completed CDS 00806-0100-4001 required with order)	★
Expanded		
C2[8]	0.8–3.2 V dc Output with Digital Signal Based on *HART* Protocol (Output Code M only)	
Alarm Limit		
Standard		**Standard**
C4[8][13]	Analog Output Levels Compliant with NAMUR Recommendation NE 43, Alarm High	★
CN[8][13]	Analog Output Levels Compliant with NAMUR Recommendation NE 43, Low Alarm	★
Pressure Testing		
Expanded		
P1	Hydrostatic Testing with Certificate	

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Cleaning Process Area(14)		
Expanded		
P2	Cleaning for Special Service	
P3	Cleaning for <1 PPM Chlorine/Fluorine	
Performance		
Standard		**Standard**
P8(15)	High Performance Option	★
Ground Screw		
Standard		**Standard**
V5(16)	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	M12, 4-pin, Male Connector (eurofast®)	★
GM	A size Mini, 4-pin, Male Connector (minifast®)	★
Typical Model Number:	**3051T G 5 F 2A 2 1 A B4**	

(1) 3051TG lower range limit varies with atmospheric pressure.

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

(3) 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.

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

(5) Not available with low-power Option Code M.

(6) 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).

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

(8) Not available with fieldbus (output code F) or Profibus protocols (output code W).

(9) Local zero and span adjustments are standard unless Option Code J1 or J3 is specified.

(10) Available only with output code W - Profibus PA.

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

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

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

(14) Not valid with Alternate Process Connection S5.

(15) High Performance Option includes 0.04% Reference Accuracy. See Performance Specifications for details.

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

Rosemount 3051CF Flowmeter Series

Rosemount 3051CFA
Annubar Flowmeter

Rosemount 3051CF Flowmeters combine the proven 3051C pressure transmitter and the latest primary element technology: Annubar Averaging Pitot Tube, Compact Conditioning Orifice Plate, and Integral Orifice Plate.

- Flowmeters are factory configured to meet your application needs (Configuration Data Sheet required)
- 4-20 mA HART, FOUNDATION fieldbus, and Profibus PA protocols
- Integral temperature measurement (T option)
- Direct or remote mount configurations available

Additional Information
Specifications: page 35
Certifications: page 44
Dimensional Drawings: page 49

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)	★
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)	

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.

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	★
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	★

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				
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	Stainless Steel Packing Gland / Cage Nipple	Carbon Steel	PTFE	
K	Stainless Steel Packing Gland / Cage Nipple	Stainless Steel	PTFE	
L	Stainless Steel Packing Gland / Cage Nipple	Carbon Steel	Graphite	
N	Stainless Steel Packing Gland / Cage Nipple	Stainless Steel	Graphite	
R	Alloy C-276 Packing Gland / Cage Nipple	Stainless Steel	Graphite	
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			
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 62,3 mbar)			★
2	0 to 250 in H_2O (0 to 623 mbar)			★
3	0 to 1000 in H_2O (0 to 2,5 bar)			★

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.

Transmitter Output			
Standard			**Standard**
A	4–20 mA with digital signal based on HART Protocol		★
F	FOUNDATION fieldbus Protocol		★
W[2]	Profibus PA Protocol		★
Expanded			
M	Low-Power, 1-5 V dc with Digital Signal Based on HART Protocol		
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	★
Expanded			
D	Aluminum	G1/2	
M	SST	G1/2	
Transmitter Performance Class			
Standard			**Standard**
1	1.6% flow rate accuracy, 8:1 flow turndown, 5-yr. stability		★

Options (Include with selected model number)

Pressure Testing		
Expanded		
P1[3]	Hydrostatic Testing with Certificate	
PX[3]	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[4]	Material Traceability Certification per EN 10474:2004 3.1	★
Code Conformance[5]		
Expanded		
J2	ANSI/ASME B31.1	
J3	ANSI/ASME B31.3	

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.

Materials Conformance		
Expanded		
J5[6]	NACE MR-0175 / ISO 15156	
Country Certification		
Standard		**Standard**
J6	European Pressure Directive (PED)	★
Expanded		
J1	Canadian Registration	
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[7]	FOUNDATION fieldbus Advanced Control Function Block Suite	★
PlantWeb Diagnostic Functionality		
Standard		**Standard**
D01[7]	FOUNDATION fieldbus Diagnostics Suite	★
Product Certifications		
Standard		**Standard**
C6	CSA Explosion-proof, Dust Ignition-proof, Intrinsically Safe, Division 2	★
E5	FM Explosion-proof, Dust Ignition-proof	★
E7[8]	IECEx Flameproof, Dust Ignition-proof	★
E8	ATEX Flameproof, Dust	★
I1[8]	ATEX Intrinsic Safety	★
I5	FM Intrinsically Safe, Division 2	★
IA	ATEX FISCO Intrinsic Safety; for FOUNDATION fieldbus protocol only	★
K5	FM Explosion-proof, Dust Ignition-proof, Intrinsically Safe, Division 2 (combination of E5 and I5)	★
K6[8]	CSA Explosion-proof, Dust Ignition-proof, Intrinsically Safe, Division 2 (combination of E6 and I6)	★
K8[8]	ATEX Flameproof, Intrinsic Safety, Type n, Dust (combination of E8, I1 and N1)	★
KB	FM and CSA Explosion-proof, Dust Ignition-proof, Intrinsically Safe, Division 2 (combination of K5 and C6)	★
KD[8]	FM, CSA, and ATEX Explosion-proof, Intrinsically Safe (combination of K5, C6, I1, and E8)	★
N1[8]	ATEX Type n	★
Sensor Fill Fluid and O-ring Options		
Standard		**Standard**
L1	Inert Sensor Fill Fluid *Note: Silicone fill fluid is standard.*	★
L2	Graphite-Filled (PTFE) O-ring	★
LA	Inert Sensor Fill Fluid and Graphite-Filled (PTFE) O-ring	★

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.

Shipboard Approvals		
Standard		**Standard**
SBS	American Bureau of Shipping	★
Display and Interface Options		
Standard		**Standard**
M4[9]	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[11]	Prior-use certificate of FMEDA data	★
Transient Protection		
Standard		**Standard**
T1[10]	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	
Lower Power Output		
Standard		**Standard**
C2[11]	0.8-3.2 V dc Output with Digital Signal Based on Hart Protocol	★
Alarm Limit		
Standard		**Standard**
C4[11][12]	NAMUR Alarm and Saturation Levels, High Alarm	★
CN[11][12]	NAMUR Alarm and Saturation Levels, Low Alarm	★
Ground Screw		
Standard		**Standard**
V5[13]	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) Option code M4 - LCD Display with Local Operator Interface required for local addressing and configuration.

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

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

(5) Not available with Transmitter Connection Platform 6.

(6) 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.

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

(8) Not available with Low Power code M.

(9) Available only with output code W - Profibus PA.

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

(11) Not available with FOUNDATION fieldbus (Output Code F) or Profibus (Output Code W).

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

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

Rosemount 3051CFC Compact Flowmeter

Additional Information
Specifications: page 35
Certifications: page 44
Dimensional Drawings: page 49

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**
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	10-in. (250 mm)	★
120	12-in. (300 mm)	★
Primary Element Style		
Standard		**Standard**
N	Square Edged	★
Primary Element Type		
Standard		**Standard**
040	0.40 Beta Ratio	★
065(2)	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, Integral 3-valve Manifold	★
7	Remote-mount, 1/4-in. NPT Connections	★
Differential Pressure Range		
Standard		**Standard**
1	0 to 25 in H_2O (0 to 62,3 mbar)	★
2	0 to 250 in H_2O (0 to 623 mbar)	★
3	0 to 1000 in H_2O (0 to 2,5 bar)	★

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.

Transmitter Output			
Standard			**Standard**
A	4–20 mA with digital signal based on HART Protocol		★
F	FOUNDATION fieldbus Protocol		★
W(3)	Profibus PA Protocol		★
Expanded			
M	Low-Power, 1-5 V dc with Digital Signal Based on HART Protocol		
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	★
Expanded			
D	Aluminum	G1/2	
M	SST	G1/2	
Transmitter Performance Class			
Standard			**Standard**
1	Up to ±1.75% flow rate accuracy, 8:1 flow turndown, 5-year stability		★

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(4)	Flow Calibration Certification (3 point)	
WD(4)	Discharge Coefficient Verification (full 10 point)	
Pressure Testing		
Expanded		
P1	Hydrostatic Testing with Certificate	
Special Cleaning		
Expanded		
P2	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	★

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.

Transmitter Calibration Certification		
Standard		**Standard**
Q4	Calibration Certificate for Transmitter	★
Quality Certification for Safety		
Standard		**Standard**
QS[5]	Prior-use certificate of FMEDA data	★
Material Traceability Certification		
Standard		**Standard**
Q8	Material Traceability Certification per EN 10204:2004 3.1	★
Code Conformance		
Expanded		
J2	ANSI/ASME B31.1	
J3	ANSI/ASME B31.3	
J4	ANSI/ASME B31.8	
Materials Conformance		
Expanded		
J5[6]	NACE MR-0175 / ISO 15156	
Country Certification		
Expanded		
J1	Canadian Registration	
Product Certifications		
Standard		**Standard**
C6	CSA Explosion-proof, Dust Ignition-proof, Intrinsically Safe, Division 2	★
E5	FM Explosion-proof, Dust Ignition-proof	★
E7[7]	IECEx Flameproof, Dust Ignition-proof	★
E8	ATEX Flameproof, Dust	★
I1[7]	ATEX Intrinsic Safety	★
I5	FM Intrinsically Safe, Division 2	★
IA	ATEX FISCO Intrinsic Safety; for FOUNDATION fieldbus protocol only	★
K5	FM Explosion-proof, Dust Ignition-proof, Intrinsically Safe, Division 2 (combination of E5 and I5)	★
K6[7]	CSA Explosion-proof, Dust Ignition-proof, Intrinsically Safe, Division 2 (combination of E6 and I6)	★
K8[7]	ATEX Flameproof, Intrinsic Safety, Type n, Dust (combination of E8, I1 and N1)	★
KB	FM and CSA Explosion-proof, Dust Ignition-proof, Intrinsically Safe, Division 2 (combination of K5 and C6)	★
KD[7]	FM, CSA, and ATEX Explosion-proof, Intrinsically Safe (combination of K5, C6, I1, and E8)	★
N1[7]	ATEX Type n	★
Sensor Fill Fluid and O-ring Options		
Standard		**Standard**
L1	Inert Sensor Fill Fluid	★
L2	Graphite-Filled (PTFE) O-ring	★
LA	Inert Sensor Fill Fluid and Graphite-Filled (PTFE) O-ring	★
Shipboard Approvals		
Standard		**Standard**
SBS	American Bureau of Shipping	★
Display and Interface Options		
Standard		**Standard**
M4[8]	LCD Display with Local Operator Interface	★
M5	LCD Display	★
Transient Protection		
Standard		**Standard**
T1[9]	Transient terminal block	★
Manifold for Remote Mount Option		
Standard		**Standard**
F2	3-Valve Manifold, Stainless Steel	★
F6	5-Valve Manifold, Stainless Steel	★

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.

PlantWeb Control Functionality		
Standard		**Standard**
A01[10]	FOUNDATION fieldbus Advanced Control Function Block Suite	★
PlantWeb Diagnostic Functionality		
Standard		**Standard**
D01[10]	FOUNDATION fieldbus Diagnostic Suite	★
Low Power Output		
Standard		**Standard**
C2[11]	0.8-3.2 V dc Output with Digital Signal Based on Hart Protocol	★
Alarm Limit		
Standard		**Standard**
C4[11][12]	NAMUR Alarm and Saturation Levels, High Alarm	★
CN[11][12]	NAMUR Alarm and Saturation Levels, Low Alarm	★
Ground Screw		
Standard		**Standard**
V5[13]	External Ground Screw Assembly	★
Typical Model Number: 3051CFC D C S 060 N 065 0 3 2 A A 1 WC E5 M5		

(1) Not available for Primary Element Technology C.

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

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

(4) Not available with Primary Element Technology P.

(5) Not available with FOUNDATION fieldbus (Output Code F) or Profibus (Output Code W).

(6) 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.

(7) Not available with Low Power code M.

(8) Available only with output code W - Profibus PA.

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

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

(11) Not available with FOUNDATION fieldbus (Output Code F) or Profibus (Output Code W).

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

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

Rosemount 3051CFP Integral Orifice Flowmeter

Additional Information
Specifications: page 35
Certifications: page 44
Dimensional Drawings: page 49

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	★
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	★

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.

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		
Differential Pressure Ranges			
Standard			**Standard**
1	0 to 25 in H_2O (0 to 62,3 mbar)		★
2	0 to 250 in H_2O (0 to 623 mbar)		★
3	0 to 1000 in H_2O (0 to 2,5 bar)		★
Transmitter Output			
Standard			**Standard**
A	4–20 mA with digital signal based on HART Protocol		★
F	FOUNDATION fieldbus Protocol		★
W(2)	Profibus PA Protocol		★
Expanded			
M	Low-Power, 1-5 V dc with Digital Signal Based on HART Protocol		
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	★
Expanded			
D	Aluminum	G1/2	
M	SST	G1/2	
Transmitter Performance Class			
Standard			**Standard**
1	up to ±1.75% flow rate accuracy, 8:1 flow turndown, 5-year stability		★

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.

Options (Include with selected model number)

Transmitter Body / Bolt Material		
Expanded		
GT	High Temperature (850 °F / 454 °C)	
Temperature Sensor		
Expanded		
RT[3]	Thermowell and RTD	
Optional Connection		
Standard		**Standard**
G1	DIN 19213 Transmitter Connection	★
Pressure Testing		
Expanded		
P1[4]	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[5]	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[6]	ANSI/ASME B31.1	
J3[6]	ANSI/ASME B31.3	
J4[6]	ANSI/ASME B31.8	
Materials Conformance		
Expanded		
J5[7]	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[8]	Prior-use certificate of FMEDA data	★

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**
C6	CSA Explosion-proof, Dust Ignition-proof, Intrinsically Safe, Division 2	★
E5	FM Explosion-proof, Dust Ignition-proof	★
E7[(9)]	IECEx Flameproof, Dust Ignition-proof	★
E8	ATEX Flameproof, Dust	★
I1[(9)]	ATEX Intrinsic Safety	★
I5	FM Intrinsically Safe, Division 2	★
IA	ATEX FISCO Intrinsic Safety; for FOUNDATION fieldbus protocol only	★
K5	FM Explosion-proof, Dust Ignition-proof, Intrinsically Safe, Division 2 (combination of E5 and I5)	★
K6[(9)]	CSA Explosion-proof, Dust Ignition-proof, Intrinsically Safe, Division 2 (combination of E6 and I6)	★
K8[(9)]	ATEX Flameproof, Intrinsic Safety, Type n, Dust (combination of E8, I1 and N1)	★
KB	FM and CSA Explosion-proof, Dust Ignition-proof, Intrinsically Safe, Division 2 (combination of K5 and C6)	★
KD[(9)]	FM, CSA, and ATEX Explosion-proof, Intrinsically Safe (combination of K5, C6, I1 and E8)	★
N1[(9)]	ATEX Type n	★
Sensor Fill Fluid and O-ring Options		
Standard		**Standard**
L1	Inert Sensor Fill Fluid	★
L2	Graphite-Filled (PTFE) O-ring	★
LA	Inert Sensor Fill Fluid and Graphite-Filled (PTFE) O-ring	★
Shipboard Approvals		
Standard		**Standard**
SBS	American Bureau of Shipping	★
Display and Interface Options		
Standard		**Standard**
M4[(10)]	LCD Display with Local Operator Interface	★
M5	LCD Display	★
Transient Protection		
Standard		**Standard**
T1[(11)]	Transient terminal block	★
PlantWeb Control Functionality		
Standard		**Standard**
A01[(12)]	FOUNDATION fieldbus Advanced Control Function Block Suite	★
PlantWeb Diagnostic Functionality		
Standard		**Standard**
D01[(12)]	FOUNDATION fieldbus Diagnostic Suite	★
Lower Power Output		
Standard		**Standard**
C2[(13)]	0.8-3.2 V dc Output with Digital Signal Based on Hart Protocol	★
Alarm Limit		
Standard		**Standard**
C4[(13)(14)]	NAMUR Alarm and Saturation Levels, High Alarm	★
CN[(13)(14)]	NAMUR Alarm and Saturation Levels, Low Alarm	★
Ground Screw		
Standard		**Standard**
V5[(15)]	External Ground Screw Assembly	★
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) Option code M4 - LCD Display with Local Operator Interface required for local addressing and configuration.

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

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

(5) Not available for bore sizes 0010, 0014, 0020, or 0034.

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

(7) 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.

(8) Not available with FOUNDATION fieldbus (Output Code F) or Profibus (Output Code W).

(9) Not available with Low Power code M.

(10) Available only with output code W - Profibus PA.

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

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

(13) Not available with FOUNDATION fieldbus (Output Code F) or Profibus (Output Code W).

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

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

Rosemount 3051L Liquid Level Transmitter

3051L Liquid Level Transmitter

Rosemount 3051 liquid level transmitters combine the features and benefits of a 3051 transmitter with the durability and reliability of a direct mount seal all in a single model number.

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

Product features and capabilities include:

- Variety of process connections
- Quantified performance for the entire transmitter / seal assembly (QZ option)
- 4-20 mA HART, 1-5 Vdc HART low power, FOUNDATION fieldbus, and Profibus PA protocols

Additional Information
Specifications: page 35
Certifications: page 44
Dimensional Drawings: page 49

Table 6. Rosemount 3051L Liquid 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	Liquid Level Transmitter			
Pressure Range				
Standard				**Standard**
2	–250 to 250 inH_2O (–0,6 to 0,6 bar)			★
3	–1000 to 1000 inH_2O (–2,5 to 2,5 bar)			★
4	–300 to 300 psi (–20,7 to 20,7 bar)			★
Transmitter Output				
Standard				**Standard**
A	4–20 mA with Digital Signal Based on *HART* Protocol			★
F	FOUNDATION fieldbus Protocol			★
W(1)	Profibus PA Protocol			★
Expanded				
M	Low-Power 1–5 V dc with Digital Signal Based on *HART* Protocol (See Option Code C2 for 0.8–3.2 V dc Output)			
Process Connection Size, Material, Extension length (High Side)				
Standard				**Standard**
Code	**Process Connection Size**	**Material**	**Extension Length**	★
G0(2)	2-in./DN 50	316L SST	Flush Mount Only	★
H0(2)	2-in./DN 50	Alloy C-276	Flush Mount Only	★
J0	2-in./DN 50	Tantalum	Flush Mount Only	★
A0(2)	3-in./DN 80	316L SST	Flush Mount	★
A2(2)	3-in./DN 80	316L SST	2-in./50 mm	★
A4(2)	3-in./DN 80	316L SST	4-in./100 mm	★
A6(2)	3-in./DN 80	316L SST	6-in./150 mm	★
B0(2)	4-in./DN 100	316L SST	Flush Mount	★
B2(2)	4-in./DN 100	316L SST	2-in./50 mm	★
B4(2)	4-in./DN 100	316L SST	4-in./100 mm	★

Table 6. Rosemount 3051L Liquid 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.

B6[2]	4-in./DN 100	316L SST	6-in./150 mm	★
C0[2]	3-in./DN 80	Alloy C-276	Flush Mount	★
C2[2]	3-in./DN 80	Alloy C-276	2-in./50 mm	★
C4[2]	3-in./DN 80	Alloy C-276	4-in./100 mm	★
C6[2]	3-in./DN 80	Alloy C-276	6-in./150 mm	★
D0[2]	4-in./DN 100	Alloy C-276	Flush Mount	★
D2[2]	4-in./DN 100	Alloy C-276	2-in./50 mm	★
D4[2]	4-in./DN 100	Alloy C-276	4-in./100 mm	★
D6[2]	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[2]	2-in.	ANSI/ASME B16.5 Class 150	SST	★
F[2]	3-in.	ANSI/ASME B16.5 Class 150	SST	★
G[2]	4-in.	ANSI/ASME B16.5 Class 150	SST	★
Y[2]	2-in.	ANSI/ASME B16.5 Class 300	SST	★
H[2]	3-in.	ANSI/ASME B16.5 Class 300	SST	★
J[2]	4-in.	ANSI/ASME B16.5 Class 300	SST	★
Z[2]	2-in.	ANSI/ASME B16.5 Class 600	SST	★
L[2]	3-in.	ANSI/ASME B16.5 Class 600	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[2]	DN 50	PN 10-40 per EN 1092-1	SST	★
T[2]	DN 80	PN 40 per EN 1092-1	SST	★
U[2]	DN 100	PN 40 per EN 1092-1	SST	★
W[2]	DN 100	PN 10/16 per EN 1092-1	SST	★
7[2]	4 in.	ANSI/ASME B16.5 Class 600	SST	★
Expanded				
1	—	10K per JIS B2238	CS	
2	—	20K per JIS B2238	CS	
3	—	40K per JIS B2238	CS	
4[2]	—	10K per JIS B2238	316 SST	
5[2]	—	20K per JIS B2238	316 SST	
6[2]	—	40K per JIS B2238	316 SST	

Table 6. Rosemount 3051L Liquid Level Transmitter Ordering Information

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

Seal Fill Fluid (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[2]	Gage	SST	316L SST	Silicone	★
21[2]	Differential	SST	316L SST	Silicone	★
22[2]	Differential	SST	Alloy C-276	Silicone	★
2A[2]	Differential	SST	316L SST	Inert (Halocarbon)	★
2B[2]	Differential	SST	Alloy C-276	Inert (Halocarbon)	★
31[2]	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	★
Expanded			
D	Aluminum	G½	
M	SST	G½	

Options (Include with selected model number)

PlantWeb Control Functionality		
Standard		**Standard**
A01[3]	FOUNDATION fieldbus Advanced Control Function Block Suite	★
PlantWeb Diagnostic Functionality		
Standard		**Standard**
D01[3]	FOUNDATION fieldbus Diagnostics Suite	★
Seal Assemblies		
Standard		**Standard**
S1[4]	Assembled to One Rosemount 1199 Seal (Requires 1199M)	★

Table 6. Rosemount 3051L Liquid 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**
E5	FM Explosion-proof, Dust Ignition-proof	★
I5	FM Intrinsically Safe, Division 2	★
K5	FM Explosion-proof, Dust Ignition-proof, Intrinsically Safe, and Division 2	★
I1[5]	ATEX Intrinsic Safety and Dust	★
N1[5]	ATEX Type n Certification and Dust	★
E8	ATEX Flameproof and Dust Certification	★
E4[5]	TIIS Flameproof	★
C6	CSA Explosion-proof, Dust Ignition-proof, Intrinsically Safe, and Division 2	★
K6[5]	CSA and ATEX Explosion-proof, Intrinsically Safe, and Division 2 (combination of C6 and K8)	★
KB	FM and CSA Explosion-proof, Dust Ignition-proof, Intrinsically Safe, and Division 2 (combination of K5 and C6)	★
K7[5]	IECEx Flameproof, Dust Ignition-proof, Intrinsic Safety, and Type n (combination of I7, N7 and E7)	★
K8[5]	ATEX Flame-proof and Intrinsic Safety Approvals (combination of I1 and E8)	★
KD[5]	FM, CSA, and ATEX Explosion-proof, Intrinsically Safe (combination of K5, C6, I1, and E8)	★
I7[5]	IECEx Intrinsic Safety	★
E7[5]	IECEx Flameproof, Dust Ignition-proof	★
N7[5]	IECEx Type n Certification	★
IA	ATEX FISCO Intrinsic Safety	★
IE	FM FISCO Intrinsically Safe	★
E2	INMETRO Flameproof	★
I2	INMETRO Intrinsic Safety	★
K2	INMETRO Flameproof, Intrinsic Safety	★
E3	China Flameproof	★
I3	China Intrinsic Safety	★
N3	China Type n	★
Shipboard Approvals		
Standard		**Standard**
SBS	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[6]	LCD Display with Local Operator Interface	★
M5	LCD Display for Aluminum Housing (Housing Codes A, B, C, and D only)	★
M6	LCD Display for SST Housing (Housing Codes J, K, L, and M only)	★
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[7]	Prior-use certificate of FMEDA data	★

Table 6. Rosemount 3051L Liquid Level Transmitter Ordering Information

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

Toolkit Total System Performance Reports				
Standard				**Standard**
QZ	Remote Seal System Performance Calculation Report			★
Conduit Electrical Connector				
Standard				**Standard**
GE	M12, 4-pin, Male Connector (eurofast®)			★
GM	A size Mini, 4-pin, Male Connector (minifast®)			★
Hardware Adjustments				
Standard				**Standard**
J1(8)(9)	Local Zero Adjustment Only			★
J3(8)(9)	No Local Zero or Span Adjustment			★
Transient Protection				
Standard				**Standard**
T1(10)	Transient Protection Terminal Block			★
Software Configuration				
Standard				**Standard**
C1(8)	Custom Software Configuration (Completed CDS 00806-0100-4001 required with order)			★
Low Power Output				
Standard				**Standard**
C2(8)	0.8–3.2 V dc Output with Digital Signal Based on HART Protocol (Available with Output code M only)			★
Alarm Limit				
Standard				**Standard**
C4(8)(11)	NAMUR alarm and saturation levels, high alarm			★
CN(8)(11)	NAMUR alarm and saturation levels, low alarm			★
Conduit Plug				
Standard				**Standard**
DO	316 SST Conduit Plug			★
Ground Screw				
Standard				**Standard**
V5(12)	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	★
Typical Model Number: 3051L 2 A A0 D 21 A A F1				

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

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

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

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

(5) Not available with low-power Option Code M

(6) Available only with output code W - Profibus PA.

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

(8) Not available with fieldbus (output code F) or profibus protocols (output code W).

(9) Local zero and span adjustments are standard unless Option Code J1 or J3 is specified.

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

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

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

Specifications

PERFORMANCE SPECIFICATIONS

This product data sheet covers HART, 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 FOUNDATION fieldbus and Profibus PA devices, use calibrated range in place of span.

Models	Standard	High Accuracy Option
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	Ranges 2-5 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
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	
Range 0 (CD)	±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
3051T 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
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	
3051L 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	

Flow Performance - Flow Reference Accuracy

3051CFA Annubar Flowmeter		
Ranges 2-3		±1.60% 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(1)		
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		
Ranges 2-3	β <0.1	±3.00% of Flow Rate at 8:1 flow turndown
	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) 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.

For ±50 °F (28 °C) temperature changes, up to 1000 psi (6,9 MPa) line pressure (CD only), from 1:1 to 5:1 rangedown.

Models	Total Performance
3051C Ranges 2-5	±0.15% of span
3051T Ranges 1-4	±0.15% of span

Long Term Stability

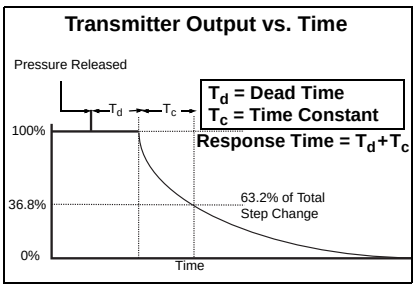
Models	Long Term Stability
3051C Ranges 2-5	±0.125% of URL for 5 years ±50 °F (28 °C) temperature changes, and up to 1000 psi (6.9 MPa) line pressure.
3051CD, 3051CG Low/Draft Range Ranges 0-1	±0.2% of URL for 1 year
3051CA Low Range Range 1	±0.125% of URL for 5 years ±50 °F (28 °C) temperature changes, and up to 1000 psi (6.9 MPa) line pressure.
3051T Ranges 1-5	±0.125% of URL for 5 years ±50 °F (28 °C) temperature changes, and up to 1000 psi (6.9 MPa) line pressure.

Dynamic Performance

	4 - 20 mA HART(1) 1-5 Vdc HART Low Power	FOUNDATION fieldbus and Profibus PA protocols(3)
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	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.

Typical HART Transmitter Response Time



Line Pressure Effect per 1000 psi (6,9 MPa)

For line pressures above 2000 psi (13,7 MPa) and Ranges 4-5, see user manual (Document number 00809-0100-4001 for HART, 00809-0100-4774 for FOUNDATION fieldbus, and 00809-0100-4797 for Profibus PA).

Models	Line Pressure Effect
3051CD, 3051CF	Zero Error(1)
Ranges 2-3	±0.05% of URL/1000 psi (68,9 bar) for line pressures from 0 to 2000 psi (0 to 13,7 MPa)
Range 1	±0.25% of URL/1000 psi (68,9 bar)
Range 0	±0.125% of URL/100 psi (6,89 bar)
	Span Error
Ranges 2-3	±0.1% of reading/1000 psi (68,9 bar)
Range 1	±0.4% of reading/1000 psi (68,9 bar)
Range 0	±0.15% of reading/100 psi (6,89 bar)

(1) Can be calibrated out at line pressure.

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

Models	Ambient Temperature Effect
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 100:1
Range 1	±(0.1% URL + 0.25% span) from 1:1 to 30:1
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 100:1
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 100:1
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)
3051L	See Instrument Toolkit software.

Mounting Position Effects

Models	Mounting Position Effects
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 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.

Electromagnetic Compatibility (EMC)

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

Transient Protection (Option Code T1)

Meets IEEE C62.41, Category Location B

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

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)			
	3051CD[(1)], 3051CG, 3051CF, 3051L	Upper (URL)	3051CD Differential 3051CF Flowmeters	3051CG Gage	3051L Differential	3051LGage
0	0.1 inH_2O (0,25 mbar)	3.0 inH_2O (7,47 mbar)	-3.0 inH_2O (-7,47 mbar)	NA	NA	NA
1	0.5 inH_2O (1,2 mbar)	25 inH_2O (62,3 mbar)	-25 inH_2O (-62,1 mbar)	-25 inH_2O (-62,1 mbar)	NA	NA
2	2.5 inH_2O (6,2 mbar)	250 inH_2O (0,62 bar)	-250 inH_2O (-0,62 bar)	-250 inH_2O (-0,62 bar)	-250 inH_2O (-0,62 bar)	-250 inH_2O (-0,62 bar)
3	10 inH_2O (24,9 mbar)	1000 inH_2O (2,49 bar)	-1000 inH_2O (-2,49 bar)	0.5 psia (34,5 mbar abs)	-1000 inH_2O (-2,49 bar)	0.5 psia (34,5 mbar abs)
4	3 psi (0,20 bar)	300 psi (20,6 bar)	-300 psi (-20,6 bar)	0.5 psia (34,5 mbar abs)	-300 psi (-20,6 bar)	0.5 psia (34,5 mbar abs)
5	20 psi (1,38 bar)	2000 psi (137,9 bar)	- 2000 psi (-137,9 bar)	0.5 psia (34,5 mbar abs)	NA	NA

(1) Range 0 only available with 3051CD. Range 1 only available with 3051CD, 3051CG, or 3051CF.

Table 8. Range and Sensor Limits

Range	3051CA				Range	3051T			
		Range and Sensor Limits					Range and Sensor Limits		
	Minimum Span	Upper (URL)	Lower (LRL)			Minimum Span	Upper (URL)	Lower (LRL)	Lower[(1)] (LRL) (Gage)
1	0.3 psia (20,6 mbar)	30 psia (2,07 bar)	0 psia (0 bar)		1	0.3 psi (20,6 mbar)	30 psi (2,07 bar)	0 psia (0 bar)	-14.7 psig (-1,01 bar)
2	1.5 psia (0,103 bar)	150 psia (10,3 bar)	0 psia (0 bar)		2	1.5 psi (0,103 bar)	150 psi (10,3 bar)	0 psia (0 bar)	-14.7 psig (-1,01 bar)
3	8 psia (0,55 bar)	800 psia (55,2 bar)	0 psia (0 bar)		3	8 psi (0,55 bar)	800 psi (55,2 bar)	0 psia (0 bar)	-14.7 psig (-1,01 bar)
4	40 psia (2,76 bar)	4000 psia (275,8 bar)	0 psia (0 bar)		4	40 psi (2,76 bar)	4000 psi (275,8 bar)	0 psia (0 bar)	-14.7 psig (-1,01 bar)
					5	2000 psi (137,9 bar)	10000 psi (689,4 bar)	0 psia (0 bar)	-14.7 psig (-1,01 bar)

(1) Assumes atmospheric pressure of 14.7 psig.

Service

Liquid, gas, and vapor applications

4-20 mA HART (Output Code A)

Output

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

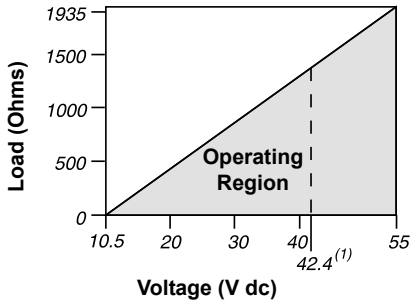
Power Supply

External power supply required. Standard transmitter (4-20 mA) operates on 10.5 to 55 V dc with no load.

Load Limitations

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

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.

Indication

Optional two line LCD display

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 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 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

Optional external configuration buttons

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

Output

Three wire 1-5 V dc or 0.8-3.2 V dc (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 V dc 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 (51,7 bar)
- Range 1: 2000 psig (137,9 bar)
- Ranges 2-5: 3626 psig (250 bar)
  4500 psig (310,3 bar) for option code P9

Rosemount 3051CA

- Range 1: 750 psia (51,7 bar)
- Range 2: 1500 psia (103,4 bar)
- Range 3: 1600 psia (110,3 bar)
- Range 4: 6000 psia (413,7 bar)

Rosemount 3051TG/TA

- Range 1: 750 psi (51,7 bar)
- Range 2: 1500 psi (103,4 bar)
- Range 3: 1600 psi (110,3 bar)
- Range 4: 6000 psi (413,7 bar)
- Range 5: 15000 psi (1034,2 bar)

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, 3 bar) for Option Code P9).

Range 0: 0.5 psia and 750 psig (3, 4 bar and 51, 7 bar)

Range 1: 0.5 psia and 2000 psig (3, 4 bar and 137, 9 bar)

Burst Pressure Limits

3051C, 3051CF Coplanar or Traditional process flange

10000 psig (69 MPa)

3051T Inline

Ranges 1-4: 11000 psi (75,8 MPa)

Range 5: 26000 psig (179 MPa)

Failure Mode Alarm

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

Standard Operation			
Output Code	**Linear Output**	**Fail High**	**Fail Low**
A	$3.9 \le I \le 20.8$	$I \ge 21.75$ mA	$I \le 3.75$ mA
M	$0.97 \le V \le 5.2$	$V \ge 5.4$ V	$V \le 0.95$V

NAMUR-Compliant Operation			
Output Code	**Linear Output**	**Fail High**	**Fail Low**
A	$3.8 \le I \le 20.5$	$I \ge 22.5$ mA	$I \le 3.6$ mA

Output Code F and W

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): -40 to 175 °F (-40 to 80 °C)

Storage

-50 to 230 °F (-46 to 110 °C)

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

Process

At atmospheric pressures and above. See Table 10

(1) LCD Display may not be readable and updates may be slower at temperatures below -22 °F (-30 °C)

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)	0 to 185 °F (–18 to 85 °C)(4)(5)
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)	0 to 185 °F (–18 to 85 °C)(2)
3051L High-Side Temperature Limits (Process Fill Fluid)	
Syltherm® XLT	–100 to 300 °F (–73 to 149 °C)
D.C. Silicone 704®	32 to 400 °F (0 to 205 °C)
D.C. Silicone 200	–40 to 400 °F (–40 to 205 °C)
Inert	–50 to 350 °F (–45 to 177 °C)
Glycerin and Water	0 to 200 °F (–18 to 93 °C)
Neobee M-20	0 to 400 °F (–18 to 205 °C)
Propylene Glycol and Water	0 to 200 °F (–18 to 93 °C)

(1) Process temperatures above 185 °F (85 °C) require derating the ambient limits by a 1.5:1 ratio.

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

(3) 3051CD0 process temperature limits are –40 to 212 °F (–45 to 100 °C)

(4) 160 °F (71 °C) limit in vacuum service.

(5) 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 protocol) after power is applied to the transmitter

Volumetric Displacement

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

Damping

4-20 mA HART

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, G1/2, and M20 × 1.5 conduit. *HART* interface connections fixed to terminal block.

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. A DIN 16288 Male (available in SST for Range 1–4 transmitters only), or Autoclave type F-250-C (Pressure relieved 9/16–18 gland thread; 1/4 OD high pressure tube 60° cone; available in SST for Range 5 transmitters only).

Rosemount 3051CF

For 3051CFA, see 00813-01000-4485 in the 485 section
For 3051CFC, see 00813-01000-4485 in the 405 section
For 3051CFP, see 00813-01000-4485 in the 1195 section

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 cast CF-8M (cast version of 316 SST, material per ASTM-A743), C-Type cast alloy CW12MW, or cast alloy M30C

Wetted O-rings

Glass-filled PTFE or Graphite-filled PTFE

Process Isolating Diaphragms

Isolating Diaphragm Material	3051CD 3051CG	3051T	3051CA
316L SST	•	•	•
Alloy C-276	•	•	•
Alloy 400	•		•
Tantalum	•		
Gold-plated Alloy 400	•		•
Gold-plated 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

Coplanar Sensor Module Housing

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

Bolts

ASTM A449, Type 1 (zinc-cobalt plated carbon steel)
ASTM F593G, Condition CW1 (Austenitic 316 SST)
ASTM A193, Grade B7M (zinc plated alloy steel)
Alloy K-500

Sensor Module Fill Fluid

Silicone or inert halocarbon
In-line series uses Fluorinert® FC-43

Process Fill Fluid (3051L only)

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

Paint

Polyurethane

Cover O-rings

Buna-N

Shipping Weights

Table 11. Transmitter Weights without Options

Transmitter	Add Weight In lb. (kg)
3051C	6.0 (2,7)
3051T	3.0 (1,4)
3051L	Table 12 on page 43

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 Options 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 Aluminum Housing	0.5 (0,2)
M4/M6	LCD display for SST Housing	1.25 (0,6)
B4	SST Mounting Bracket for Coplanar Flange	1.0 (0,5)
B1, B2, B3	Mounting Bracket for Traditional Flange	2.3 (1,0)
B7, B8, B9	Mounting Bracket for Traditional Flange	2.3 (1,0)
BA, BC	SST Bracket for Traditional Flange	2.3 (1,0)
H2	Traditional Flange	2.4 (1,1)
H3	Traditional Flange	2.7 (1,2)
H4	Traditional Flange	2.6 (1,2)
H7	Traditional Flange	2.5 (1,1)
FC	Level Flange—3 in., 150	10.8 (4,9)
FD	Level Flange—3 in., 300	14.3 (6,5)
FA	Level Flange—2 in., 150	10.7 (4,8)
FB	Level Flange—2 in., 300	14.0 (6,3)
FP	DIN Level Flange, SST, DN 50, PN 40	8.3 (3,8)
FQ	DIN Level Flange, SST, DN 80, PN 40	13.7 (6,2)

Product Certifications

Approved Manufacturing Locations

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

ATEX Directive (94/9/EC)

All 3051 transmitters comply with the ATEX Directive.

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

3051CA4; 3051CG2, 3, 4, 5; 3051CD2, 3, 4, 5
(also with P9 option)
— QS Certificate of Assessment - EC No. 59552-2009-CE-HOU-DNV
Module H Conformity Assessment

All other 3051Pressure Transmitters

— Sound Engineering Practice

Transmitter Attachments: Diaphragm Seal - Process Flange - Manifold

— Sound Engineering Practice

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

All 3051 Pressure Transmitters meet all of the requirements of EN61326 and NAMUR NE-21

Ordinary Location Certification for Factory Mutual

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

HART PROTOCOL

Hazardous Locations Certifications

North American Certifications

FM Approvals

E5 Explosion-Proof for Class I, Division 1, Groups B, C, and D. Dust-Ignition-Proof for Class II, Division 1, Groups E, F, and G. Dust-Ignition-Proof for Class III, Division 1.
Factory Sealed, Enclosure Type 4X

I5 Intrinsically Safe for use in Class I, Division 1, Groups A, B, C, and D; Class II, Division 1, Groups E, F, and G; Class III, Division 1 when connected per Rosemount drawing 03031-1019; Non-incendive for Class I, Division 2, Groups A, B, C, and D.
Temperature Code:T4 (Ta = 40 °C), T3 (Ta = 85 °C), Enclosure Type 4X
For input parameters see control drawing 03031-1019.

Canadian Standards Association (CSA)

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

E6 Explosion-Proof for Class I, Division 1, Groups B, C, and D. Dust-Ignition-Proof for Class II and Class III, Division 1, Groups E, F, and G. Suitable for Class I, Division 2 Groups A, B, C, and D for indoor and outdoor hazardous locations. Enclosure type 4X, factory sealed

C6 Explosion-Proof and intrinsically safe approval. Intrinsically safe for Class I, Division 1, Groups A, B, C, and D when connected in accordance with Rosemount drawings 03031-1024. Temperature Code T3C.
Explosion-Proof for Class I, Division 1, Groups B, C, and D. Dust-Ignition-Proof for Class II and Class III, Division 1, Groups E, F, and G. Suitable for Class I, Division 2 Groups A, B, C, and D hazardous locations. Enclosure type 4X, factory sealed
For input parameters see control drawing 03031-1024.

European Certifications

I1 ATEX Intrinsic Safety and Dust
Certification No.: BAS 97ATEX1089X ⟨Ex⟩ II 1 GD
Ex ia IIC T4 (–60 ≤ T_a ≤ +70 °C)
Dust Rating: Ex tD A20 T80 °C (–20 ≤ T_a ≤ 40 °C) IP66
CE 1180

TABLE 14. Input Parameters

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

TABLE 15. RTD Assembly (3051CFx Option T or R)

U_i = 5 Vdc
I_i = 500 mA
P_i = 0.63W

Special Conditions for Safe Use (X):
When the optional transient protection terminal block is installed, the apparatus is not capable of withstanding the 500V insulation test required by Clause 6.3.12 of EN60079-11. This must be taken into account when installing the apparatus.
The enclosure may be made of aluminium alloy and given a protective polyurethane paint finish; however care should be taken to protect it from impact or abrasion located in Zone 0.

N1 ATEX Type n and Dust
Certification No.: BAS 00ATEX3105X ⟨Ex⟩ II 3 GD
U_i = 55 Vdc max
Ex nA nL T5 (–40°C ≤ T_{amb} ≤ 70 °C)
Dust rating: Ex tD A22 T80 °C (–20 ≤ T_a ≤ 40 °C) IP66
CE

Special Conditions for Safe Use (X):
When the optional transient protection terminal block is installed, the apparatus is not capable of withstanding a 500V r.m.s. test to case. This must be taken into account on any installation in which it is used, for example by assuring that the supply to the apparatus is galvanically isolated.

E8 ATEX Flame-Proof and Dust
Certification No.: KEMA 00ATEX2013X ⟨Ex⟩ II 1/2 GD
Ex d IIC T6 (–50 ≤ T_a ≤ 65 °C)
Dust rating: Ex tD A20/A21 T90 °C, IP66
CE 1180
Vmax = 55 V dc

Special Conditions for Safe Use (X):
This device contains a thin wall diaphragm. Installation, maintenance, and use shall take into account the environmental conditions to which the diaphragm will be subjected. The manufacturer's instructions for installation and maintenance shall be followed in detail to assure safety during its expected lifetime.
In case of repair, contact the manufacturer for information on the dimensions of the flameproof joints.

IECEx Certifications

I7 IECEx Intrinsic Safety
Certification No.: IECEx BAS 09.0076X
Ex ia IIC T4 (–60 °C ≤ T_a ≤ 70 °C)
IP66

TABLE 16. Input Parameters

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

TABLE 17. RTD Assembly (3051CFx Option T or R)

U_i = 5 Vdc
I_i = 500 mA
P_i = 0.63W

Special Conditions for Safe Use (X):
When the optional transient protection terminal block is installed, the apparatus is not capable of withstanding the 500V insulation test required by Clause 6.3.12 of IEC 60079-11. This must be taken into account when installing the apparatus.
The enclosure may be made of aluminium alloy and given a protective polyurethane paint finish; however care should be taken to protect it from impact or abrasion located in Zone 0.

E7 IECEx Explosion-Proof (Flame-Proof)
Certification No.: IECEx KEM 09.0034X
Ga/Gb Ex d IIC T6 or T5
Ex tD A20/A21 IP66 T90 °C
IP66

Special Conditions for Safe Use (X):
This device contains a thin wall diaphragm. Installation, maintenance and use shall take into account the environmental conditions to which the diaphragm will be subjected. The manufacturer's instructions for installation and maintenance shall be followed in detail to assure safety during its expected lifetime.

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

N7 IECEx Type n
Certification No.: IECEx BAS 09.0077X
Ex nA nL IIC T5 (–40 °C ≤ T_a ≤ 70 °C)
IP66

Special Conditions for Safe Use (X):
The apparatus is not capable of withstanding the 500V insulation test required by clause 6.8.1 of 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
TC15850	3051C/D/1 4–20 mA HART — no display
TC15851	3051C/D/1 4–20 mA HART — with display
TC15854	3051T/G/1 4–20 mA HART, SST, Silicon — no display
TC15855	3051T/G/1 4–20 mA HART, Alloy C-276, Silicon — no display
TC15856	3051T/G/1 4–20 mA HART, SST, Silicon — with display
TC15857	3051T/G/1 4–20 mA HART, Alloy C-276, Silicon — with display

I4 TIIS Intrinsic Safety
Ex ia IIC T4

Certificate	Description
TC16406	3051CD/CG

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** and **I5** combination

KB **K5** and **C6** combination

KD **K5**, **C6**, **I1**, and **E8** combination

K6 **C6**, **I1**, and **E8** combination

K8 **E8** and **I1** combination

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

FOUNDATION FIELDBUS AND PROFIBUS PA PROTOCOLS

Hazardous Locations Certifications

North American Certifications

FM Approvals

E5 Explosion-Proof for Class I, Division 1, Groups B, C, and D. Dust-Ignition-Proof for Class II, Division 1, Groups E, F, and G. Dust-Ignition-Proof for Class III, Division 1.

I5 Intrinsically Safe for use in Class I, Division 1, Groups A, B, C, and D; Class II, Division 1, Groups E, F, and G; Class III, Division 1 when connected per Rosemount drawing 03031-1019; Non-incendive for Class I, Division 2, Groups A, B, C, and D.

Temperature Code:T4 (Ta = 60 °C), T3 (Ta = 85 °C), Enclosure Type 4X
For input parameters see control drawing 03031-1019.

Canadian Standards Association (CSA)

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

E6 Explosion-Proof for Class I, Division 1, Groups B, C, and D. Dust-Ignition-Proof for Class II and Class III, Division 1, Groups E, F, and G. Suitable for Class I, Division 2 Groups A, B, C, and D for indoor and outdoor hazardous locations. Enclosure type 4X, factory sealed

C6 Explosion-Proof and intrinsically safe approval. Intrinsically safe for Class I, Division 1, Groups A, B, C, and D when connected in accordance with Rosemount drawings 03031-1024. Temperature Code T3C.
Explosion-Proof for Class I, Division 1, Groups B, C, and D. Dust-Ignition-Proof for Class II and Class III, Division 1, Groups E, F, and G. Suitable for Class I, Division 2 Groups A, B, C, and D hazardous locations. Enclosure type 4X, factory sealed
For input parameters see control drawing 03031-1024.

European Certifications

I1 ATEX Intrinsic Safety and Dust
Certification No.: BAS 98ATEX1355X ⟨Ex⟩ II 1 GD
Ex ia IIC T4 (T_{amb} = –60 to +60 °C)
Ex td A20 IP66 T 70 °C (-20 ≤ T_a ≤ 40 °C)
CE 1180

TABLE 18. Input Parameters

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

TABLE 19. RTD Assembly (3051CFx Option T or R)

U_i = 5 Vdc
I_i = 500 mA
P_i = 0.63W

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 clause 6.3.12 of EN 60079-11. This must be taken into account when installing the apparatus.
2. The enclosure may be made of aluminium 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
Certification No.: BAS 98ATEX1355X ⟨Ex⟩ II 1 G
Ex ia IIC T4 (T_{amb} = –60 to +60 °C)
IP66
CE 1180

TABLE 20. 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):
When the optional transient protection terminal block is installed, the apparatus is not capable of withstanding the 500V insulation test required by Clause 6.3.12 of EN60079-11. This must be taken into account when installing the apparatus.
The enclosure may be made of aluminium alloy and given a protective polyurethane paint finish; however care should be taken to protect it from impact or abrasion located in Zone 0.

N1 ATEX Type n and Dust
Certification No.: BAS 98ATEX3356X ⟨Ex⟩ II 3 GD
U_i = 40 Vdc max
Ex nL IIC T5 (T_a = –40°C to 70 °C)
Dust rating: Ex tD A22 T80 °C (T_{amb} = –20 to 40 °C) IP66

Special Conditions for Safe Use (X):
The apparatus is not capable of withstanding the 500V insulation test required by clause 6.8.1 of EN 60079-15. This must be taken into account when installing the apparatus.

E8 ATEX Flame-Proof and Dust
Certification No.: KEMA 00ATEX2013X ⟨Ex⟩ II 1/2 GD
Ex d IIC T6 (T_{amb} = –50 to 65 °C)
Dust rating: Ex tD A20/21 T90 °C, IP66
CE 1180
Vmax = 55 V dc

Special Conditions for Safe Use (X):
This device contains a thin wall diaphragm. Installation, maintenance, and use shall take into account the environmental conditions to which the diaphragm will be subjected. The manufacturer's instructions for installation and maintenance shall be followed in detail to assure safety during its expected lifetime.
In case of repair, contact the manufacturer for information on the dimensions of the flameproof joints.

IECEx Certifications

I7 IECEx Intrinsic Safety
Certification No.: IECEx BAS 09.0076X
Ex ia IIC T4 (–60 °C ≤ T_a ≤ 60 °C)
IP66

TABLE 21. Input Parameters

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

TABLE 22. RTD Assembly (3051CFx Option T or R)

U_i = 5 Vdc
I_i = 500 mA
P_i = 0.63W

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 clause 6.3.12 of IEC 60079-11. This must be taken into account when installing the apparatus.
2. The enclosure may be made of aluminium 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 Explosion-Proof (Flame-Proof)
Certification No.: IECEx KEM 09.0034X
Ga/Gb Ex d IIC T6 or T5
Ex tD A20/A21 IP66 T90 °C
IP66

Special Conditions for Safe Use (X):
This device contains a thin wall diaphragm. Installation, maintenance and use shall take into account the environmental conditions to which the diaphragm will be subjected. The manufacturer's instructions for installation and maintenance shall be followed in detail to assure safety during its expected lifetime.

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

N7 IECEx Type n
Certification No.: IECEx BAS 09.0077X
Ex nA nL IIC T5 (–40 °C ≤ T_a ≤ 70 °C)
IP66

Special Conditions for Safe Use (X):
The apparatus is not capable of withstanding the 500V insulation test required by clause 6.8.1 of 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

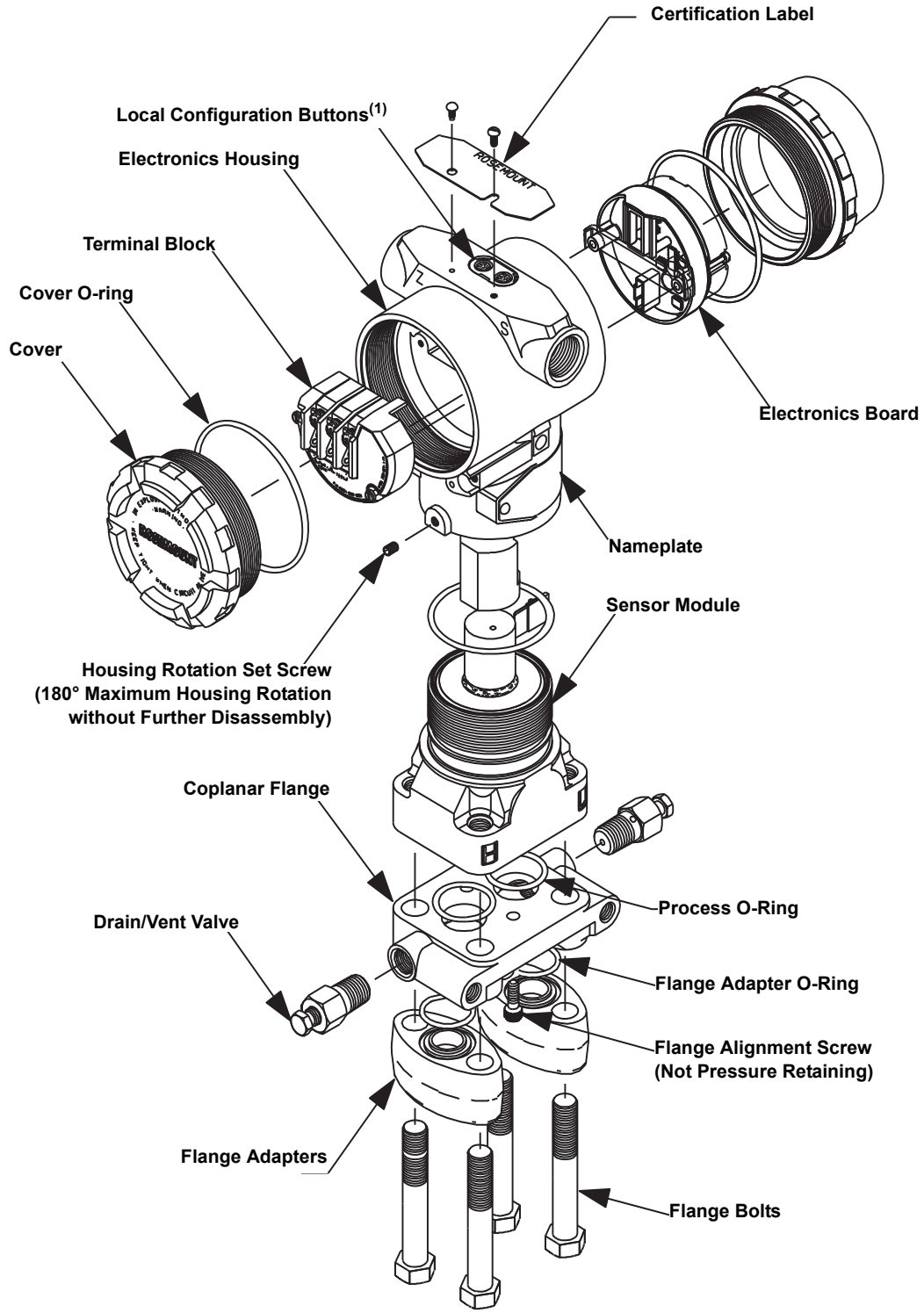
Combinations of Certifications

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** and **I5** combination
KB **K5** and **C6** combination
KD **K5**, **C6**, **I1**, and **E8** combination
K6 **C6**, **I1**, and **E8** combination
K8 **E8** and **I1** combination
K7 **E7**, **I7**, and **N7** combination

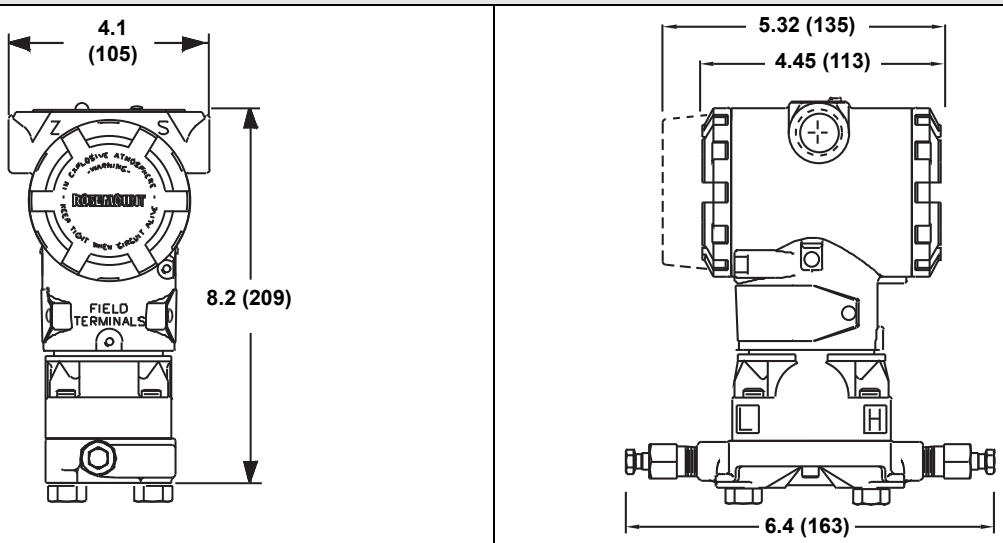
Dimensional Drawings

3051C Exploded View



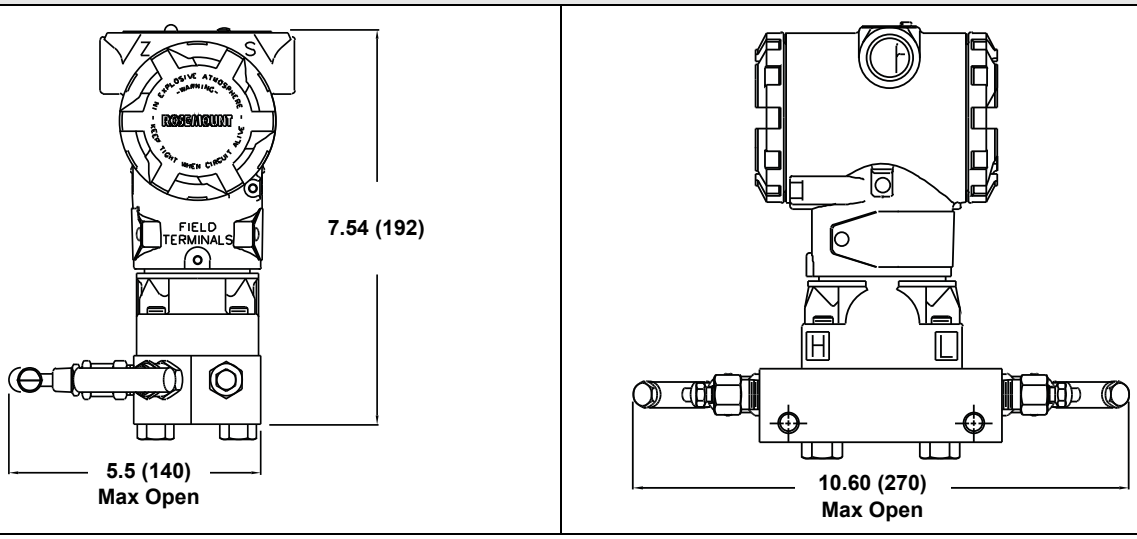
1) Span and Zero Adjustment Buttons are standard with 4-20 mA and 1-5 Vdc HART protocol. Local Operator Interface buttons are optional for Profibus PA protocol. Local Configuration Buttons are not available with FOUNDATION fieldbus.

3051C Coplanar Flange[1]



(1) For FOUNDATION fieldbus and Profibus PA transmitters with LCD Display, housing length is 5.78 in. (147 mm).

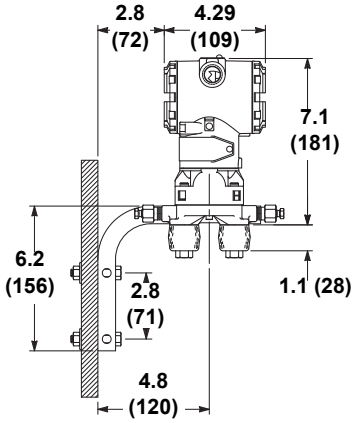
3051C Coplanar Flange with Rosemount 305 3-Valve Coplanar Integral Manifold

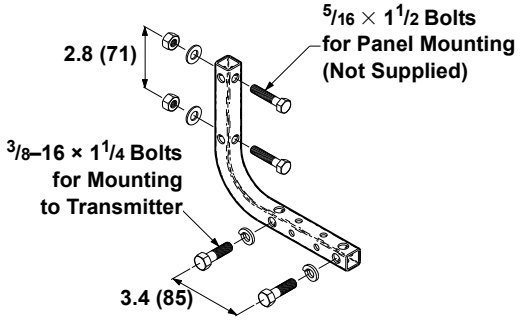


Dimensions are in inches (millimeters)

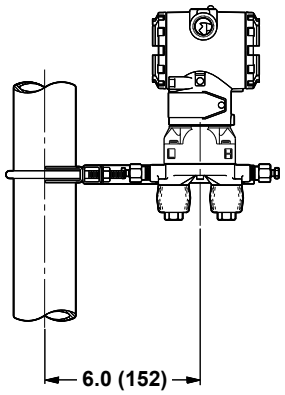
Coplanar Flange Mounting Configurations with Optional Bracket (B4) for 2-in. Pipe or Panel Mounting

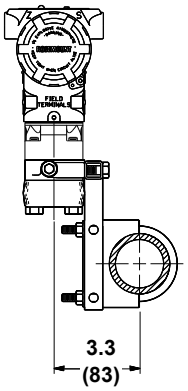
PANEL MOUNTING

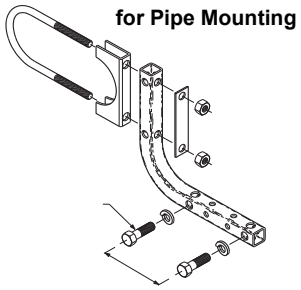




PIPE MOUNTING

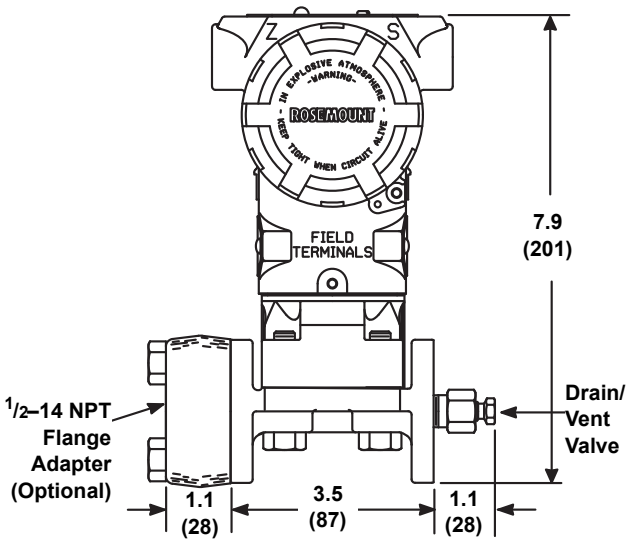


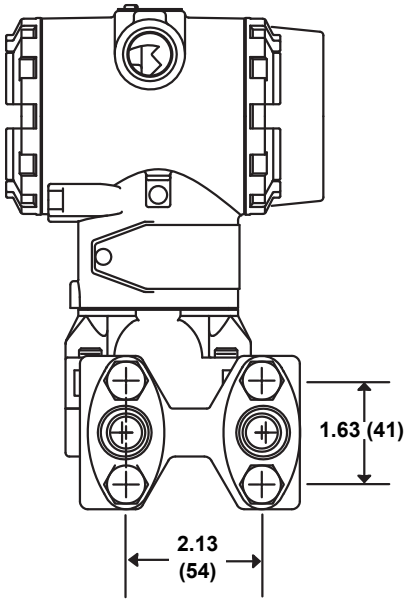




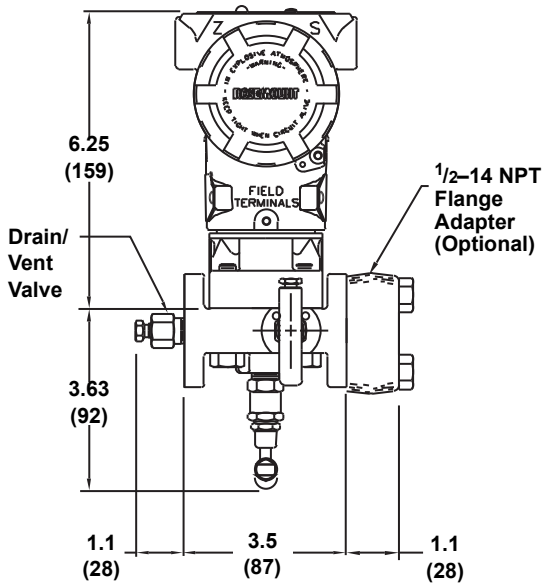
Dimensions are in inches (millimeters)

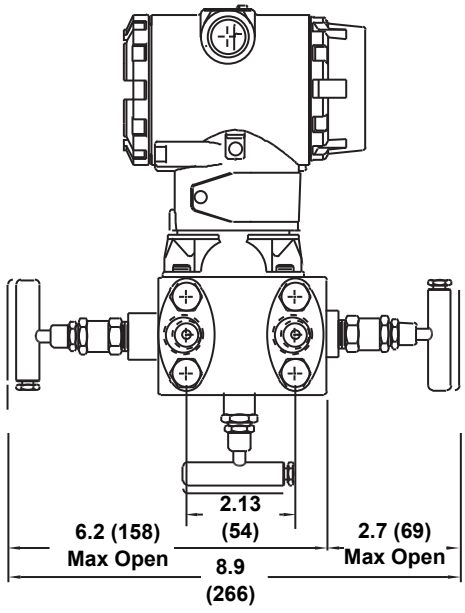
3051C Coplanar with Traditional Flange





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

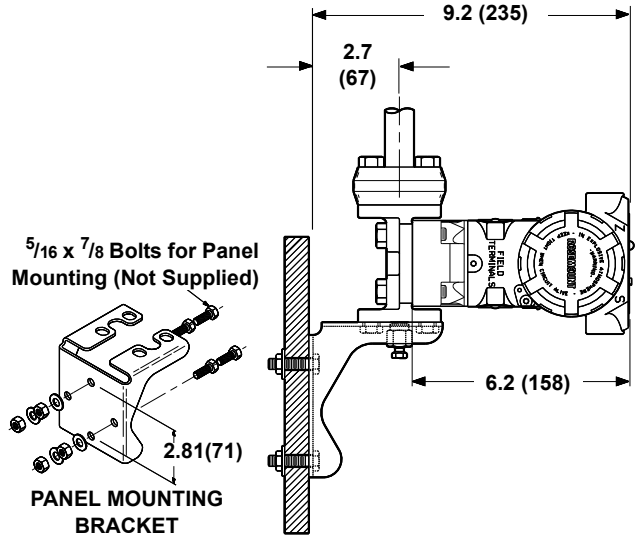




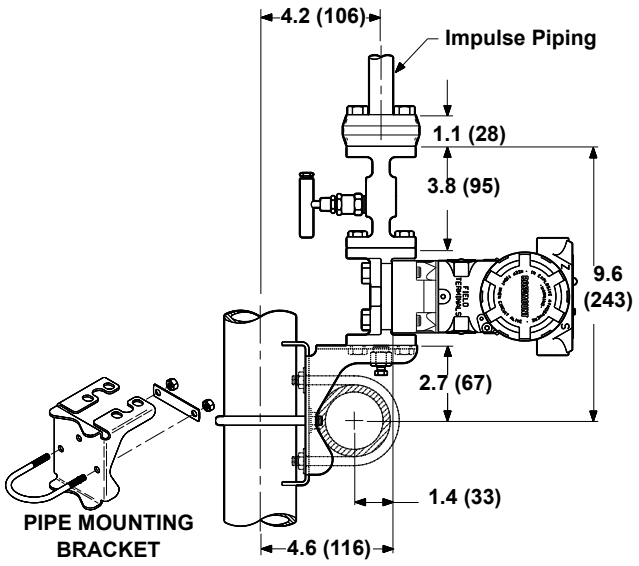
Dimensions are in inches (millimeters)

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

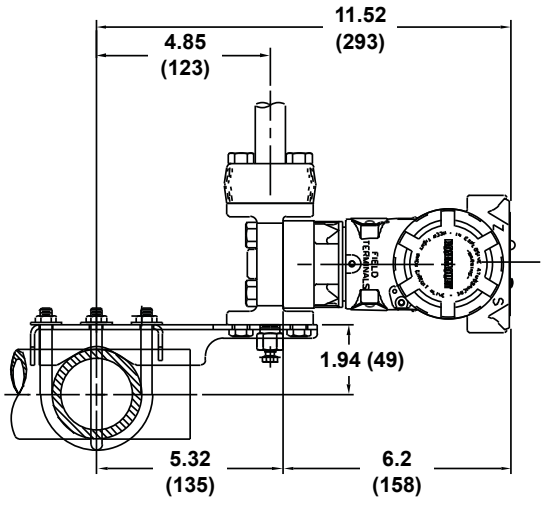
Panel Mounting Bracket (option B2/B8)



2-in. Pipe Mounting Bracket (option B1/B7/BA)

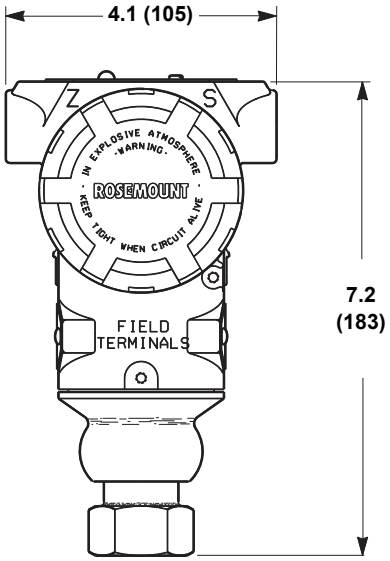


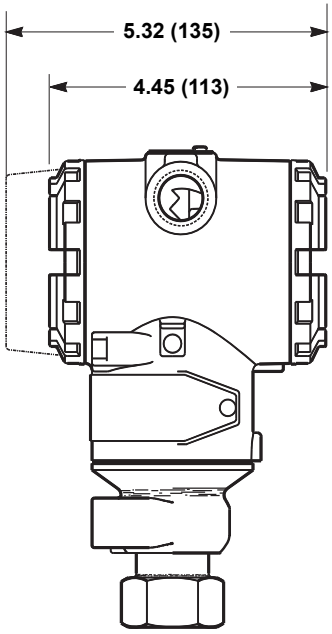
2-in. Pipe Mounting Bracket (option B3/B9/BC)



Dimensions are in inches (millimeters)

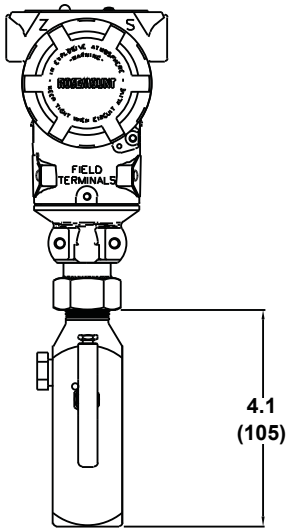
3051T Dimensional Drawings(1)

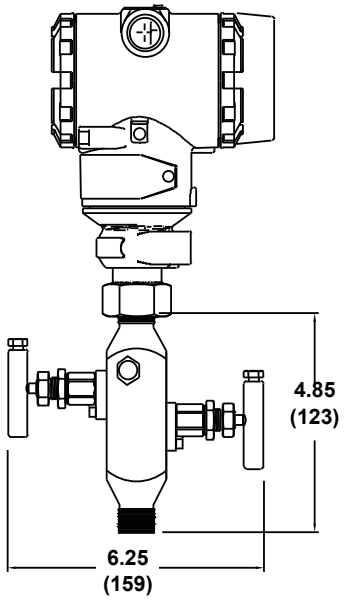




(1) For FOUNDATION fieldbus and Profibus PA transmitters with LCD Display, housing length is 5.78 in. (146 mm).

3051T with Rosemount 306 2-Valve I Integral Manifold

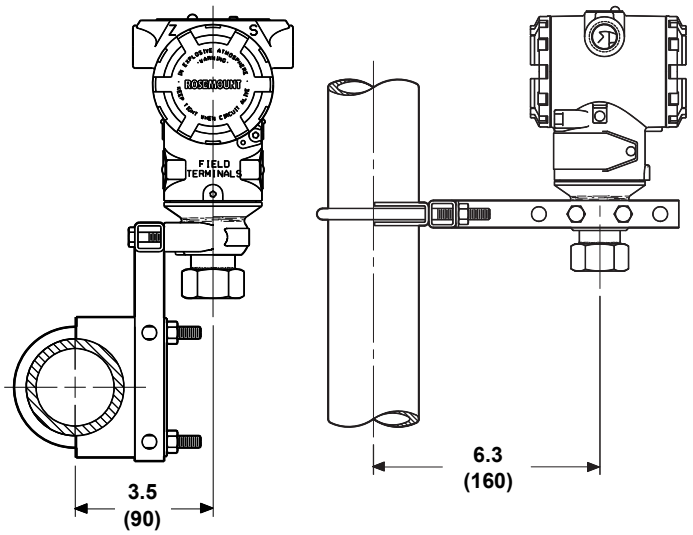




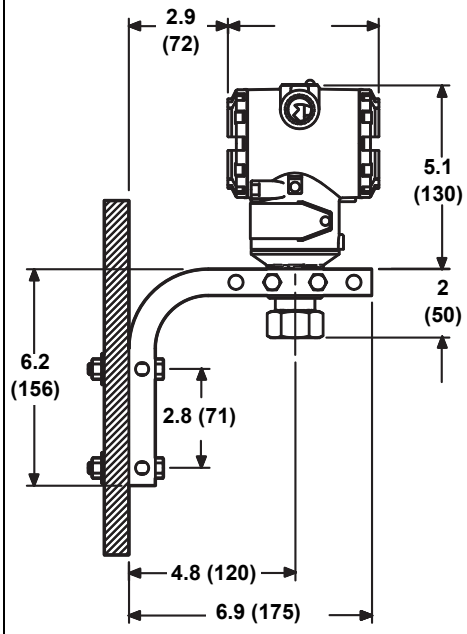
Dimensions are in inches (millimeters)

3051T Typical Mounting Configurations with Optional Mounting Bracket

Pipe Mounting



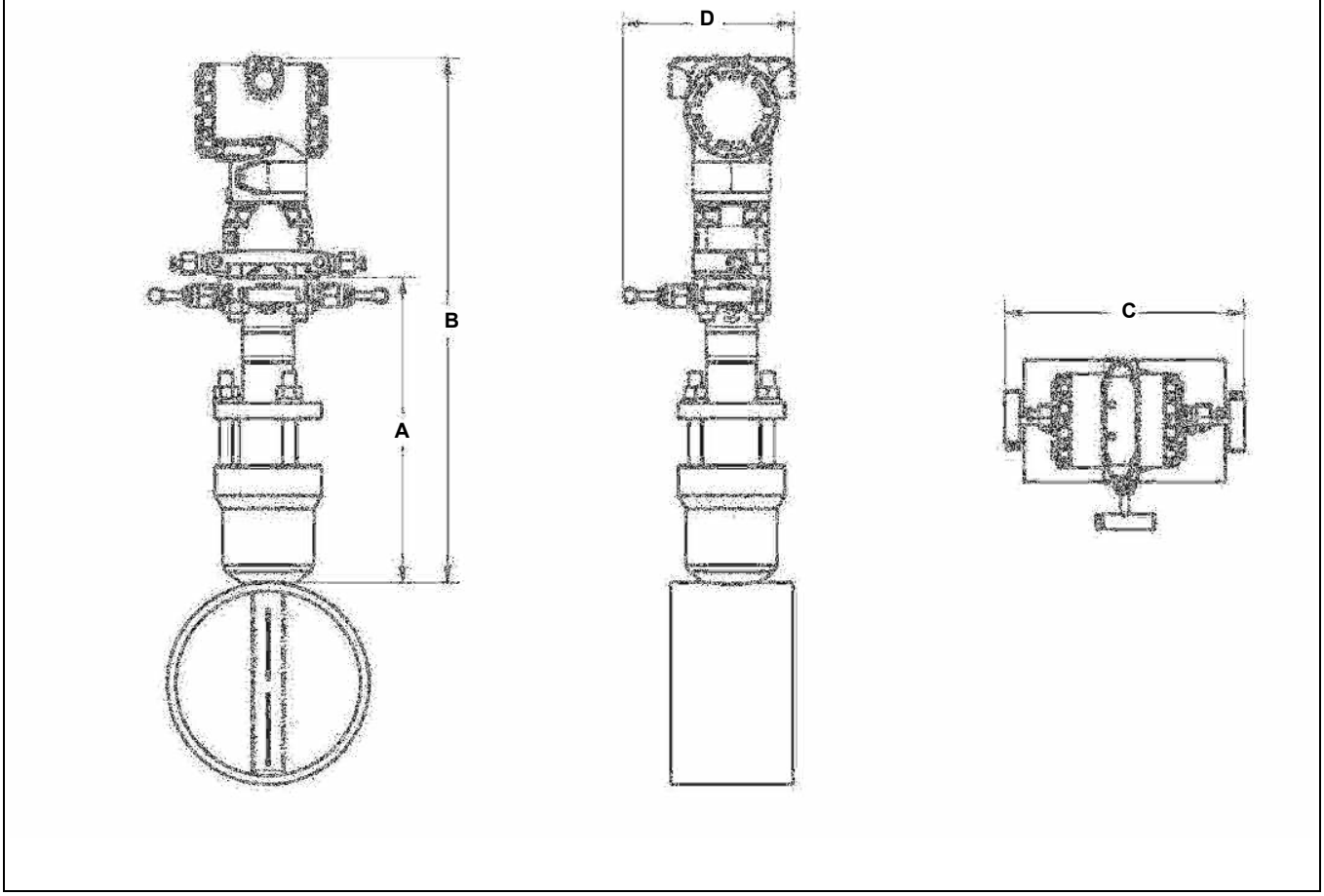
Panel Mounting



Dimensions are in inches (millimeters)

Rosemount 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 23. 3051CFA Pak-Lok Annubar Flowmeter Dimensional Data

Sensor Size	A (Max)	B (Max)	C (Max)	D (Max)
1	8.50 (215.9)	14.60 (370.8)	9.00 (228.6)	6.00 (152.4)
2	11.0 (279.4)	16.35 (415.3)	9.00 (228.6)	6.00 (152.4)
3	12.00 (304.8)	19.10 (485.1)	9.00 (228.6)	6.00 (152.4)
Dimensions are in inches (millimeters)				

Rosemount 3051CFC Compact Orifice Flowmeter

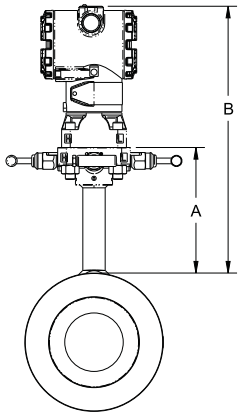
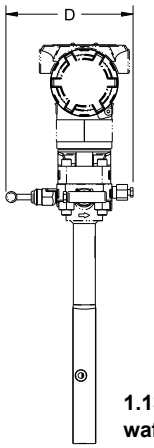
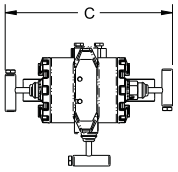
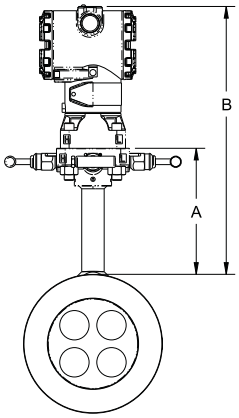
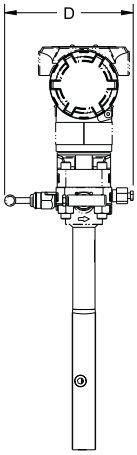
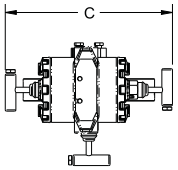
	Orifice Plate Side View	Orifice Plate Front View	Orifice Plate Top View
Compact Orifice Plate (Primary Element Type code P)		 **1.13-in. (28.7 mm) wafer thickness**	
Conditioning Orifice Plate (Primary Element Type code C)			

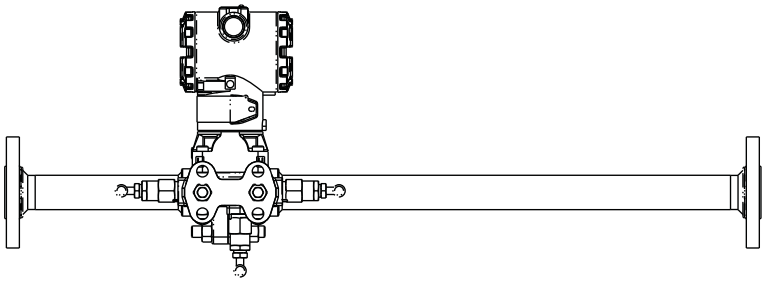
Table 24. Dimensional Drawings

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

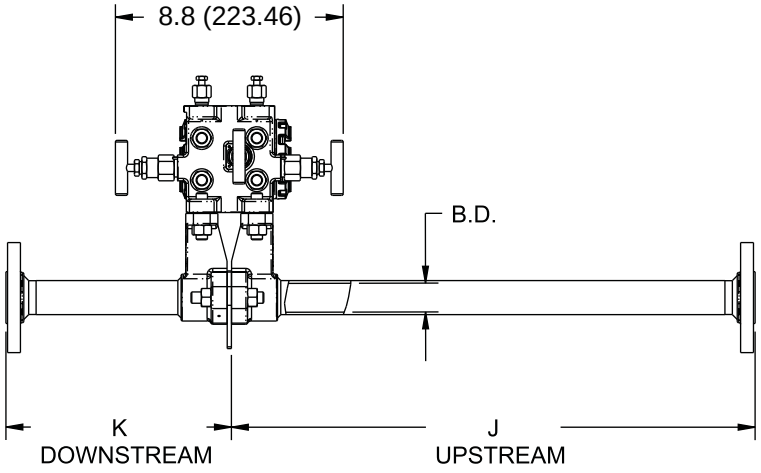
Dimensions are in inches (millimeters)

Rosemount 3051CFP Integral Orifice Flowmeter

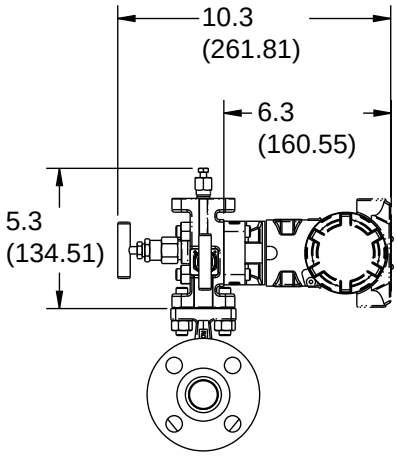
Side View



Bottom View



Front View



Dimensions are in inches (millimeters).

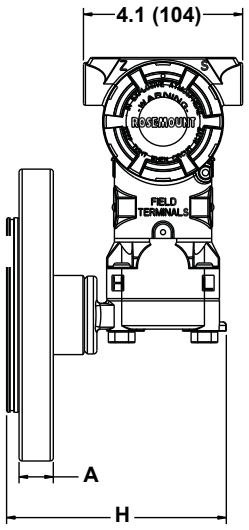
	Line Size		
Dimension	**1/2-in. (15 mm)**	**1-in. (25 mm)**	**1 1/2-in. (40 mm)**
J (Beveled/Threaded pipe ends)	12.54 (318.4)	20.24 (514.0)	28.44 (722.4)
J (RF slip-on, RTJ slip-on, RF-DIN slip on)	12.62 (320.4)	20.32 (516.0)	28.52 (724.4)
J (RF 150#, weld neck)	14.37 (364.9)	22.37 (568.1)	30.82 (782.9)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

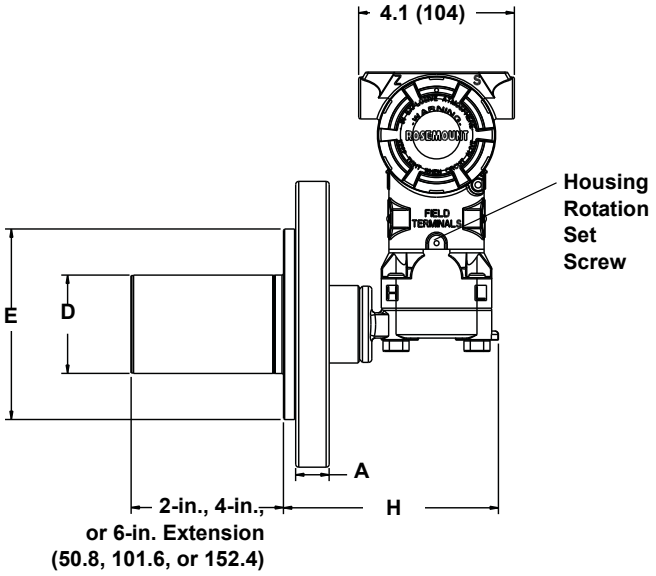
(1) Downstream length shown here includes plate thickness of 0.162-in. (4.11 mm).

3051L Dimensional Drawings

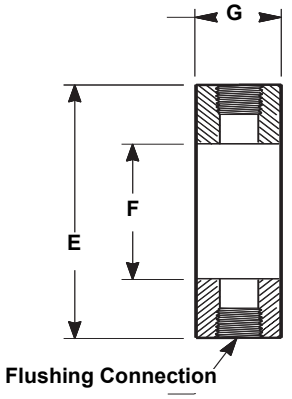
2-in. Flange Configuring (Flush Mount Only)



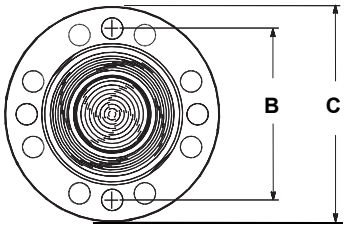
3- and 4-in. Flange Configuration

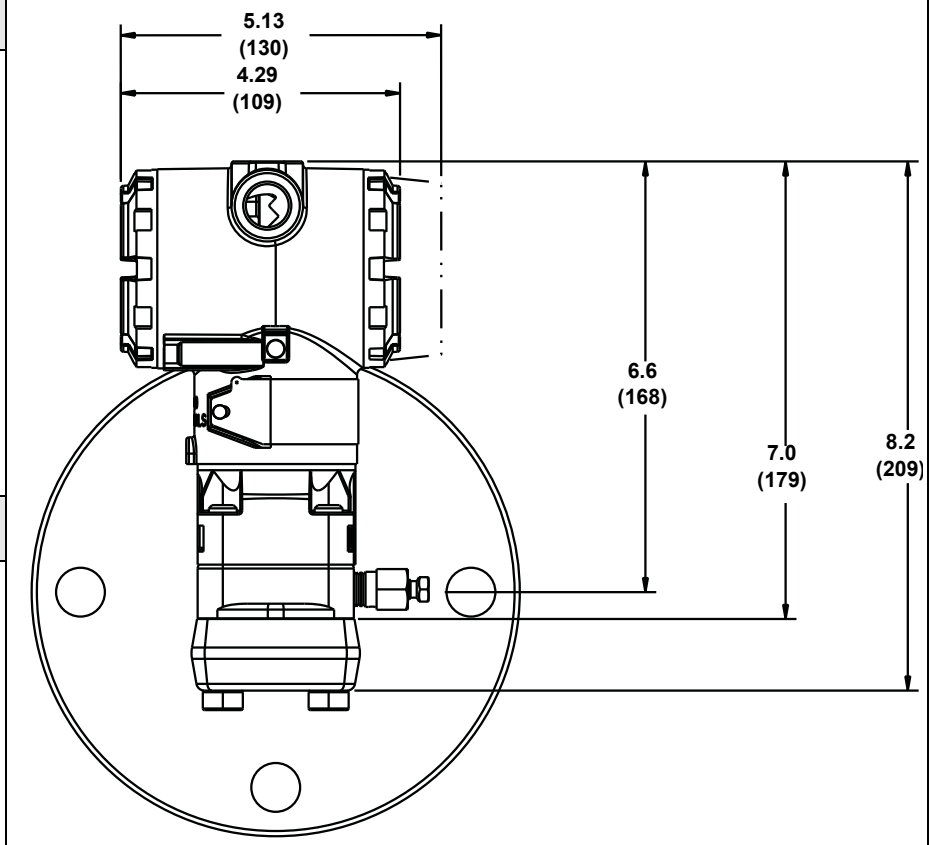


Optional Flushing Connection Ring (Lower Housing)



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 are 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) Tolerances are 0.040 (1.02), –0.020 (0.51).

OPTIONS

Standard Configuration

Unless otherwise specified, transmitter is shipped as follows:

ENGINEERING UNITS	
***Differential/Gage*:**	inH_2O (Range 0, 1, 2, and 3) psi (Range 4 and 5)
***Absolute/3051TA*:**	psi (all ranges)
4 mA (1 V dc)[(1)]:	0 (engineering units above)
20 mA (5 V dc)[(1)]:	Upper range limit
Output:	Linear
Flange type:	Specified model code option
Flange material:	Specified model code option
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 or Profibus PA.

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

Refer to the "Rosemount 3051 Configuration Data Sheet" document number 00806-0100-4001.

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 (30 characters maximum). Software tag is left blank unless specified.

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.

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.

(1) Not applicable to FOUNDATION fieldbus or Profibus PA protocols.
(2) Only applicable to FOUNDATION fieldbus.

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	inH2O@4 °C[(1)]	g/cm^2	psi
mbar	mmH_2O	kg/cm^2	torr
bar	mmHg	Pa	
inH_20	mmH2O@4 °C[(1)]	kPa	
inHg	ftH_20	MPa[(2)]	
Flow[(2)(3)]			
bbl	kg	cm^3	
ft^3	lb	m^3	
gal	L	ton	
Level[(2)]			
%	ft	cm	
in	mm		

(1) Only available on 4-20mA HART.

(2) Only 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 Profibus PA
- Commission the device with external Local Configuration Buttons
- LOI Menu includes: Address, Units, Calibration, Damping, Display, Identification Number

M5 Digital Display

- 2-Line, 5-Digit LCD for 4-20 mA HART
- 1-Line, 4-Digit LCD for 1-5 Vdc HART Low Power
- 2-Line, 8-Digit LCD for FOUNDATION fieldbus and Profibus PA
- 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

M6 Digital Display with 316 Stainless Steel Cover

- For use with stainless steel housing option (housing codes J, K, and L)

Hardward Adjustments[(1)]

4-20 mA HART and 1-5 Vdc HART Low Power transmitters ship with local span and zero adjustments standard unless otherwise specified.

- Non-interactive external zero and span adjustments ease calibration
- Magnetic switches replace standard potentiometer adjustments to optimize performance

J1 Local Zero Adjustment Only[(1)]

J3 No Local Zero or Span Adjustment[(1)]

Transient Protection

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

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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