

# Rosemount 3051 Pressure Transmitter



WirelessHART

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

**Let Transcat help you build your Rosemount Transmitter.**

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**EMERSON.**  
Process Management

# Setting the Standard for Pressure Measurement



## Proven best-in-class performance, reliability and safety

- Over 7 million installed
- Reference accuracy 0.04% of span
- Installed total performance of 0.14% of span
- 10-year stability of 0.2% of URL
- SIL2/3 certified (IEC 61508)

## Maximize installation and application flexibility with the coplanar platform

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

## Advanced functionality

### Power advisory diagnostics

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

### Local operator interface

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



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## Industry leading capabilities extended to IEC 62591 (WirelessHART®)

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



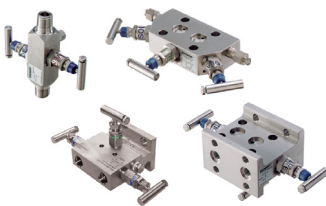
## Innovative, integrated DP Flowmeters

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



## Proven, reliable, and innovative DP Level Technologies

- Connect to virtually any process with a comprehensive offering of process connections, fill fluids, direct mount or capillary connections and materials
- Quantify and optimize total system performance with QZ option
- Operate at higher temperature and in vacuum applications
- Optimize level measurement with cost efficient Rosemount Tuned-System™ Assemblies



## Instrument manifolds – quality, convenient, and easy

- Designed and engineered for optimal performance with Rosemount transmitters
- Save installation time and money with factory assembly
- Offers a variety of styles, materials and configurations

# Rosemount 3051C Coplanar™ Pressure Transmitter



3051C Coplanar  
Pressure Transmitter

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

- Power Advisory can proactively detect degraded electrical loop integrity issues (Option Code **DA0**)
- Local Operator Interface with straightforward menus and built-in configuration buttons (Option Code **M4**)
- Safety Certification (Option Code **QT**)

See [Specifications](#) and options for more details on each configuration. Specification and selection of product materials, options, or components must be made by the purchaser of the equipment. See [page 54](#) for more information on Material Selection.

## Additional information:

Specifications: [page 45](#)

Certifications: [page 56](#)

Dimensional Drawings: [page 66](#)

## 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 <sup>(1)</sup>	Coplanar Pressure Transmitter			
<b>Measurement type</b>				
D	Differential			★
G	Gage			★
A <sup>(2)</sup>	Absolute			
<b>Pressure range</b>				
	<b>Differential (3051CD)</b>	<b>Gage (3051CG)</b>	<b>Absolute (3051CA)</b>	
1	-25 to 25 inH <sub>2</sub> O (-62,16 to 62,16 mbar)	-25 to 25 inH <sub>2</sub> O (-62,16 to 62,16 mbar)	0 to 30 psia (0 to 2,06 bar)	★
2	-250 to 250 inH <sub>2</sub> O (-621,60 to 621,60 mbar)	-250 to 250 inH <sub>2</sub> O (-621,60 to 621,60 mbar)	0 to 150 psia (0 to 10,34 bar)	★
3	-1000 to 1000 inH <sub>2</sub> O (-2,48 to 2,48 bar)	-393 to 1000 inH <sub>2</sub> O (-0,97 to 2,48 bar)	0 to 800 psia (0 to 55,15 bar)	★
4	-300 to 300 psi (-20,68 to 20,68 bar)	-14.2 to 300 psi (-0,97 to 20,68 bar)	0 to 4000 psia (0 to 275,79 bar)	★
5	-2000 to 2000 psi (-137,89 to 137,89 bar)	-14.2 to 2000 psi (-0,97 to 137,89 bar)	N/A	★
0 <sup>(3)</sup>	-3 to 3 inH <sub>2</sub> O (-7,46 to 7,46 mbar)	N/A	N/A	
<b>Transmitter output</b>				
A <sup>(4)</sup>	4–20 mA with Digital Signal Based on HART Protocol			★
F	FOUNDATION™ fieldbus Protocol			★
W <sup>(5)</sup>	PROFIBUS® PA Protocol			★
X <sup>(6)</sup>	Wireless (requires wireless options and engineered polymer housing)			★
M <sup>(7)</sup>	Low-Power, 1-5 Vdc with Digital Signal Based on HART® Protocol			

**Table 1. 3051C Coplanar Pressure Transmitters Ordering Information**

★ The Standard offering represents the most common options. The starred options (★) should be selected for best delivery.  
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<b>Materials of construction</b>				
	<b>Process flange type</b>	<b>Flange material</b>	<b>Drain/vent</b>	
2	Coplanar	SST	SST	★
3 <sup>(8)</sup>	Coplanar	Cast C-276	Alloy C-276	★
4	Coplanar	Alloy 400	Alloy 400/K-500	★
5	Coplanar	Plated CS	SST	★
7 <sup>(8)</sup>	Coplanar	SST	Alloy C-276	★
8 <sup>(8)</sup>	Coplanar	Plated CS	Alloy C-276	★
0	Alternate Process Connection			★
<b>Isolating diaphragm</b>				
2 <sup>(8)</sup>	316L SST			★
3 <sup>(8)</sup>	Alloy C-276			★
4 <sup>(9)</sup>	Alloy 400			
5 <sup>(9)</sup>	Tantalum (available on 3051CD and CG, Ranges 2–5 only; not available on 3051CA)			
6 <sup>(9)</sup>	Gold-plated Alloy 400 (use in combination with O-ring Option Code B)			
7 <sup>(9)</sup>	Gold-plated 316 SST			
<b>O-ring</b>				
A	Glass-filled PTFE			★
B	Graphite-filled PTFE			★
<b>Sensor fill fluid</b>				
1	Silicone			★
2 <sup>(9)</sup>	Inert (Differential and Gage only)			★
<b>Housing material</b>		<b>Conduit entry size</b>		
A	Aluminum	½–14 NPT		★
B	Aluminum	M20 × 1.5		★
J	SST	½–14 NPT		★
K	SST	M20 × 1.5		★
P <sup>(10)</sup>	Engineered Polymer	No Conduit Entries		★
D <sup>(11)</sup>	Aluminum	G½		
M <sup>(11)</sup>	SST	G½		

**Wireless options (requires Wireless Output Code X and Engineered Polymer Housing Code P)**

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

**HART Revision configuration (requires HART Protocol Output Code A)**

HR5 <sup>(4)</sup>	Configured for HART Revision 5	★
HR7 <sup>(4)</sup>	Configured for HART Revision 7	★

**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.

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

<b>Extended product warranty</b>		
WR3	3-year limited warranty	★
WR5	5-year limited warranty	★
<b>PlantWeb® control functionality</b>		
A01 <sup>(12)</sup>	FOUNDATION fieldbus Control Function Block Suite	★
<b>PlantWeb diagnostic functionality</b>		
DA0 <sup>(13)</sup>	Power Advisory HART Diagnostic	★
D01 <sup>(12)</sup>	FOUNDATION fieldbus Diagnostics Suite	★
<b>Alternate flange<sup>(14)</sup></b>		
H2	Traditional Flange, 316 SST, SST drain/vent	★
H3 <sup>(8)</sup>	Traditional Flange, Alloy C, Alloy C-276 drain/vent	★
H4	Traditional Flange, Cast Alloy 400, Alloy 400/K-500 drain/vent	★
H7 <sup>(8)</sup>	Traditional Flange, 316 SST, Alloy C-276 drain/vent	★
HJ	DIN-Compliant Traditional Flange, SST, 7/16 in. Adapter/Manifold Bolting	★
FA	Level Flange, SST, 2 in., ANSI Class 150, Vertical Mount 316 SST drain/vent	★
FB	Level Flange, SST, 2 in., ANSI Class 300, Vertical Mount 316 SST drain/vent	★
FC	Level Flange, SST, 3 in., ANSI Class 150, Vertical Mount 316 SST drain/vent	★
FD	Level Flange, SST, 3 in., ANSI Class 300, Vertical Mount 316 SST drain/vent	★
FP	DIN Level Flange, SST, DN 50, PN 40, Vertical Mount 316 SST drain/vent	★
FQ	DIN Level Flange, SST, DN 80, PN 40, Vertical Mount 316 SST drain/vent	★
HK <sup>(15)</sup>	DIN Compliant Traditional Flange, SST, 10 mm Adapter/Manifold Bolting 316 SST	
HL	DIN Compliant Traditional Flange, SST, 12mm Adapter/Manifold Bolting 316 SST	
<b>Manifold assembly<sup>(16)</sup></b>		
S5	Assemble to Rosemount 305 Integral Manifold	★
S6	Assemble to Rosemount 304 Manifold or Connection System	★
<b>Integral mount primary element<sup>(15)(16)</sup></b>		
S3	Assemble to Rosemount 405 Compact Orifice Plate	★
S4 <sup>(17)</sup>	Assemble to Rosemount Annubar® or Rosemount 1195 Integral Orifice	★
<b>Seal assemblies<sup>(16)</sup></b>		
S1 <sup>(18)</sup>	Assemble to one Rosemount 1199 seal	★
S2 <sup>(19)</sup>	Assemble to two Rosemount 1199 seals	★
<b>Mounting bracket<sup>(20)</sup></b>		
B4	Coplanar flange bracket, all SST, 2-in. pipe and panel	★
B1	Traditional flange bracket, CS, 2-in. pipe	★
B2	Traditional flange bracket, CS, panel	★
B3	Traditional flange flat bracket, CS, 2-in. pipe	★
B7	Traditional flange bracket, B1 with SST bolts	★
B8	Traditional flange bracket, B2 with SST bolts	★
B9	Traditional flange bracket, B3 with SST bolts	★
BA	Traditional flange bracket, B1, all SST	★
BC	Traditional flange bracket, B3, all SST	★

**Table 1. 3051C Coplanar Pressure Transmitters Ordering Information**

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<b>Product certifications</b>		
E8	ATEX Flameproof and Dust Certification	★
I1 <sup>(21)</sup>	ATEX Intrinsic Safety and Dust	★
IA	ATEX FISCO Intrinsic Safety; for FOUNDATION fieldbus or PROFIBUS PA protocol only	★
N1	ATEX Type n Certification and Dust	★
K8	ATEX Flameproof, Intrinsic Safety, Type n, Dust (combination of E8, I1 and N1)	★
E4 <sup>(22)</sup>	TIIS Flame-proof	★
E5	FM Explosion-proof, Dust Ignition-Proof	★
I5 <sup>(23)</sup>	FM Intrinsically Safe, Nonincendive	★
IE	FM FISCO Intrinsically Safe; for FOUNDATION fieldbus or PROFIBUS PA protocol only	★
K5	FM Explosion-proof, Dust Ignition-Proof, Intrinsically Safe, and Division 2	★
C6	CSA Explosion-proof, Dust Ignition-proof, Intrinsically Safe, and Division 2	★
I6 <sup>(10)</sup>	CSA Intrinsic Safety	★
K6	CSA and ATEX Explosion-proof, Intrinsically Safe, and Division 2 (combination of C6, E8, and I1)	★
E7	IECEX Flameproof, Dust Ignition-proof	★
I7	IECEX Intrinsic Safety	★
N7	IECEX Type n Certification	★
K7	IECEX Flame-proof, Dust Ignition-proof, Intrinsic Safety, and Type n (combination of I7, N7, and E7)	★
E2	INMETRO Flameproof	★
I2	INMETRO Intrinsic Safety	★
IB	INMETRO FISCO intrinsically safe; for FOUNDATION fieldbus or PROFIBUS PA protocols only	★
K2	INMETRO Flameproof, Intrinsic Safety	★
E3	China Flameproof	★
I3	China Intrinsic Safety	★
N3	China Type n	★
EM	Technical Regulations Customs Union (EAC) Flameproof	★
IM	Technical Regulations Customs Union (EAC) Intrinsic Safety	★
KM	Technical Regulations Customs Union (EAC) Flameproof and Intrinsic Safety	★
KB	FM and CSA Explosion-proof, Dust Ignition Proof, Intrinsically Safe, and Division 2 (combination of K5 and C6)	★
KD	FM, CSA, and ATEX Explosion-proof, Intrinsically Safe (combination of K5, C6, I1, and E8)	★
<b>Drinking water approval</b>		
DW <sup>(24)</sup>	NSF drinking water approval	★
<b>Shipboard approvals</b>		
SBS <sup>(9)</sup>	American Bureau of Shipping	★
SBV <sup>(9)(25)</sup>	Bureau Veritas (BV)	★
SDN <sup>(9)</sup>	Det Norske Veritas	★
SLL <sup>(9)(25)</sup>	Lloyds Register (LR)	★
<b>Custody transfer</b>		
C5 <sup>(13)</sup>	Measurement Canada Accuracy Approval (limited availability depending on transmitter type and range; contact an Emerson Process Management representative)	★

**Table 1. 3051C Coplanar Pressure Transmitters Ordering Information**

★ The Standard offering represents the most common options. The starred options (★) should be selected for best delivery.  
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<b>Bolting material</b>		
L4	Austenitic 316 SST Bolts	★
L5	ASTM A 193, Grade B7M Bolts	★
L6	Alloy K-500 Bolts	★
<b>Display and interface options</b>		
M4 <sup>(26)</sup>	LCD Display with Local Operator Interface	★
M5	LCD Display	★
<b>Calibration certificate</b>		
Q4	Calibration Certificate	★
QG <sup>(27)</sup>	Calibration Certificate and GOST Verification Certificate	★
QP	Calibration certification and tamper evident seal	★
<b>Material traceability certification</b>		
Q8	Material Traceability Certification per EN 10204 3.1	★
<b>Quality certification for safety</b>		
QS <sup>(13)</sup>	Prior-use certificate of FMEDA data	★
QT <sup>(13)</sup>	Safety certified to IEC 61508 with certificate of FMEDA	★
<b>Configuration buttons</b>		
D4 <sup>(13)</sup>	Analog Zero and Span	★
DZ <sup>(28)</sup>	Digital Zero Trim	★
<b>Transient protection</b>		
T1 <sup>(9)(29)</sup>	Transient Protection Terminal Block	★
<b>Software configuration</b>		
C1 <sup>(28)</sup>	Custom Software Configuration (completed CDS 00806-0100-4007 for wired and 00806-0100-4100 for Wireless required with order)	★
<b>Low power output</b>		
C2	0.8-3.2 Vdc Output with Digital Signal Based on HART Protocol (available with Output code M only)	★
<b>Gage pressure calibration</b>		
C3	Gage Calibration (Model 3051CA4 only)	★
<b>Alarm levels</b>		
C4 <sup>(13)</sup>	Analog Output Levels Compliant with NAMUR Recommendation NE 43, Alarm High	★
CN <sup>(13)</sup>	Analog Output Levels Compliant with NAMUR Recommendation NE 43, Alarm Low	★
CR <sup>(13)</sup>	Custom alarm and saturation signal levels, high alarm (requires C1 and Configuration Data Sheet)	★
CS <sup>(13)</sup>	Custom alarm and saturation signal levels, low alarm (requires C1 and Configuration Data Sheet)	★
CT <sup>(13)</sup>	Rosemount standard low alarm	★
<b>Pressure testing</b>		
P1	Hydrostatic Testing with Certificate	



**Table 1. 3051C Coplanar Pressure Transmitters Ordering Information**

★ The Standard offering represents the most common options. The starred options (★) should be selected for best delivery.  
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<b>Cleaning process area</b>		
P2	Cleaning for Special Service	
P3	Cleaning for <1 PPM Chlorine/Fluorine	
<b>Flange adapters</b>		
DF <sup>(30)</sup>	1/2 -14 NPT flange adapter(s)	★
<b>Vent/drain valves</b>		
D7	Coplanar Flange Without Drain/Vent Ports	
<b>Conduit plug</b>		
DO <sup>(9)(31)</sup>	316 SST Conduit Plug	★
<b>RC<sup>1/4</sup> RC<sup>1/2</sup> process connection</b>		
D9 <sup>(32)</sup>	RC 1/4 Flange with RC 1/2 Flange Adapter - SST	
<b>Max static line pressure</b>		
P9	4500 psig (310,26 bar) Static Pressure Limit (3051CD Ranges 2–5 only)	★
<b>Ground screw</b>		
V5 <sup>(9)(33)</sup>	External Ground Screw Assembly	★
<b>Surface finish</b>		
Q16	Surface finish certification for sanitary remote seals	★
<b>Toolkit total system performance reports</b>		
QZ	Remote Seal System Performance Calculation Report	★
<b>Conduit electrical connector</b>		
GE <sup>(9)</sup>	M12, 4-pin, Male Connector (eurofast <sup>®</sup> )	★
GM <sup>(9)</sup>	A size Mini, 4-pin, Male Connector (minifast <sup>®</sup> )	★
<b>NACE certificate</b>		
Q15 <sup>(34)</sup>	Certificate of Compliance to NACE MR0175/ISO 15156 for wetted materials	★
Q25 <sup>(34)</sup>	Certificate of Compliance to NACE MR0103 for wetted materials	★
<b>Typical model number: 3051CD 2 A 2 2 A 1 A B4</b>		

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

(2) If ordered with Wireless output code X, only Range 1-4, 316L SST diaphragm material (code 2), silicone fill fluid (code 1) and wireless housing (code P) are available.

(3) 3051CD0 is only available with output code A and X. For output code A, only process flange code 0 (Alternate flange H2, H7, HJ or HK), isolating diaphragm code 2, O ring code A and bolting option L4 are available. For output code X, only process flange code 0 (Alternate flange H2), isolating diaphragm code 2, O ring code A and bolting option L4 are available.

(4) Option HR5 configures the HART output to HART Revision 5. Option HR7 configures the HART output to HART Revision 7. The device can be field configured to HART Revision 5 or 7 if desired. HART Revision 5 is the default HART output.

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

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

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

- 
- (8) 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.
- (9) Not available with Wireless Output (code X).
- (10) Only available with Wireless Output (code X).
- (11) Not available with Product certifications options E8, K8, E5, K5, C6, K6, E7, K7, E2, K2, E3, KB, KD.
- (12) Only valid with FOUNDATION fieldbus Output Code F.
- (13) Only available with HART 4-20 mA Output (code A).
- (14) Requires 0 code in Materials of Construction for Alternate Process Connection.
- (15) Not valid with Option Code P9 for 4500 psi Static Pressure.
- (16) "Assemble-to" items are specified separately and require a completed model number.
- (17) Process flange limited to Coplanar (Option Codes 2, 3, 5, 7, 8) or Traditional (Option Codes H2, H3, H7).
- (18) Not valid with Option Code D9 for RC<sup>1</sup>/<sub>2</sub> Adapters.
- (19) Not valid for Option Codes DF and D9 for Adapters.
- (20) Panel mounting bolts are not supplied.
- (21) Dust approval not applicable to Output Code X. See "[IEC 62591 \(WirelessHART Protocol\)](#)" on page 62 for wireless approvals.
- (22) Only available with output codes A - 4-20mA HART, F - FOUNDATION fieldbus, and W - PROFIBUS PA. Also only available with G1/2 housing thread types.
- (23) Nonincendive certification not provided with Wireless output option code (X).
- (24) Not available with Alloy C-276 isolator (code 3), tantalum isolator (code 5), all cast C-276 flanges, all plated CS flanges, all DIN flanges, all Level flanges, assemble-to manifolds (codes S5 and S6), assemble-to seals (codes S1 and S2), assemble-to primary elements (codes S3 and S4), surface finish certification (code Q16), and remote seal system report (code QZ).
- (25) Only available with product certifications E7, E8, I1, I7, IA, K7, K8, KD, N1, N7
- (26) Not available with FOUNDATION fieldbus (Output Code F), Wireless (Output Code X), or Low Power Output (output code M).
- (27) Contact an Emerson Process Management representative for availability.
- (28) Only available with HART 4-20 mA Output (output code A) and Wireless Output (output code X)
- (29) The T1 option is not needed with FISCO Product Certifications; transient protection is included in the FISCO product certification codes IA, IB, and IE.
- (30) Not valid with Alternate Process Connection options S3, S4, S5, and S6.
- (31) Transmitter is shipped with a 316 SST Conduit plug (uninstalled) in place of standard carbon steel conduit plug.
- (32) Not available with Alternate Process Connection; DIN Flanges and Level Flanges.
- (33) The V5 option is not needed with the T1 option; external ground screw assembly is included with the T1 option.
- (34) NACE compliant wetted materials are identified by [Footnote 8](#).

# Rosemount 3051T In-Line Pressure Transmitter



3051T In-Line  
Pressure Transmitter

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

- Power Advisory can proactively detect degraded electrical loop integrity issues (Option Code **DA0**)
- Local Operator Interface with straightforward menus and built-in configuration buttons (Option Code **M4**)
- Safety Certification (Option Code **QT**)

See “Specifications” on page 45 and options for more details on each configuration. Specification and selection of product materials, options, or components must be made by the purchaser of the equipment. See page 54 for more information on Material Selection.

### Additional information:

Specifications: [page 45](#)

Certifications: [page 56](#)

Dimensional Drawings: [page 66](#)

### 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 <sup>(1)</sup>	In-Line Pressure Transmitter		
<b>Pressure type</b>			
G	Gage		★
A <sup>(2)</sup>	Absolute		★
<b>Pressure range</b>			
	<b>Gage (3051TG)<sup>(3)</sup></b>	<b>Absolute (3051TA)</b>	
1	-14.7 to 30 psi (-1,01 to 2,06 bar)	0 to 30 psia (0 to 2,06 bar)	★
2	-14.7 to 150 psi (-1,01 to 10,34 bar)	0 to 150 psia (0 to 10,34 bar)	★
3	-14.7 to 800 psi (-1,01 to 55,15 bar)	0 to 800 psia (0 to 55,15 bar)	★
4	-14.7 to 4000 psi (-1,01 to 275,79 bar)	0 to 4000 psia (0 to 275,79 bar)	★
5	-14.7 to 10000 psi (-1,01 to 689,47 bar)	0 to 10000 psia (0 to 689,47 bar)	★
<b>Transmitter output</b>			
A <sup>(4)</sup>	4–20 mA with Digital Signal Based on HART Protocol		★
F	FOUNDATION fieldbus Protocol		★
W <sup>(5)</sup>	PROFIBUS PA Protocol		★
X <sup>(6)</sup>	Wireless (requires wireless options and engineered polymer housing)		★
M <sup>(7)</sup>	Low-Power 1-5 Vdc with Digital Signal Based on HART Protocol		
<b>Process connection style</b>			
2B	1/2–14 NPT Female		★
2C <sup>(8)</sup>	G 1/2 A DIN 16288 Male (Range 1–4 only)		★
2F <sup>(9)</sup>	Coned and Threaded, Compatible with Autoclave Type F-250-C (Range 5 only)		
61 <sup>(9)</sup>	Non-threaded Instrument flange (Range 1–4 only)		

**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.

Isolating diaphragm		Process connection wetted parts material	
2 <sup>(10)</sup>	316L SST	316L SST	★
3 <sup>(10)</sup>	Alloy C-276	Alloy C-276	★
Sensor fill fluid			
1	Silicone		★
2 <sup>(9)</sup>	Inert		★
Housing material		Conduit entry size	
A	Aluminum	½–14 NPT	★
B	Aluminum	M20 × 1.5	★
J	SST	½–14 NPT	★
K	SST	M20 × 1.5	★
P <sup>(11)</sup>	Engineered polymer	No conduit entries	★
D <sup>(12)</sup>	Aluminum	G½	
M <sup>(12)</sup>	SST	G½	

#### Wireless options (requires wireless Output Code X and Engineered Polymer Housing Code P)

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

#### HART Revision configuration (requires HART Protocol Output Code A)

HR5 <sup>(4)</sup>	Configured for HART Revision 5	★
HR7 <sup>(4)</sup>	Configured for HART Revision 7	★

#### Options (include with selected model number)

Extended product warranty		
WR3	3-year limited warranty	★
WR5	5-year limited warranty	★
PlantWeb control functionality		
A01 <sup>(13)</sup>	FOUNDATION fieldbus Control Function Block Suite	★
PlantWeb diagnostic functionality		
DA0 <sup>(22)</sup>	Power Advisory HART Diagnostic	★
D01 <sup>(13)</sup>	FOUNDATION fieldbus Diagnostics Suite	★
Integral assembly		
S5 <sup>(14)</sup>	Assemble to Rosemount 306 Integral Manifold	★
Diaphragm seal assemblies		
S1 <sup>(14)</sup>	Assemble to one Rosemount 1199 seal	★
Mounting bracket <sup>(15)</sup>		
B4	Bracket for 2-in. Pipe or Panel Mounting, All SST	★
Product certifications		
E8	ATEX Flameproof and Dust Certification	★
I1 <sup>(16)</sup>	ATEX Intrinsic Safety and Dust	★

**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.

IA	ATEX Intrinsic Safety for FISCO; for FOUNDATION fieldbus or PROFIBUS PA protocols only	★
N1	ATEX Type n Certification and Dust	★
K8	ATEX Flame-proof, Intrinsic Safety, Type n, Dust (combination of E8, I1 and N1)	★
E4 <sup>(17)</sup>	TIIS Flameproof	★
E5	FM Explosion-proof, Dust Ignition-proof	★
I5 <sup>(18)</sup>	FM Intrinsically Safe, Nonincendive	★
IE	FM FISCO Intrinsically Safe; for FOUNDATION fieldbus or PROFIBUS PA protocols only	★
K5	FM Explosion-proof, Dust Ignition-proof, Intrinsically Safe, and Division 2	★
C6	CSA Explosion-proof, Dust Ignition-proof, Intrinsically Safe, and Division 2	★
I6 <sup>(11)</sup>	CSA Intrinsic Safety	★
K6	CSA and ATEX Explosion-proof, Intrinsically Safe, and Division 2 (combination of C6, E8, and I1)	★
E7	IECEX Flameproof, Dust Ignition-proof	★
I7	IECEX Intrinsic Safety	★
N7	IECEX Type n Certification	★
K7	IECEX Flameproof, Dust Ignition-proof, Intrinsic Safety, and Type n (combination of I7, N7, and E7)	★
E2	INMETRO Flameproof	★
I2	INMETRO Intrinsic Safety	★
IB	INMETRO FISCO intrinsically safe; for FOUNDATION fieldbus or PROFIBUS PA protocols only	★
K2	INMETRO Flameproof, Intrinsic Safety	★
E3	China Flameproof	★
I3	China Intrinsic Safety	★
N3	China Type n	★
EM	Technical Regulations Customs Union (EAC) Flameproof	★
IM	Technical Regulations Customs Union (EAC) Intrinsic Safety	★
KM	Technical Regulations Customs Union (EAC) Flameproof and Intrinsic Safety	★
KB	FM and CSA Explosion-proof, Dust Ignition-proof, Intrinsically Safe, and Division 2 (combination of K5 and C6)	★
KD	FM, CSA, and ATEX Explosion-proof, Intrinsically Safe (combination of K5, C6, I1, and E8)	★
<b>Drinking water approval</b>		
DW <sup>(19)</sup>	NSF drinking water approval	★
<b>Shipboard approvals</b>		
SBS <sup>(9)</sup>	American Bureau of Shipping	★
SBV <sup>(9)(20)</sup>	Bureau Veritas (BV)	★
SDN <sup>(9)</sup>	Det Norske Veritas	★
SLL <sup>(9)(20)</sup>	Lloyds Register (LR)	★
<b>Custody transfer</b>		
C5	Measurement Canada Accuracy Approval ( <i>Limited availability depending on transmitter type and range. Contact an Emerson Process Management representative</i> )	★
<b>Calibration certification</b>		
Q4	Calibration Certificate	★
QG <sup>(21)</sup>	Calibration Certificate and GOST Verification Certificate	★
QP	Calibration Certification and tamper evident seal	★
<b>Material traceability certification</b>		
Q8	Material Traceability Certification per EN 10204 3.1	★
<b>Quality certification for safety</b>		
QS <sup>(22)</sup>	Prior-use certificate of FMEDA Data	★
QT <sup>(22)</sup>	Safety certified to IEC 61508 with certificate of FMEDA	★

**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.

<b>Configuration buttons</b>		
D4 <sup>(22)</sup>	Analog Zero and Span	★
DZ <sup>(23)</sup>	Digital Zero Trim	★
<b>Display and interface options</b>		
M4 <sup>(24)</sup>	LCD Display with Local Operator Interface	★
M5	LCD Display	★
<b>Wireless SST sensor module</b>		
WSM <sup>(11)</sup>	Wireless SST Sensor Module	★
<b>Conduit plug</b>		
DO <sup>(9)(25)</sup>	316 SST Conduit Plug	★
<b>Transient terminal block</b>		
T1 <sup>(9)(26)</sup>	Transient Protection Terminal Block	★
<b>Software configuration</b>		
C1 <sup>(23)</sup>	Custom Software Configuration (Completed CDS 00806-0100-4007 for wired and 00806-0100-4100 for wireless required with order)	★
<b>Low power output</b>		
C2	0.8-3.2 Vdc Output with Digital Signal Based on HART Protocol (Available with Output code M only)	
<b>Alarm levels</b>		
C4 <sup>(22)</sup>	Analog Output Levels Compliant with NAMUR Recommendation NE 43, Alarm High	★
CN <sup>(22)</sup>	Analog Output Levels Compliant with NAMUR Recommendation NE 43, Low Alarm	★
CR <sup>(22)</sup>	Custom alarm and saturation signal levels, high alarm (requires C1 and Configuration Data Sheet)	★
CS <sup>(22)</sup>	Custom alarm and saturation signal levels, low alarm (requires C1 and Configuration Data Sheet)	★
CT <sup>(22)</sup>	Rosemount standard low alarm	★
<b>Pressure testing</b>		
P1	Hydrostatic Testing with Certificate	
<b>Cleaning process area<sup>(27)</sup></b>		
P2	Cleaning for Special Service	
P3	Cleaning for <1 PPM Chlorine/Fluorine	
<b>Ground screw</b>		
V5 <sup>(9)(28)</sup>	External Ground Screw Assembly	★
<b>Surface finish</b>		
Q16	Surface finish certification for sanitary remote seals	★
<b>Toolkit total system performance reports</b>		
QZ	Remote Seal System Performance Calculation Report	★
<b>Conduit electrical connector</b>		
GE <sup>(9)</sup>	M12, 4-pin, Male Connector (eurofast)	★
GM <sup>(9)</sup>	A size Mini, 4-pin, Male Connector (minifast)	★

**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.

NACE certificate		
Q15 <sup>(29)</sup>	Certificate of Compliance to NACE MR0175/ISO15156 for wetted materials	★
Q25 <sup>(29)</sup>	Certificate of Compliance to NACE MR0103 for wetted materials	★
<b>Typical model number: 3051T G 5 F 2A 2 1 A B4</b>		

- (1) Select Configuration Buttons (option code D4 or DZ) or Local Operator Interface (option code M4) if local configuration buttons are required.
- (2) Wireless Output (code X) only available in absolute measurement type (code A) in range 1-5 with 1/2 14 NPT process connection (code 2B), and polymer housing (code P).
- (3) 3051TG lower range limit varies with atmospheric pressure.
- (4) Option HR5 configures the HART output to HART Revision 5. Option HR7 configures the HART output to HART Revision 7. The device can be field configured to HART Revision 5 or 7 if desired. HART Revision 5 is the default HART output.
- (5) For local addressing and configuration, M4 (Local Operator Interface) is required.
- (6) Requires wireless options and engineered polymer housing. Available approvals are FM Intrinsically Safe, (Option Code I5), CSA Intrinsically Safe (Option Code I6), ATEX Intrinsic Safety (Option Code I1), IECEx Intrinsic Safety (Option Code I7), and EAC Intrinsic Safety (Option Code IM).
- (7) Only available with C6, E2, E5, I5, K5, KB and E8 product certifications. Not available with GE, GM, SBS, DA0, M4, D4, DZ, QT, HR5, HR7, CR, CS, CT.
- (8) Wireless Output (code X) only available in G1/2 A DIN 16288 Male process connection (code 2C) with range 1-4, 316 SST isolating Diaphragm (code 2), Silicone Fill Fluid (code 1) and Housing Code (code P).
- (9) Not available with Wireless Output (output code X).
- (10) 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.
- (11) Only available with Wireless Output (output code X).
- (12) Not available with Product certifications options E8, K8, E5, K5, C6, K6, E7, K7, E2, K2, E3, KB, KD.
- (13) Only valid with FOUNDATION fieldbus Output Code F.
- (14) "Assemble-to" items are specified separately and require a completed model number.
- (15) Panel mounting bolts are not supplied.
- (16) Dust approval not applicable to output code X. See "[IEC 62591 \(WirelessHART Protocol\)](#)" on page 62 for wireless approvals.
- (17) Only available with output codes A - 4-20mA HART, F - FOUNDATION fieldbus, and W - PROFIBUS PA. Also only available with G1/2 housing thread types.
- (18) Nonincendive certification not provided with Wireless output option code (X).
- (19) Not available with Alloy C-276 isolator (option code 3), Assemble-to manifolds (option code S5), assemble-to seals (option code S1), surface finish certification (option code Q16), and remote seal system report (option code QZ).
- (20) Only available with product certifications E7, E8, I1, I7, IA, K7, K8, KD, N1, N7.
- (21) Contact an Emerson Process Management representative for availability.
- (22) Only available with HART 4-20 mA output (output code A).
- (23) Only available with HART 4-20 mA output (output code A) and Wireless output (output code X).
- (24) Not available with FOUNDATION fieldbus (output code F) and Wireless output (output code X) or Low Power (output code M).
- (25) Transmitter is shipped with 316 SST conduit plug (uninstalled) in place of standard carbon steel conduit plug.

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

(27) Not valid with Alternate Process Connection S5.

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

(29) NACE compliant wetted materials are identified by [Footnote 10](#).



## Rosemount 3051CF Flowmeter Selection Guide

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



### Rosemount 3051CFA Annubar Flowmeter

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

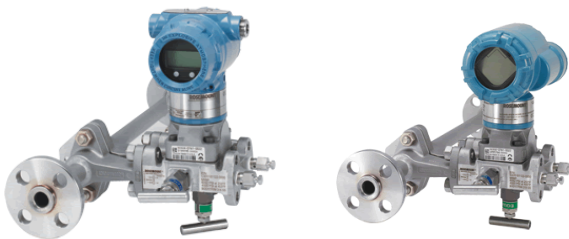
- Lowest material costs for large line sizes
- Flo-tap enables installation without process shutdown
- Realize up to 96% less permanent pressure loss compared to traditional orifice plate installations



### Rosemount 3051CFC Compact Conditioning Flowmeter

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

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



### Rosemount 3051CFP Integral Orifice Flowmeter

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

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

## Rosemount 3051CFA Annubar Flowmeter



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

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

See “Specifications” on page 45 and options for more details on each configuration. Specification and selection of product materials, options, or components must be made by the purchaser of the equipment. See page 54 for more information on Material Selection.

### Additional information:

Specifications: [page 45](#)

Certifications: [page 56](#)

Dimensional Drawings: [page 66](#)

**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 <sup>(1)</sup>	Annubar Flowmeter	
<b>Measurement type</b>		
D	Differential Pressure	★
<b>Fluid type</b>		
L	Liquid	★
G	Gas	★
S	Steam	★
<b>Line size</b>		
020	2-in. (50 mm)	★
025	2 <sup>1</sup> / <sub>2</sub> -in. (63.5 mm)	★
030	3-in. (80 mm)	★
035	3 <sup>1</sup> / <sub>2</sub> -in. (89 mm)	★
040	4-in. (100 mm)	★
050	5-in. (125 mm)	★
060	6-in. (150 mm)	★
070	7-in. (175 mm)	★
080	8-in. (200 mm)	★
100	10-in. (250 mm)	★
120	12-in. (300 mm)	★
140	14-in. (350 mm)	

**Table 3. Rosemount 3051 CFA 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.

160	16-in. (400 mm)	
180	18-in. (450 mm)	
200	20-in. (500 mm)	
240	24-in. (600 mm)	
300	30-in. (750 mm)	
360	36-in. (900 mm)	
420	42-in. (1066 mm)	
480	48-in. (1210 mm)	
600	60-in. (1520 mm)	
720	72-in. (1820 mm)	
780	78-in (1950 mm)	
840	84-in. (2100 mm)	
900	90-in. (2250 mm)	
960	96-in (2400 mm)	
<b>Pipe I.D. range</b>		
C	Range C from the <a href="#">Pipe I.D. Range Codes</a> table	★
D	Range D from the <a href="#">Pipe I.D. Range Codes</a> table	★
A	Range A from the <a href="#">Pipe I.D. Range Codes</a> table	
B	Range B from the <a href="#">Pipe I.D. Range Codes</a> table	
E	Range E from the <a href="#">Pipe I.D. Range Codes</a> table	
Z	Non-standard <a href="#">Pipe I.D. Range Codes</a> or Line Sizes greater than 12 inches	
<b>Pipe material/mounting assembly material</b>		
C	Carbon steel (A105)	★
S	316 Stainless Steel	★
0	No Mounting (customer supplied)	★
G	Chrome-Moly Grade F-11	
N	Chrome-Moly Grade F-22	
J	Chrome-Moly Grade F-91	
<b>Piping orientation</b>		
H	Horizontal Piping	★
D	Vertical Piping with Downwards Flow	★
U	Vertical Piping with Upwards Flow	★
<b>Annubar type</b>		
P	Pak-Lok	★
F	Flanged with opposite side support	★
L	Flange-Lok	
G	Gear-Drive Flo-Tap	
M	Manual Flo-Tap	
<b>Sensor material</b>		
S	316 Stainless Steel	★
H	Alloy C-276	

**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.

<b>Sensor size</b>				
1	Sensor size 1 — Line sizes 2-in. (50 mm) to 8-in. (200 mm)			★
2	Sensor size 2 — Line sizes 6-in. (150 mm) to 96-in. (2400 mm)			★
3	Sensor size 3 — Line sizes greater than 12-in. (300 mm)			★
<b>Mounting type</b>				
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			★
A9 <sup>(2)</sup>	900# RF ANSI			
AF <sup>(2)</sup>	1500# RF ANSI			
AT <sup>(2)</sup>	2500 # RF ANSI			
R1	150# RTJ Flange			
R3	300# RTJ Flange			
R6	600# RTJ Flange			
R9 <sup>(2)</sup>	900# RTJ Flange			
RF <sup>(2)</sup>	1500# RTJ Flange			
RT <sup>(2)</sup>	2500# RTJ Flange			
<b>Opposite side support or packing gland</b>				
0	No opposite side support or packing gland (required for Pak-Lok and Flange-Lok models)			★
<b>Opposite Side Support – Required for Flanged Models</b>				
C	NPT Threaded Opposite Support Assembly – Extended Tip			★
D	Welded Opposite Support Assembly – Extended Tip			★
<b>Packing Gland – Required for Flo-Tap Models</b>				
	<i>Packing Gland Material</i>	<i>Rod Material</i>	<i>Packing Material</i>	
J <sup>(3)</sup>	Stainless Steel Packing Gland/Cage Nipple	Carbon Steel	PTFE	
K <sup>(3)</sup>	Stainless Steel Packing Gland/Cage Nipple	Stainless Steel	PTFE	
L <sup>(3)</sup>	Stainless Steel Packing Gland/Cage Nipple	Carbon Steel	Graphite	
N <sup>(3)</sup>	Stainless Steel Packing Gland/Cage Nipple	Stainless Steel	Graphite	
R	Alloy C-276 Packing Gland/Cage Nipple	Stainless Steel	Graphite	
<b>Isolation valve for Flo-Tap models</b>				
0	Not Applicable or Customer Supplied			★
1	Gate Valve, Carbon Steel			
2	Gate Valve, Stainless Steel			
5	Ball Valve, Carbon Steel			
6	Ball Valve, Stainless Steel			
<b>Temperature measurement</b>				
T	Integral RTD – not available with Flanged model greater than class 600#			★
0	No Temperature Sensor			★
R	Remote Thermowell and RTD			

**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.

<b>Transmitter connection platform</b>			
3	Direct-mount, Integral 3-valve Manifold– not available with Flanged model greater than class 600	★	
5	Direct -mount, 5-valve Manifold – not available with Flanged model greater than class 600	★	
7	Remote-mount NPT Connections (1/2-in. NPT)	★	
6	Direct-mount, high temperature 5-valve Manifold – not available with Flanged model greater than class 600		
8	Remote-mount SW Connections (1/2-in.)		
<b>Differential pressure range</b>			
1	0 to 25 in H <sub>2</sub> O (0 to 62,16 mbar)	★	
2	0 to 250 in H <sub>2</sub> O (0 to 621,60 mbar)	★	
3	0 to 1000 in H <sub>2</sub> O (0 to 2,48 bar)	★	
<b>Transmitter output</b>			
A <sup>(4)</sup>	4–20 mA with digital signal based on HART Protocol	★	
F	FOUNDATION fieldbus Protocol	★	
W <sup>(5)</sup>	PROFIBUS PA Protocol	★	
X <sup>(6)</sup>	Wireless (Requires wireless options and engineered polymer housing)	★	
M <sup>(7)</sup>	Low-Power 1-5 Vdc with Digital Signal Based on HART Protocol		
<b>Transmitter housing material</b>		<b>Conduit entry size</b>	
A	Aluminum	1/2-14 NPT	★
B	Aluminum	M20 x 1.5	★
J	SST	1/2-14 NPT	★
K	SST	M20 x 1.5	★
P <sup>(8)</sup>	Engineered polymer	No conduit entries	★
D <sup>(9)</sup>	Aluminum	G1/2	
M <sup>(9)</sup>	SST	G1/2	
<b>Transmitter performance class</b>			
1	1.8% flow rate accuracy, 8:1 flow turndown, 5-yr. stability	★	

### Wireless options (requires Wireless Output Code X and Engineered Polymer Housing Code P)

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

### HART Revision configuration (requires HART Protocol Output Code A)

HR5 <sup>(4)</sup>	Configured for HART Revision 5	★
HR7 <sup>(4)</sup>	Configured for HART Revision 7	★

### Options (include with selected model number)

<b>Extended product warranty</b>		
WR3	3-year limited warranty	★
WR5	5-year limited warranty	★

**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.

<b>Pressure testing</b>		
P1 <sup>(10)</sup>	Hydrostatic Testing with Certificate	
PX <sup>(10)</sup>	Extended Hydrostatic Testing	
<b>Special cleaning</b>		
P2	Cleaning for Special Services	
PA	Cleaning per ASTM G93 Level D (Section 11.4)	
<b>Material testing</b>		
V1	Dye Penetrant Exam	
<b>Material examination</b>		
V2	Radiographic Examination	
<b>Flow calibration</b>		
W1	Flow Calibration (Average K)	
<b>Special inspection</b>		
QC1	Visual & Dimensional Inspection with Certificate	★
QC7	Inspection & Performance Certificate	★
<b>Surface finish</b>		
RL	Surface finish for Low Pipe Reynolds # in Gas & Steam	★
RH	Surface finish for High Pipe Reynolds # in Liquid	★
<b>Material traceability certification</b>		
Q8 <sup>(11)</sup>	Material Traceability Certification per EN 10474:2004 3.1	★
<b>Code conformance<sup>(12)</sup></b>		
J2	ANSI/ASME B31.1	
J3	ANSI/ASME B31.3	
<b>Materials conformance</b>		
J5 <sup>(13)</sup>	NACE MR-0175 / ISO 15156	
<b>Country certification</b>		
J6	European Pressure Directive (PED)	★
J1	Canadian Registration	
<b>Installed in flanged pipe spool section</b>		
H3	150# Flanged Connection with Rosemount Standard Length and Schedule	
H4	300# Flanged Connection with Rosemount Standard Length and Schedule	
H5	600# Flanged Connection with Rosemount Standard Length and Schedule	
<b>Instrument connections for remote mount options</b>		
G2	Needle Valves, Stainless Steel	★
G6	OS&Y Gate Valve, Stainless Steel	★
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	

**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.

<b>Special shipment</b>		
Y1	Mounting Hardware Shipped Separately	★
<b>Special dimensions</b>		
VM	Variable Mounting	
VT	Variable Tip	
VS	Variable length Spool Section	
<b>PlantWeb control functionality</b>		
A01 <sup>(14)</sup>	FOUNDATION fieldbus Control Function Block Suite	★
<b>PlantWeb diagnostic functionality</b>		
DA0 <sup>(15)</sup>	Power Advisory HART Diagnostic	★
D01 <sup>(14)</sup>	FOUNDATION fieldbus Diagnostics Suite	★
<b>Product certifications</b>		
E8	ATEX Flameproof, Dust	★
I1 <sup>(16)</sup>	ATEX Intrinsic Safety and Dust	★
IA	ATEX FISCO Intrinsic Safety; for FOUNDATION fieldbus or PROFIBUS PA protocols only	★
N1	ATEX Type n and Dust	★
K8	ATEX Flameproof, Intrinsic Safety, Type n, Dust (combination of E8, I1 and N1)	★
E5	FM Explosion-proof, Dust Ignition-proof	★
I5 <sup>(17)</sup>	FM Intrinsically Safe, Nonincendive	★
IE	FM FISCO Intrinsically Safe; for FOUNDATION fieldbus or PROFIBUS PA protocols only	★
K5	FM Explosion-proof, Dust Ignition-proof, Intrinsically Safe, and Division 2 (combination of E5 and I5)	★
C6	CSA Explosion-proof, Dust Ignition-proof, Intrinsically Safe, and Division 2	★
I6 <sup>(8)</sup>	CSA Intrinsically Safe	★
K6	CSA and ATEX Explosion-proof, Intrinsically Safe, and Division 2 (combination of C6, E8, and I1)	★
E7	IECEX Flameproof, Dust Ignition-proof	★
I7	IECEX Intrinsic Safety	★
N7	IECEX Type n	★
K7	IECEX Flameproof, Dust Ignition-proof, Intrinsic Safety, and Type n (combination of I7, N7 and E7)	★
E2	INMETRO Flameproof	★
I2	INMETRO Intrinsic Safety	★
IB	INMETRO FISCO intrinsically safe; for FOUNDATION fieldbus or PROFIBUS PA protocols only	★
K2	INMETRO Flameproof, Intrinsic Safety	★
E3	China Flameproof	★
I3	China Intrinsic Safety	★
KB	FM and CSA Explosion-proof, Dust Ignition-proof, Intrinsically Safe, and Division 2 (combination of K5 and C6)	★
KD	CSA, FM, and ATEX Explosion-proof, Intrinsically Safe (combination of K5, C6, I1, and E8)	★
<b>Sensor fill fluid and O-ring options</b>		
L1 <sup>(18)</sup>	Inert Sensor Fill Fluid <i>Note: Silicone fill fluid is standard.</i>	★
L2	Graphite-Filled (PTFE) O-ring	★
LA <sup>(18)</sup>	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.

<b>Shipboard approvals</b>		
SBS <sup>(18)</sup>	American Bureau of Shipping	★
SLL <sup>(18)(19)</sup>	Lloyds Register (LR)	
<b>Display and interface options</b>		
M4 <sup>(20)</sup>	LCD Display with Local Operator Interface	★
M5	LCD Display	★
<b>Transmitter calibration certification</b>		
Q4	Calibration Certificate for Transmitter	★
<b>Quality certification for safety</b>		
QS <sup>(15)</sup>	Prior-use certificate of FMEDA data	★
QT <sup>(15)</sup>	Safety certified to IEC 61508 with certificate of FMEDA	★
<b>Transient protection</b>		
T1 <sup>(18)(21)</sup>	Transient terminal block	★
<b>Manifold for remote mount option</b>		
F2	3-Valve Manifold, Stainless Steel	★
F6	5-Valve Manifold, Stainless Steel	★
F1	3-Valve Manifold, Carbon Steel	
F3	3-Valve Manifold, Alloy C-276	
F5	5-Valve Manifold, Carbon Steel	
F7	5-Valve Manifold, Alloy C-276	
<b>Lower power output</b>		
C2	0.8-3.2 Vdc Output with Digital Signal based on HART Protocol (Available with Output code M only)	
<b>Alarm levels</b>		
C4 <sup>(15)</sup>	NAMUR Alarm and Saturation Levels, High Alarm	★
CN <sup>(15)</sup>	NAMUR Alarm and Saturation Levels, Low Alarm	★
CR <sup>(15)</sup>	Custom alarm and saturation signal levels, high alarm	★
CS <sup>(15)</sup>	Custom alarm and saturation signal levels, low alarm	★
CT <sup>(15)</sup>	Rosemount Standard low alarm	★
<b>Configuration buttons</b>		
D4 <sup>(15)</sup>	Analog Zero and Span	★
DZ <sup>(22)</sup>	Digital Zero Trim	★
<b>Ground screw</b>		
V5 <sup>(18)(23)</sup>	External Ground Screw Assembly	★
<b>Typical model number: 3051CFA D L 060 D C H P S 2 T1 0 0 0 3 2 A A 1</b>		

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

(2) Available in remote mount applications only.

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



- 
- (4) Option HR5 configures the HART output to HART Revision 5. Option HR7 configures the HART output to HART Revision 7. The device can be field configured to HART Revision 5 or 7 if desired. HART Revision 5 is the default HART output.
  - (5) For local addressing and configuration, M4 (Local Operator Interface) is required.
  - (6) Requires wireless options and engineered polymer housing. Available approvals are FM Intrinsically Safe, (option code I5), CSA Intrinsically Safe (option code I6), ATEX Intrinsic Safety (option code I1), and IECEx Intrinsic Safety (option code I7).
  - (7) Only available with C6, E2, E5, I5, K5, KB and E8 approval. Not available with GE, GM, SBS, DA0, M4, D4, DZ, QT, HR5, HR7, CR, CS, CT.
  - (8) Only available with Wireless Output (output code X).
  - (9) Not available with Product certifications options E8, K8, E5, K5, C6, K6, E7, K7, E2, K2, E3, KB, KD.
  - (10) Applies to assembled flowmeter only, mounting not tested.
  - (11) Instrument Connections for Remote Mount Options and Isolation Valves for Flo-tap Models are not included in the Material Traceability Certification.
  - (12) Not available with Transmitter Connection Platform 6.
  - (13) Materials of Construction comply with metallurgical requirements within NACE MR0175/ISO for sour oil field production environments. Environmental limits apply to certain materials. Consult latest standard for details. Selected materials also conform to NACE MR0103 for sour refining environments.
  - (14) Only valid with FOUNDATION fieldbus output (output code F).
  - (15) Only available with 4-20 mA HART Output (output Code A).
  - (16) Dust approval not applicable to output code X. See "[IEC 62591 \(WirelessHART Protocol\)](#)" on page 62 for wireless approvals
  - (17) Nonincendive certification not provided with Wireless output option code (X).
  - (18) Not available with Wireless Output (output code X).
  - (19) Only available with product certifications E7, E8, I1, I7, IA, K7, K8, KD, N1, N7
  - (20) Not available with FOUNDATION Fieldbus (Output Code F) or Wireless Output (output code X) or Low Power (output code M).
  - (21) The T1 option is not needed with FISCO Product Certifications, transient protection is included with the FISCO Product Certification codes IA, IB, and IE.
  - (22) Only available with 4-20 mA HART Output (output code A) and Wireless output (Output Code X).
  - (23) The V5 option is not needed with the T1 option; external ground screw assembly is included with the T1 option.

## Rosemount 3051CFC Compact Flowmeter



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

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

See “Specifications” on page 45 and options for more details on each configuration. Specification and selection of product materials, options, or components must be made by the purchaser of the equipment. See page 54 for more information on Material Selection.

### Additional information:

Specifications: [page 45](#)

Certifications: [page 56](#)

Dimensional Drawings: [page 66](#)

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

**Table 4. Rosemount 3051CFC Compact Flowmeter Ordering Information**

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

Primary element type			
N000	Annubar Sensor Size 1	★	
N040	0.40 Beta Ratio	★	
N050	0.50 Beta Ratio		
N065 <sup>(4)</sup>	0.65 Beta Ratio	★	
Temperature measurement			
0	No Temperature Sensor	★	
R	Remote Thermowell and RTD		
Transmitter connection platform			
3	Direct-mount	★	
7	Remote-mount, NPT Connections	★	
Differential pressure range			
1	0 to 25 in H <sub>2</sub> O (0 to 62,16 mbar)	★	
2	0 to 250 in H <sub>2</sub> O (0 to 621,60 mbar)	★	
3	0 to 1000 in H <sub>2</sub> O (0 to 2,48 bar)	★	
Transmitter output			
A <sup>(5)</sup>	4–20 mA with digital signal based on HART Protocol	★	
F	FOUNDATION fieldbus Protocol	★	
W <sup>(6)</sup>	PROFIBUS PA Protocol	★	
X <sup>(7)</sup>	Wireless (Requires wireless options and engineered polymer housing)	★	
M <sup>(8)</sup>	Low-Power 1-5 Vdc with Digital Signal Based on HART Protocol		
Transmitter housing material		Conduit entry size	
A	Aluminum	1/2-14 NPT	★
B	Aluminum	M20 x 1.5	★
J	SST	1/2-14 NPT	★
K	SST	M20 x 1.5	★
P <sup>(9)</sup>	Engineered polymer	No conduit entries	★
D <sup>(10)</sup>	Aluminum	G1/2	
M <sup>(10)</sup>	SST	G1/2	
Transmitter performance class			
1	Up to ±1.65% flow rate accuracy, 8:1 flow turndown, 5-year stability	★	

### Wireless options (requires Wireless Output Code X and Engineered Polymer Housing Code P)

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

### HART Revision Configuration (requires HART Protocol Output Code A)

HR5 <sup>(5)</sup>	Configured for HART Revision 5	★
HR7 <sup>(5)</sup>	Configured for HART Revision 7	★

### Options (include with selected model number)

Extended product warranty		
WR3	3-year limited warranty	★
WR5	5-year limited warranty	★

**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.

<b>Installation accessories</b>		
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)	★
JB	JIS Alignment Ring (10K)	
JR	JIS Alignment Ring (20K)	
JS	JIS Alignment Ring (40K)	
<b>Remote adapters</b>		
FE	Flange Adapters 316 SST (1/2-in NPT)	★
<b>High temperature application</b>		
HT	Graphite Valve Packing (Tmax = 850 °F)	
<b>Flow calibration</b>		
WC <sup>(11)</sup>	Flow Calibration, 3 pt, Conditioning Orifice Option C (all pipe schedules)	
WD <sup>(11)(12)</sup>	Flow Calibration, 10 pt, Conditioning Option C (All Schedules), Annubar Option A (Schedule 40)	
<b>Pressure testing</b>		
P1	Hydrostatic Testing with Certificate	
<b>Special cleaning</b>		
P2 <sup>(13)</sup>	Cleaning for Special Services	
PA	Cleaning per ASTM G93 Level D (Section 11.4)	
<b>Special inspection</b>		
QC1	Visual & Dimensional Inspection with Certificate	★
QC7	Inspection and Performance Certificate	★
<b>Transmitter calibration certification</b>		
Q4	Calibration Certificate for Transmitter	★
<b>Quality certification for safety</b>		
QS <sup>(14)</sup>	Prior-use certificate of FMEDA data	★
QT <sup>(14)</sup>	Safety certified to IEC 61508 with certificate of FMEDA	★
<b>Material traceability certification</b>		
Q8	Material Traceability Certification per EN 10204:2004 3.1	★
<b>Code conformance</b>		
J2	ANSI/ASME B31.1	
J3	ANSI/ASME B31.3	
J4	ANSI/ASME B31.8	
<b>Materials conformance</b>		
J5 <sup>(15)</sup>	NACE MR-0175 / ISO 15156	
<b>Country certification</b>		
J1	Canadian Registration	
<b>Product certifications</b>		
E8	ATEX Flameproof, Dust	★
I1 <sup>(16)</sup>	ATEX Intrinsic Safety and Dust	★

**Table 4. Rosemount 3051 CFC 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.

IA	ATEX FISCO Intrinsic Safety; for FOUNDATION fieldbus or PROFIBUS PA protocols only	★
N1	ATEX Type n and Dust	★
K8	ATEX Flameproof, Intrinsic Safety, Type n, Dust (combination of E8, I1 and N1)	★
E5	FM Explosion-proof, Dust Ignition-proof	★
I5 <sup>(17)</sup>	FM Intrinsically Safe, Nonincendive	★
IE	FM FISCO Intrinsically Safe; for FOUNDATION fieldbus or PROFIBUS PA protocols only	★
K5	FM Explosion-proof, Dust Ignition-proof, Intrinsically Safe, and Division 2 (combination of E5 and I5)	★
C6	CSA Explosion-proof, Dust Ignition-proof, Intrinsically Safe, and Division 2	★
I6 <sup>(9)</sup>	CSA Intrinsically Safe	★
K6	CSA and ATEX Explosion-proof, Intrinsically Safe, and Division 2 (combination of C6, E8, and I1)	★
E7	IECEX Flameproof, Dust Ignition-proof	★
I7	IECEX Intrinsic Safety	★
N7	IECEX Type n	★
K7	IECEX Flameproof, Dust Ignition-proof, Intrinsic Safety, and Type n (combination of I7, N7 and E7)	★
E2	INMETRO Flameproof	★
I2	INMETRO Intrinsic Safety	★
IB	INMETRO FISCO intrinsically safe; for FOUNDATION fieldbus or PROFIBUS PA protocols only	★
K2	INMETRO Flameproof, Intrinsic Safety	★
E3	China Flameproof	★
I3	China Intrinsic Safety	★
KB	FM and CSA Explosion-proof, Dust Ignition-proof, Intrinsically Safe, and Division 2 (combination of K5 and C6)	★
KD	CSA, FM, and ATEX Explosion-proof, Intrinsically Safe (combination of K5, C6, I1, and E8)	★
<b>Sensor fill fluid and O-ring options</b>		
L1 <sup>(18)</sup>	Inert Sensor Fill Fluid	★
L2	Graphite-Filled (PTFE) O-ring	★
LA <sup>(18)</sup>	Inert Sensor Fill Fluid and Graphite-Filled (PTFE) O-ring	★
<b>Shipboard approvals</b>		
SBS <sup>(18)</sup>	American Bureau of Shipping	★
SLL <sup>(18)(19)</sup>	Lloyds Register (LR)	
<b>Display and interface options</b>		
M4 <sup>(20)</sup>	LCD Display with Local Operator Interface	★
M5	LCD Display	★
<b>Transient protection</b>		
T1 <sup>(18)(21)</sup>	Transient terminal block	★
<b>Manifold for remote mount option</b>		
F2	3-Valve Manifold, Stainless Steel	★
F6	5-Valve Manifold, Stainless Steel	★
<b>PlantWeb control functionality</b>		
A01 <sup>(22)</sup>	FOUNDATION fieldbus Control Function Block Suite	★
<b>PlantWeb diagnostic functionality</b>		
DA0 <sup>(14)</sup>	Power Advisory HART Diagnostic	★
D01 <sup>(22)</sup>	FOUNDATION fieldbus Diagnostic Suite	★
<b>Low power output</b>		
C2	0.8-3.2 Vdc Output with Digital Signal Based on HART Protocol (available with Output code M only)	

**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.

Alarm levels		
C4 <sup>(14)</sup>	NAMUR Alarm and Saturation Levels, High Alarm	★
CN <sup>(14)</sup>	NAMUR Alarm and Saturation Levels, Low Alarm	★
CR <sup>(14)</sup>	Custom alarm and saturation signal levels, high alarm	★
CS <sup>(14)</sup>	Custom alarm and saturation signal levels, low alarm	★
CT <sup>(14)</sup>	Rosemount Standard low alarm	★
Ground screw		
V5 <sup>(18)(23)</sup>	External Ground Screw Assembly	★
Configuration buttons		
D4 <sup>(14)</sup>	Analog Zero and Span	★
DZ <sup>(24)</sup>	Digital Zero Trim	★
<b>Typical model number: 3051CFC D C S 060 N 065 0 3 2 A A 1 WC E5 M5</b>		

- (1) Select Configuration Buttons (option code D4 or DZ) or Local Operator Interface (option code M4) if local configuration buttons are required.
- (2) Available with Primary Element Technology P only.
- (3) 10-in. (250 mm) and 12-in. (300 mm) line sizes not available with Primary Element Technology A.
- (4) For 2-in. (50 mm) line sizes the Primary Element Type is 0.6 for Primary Element Technology Code C.
- (5) Option HR5 configures the HART output to HART Revision 5. Option HR7 configures the HART output to HART Revision 7. The device can be field configured to HART Revision 5 or 7 if desired. HART Revision 5 is the default HART output.
- (6) For local addressing and configuration, M4 (Local Operator Interface) is required.
- (7) Requires wireless options and engineered polymer housing. Available approvals are FM Intrinsically Safe, (option code I5), CSA Intrinsically Safe (option code I6), ATEX Intrinsic Safety (option code I1), and IECEx Intrinsic Safety (option code I7).
- (8) Only available with C6, E2, E5, I5, K5, KB and E8 approval. Not available with GE, GM, SBS, DA0, M4, D4, DZ, QT, HR5, HR7, CR, CS, CT.
- (9) Only available with Wireless Output (output code X).
- (10) Not available with Product certifications options E8, K8, E5, K5, C6, K6, E7, K7, E2, K2, E3, KB, KD.
- (11) Available with Primary Element Technology C only.
- (12) For Annubar option A, consult factory for pipe schedules other than schedule 40.
- (13) Available with Primary Element Technology C or P only.
- (14) Only available with HART 4-20 mA Output (output code A).
- (15) 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.
- (16) Dust approval not applicable to output code X. See [“IEC 62591 \(WirelessHART Protocol\)” on page 62](#) for wireless approvals
- (17) Nonincendive certification not provided with Wireless output option code (X).
- (18) Not available with Wireless output (output code X).
- (19) Only available with product certifications E7, E8, I1, I7, IA, K7, K8, KD, N1, N7
- (20) Not available with output code F - FOUNDATION fieldbus or Wireless output (output code X) or Low Power (output code M).
- (21) The T1 option is not needed with FISCO Product Certifications, transient protection is included with the FISCO Product Certification code IA, IB, and IE.

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

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

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

## Rosemount 3051CFP Integral Orifice Flowmeter



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

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

See “Specifications” on page 45 and options for more details on each configuration. Specification and selection of product materials, options, or components must be made by the purchaser of the equipment. See page 54 for more information on Material Selection.

### Additional information:

Specifications: [page 45](#)

Certifications: [page 56](#)

Dimensional Drawings: [page 66](#)

**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 <sup>(1)</sup>	Integral Orifice Flowmeter	
<b>Measurement type</b>		
D	Differential Pressure	★
<b>Body material</b>		
S	316 SST	★
<b>Line size</b>		
005	1/2-in. (15 mm)	★
010	1-in. (25 mm)	★
015	1 1/2-in. (40 mm)	★
<b>Process connection</b>		
T1	NPT Female Body (Not Available with Remote Thermowell and RTD)	★
S1 <sup>(2)</sup>	Socket Weld Body (Not Available with Remote Thermowell and RTD)	★
P1	Pipe Ends: NPT Threaded	★
P2	Pipe ends: Beveled	★
D1	Pipe Ends: Flanged, DIN PN16, slip-on	★
D2	Pipe Ends: Flanged, DIN PN40, slip-on	★
D3	Pipe Ends: Flanged, DIN PN100, slip-on	★
W1	Pipe Ends: Flanged, 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	★
A1	Pipe Ends: Flanged, RF, ANSI Class 150, slip-on	



**Table 5. Rosemount 3051 CFP 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.

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	
<b>Orifice plate material</b>		
S	316 SST	★
H	Alloy C-276	
M	Alloy 400	
<b>Bore size option</b>		
0066	0.066-in. (1.68 mm) for 1/2-in. Pipe	★
0109	0.109-in. (2.77 mm) for 1/2-in. Pipe	★
0160	0.160-in. (4.06 mm) for 1/2-in. Pipe	★
0196	0.196-in. (4.98 mm) for 1/2-in. Pipe	★
0260	0.260-in. (6.60 mm) for 1/2-in. Pipe	★
0340	0.340-in. (8.64 mm) for 1/2-in. Pipe	★
0150	0.150-in. (3.81 mm) for 1-in. Pipe	★
0250	0.250-in. (6.35 mm) for 1-in. Pipe	★
0345	0.345-in. (8.76 mm) for 1-in. Pipe	★
0500	0.500-in. (12.70 mm) for 1-in. Pipe	★
0630	0.630-in. (16.00 mm) for 1-in. Pipe	★
0800	0.800-in. (20.32 mm) for 1-in. Pipe	★
0295	0.295-in. (7.49 mm) for 1 1/2-in. Pipe	★
0376	0.376-in. (9.55 mm) for 1 1/2-in. Pipe	★
0512	0.512-in. (13.00 mm) for 1 1/2-in. Pipe	★
0748	0.748-in. (19.00 mm) for 1 1/2-in. Pipe	★
1022	1.022-in. (25.96 mm) for 1 1/2-in. Pipe	★
1184	1.184-in. (30.07 mm) for 1 1/2-in. Pipe	★
0010	0.010-in. (0.25 mm) for 1/2-in. Pipe	
0014	0.014-in. (0.36 mm) for 1/2-in. Pipe	
0020	0.020-in. (0.51 mm) for 1/2-in. Pipe	
0034	0.034-in. (0.86 mm) for 1/2-in. Pipe	
<b>Transmitter connection platform</b>		
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	★
D4	Direct-mount, 3-Valve Manifold, Alloy C-276	
D6	Direct-mount, 5-Valve Manifold, Alloy C-276	
D7	Direct-mount, High Temperature, 5-Valve Manifold, SST	
R4	Remote-mount, 3-Valve Manifold, Alloy C-276	
R6	Remote-mount, 5-Valve Manifold, Alloy C-276	
<b>Differential pressure ranges</b>		
1	0 to 25 in H <sub>2</sub> O (0 to 62,16 mbar)	★
2	0 to 250 in H <sub>2</sub> O (0 to 621,60 mbar)	★
3	0 to 1000 in H <sub>2</sub> O (0 to 2,48 bar)	★

**Table 5. Rosemount 3051 CFP Integral Orifice Flowmeter Ordering Information**

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

Transmitter output		
A <sup>(3)</sup>	4–20 mA with digital signal based on HART Protocol	★
F	FOUNDATION fieldbus Protocol	★
W <sup>(4)</sup>	PROFIBUS PA Protocol	★
X <sup>(5)</sup>	Wireless	★
M <sup>(6)</sup>	Low-Power 1-5 Vdc with Digital Signal Based on HART Protocol	
Transmitter housing material		Conduit entry size
A	Aluminum	1/2-14 NPT
B	Aluminum	M20 x 1.5
J	SST	1/2-14 NPT
K	SST	M20 x 1.5
P <sup>(7)</sup>	Engineered polymer	No conduit entries
D <sup>(8)</sup>	Aluminum	G <sup>1</sup> / <sub>2</sub>
M <sup>(8)</sup>	SST	G <sup>1</sup> / <sub>2</sub>
Transmitter performance class		
1	up to ±1.8% flow rate accuracy, 8:1 flow turndown, 5-year stability	★

**Wireless options (requires Wireless Output Code X and Engineered Polymer Housing Code P)**

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

**HART revision configuration (requires HART Protocol Output Code A)**

HR5 <sup>(3)</sup>	Configured for HART Revision 5	★
HR7 <sup>(3)</sup>	Configured for HART Revision 7	★

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

Extended product warranty		
WR3	3-year limited warranty	★
WR5	5-year limited warranty	★
Transmitter body/bolt material		
GT	High Temperature (850 °F / 454 °C)	
Temperature sensor		
RT <sup>(9)</sup>	Thermowell and RTD	
Optional connection		
G1	DIN 19213 Transmitter Connection	★
Pressure testing		
P1 <sup>(10)</sup>	Hydrostatic Testing with Certificate	
Special cleaning		
P2	Cleaning for Special Services	
PA	Cleaning per ASTM G93 Level D (Section 11.4)	
Material testing		
V1	Dye Penetrant Exam	

**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.

<b>Material examination</b>		
V2	Radiographic Examination	
<b>Flow calibration</b>		
WD <sup>(11)</sup>	Discharge Coefficient Verification	
<b>Special inspection</b>		
QC1	Visual & Dimensional Inspection with Certificate	★
QC7	Inspection and Performance Certificate	★
<b>Material traceability certification</b>		
Q8	Material Traceability Certification per EN 10204:2004 3.1	★
<b>Code conformance</b>		
J2 <sup>(12)</sup>	ANSI/ASME B31.1	
J3 <sup>(12)</sup>	ANSI/ASME B31.3	
J4 <sup>(12)</sup>	ANSI/ASME B31.8	
<b>Materials conformance</b>		
J5 <sup>(13)</sup>	NACE MR-0175 / ISO 15156	
<b>Country certification</b>		
J6	European Pressure Directive (PED)	★
J1	Canadian Registration	
<b>Transmitter calibration certification</b>		
Q4	Calibration Certificate for Transmitter	★
<b>Quality certification for safety</b>		
QS <sup>(14)</sup>	Prior-use certificate of FMEDA data	★
QT <sup>(14)</sup>	Safety certified to IEC 61508 with certificate of FMEDA	★
<b>Product certifications</b>		
E8	ATEX Flameproof, Dust	★
I1 <sup>(15)</sup>	ATEX Intrinsic Safety and Dust	★
IA	ATEX FISCO Intrinsic Safety; for FOUNDATION fieldbus or PROFIBUS PA protocols only	★
N1	ATEX Type n and Dust	★
K8	ATEX Flameproof, Intrinsic Safety, Type n, Dust (combination of E8, I1 and N1)	★
E5	FM Explosion-proof, Dust Ignition-proof	★
I5 <sup>(16)</sup>	FM Intrinsically Safe, Nonincendive	★
IE	FM FISCO Intrinsically Safe; for FOUNDATION fieldbus or PROFIBUS PA protocols only	★
K5	FM Explosion-proof, Dust Ignition-proof, Intrinsically Safe, and Division 2 (combination of E5 and I5)	★
C6	CSA Explosion-proof, Dust Ignition-proof, Intrinsically Safe, and Division 2	★
I6 <sup>(7)</sup>	CSA Intrinsically Safe	★
K6	CSA and ATEX Explosion-proof, Intrinsically Safe, and Division 2 (combination of C6, E8, and I1)	★
E7	IECEx Flameproof, Dust Ignition-proof	★
I7	IECEx Intrinsic Safety	★
N7	IECEx Type n	★
K7	IECEx Flameproof, Dust Ignition-proof, Intrinsic Safety, and Type n (combination of I7, N7 and E7)	★
E2	INMETRO Flameproof	★
I2	INMETRO Intrinsic Safety	★
IB	INMETRO FISCO intrinsically safe; for FOUNDATION fieldbus or PROFIBUS PA protocols only	★
K2	INMETRO Flameproof, Intrinsic Safety	★

**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.

E3	China Flameproof	★
I3	China Intrinsic Safety	★
KB	FM and CSA Explosion-proof, Dust Ignition-proof, Intrinsically Safe, and Division 2 (combination of K5 and C6)	★
KD	CSA, FM, and ATEX Explosion-proof, Intrinsically Safe (combination of K5, C6, I1, and E8)	★
<b>Sensor fill fluid and O-ring options</b>		
L1 <sup>(17)</sup>	Inert Sensor Fill Fluid	★
L2	Graphite-Filled (PTFE) O-ring	★
LA <sup>(17)</sup>	Inert Sensor Fill Fluid and Graphite-Filled (PTFE) O-ring	★
<b>Shipboard approvals</b>		
SBS <sup>(17)</sup>	American Bureau of Shipping	★
SLL <sup>(17)(18)</sup>	Lloyds Register (LR)	
<b>Display and interface options</b>		
M4 <sup>(19)</sup>	LCD Display with Local Operator Interface	★
M5	LCD Display	★
<b>Transient protection</b>		
T1 <sup>(17)(20)</sup>	Transient terminal block	★
<b>PlantWeb control functionality</b>		
A01 <sup>(21)</sup>	FOUNDATION fieldbus Control Function Block Suite	★
<b>PlantWeb diagnostic functionality</b>		
DA0 <sup>(14)</sup>	Power Advisory HART Diagnostic	★
D01 <sup>(21)</sup>	FOUNDATION fieldbus Diagnostic Suite	★
<b>Low power output</b>		
C2	0.8-3.2 Vdc Output with Digital Signal Based on HART Protocol (Available with Output code M only)	
<b>Alarm levels</b>		
C4 <sup>(14)</sup>	NAMUR Alarm and Saturation Levels, High Alarm	★
CN <sup>(14)</sup>	NAMUR Alarm and Saturation Levels, Low Alarm	★
CR <sup>(14)</sup>	Custom alarm and saturation signal levels, high alarm	★
CS <sup>(14)</sup>	Custom alarm and saturation signal levels, low alarm	★
CT <sup>(14)</sup>	Rosemount Standard low alarm	★
<b>Ground screw</b>		
V5 <sup>(17)(22)</sup>	External Ground Screw Assembly	★
<b>Configuration buttons</b>		
D4 <sup>(14)</sup>	Analog Zero and Span	★
DZ <sup>(23)</sup>	Digital Zero Trim	★
<b>Typical model number: 3051CFP D S 010 W1 S 0500 D3 2 A A 1 E5 M5</b>		

- (1) Select Configuration Buttons (option code D4 or DZ) or Local Operator Interface (option code M4) if local configuration buttons are required.
- (2) To improve pipe perpendicularity for gasket sealing, socket diameter is smaller than standard pipe O.D.
- (3) Option HR5 configures the HART output to HART Revision 5. Option HR7 configures the HART output to HART Revision 7. The device can be field configured to HART Revision 5 or 7 if desired. HART Revision 5 is the default HART output.
- (4) For local addressing and configuration, M4 (Local Operator Interface) is required.

- 
- (5) Requires wireless options and engineered polymer housing. Available approvals are FM Intrinsically Safe, (option code I5), CSA Intrinsically Safe (option code I6), ATEX Intrinsic Safety (option code I1), and IECEx Intrinsic Safety (option code I7).
  - (6) Only available with C6, E2, E5, I5, K5, KB and E8 approval. Not available with GE, GM, SBS, DA0, M4, D4, DZ, QT, HR5, HR7, CR, CS, CT.
  - (7) Only available with Wireless Output (output code X).
  - (8) Not available with Product certifications options E8, K8, E5, K5, C6, K6, E7, K7, E2, K2, E3, KB, KD.
  - (9) Thermowell Material is the same as the body material.
  - (10) Does not apply to Process Connection codes T1 and S1.
  - (11) Not available for bore sizes 0010, 0014, 0020, 0034, 0066, or 0109.
  - (12) Not available with DIN Process Connection codes D1, D2, or D3.
  - (13) Materials of Construction comply with metallurgical requirements within NACE MR0175/ISO for sour oil field production environments. Environmental limits apply to certain materials. Consult latest standard for details. Selected materials also conform to NACE MR0103 for sour refining environments.
  - (14) Only available with HART 4-20 mA output (Option code A).
  - (15) Dust approval not applicable to output code X. See "[IEC 62591 \(WirelessHART Protocol\)](#)" on page 62 for wireless approvals
  - (16) Nonincendive certification not provided with Wireless output option code (X).
  - (17) Not available with Wireless Output (output code X).
  - (18) Only available with product certifications E7, E8, I1, I7, IA, K7, K8, KD, N1, N7.
  - (19) Not available with FOUNDATION fieldbus (Output Code F) or Wireless output (output code X) or Low Power (output code M).
  - (20) The T1 option is not needed with FISCO Product Certifications, transient protection is included with the FISCO Product Certification code IA, IB, and IE.
  - (21) Only valid with FOUNDATION fieldbus Output Code F.
  - (22) The V5 option is not needed with the T1 option; external ground screw assembly is included with the T1 option.
  - (23) Only available with 4-20 mA output (Output Code A) and Wireless output (Output Code X).

## Rosemount 3051L Level Transmitter



3051L Level Transmitter

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

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

See [Specifications](#) and options for more details on each configuration. Specification and selection of product materials, options, or components must be made by the purchaser of the equipment. See [page 54](#) for more information on Material Selection.

### Additional information:

Specifications: [page 45](#)

Certifications: [page 56](#)

Dimensional Drawings: [page 66](#)

### Table 6. Rosemount 3051L Level Transmitter Ordering Information

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

Model	Transmitter type			
3051L <sup>(1)</sup>	Level Transmitter			
<b>Pressure range</b>				
2	–250 to 250 inH <sub>2</sub> O (–621,60 to 621,60 mbar)			★
3	–1000 to 1000 inH <sub>2</sub> O (–2,48 to 2,48 bar)			★
4	–300 to 300 psi (–20,68 to 20,68 bar)			★
<b>Transmitter output</b>				
A <sup>(2)</sup>	4–20 mA with Digital Signal Based on HART Protocol			★
F	FOUNDATION fieldbus Protocol			★
W <sup>(3)</sup>	PROFIBUS PA Protocol			★
X <sup>(4)</sup>	Wireless (requires wireless options and engineered polymer housing)			★
M <sup>(5)</sup>	Low-Power 1-5 Vdc with Digital Signal Based on HART Protocol			
<b>Process connection size, material, extension length (high side)</b>				
Code	Process connection size	Material	Extension length	
G0 <sup>(6)</sup>	2-in./DN 50/A	316L SST	Flush Mount Only	★
H0 <sup>(6)</sup>	2-in./DN 50	Alloy C-276	Flush Mount Only	★
J0	2-in./DN 50	Tantalum	Flush Mount Only	★
A0 <sup>(6)</sup>	3-in./DN 80	316L SST	Flush Mount	★
A2 <sup>(6)</sup>	3-in./DN 80	316L SST	2-in./50 mm	★
A4 <sup>(6)</sup>	3-in./DN 80	316L SST	4-in./100 mm	★

**Table 6. Rosemount 3051L Level Transmitter Ordering Information**

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

The Expanded offering is subject to additional delivery lead time.

A6 <sup>(6)</sup>	3-in./DN 80	316L SST	6-in./150 mm	★
B0 <sup>(6)</sup>	4-in./DN 100	316L SST	Flush Mount	★
B2 <sup>(6)</sup>	4-in./DN 100	316L SST	2-in./50 mm	★
B4 <sup>(6)</sup>	4-in./DN 100	316L SST	4-in./100 mm	★
B6 <sup>(6)</sup>	4-in./DN 100	316L SST	6-in./150 mm	★
C0 <sup>(6)</sup>	3-in./DN 80	Alloy C-276	Flush Mount	★
C2 <sup>(6)</sup>	3-in./DN 80	Alloy C-276	2-in./50 mm	★
C4 <sup>(6)</sup>	3-in./DN 80	Alloy C-276	4-in./100 mm	★
C6 <sup>(6)</sup>	3-in./DN 80	Alloy C-276	6-in./150 mm	★
D0 <sup>(6)</sup>	4-in./DN 100	Alloy C-276	Flush Mount	★
D2 <sup>(6)</sup>	4-in./DN 100	Alloy C-276	2-in./50 mm	★
D4 <sup>(6)</sup>	4-in./DN 100	Alloy C-276	4-in./100 mm	★
D6 <sup>(6)</sup>	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	★
<b>Mounting flange size, rating, material (high side)</b>				
	<b>Size</b>	<b>Rating</b>	<b>Material</b>	
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 <sup>(6)</sup>	2-in.	ANSI/ASME B16.5 Class 150	316 SST	★
F <sup>(6)</sup>	3-in.	ANSI/ASME B16.5 Class 150	316 SST	★
G <sup>(6)</sup>	4-in.	ANSI/ASME B16.5 Class 150	316 SST	★
Y <sup>(6)</sup>	2-in.	ANSI/ASME B16.5 Class 300	316 SST	★
H <sup>(6)</sup>	3-in.	ANSI/ASME B16.5 Class 300	316 SST	★
J <sup>(6)</sup>	4-in.	ANSI/ASME B16.5 Class 300	316 SST	★
Z <sup>(6)</sup>	2-in.	ANSI/ASME B16.5 Class 600	316 SST	★
L <sup>(6)</sup>	3-in.	ANSI/ASME B16.5 Class 600	316 SST	★
Q	DN 50	PN 10-40 per EN 1092-1	CS	★
R	DN 80	PN 40 per EN 1092-1	CS	★
S	DN 100	PN 40 per EN 1092-1	CS	★
V	DN 100	PN 10/16 per EN 1092-1	CS	★
K <sup>(6)</sup>	DN 50	PN 10-40 per EN 1092-1	316 SST	★
T <sup>(6)</sup>	DN 80	PN 40 per EN 1092-1	316 SST	★
U <sup>(6)</sup>	DN 100	PN 40 per EN 1092-1	316 SST	★

**Table 6. Rosemount 3051L Level Transmitter Ordering Information**

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

<b>Mounting flange size, rating, material (high side)</b>				
	<b>Size</b>	<b>Rating</b>	<b>Material</b>	
W <sup>(6)</sup>	DN 100	PN 10/16 per EN 1092-1	316 SST ★	
7 <sup>(6)</sup>	4 in.	ANSI/ASME B16.5 Class 600	316 SST ★	
1	N/A	10K per JIS B2238	CS	
2	N/A	20K per JIS B2238	CS	
3	N/A	40K per JIS B2238	CS	
4 <sup>(6)</sup>	N/A	10K per JIS B2238	316 SST	
5 <sup>(6)</sup>	N/A	20K per JIS B2238	316 SST	
6 <sup>(6)</sup>	N/A	40K per JIS B2238	316 SST	
<b>Seal fill fluid (high side)</b>		<b>Specific gravity</b>	<b>Temperature limits [ambient temperature of 70° F (21° C)]</b>	
D	Silicone 200	0.93	-49 to 401 °F (-45 to 205 °C) ★	
F	Silicone 200 for Vacuum Applications	0.93	For use in vacuum applications below 14.7 psia (1 bar-a), refer to vapor pressure curves in Rosemount DP Level Fill Fluid Specification Technical Note (00840-2100-4016). ★	
L	Silicone 704	1.07	32 to 401 °F (0 to 205 °C) ★	
C	Silicone 704 for Vacuum Applications	1.07	For use in vacuum applications below 14.7 psia (1 bar-a), refer to vapor pressure curves in Rosemount DP Level Fill Fluid Specification Technical Note (00840-2100-4016). ★	
R	Silicone 705	1.09	68 to 401 °F (20 to 205 °C) ★	
V	Silicone 705 for Vacuum Applications	1.09	For use in vacuum applications below 14.7 psia (1 bar-a), refer to vapor pressure curves in Rosemount DP Level Fill Fluid Specification Technical Note (00840-2100-4016). ★	
A	SYLTHERM™ XLT	0.85	-102 to 293 °F (-75 to 145 °C) ★	
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) ★	
<b>Low pressure side</b>				
	<b>Configuration</b>	<b>Flange adapter</b>	<b>Diaphragm material</b>	<b>Sensor fill fluid</b>
11 <sup>(6)</sup>	Gage	SST	316L SST	Silicone ★
21	Differential	SST	316L SST	Silicone ★
22 <sup>(6)</sup>	Differential	SST	Alloy C-276	Silicone ★
2A <sup>(7)</sup>	Differential	SST	316L SST	Inert (Halocarbon) ★
2B <sup>(6)(7)</sup>	Differential	SST	Alloy C-276	Inert (Halocarbon) ★
31 <sup>(6)</sup>	Tuned-System Assembly with Remote Seal	None	316L SST	Silicone (requires Option Code S1) ★



**Table 6. Rosemount 3051L Level Transmitter Ordering Information**

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

O-ring		
A	Glass-filled PTFE	★
Housing material		Conduit entry size
A	Aluminum	½–14 NPT
B	Aluminum	M20 × 1.5
J	SST	½–14 NPT
K	SST	M20 × 1.5
P <sup>(8)</sup>	Engineered polymer	No conduit entries
D <sup>(9)</sup>	Aluminum	G½
M <sup>(9)</sup>	SST	G½

**Wireless options (requires Wireless Output Code X and Engineered Polymer Housing Code P)**

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

**HART Revision configuration (requires HART Protocol Output Code A)**

HR5 <sup>(2)</sup>	Configured for HART Revision 5	★
HR7 <sup>(2)</sup>	Configured for HART Revision 7	★

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

Extended product warranty		
WR3	3-year limited warranty	★
WR5	5-year limited warranty	★
PlantWeb control functionality		
A01 <sup>(10)</sup>	FOUNDATION fieldbus Control Function Block Suite	★
PlantWeb diagnostic functionality		
DA0 <sup>(18)</sup>	Power Advisory HART Diagnostic	★
D01 <sup>(10)</sup>	FOUNDATION fieldbus Diagnostics Suite	★
Seal assemblies		
S1 <sup>(11)</sup>	Assembled to One Rosemount 1199 Seal	★
Product certifications		
E8	ATEX Flameproof and Dust Certification	★
I1 <sup>(12)</sup>	ATEX Intrinsic Safety and Dust	★
IA	ATEX FISCO Intrinsic Safety; for FOUNDATION fieldbus or PROFIBUS PA protocols only	★
N1	ATEX Type n Certification and Dust	★
K8	ATEX Flameproof, Intrinsic Safety, Type n, Dust (combination of E8, I1 and N1)	★
E4 <sup>(13)</sup>	TIIS Flameproof	★
E5	FM Explosion-proof, Dust Ignition-proof	★
I5 <sup>(14)</sup>	FM Intrinsically Safe, Nonincendive	★
IE	FM FISCO Intrinsically Safe; for FOUNDATION fieldbus or PROFIBUS PA protocols only	★
K5	FM Explosion-proof, Dust Ignition-Proof, Intrinsically Safe, and Division 2	★

**Table 6. Rosemount 3051L Level Transmitter Ordering Information**

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

C6	CSA Explosion-proof, Dust Ignition-proof, Intrinsically Safe, and Division 2	★
I6 <sup>(8)</sup>	CSA Intrinsic Safety	★
K6	CSA and ATEX Explosion-proof, Intrinsically Safe, and Division 2 (combination of C6, E8, and I1)	★
E7	IECEX Flameproof, Dust Ignition-proof	★
I7	IECEX Intrinsic Safety	★
N7	IECEX Type n Certification	★
K7	IECEX Flameproof, Dust Ignition-proof, Intrinsic Safety, and Type n (combination of I7, N7 and E7)	★
E2	INMETRO Flameproof	★
I2	INMETRO Intrinsic Safety	★
IB	INMETRO FISCO intrinsically safe; for FOUNDATION fieldbus or PROFIBUS PA protocols only	★
K2	INMETRO Flameproof, Intrinsic Safety	★
E3	China Flameproof	★
I3	China Intrinsic Safety	★
N3	China Type n	★
EM	Technical Regulations Customs Union (EAC) Flameproof	★
IM	Technical Regulations Customs Union (EAC) Intrinsic Safety	★
KM	Technical Regulations Customs Union (EAC) Flameproof and Intrinsic Safety	★
KB	FM and CSA Explosion-proof, Dust Ignition Proof, Intrinsically Safe, and Division 2 (combination of K5 and C6)	★
KD	FM, CSA, and ATEX Explosion-proof, Intrinsically Safe (combination of K5, C6, I1, and E8)	★
<b>Shipboard approvals</b>		
SBS <sup>(7)</sup>	American Bureau of Shipping	★
SBV <sup>(7)</sup> (15)	Bureau Veritas (BV)	
SDN <sup>(7)</sup>	Det Norske Veritas	
SLL <sup>(7)(15)</sup>	Lloyds Register (LR)	
<b>Bolting material</b>		
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	★
<b>Display and interface options</b>		
M4 <sup>(16)</sup>	LCD Display with Local Operator Interface	★
M5	LCD Display	★
<b>Calibration certification</b>		
Q4	Calibration Certificate	★
QP	Calibration Certificate and tamper evident seal	★
QG <sup>(17)</sup>	Calibration Certificate and GOST Verification Certificate	★
<b>Material traceability certification</b>		
Q8	Material Traceability Certification per EN 10204 3.1	★
<b>Quality certification for safety</b>		
QS <sup>(18)</sup>	Prior-use certificate of FMEDA data	★
QT <sup>(18)</sup>	Safety certified to IEC 61508 with certificate of FMEDA	★

**Table 6. Rosemount 3051L Level Transmitter Ordering Information**

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

<b>Toolkit total system performance reports</b>				
QZ	Seal System Performance Calculation Report			★
<b>Conduit electrical connector</b>				
GE <sup>(7)</sup>	M12, 4-pin, Male Connector (eurofast)			★
GM <sup>(7)</sup>	A size Mini, 4-pin, Male Connector (minifast)			★
<b>Configuration buttons</b>				
D4 <sup>(18)</sup>	Analog Zero and Span			★
DZ <sup>(19)</sup>	Digital Zero Trim			★
<b>Transient protection</b>				
T1 <sup>(7)(20)</sup>	Transient Protection			★
<b>Software configuration</b>				
C1 <sup>(19)</sup>	Custom Software Configuration (completed CDS 00806-0100-4007 for wired and 00806-0100-4100 for wireless required with order)			★
<b>Low power output</b>				
C2	0.8-3.2 Vdc Output with Digital Signal Based on HART Protocol (available with Output code M only)			
<b>Alarm levels</b>				
C4 <sup>(18)</sup>	NAMUR alarm and saturation levels, high alarm			★
CN <sup>(18)</sup>	NAMUR alarm and saturation levels, low alarm			★
CR <sup>(18)</sup>	Custom alarm and saturation signal levels, high alarm (requires C1 and Configuration Data Sheet)			★
CS <sup>(18)</sup>	Custom alarm and saturation signal levels, low alarm (requires C1 and Configuration Data Sheet)			★
CT <sup>(18)</sup>	Rosemount Standard low alarm			★
<b>Conduit plug</b>				
DO <sup>(7)</sup>	316 SST Conduit Plug			★
<b>Ground screw</b>				
V5 <sup>(7)(21)</sup>	External Ground Screw Assembly			★
<b>Lower housing flushing connection options</b>				
	Ring material	Number	Size (NPT)	
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	★
<b>Lower housing intermediate gasket material</b>				
S0	No Gasket for lower housing			★
SY <sup>(22)</sup>	Thermo-Tork TN-9000			★

**Table 6. Rosemount 3051L Level Transmitter Ordering Information**

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

NACE certificate		
Q15 <sup>(23)</sup>	Certificate of Compliance to NACE MR0175/ISO 15156 for wetted materials	★
Q25 <sup>(23)</sup>	Certificate of Compliance to NACE MR0103 for wetted materials	★
<b>Typical model number: 3051L 2 A A0 D 21 A A F1</b>		

- (1) Select Configuration Buttons (option code D4 or DZ) or Local Operator Interface (option code M4) if local configuration buttons are required.
- (2) Option HR5 configures the HART output to HART Revision 5. Option HR7 configures the HART output to HART Revision 7. The device can be field configured to HART Revision 5 or 7 if desired. HART Revision 5 is the default HART output.
- (3) Option code M4 - LCD Display with Local Operator Interface required for local addressing and configuration.
- (4) Requires wireless options and engineered polymer housing. Available approvals are FM Intrinsically Safe, (option code I5), CSA Intrinsically Safe (option code I6), ATEX Intrinsic Safety (option code I1), IECEx Intrinsic Safety (option code I7) and EAC Intrinsic Safety (option code IM).
- (5) Only available with C6, E2, E5, I5, K5, KB and E8 approval. Not available with GE, GM, SBS, DA0, M4, D4, DZ, QT, HR5, HR7, CR, CS, CT.
- (6) 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.
- (7) Not available with Wireless output (output code X).
- (8) Only available with Wireless output (output code X).
- (9) Not available with Product certifications options E8, K8, E5, K5, C6, K6, E7, K7, E2, K2, E3, KB, KD.
- (10) Only valid with FOUNDATION fieldbus output (output code F).
- (11) "Assemble-to" items are specified separately and require a completed model number.
- (12) Dust approval not applicable to output code X. See "[IEC 62591 \(WirelessHART Protocol\)](#)" on page 62 for wireless approvals.
- (13) Only available with output codes A - 4-20mA HART, F - FOUNDATION fieldbus, and W - PROFIBUS PA. Also only available with G 1/2 housing thread types.
- (14) Nonincendive certification not provided with Wireless output option code (X).
- (15) Only available with product certifications E7, E8, I1, I7, IA, K7, K8, KD, N1, N7.
- (16) Not available with FOUNDATION fieldbus (Output Code F) or Wireless output (Output Code X) or Low Power (Output Code M).
- (17) Contact an Emerson Process Management representative for availability.
- (18) Only available with HART 4-20 mA output (output code A).
- (19) Only available with 4-20 mA HART output (Output Code A) and Wireless output (Output Code X).
- (20) The T1 option is not needed with FISCO Product Certifications; transient protection is included in the FISCO product certification codes IA, IB, and IE.
- (21) The V5 option is not needed with the T1 option; external ground screw assembly is included with the T1 option.
- (22) Gasket provided when lower housing is ordered.
- (23) NACE compliant wetted materials are identified by [Footnote 6](#).

# Specifications

## Performance specifications

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

### Conformance to specification [ $\pm 3\sigma$ (Sigma)]

Technology leadership, advanced manufacturing techniques, and statistical process control ensure specification conformance to at least  $\pm 3\sigma$ .

### Reference accuracy

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

Models	Rosemount 3051 and WirelessHART
<b>3051C</b> Range 5	$\pm 0.065\%$ of span For spans less than 10:1, accuracy = $\pm \left[ 0.015 + 0.005 \left( \frac{URL}{Span} \right) \right] \%$ of Span
Ranges 2-4	$\pm 0.04\%$ of span <sup>(1)</sup> For spans less than 10:1 <sup>(2)</sup> , accuracy = $\pm \left[ 0.015 + 0.005 \left( \frac{URL}{Span} \right) \right] \%$ of Span
Range 1	$\pm 0.10\%$ 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)	$\pm 0.10\%$ of span For spans less than 2:1, accuracy = $\pm 0.05\%$ of URL
<b>3051CA</b> Ranges 1-4	$\pm 0.04\%$ of span <sup>(1)</sup> For spans less than 10:1, accuracy = $\pm \left[ 0.0075 \left( \frac{URL}{Span} \right) \right] \%$ of Span
<b>3051T</b> Ranges 1-4	$\pm 0.04\%$ of span <sup>(1)</sup> For spans less than 10:1, accuracy = $\pm \left[ 0.0075 \left( \frac{URL}{Span} \right) \right] \%$ of Span
Range 5	$\pm 0.075\%$ of span For spans less than 10:1, accuracy = $\pm \left[ 0.0075 \left( \frac{URL}{Span} \right) \right] \%$ of Span
<b>3051L</b> Ranges 2-4	$\pm 0.075\%$ of span For spans less than 10:1, accuracy = $\pm \left[ 0.025 + 0.005 \left( \frac{URL}{Span} \right) \right] \%$ of Span

(1) For output code W and M,  $\pm 0.065\%$  span.

(2) For output code F, for span less than 5:1.

### Flow performance - flow reference accuracy<sup>(1)</sup>

3051CFA Annubar Flowmeter		
Ranges 2-3		$\pm 1.80\%$ of Flow Rate at 8:1 flow turndown
3051CFC_A Compact Annubar Flowmeter – Annubar Option A		
Ranges 2-3	Uncalibrated	$\pm 2.10\%$ of Flow Rate at 8:1 flow turndown
	Calibrated	$\pm 1.80\%$ of Flow Rate at 8:1 flow turndown
3051CFC_C Compact Orifice Flowmeter – Conditioning Option C		
Ranges 2-3	$\beta = 0.4$	$\pm 1.75\%$ of Flow Rate at 8:1 flow turndown
	$\beta = 0.50, 0.65$	$\pm 1.95\%$ of Flow Rate at 8:1 flow turndown

**Flow performance - flow reference accuracy<sup>(1)</sup>**

<b>3051CFC_P Compact Orifice Flowmeter – orifice type option P<sup>(2)</sup></b>		
Ranges 2-3	$\beta = 0.4$	$\pm 2.00\%$ of Flow Rate at 8:1 flow turndown
	$\beta = 0.65$	$\pm 2.00\%$ of Flow Rate at 8:1 flow turndown
<b>3051CFP Integral Orifice Flowmeter</b>		
Ranges 2-3	$\beta < 0.1$	$\pm 3.00\%$ of Flow Rate at 8:1 flow turndown
	$0.1 < \beta < 0.2$	$\pm 1.95\%$ of Flow Rate at 8:1 flow turndown
	$0.2 < \beta < 0.6$	$\pm 1.75\%$ of Flow Rate at 8:1 flow turndown
	$0.6 < \beta < 0.8$	$\pm 2.15\%$ of Flow Rate at 8:1 flow turndown

(1) Accuracy over range of use is always application dependent. Range 1 flowmeters may experience an additional uncertainty up to 0.9%. Consult your Emerson Process Management Representative for exact specifications.

(2) Applicable to 2-in. to 12-in. line sizes. For smaller line sizes, see the Rosemount DP Flowmeters and Primary Elements PDS (00813-0100-4485).

**Total performance**

Total performance is based on combined errors of reference accuracy, ambient temperature effect, and static pressure effect at normal operating conditions (70% of span typical reading, 740 psi (51,02 bar) line pressure).

For  $\pm 50^\circ\text{F}$  ( $28^\circ\text{C}$ ) temperature changes; 0-100% relative humidity, from 1:1 to 5:1 rangedown

<b>Models</b>	<b>Total performance<sup>(1)</sup></b>
3051C Ranges 2-5	$\pm 0.14\%$ of span
3051T Ranges 1-4	$\pm 0.14\%$ of span
3051L Ranges 2-4	Use Instrument Toolkit™ or the QZ option to quantify the total performance of a remote seal assembly under operating conditions.

(1) For output code W, F and M, total performance is  $\pm 0.15\%$  of span.

**Long term stability**

<b>Models</b>	<b>Long term stability</b>
3051C Ranges 2-5	$\pm 0.2\%$ of URL for 10 years $\pm 50^\circ\text{F}$ ( $28^\circ\text{C}$ ) temperature changes, and up to 1000 psi (68,95 bar) line pressure.
3051CD, 3051CG Low/Draft Range Ranges 0-1	$\pm 0.2\%$ of URL for 1 year
3051CA Low Range Range 1	$\pm 0.2\%$ of URL for 10 years $\pm 50^\circ\text{F}$ ( $28^\circ\text{C}$ ) temperature changes, and up to 1000 psi (68,95 bar) line pressure.
3051T Ranges 1-4	$\pm 0.2\%$ of URL for 10 years $\pm 50^\circ\text{F}$ ( $28^\circ\text{C}$ ) temperature changes, and up to 1000 psi (68,95 bar) line pressure.

**Dynamic performance**

	4 - 20 mA HART <sup>(1)</sup>	FOUNDATION fieldbus and PROFIBUS PA protocols <sup>(3)</sup>	Typical HART transmitter response time
Total Response Time ( $T_d + T_c$ ) <sup>(2)</sup> :			
3051C	Ranges 2-5 100 ms Range 1 255 ms Range 0 700 ms 3051T 100 ms 3051L See Instrument Toolkit	152 ms 307 ms N/A 152 ms See Instrument Toolkit	
Dead Time ( $T_d$ )	45 ms (nominal)	97 ms	
Update Rate <sup>(4)</sup>	22 times per second	22 times per second	
(1) Dead time and update rate apply to all models and ranges; analog output only. (2) Nominal total response time at 75 °F (24 °C) reference conditions. (3) Transducer block response time, Analog Input block execution time not included. (4) Does not apply to wireless (output Code X). See “Wireless (output code X)” on page 52 for wireless update rate.			

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

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

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

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

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

## Mounting position effects

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

## Vibration effect

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

## Power supply effect

Less than  $\pm 0.005\%$  of calibrated span per volt change.

## Electromagnetic compatibility (EMC)

Meets all relevant requirements of EN61326-1:2006 and Namur NE-21.<sup>(1)</sup>

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

## Transient protection (option code T1)

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

6 kV crest (0.5  $\mu$ s - 100 kHz)

3 kA crest (8  $\times$  20  $\mu$ s)

6 kV crest (1.2  $\times$  50  $\mu$ s)



## Functional specifications

### Range and sensor limits

**Table 7. 3051CD, 3051CG, 3051CF, and 3051L Range and Sensor Limits**

Range <sup>(1)</sup>	Minimum span		Range and sensor limits			
	3051CD, 3051CG, 3051CF, 3051L <sup>(2)</sup>	Upper (URL)	Lower (LRL)			
			3051CD differential 3051CF Flowmeters	3051CG gage <sup>(3)</sup>	3051L differential	3051L gage <sup>(3)</sup>
0	0.10 inH <sub>2</sub> O (0,24 mbar)	3.00 inH <sub>2</sub> O (7,45 mbar)	-3.00 inH <sub>2</sub> O (-7,45 mbar)	N/A	N/A	N/A
1	0.50 inH <sub>2</sub> O (1,24 mbar)	25.00 inH <sub>2</sub> O (62,16 mbar)	-25.00 inH <sub>2</sub> O (-62,16 mbar)	-25.00 inH <sub>2</sub> O (-62,16 mbar)	N/A	N/A
2	1.67 inH <sub>2</sub> O (4,15 mbar)	250.00 inH <sub>2</sub> O (621,60 mbar)	-250.00 inH <sub>2</sub> O (-621,60 mbar)	-250.00 inH <sub>2</sub> O (-621,60 mbar)	-250.00 inH <sub>2</sub> O (-621,60 mbar)	-250.00 inH <sub>2</sub> O (-621,60 mbar)
3	6.67 inH <sub>2</sub> O (16,58 mbar)	1000.00 inH <sub>2</sub> O (2,48 bar)	-1000.00 inH <sub>2</sub> O (-2,48 bar)	0.50 psia (34,47 mbar)	-1000.00 inH <sub>2</sub> O (-2,48 bar)	0.50 psia (34,47 mbar)
4	2.00 psi (137,89 mbar)	300.00 psi (20,68 bar)	-300.00 psi (-20,68 bar)	0.50 psia (34,47 mbar)	-300.00 psi (-20,68 bar)	0.50 psia (34,47 mbar)
5	13.33 psi (919,01 mbar)	2000.00 psi (137,89 bar)	-2000.00 psi (-137,89 bar)	0.50 psia (34,47 mbar)	N/A	N/A

(1) Range 0 only available with 3051CD. Range 1 only available with 3051CD, 3051CG, or 3051CF. inH<sub>2</sub>O referenced at 68 degrees Fahrenheit.

(2) For outputs options W and M, minimum span are: range 1 - 0.50 inH<sub>2</sub>O (1,24 mbar), range 2 - 2.50 inH<sub>2</sub>O (6,21 mbar), range 3 - 10.00 inH<sub>2</sub>O (24,86 mbar), range 4 - 3.00 psi (0,21 bar), range 5 - 20.00 psi (1,38 bar).

(3) Assumes atmospheric pressure of 14.7 psig.

**Table 8. 3051CA and 3051T Range and Sensor Limits**

Range	3051CA			Range	3051T			
	Minimum span <sup>(1)</sup>	Range and sensor limits			Minimum span <sup>(1)</sup>	Range and sensor limits		Lower <sup>(2)</sup> (LRL) (gage)
		Upper (URL)	Lower (LRL)			Upper (URL)	Lower (LRL) (absolute)	
1	0.30 psi (20,68 mbar)	30 psia (2,06 bar)	0 psia (0 bar)	1	0.30 psi (20,68 mbar)	30.00 psi (2,06 bar)	0 psia (0 bar)	-14.70 psig (-1,01 bar)
2	1.00 psi (68,94 mbar)	150 psia (10,34 bar)	0 psia (0 bar)	2	1.00 psi (68,94 mbar)	150.00 psi (10,34 bar)	0 psia (0 bar)	-14.70 psig (-1,01 bar)
3	5.33 psi (367,49 mbar)	800 psia (55,15 bar)	0 psia (0 bar)	3	5.33 psi (367,49 mbar)	800.00 psi (55,15 bar)	0 psia (0 bar)	-14.70 psig (-1,01 bar)
4	26.67 psi (1,83 bar)	4000 psia (275,79 bar)	0 psia (0 bar)	4	26.67 psi (1,83 bar)	4000.00 psi (275,79 bar)	0 psia (0 bar)	-14.70 psig (-1,01 bar)
5	N/A	N/A	N/A	5	2000.00 psi (137,89 bar)	10000.00 psi (689,47 bar)	0 psia (0 bar)	-14.70 psig (-1,01 bar)

(1) For output options W and M, minimum span are: range 2 - 1.50 psi(0,10 bar), range 3 - 8.00 psi (0,55 bar), range 4 - 40.00 psi (2,75 bar), range 5 for 3051T - 2000.00 psi (137,89 bar)

(2) Assumes atmospheric pressure of 14.7 psig.

**Service**

Liquid, gas, and vapor applications

**4-20 mA HART (output code A)**

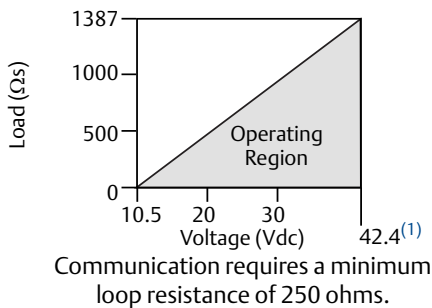
**Power supply**

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

**Load limitations**

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

$$\text{Max. Loop Resistance} = 43.5 (\text{Power Supply Voltage} - 10.5)$$



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

**Indication**

Optional two line LCD/LOI Display

**Optional configuration buttons**

Configuration buttons need to be specified: Digital Zero trim (option code DZ) changes digital value of the transmitter and is used for performing a sensor zero trim. Analog Zero Span (option code D4) changes analog value and can be used to rerange the transmitter with an applied pressure.

**Output**

Two-wire 4-20mA, user selectable for linear or square root output. Digital process variable superimposed on 4-20 mA signal, available to any host that conforms to HART protocol. The 3051 comes with Selectable HART Revisions. Digital communications based on HART Revision 5 (default) or Revision 7 (option code HR7) protocol can be selected. The HART revision can be switched in the field using any HART based configuration tool or the optional local operator interface (M4).

**Power advisory diagnostics**

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

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

**Local operator interface**

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

**FOUNDATION fieldbus (output code F)**

**Power supply**

External power supply required; transmitters operate on 9.0 to 32.0 V dc transmitter terminal voltage. FISCO transmitters operate on 9.0 to 17.5 V dc.

**Current draw**

17.5 mA for all configurations (including LCD display option)

**Indication**

Optional two line LCD display

**FOUNDATION fieldbus block execution times**

Block	Execution time
Resource	N/A
Sensor and SPM Transducer	N/A
LCD Display	N/A
Analog Input 1, 2	20 milliseconds
PID	25 milliseconds
Input Selector	20 milliseconds
Arithmetic	20 milliseconds
Signal Characterizer	20 milliseconds
Integrator	20 milliseconds
Output Splitter	20 milliseconds
Control Selector	20 milliseconds

**FOUNDATION fieldbus parameters**

Links	25 (max.)
Virtual Communications Relationships (VCR)	20 (max.)

**FOUNDATION fieldbus function blocks (option A01)**

**Resource block**

The resource block contains diagnostic, hardware, and electronics information. There are no linkable inputs or outputs to the Resource Block.

**Sensor transducer block**

The sensor transducer block contains sensor information and the ability to calibrate the pressure sensor or recall factory calibration.

**LCD transducer block**

The LCD transducer block is used to configure the LCD display meter.

**Analog input block**

The analog input (AI) function block processes the measurements from the sensor and makes them available to other function blocks. The output value from the AI block is in engineering units and contains a status indicating the quality of the measurement. The AI Block is widely used for scaling functionality.

**Input selector block**

The input selector (ISEL) function block can be used to select the first good, hot backup, maximum, minimum, or average of as many as eight input values and place it at the output. The block supports signal status propagation.

**Integrator block**

The integrator (INT) function block integrates one or two variables over time. The block compares the integrated or accumulated value to pre-trip and trip limits and generates discrete output signals when the limits are reached.

The Integrator Block is used as a totalizer. This block will accept up to two inputs, has six options how to totalize the inputs, and two trip outputs.

**Arithmetic block**

The arithmetic (ARTH) function block provides the ability to configure a range extension function for a primary input. It can also be used to compute nine different arithmetic functions including flow with partial density compensation, electronic remote seals, hydrostatic tank gaging, ratio control, and others.

**Signal characterizer block**

The signal characterizer (SGCR) function block characterizes or approximates any function that defines an input/output relationship. The function is defined by configuring as many as twenty X,Y coordinates. The block interpolates an output value for a given input value using the curve defined by the configured coordinates. Two separate analog input signals can be processed simultaneously to give two corresponding separate output values using the same defined curve.

**PID block**

The PID function block combines all of the necessary logic to perform proportional/integral/derivative (PID) control. The block supports mode control, signal scaling and limiting, feed forward control, override tracking, alarm limit detection, and signal status propagation.

**Control selector block**

The control selector function block selects one of two or three inputs to be the output. The inputs are normally connected to the outputs of PID or other function blocks. One of the inputs would be considered normal and the other two overrides.

**Output splitter block**

The output splitter function block provides the capability to drive two control outputs from a single input. It takes the output of one PID or other control block to control two valves or other actuators.

**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.

**FOUNDATION fieldbus Diagnostics Suite (option code D01)**

The 3051C FOUNDATION fieldbus Diagnostics Suite features SPM technology to detect changes in the process, process equipment, or installation conditions (such as plugged impulse lines) of the transmitter. This is done by modeling the process noise signature (using the statistical values of mean and standard deviation) under normal conditions and then comparing the baseline values to current values over time. If a significant change in the current values is detected, the transmitter can generate an alert.

**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. FISCO transmitters operate on 9.0 to 17.5 V dc.

**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 2-line LCD display

**Local operator interface**

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

**Wireless (output code X)**

**Output**

IEC 62591 (*WirelessHART*), 2.4 GHz DSSS

**Wireless radio (internal antenna, WP5 option)**

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

**Local display**

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

**Digital zero trim**

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

**Update rate**

User selectable 1 sec. to 60 min.

**Wireless sensor module for in-line transmitters**

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

**Power module**

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

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

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

**Low power output**

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

**Output**

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

**Power consumption**

3.0 mA, 18-36 mW

**Minimum load impedance**

100 kΩ (V<sub>out</sub> wiring)

**Indication**

Optional 5-digit LCD display

**Overpressure limits**

**Rosemount 3051CD/CG/CF**

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

**Rosemount 3051CA**

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

**Rosemount 3051TG/TA**

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

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

**Table 9. 3051L and Level Flange Rating Limits**

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

**Static pressure limit**

**Rosemount 3051CD only**

Operates within specifications between static line pressures of 0.5 psia and 3626 psig (4500 psig (310, 26 bar) for Option Code P9).

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

Range 1: 0.5 psia and 2000 psig (0,03 bar and 137, 90 bar)

**Burst pressure limits**

**3051C, 3051CF Coplanar or traditional process flange**

10081 psig (695,06 bar)

**3051T In-Line**

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

**Failure mode alarm**

**HART 4-20 mA (output option code A)**

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

	High alarm	Low alarm
Default	≥ 21.75 mA	≤ 3.75 mA
NAMUR compliant <sup>(1)</sup>	≥ 22.5 mA	≤ 3.6 mA
Custom levels <sup>(2)</sup>	20.2 - 23.0 mA	3.4 - 3.8 mA

- (1) Analog output levels are compliant with NAMUR recommendation NE 43, see option codes C4 or C5.
- (2) Low alarm must be 0.1 mA less than low saturation and high alarm must be 0.1 mA greater than high saturation.

**Output code M**

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

**Output code F, W, and X**

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

**Temperature limits**

**Ambient**

-40 to 185 °F (-40 to 85 °C)  
 With LCD display<sup>(1)(2)</sup>: -40 to 176 °F (-40 to 80 °C)

- (1) For the output code M and W, LCD display may not be readable and LCD display updates will be slower at temperatures below -22 °F (-30 °C).
- (2) Wireless LCD display may not be readable and LCD display updates will be slower at temperature below -4 °F (-20 °C).

**Storage<sup>(1)</sup>**

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

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

**Process**

At atmospheric pressures and above. See [Table 10](#).

**Table 10. 3051 Process Temperature Limits**

3051CD, 3051CG, 3051CF, 3051CA	
Silicone Fill Sensor <sup>(1)</sup>	
with Coplanar Flange	-40 to 250 °F (-40 to 121 °C) <sup>(2)</sup>
with Traditional Flange	-40 to 300 °F (-40 to 149 °C) <sup>(2)(3)</sup>
with Level Flange	-40 to 300 °F (-40 to 149 °C) <sup>(2)</sup>
with 305 Integral Manifold	-40 to 300 °F (-40 to 149 °C) <sup>(2)</sup>
Inert Fill Sensor <sup>(1)(4)</sup>	-40 to 185 °F (-40 to 85 °C) <sup>(5)(6)</sup>
3051T (process fill fluid)	
Silicone Fill Sensor <sup>(1)</sup>	-40 to 250 °F (-40 to 121 °C) <sup>(2)</sup>
Inert Fill Sensor <sup>(1)</sup>	-22 to 250 °F (-30 to 121 °C) <sup>(2)</sup>
3051L low-side temperature limits	
Silicone Fill Sensor <sup>(1)</sup>	-40 to 250 °F (-40 to 121 °C) <sup>(2)</sup>
Inert Fill Sensor <sup>(1)</sup>	-40 to 185 °F (-40 to 85 °C) <sup>(5)</sup>
3051L high-side temperature limits (process fill fluid)	
SYL THERM XLT	-102 to 293 °F (-75 to 145 °C)
D.C. Silicone 704 <sup>®</sup>	32 to 401 °F (0 to 205 °C)
D.C. Silicone 200	-49 to 401 °F (-45 to 205 °C)
Inert	-49 to 320 °F (-45 to 160 °C)
Glycerin and Water	5 to 203 °F (-15 to 95 °C)
Neobee M-20	5 to 401 °F (-15 to 205 °C)
Propylene Glycol and Water	5 to 203 °F (-15 to 95 °C)

- (1) Process temperatures above 185 °F (85 °C) require derating the ambient limits by a 1.5:1 ratio.
- (2) 220 °F (104 °C) limit in vacuum service; 130 °F (54 °C) for pressures below 0.5 psia.
- (3) 3051CD0 process temperature limits are -40 to 212 °F (-40 to 100 °C).
- (4) Inert fill with traditional flange on Range 0: limits are 32 to 185 °F (0 to 85 °C).
- (5) 160 °F (71 °C) limit in vacuum service.
- (6) Not available for 3051CA.

**Humidity limits**

0–100% relative humidity

**Turn-on time**

Performance within specifications less than 2.0 seconds (20.0 seconds for PROFIBUS PA and FOUNDATION fieldbus protocols) after power is applied to the transmitter.<sup>(1)</sup>

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

**Volumetric displacement**

Less than 0.005 in<sup>3</sup> (0,08 cm<sup>3</sup>)

## Damping

### 4-20 mA HART

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

### FOUNDATION fieldbus

Transducer block: User configurable  
AI Block: User configurable

### PROFIBUS PA

AI Block only: User configurable

## Physical specifications

### Material selection

Emerson provides a variety of Rosemount products with various product options and configurations including materials of construction that can be expected to perform well in a wide range of applications. The Rosemount product information presented is intended as a guide for the purchaser to make an appropriate selection for the application. It is the purchaser's sole responsibility to make a careful analysis of all process parameters (such as all chemical components, temperature, pressure, flow rate, abrasives, contaminants, etc.), when specifying product materials, options, and components for the particular application. Emerson Process Management is not in a position to evaluate or guarantee the compatibility of the process fluid or other process parameters with the product options, configuration, or materials of construction selected.

### Electrical connections

$1/2$ -14 NPT,  $G^{1/2}$ , and  $M20 \times 1.5$  conduit. The polymer housing (housing code P) has no conduit entries. HART interface connections fixed to terminal block for output code A and to 701P Power Module for Output Code X.

### Process connections

#### Rosemount 3051C

$1/4$ -18 NPT on  $2^{1/8}$ -in. centers

$1/2$ -14 NPT on 2-,  $2^{1/8}$ -, or  $2^{1/4}$ -in. centers

#### Rosemount 3051L

High pressure side: 2-, 3-, or 4-in., ASME B 16.5 (ANSI) Class 150, 300 or 600 flange; 50, 80 or 100 mm, PN 40 or 10/16 flange

Low pressure side:  $1/4$ -18 NPT on flange  $1/2$ -14 NPT on adapter

#### Rosemount 3051T

$1/2$ -14 NPT female.

$G^{1/2}$ A DIN 16288 Male (Range 1-4 only)

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

#### Rosemount 3051CF

For 3051CFA, see 00813-0100-4485 Rosemount 485 Annubar

For 3051CFC, see 00813-0100-4485 Rosemount 405 Compact Orifice Plate

For 3051CFP, see 00813-0100-4485 Rosemount 1195 Integral Orifice

### Process-wetted parts

#### Drain/vent valves

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

#### Process flanges and adapters

Plated carbon steel

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

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

Cast Alloy 400: M-30C per ASTM A494

#### Wetted O-rings

Glass-filled PTFE or Graphite-filled PTFE

#### Process isolating diaphragms

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

### Rosemount 3051L process wetted parts

#### Flanged process connection (transmitter high side)

##### Process diaphragms, including process gasket surface

316L SST, Alloy C-276, or Tantalum

##### Extension

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

##### Mounting flange

Zinc-cobalt plated CS or SST

#### Reference process connection (transmitter low side)

##### Isolating diaphragms

316L SST or Alloy C-276

##### Reference flange and adapter

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

### Non-wetted parts

#### Electronics housing

Low-copper aluminum or CF-8M (Cast version of 316 SST).

Enclosure Type 4X, IP 65, IP 66, IP 68

Housing Material Code P: PBT/PC with NEMA 4X and IP66/67/68

#### Coplanar sensor module housing

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

**Bolts**

Plated carbon steel per ASTM A449, Type 1  
 Austenitic 316 SST per ASTM F593  
 ASTM A193, Grade B7M alloy steel  
 Alloy K-500

**Sensor module fill fluid**

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

**Process fill fluid (3051L only)**

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

**Paint**

Polyurethane

**Cover O-rings**

Buna-N  
 Silicone (for wireless option code X)

**Power module**

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

**Shipping weights**

**Table 11. Transmitter Weights without Options<sup>(1)</sup>**

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

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

**Table 12. 3051L Weights without Options**

Flange	Flush lb. (kg)	2-in. Ext. lb. (kg)	4-in. Ext. lb. (kg)	6-in. Ext. lb. (kg)
2-in., 150	12.5 (5,7)	N/A	N/A	N/A
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)	N/A	N/A	N/A
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)	N/A	N/A	N/A
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)	N/A	N/A	N/A

**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)
DN 80/PN 40	19.5 (8,8)	21.5 (9,7)	22.5 (10,2)	23.5 (10,6)
DN 100/PN 10/16	17.8 (8,1)	19.8 (9,0)	20.8 (9,5)	21.8 (9,9)
DN 100/PN 40	23.2 (10,5)	25.2 (11,5)	26.2 (11,9)	27.2 (12,3)

**Table 13. Transmitter Option Weights**

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

# 3051 Product Certifications

## European Directive Information

A copy of the EC Declaration of Conformity can be found at the end of the Quick Start Guide. The most recent revision of the EC Declaration of Conformity can be found at [www.rosemount.com](http://www.rosemount.com).

### Ordinary Location Certification for FM Approvals

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

## North America

### E5 FM Explosionproof (XP) and Dust-Ignitionproof (DIP) Certificate: 0T2H0.AE

Standards: FM Class 3600 – 1998, FM Class 3615 – 2006,  
FM Class 3810 – 2005, ANSI/NEMA 250 – 2003

Markings: XP CL I, DIV 1, GP B, C, D; DIP CL II, DIV 1, GPE, F,  
G; CL III; T5(-50°C ≤ Ta ≤ +85°C); Factory Sealed;  
Type 4X

### I5 FM Intrinsic Safety (IS) and Nonincendive (NI) Certificate: 1Q4A4.AX

Standards: FM Class 3600 – 2011, FM Class 3610 – 2010,  
FM Class 3611 – 2004, FM Class 3810 – 2005

Markings: IS CL I, DIV 1, GP A, B, C, D; CL II, DIV 1, GPE, F, G;  
Class III; DIV 1 when connected per Rosemount  
drawing 03031-1019; NI CL 1, DIV 2, GP A, B, C,  
D; T4(-50°C ≤ Ta ≤ +70°C) [HART], T5(-50°C ≤ Ta  
≤ +40°C) [HART]; T4(-50°C ≤ Ta ≤ +60°C)  
[Fieldbus/PROFIBUS]; Type 4x

### Special Conditions for Safe Use (X):

1. The Model 3051 transmitter housing contains aluminum and is considered a potential risk of ignition by impact or friction. Care must be taken into account during installation and use to prevent impact and friction.
2. The Model 3051 transmitter with the transient terminal block (Option code T1) will not pass the 500Vrms dielectric strength test and this must be taken into account during installation.

### IE FM FISCO Certificate: 1Q4A4.AX

Standards: FM Class 3600 – 2011, FM Class 3610 – 2010,  
FM Class 3611 – 2004, FM Class 3810 – 2005

Markings: IS CL I, DIV 1, GP A, B, C, D when connected per  
Rosemount drawing 03031-1019 (-50°C ≤ Ta ≤  
+60°C); Type 4x

### Special Conditions for Safe Use (X):

1. The Model 3051 transmitter housing contains aluminum and is considered a potential risk of ignition by impact or friction. Care must be taken into account during installation and use to prevent impact and friction.
2. The Model 3051 transmitter with the transient terminal block (Option code T1) will not pass the 500Vrms dielectric strength test and this must be taken into account during installation.

### C6 CSA Explosionproof, Dust-Ignitionproof, Intrinsic Safety and Nonincendive Certificate: 1053834

Standards: ANSI/ISA 12.27.01-2003, CSA Std. C22.2 No. 30  
-M1986, CSA Std. C22.2 No.142-M1987, CSA  
Std. C22.2. No.157-92, CSA Std. C22.2 No. 213  
- M1987, CAN/CSA C22.2 No. 0-10, CSA Std  
C22.2 No. 25-1966, CAN/CSA-C22.2 No.  
94-M91, CAN/CSA-E60079-0-07,  
CAN/CSA-E60079-1-07

Markings: Explosionproof for Class I, Division 1, Groups B,  
C and D; Suitable for Class I, Zone 1, Group  
IIB+H2, T5; Dust-Ignitionproof Class II, Division  
1, Groups E, F, G; Class III Division 1; Intrinsically  
Safe Class I, Division 1 Groups A, B, C, D when  
connected in accordance with Rosemount  
drawing 03031-1024, Temperature Code T3C;  
Suitable for Class I, Zone 0; Class I Division 2  
Groups A, B, C and D, T5; Suitable for Class I  
Zone 2, Group IIC; Type 4X; Factory Sealed;  
Single Seal (See drawing 03031-1053)

### E6 CSA Explosionproof, Dust-Ignitionproof and Division 2 Certificate: 1053834

Standards: ANSI/ISA 12.27.01-2003, CSA Std. C22.2 No. 30  
-M1986, CSA Std. C22.2 No.142-M1987, CSA  
Std. C22.2 No. 213 - M1987, CAN/CSA C22.2  
No. 0-10, CSA Std C22.2 No. 25-1966,  
CAN/CSA-C22.2 No. 94-M91, CAN/CSA-C22.2  
No. 157-92, CAN/CSA-E60079-0-07,  
CAN/CSA-E60079-1-07

Markings: Explosionproof Class I, Division 1, Groups B, C  
and D; Suitable for Class I, Zone 1, Group  
IIB+H2, T5; Dust-Ignitionproof for Class II and  
Class III, Division 1, Groups E, F and G; Class I,  
Division 2, Groups A, B, C and D; Suitable for  
Class I Zone 2, Group IIC; Type 4X; Factory  
Sealed; Single Seal (See drawing 03031-1053)



## Europe

### E8 ATEX Flameproof and Dust

Certificate: KEMA00ATEX2013X; Baseefa11ATEX0275X

Standards Used: EN60079-0:2012, EN60079-1:2007, EN60079-26:2007, EN60079-31:2009

Markings: II 1/2 G, Ex d IIC T6/T5 Ga/Gb, T6(-50°C ≤ Ta ≤ +65°C), T5(-50°C ≤ Ta ≤ +80°C);

II 1 D Ex ta IIIC T95°C T<sub>500</sub> 105°C Da (-20°C ≤ Ta ≤ +85°C)

#### Process Temperature

Temperature class	Process temperature
T6	-50°C to +65°C
T5	-50°C to +80°C

#### Special Conditions for Safe Use (X):

1. This device contains a thin wall diaphragm. Installation, maintenance and use shall take into account the environmental conditions to which the diaphragm will be subjected. The manufacturer's instructions for installation and maintenance shall be followed in detail to assure safety during its expected lifetime.
2. For information on the dimensions of the flameproof joints the manufacturer shall be contacted.
3. Some variants of the equipment have reduced markings on the nameplate. Refer to the Certificate for full equipment marking.

### I1 ATEX Intrinsic Safety and Dust

Certificate: BAS97ATEX1089X; Baseefa11ATEX0275X

Standards: EN60079-0:2012, EN60079-11:2012, EN60079-31:2009

Markings: HART: II 1 G Ex ia IIC T5/T4 Ga T5(-60°C ≤ Ta ≤ +40°C), T4(-60°C ≤ Ta ≤ +70°C)

Fieldbus/PROFIBUS: II 1 G Ex ia IIC Ga T4(-60°C ≤ Ta ≤ +60°C)

DUST: II 1 D Ex ta IIIC T95°C T<sub>500</sub> 105°C Da (-20°C ≤ Ta ≤ +85°C)

#### Input parameters

	HART	Fieldbus/PROFIBUS
<b>Voltage U<sub>i</sub></b>	30 V	30 V
<b>Current I<sub>i</sub></b>	200 mA	300 mA
<b>Power P<sub>i</sub></b>	0.9 W	1.3 W
<b>Capacitance C<sub>i</sub></b>	0.012 μF	0 μF
<b>Inductance L<sub>i</sub></b>	0 mH	0 mH

#### Special Conditions for Safe Use (X):

1. The apparatus is not capable of withstanding the 500 V insulation test required by EN60079-11. This must be taken into account when installing the apparatus.
2. The enclosure may be made of aluminum alloy and given a protective polyurethane paint finish; however care should be taken to protect it from impact or abrasion if located in Zone 0.
3. Some variants of the equipment have reduced markings on the nameplate. Refer to the Certificate for full equipment marking.

### IA ATEX FISCO

Certificate: BAS97ATEX1089X

Standards: EN60079-0:2012, EN60079-11:2009

Markings: II 1 G Ex ia IIC Ga T4(-60°C ≤ Ta ≤ +60°C)

#### Input parameters

	FISCO
<b>Voltage U<sub>i</sub></b>	17.5 V
<b>Current I<sub>i</sub></b>	380 mA
<b>Power P<sub>i</sub></b>	5.32 W
<b>Capacitance C<sub>i</sub></b>	<5 nF
<b>Inductance L<sub>i</sub></b>	<10 μH

#### Special Conditions for Safe Use (X):

1. The apparatus is not capable of withstanding the 500 V insulation test required by EN60079-11. This must be taken into account when installing the apparatus.
2. The enclosure may be made of aluminum alloy and given a protective polyurethane paint finish; however care should be taken to protect it from impact or abrasion if located in Zone 0.

### N1 ATEX Type n and Dust

Certificate: BAS00ATEX3105X; Baseefa11ATEX0275X

Standards: EN60079-0:2012, EN60079-15:2010, EN60079-31:2009

Markings: II 3 G Ex nA IIC T5 Gc (-40°C ≤ Ta ≤ +70°C);

II 1 D Ex ta IIIC T95°C T<sub>500</sub> 105°C Da (-20°C ≤ Ta ≤ +85°C)

#### Special Conditions for Safe Use (X):

1. This apparatus is not capable of withstanding the 500V insulation test that is required by EN60079-15. This must be taken into account when installing the apparatus.
2. Some variants of the equipment have reduced markings on the nameplate. Refer to the Certificate for full equipment marking.

## International

### E7 IECEx Flameproof and Dust

Certificate: IECEx KEM 09.0034X; IECEx BAS 10.0034X

Standards: IEC60079-0:2011, IEC60079-1:2007-04, IEC60079-26:2006, IEC60079-31:2008

Markings: Ex d IIC T6/T5 Ga/Gb, T6(-50°C ≤ Ta ≤ +65°C), T5(-50°C ≤ Ta ≤ +80°C);  
Ex ta IIIC T95°C T<sub>500</sub>105°C Da (-20°C ≤ Ta ≤ +85°C)

#### Process Temperature

Temperature class	Process temperature
T6	-50°C to +65°C
T5	-50°C to +80°C

#### Special Conditions for Safe Use (X):

1. This device contains a thin wall diaphragm. Installation, maintenance and use shall take into account the environmental conditions to which the diaphragm will be subjected. The manufacturer's instructions for installation and maintenance shall be followed in detail to assure safety during its expected lifetime.
2. For information on the dimensions of the flameproof joints the manufacturer shall be contacted.
3. Some variants of the equipment have reduced markings on the nameplate. Refer to the Certificate for full equipment marking.

### I7 IECEx Intrinsic Safety

Certificate: IECEx BAS 09.0076X

Standards: IEC60079-0:2011, IEC60079-11:2011

Markings: HART: Ex ia IIC T5/T4 Ga, T5(-60°C ≤ Ta ≤ +40°C), T4(-60°C ≤ Ta ≤ +70°C)  
Fieldbus/PROFIBUS: Ex ia IIC Ga T4(-60°C ≤ Ta ≤ +60°C)

#### Input parameters

	HART	Fieldbus/PROFIBUS
Voltage U <sub>i</sub>	30 V	30 V
Current I <sub>i</sub>	200 mA	300 mA
Power P <sub>i</sub>	0.9 W	1.3 W
Capacitance C <sub>i</sub>	0.012 μF	0 μF
Inductance L <sub>i</sub>	0 mH	0 mH

#### Special Conditions for Safe Use (X):

1. If the apparatus is fitted with an optional 90V transient suppressor, it is not capable of withstanding the 500V insulation test required by IEC 60079-11. This must be taken into account when installing the apparatus.
2. The enclosure may be made of aluminum alloy and given a protective polyurethane paint finish; however, care should be taken to protect it from impact or abrasion if located in Zone 0.

IECEx Mining (Special A0259)

Certificate: IECEx TSA 14.0001X

Standards: IEC60079-0:2011, IEC60079-11:2011

Markings: Ex ia I Ma (-60°C ≤ Ta ≤ +70°C)

#### Input parameters

	HART	Fieldbus/PROFIBUS	FISCO
Voltage U <sub>i</sub>	30 V	30 V	17.5 V
Current I <sub>i</sub>	200 mA	300 mA	380 mA
Power P <sub>i</sub>	0.9 W	1.3 W	5.32 W
Capacitance C <sub>i</sub>	0.012 μF	0 μF	<5 nF
Inductance L <sub>i</sub>	0 mH	0 mH	<10 μH

#### Special Conditions for Safe Use (X):

1. If the apparatus is fitted with optional 90V transient suppressor, it is not capable of withstanding the 500V insulation test required by IEC60079-11. This must be taken into account when installing the apparatus.
2. It is a condition of safe use that the above input parameters shall be taken into account during installation.
3. It is a condition of manufacture that only the apparatus fitted with housing, covers and sensor module housing made out of stainless steel are used in Group I applications.

### N7 IECEx Type n

Certificate: IECEx BAS 09.0077X

Standards: IEC60079-0:2011, IEC60079-15:2010

Markings: Ex nA IIC T5 Gc (-40°C ≤ Ta ≤ +70°C)

#### Special Condition for Safe Use (X):

1. The apparatus is not capable of withstanding the 500V insulation test required by IEC60079-15. This must be taken into account when installing the apparatus.

## Brazil

### E2 INMETRO Flameproof

Certificate: UL-BR 13.0643X

Standards: ABNT NBR IEC60079-0:2008 + Errata 1:2011, ABNT NBR IEC60079-1:2009 + Errata 1:2011, ABNT NBR IEC60079-26:2008 + Errata 1:2008

Markings: Ex d IIC T6/T5 Ga/Gb, T6(-50°C ≤ Ta ≤ +65°C), T5(-50°C ≤ Ta ≤ +80°C)

#### Special Conditions for Safe Use (X):

1. This device contains a thin wall diaphragm. Installation, maintenance and use shall take into account the environmental conditions to which the diaphragm will be subjected. The manufacturer's instructions for installation and maintenance shall be followed in detail to assure safety during its expected lifetime.
2. In case of repair, contact the manufacturer for information on the dimensions of the flameproof joints.
3. The capacitance of the wrap around label, being 1.6nF, exceeds the limit in Table 9 of ABNT NBR IEC 60079-0. The user shall determine suitability for the specific application.

### I2 INMETRO Intrinsic Safety

Certificate: UL-BR 13.0584X

Standards: ABNT NBR IEC60079-0:2008 + Errata 1:2011, ABNT NBR IEC60079-11:2009

Markings: HART: Ex ia IIC T5/T4 Ga, T5(-60°C ≤ Ta ≤ +40°C), T4(-60°C ≤ Ta ≤ +70°C)  
Fieldbus/PROFIBUS: Ex ia IIC T4 Ga (-60°C ≤ Ta ≤ +60°C)

#### Input parameters

	HART	Fieldbus/PROFIBUS
<b>Voltage U<sub>i</sub></b>	30 V	30 V
<b>Current I<sub>i</sub></b>	200 mA	300 mA
<b>Power P<sub>i</sub></b>	0.9 W	1.3 W
<b>Capacitance C<sub>i</sub></b>	0.012 μF	0 μF
<b>Inductance L<sub>i</sub></b>	0 mH	0 mH

#### Special Conditions for Safe Use (X):

1. If the equipment is fitted with an optional 90V transient suppressor, it is not capable of withstanding the 500V insulation test required by ABNT NBR IRC 60079-11:2008. This must be taken into account when installing the equipment.
2. The enclosure may be made of aluminum alloy and given a protective polyurethane paint finish; however, care should be taken to protect it from impact or abrasion if located in Zone 0.

### IB INMETRO FISCO

Certificate: UL-BR 13.0584X

Standards: ABNT NBR IEC60079-0:2008 + Errata 1:2011, ABNT NBR IEC60079-11:2009

Markings: Ex ia IIC T4 Ga (-60°C ≤ Ta ≤ +60°C)

#### Input parameters

	FISCO
<b>Voltage U<sub>i</sub></b>	17.5 V
<b>Current I<sub>i</sub></b>	380 mA
<b>Power P<sub>i</sub></b>	5.32 W
<b>Capacitance C<sub>i</sub></b>	<5 nF
<b>Inductance L<sub>i</sub></b>	<10 μH

#### Special Conditions for Safe Use (X):

1. If the equipment is fitted with an optional 90V transient suppressor, it is not capable of withstanding the 500V insulation test required by ABNT NBR IRC 60079-11:2008. This must be taken into account when installing the equipment.
2. The enclosure may be made of aluminum alloy and given a protective polyurethane paint finish; however, care should be taken to protect it from impact or abrasion if located in Zone 0.

## China

### E3 China Flameproof

Certificate: GYJ14.1041X; GYJ10.1313X [Flowmeters]

Standards: GB3836.1-2000, GB3836.2-2010, GB12476-2000

Markings: Ex d IIC T6/T5, T6(-50°C ≤ Ta ≤ +65°C), T5(-50°C ≤ Ta ≤ +80°C)

#### Special Conditions for Safe Use (X):

1. The relation between ambient temperature arrange and temperature class is as follows:

Ta	Temperature class
-50°C~+80°C	T5
-50°C~+65°C	T6

When used in a combustible dust environment, the maximum ambient temperature is 80°C.

2. The earth connection facility in the enclosure should be connected reliably.
3. Cable entry certified by notified body with type of protection Ex d IIC in accordance with GB3836.1-2000 and GB3836.2-2000, should be applied when installed in a

hazardous location. When used in combustible dust environment, cable entry in accordance with IP66 or higher level should be applied.

4. Obey the warning “Keep tight when the circuit is alive.”
5. End users are not permitted to change any internal components.
6. During installation, use and maintenance of this product, observe the following standards:  
 GB3836.13-1997 “Electrical apparatus for explosive gas atmospheres Part 13: Repair and overhaul for apparatus used in explosive gas atmospheres”  
 GB3836.15-2000 “Electrical apparatus for explosive gas atmospheres Part 15: Electrical installations in hazardous area (other than mines)”  
 GB3836.16-2006 “Electrical apparatus for explosive gas atmospheres Part 16: Inspection and maintenance of electrical installation (other than mines)”  
 GB50257-1996 “Code for construction and acceptance of electric device for explosion atmospheres and fire hazard electrical equipment installation engineering”.  
 GB12476.2-2006 “Electrical apparatus for use in the presence of combustible dust Part 1-2: Electrical apparatus protected by enclosures and surface temperature limitation-Selection, installation and maintenance”  
 GB15577-2007 “Safety regulations for dust explosion prevention and protection”

**I3** China Intrinsic Safety

Certificate: GYJ13.1362X; GYJ101312X [Flowmeters]

Standards: GB3836.1-2010, GB3836.4-2010, GB3836.20-2010, GB12476.1-2000

Markings: Ex ia IIC Ga T4/T5

**Special Conditions for Safe Use (X):**

1. Symbol “X” is used to denote specific conditions of use:
  - a.If the apparatus is fitted with an optional 90V transient suppressor, it is not capable of withstanding the 500V insulation test for 1 minute. This must be taken into account when installing the apparatus.
  - b.The enclosure may be made of aluminum alloy and given a protective polyurethane paint finish; however, care should be taken to protect it from impact or abrasion if located in Zone 0.
2. The relation between T code and ambient temperature range is:

Model	T code	Temperature range
HART	T5	-60°C ≤ Ta ≤ +40°C
HART	T4	-60°C ≤ Ta ≤ +70°C
Fieldbus/PROFIBUS/FISCO	T4	-60°C ≤ Ta ≤ +60°C
Flowmeter with 644 Temp Housing	T4	-40°C ≤ Ta ≤ +60°C

3. Intrinsically Safe parameters:

**Input parameters**

	HART	Fieldbus/PROFIBUS	FISCO
<b>Voltage U<sub>i</sub></b>	30 V	30 V	17.5 V
<b>Current I<sub>i</sub></b>	200 mA	300 mA	380 mA
<b>Power P<sub>i</sub></b>	0.9 W	1.3 W	5.32 W
<b>Capacitance C<sub>i</sub></b>	0.012 μF	0 μF	<5 nF
<b>Inductance L<sub>i</sub></b>	0 mH	0 mH	<10 μH

Note 1: FISCO parameters apply to both Group IIC and IIB.

Note 2: [For Flowmeters] When 644 Temperature Transmitter is used, it should be used with Ex-certified associated apparatus to establish explosion protection system that can be used in explosive gas atmospheres. Wiring and terminals should comply with the instruction manual of both 644 Temperature Transmitter and associated apparatus. The cables between 644 Temperatures Transmitter and associated apparatus should be shielded cables (the cables must have insulated shield). The shielded cable has to be grounded reliably in a non-hazardous area.

4. Transmitters comply with the requirements for FISCO field devices specified in IEC60079-27:2008. For the connection of an intrinsically safe circuit in accordance with FISCO Model, FISCO parameters are listed in the table above.
5. The product should be used with Ex-certified associated apparatus to establish explosion protection system that can be used in explosive gas atmospheres. Wiring and terminals should comply with the instruction manual of the product and associated apparatus.
6. The cables between this product and associated apparatus should be shielded cables (the cables must have insulated shield). The shielded cable has to be grounded reliably in a non-hazardous area.
7. End users are not permitted to change any intern components but to settle the problem in conjunction with the manufacturer to avoid damage to the product.
8. During installation, use and maintenance of this product, observe the following standards:  
 GB3836.13-1997 “Electrical apparatus for explosive gas atmospheres Part 13: Repair and overhaul for apparatus used in explosive gas atmospheres”  
 GB3836.15-2000 “Electrical apparatus for explosive gas atmospheres Part 15: Electrical installations in hazardous area (other than mines)”  
 GB3836.16-2006 “Electrical apparatus for explosive gas atmospheres Part 16: Inspection and maintenance of electrical installation (other than mines)”  
 GB50257-1996 “Code for construction and acceptance of electric device for explosion atmospheres and fire hazard electrical equipment installation engineering”.  
 GB12476.2-2006 “Electrical apparatus for use in the presence of combustible dust Part 1-2: Electrical apparatus protected by enclosures and surface temperature

limitation-Selection, installation and maintenance”  
GB15577-2007 “Safety regulations for dust explosion prevention and protection”

**N3** China Type n

Certificate: GYJ101111X

Standards: GB3836.1-2000, GB3836.8-2003

Markings: Ex nA IIC T5 (-40°C ≤ Ta ≤ +70°C)

**Special Conditions for Safe Use (X):**

1. Symbol “X” is used to denote specific conditions of use: The apparatus is not capable of withstanding the 500V test to earth for one minute. The must be taken into consideration during installation.
2. The ambient temperature range is -40°C ≤ Ta ≤ +70°C.
3. Maximum input voltage: 55V.
4. Cable glands, conduit or blanking plugs, certified by NEPSI with Ex e or Ex n protection type and IP66 degree of protection provided by enclosure, should be used on external connections and redundant cable entries.
5. Maintenance should be done in non-hazardous location.
6. End users are not permitted to change any internal components but to settle the problem in conjunction with manufacturer to avoid damage to the product.
7. During installation, use and maintenance of this product, observe the following standards:  
GB3836.13-1997 “Electrical apparatus for explosive gas atmospheres Part 13: Repair and overhaul for apparatus used in explosive gas atmospheres”  
GB3836.15-2000 “Electrical apparatus for explosive gas atmospheres Part 15: Electrical installations in hazardous area (other than mines)”  
GB3836.16-2006 “Electrical apparatus for explosive gas atmospheres Part 16: Inspection and maintenance of electrical installation (other than mines)”  
GB50257-1996 “Code for construction and acceptance of electric device for explosion atmospheres and fire hazard electrical equipment installation engineering”

**Japan**

**E4** Japan Flameproof

Certificate: TC20577, TC20578, TC20583, TC20584 [HART]; TC20579, TC20580, TC20581, TC20582 [Fieldbus]

Markings: Ex d IIC T5

**Technical Regulations Customs Union (EAC)**

**EM, IM, KM** Contact an Emerson Process Management representative for further information.

**Combinations**

- K2** Combination of E2 and I2
- K5** Combination of E5 and I5
- K6** Combination of C6, E8, and I1
- K7** Combination of E7, I7, and N7
- K8** combination of E8, I1, and N1
- KB** Combination of E5, I5, and C6
- KD** Combination of E8, I1, E5, I5, and C6

**Conduit Plugs and Adapters**

IECEx Flameproof and Increased Safety

Certificate: IECEx FMG 13.0032X

Standards: IEC60079-0:2011, IEC60079-1:2007, IEC60079-7:2006-2007

Markings: Ex de IIC Gb

ATEX Flameproof and Increased Safety

Certificate: FM13ATEX0076X

Standards: EN60079-0:2012, EN60079-1:2007, IEC60079-7:2007

Markings: Ex II 2 G Ex de IIC Gb

**Conduit Plug Thread Sizes**

Thread	Identification mark
M20 x 1.5	M20
1/2 - 14 NPT	1/2 NPT
G1/2A	G1/2

**Thread Adapter Thread Sizes**

Male thread	Identification mark
M20 x 1.5 – 6H	M20
1/2 - 14 NPT	1/2 – 14 NPT
3/4 - 14 NPT	3/4 – 14 NPT
Female thread	Identification mark
M20 x 1.5 – 6H	M20
1/2 - 14 NPT	1/2 – 14 NPT
PG 13.5	PG 13.5

**Special Conditions for Safe Use (X):**

1. When the thread adapter or blanking plug is used with an enclosure in type of protection increased safety “e” the entry thread shall be suitably sealed in order to maintain the ingress protection rating (IP) of the enclosure.
2. The blanking plug shall not be used with an adapter.
3. Blanking Plug and Threaded Adapter shall be either NPT or Metric thread forms. G½ and PG 13.5 thread forms are only acceptable for existing (legacy) equipment installations.

**Additional Certifications**

**SBS** American Bureau of Shipping (ABS) Type Approval

Certificate: 09-HS446883A-PDA

Intended Use: Measure gauge or absolute pressure of liquid, gas or vapor applications on ABS classed vessels, marine, and offshore installations.

ABS Rules: 2014 Steel Vessels Rules 1-1-4/7.7, 4-8-3/13.1, 1-1-A3, 4-8-3/1.7, 4-8-3/1.11.1

**SBV** Bureau Veritas (BV) Type Approval

Certificate: 23155/A3 BV

Requirements: Bureau Veritas Rules for the Classification of Steel Ships

Application: Class notations: AUT-UMS, AUT-CCS, AUT-PORT and AUT-IMS; Pressure transmitter type 3051 cannot be installed on diesel engines

**SDN** Det Norske Veritas (DNV) Type Approval

Certificate: A-13245

Intended Use: Det Norske Veritas’ Rules for Classification of Ships, High Speed & Light Craft and Det Norske Veritas’ Offshore Standards

Application:

Location classes	
Type	3051
Temperature	D
Humidity	B
Vibration	A
EMC	B
Enclosure	D

**SLL** Lloyds Register (LR) Type Approval

Certificate: 11/60002

Application: Environmental categories ENV1, ENV2, ENV3 and ENV5

**C5** Custody Transfer - Measurement Canada Accuracy Approval

Certificate: AG-0226; AG-0454; AG-0477

**IEC 62591 (WirelessHART Protocol)**

**Approved Manufacturing Locations**

Rosemount Inc. — Chanhassen, Minnesota USA

Fisher-Rosemount GmbH & Co. — Wessling, Germany

Emerson Process Management Asia Pacific Private Limited — Singapore

Beijing Rosemount Far East Instrument Co., LTD — Beijing, China

**European Directive Information**

The most recent revision of the EC declaration of conformity can be found at [www.rosemount.com](http://www.rosemount.com).

**Telecommunication Compliance**

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

## FCC and IC

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

## Ordinary Location Certification for FM

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

## North American Certifications

### Factory Mutual (FM) approvals

- I5** FM Intrinsically Safe  
 Certificate No: 3046325  
 Applicable Standards: Class 3600:2011, Class 3610:2010, Class 3810: 2005, ANSI/ISA 60079-0 2009, ANSI/ISA 60079-11:2009&#10;ANSI/NEMA 250:2003, ANSI/IEC 60529:2004  
 Markings: Intrinsically Safe for Class I, Division I, Groups A, B, C, D  
 Zone Marking: Class I Zone 0, AEx ia IIC  
 T4 (-40 °C to 70 °C)  
 Intrinsically Safe when installed according to Rosemount Drawing 03031-1062  
 Enclosure Type 4X/IP66/IP68/IP67

### Special Conditions for Safe Use (X):

1. The inline pressure sensor may contain more than 10% aluminum and is considered a potential risk of ignition by impact or friction. Care must be taken into account during installation and use to prevent impact and friction.
2. The surface resistivity of the transmitter is greater than one gigaohm. To avoid electrostatic charge build-up, it must not be rubbed or cleaned with solvents or a dry cloth.
3. The Model 3051 Wireless Pressure Transmitter shall only be used with the 701PGNKF Rosemount SmartPower Battery Pack.

## CSA - Canadian Standards Association

- I6** CSA Intrinsically Safe  
 Certificate No: 2526009  
 Applicable Standards: CSA C22.2 No. 0-M91, CSA C22.2 No. 94-M91, CSA C22.2 No. 142-M1987, CSA C22.2 No. 157-92, CSA C22.2 No. 60529-05  
 Markings: Intrinsically Safe For Class I, Division I, Groups A, B, C, D  
 T4 (-40 °C to 70 °C)  
 Intrinsically safe when installed according to Rosemount drawing 03031-1063  
 Enclosure Type 4X/IP66/IP68

## European Certifications

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

### Special Conditions for Safe Use (X):

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

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

### Special Conditions for Safe Use (X):

1. The plastic enclosure may constitute a potential electrostatic ignition risk and must not be rubbed or cleaned with a dry cloth.
2. The Model 701PGNKF Power Module may be replaced in a hazardous area. The Power Module has a surface resistivity greater than 1GΩ and must be properly installed in the wireless device enclosure. Care must be taken during transportation to and from the point of installation to prevent electrostatic charge build-up.

## Pipe I.D. Range Codes

For pipes with an Inner Diameter (I.D.) Range/Pipe Wall Thickness not found in this table or with a line size greater than 12-in. (300 mm), choose option code Z and specify the exact pipe dimensions (I.D. and Pipe Wall Thickness) on the Configuration Data Sheet (see document number 00806-0100-4010). The Emerson Process Management sizing program will determine this code, based on the application piping.

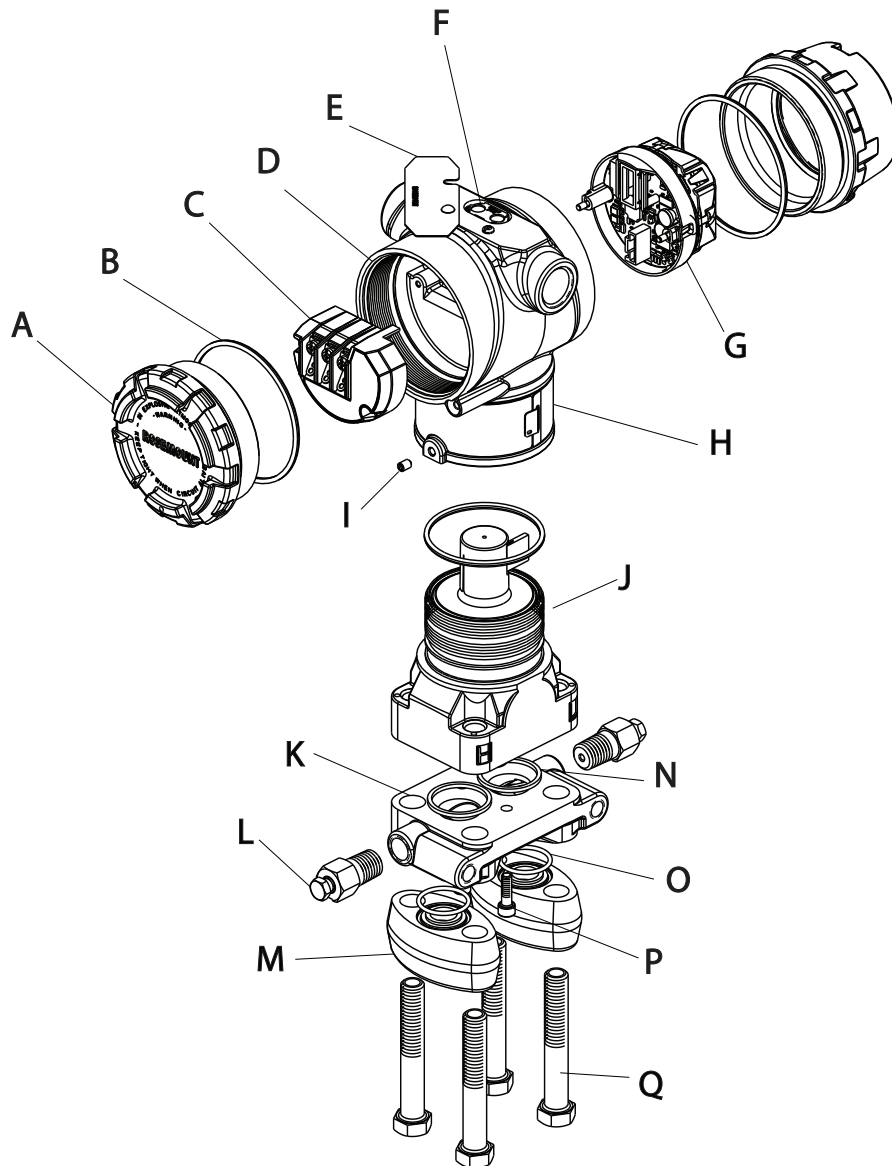
	Line size			I.D. range	Pipe wall thickness		I.D. range code
	Nominal	Max. O.D.	Option code		ANSI pipes	Non-ANSI pipes	
2-in. (50 mm)	2.625-in. (66.68 mm)	020	1.784 to 1.841-in. (45.31 to 46.76 mm)	0.065 to 0.545-in. (1.7 to 13.8 mm)	0.065 to 0.488-in. (1.7 to 12.4 mm)	A	
			1.842 to 1.938-in. (46.79 to 49.23 mm)		0.065 to 0.449-in. (1.7 to 11.4 mm)	B	
			1.939 to 2.067-in. (49.25 to 52.50 mm)		0.065 to 0.417-in. (1.7 to 10.6 mm)	C	
			2.068 to 2.206-in. (52.53 to 56.03 mm)		0.065 to 0.407-in. (1.7 to 10.3 mm)	D	
2½-in. (63.5 mm)	3.188-in. (80.98 mm)	025	2.207 to 2.322-in. (56.06 to 58.98 mm)	0.083 to 0.563-in. (2.1 to 14.3 mm)	0.083 to 0.448-in. (2.1 to 11.4 mm)	B	
			2.323 to 2.469-in. (59.00 to 62.71 mm)		0.083 to 0.417-in. (2.1 to 10.6 mm)	C	
			2.470 to 2.598-in. (62.74 to 65.99 mm)		0.083 to 0.435-in. (2.1 to 11.0 mm)	D	
			2.599 to 2.647-in. (66.01 to 67.23 mm)		0.083 to 0.515-in. (2.1 to 13.1 mm)	E	
3-in. (80 mm)	3.75-in. (95.25 mm)	030	2.648 to 2.751-in. (67.26 to 69.88 mm)	0.083 to 0.563-in. (2.1 to 14.3 mm)	0.083 to 0.460-in. (2.1 to 11.7 mm)	A	
			2.752 to 2.899-in. (69.90 to 73.63 mm)		0.083 to 0.416-in. (2.1 to 10.6 mm)	B	
			2.900 to 3.068-in. (73.66 to 77.93 mm)		0.083 to 0.395-in. (2.1 to 10.0 mm)	C	
			3.069 to 3.228-in. (77.95 to 81.99 mm)		0.083 to 0.404-in. (2.1 to 10.3 mm)	D	
3½-in. (89 mm)	4.25-in. (107.95 mm)	035	3.229 to 3.333-in. (82.02 to 84.66 mm)	0.120 to 0.600-in. (3.0 to 15.2 mm)	0.120 to 0.496-in. (3.0 to 12.6 mm)	B	
			3.334 to 3.548-in. (84.68 to 90.12 mm)		0.120 to 0.386-in. (3.0 to 9.8 mm)	C	
			3.549 to 3.734-in. (90.14 to 94.84 mm)		0.120 to 0.415-in. (3.0 to 10.5 mm)	D	
4-in. (100 mm)	5.032-in. (127.81 mm)	040	3.735 to 3.825-in. (94.87 to 97.16 mm)	0.120 to 0.600-in. (3.0 to 15.2 mm)	0.120 to 0.510-in. (3.0 to 13.0 mm)	B	
			3.826 to 4.026-in. (97.18 to 102.26 mm)		0.120 to 0.400-in. (3.0 to 10.2 mm)	C	
			4.027 to 4.237-in. (102.29 to 107.62 mm)		0.120 to 0.390-in. (3.0 to 9.9 mm)	D	
			4.238 to 4.437-in. (107.65 to 112.70 mm)		0.120 to 0.401-in. (3.0 to 10.2 mm)	E	
5-in. (125 mm)	6.094-in. (154.79 mm)	050	4.438 to 4.571-in. (112.73 to 116.10 mm)	0.134 to 0.614-in. (3.4 to 15.6 mm)	0.134 to 0.481-in. (3.4 to 12.2 mm)	A	
			4.572 to 4.812-in. (116.13 to 122.22 mm)		0.134 to 0.374-in. (3.4 to 9.5 mm)	B	
			4.813 to 5.047-in. (122.25 to 128.19 mm)		0.134 to 0.380-in. (3.4 to 9.7 mm)	C	
			5.048 to 5.249-in. (128.22 to 133.32 mm)		0.134 to 0.413-in. (3.4 to 10.5 mm)	D	



Sensor Size 1	6-in. (150 mm)	6.93-in. (176.02 mm)	060	5.250 to 5.472-in. (133.35 to 138.99 mm)	0.134 to 0.614-in. (3.4 to 15.6 mm)	0.134 to 0.3919-in. (3.4 to 9.9 mm)	A
				5.473 to 5.760-in. (139.01 to 146.30 mm)		0.134 to 0.327-in. (3.4 to 8.3 mm)	B
				5.761 to 6.065-in. (146.33 to 154.05 mm)		0.134 to 0.31-in. (3.4 to 7.9 mm)	C
				6.066 to 6.383-in. (154.08 to 162.13 mm)		0.134 to 0.297-in. (3.4 to 7.5 mm)	D
Sensor Size 2	6-in. (150 mm)	6.93-in. (176.02 mm)	060	5.250 to 5.472-in. (133.35 to 139.99 mm)	0.134 to 1.354-in. (3.4 to 34.4 mm)	0.134 to 1.132-in. (3.4 to 28.7 mm)	A
				5.473 to 5.760-in. (139.01 to 146.30 mm)		0.134 to 1.067-in. (3.4 to 27.1 mm)	B
				5.761 to 6.065-in. (146.33 to 154.05 mm)		0.134 to 1.05-in. (3.4 to 26.7 mm)	C
				6.066 to 6.383-in. (154.08 to 162.13 mm)		0.134 to 1.037-in. (3.4 to 26.3 mm)	D
Sensor Size 1	7-in. (180 mm)	7.93-in. (201.42 mm)	070	6.384 to 6.624-in. (162.15 to 168.25 mm)	0.134 to 0.614-in. (3.4 to 15.6 mm)	0.134 to 0.374-in. (3.4 to 9.5 mm)	B
				6.625 to 7.023-in. (168.28 to 178.38 mm)		0.134 to 0.216-in. (3.4 to 5.5 mm)	C
				7.024 to 7.392-in. (178.41 to 187.76 mm)		0.134 to 0.246-in. (3.4 to 6.2 mm)	D
Sensor Z2	7-in. (180 mm)	7.93-in. (201.42 mm)	070	6.384 to 6.624-in. (162.15 to 168.25 mm)	0.134 to 1.354-in. (3.4 to 34.4 mm)	0.134 to 1.114-in. (3.4 to 28.3 mm)	B
				6.625 to 7.023-in. (168.28 to 178.38 mm)		0.134 to 0.956-in. (3.4 to 24.3 mm)	C
				7.024 to 7.392-in. (178.41 to 187.76 mm)		0.134 to 0.986-in. (3.4 to 25.0 mm)	D
Sensor Size 1	8-in. (200 mm)	9.688-in. (246.08 mm)	080	7.393 to 7.624-in. (187.78 to 193.65 mm)	0.250 to 0.73-in. (6.4 to 18.5 mm)	0.250 to 0.499-in. (6.4 to 12.6 mm)	B
				7.625 to 7.981-in. (193.68 to 202.72 mm)		0.250 to 0.374-in. (6.4 to 9.5 mm)	C
				7.982 to 8.400-in. (202.74 to 213.36 mm)		0.250 to 0.312-in. (6.4 to 7.9 mm)	D
				8.401 to 8.766-in. (213.39 to 222.66 mm)		0.250 to 0.364-in. (6.4 to 9.2 mm)	E
Sensor Size 2	8-in. (200 mm)	9.688-in. (246.08 mm)	080	7.393 to 7.624-in. (187.78 to 193.65 mm)	0.250 to 1.47-in. (6.4 to 37.3 mm)	0.250 to 1.239-in. (6.4 to 31.4 mm)	B
				7.625 to 7.981-in. (193.68 to 202.72 mm)		0.250 to 1.114-in. (6.4 to 28.3 mm)	C
				7.982 to 8.400-in. (202.74 to 213.36 mm)		0.250 to 1.052-in. (6.4 to 26.7 mm)	D
				8.401 to 8.766-in. (213.39 to 222.66 mm)		0.250 to 1.104-in. (6.4 to 28.0 mm)	E
	10-in. (250 mm)	11.75-in. (298.45 mm)	100	8.767 to 9.172-in. (222.68 to 232.97 mm)	0.250 to 1.470-in. (6.4 to 37.3 mm)	0.250 to 1.065-in. (6.4 to 27.1 mm)	A
				9.173 to 9.561-in. (232.99 to 242.85 mm)		0.250 to 1.082-in. (6.4 to 27.5 mm)	B
				9.562 to 10.020-in. (242.87 to 254.51 mm)		0.250 to 1.012-in. (6.4 to 25.7 mm)	C
				10.021 to 10.546-in. (254.53 to 267.87 mm)		0.250 to 0.945-in. (6.4 to 24.0 mm)	D
				10.547 to 10.999-in. (267.89 to 279.37 mm)		0.250 to 1.018-in. (6.4 to 25.9 mm)	E
	12-in. (300 mm)	13.0375-in. (331.15 mm)	120	11.000 to 11.373-in. (279.40 to 288.87 mm)	0.250 to 1.470-in. (6.4 to 37.3 mm)	0.250 to 1.097-in. (6.4 to 27.9 mm)	B
				11.374 to 11.938-in. (288.90 to 303.23 mm)		0.250 to 0.906-in. (6.4 to 23.0 mm)	C
				11.939 to 12.250-in. (303.25 to 311.15 mm)		0.250 to 1.159-in. (6.4 to 29.4 mm)	D

# Rosemount 3051 Dimensional Drawings<sup>(1)</sup>

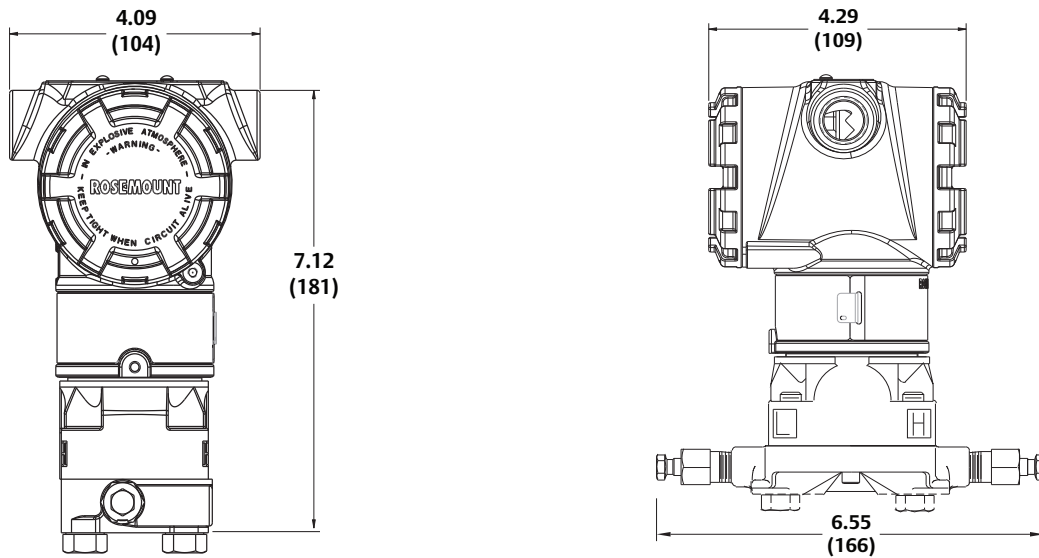
Figure 1. Rosemount 3051C Exploded View



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

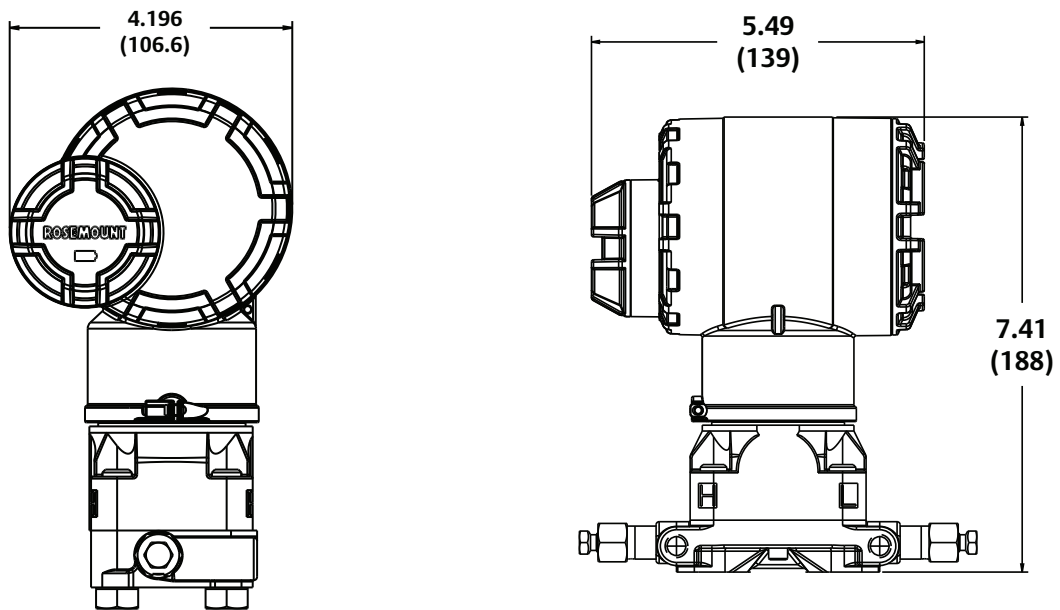
(1) This section contains dimensional drawings for output codes A, F and X. For output codes W and M, visit <http://www2.emersonprocess.com/en-US/brands/rosemount/Documentation-and-Drawings/Type-1-Drawings/Pages/index.aspx>

**Figure 2. Rosemount 3051C Coplanar Flange**



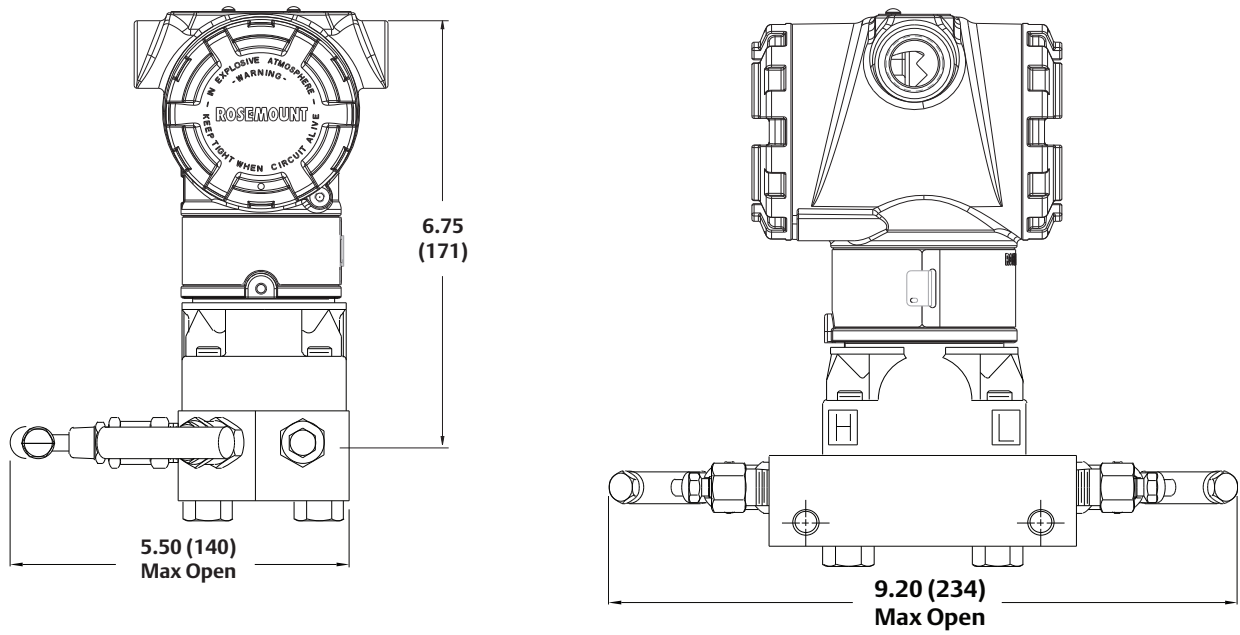
Dimensions are in inches (millimeters).

**Figure 3. 3051 Wireless Housing with Coplanar Flange**



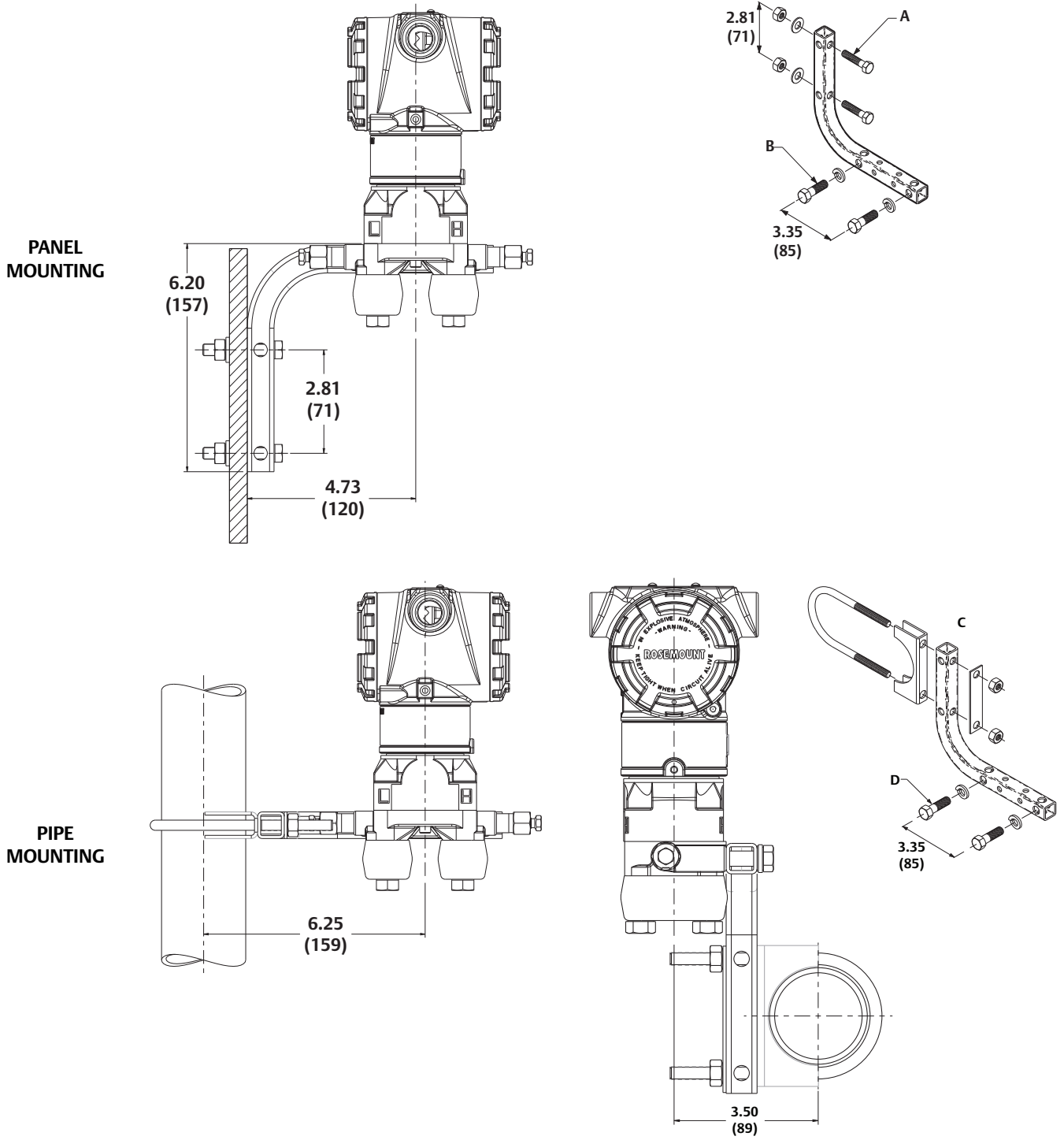
Dimensions are in inches (millimeters).

Figure 4. Rosemount 3051C Coplanar Flange with Rosemount 305RC3 3-Valve Coplanar Integral Manifold



Dimensions are in inches (millimeters).

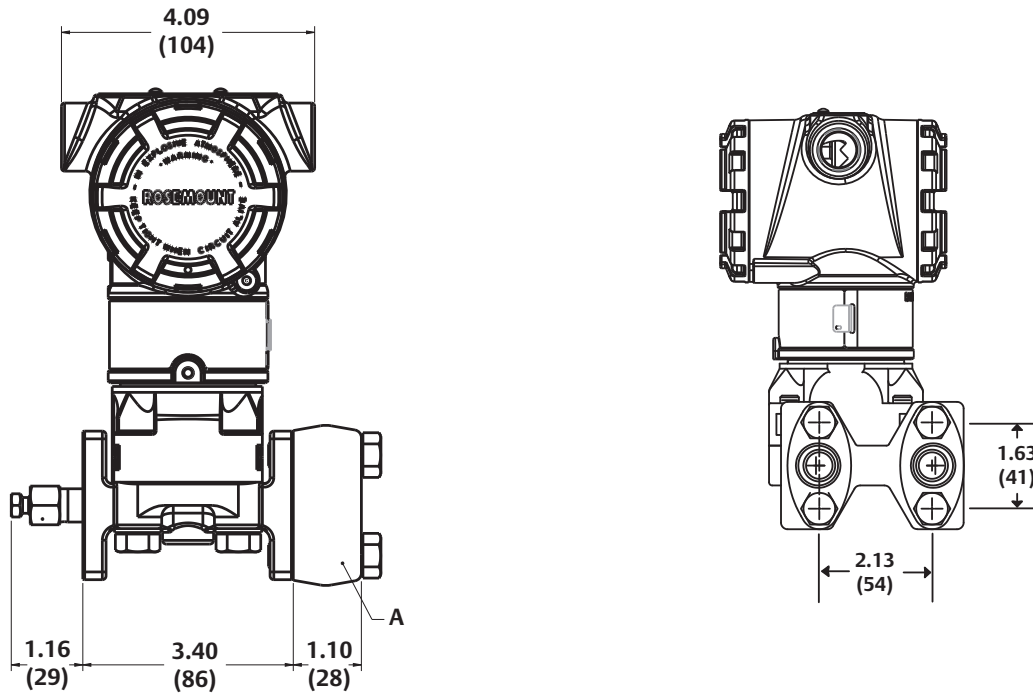
Figure 5. Coplanar Flange Mounting Configurations with Optional Bracket (B4) for 2-in. Pipe or Panel Mounting



A.  $\frac{5}{16}$ -18 Bolts (not supplied)  
 B.  $\frac{3}{8}$ -16 Bolts  
 Dimensions are in inches (millimeters).

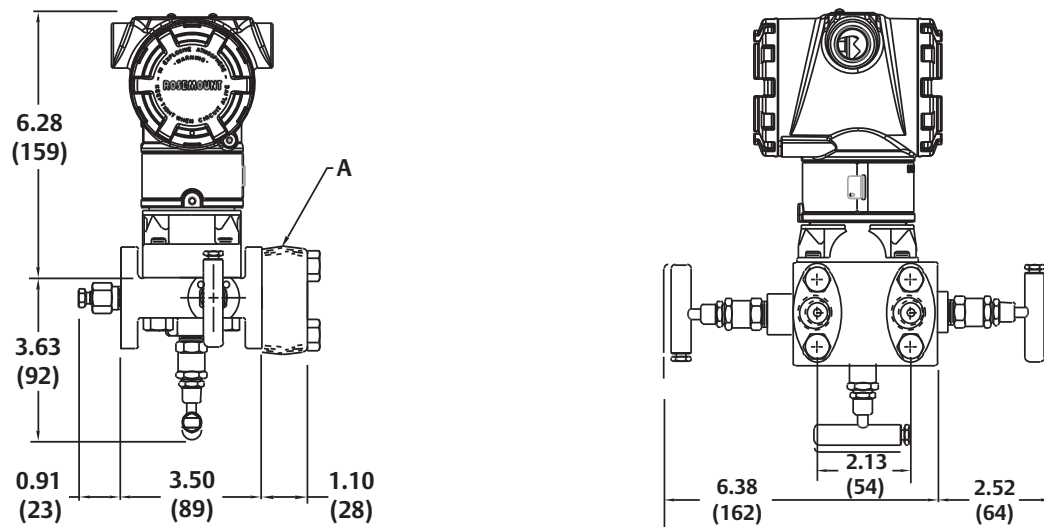
C. 2-inch U-Bolt  
 D.  $\frac{3}{8}$ -16 Bolts

**Figure 6. Rosemount 3051C Coplanar with Traditional Flange**



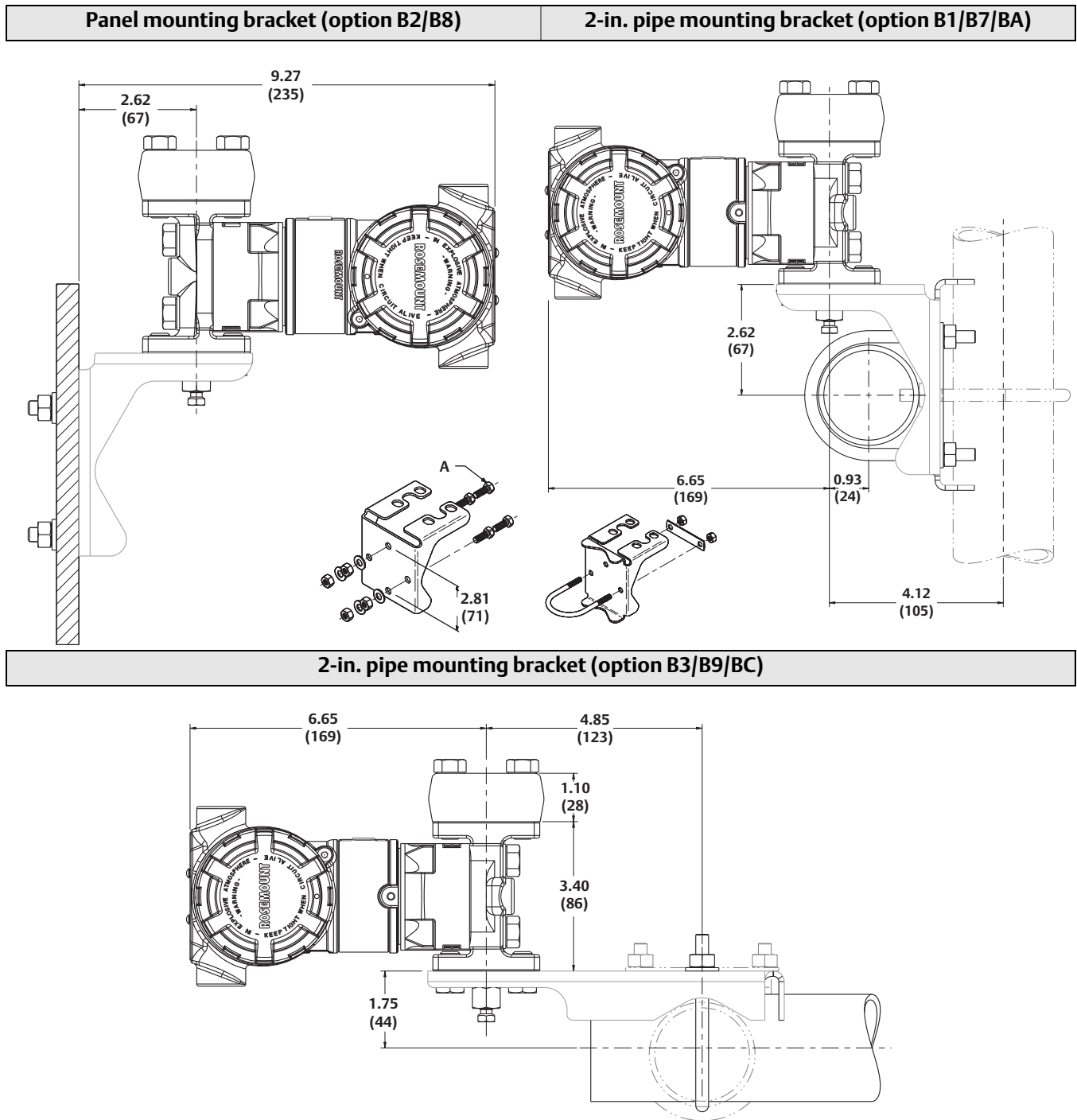
A. Flange Adapters (optional)  
 Dimensions are in inches (millimeters).

**Figure 7. Rosemount 3051C Coplanar with Rosemount 305RT3 3-Valve Traditional Integral Manifold**



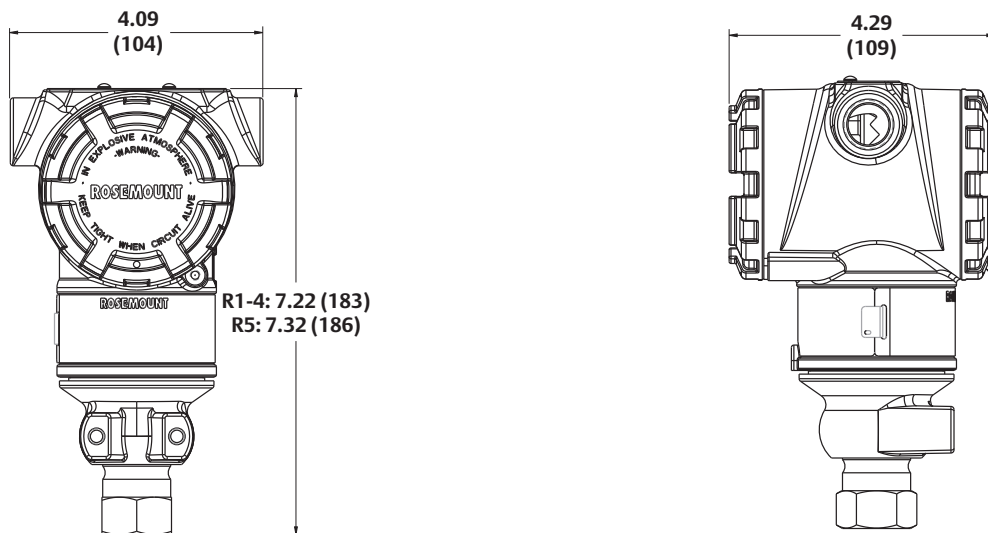
A. 1/2-14 NPT Flange Adapter (optional)  
 Dimensions are in inches (millimeters).

**Figure 8. Traditional Flange Mounting Configurations with Optional Brackets for 2-in. Pipe or Panel Mounting**



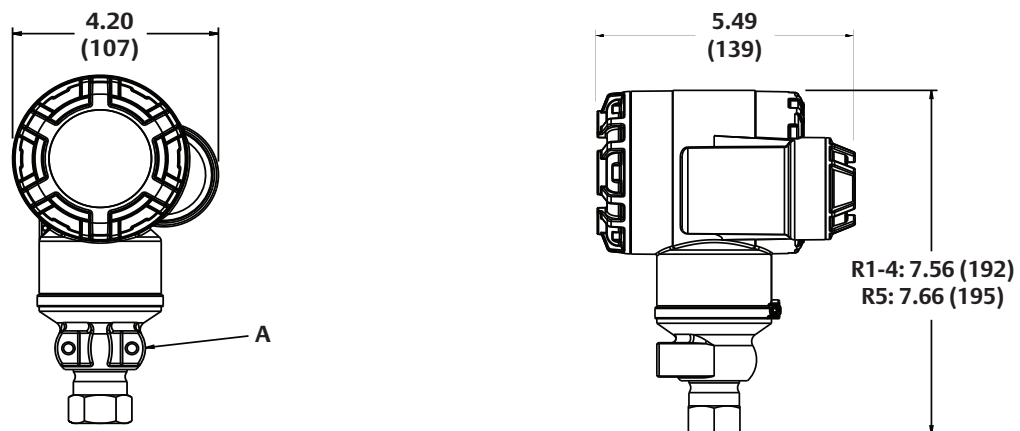
A. <sup>5</sup>/<sub>16</sub>-18 Bolts (not supplied)  
 Dimensions are in inches (millimeters).

**Figure 9. Rosemount 3051T Dimensional Drawings**



Dimensions are in inches (millimeters).

**Figure 10. 3051T Wireless Housing Dimensional Drawings**

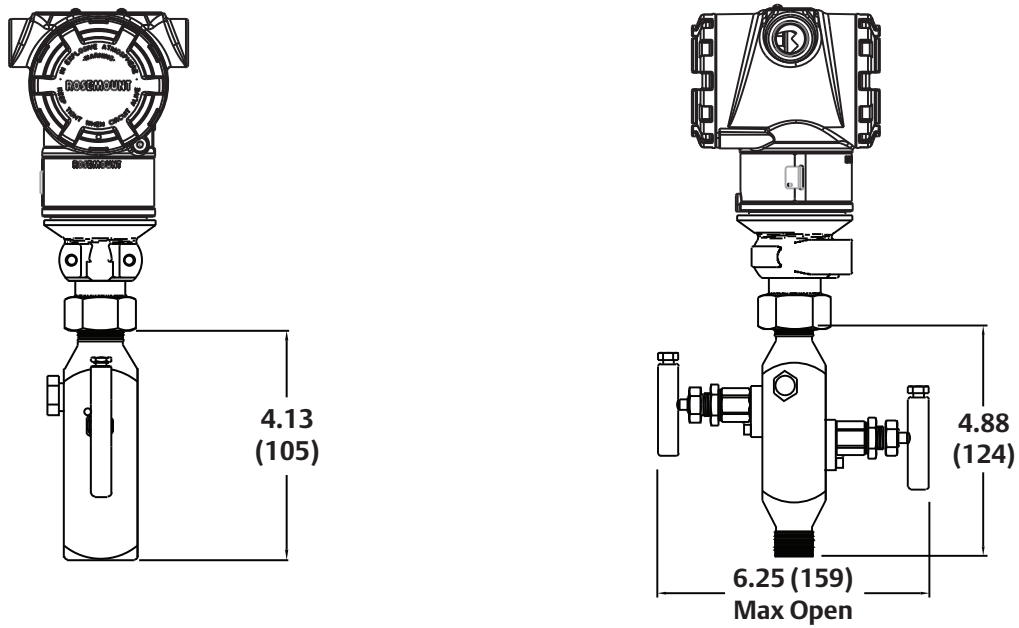


A. U-Bolt Bracket

Dimensions are in inches (millimeters).

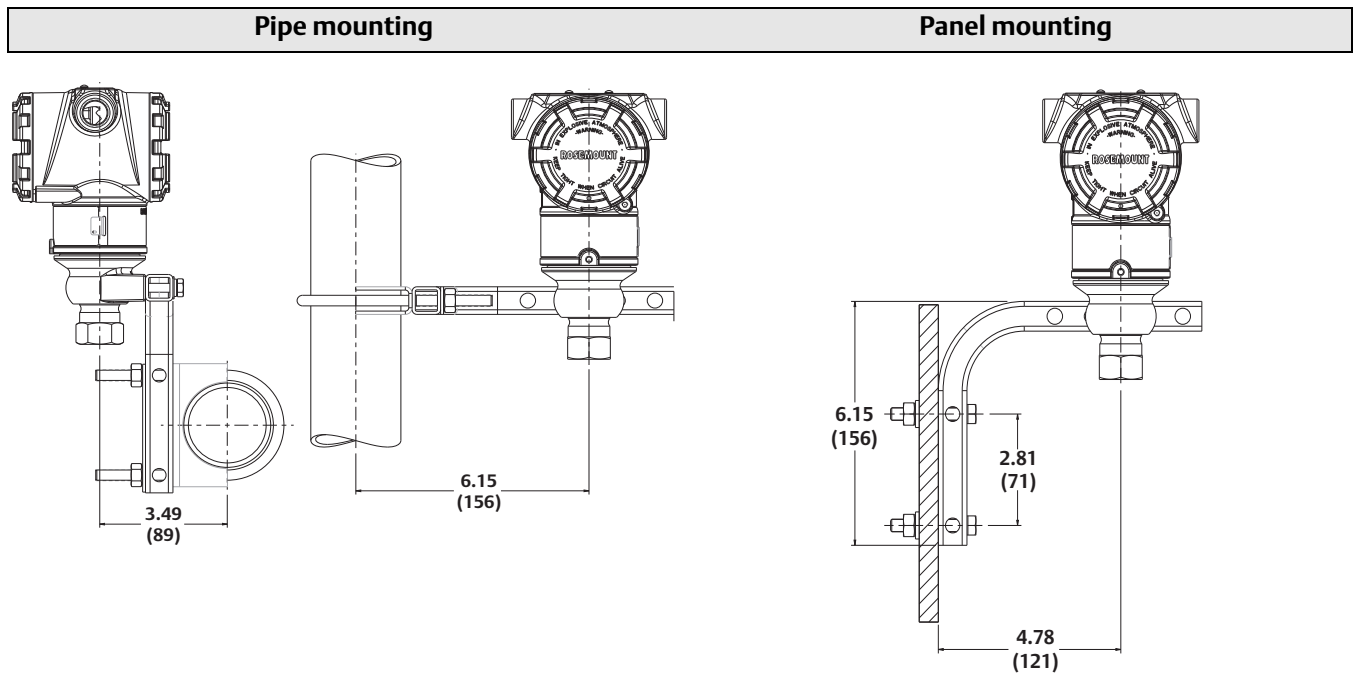


**Figure 11. Rosemount 3051T with Rosemount 306 2-Valve I Integral Manifold**



Dimensions are in inches (millimeters).

**Figure 12. Rosemount 3051T Typical Mounting Configurations with Optional Mounting Bracket**



Dimensions are in inches (millimeters).

Figure 13. Rosemount 3051CFA Pak-Lok Annubar Flowmeter<sup>(1)</sup>

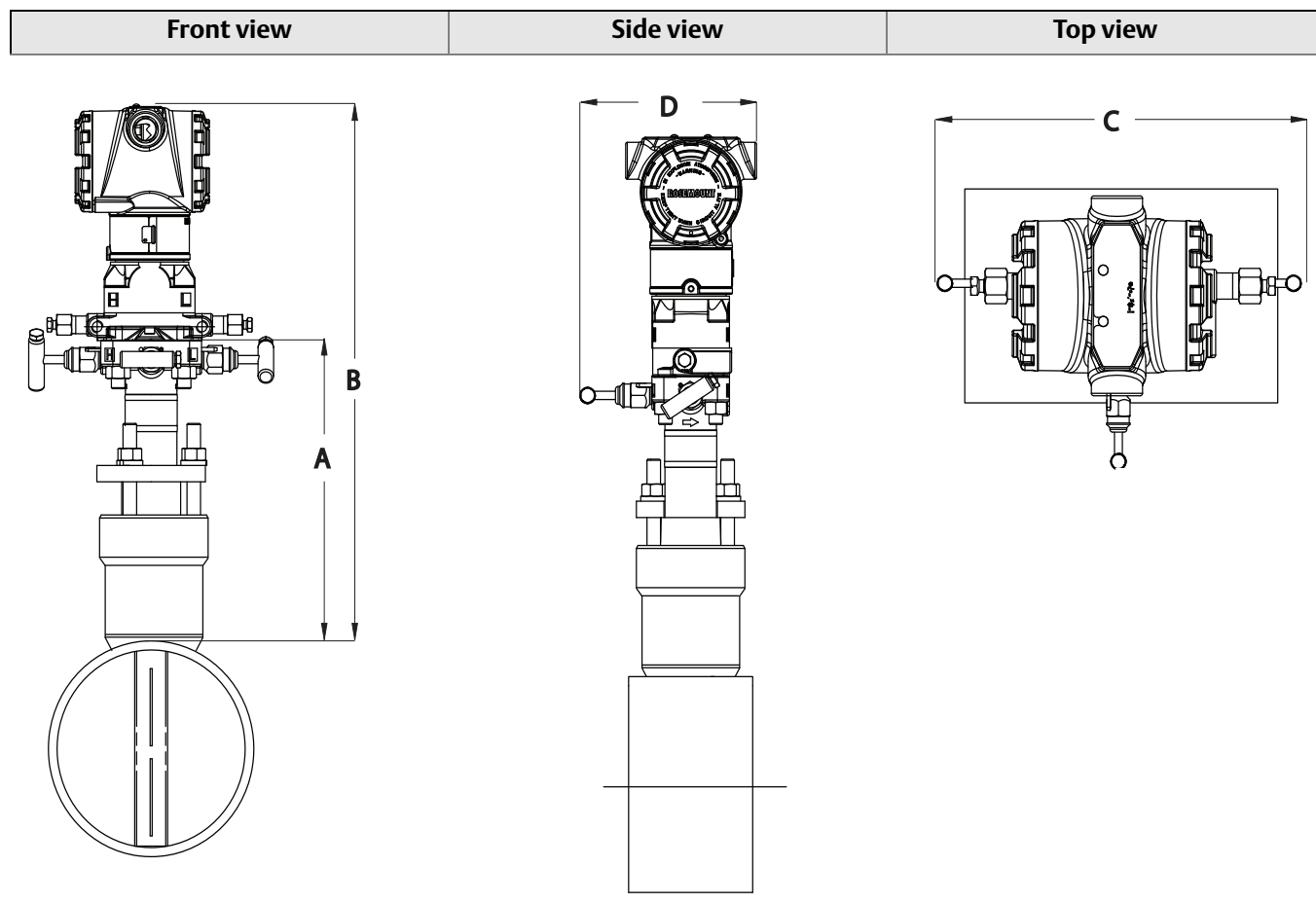


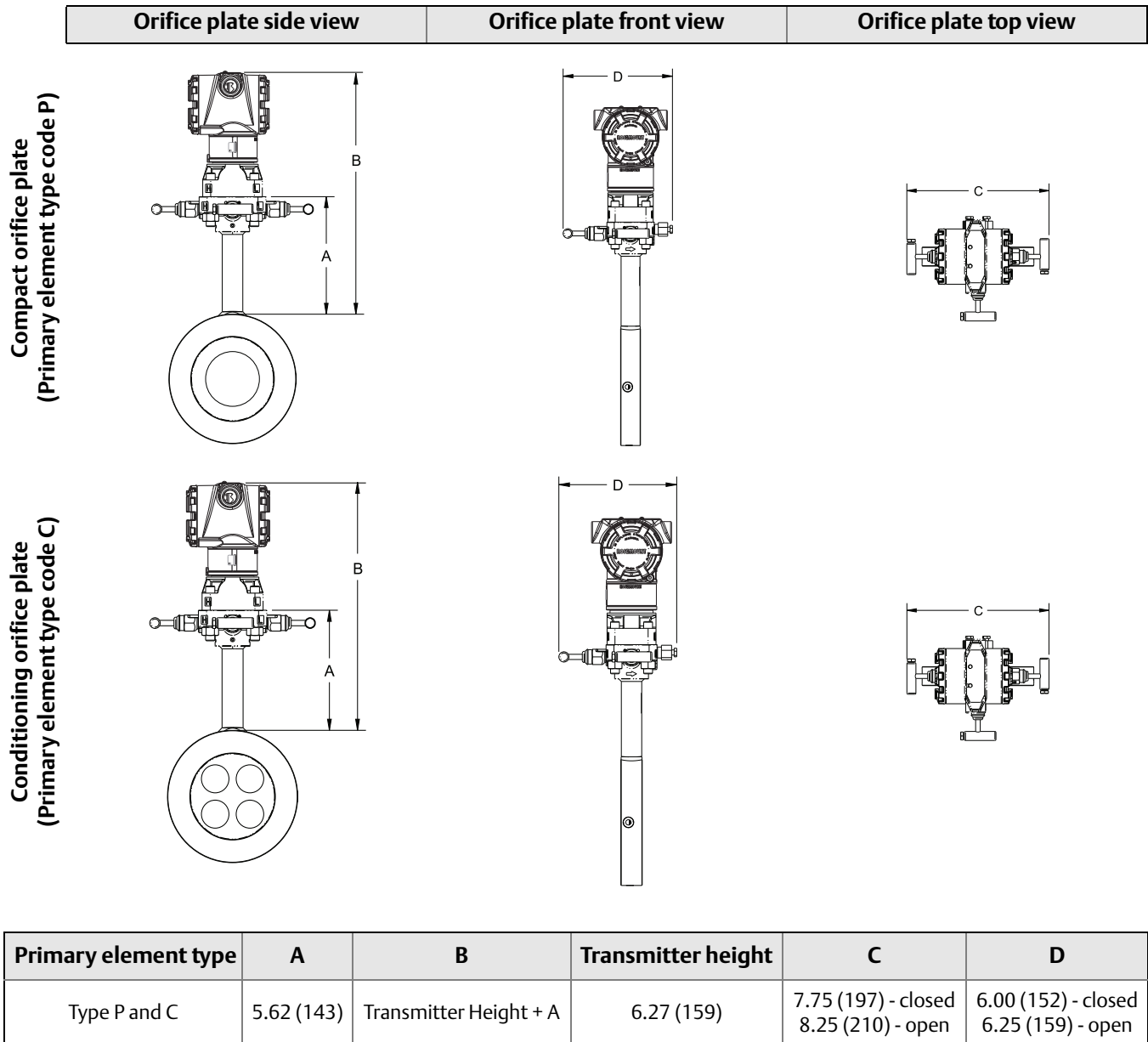
Table 14. Rosemount 3051CFA Pak-Lok Annubar Flowmeter Dimensional Data (Maximum Dimensions)

Sensor size	A	B	C	D
1	8.50 (215.9)	15.60 (396.9)	9.00 (228.6)	6.00 (152.4)
2	11.00 (279.4)	18.10 (460.4)	9.00 (228.6)	6.00 (152.4)
3	12.00 (304.8)	19.10 (485.8)	9.00 (228.6)	6.00 (152.4)

Dimensions are in inches (millimeters).

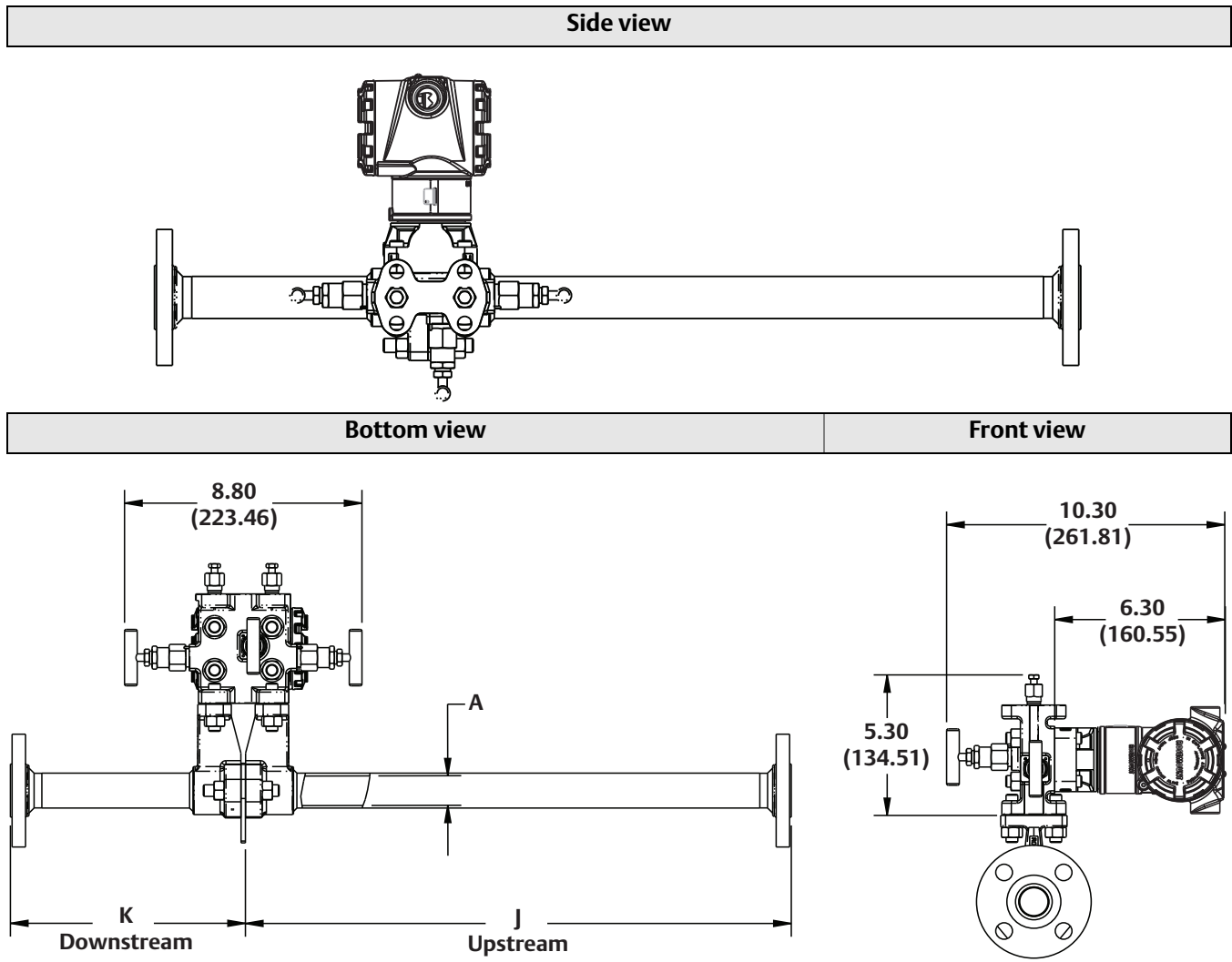
(1) The Pak-Lok Annubar model is available up to 600# ANSI [1440 psig at 100 °F (99 bar at 38 °C)].

Figure 14. Rosemount 3051CFC Compact Orifice Flowmeter



Dimensions are in inches (millimeters).

Figure 15. Rosemount 3051CFP Integral Orifice Flowmeter



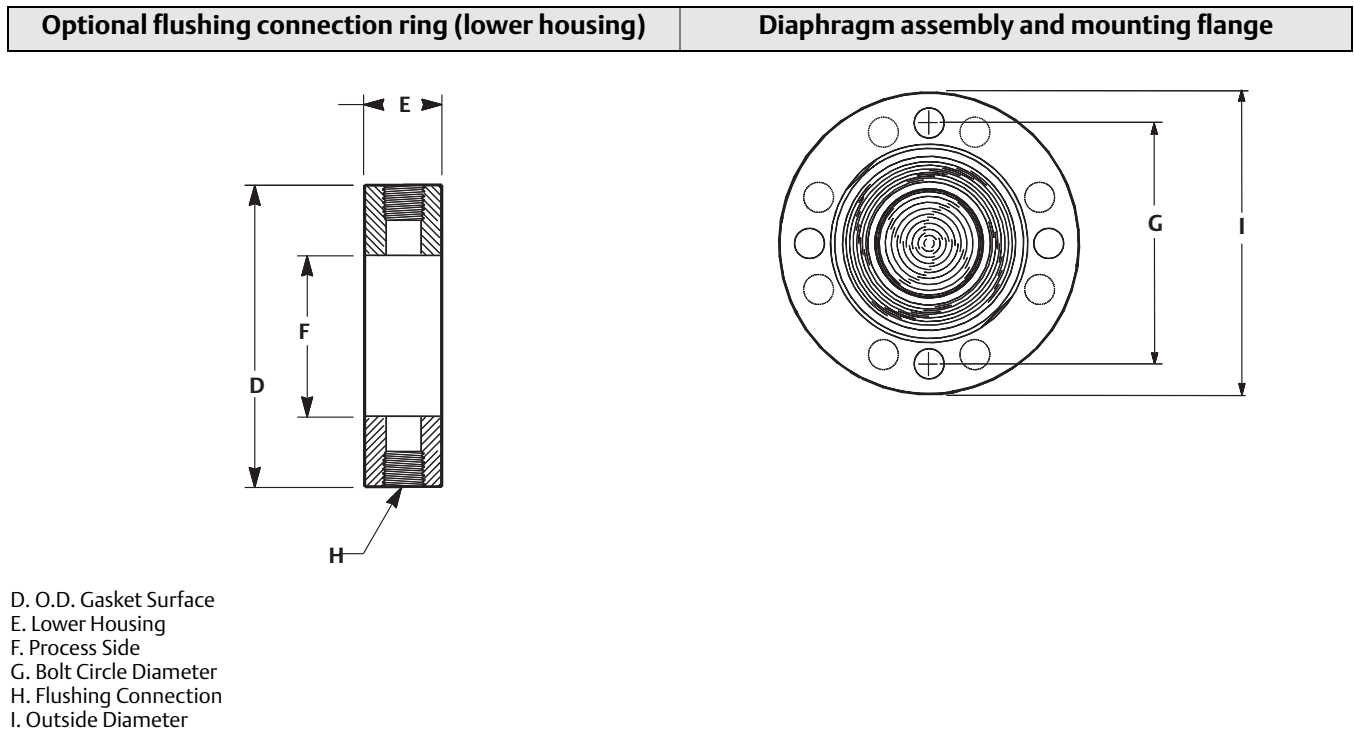
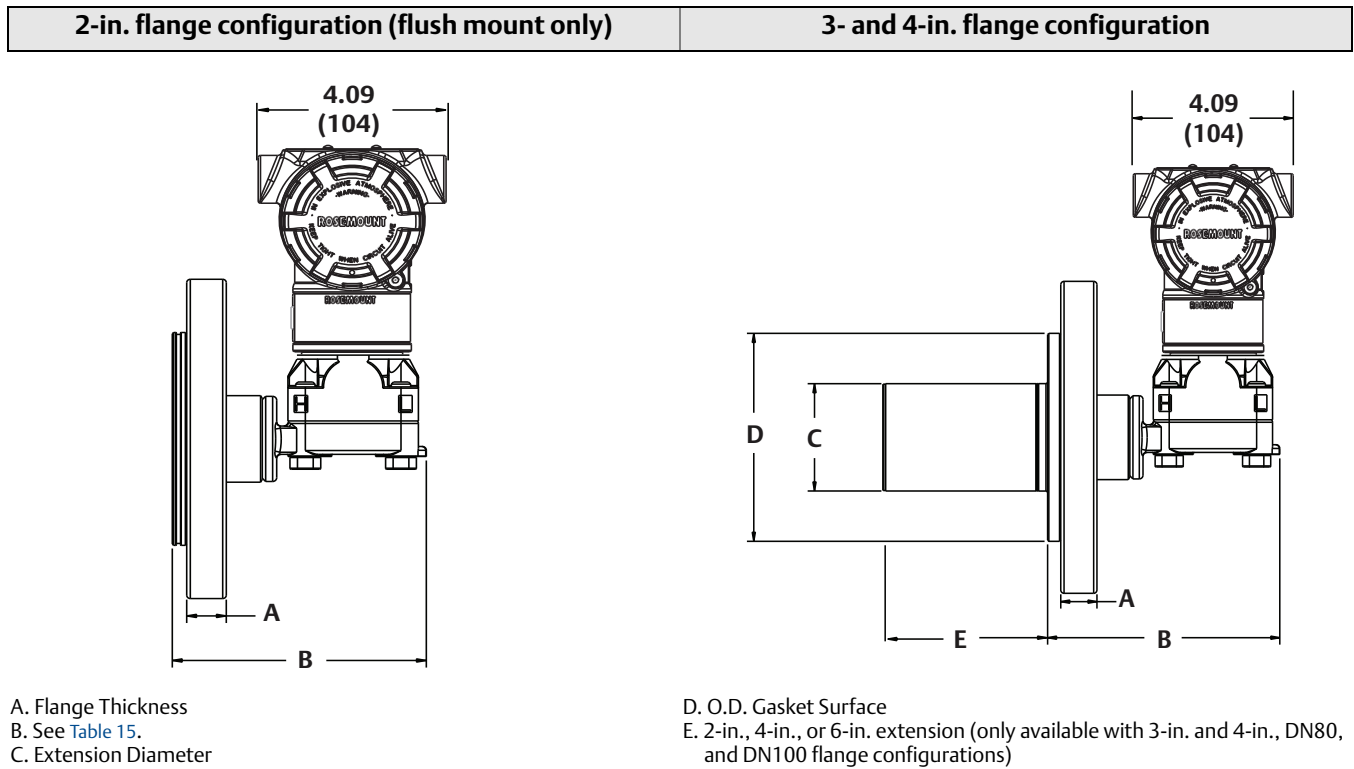
A. B.D. (Bore Diameter)  
 Dimensions are in inches (millimeters).

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

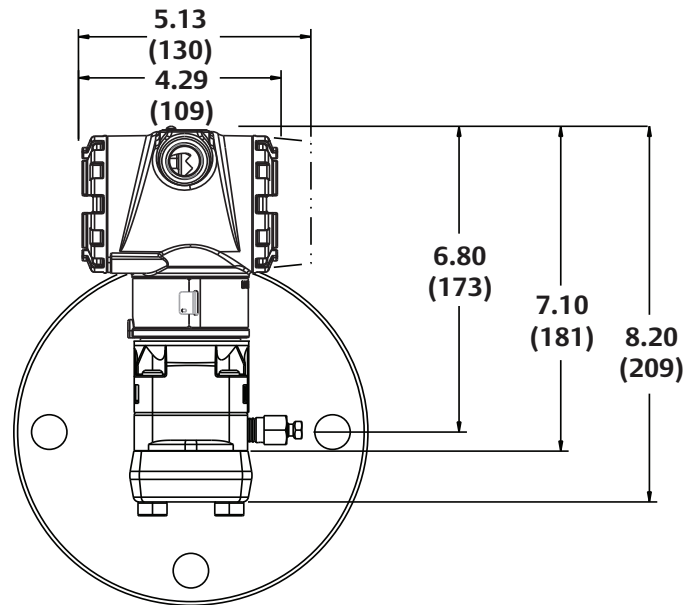
Dimensions are in inches (millimeters).

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

Figure 16. Rosemount 3051L Dimensional Drawings



**Diaphragm assembly and mounting flange**



Dimensions are in inches (millimeters).

**Table 15. 3051L Dimensional Specifications**

Class <sup>(1)</sup>	Pipe size	Flange thickness A	Bolt circle diameter H	Outside diameter J	No. of bolts	Bolt hole diameter	Extension diameter <sup>(1)</sup> 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)	N/A	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)	N/A	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)	N/A	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	N/A	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) Tolerances are 0.040 (1.02), - 0.020 (0.51).

Class <sup>(1)</sup>	Pipe size	Process side G	Lower housing F		C
			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)	3.60 (91)	0.97 (25)	1.31 (33)	5.65 (143)
	4 (102)	3.60 (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)	3.60 (91)	0.97 (25)	1.31 (33)	5.65 (143)
	4 (102)	3.60 (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)	3.60 (91)	0.97 (25)	1.31 (33)	7.65 (194)
DIN 2501 PN 10–40	DN 50	2.40 (61)	0.97 (25)	1.31 (33)	5.65 (143)
DIN 2501 PN 25/40	DN 80	3.60 (91)	0.97 (25)	1.31 (33)	5.65 (143)
	DN 100	3.60 (91)	0.97 (25)	1.31 (33)	5.65 (143)
DIN 2501 PN 10/16	DN 100	3.60 (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 <sub>2</sub> O (Range 0, 1, 2, and 3) psi (Range 4 and 5)
Absolute/3051TA/3051TG:	psi (all ranges)
4 mA <sup>(1)</sup>	0 (engineering units above)
20 mA <sup>(1)</sup> :	Upper range limit
Output:	Linear
External buttons:	None
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:	None
Alarm <sup>(1)</sup> :	High
Software tag:	(Blank)
Damping:	0.4 seconds <sup>(2)</sup>

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

(2) For fieldbus protocols, default damping is 1 second.

## Custom configuration<sup>(1)</sup>

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

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

Refer to the “Rosemount 3051 Configuration Data Sheet” document number 00806-0100-4007 for Rosemount 3051 HART protocol.

For Wireless refer to the “Rosemount 3051 Wireless Configuration Data Sheet” (document number 00806-0100-4100).<sup>(1)</sup>

## Tagging (3 options available)

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

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



## Commissioning tag<sup>(1)</sup>

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.

## Other seals

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

## Output information

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

Pressure			
atm	inH <sub>2</sub> O@4 °C <sup>(2)</sup>	g/cm <sup>2</sup>	psi
mbar	mmH <sub>2</sub> O	kg/cm <sup>2</sup>	torr
bar	mmHg	Pa	cmH <sub>2</sub> O @4 °C <sup>(1)(2)</sup>
inH <sub>2</sub> O	mmH <sub>2</sub> O @4 °C <sup>(2)</sup>	kPa	mH <sub>2</sub> O @4 °C <sup>(1)(2)</sup>
inHg	ftH <sub>2</sub> O	MPa <sup>(2)</sup>	ftH <sub>2</sub> O @60 °F <sup>(1)(2)</sup>
hPa <sup>(1)(2)</sup>	inH <sub>2</sub> O@60 °F <sup>(2)</sup>	kg/m <sup>2</sup> <sup>(1)(2)</sup>	cmHg @0 °C <sup>(1)(2)</sup>
mHg @0 °C <sup>(1)(2)</sup>	psf <sup>(1)(2)</sup>	ftH <sub>2</sub> O @4 °C <sup>(1)(2)</sup>	

(1) Field configurable only, not available for factory calibration or custom configuration (option code C1 "Software configuration").

(2) Not available with Low Power (output option code M) or PROFIBUS PA (output option code W).

## Display and interface options

### M4 Digital Display with Local Operator Interface (LOI)

- Available for 4-20 mA HART and PROFIBUS PA

### M5 Digital Display

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

## Configuration buttons

Rosemount 3051 will ship with no buttons unless option D4 (Analog Zero and Span), DZ (Digital Zero), or M4 (LOI) for local configuration buttons are specified.

The Rosemount 3051 Wireless Transmitter is available with a Digital Zero button installed with or without the LCD display digital display.

## Transient protection (option code T1)

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

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

## Bolts for flanges and adapters

- Options permit bolts for flanges and adapters to be obtained in various materials
- Standard material is plated carbon steel per ASTM A449, Type 1
  - L4 Austenitic 316 Stainless Steel Bolts
  - L5 ASTM A 193, Grade B7M Bolts
  - L6 Alloy K-500 Bolts

## Conduit plug

### DO 316 SST Conduit Plug

Single 316 SST conduit plug replaces carbon steel plug

## Rosemount 3051C Coplanar Flange and 3051T Bracket Option

### B4 Bracket for 2-in. Pipe or Panel Mounting

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

(1) Only applicable to FOUNDATION fieldbus.

---

## 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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