

# Rosemount™ 3051 Pressure Transmitter



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

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# Setting the standard for pressure measurement

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



- More than seven million installed
- Reference accuracy 0.04 percent of span
- Installed total performance of 0.14 percent of span
- 10-year stability of 0.2 percent of URL
- SIL2/3 certified (IEC 61508)

## Maximize installation and application flexibility with the coplanar platform

- Improve reliability and performance with integrated DP Flow meters, 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

### Loop Integrity 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 (LOI)

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



## Industry leading capabilities extended to IEC 62591 (*WirelessHART*<sup>®</sup>)



- 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 to 60 percent.
- Quickly deploy new pressure, level, and flow measurements in 70 percent less time.

## Innovative, integrated DP flow meters



- 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 percent 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.

## Access information when you need it with asset tags

Newly shipped devices include a unique QR code asset tag that enables you to access serialized information directly from the device. With this capability, you can:

- Access device drawings, diagrams, technical documentation, and troubleshooting information in your MyEmerson account
- Improve mean time to repair and maintain efficiency
- Ensure confidence that you have located the correct device
- Eliminate the time-consuming process of locating and transcribing nameplates to view asset information

# Rosemount 3051C Coplanar Pressure Transmitter ordering information



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:

- The Loop Integrity Diagnostic continuously monitors the electrical loop to detect changes that compromise the integrity of the transmitted 4-20 mA output signal (Option Code DA0).
- LOI with straightforward menus and built-in configuration buttons (option code M4).
- Safety certification (option code QT).

<a href="#" style="color: white; text-decoration: none;">CONFIGURE &gt;</a>	<a href="#" style="color: #000080; text-decoration: none;">VIEW PRODUCT &gt;</a>
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## Online product configurator

Many products are configurable online using our Product Configurator. Select the **Configure** button or visit our [website](#) to start. With this tool's built-in logic and continuous validation, you can configure your products more quickly and accurately.

## Specifications and options

See the Specifications and options section 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 the Material selection section for more information.

## Model codes

Model codes contain the details related to each product. Exact model codes will vary; an example of a typical model code is shown in [Figure 1](#).

**Figure 1: Model Code Example**

**3051C D 2 X 2 2 M5 B4**

1	2
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1. Required model components (choices available on most)
2. Additional options (variety of features and functions that may be added to products)

## Optimizing lead time

The starred offerings (★) represent the most common options and should be selected for best delivery. The non-starred offerings are subject to additional delivery lead time.

## Required model components

### Model

Code	Description	
3051C	Coplanar pressure transmitter	★

### Measurement type

Code	Description	
D	Differential	★
G	Gage	★
A <sup>(1)</sup>	Absolute	

(1) If ordered with Wireless output code X, only available with 316L stainless steel (SST) diaphragm material (code 2), and silicone fill fluid (code 1).

### Pressure range

Code	Differential (Rosemount 3051CD)	Gage (Rosemount 3051CG)	Absolute (Rosemount 3051CA)	
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>(1)</sup>	-3 to 3 inH <sub>2</sub> O (-7.46 to 7.46 mbar)	N/A	N/A	

(1) Rosemount 3051CD0 is only available with output code A and X. For output code A, only transmitter 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 transmitter flange code 0 (Alternate flange H2), isolating diaphragm code 2, O ring code A, and bolting option L4 are available.

### Transmitter output

Code	Description	
A <sup>(1)</sup>	4–20 mA with digital signal based on HART® Protocol	★
F	FOUNDATION™ Fieldbus Protocol	★
W <sup>(2)</sup>	PROFIBUS® PA Protocol	★
X <sup>(3)</sup>	Wireless (requires wireless options and engineered polymer housing)	★

M <sup>(4)</sup>	Low-power, 1–5 Vdc with digital signal based on HART Protocol	
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- (1) HART Revision 5 is the default HART output.
- (2) For local addressing and configuration, M4 (LOI) is required. Not available with product certification codes E4, EM, EP, I6, IM, KD, KL, KM, KP, KS, N3.
- (3) This option is only available with intrinsically safe approvals.
- (4) Only available with C6, E2, E5, I5, K5, KB, EM, EP, and E8 product certifications.

## Materials of construction

Code	Transmitter flange type	Flange material	Drain/vent	
2	Coplanar	SST	SST	★
3 <sup>(1)</sup>	Coplanar	Cast C-276	Alloy C-276	★
4	Coplanar	Alloy 400	Alloy 400/K-500	★
5	Coplanar	Plated CS	SST	★
7 <sup>(1)</sup>	Coplanar	SST	Alloy C-276	★
8 <sup>(1)</sup>	Coplanar	Plated CS	Alloy C-276	★
0	Alternate process connection			★

- (1) 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.

## Isolating diaphragm

Code	Description	
2 <sup>(1)</sup>	316L SST	★
3 <sup>(1)</sup>	Alloy C-276	★
4 <sup>(2)</sup>	Alloy 400	
5 <sup>(2)</sup>	Tantalum (available on Rosemount 3051CD and CG, ranges 2–5 only; not available on Rosemount 3051CA)	
6 <sup>(2)</sup>	Gold-plated alloy 400 (use in combination with O-ring option code B)	
7 <sup>(2)</sup>	Gold-plated 316 SST	

- (1) 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.
- (2) Not available with wireless output (code X).

## O-ring

Code	Description	
A	Glass-filled PTFE	★
B	Graphite-filled PTFE	★

## Sensor fill fluid

Code	Description	
1	Silicone	★



2 <sup>(1)</sup>	Inert (differential and gage only)	★
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(1) Not available with wireless output (code X).

### Housing material

Code	Description	Conduit entry size	
A	Aluminum	½–14 NPT	★
B	Aluminum	M20 x 1.5	★
E	Aluminum, ultra low copper	½–14 NPT	★
F	Aluminum, ultra low copper	M20 x 1.5	★
J	SST	½–14 NPT	★
K	SST	M20 x 1.5	★
P <sup>(1)</sup>	Engineered polymer	No conduit entries	★
D <sup>(2)</sup>	Aluminum	G½	
M <sup>(2)</sup>	SST	G½	

(1) Only available with wireless output (code X).

(2) Transmitter conduit entry will be ½ NPT and a ½ NPT to G½ thread adapter will be provided. This option is only available with product certifications options I1, I2, I3, I7, IA, IB, IM, KA, N1, N3, N7. Housing code D is also available with E4, and IG.

### Wireless options

Requires wireless output code X and engineered polymer housing code P.

### Wireless transmit rate, operating frequency, and protocol

Code	Description	
WA3	User configurable transmit rate, 2.4 GHz <i>WirelessHART</i> ®	★

### Antenna and SmartPower™

Code	Description	
WP5	Internal antenna, compatible with Green Power Module (I.S. Power Module sold separately)	★

## Additional options

### Extended product warranty

Code	Description	
WR3	3-year limited warranty	★
WR5	5-year limited warranty	★

### Plantweb™ control functionality

Code	Description	
A01	FOUNDATION™ Fieldbus control function block suite	★

### Plantweb™ diagnostic functionality

Code	Description	
DA0	Loop Integrity HART® Diagnostic	★
D01	FOUNDATION™ Fieldbus Diagnostics Suite	★

### Alternate flange

The alternate flange option code requires the 0 code in materials of construction for alternate process connection.

Code	Description	
H2	Traditional flange, 316 SST, SST drain/vent	★
H3 <sup>(1)</sup>	Traditional flange, alloy C, alloy C-276 drain/vent	★
H4	Traditional flange, cast alloy 400, alloy 400/K-500 drain/vent	★
H7 <sup>(1)</sup>	Traditional flange, 316 SST, alloy C-276 drain/vent	★
HJ	DIN-compliant traditional flange, SST, 7/16-in. (10 mm) adapter/manifold bolting	★
FA	Level flange, SST, 2-in. (51 mm), ANSI Class 150, vertical mount 316 SST drain/vent	★
FB	Level flange, SST, 2-in. (51 mm), ANSI Class 300, vertical mount 316 SST drain/vent	★
FC	Level flange, SST, 3-in. (76 mm), ANSI Class 150, vertical mount 316 SST drain/vent	★
FD	Level flange, SST, 3-in. (76 mm), 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>(2)</sup>	DIN compliant traditional flange, SST, 0.40 in. (10 mm) adapter/manifold bolting 316 SST	
HL	DIN compliant traditional flange, SST, 0.50 in. (12 mm) adapter/manifold bolting 316 SST	

(1) 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.

(2) Not valid with option code P9 for 4500 static pressure.

## Manifold assembly

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

Code	Description	
S5	Assemble to Rosemount 305 Integral Manifold	★
S6	Assemble to Rosemount 304 Manifold or Connection System	★

## Integral mount primary element

Not valid with option code P9 for 4500 static pressure. “Assemble-to” items are specified separately and require a completed model number.

Code	Description	
S3	Assemble to Rosemount 405 Compact Orifice Plate	★
S4 <sup>(1)</sup>	Assemble to Rosemount Annubar™ or Rosemount 1195 Integral Orifice	★

(1) Transmitter flange limited to coplanar (option codes 2, 3, 5, 7, or 8) or traditional (option codes H2, H3, or H7).

## Seal assemblies

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

Code	Description	
S1 <sup>(1)</sup>	Assemble to one Rosemount 1199 seal	★
S2 <sup>(2)</sup>	Assemble to two Rosemount 1199 seals	★

(1) Not valid with option code D9 for RC½ adapters.

(2) Not valid for option codes DF and D9 for adapters.

## Mounting bracket

Panel mounting bolts are not supplied.

Code	Description	
B4	Coplanar flange bracket, all SST, 2-in. (51 mm) pipe and panel	★
B1	Traditional flange bracket, CS, 2-in. (51 mm) pipe	★
B2	Traditional flange bracket, CS, panel	★
B3	Traditional flange flat bracket, CS, 2-in. (51 mm) pipe	★
B7	Traditional flange bracket, B1 with SST bolts	★
B8	Traditional flange bracket, B2 with SST bolts	★
B9	Traditional flange bracket, B3 with SST bolts	★
BA	Traditional flange bracket, B1, all SST	★
BC	Traditional flange bracket, B3, all SST	★

## Product certifications

Code	Description	
E8	ATEX Flameproof and Dust Certification	★

I1 <sup>(1)</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	TIIS Flame-proof	★
I4	TIIS Intrinsic Safety	★
E5	USA Explosion-proof, Dust Ignition-Proof	★
I5 <sup>(2)</sup>	USA Intrinsically Safe, Nonincendive	★
C6	Canada Explosion-proof, Dust Ignition-proof, Intrinsically Safe, and Division 2	★
E6	Canada Explosion-proof, Dust Ignition-proof, Division 2	★
I6	Canada Intrinsic Safety	★
K6	Canada 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)	★
IG	IECEX FISCO Intrinsically Safe; for FOUNDATION Fieldbus or PROFIBUS PA Protocols only	★
K5	USA Explosion-proof, Dust Ignition-Proof, Intrinsically Safe, and Division 2	★
E2	INMETRO Flameproof001	★
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	USA and Canada Explosion-proof, Dust Ignition Proof, Intrinsically Safe, and Division 2 (combination of K5 and C6)	★
KD	USA, Canada, and ATEX Explosion-proof, Intrinsically Safe (combination of K5, C6, I1, and E8)	★
KL <sup>(3)</sup>	USA, Canada, IECEX, ATEX Intrinsic Safety Combination	★
KS	USA, Canada, IECEX, ATEX Explosion Proof, Intrinsically Safe, Dust, Non-Incendive, Type-N, Div. 2	★
EP	Republic of Korea Flameproof	★
IP	Republic of Korea Intrinsic Safety	★
KP	Republic of Korea Flameproof, Intrinsic Safety	★

(1) Dust approval not applicable to output code X.  
 (2) Nonincendive certification not provided with output code (X).  
 (3) Only available with output code X.

## Drinking water approval

This approval is not available with Alloy C-276 isolator (code 3), tantalum isolator (code 5), all cast C-276 flanges, all plated carbon steel (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).

Code	Description	
DW	NSF drinking water approval	★

## Shipboard approvals

Shipyard approvals are not available with wireless output (code X).

Code	Description	
SBS	American Bureau of Shipping	★
SBV <sup>(1)</sup>	Bureau Veritas (BV)	★
SDN	Det Norske Veritas	★
SLL <sup>(1)</sup>	Lloyds Register (LR)	★

(1) Only available with product certifications E7, E8, I1, I7, IA, K7, K8, KD, N1, N7

## SST tagging

Code	Description	
Y2	316 SST nameplate, top tag, wire-on tag, and fasteners	

## Custody transfer

The custody transfer option is only available with HART 4–20 mA output (code A).

Code	Description	
C5	Measurement Canada Accuracy Approval (limited availability depending on transmitter type and range; contact an Emerson representative).	★

## Bolting material

Code	Description	
L4 <sup>(1)</sup>	Austenitic 316 SST bolts	★
L5	ASTM A 193, grade B7M bolts	★
L6	Alloy K-500 bolts	★

(1) L4 bolting not required with S6 option.

### Display and interface options

Code	Description	
M4 <sup>(1)</sup>	LCD display with LOI	★
M5	LCD display	★

(1) Only available with 4–20 mA HART® output (code A) and PROFIBUS®-PA (code W).

### Calibration certificate

Code	Description	
Q4	Calibration certificate	★
QG <sup>(1)</sup>	Calibration certificate and GOST verification certificate	★
QP	Calibration certification and tamper evident seal	★

(1) Contact an Emerson representative for availability.

### Material traceability certification

Code	Description	
Q8	Material traceability certification per EN 10204 3.1	★

### Positive material identification (PMI)

Code	Description	
Q76	PMI verification and certificate	★

### Quality certification for safety

The quality certification for safety is only available with HART® 4–20 mA output (code A).

Code	Description	
QT	Safety certified to IEC 61508 with certificate of FMEDA	★

### Configuration buttons

Code	Description	
D4 <sup>(1)</sup>	Analog zero and span	★
DZ <sup>(2)</sup>	Digital zero trim	★

(1) Only available with HART® 4–20 mA output (code A).

(2) Only available with HART 4–20 mA output (output code A) and wireless output (output code X)

### Transient protection

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

Code	Description	
T1	Transient protection terminal block	★

### Software configuration

The software configuration option is only available with HART® 4–20 mA output (output code A) and wireless output (output code X).

Code	Description	
C1	Custom software configuration (For wired, see the Rosemount 3051 <a href="#">Configuration Data Sheet</a> . For wireless, see the Rosemount 3051 Wireless <a href="#">Configuration Data Sheet</a> .)	★

### Low power output

Code	Description	
C2	0.8–3.2 Vdc output with digital signal based on HART Protocol (available with output code M only)	★

### Gauge pressure calibration

Code	Description	
C3	Gauge calibration (Rosemount 3051CA only)	★

### Alarm levels

The alarm levels option is only available with HART 4–20 mA output (code A).

Code	Description	
C4 <sup>(1)</sup>	Analog output levels compliant with NAMUR recommendation NE 43, alarm high	★
CN <sup>(1)</sup>	Analog output levels compliant with NAMUR recommendation NE 43, alarm low	★
CR	Custom alarm and saturation signal levels, high alarm (requires C1 and Rosemount 3051 <a href="#">Configuration Data Sheet</a> )	★
CS	Custom alarm and saturation signal levels, low alarm (requires C1 and Rosemount 3051 <a href="#">Configuration Data Sheet</a> )	★
CT	Rosemount standard low alarm	★

(1) NAMUR-compliant operation is preset at the factory and can be changed to standard operation in the field for the standard Rosemount 3051.

### Pressure testing

Code	Description	
P1	Hydrostatic testing with certificate	

### Cleaning process area

Code	Description	
P2	Cleaning for special service	
P3 <sup>(1)</sup>	Cleaning for < 1 ppm chlorine/fluorine	

(1) Not available with code S5.

### Flange adapters

This option is not valid with alternate process connection options S3, S4, S5, and S6.

Code	Description	
DF	½–14 NPT flange adapter(s)	★

### Vent drain valves

Code	Description	
D7	Coplanar flange without drain/vent ports	
DC	Ports left open - None	

### Conduit plug

The conduit plug option is not available with wireless output (code X).

Code	Description	
DO	316 SST conduit plug	★

### RC¼ RC½ process connection

This option is not available with alternate process connection, DIN flanges, and level flanges.

Code	Description	
D9	RC¼ flange with RC½ flange adapter - SST	

### Maximum static line pressure

Code	Description	
P9	4500 psig (310,26 bar) static pressure limit (Rosemount 3051CD ranges 2–5 only)	★

### Ground screw

The ground screw option is not available with wireless output (code X). The V5 option is not needed with the T1 option; external ground screw assembly is included with the T1 option.

Code	Description	
V5	External ground screw assembly	★



## Surface finish

Code	Description	
Q16	Surface finish certification for sanitary remote seals	★

## Toolkit total system performance reports

Code	Description	
QZ	Remote seal system performance calculation report	★

## Conduit electrical connector

The conduit electrical connector option is not available with wireless output (code X).

Code	Description	
GE	M12, 4-pin, male connector (eurofast®)	★
GM	A size mini, 4-pin, male connector (minifast®)	★

## NACE certificate

Note that NACE®-compliant wetted materials are required. Materials of construction must comply with recommendations per NACE MR0175/ISO 15156 for sour oil field production environments. Environmental limits apply to certain materials. Consult the latest standard for details. All selected materials must also conform to NACE MR0103 for sour refining environments.

Code	Description	
Q15	Certificate of Compliance to NACE MR0175/ISO 15156 for wetted materials	★
Q25	Certificate of Compliance to NACE MR0103 for wetted materials	★

## Cold temperature

This option is only available for pressure type D and G, pressure ranges 1–5 with 4–20 mA HART® protocol, and silicone sensor fill fluid. It is available with 316SST, C-276, gold plated SST isolating diaphragms, and with transmitter flange types 2, 7, and 0 (only for HJ, HK, and HL). BR5 and BR6 are not available with the following options: DC, DF, D7, D9, P9, Q16, GE, and GM. Consult factory for available approvals.

Code	Description	
BR5 <sup>(1)</sup>	–58 °F (–50 °C) cold temperature operation	★
BR6 <sup>(2)</sup>	–76 °F (–60 °C) cold temperature operation	★

(1) BR5 option is only available with approval codes C6, E2, E5, EM, I2, I5, I7, IM, IP, K5, KM, and KP.

(2) BR6 option is only available with approval codes EM, I2, I7, IM, IP, and KM.

## HART revision configuration (requires HART Protocol output code A)

HART® Revision 5 is the default HART output.

Code	Description	
HR5	Configured for HART Revision 5	★
HR7	Configured for HART Revision 7	★

**Wireless power accessory**

This option is only available with output code X.

Code	Description	
HS	Hot swap power adapter for power module replacement	

# Rosemount 3051T In-Line Transmitter ordering information



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:

- The Loop Integrity Diagnostic continuously monitors the electrical loop to detect changes that compromise the integrity of the transmitted 4-20 mA output signal (Option Code DA0).
- LOI with straightforward menus and built-in configuration buttons (option code M4).
- Safety certification (option code QT).

<a href="#">CONFIGURE &gt;</a>	<a href="#">VIEW PRODUCT &gt;</a>
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## Online product configurator

Many products are configurable online using our Product Configurator. Select the **Configure** button or visit our [website](#) to start. With this tool's built-in logic and continuous validation, you can configure your products more quickly and accurately.

## Specifications and options

See the Specifications and options section 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 the Material selection section for more information.

## Model codes

Model codes contain the details related to each product. Exact model codes will vary; an example of a typical model code is shown in [Figure 2](#).

Figure 2: Model Code Example

3051C D 2 X 2 2 M5 B4

1            2

1. Required model components (choices available on most)
2. Additional options (variety of features and functions that may be added to products)

## Optimizing lead time

The starred offerings (★) represent the most common options and should be selected for best delivery. The non-starred offerings are subject to additional delivery lead time.

## Required model components

### Model

Code	Description
3051T	In-Line Pressure Transmitter

### Pressure type

Code	Description	
G	Gage	★
A <sup>(1)</sup>	Absolute	★

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

### Pressure range

Code	Gage (Rosemount 3051TG) <sup>(1)</sup>	Absolute (Rosemount 3051TA)	
0	–5 to 5 psi (–344.74 to 344.74 mbar)	N/A	★
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)	★
6 <sup>(2)</sup>	–14.7 to 20000 psi (–1.01 to 1378.95 bar)	0 to 20000 psia (0 to 1378.95 bar)	

(1) *Rosemount 3051TG lower range limit assumes atmospheric pressure of 14.7 psig.*

(2) *Not available with PROFIBUS PA or Low Power 1–5 Vdc transmitter output (option code W or M), inert sensor fill fluid (option code 2), NSW drinking water approval (option code DW), or assemble to manifolds (option code S5).*

### Transmitter output

Code	Description	
A <sup>(1)</sup>	4–20 mA with digital signal based on HART® Protocol	★
F	FOUNDATION™ Fieldbus Protocol	★
W <sup>(2)</sup>	PROFIBUS® PA Protocol	★
X <sup>(3)</sup>	Wireless (requires wireless options and engineered polymer housing)	★
M <sup>(4)</sup>	Low-power, 1–5 Vdc with digital signal based on HART Protocol	

(1) *HART Revision 5 is the default HART output.*

(2) *For local addressing and configuration, M4 (LOI) is required. Not available with product certification codes E4, EM, EP, I6, IM, KD, KL, KM, KP, KS, N3.*

(3) *This option is only available with intrinsically safe approvals.*

(4) *Only available with C6, E2, E5, I5, K5, KB, EM, EP, and E8 product certifications.*

### Process connection style

Code	Description	
2B	½-14 NPT female (range 1-5 only)	★
2C <sup>(1)</sup>	G½ A EN837-1 male (range 1-4 only)	★
2F <sup>(2)</sup>	Coned and threaded, compatible with autoclave Type F-250-C (range 5-6 only)	
61 <sup>(3)(4)</sup>	Non-threaded instrument flange (range 1-4 only)	

- (1) *Wireless output (code X), not available with absolute pressure type or C-276 diaphragm. Not available with S1, S5, or WSM. Only available in G½ A EN837-1 male process connection (code 2C) with range 1-4, 316 stainless steel isolating diaphragm (code 2), silicone fill fluid (code 1), and housing (code P).*
- (2) *Not available with wireless output for range 5.*
- (3) *Not available with wireless output.*
- (4) *Only available with 316L stainless steel isolating diaphragm.*

### Isolating diaphragm

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.

Code	Isolating diaphragm	Process connection wetted parts material	
2	316L stainless steel	316L stainless steel	★
3	Alloy C-276	Alloy C-276	★
7	Gold-plated 316 stainless steel	316L stainless steel	

### Sensor fill fluid

Code	Description	
1	Silicone	★
2 <sup>(1)</sup>	Inert	

- (1) *Not available with wireless output.*

### Housing material

Code	Housing material	Conduit entry size	
A	Aluminum	½-14 NPT	★
B	Aluminum	M20 x 1.5	★
E	Aluminum, ultra low copper	½-14 NPT	
F	Aluminum, ultra low copper	M20 x 1.5	
J	Stainless steel	½-14 NPT	★
K	Stainless steel	M20 x 1.5	
P <sup>(1)</sup>	Engineered polymer	No conduit entries	★
D <sup>(2)</sup>	Aluminum	G½	
M <sup>(2)</sup>	Stainless steel	G½	

- (1) *Only available with wireless output. Not available with absolute pressure type, range 1-4.*

- (2) Transmitter conduit entry will be ½ NPT, and a ½ NPT to G½ thread adapter will be provided. Only available with product certifications options I1, I2, I3, I7, IA, IB, IM, KA, N1, N3, N7. Housing code D is also available with E4, and IG.

## Wireless options

Requires wireless output code X and engineered polymer housing code P.

### Wireless transmit rate, operating frequency, and protocol

Code	Description	
WA3	User configurable transmit rate, 2.4 GHz <b>WirelessHART</b> ®	★

### Antenna and SmartPower

Code	Description	
WP5	Internal antenna, compatible with Green Power Module (I.S. Power Module sold separately).	★

## Additional options

### Extended product warranty

Code	Description	
WR3	3-year limited warranty	★
WR5	5-year limited warranty	★

### Plantweb™ control functionality

Code	Description	
A01	FOUNDATION™ Fieldbus control function block suite	★

### Plantweb™ diagnostic functionality

Code	Description	
DA0	Loop Integrity HART® Diagnostic	★
D01	FOUNDATION™ Fieldbus Diagnostics Suite	★

### Integral assembly

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

Code	Description	
S5	Assemble to Rosemount 306 Integral Manifold	★

## Diaphragm seal assemblies

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

Code	Description	
S1	Assemble to one Rosemount 1199 seal	★

## Mounting bracket

Panel mounting bolts are not supplied.

Code	Description	
B4	Bracket for 2-in. pipe or panel mounting, all stainless steel	★

## Product certifications

Code	Description	
E8	ATEX Flameproof and Dust Certification	★
I1 <sup>(1)</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	TIIS Flame-proof	★
I4	TIIS Intrinsic Safety	★
E5	USA Explosion-proof, Dust Ignition-Proof	★
I5 <sup>(2)</sup>	USA Intrinsically Safe, Nonincendive	★
C6	Canada Explosion-proof, Dust Ignition-proof, Intrinsically Safe, and Division 2	★
E6	Canada Explosion-proof, Dust Ignition-proof, Division 2	★
I6	Canada Intrinsic Safety	★
K6	Canada 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)	★
IG	IECEX FISCO Intrinsically Safe; for FOUNDATION Fieldbus or PROFIBUS PA Protocols only	★
K5	USA Explosion-proof, Dust Ignition-Proof, Intrinsically Safe, and Division 2	★
E2	INMETRO Flameproof001	★
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	USA and Canada Explosion-proof, Dust Ignition Proof, Intrinsically Safe, and Division 2 (combination of K5 and C6)	★
KD	USA, Canada, and ATEX Explosion-proof, Intrinsically Safe (combination of K5, C6, I1, and E8)	★
KL <sup>(3)</sup>	USA, Canada, IECEx, ATEX Intrinsic Safety Combination	★
KS	USA, Canada, IECEx, ATEX Explosion Proof, Intrinsically Safe, Dust, Non-Incendive, Type-N, Div. 2	★
EP	Republic of Korea Flameproof	★
IP	Republic of Korea Intrinsic Safety	★
KP	Republic of Korea Flameproof, Intrinsic Safety	★

(1) Dust approval not applicable to output code X.

(2) Nonincendive certification not provided with output code (X).

(3) Only available with output code X.

## Drinking water approval

Not available with alloy 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).

Code	Description	
DW	NSF drinking water approval	★

## Shipboard approvals

Shipyard approvals are not available with wireless output (code X).

Code	Description	
SBS	American Bureau of Shipping	★
SBV <sup>(1)</sup>	Bureau Veritas (BV)	★
SDN	Det Norske Veritas	★
SLL <sup>(1)</sup>	Lloyds Register (LR)	★

(1) Only available with product certifications E7, E8, I1, I7, IA, K7, K8, KD, N1, N7

## SST tagging

Code	Description	
Y2	316 SST nameplate, top tag, wire-on tag, and fasteners	

## Custody transfer

The custody transfer option is only available with HART 4–20 mA output (code A).



Code	Description	
C5	Measurement Canada Accuracy Approval (limited availability depending on transmitter type and range; contact an Emerson representative).	★

### Calibration certification

Code	Description	
Q4	Calibration certificate	★
QG	Calibration certificate and GOST verification certificate	★
QP	Calibration certificate and tamper evident seal	★

### Material traceability certification

Code	Description	
Q8	Material traceability certification per EN 10204 3.1.B	★

### Positive material identification (PMI)

Code	Description	
Q76	PMI verification and certificate	★

### Quality certification for safety

The quality certification for safety is only available with HART® 4–20 mA output (code A).

Code	Description	
QT	Safety certified to IEC 61508 with certificate of FMEDA	★

### Configuration buttons

Code	Description	
D4 <sup>(1)</sup>	Analog zero and span	★
DZ <sup>(2)</sup>	Digital zero trim	★

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

(2) Only available with HART 4–20 mA output (output code A) and wireless output (output code X).

### Display and interface options

Code	Description	
M4 <sup>(1)</sup>	LCD display with LOI	★
M5	LCD display	★

(1) Only available with 4–20 mA HART output (code A) and PROFIBUS-PA (code W).

## Wireless sensor module

Code	Description	
WSM	Wireless stainless steel sensor module	★

## Transient protection

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

Code	Description	
T1	Transient protection terminal block	★

## Conduit plug

The conduit plug option is not available with wireless output (code X).

Code	Description	
DO	316 SST conduit plug	★

## Software configuration

Code	Description	
C1	Custom software configuration. (Completed Rosemount 3051 Wireless <a href="#">Configuration Data Sheet</a> required with order.)	★

## Low power output

Code	Description	
C2	0.8–3.2 Vdc output with digital signal based on HART Protocol (available with output code M only)	★

## Alarm levels

The alarm levels option is only available with HART 4–20 mA output (code A).

Code	Description	
C4 <sup>(1)</sup>	Analog output levels compliant with NAMUR recommendation NE 43, alarm high	★
CN <sup>(1)</sup>	Analog output levels compliant with NAMUR recommendation NE 43, alarm low	★
CR	Custom alarm and saturation signal levels, high alarm (requires C1 and Rosemount 3051 <a href="#">Configuration Data Sheet</a> )	★
CS	Custom alarm and saturation signal levels, low alarm (requires C1 and Rosemount 3051 <a href="#">Configuration Data Sheet</a> )	★
CT	Rosemount standard low alarm	★

(1) NAMUR-compliant operation is preset at the factory and can be changed to standard operation in the field for the standard Rosemount 3051.

## Pressure testing

Code	Description	
P1 <sup>(1)</sup>	Hydrostatic testing with certificate	★

(1) Not available with pressure range 0.

## Cleaning process area

Not valid with alternate process connection S5.

Code	Description
P2	Cleaning for special service
P3	Cleaning for < 1 ppm chlorine/fluoride

## Ground screw

The ground screw option is not available with wireless output (code X). The V5 option is not needed with the T1 option; external ground screw assembly is included with the T1 option.

Code	Description	
V5	External ground screw assembly	★

## High accuracy

Only available with standard Rosemount 3051. See [Specifications](#) section for more information.

Code	Description	
P8	0.04% accuracy to 5:1 turndown (range 2-4)	★

## Surface finish

Code	Description	
Q16	Surface finish certification for sanitary remote seals	★

## Toolkit total system performance reports

Code	Description	
QZ	Remote seal system performance calculation report	★

## Conduit electrical connector

The conduit electrical connector option is not available with wireless output (code X).

Code	Description	
GE	M12, 4-pin, male connector (eurofast®)	★
GM	A size mini, 4-pin, male connector (minifast®)	★

## NACE certificate

Note that NACE®-compliant wetted materials are required. Materials of construction must comply with recommendations per NACE MR0175/ISO 15156 for sour oil field production environments. Environmental limits apply to certain materials. Consult the latest standard for details. All selected materials must also conform to NACE MR0103 for sour refining environments.

Code	Description	
Q15	Certificate of Compliance to NACE MR0175/ISO 15156 for wetted materials	★
Q25	Certificate of Compliance to NACE MR0103 for wetted materials	★

## Cold temperature

This option is only available for pressure type D and G, pressure ranges 1–5 with 4–20 mA HART® protocol, and silicone sensor fill fluid. It is available with 316SST, C-276, gold plated SST isolating diaphragms, and with transmitter flange types 2, 7, and 0 (only for HJ, HK, and HL). BR5 and BR6 are not available with the following options: DC, DF, D7, D9, P9, Q16, GE, and GM. Consult factory for available approvals.

Code	Description	
BR5 <sup>(1)</sup>	–58 °F (–50 °C) cold temperature operation	★
BR6 <sup>(2)</sup>	–76 °F (–60 °C) cold temperature operation	★

(1) BR5 option is only available with approval codes C6, E2, E5, EM, I2, I5, I7, IM, IP, K5, KM, and KP.

(2) BR6 option is only available with approval codes EM, I2, I7, IM, IP, and KM.

## HART revision configuration (requires HART Protocol output code A)

HART® Revision 5 is the default HART output.

Code	Description	
HR5	Configured for HART Revision 5	★
HR7	Configured for HART Revision 7	★

## Wireless power accessory

This option is only available with output code X.

Code	Description	
HS	Hot swap power adapter for power module replacement	

## Rosemount 3051CF Flow Meter selection guide

Rosemount 3051CF Flow Meters combine the proven Rosemount 3051 Pressure Transmitter and the latest primary element technologies. All flow meters 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 Flow Meter



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 percent less permanent pressure loss compared to traditional orifice plate installations.

### Rosemount 3051CFC Compact Conditioning Flow Meter



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

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

### Rosemount 3051CFP Integral Orifice Flow Meter



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

- Best performance for small line sizes ½- to 1½-in. (15 to 40 mm).
- Precision honed pipe section and tight machining tolerances deliver higher installed performance.
- Reduces uncertainty by up to five percent compared to traditional orifice plate installation.

### Rosemount 3051CFA Annubar™ Flow Meter ordering information



The Rosemount 3051CFA Annubar Flow Meter uses 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 percent of flow rate accuracy.
- Available in 2- to 96-in. (50 to 2400 mm) line.
- Fully assembled and leak tested for out-of-the-box installation.
- The Loop Integrity Diagnostic continuously monitors the electrical loop to detect changes that compromise the integrity of the transmitted 4-20 mA output signal (Option Code DA0).
- LOI with straightforward menus and built-in configuration buttons (option code M4).

[VIEW PRODUCT >](#)

### Online product configurator

Many products are configurable online using our Product Configurator. Select the **Configure** button or visit our [website](#) to start. With this tool's built-in logic and continuous validation, you can configure your products more quickly and accurately.

### Specifications and options

See the Specifications and options section 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 the Material selection section for more information.

### Model codes

Model codes contain the details related to each product. Exact model codes will vary; an example of a typical model code is shown in Figure 3.

Figure 3: Model Code Example

**3051C D 2 X 2 2 M5 B4**

1            2

1. Required model components (choices available on most)
2. Additional options (variety of features and functions that may be added to products)

### Optimizing lead time

The starred offerings (★) represent the most common options and should be selected for best delivery. The non-starred offerings are subject to additional delivery lead time.

### Required model components

#### Model

Code	Description	
3051CFA	Annubar Flow Meter	★

#### Measurement type

Code	Description	
D	Differential pressure	★

#### Fluid type

Code	Description	
L	Liquid	★
G	Gas	★
S	Steam	★

#### Line size

Code	Description	
020	2-in. (50 mm)	★
025	2½-in. (63.5 mm)	★
030	3-in. (80 mm)	★
035	3½-in. (89 mm)	★
040	4-in. (100 mm)	★
050	5-in. (125 mm)	★

Code	Description	
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)	
160	16-in. (400 mm)	
180	18-in. (450 mm)	
200	20-in. (500 mm)	
240	24-in. (600 mm)	
300	30-in. (750 mm)	
360	36-in. (900 mm)	
420	42-in. (1066 mm)	
480	48-in. (1210 mm)	
600	60-in. (1520 mm)	
720	72-in. (1820 mm)	
780	78-in. (1950 mm)	
840	84-in. (2100 mm)	
900	90-in. (2250 mm)	
960	96-in. (2400 mm)	

### Pipe I.D. range

All pipe I.D. ranges are available for both measurement types D and 1-7.

Code	Description	
Z	Specify pipe I.D. and wall thickness	★

### Pipe material/mounting assembly material

All materials are available for both measurement types D and 1-7.

Code	Description	
C	CS (A105)	★
S	316 SST	★
0	No mounting (customer supplied)	★
G	Chrome-moly grade F-11	
N	Chrome-moly grade F-22	
J	Chrome-moly grade F-91	



**Piping orientation**

Code	Description	
H	Horizontal piping	★
D	Vertical piping with downward flow	★
U	Vertical piping with upward flow	★

**Annubar type**

Code	Description	
P	Pak-Lok	★
F	Flanged with opposite side support	★
L	Flange-Lok	
G	Gear-drive Flo-Tap	
M	Manual Flo-Tap	

**Sensor material**

Code	Description	
S	316 SST	★
H	Alloy C-276	

**Sensor size**

Code	Description	
1	Sensor size 1 — line sizes 2- to 8-in. (50 to 200 mm)	★
2	Sensor size 2 — line sizes 6- to 96-in. (150 to 2400 mm)	★
3	Sensor size 3 — line sizes greater than 12-in. (300 mm)	★

**Mounting type**

Code	Description	
T1	Compression or threaded connection	★
A1	Class 150 RF ASME B16.5	★
A3	Class 300 RF ASME B16.5	★
A6	Class 600 RF ASME B16.5	★
A9 <sup>(1)</sup>	Class 900 RF ASME B16.5	
AF <sup>(1)</sup>	Class 1500 RF ASME B16.5	
AT <sup>(1)</sup>	Class 2500 RF ASME B16.5	
D1	PN16 EN-1092-1 RF	★

Code	Description	
D3	PN40 EN-1092-1 RF	★
D6	PN100 EN-1092-1 RF	★
R1	Class 150 RTJ ASME B16.5	
R3	Class 300 RTJ ASME B16.5	
R6	Class 600 RTJ ASME B16.5	
R9 <sup>(1)</sup>	Class 900 RTJ ASME B16.5	
RF <sup>(1)</sup>	Class 1500 RTJ ASME B16.5	
RT <sup>(1)</sup>	Class 2500 RTJ ASME B16.5	

(1) Available in remote mount applications only.

**Opposite side support or packing gland**

Code	Description	
0	No opposite side support or packing gland (required for Pak-Lok and Flange-Lok models)	★

**Opposite side support - required for flanged models**

Code	Description	
C	NPT threaded opposite support assembly – extended tip	★
D	Welded opposite support assembly – extended tip	★

**Packing gland - required for Flo-Tap models**

Code	Packing gland material	Rod material	Packing material	
J <sup>(1)</sup>	SST packing gland/cage nipple	CS	PTFE	
K <sup>(1)</sup>		SST	PTFE	
L <sup>(1)</sup>		CS	Graphite	
N <sup>(1)</sup>		SST	Graphite	
R	Alloy C-276 packing gland/cage nipple	SST	Graphite	

(1) The cage nipple is constructed of Rosemount 304 SST.

**Isolation valve for Flo-Tap models**

Code	Description	
0	Not applicable or customer supplied	★
1	Gate valve, CS	
2	Gate valve, SST	
5	Ball valve, CS	
6	Ball valve, SST	

**Temperature measurement**

Code	Description	
T	Integral RTD – not available with flanged model greater than Class 600	★
0	No temperature sensor	★
R	Remote thermowell and RTD	

**Transmitter connection platform**

Code	Description	
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 (½-in. NPT)	★
6	Direct-mount, high temperature 5-valve manifold – not available with flanged model greater than Class 600	
8	Remote-mount SW connections (½-in.)	

**Differential pressure range**

Code	Description	
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 2.49 bar)	★

**Transmitter output**

Code	Description	
A <sup>(1)</sup>	4–20 mA with digital signal based on HART® Protocol	★
F	FOUNDATION™ Fieldbus Protocol	★
W <sup>(2)</sup>	PROFIBUS® PA Protocol	★
X <sup>(3)</sup>	Wireless (requires wireless options and engineered polymer housing)	★
M <sup>(4)</sup>	Low-power, 1–5 Vdc with digital signal based on HART Protocol	

(1) HART Revision 5 is the default HART output.

(2) For local addressing and configuration, M4 (LOI) is required. Not available with product certification codes E4, EM, EP, I6, IM, KD, KL, KM, KP, KS, N3.

(3) This option is only available with intrinsically safe approvals.

(4) Only available with C6, E2, E5, I5, K5, KB, EM, EP, and E8 product certifications.

**Housing material**

Code	Description	Conduit entry size	
A	Aluminum	½–14 NPT	★
B	Aluminum	M20 x 1.5	★
E	Aluminum, ultra low copper	½–14 NPT	★
F	Aluminum, ultra low copper	M20 x 1.5	★

J	SST	½–14 NPT	★
K	SST	M20 x 1.5	★
P <sup>(1)</sup>	Engineered polymer	No conduit entries	★
D <sup>(2)</sup>	Aluminum	G½	
M <sup>(2)</sup>	SST	G½	

(1) Only available with wireless output (code X).

(2) Transmitter conduit entry will be ½ NPT and a ½ NPT to G½ thread adapter will be provided. This option is only available with product certifications options I1, I2, I3, I7, IA, IB, IM, KA, N1, N3, N7. Housing code D is also available with E4, and IG.

**Transmitter performance class**

Code	Description	
1	1.75 percent flow rate accuracy, 8:1 flow turndown, 5-year stability	★

**Wireless options**

**Wireless transmit rate, operating frequency, and protocol**

Code	Description	
WA3	User configurable transmit rate, 2.4 GHz WirelessHART	★

**Antenna and SmartPower™**

Code	Description	
WP5	Internal antenna, compatible with Green Power Module (I.S. Power Module sold separately)	★

**Additional options**

**Extended product warranty**

Code	Description	
WR3	3-year limited warranty	★
WR5	5-year limited warranty	★

**Pressure testing**

These options apply to assembled flow meter only, mounting not tested.

Code	Description	
P1	Hydrostatic testing with certificate	
PX	Extended hydrostatic testing	

**Special cleaning**

Code	Description	
P2	Cleaning for special processes	

**Material testing**

Code	Description	
V1	Dye penetrant exam	

**Material examination**

Code	Description	
V2	Radiographic examination	

**Flow calibration**

Code	Description	
W1	Flow calibration (Average K)	

**Special inspection**

Code	Description	
QC1	Visual and dimensional inspection with certificate	★
QC7	Inspection and performance certificate	★

**Surface finish**

This surface finish option is auto selected by the sizing tool as necessary.

Code	Description	
RL	Surface finish for low pipe Reynolds number in gas and steam	★
RH	Surface finish for high pipe Reynolds number in liquid	★

**Material traceability certification**

Instrument connections for remote mount options and isolation valves for Flo-Tap models are not included in the Material Traceability Certification.

Code	Description	
Q8	Material Traceability Certification per EN 10474:2004 3.1	★

**Positive material identification (PMI)**

Code	Description	
Q76	PMI verification and certificate	★

**Code conformance**

This option is not available with transmitter connection platform 6.

Code	Description	
J2	ANSI/ASME B31.1	

Code	Description	
J3	ANSI/ASME B31.3	

#### Materials conformance

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.

Code	Description	
J5	NACE MR-0175/ISO 15156	

#### Country certification

Code	Description	
J6	European Pressure Directive (PED)	★
J1	Canadian registration	
J8	Chinese Certificate of Special Equipment Type Test	

#### Installed in flanged pipe spool section

Code	Description	
H3	Class 150 flanged connection with Rosemount standard length and schedule	
H4	Class 300 flanged connection with Rosemount standard length and schedule	
H5	Class 600 flanged connection with Rosemount standard length and schedule	

#### Instrument connections for remote mount options

Code	Description	
G2	Needle valves, SST	★
G6	OS&Y gate valves, SST	★
G1	Needle valves, CS	
G3	Needle valves, alloy C-276	
G5	OS&Y gate valves, CS	
G7	OS&Y gate valves, alloy C-276	

#### Special shipment

Code	Description	
Y1	Mounting hardware shipped separately	★

**Special dimensions**

Code	Description	
VM	Variable mounting	
VT	Variable tip	
VS	Variable length spool section	

**Plantweb™ control functionality**

Code	Description	
A01	FOUNDATION™ Fieldbus control function block suite	★

**Plantweb™ diagnostic functionality**

Code	Description	
DA0	Loop Integrity HART® Diagnostic	★
D01	FOUNDATION™ Fieldbus Diagnostics Suite	★

**Product certifications**

Code	Description	
E8	ATEX Flameproof and Dust Certification	★
I1 <sup>(1)</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	TIIS Flame-proof	★
I4	TIIS Intrinsic Safety	★
E5	USA Explosion-proof, Dust Ignition-Proof	★
I5 <sup>(2)</sup>	USA Intrinsically Safe, Nonincendive	★
C6	Canada Explosion-proof, Dust Ignition-proof, Intrinsically Safe, and Division 2	★
E6	Canada Explosion-proof, Dust Ignition-proof, Division 2	★
I6	Canada Intrinsic Safety	★
K6	Canada 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)	★
IG	IECEX FISCO Intrinsically Safe; for FOUNDATION Fieldbus or PROFIBUS PA Protocols only	★
K5	USA Explosion-proof, Dust Ignition-Proof, Intrinsically Safe, and Division 2	★
E2	INMETRO Flameproof001	★

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	USA and Canada Explosion-proof, Dust Ignition Proof, Intrinsically Safe, and Division 2 (combination of K5 and C6)	★
KD	USA, Canada, and ATEX Explosion-proof, Intrinsically Safe (combination of K5, C6, I1, and E8)	★
KL <sup>(3)</sup>	USA, Canada, IECEx, ATEX Intrinsic Safety Combination	★
KS	USA, Canada, IECEx, ATEX Explosion Proof, Intrinsically Safe, Dust, Non-Incendive, Type-N, Div. 2	★
EP	Republic of Korea Flameproof	★
IP	Republic of Korea Intrinsic Safety	★
KP	Republic of Korea Flameproof, Intrinsic Safety	★

(1) *Dust approval not applicable to output code X.*

(2) *Nonincendive certification not provided with output code (X).*

(3) *Only available with output code X.*

### Sensor fill fluid and O-ring options

Code	Description	
L1 <sup>(1)</sup>	Inert sensor fill fluid (silicone fill fluid is standard)	★
L2	Graphite-filled (PTFE) O-ring	★
LA <sup>(1)</sup>	Inert sensor fill fluid and graphite-filled (PTFE) O-ring	★

(1) *Not available with wireless output code X.*

### Shipboard approvals

These options are not available with wireless output code X.

Code	Description	
SBS	American Bureau of Shipping	★
SLL <sup>(1)</sup>	Lloyds Register (LR)	

(1) *Only available with Product certifications E7, E8, I1, I7, IA, K7, K8, KD, N1, and N7.*

### Display and interface options

Code	Description	
M4 <sup>(1)</sup>	LCD display with LOI	★
M5	LCD display	★

(1) *Not available with FOUNDATION Fieldbus (output code F) or Wireless (output code X) or low power (output code M).*



**Transmitter calibration certification**

Code	Description	
Q4	Calibration certificate for transmitter	★

**Quality certification for safety**

These options are only available with 4–20 mA HART (output code A).

Code	Description	
QT	Safety certified to IEC 61508 with certificate of FMEDA	★

**Transient protection**

This option is not available with wireless output code X. The T1 option is not needed with FISCO Product Certifications; transient protection is included with the FISCO Product Certification codes IA, IB, and IE.

Code	Description	
T1	Transient terminal block	★

**Manifold for remote mount option**

Code	Description	
F2	3-valve manifold, SST	★
F6	5-valve manifold, SST	★
F3	3-valve manifold, alloy C-276	
F7	5-valve manifold, alloy C-276	

**Lower power output**

Code	Description	
C2	0.8–3.2 Vdc output with digital signal based on HART® Protocol (available with output code M only)	

**Alarm levels**

These options are only available with 4–20 mA HART (output code A).

Code	Description	
C4 <sup>(1)</sup>	NAMUR alarm and saturation levels, high alarm	★
CN <sup>(1)</sup>	NAMUR alarm and saturation levels, low alarm	★
CR	Custom alarm and saturation signal levels, high alarm (requires C1 and Rosemount 3051 <a href="#">Configuration Data Sheet</a> )	★
CS	Custom alarm and saturation signal levels, low alarm (requires C1 and Rosemount 3051 <a href="#">Configuration Data Sheet</a> )	★
CT	Rosemount standard low alarm	★

(1) NAMUR-compliant operation is preset at the factory and can be changed to standard operation in the field for the standard Rosemount 3051.

**Configuration buttons**

Code	Description	
D4 <sup>(1)</sup>	Analog zero and span	★
DZ <sup>(2)</sup>	Digital zero trim	★

(1) Only available with 4–20 mA HART® (output code A).  
 (2) Only available with 4–20 mA HART (output code A) and Wireless (output code X).

**Ground screw**

This option is not available with wireless output code X. The V5 option is not needed with the T1 option; external ground screw assembly is included with the T1 option.

Code	Description	
V5	External ground screw assembly	★

**HART® Revision configuration**

These options require HART Protocol output code A. 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.

Code	Description	
HR5	Configured for HART Revision 5	★
HR7	Configured for HART Revision 7	★

**Rosemount 3051CFC Compact Flow Meter ordering information**



Rosemount 3051CFC Compact Flow Meters 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 percent of flow rate accuracy.
- Available in ½- to 12-in. (15 to 300 mm) line sizes.
- Fully assembled and leak tested for out-of-the-box installation.
- The Loop Integrity Diagnostic continuously monitors the electrical loop to detect changes that compromise the integrity of the transmitted 4-20 mA output signal (Option Code DA0).
- LOI with straightforward menus and built-in configuration buttons (option code M4).

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### Specifications and options

See the Specifications and options section 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 the Material selection section for more information.

### Model codes

Model codes contain the details related to each product. Exact model codes will vary; an example of a typical model code is shown in Figure 4.

Figure 4: Model Code Example

**3051C D 2 X 2 2 M5 B4**

**1            2**

1. Required model components (choices available on most)
2. Additional options (variety of features and functions that may be added to products)

### Optimizing lead time

The starred offerings (★) represent the most common options and should be selected for best delivery. The non-starred offerings are subject to additional delivery lead time.

### Required model components

#### Model

Code	Description	
3051CFC	Compact flow meter	★

#### Measurement type

Code	Description	
D	Differential pressure	★

#### Primary element technology

Code	Description	
A	Annubar averaging pitot tube	★
C	Conditioning orifice plate	★
P	Orifice plate	★

#### Material type

Code	Description	
S	316 SST	★

**Line size**

Code	Product description	
005 <sup>(1)</sup>	½-in. (15 mm)	★
010 <sup>(1)</sup>	1-in. (25 mm)	★
015 <sup>(1)</sup>	1½-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>(2)</sup>	10-in. (250 mm)	★
120 <sup>(2)</sup>	12-in. (300 mm)	★

(1) Available with Primary Element Technology P only.

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

**Primary element type**

Code	Description	
N000	Rosemount Annubar sensor size 1	★
N040	0.40 beta ratio	★
N050	0.50 beta ratio	
N065 <sup>(1)</sup>	0.65 beta ratio	★

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

**Temperature measurement**

Code	Description	
T <sup>(1)</sup>	Integral temperature	
0	No temperature sensor	★
R	Remote thermowell and RTD	

(1) Available with primary element technology A only.

**Transmitter connection platform**

Code	Description	
3	Direct-mount	★
7	Remote-mount, NPT connections	★

**Differential pressure range**

Code	Description	
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)	★

Code	Description	
3	0 to 1000 in H <sub>2</sub> O (0 to 2.49 bar)	★

### Transmitter output

Code	Description	
A <sup>(1)</sup>	4–20 mA with digital signal based on HART® Protocol	★
F	FOUNDATION™ Fieldbus Protocol	★
W <sup>(2)</sup>	PROFIBUS® PA Protocol	★
X <sup>(3)</sup>	Wireless (requires wireless options and engineered polymer housing)	★
M <sup>(4)</sup>	Low-power, 1–5 Vdc with digital signal based on HART Protocol	

(1) HART Revision 5 is the default HART output.

(2) For local addressing and configuration, M4 (LOI) is required. Not available with product certification codes E4, EM, EP, I6, IM, KD, KL, KM, KP, KS, N3.

(3) This option is only available with intrinsically safe approvals.

(4) Only available with C6, E2, E5, I5, K5, KB, EM, EP, and E8 product certifications.

### Housing material

Code	Description	Conduit entry size	
A	Aluminum	½–14 NPT	★
B	Aluminum	M20 x 1.5	★
E	Aluminum, ultra low copper	½–14 NPT	★
F	Aluminum, ultra low copper	M20 x 1.5	★
J	SST	½–14 NPT	★
K	SST	M20 x 1.5	★
P <sup>(1)</sup>	Engineered polymer	No conduit entries	★
D <sup>(2)</sup>	Aluminum	G½	
M <sup>(2)</sup>	SST	G½	

(1) Only available with wireless output (code X).

(2) Transmitter conduit entry will be ½ NPT and a ½ NPT to G½ thread adapter will be provided. This option is only available with product certifications options I1, I2, I3, I7, IA, IB, IM, KA, N1, N3, N7. Housing code D is also available with E4, and IG.

### Transmitter performance class

Code	Description	
1	Up to ±1.75% flow rate accuracy, 8:1 flow turndown, 5-year stability	★

### Wireless options

These options require wireless output code X and Engineered Polymer Housing code P.

#### Wireless transmit rate, operating frequency, and protocol

Code	Description	
WA3	User configurable transmit rate, 2.4 GHz WirelessHART®	★

**Antenna and SmartPower**

Code	Description	
WP5	Internal antenna, compatible with Green Power Module (I.S. Power Module sold separately)	★

**Additional options****Extended product warranty**

Code	Description	
WR3	3-year limited warranty	★
WR5	5-year limited warranty	★

**Installation accessories**

Code	Description	
AB	ANSI alignment ring (Class 150) (only required for 10-in. (250 mm) and 12-in. (300 mm) line sizes)	★
AC	ANSI alignment ring (Class 300) (only required for 10-in. (250 mm) and 12-in. (300 mm) line sizes)	★
AD	ANSI alignment ring (Class 600) (only required for 10-in. (250 mm) and 12-in. (300 mm) 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)	

**Remote adapters**

Code	Description	
FE	Flange adapters 316 SST (½-in NPT)	★

**High temperature application**

Code	Description	
HT	Graphite valve packing ( $T_{max} = 850$ °F)	

**Flow calibration**

Available with Primary Element Technology C only.

Code	Description	
WC	Flow calibration, 3 pt, conditioning orifice option C (all pipe schedules)	
WD <sup>(1)</sup>	Flow calibration, 10 pt, conditioning option C (all schedules), Annubar option A (schedule 40)	

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

**Pressure testing**

Code	Description
P1	Hydrostatic testing with certificate

**Special cleaning**

Available with Primary Element Technology C or P only.

Code	Description
P2	Cleaning for special processes

**Special inspection**

Code	Description
QC1	Visual and dimensional inspection with certificate
QC7	Inspection and performance certificate

**Transmitter calibration certification**

Code	Description
Q4	Calibration certificate for transmitter

**Quality certification for safety**

Only available with HART® 4–20 mA output code A.

Code	Description
QT	Safety certified to IEC 61508 with certificate of FMEDA

**Material traceability certification**

Code	Description
Q8	Material traceability certification per EN 10204:2004 3.1

**Positive material identification (PMI)**

Code	Description
Q76	PMI verification and certificate

**Code conformance**

Code	Description
J2	ANSI/ASME B31.1
J3	ANSI/ASME B31.3
J4	ANSI/ASME B31.8

**Materials conformance**

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.

Code	Description
J5	NACE MR-0175/ISO 15156

**Country certification**

Code	Description
J1	Canadian registration

**Product certifications**

Code	Description	
E8	ATEX Flameproof and Dust Certification	★
I1 <sup>(1)</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	TIIS Flame-proof	★
I4	TIIS Intrinsic Safety	★
E5	USA Explosion-proof, Dust Ignition-Proof	★
I5 <sup>(2)</sup>	USA Intrinsically Safe, Nonincendive	★
C6	Canada Explosion-proof, Dust Ignition-proof, Intrinsically Safe, and Division 2	★
E6	Canada Explosion-proof, Dust Ignition-proof, Division 2	★
I6	Canada Intrinsic Safety	★
K6	Canada 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)	★
IG	IECEX FISCO Intrinsically Safe; for FOUNDATION Fieldbus or PROFIBUS PA Protocols only	★
K5	USA Explosion-proof, Dust Ignition-Proof, Intrinsically Safe, and Division 2	★
E2	INMETRO Flameproof001	★
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	USA and Canada Explosion-proof, Dust Ignition Proof, Intrinsically Safe, and Division 2 (combination of K5 and C6)	★
KD	USA, Canada, and ATEX Explosion-proof, Intrinsically Safe (combination of K5, C6, I1, and E8)	★
KL <sup>(3)</sup>	USA, Canada, IECEx, ATEX Intrinsic Safety Combination	★
KS	USA, Canada, IECEx, ATEX Explosion Proof, Intrinsically Safe, Dust, Non-Incendive, Type-N, Div. 2	★
EP	Republic of Korea Flameproof	★
IP	Republic of Korea Intrinsic Safety	★
KP	Republic of Korea Flameproof, Intrinsic Safety	★

- (1) *Dust approval not applicable to output code X.*
- (2) *Nonincendive certification not provided with output code (X).*
- (3) *Only available with output code X.*

**Sensor fill fluid and O-ring options**

Code	Description	
L1 <sup>(1)</sup>	Inert sensor fill fluid	★
L2	Graphite-filled (PTFE) O-ring	★
LA <sup>(1)</sup>	Inert sensor fill fluid and graphite-filled (PTFE) O-ring	★

- (1) *Not available with Wireless output code X.*

**Shipboard approvals**

Not available with wireless output code X.

Code	Description	
SBS	American Bureau of Shipping	★
SLL <sup>(1)</sup>	Lloyds Register (LR)	★

- (1) *Only available with product certifications E7, E8, I1, I7, IA, K7, K8, KD, N1, and N7.*

**Display and interface options**

Code	Description	
M4 <sup>(1)</sup>	LCD display with LOI	★
M5	LCD display	★

- (1) *Not available with output code F- FOUNDATION Fieldbus or Wireless output code X or low power (output code M).*

**Transient protection**

The T1 option is not needed with FISCO Product Certifications; transient protection is included with the FISCO Product Certification code IA, IB, and IE.

Code	Description	
T1	Transient terminal block	★

**Manifold for remote mount option**

Code	Description	
F2	3-valve manifold, SST	★
F6	5-Valve Manifold, SST	★

**Plantweb™ control functionality**

Code	Description	
A01	FOUNDATION™ Fieldbus control function block suite	★

**Plantweb™ diagnostic functionality**

Code	Description	
DA0	Loop Integrity HART® Diagnostic	★
D01	FOUNDATION™ Fieldbus Diagnostics Suite	★

**Low power output**

Code	Description	
C2	0.8–3.2 Vdc output with digital signal based on HART Protocol (available with output code M only)	

**Alarm levels**

Only available with HART 4–20 mA output code A.

Code	Description	
C4 <sup>(1)</sup>	NAMUR alarm and saturation levels, high alarm	★
CN <sup>(1)</sup>	NAMUR alarm and saturation levels, low alarm	★
CR	Custom alarm and saturation signal levels, high alarm (requires C1 and Rosemount 3051 <a href="#">Configuration Data Sheet</a> )	★
CS	Custom alarm and saturation signal levels, low alarm (requires C1 and Rosemount 3051 <a href="#">Configuration Data Sheet</a> )	★
CT	Rosemount standard low alarm	★

(1) NAMUR-compliant operation is preset at the factory and can be changed to standard operation in the field for the standard Rosemount 3051.

**Ground screw**

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

Code	Description	
V5	External ground screw assembly	★

**Configuration buttons**

Code	Description	
D4 <sup>(1)</sup>	Analog zero and span	★
DZ <sup>(2)</sup>	Digital zero trim	★

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

(2) Only available with 4–20 mA HART output code A and wireless output code X.

**HART® Revision Configuration (requires HART Protocol output code A)**

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.

Code	Description	
HR5	Configured for HART Revision 5	★
HR7	Configured for HART Revision 7	★

**Rosemount 3051CFP Integral Orifice Flow Meter ordering information**



Rosemount 3051CFP Integral Orifice Flow Meters enable highly accurate flow measurement in small line sizes. Integral Orifice Flow Meters use 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 percent of flow rate accuracy.
- Available in ½- to 1½-in. (15 - 40 mm) line sizes.
- Fully assembled and leak tested for out-of-the-box installation.
- The Loop Integrity Diagnostic continuously monitors the electrical loop to detect changes that compromise the integrity of the transmitted 4-20 mA output signal (Option Code DA0).
- LOI with straightforward menus and built-in configuration buttons (option code M4).

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Many products are configurable online using our Product Configurator. Select the **Configure** button or visit our [website](#) to start. With this tool's built-in logic and continuous validation, you can configure your products more quickly and accurately.

**Specifications and options**

See the Specifications and options section 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 the Material selection section for more information.

**Model codes**

Model codes contain the details related to each product. Exact model codes will vary; an example of a typical model code is shown in [Figure 5](#).

**Figure 5: Model Code Example**

**3051C D 2 X 2 2 M5 B4**

1            2

1. Required model components (choices available on most)

2. Additional options (variety of features and functions that may be added to products)

## Optimizing lead time

The starred offerings (★) represent the most common options and should be selected for best delivery. The non-starred offerings are subject to additional delivery lead time.

## Required model components

### Model

Code	Description	
3051CFP	Integral Orifice Flow Meter	★

### Measurement type

Code	Product description	
D	Differential pressure	★

### Body material

Code	Description	
F	316 SST, 4-bolt	★

### Line size

Code	Description	
005	½-in. (15 mm)	★
010	1-in. (25 mm)	★
015	1½-in. (40 mm)	★

### Process connection

Code	Description	
T1	NPT female body (not available with remote thermowell and RTD)	★
S1 <sup>(1)</sup>	Socket weld body (not available with remote thermowell and RTD)	★
P1	Pipe ends: NPT threaded	★
P2	Pipe ends: beveled	★
D1	Pipe ends: flanged, PN16 EN-1092-1 RF, slip-on	★
D2	Pipe ends: flanged, PN40 EN-1092-1 RF, slip-on	★
D3	Pipe ends: flanged, PN100 EN-1092-1 RF, slip-on	★
W1	Pipe ends: flanged, RF, Class 150 RF ASME B16.5, weld-neck	★
W3	Pipe ends: flanged, RF, Class 300 RF ASME B16.5, weld-neck	★
W6	Pipe ends: flanged, RF, Class 600 RF ASME B16.5, weld-neck	★

Code	Description	
W9	Pipe ends: flanged, Class 900 RF ASME B16.5, weld-neck	
A1	Pipe ends: flanged, RF, Class 150 RF ASME B16.5, slip-on	
A3	Pipe ends: flanged, RF, Class 300 RF ASME B16.5, slip-on	
A6	Pipe ends: flanged, RF, Class 600 RF ASME B16.5, slip-on	
R1	Pipe ends: flanged, RTJ, Class 150 RTJ ASME B16.5, slip-on	
R3	Pipe ends: flanged, RTJ, Class 300 RTJ ASME B16.5, slip-on	
R6	Pipe ends: flanged, RTJ, Class 600 RTJ ASME B16.5, slip-on	
R9	Pipe ends: flanged, Class 900 RTJ ASME B16.5, weld-neck	

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

### Orifice plate material

Code	Description	
S	316 SST	★
H	Alloy C-276	
M	Alloy 400	

### Bore size option

Code	Description	
0066	0.066-in. (1.68 mm) for ½-in. pipe	★
0109	0.109-in. (2.77 mm) for ½-in. pipe	★
0160	0.160-in. (4.06 mm) for ½-in. pipe	★
0196	0.196-in. (4.98 mm) for ½-in. pipe	★
0260	0.260-in. (6.60 mm) for ½-in. pipe	★
0340	0.340-in. (8.64 mm) for ½-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 1½-in. pipe	★
0376	0.376-in. (9.55 mm) for 1½-in. pipe	★
0512	0.512-in. (13.00 mm) for 1½-in. pipe	★
0748	0.748-in. (19.00 mm) for 1½-in. pipe	★
1022	1.022-in. (25.96 mm) for 1½-in. pipe	★
1184	1.184-in. (30.07 mm) for 1½-in. pipe	★

Code	Description	
0010	0.010-in. (0.25 mm) for ½-in. pipe	
0014	0.014-in. (0.36 mm) for ½-in. pipe	
0020	0.020-in. (0.51 mm) for ½-in. pipe	
0034	0.034-in. (0.86 mm) for ½-in. pipe	

### Transmitter connection platform

Code	Description	
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	

### Differential pressure range

Code	Description	
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 2.49 bar)	★

### Transmitter output

Code	Description	
A <sup>(1)</sup>	4–20 mA with digital signal based on HART® Protocol	★
F	FOUNDATION™ Fieldbus Protocol	★
W <sup>(2)</sup>	PROFIBUS® PA Protocol	★
X <sup>(3)</sup>	Wireless (requires wireless options and engineered polymer housing)	★
M <sup>(4)</sup>	Low-power, 1–5 Vdc with digital signal based on HART Protocol	

(1) HART Revision 5 is the default HART output.

(2) For local addressing and configuration, M4 (LOI) is required. Not available with product certification codes E4, EM, EP, I6, IM, KD, KL, KM, KP, KS, N3.

(3) This option is only available with intrinsically safe approvals.

(4) Only available with C6, E2, E5, I5, K5, KB, EM, EP, and E8 product certifications.

**Housing material**

Code	Description	Conduit entry size	
A	Aluminum	½–14 NPT	★
B	Aluminum	M20 x 1.5	★
E	Aluminum, ultra low copper	½–14 NPT	★
F	Aluminum, ultra low copper	M20 x 1.5	★
J	SST	½–14 NPT	★
K	SST	M20 x 1.5	★
P <sup>(1)</sup>	Engineered polymer	No conduit entries	★
D <sup>(2)</sup>	Aluminum	G½	
M <sup>(2)</sup>	SST	G½	

(1) Only available with wireless output (code X).

(2) Transmitter conduit entry will be ½ NPT and a ½ NPT to G½ thread adapter will be provided. This option is only available with product certifications options I1, I2, I3, I7, IA, IB, IM, KA, N1, N3, N7. Housing code D is also available with E4, and IG.

**Transmitter performance class**

Code	Description	
1	Up to ±1.75% flow rate accuracy, 8:1 flow turndown, 5-year stability	★

**Wireless options**

These options require wireless output code X and engineered polymer housing code P.

**Wireless transmit rate, operating frequency, and protocol**

Code	Description	
WA3	User configurable transmit rate, 2.4 GHz WirelessHART®	★

**Antenna and SmartPower**

Code	Description	
WP5	Internal antenna, compatible with Green Power Module (I.S. Power Module sold separately)	★

**Additional options****Extended product warranty**

Code	Description	
WR3	3-year limited warranty	★
WR5	5-year limited warranty	★

**Transmitter body/bolt material**

Code	Description	
GT	High temperature (850 °F/454 °C)	

**Temperature sensor**

Thermowell material is the same as the body material.

Code	Description	
RT	Thermowell and RTD	★

**Optional connection**

Code	Description	
G1	DIN 19213 transmitter connection	

**Pressure testing**

This option does not apply to process connection codes T1 and S1.

Code	Description	
P1	Hydrostatic testing with certificate	

**Special cleaning**

Code	Description	
P2	Cleaning for special services	

**Material testing**

Code	Description	
V1	Dye penetrant exam	

**Material examination**

Code	Description	
V2	Radiographic examination	

**Flow calibration**

This option is not available for bore sizes 0010, 0014, 0020, 0034, 0066, or 0109.

Code	Description	
WD	Discharge coefficient verification	

**Special inspection**

Code	Description	
QC1	Visual and dimensional inspection with certificate	★
QC7	Inspection and performance certificate	★



**Material traceability certification**

Code	Description	
Q8	Material traceability certification per EN 10204:2004 3.1	★

**Positive material identification (PMI)**

Code	Description	
Q76	PMI verification and certificate	★

**Code conformance**

This option is not available with DIN Process Connection codes D1, D2, or D3.

Code	Description	
J2	ANSI/ASME B31.1	
J3	ANSI/ASME B31.3	
J4	ANSI/ASME B31.8	

**Materials conformance**

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.

Code	Description	
J5	NACE MR-0175/ISO 15156	

**Country certification**

Code	Description	
J1	Canadian registration	★
J6	European Pressure Directive (PED)	★

**Transmitter calibration certification**

Code	Description	
Q4	Calibration certificate for transmitter	★

**Quality certification for safety**

This option is only available with HART® 4-20 mA output (option code A).

Code	Description	
QT	Safety certified to IEC 61508 with certificate of FMEDA	★

## Product certifications

Code	Description	
E8	ATEX Flameproof and Dust Certification	★
I1 <sup>(1)</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	TIIS Flame-proof	★
I4	TIIS Intrinsic Safety	★
E5	USA Explosion-proof, Dust Ignition-Proof	★
I5 <sup>(2)</sup>	USA Intrinsically Safe, Nonincendive	★
C6	Canada Explosion-proof, Dust Ignition-proof, Intrinsically Safe, and Division 2	★
E6	Canada Explosion-proof, Dust Ignition-proof, Division 2	★
I6	Canada Intrinsic Safety	★
K6	Canada 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)	★
IG	IECEX FISCO Intrinsically Safe; for FOUNDATION Fieldbus or PROFIBUS PA Protocols only	★
K5	USA Explosion-proof, Dust Ignition-Proof, Intrinsically Safe, and Division 2	★
E2	INMETRO Flameproof001	★
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	USA and Canada Explosion-proof, Dust Ignition Proof, Intrinsically Safe, and Division 2 (combination of K5 and C6)	★
KD	USA, Canada, and ATEX Explosion-proof, Intrinsically Safe (combination of K5, C6, I1, and E8)	★
KL <sup>(3)</sup>	USA, Canada, IECEX, ATEX Intrinsic Safety Combination	★
KS	USA, Canada, IECEX, ATEX Explosion Proof, Intrinsically Safe, Dust, Non-Incendive, Type-N, Div. 2	★
EP	Republic of Korea Flameproof	★
IP	Republic of Korea Intrinsic Safety	★

KP	Republic of Korea Flameproof, Intrinsic Safety	★
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- (1) Dust approval not applicable to output code X.
- (2) Nonincendive certification not provided with output code (X).
- (3) Only available with output code X.

**Sensor fill fluid and O-ring options**

Code	Description	
L1 <sup>(1)</sup>	Inert sensor fill fluid (silicone fill fluid is standard)	★
L2	Graphite-filled (PTFE) O-ring	★
LA <sup>(1)</sup>	Inert sensor fill fluid and graphite-filled (PTFE) O-ring	★

- (1) Not available with wireless output code X.

**Shipboard approvals**

These options are not available with wireless output code X.

Code	Description	
SBS	American Bureau of Shipping	★
SLL <sup>(1)</sup>	Lloyds Register (LR)	

- (1) Only available with Product certifications E7, E8, I1, I7, IA, K7, K8, KD, N1, and N7.

**Display and interface options**

Code	Description	
M4 <sup>(1)</sup>	LCD display with LOI	★
M5	LCD display	

- (1) Not available with output code F- FOUNDATION Fieldbus or Wireless output code X or low power (output code M).

**Transient protection**

The T1 option is not needed with FISCO Product Certifications; transient protection is included with the FISCO Product Certification code IA, IB, and IE.

Code	Description	
T1	Transient terminal block	★

**Plantweb™ control functionality**

Code	Description	
A01	FOUNDATION™ Fieldbus control function block suite	★

**Plantweb™ diagnostic functionality**

Code	Description	
DA0	Loop Integrity HART® Diagnostic	★
D01	FOUNDATION™ Fieldbus Diagnostics Suite	★

### Low power output

Code	Description	
C2	0.8–3.2 Vdc output with digital signal based on HART Protocol (available with output code M only)	

### Alarm levels

Only available with HART 4–20 mA output code A.

Code	Description	
C4 <sup>(1)</sup>	NAMUR alarm and saturation levels, high alarm	★
CN <sup>(1)</sup>	NAMUR alarm and saturation levels, low alarm	★
CR	Custom alarm and saturation signal levels, high alarm (requires C1 and Rosemount 3051 <a href="#">Configuration Data Sheet</a> )	★
CS	Custom alarm and saturation signal levels, low alarm (requires C1 and Rosemount 3051 <a href="#">Configuration Data Sheet</a> )	★
CT	Rosemount standard low alarm	★

(1) NAMUR-compliant operation is preset at the factory and can be changed to standard operation in the field for the standard Rosemount 3051.

### Ground screw

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

Code	Description	
V5	External ground screw assembly	★

### Configuration buttons

Code	Description	
D4 <sup>(1)</sup>	Analog zero and span	★
DZ <sup>(2)</sup>	Digital zero trim	★

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

(2) Only available with 4–20 mA HART output code A and wireless output code X.

### HART<sup>®</sup> Revision Configuration (requires HART Protocol output code A)

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.

Code	Description	
HR5	Configured for HART Revision 5	★
HR7	Configured for HART Revision 7	★

# Rosemount 3051L Level Transmitter ordering information



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. Rosemount 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).
- The Loop Integrity Diagnostic continuously monitors the electrical loop to detect changes that compromise the integrity of the transmitted 4-20 mA output signal (Option Code DA0).
- LOI with straightforward menus and built-in configuration buttons (option code M4).

<a href="#">CONFIGURE &gt;</a>	<a href="#">VIEW PRODUCT &gt;</a>
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## Online product configurator

Many products are configurable online using our Product Configurator. Select the **Configure** button or visit our [website](#) to start. With this tool's built-in logic and continuous validation, you can configure your products more quickly and accurately.

## Specifications and options

See the Specifications and options section 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 the Material selection section for more information.

## Model codes

Model codes contain the details related to each product. Exact model codes will vary; an example of a typical model code is shown in [Figure 6](#).

**Figure 6: Model Code Example**

**3051C D 2 X 2 2 M5 B4**

1	2
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1. Required model components (choices available on most)
2. Additional options (variety of features and functions that may be added to products)

## Optimizing lead time

The starred offerings (★) represent the most common options and should be selected for best delivery. The non-starred offerings are subject to additional delivery lead time.

## Required model components

### Model

Code	Description	
3051L	Level transmitter	★

### Pressure range

Code	Description	
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)	★

### Transmitter output

Code	Description	
A <sup>(1)</sup>	4–20 mA with digital signal based on HART® Protocol	★
F	FOUNDATION™ Fieldbus Protocol	★
W <sup>(2)</sup>	PROFIBUS® PA Protocol	★
X <sup>(3)</sup>	Wireless (requires wireless options and engineered polymer housing)	★
M <sup>(4)</sup>	Low-power, 1–5 Vdc with digital signal based on HART Protocol	

(1) HART Revision 5 is the default HART output.

(2) For local addressing and configuration, M4 (LOI) is required. Not available with product certification codes E4, EM, EP, I6, IM, KD, KL, KM, KP, KS, N3.

(3) This option is only available with intrinsically safe approvals.

(4) Only available with C6, E2, E5, I5, K5, KB, EM, EP, and E8 product certifications.

**Process connection size, material, extension length (high side)**

Code	Process connection size	Material	Extension length	
G0 <sup>(1)</sup>	2-in./DN 50/A	316L SST	Flush mount only	★
H0 <sup>(1)</sup>	2-in./DN 50	Alloy C-276	Flush mount only	★
J0	2-in./DN 50	Tantalum	Flush mount only	★
A0 <sup>(1)</sup>	3-in./DN 80	316L SST	Flush mount	★
A2 <sup>(1)</sup>	3-in./DN 80	316L SST	2-in./50 mm	★
A4 <sup>(1)</sup>	3-in./DN 80	316L SST	4-in./100 mm	★
A6 <sup>(1)</sup>	3-in./DN 80	316L SST	6-in./150 mm	★
B0 <sup>(1)</sup>	4-in./DN 100	316L SST	Flush mount	★
B2 <sup>(1)</sup>	4-in./DN 100	316L SST	2-in./50 mm	★
B4 <sup>(1)</sup>	4-in./DN 100	316L SST	4-in./100 mm	★
B6 <sup>(1)</sup>	4-in./DN 100	316L SST	6-in./150 mm	★
C0 <sup>(1)</sup>	3-in./DN 80	Alloy C-276	Flush mount	★
C2 <sup>(1)</sup>	3-in./DN 80	Alloy C-276	2-in./50 mm	★
C4 <sup>(1)</sup>	3-in./DN 80	Alloy C-276	4-in./100 mm	★
C6 <sup>(1)</sup>	3-in./DN 80	Alloy C-276	6-in./150 mm	★
D0 <sup>(1)</sup>	4-in./DN 100	Alloy C-276	Flush mount	★
D2 <sup>(1)</sup>	4-in./DN 100	Alloy C-276	2-in./50 mm	★
D4 <sup>(1)</sup>	4-in./DN 100	Alloy C-276	4-in./100 mm	★
D6 <sup>(1)</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	★

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

**Mounting flange size, rating, material (high side)**

Code	Size	Rating	Material	
M	2-in.	ASME B16.5 Class 150	CS	★
A	3-in.		CS	★
B	4-in.		CS	★
N	2-in.	ASME B16.5 Class 300	CS	★
C	3-in.		CS	★
D	4-in.		CS	★
P	2-in.	ASME B16.5 Class 600	CS	★
E	3-in.		CS	★
X <sup>(1)</sup>	2-in.	ASME B16.5 Class 150	316 SST	★
F <sup>(1)</sup>	3-in.		316 SST	★
G <sup>(1)</sup>	4-in.		316 SST	★
Y <sup>(1)</sup>	2-in.	ASME B16.5 Class 300	316 SST	★
H <sup>(1)</sup>	3-in.		316 SST	★
J <sup>(1)</sup>	4-in.		316 SST	★
Z <sup>(1)</sup>	2-in.	ASME B16.5 Class 600	316 SST	★
L <sup>(1)</sup>	3-in.		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		CS	★
V	DN 100	PN 10/16 per EN 1092-1	CS	★
K <sup>(1)</sup>	DN 50	PN 10-40 per EN 1092-1	316 SST	★
T <sup>(1)</sup>	DN 80	PN 40 per EN 1092-1	316 SST	★
U <sup>(1)</sup>	DN 100		316 SST	★
W <sup>(1)</sup>	DN 100	PN 10/16 per EN 1092-1	316 SST	★
7 <sup>(1)</sup>	4-in.	ASME B16.5 Class 600	316 SST	★
1	N/A	10K per JIS B2238	316 SST	
2	N/A	20K per JIS B2238	CS	
3	N/A	40K per JIS B2238	CS	
4 <sup>(1)</sup>	N/A	10K per JIS B2238	CS	
5 <sup>(1)</sup>	N/A	20K per JIS B2238	316 SST	
6 <sup>(1)</sup>	N/A	40K per JIS B2238	316 SST	

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



## Seal fill fluid

Code	Description	Specific gravity	Temperature limits (ambient temperature of 70° F [21° C])	
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 <a href="#">Technical Note</a> .	★
L	Dow Corning® 704 diffusion pump fluid	1.07	32 to 401 °F (0 to 205 °C)	★
C	D.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 <a href="#">Technical Note</a> .	★
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	Glycerin and water	1.13	5 to 203 °F (–15 to 95 °C)	★
N	Neobee® M-20	0.92	5 to 401 °F (–15 to 205 °C)	★
P	Propylene glycol and water	1.02	5 to 203 °F (–15 to 95 °C)	★

## Low pressure side

Code	Configuration	Flange adapter	Diaphragm material	Sensor fluid	
11 <sup>(1)</sup>	Gage	SST	316L SST	Silicone	★
21	Differential	SST	316 SST	Silicone	★
22 <sup>(1)</sup>	Differential	SST	Alloy C-276	Silicone	★
2A <sup>(2)</sup>	Differential	SST	316 SST	Inert (halocarbon)	★
2B <sup>(1)(2)</sup>	Differential	SST	Alloy C-276	Inert (halocarbon)	★
31 <sup>(1)</sup>	Tuned-system assembly with remote seal	None	316 SST	Silicone (requires option code S1)	★

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

(2) *Not available with wireless output code X.*

## O-ring

Code	Description	
A	Glass-filled PTFE	★

## Housing material

Code	Material	Conduit entry size	
A	Aluminum	½–14 NPT	★
B	Aluminum	M20 x 1.5	★

Code	Material	Conduit entry size	
E	Aluminum, ultra low copper	½–14 NPT	
F	Aluminum, ultra low copper	M20 x 1.5	
J	SST	½–14 NPT	★
K	SST	M20 x 1.5	★
p <sup>(1)</sup>	Engineered polymer	No conduit entries	★
D <sup>(2)</sup>	Aluminum	G½	
M <sup>(2)</sup>	SST	G½	

(1) Only available with wireless output code X.

(2) Transmitter conduit entry will be ½ NPT and a ½ NPT to G½ thread adapter will be provided. Only available with product certifications options I1, I2, I3, I7, IA, IB, IM, KA, N1, N3, N7. Housing code D is also available with E4, and IG

## Wireless options

Requires wireless output code X and Engineered Polymer Housing code P.

### Wireless transmit rate, operating frequency, and protocol

Code	Description	
WA3	User configurable transmit rate, 2.4 GHz <i>Wireless</i> HART	★

### Antenna and SmartPower

Code	Description	
WP5	Internal antenna, compatible with Green Power Module (I.S. Power Module sold separately)	★

## Additional options

Include with selected model number.

### Extended product warranty

Code	Description	
WR3	3-year limited warranty	★
WR5	5-year limited warranty	★

### Plantweb™ control functionality

Code	Description	
A01	FOUNDATION™ Fieldbus control function block suite	★

### Plantweb™ diagnostic functionality

Code	Description	
DA0	Loop Integrity HART® Diagnostic	★
D01	FOUNDATION™ Fieldbus Diagnostics Suite	★

### Seal assemblies

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

Code	Description	
S1	Assembled to one Rosemount 1199 Seal	★

### Remote seal diaphragm coating

Code	Description	
SZ	0.0002-in. (5 µm) gold-plated diaphragm	
FP <sup>(1)</sup>	CorrosionShield PFA coated diaphragm	

(1) *Not compatible with spiral wound gasket.*

### Product certifications

Code	Description	
E8	ATEX Flameproof and Dust Certification	★
I1 <sup>(1)</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	TIIS Flame-proof	★
I4	TIIS Intrinsic Safety	★
E5	USA Explosion-proof, Dust Ignition-Proof	★
I5 <sup>(2)</sup>	USA Intrinsically Safe, Nonincendive	★
C6	Canada Explosion-proof, Dust Ignition-proof, Intrinsically Safe, and Division 2	★
E6	Canada Explosion-proof, Dust Ignition-proof, Division 2	★
I6	Canada Intrinsic Safety	★
K6	Canada 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)	★
IG	IECEX FISCO Intrinsically Safe; for FOUNDATION Fieldbus or PROFIBUS PA Protocols only	★

K5	USA Explosion-proof, Dust Ignition-Proof, Intrinsically Safe, and Division 2	★
E2	INMETRO Flameproof001	★
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	USA and Canada Explosion-proof, Dust Ignition Proof, Intrinsically Safe, and Division 2 (combination of K5 and C6)	★
KD	USA, Canada, and ATEX Explosion-proof, Intrinsically Safe (combination of K5, C6, I1, and E8)	★
KL <sup>(3)</sup>	USA, Canada, IECEx, ATEX Intrinsic Safety Combination	★
KS	USA, Canada, IECEx, ATEX Explosion Proof, Intrinsically Safe, Dust, Non-Incendive, Type-N, Div. 2	★
EP	Republic of Korea Flameproof	★
IP	Republic of Korea Intrinsic Safety	★
KP	Republic of Korea Flameproof, Intrinsic Safety	★

- (1) *Dust approval not applicable to output code X.*
- (2) *Nonincendive certification not provided with output code (X).*
- (3) *Only available with output code X.*

### Shipboard approvals

Shipyards approvals are not available with wireless output (code X).

Code	Description	
SBS	American Bureau of Shipping	★
SBV <sup>(1)</sup>	Bureau Veritas (BV)	★
SDN	Det Norske Veritas	★
SLL <sup>(1)</sup>	Lloyds Register (LR)	★

- (1) *Only available with product certifications E7, E8, I1, I7, IA, K7, K8, KD, N1, N7*

### SST tagging

Code	Description	
Y2	316 SST nameplate, top tag, wire-on tag, and fasteners	

### Bolting material

Code	Description	
L4	Austenitic 316 SST bolts	★

### Display and interface options

Code	Description	
M4 <sup>(1)</sup>	LCD display with LOI	★
M5	LCD display	★

(1) Only available with 4-20 mA HART® output (code A) and PROFIBUS®-PA (code W).

### Calibration certificate

Code	Description	
Q4	Calibration certificate	★
QG <sup>(1)</sup>	Calibration certificate and GOST verification certificate	★
QP	Calibration certification and tamper evident seal	★

(1) Contact an Emerson representative for availability.

### Material traceability certification

Code	Description	
Q8	Material traceability certification per EN 10204 3.1	★

### Positive material identification (PMI)

Code	Description	
Q76	PMI verification and certificate	★

### Quality certification for safety

The quality certification for safety is only available with HART® 4–20 mA output (code A).

Code	Description	
QT	Safety certified to IEC 61508 with certificate of FMEDA	★

### Toolkit total system performance reports

Code	Description	
QZ	Remote seal system performance calculation report	★

### Conduit electrical connector

The conduit electrical connector option is not available with wireless output (code X).

Code	Description	
GE	M12, 4-pin, male connector (eurofast®)	★
GM	A size mini, 4-pin, male connector (minifast®)	★

## Configuration buttons

Code	Description	
D4 <sup>(1)</sup>	Analog zero and span	★
DZ <sup>(2)</sup>	Digital zero trim	★

(1) Only available with HART® 4–20 mA output (code A).

(2) Only available with HART 4–20 mA output (output code A) and wireless output (output code X)

## Transient protection

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

Code	Description	
T1	Transient protection terminal block	★

## Software configuration

The software configuration option is only available with HART® 4–20 mA output (output code A) and wireless output (output code X).

Code	Description	
C1	Custom software configuration (For wired, see the Rosemount 3051 <a href="#">Configuration Data Sheet</a> . For wireless, see the Rosemount 3051 Wireless <a href="#">Configuration Data Sheet</a> .)	★

## Low power output

Code	Description	
C2	0.8–3.2 Vdc output with digital signal based on HART Protocol (available with output code M only)	★

## Alarm levels

The alarm levels option is only available with HART 4–20 mA output (code A).

Code	Description	
C4 <sup>(1)</sup>	Analog output levels compliant with NAMUR recommendation NE 43, alarm high	★
CN <sup>(1)</sup>	Analog output levels compliant with NAMUR recommendation NE 43, alarm low	★
CR	Custom alarm and saturation signal levels, high alarm (requires C1 and Rosemount 3051 <a href="#">Configuration Data Sheet</a> )	★
CS	Custom alarm and saturation signal levels, low alarm (requires C1 and Rosemount 3051 <a href="#">Configuration Data Sheet</a> )	★
CT	Rosemount standard low alarm	★

(1) NAMUR-compliant operation is preset at the factory and can be changed to standard operation in the field for the standard Rosemount 3051.

## Conduit plug

The conduit plug option is not available with wireless output (code X).

Code	Description	
DO	316 SST conduit plug	★

## Ground screw

The ground screw option is not available with wireless output (code X). The V5 option is not needed with the T1 option; external ground screw assembly is included with the T1 option.

Code	Description	
V5	External ground screw assembly	★

## Lower housing flushing connection options

Code	Ring material	Number	Size (NPT)	
F1	316 SST	1	¼–18 NPT	★
F2	316 SST	2	¼–18 NPT	★
F3	Alloy C-276	1	¼–18 NPT	★
F4	Alloy C-276	2	¼–18 NPT	★
F7	316 SST	1	½–14 NPT	★
F8	316 SST	2	½–14 NPT	★
F9	Alloy C-276	1	½–14 NPT	★
F0	Alloy C-276	2	½–14 NPT	★

## Lower housing intermediate gasket material

Code	Description	
S0	No gasket for lower housing	★
SY <sup>(1)</sup>	Thermo-Tork® TN-9000	★

(1) Gasket provided when lower housing is ordered.

## NACE certificate

Note that NACE®-compliant wetted materials are required. Materials of construction must comply with recommendations per NACE MR0175/ISO 15156 for sour oil field production environments. Environmental limits apply to certain materials. Consult the latest standard for details. All selected materials must also conform to NACE MR0103 for sour refining environments.

Code	Description	
Q15	Certificate of Compliance to NACE MR0175/ISO 15156 for wetted materials	★
Q25	Certificate of Compliance to NACE MR0103 for wetted materials	★

## HART revision configuration (requires HART Protocol output code A)

HART® Revision 5 is the default HART output.

Code	Description	
HR5	Configured for HART Revision 5	★
HR7	Configured for HART Revision 7	★

### Wireless power accessory

This option is only available with output code X.

Code	Description	
HS	Hot swap power adapter for power module replacement	



# Specifications

## Performance specifications

This product data sheet covers HART®, WirelessHART®, FOUNDATION™ Fieldbus, and PROFIBUS® PA Protocols unless specified otherwise.

For zero-based spans, reference conditions, silicone oil fill, glass-filled PTFE O-rings, SST materials, coplanar flange, or ½–14 NPT process connections, digital trim values set to equal range points.

### Conformance to specifications ( $\pm 3\sigma$ [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>Rosemount 3051C<sup>(1)</sup></b>	
Range 5	$\pm 0.065\%$ of span For spans less than 10:1, accuracy = $\pm \left[ 0,015 + 0,005 \left( \frac{URL}{Span} \right) \right] \% \text{ of Span}$
Ranges 2–4	$\pm 0.04\%$ of span For spans less than 10:1 <sup>(2)</sup> , accuracy = $\pm \left[ 0,015 + 0,005 \left( \frac{URL}{Span} \right) \right] \% \text{ of Span}$
Range 1	$\pm 0.10\%$ of span For spans less than 15:1, accuracy = $\pm \left[ 0,025 + 0,005 \left( \frac{URL}{Span} \right) \right] \% \text{ of Span}$
Range 0 (CD)	$\pm 0.10\%$ of span For spans less than 2:1, accuracy = $\pm 0.05\%$ of URL
<b>Rosemount 3051CA</b>	
Ranges 1–4	$\pm 0.04\%$ of span <sup>(3)</sup> For spans less 10:1, accuracy = $\pm \left[ 0,0075 \left( \frac{URL}{Span} \right) \right] \% \text{ of Span}$

Rosemount 3051T <sup>(1)</sup>	
Range 0	± 0.04% of span <sup>(3)</sup> For spans less 5:1 to 20:1, accuracy = $\pm \left[ 0,05 + 0,01 \left( \frac{URL}{Span} \right) \right] \% \text{ of span}$
Ranges 1–4	± 0.04% of span <sup>(3)</sup> For spans less than 10:1, accuracy = $\pm \left[ 0,0075 \left( \frac{URL}{Span} \right) \right] \% \text{ of Span}$
Range 5–6	± 0.075% of span
Rosemount 3051L	
Ranges 2-4	± 0.075% of span For spans less than 10:1, accuracy = $\pm \left[ 0,025 + 0,005 \left( \frac{URL}{Span} \right) \right] \% \text{ of Span}$

- (1) For Rosemount 3051C and 3051T with 1199 assemble to code S1, use 3051L specification.
- (2) For output code F, for span less than 5:1.
- (3) For output code M, ±0.065 percent span.

### Flow Performance - Flow Reference Accuracy

**Note**

Accuracy over range of use is always application dependent. Range 1 flow meters may experience an additional uncertainty up to 0.9 percent. Consult your Emerson representative for exact specifications.

Rosemount 3051CFA Annubar™ Flow Meter		
Ranges 2–3		±1.80% of flow rate at 8:1 flow turndown
Rosemount 3051CFC_A Compact Annubar Flow Meter – Rosemount Annubar Option A		
Ranges 2–3	Standard	±2.10% of flow rate at 8:1 flow turndown
	Calibrated	±1.80% of Flow Rate at 8:1 flow turndown
Rosemount 3051CFC_C Compact Orifice Flow Meter – Conditioning Option C		
Ranges 2–3	β = 0.4	±1.75% of flow rate at 8:1 flow turndown
	β = 0.50, 0.65	±1.95% of flow rate at 8:1 flow turndown
Rosemount 3051CFC_P Compact Orifice Flow Meter – Orifice Type Option P <sup>(1)</sup>		
Ranges 2–3	β = 0.4	±2.00% of flow rate at 8:1 flow turndown
	β = 0.65	±2.00% of flow rate at 8:1 flow turndown
Rosemount 3051CFP Integral Orifice Flow Meter		
Ranges 2–3	β < 0.1	±3.00% of flow rate at 8:1 flow turndown

	0.1 < β < 0.2	±1.95% of flow rate at 8:1 flow turndown
	0.2 < β < 0.6	±1.75% of flow rate at 8:1 flow turndown
	0.6 < β < 0.8	±2.15% of flow rate at 8:1 flow turndown

(1) Applicable to 2- to 12-in. line sizes. For smaller line sizes, see the Rosemount DP Flow Meters and Primary Elements [Product Data Sheet](#).

### Total performance

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

For ±50 °F (28 °C) temperature changes; 0–100 percent relative humidity, from 1:1 to 5:1 rangedown

Models	Total performance <sup>(1)</sup>
Rosemount 3051C Ranges 2–5	± 0.14% of span
Rosemount 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 ±0.15 percent of span.

### Long term stability

Models	Long term stability
<b>Rosemount 3051C</b>	
Ranges 2–5	±0.2% of URL for 10 years ±50 °F (28 °C) temperature changes, and up to 1000 psi (68.95 bar) line pressure.
Rosemount 3051 CD, 3051CG Low/Draft Range Ranges 0-1, 3051TG Range 0	±0.2% of URL for 1 year
<b>Rosemount 3051CA Low Range</b>	
Range 1	±0.2% of URL for 10 years ±50 °F (28 °C) temperature changes, and up to 1000 psi (68.95 bar) line pressure.
<b>Rosemount 3051T</b>	
Ranges 1–4	±0.2% of URL for 10 years ±50 °F (28 °C) temperature changes, and up to 1000 psi (68.95 bar) line pressure.
<b>Rosemount 3051L</b>	
Ranges 2–3	±0.1% of URL for 1 year
Ranges 4–5	±0.2% of URL for 1 year

### Dynamic performance

	4 - 20 mA HART <sup>®(1)</sup>	FOUNDATION™ Fieldbus and PROFIBUS <sup>®</sup> PA Protocols <sup>(2)</sup>	Typical HART transmitter response time
Total Response Time (T <sub>d</sub> + T <sub>c</sub> ) <sup>(3)</sup> :			
Rosemount 3051C			

	4 - 20 mA HART®(1)	FOUNDATION™ Fieldbus and PROFIBUS® PA Protocols(2)	Typical HART transmitter response time
Ranges 2-5	100 ms	152 ms	
Range 1	255 ms	307 ms	
Range 0	700 ms	N/A	
Rosemount 3051T	100 ms	152 ms	
Rosemount 3051L	See Instrument Toolkit.	See Instrument Toolkit.	
Dead time (T <sub>d</sub> )	45 ms (nominal)	97 ms	
Update rate(4)	22 times per second	22 times per second	

- (1) Dead time and update rate apply to all models and ranges; analog output only.
- (2) Transducer block response time, Analog Input block execution time not included.
- (3) Nominal total response time at 75 °F (24 °C) reference conditions.
- (4) Does not apply to wireless (output code X). See [Wireless \(output code X\)](#) 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 the following documents. For HART®, see the Rosemount 3051 [Reference Manual](#). For WirelessHART®, see the Rosemount 3051 Wireless [Reference Manual](#).

For FOUNDATION™ Fieldbus, see the Rosemount 3051 [Reference Manual](#). For PROFIBUS® PA, see the Rosemount 3051 [Reference Manual](#).

**Table 1: Rosemount 3051CD and 3051CF Line Pressure Effect**

Range	Line pressure effect
<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 (6.895 bar)

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

Models	Ambient temperature effect
<b>Rosemount 3051C</b>	
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

Models	Ambient temperature effect
<b>Rosemount 3051CA</b>	
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
<b>Rosemount 3051T</b>	
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 0	±(0.15% URL + 0.075% span) from 1:1 to 20:1
Range 5–6	±(0.1% URL + 0.15% span) from 1:1 to 5:1
<b>Rosemount 3051L</b>	<b>See Instrument Toolkit™ software.</b>

### Mounting position effects

Models	Mounting position effects
Rosemount 3051C	Zero shifts up to ±1.25 in H <sub>2</sub> O (3.11 mbar), which can be calibrated out. No span effect.
Rosemount 3051CA, 3051T	Zero shifts up to ±2.5 in H <sub>2</sub> O (6.22 mbar), which can be calibrated out. No span effect.
Rosemount 3051L	With liquid level diaphragm in vertical plane, zero shift of up to ±1 in H <sub>2</sub> O (2.49 mbar). With diaphragm in horizontal plane, zero shift of up to ±5 in H <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 ±0.1 percent of URL when tested per the requirements of IEC60770-1: 1999 field or pipeline with high vibration level (10–60 Hz 0.21 mm displacement peak amplitude/60–2000 Hz 3g).

### Power supply effect

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

### Electromagnetic compatibility

Meets all industrial environment requirements of EN61326 and NAMUR NE-21. Maximum deviation <1 percent Span during EMC disturbance.

#### Note

NAMUR NE-21 does not apply to Low-Power (Transmitter output option code M) or Wireless (Transmitter output code X).

#### Note

During surge event, device with 4-20 mA (Transmitter output option code A) may exceed maximum EMC deviation limit or reset; however, device will self-recover and return to normal operation within specified start-up time.

### 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 x 20 μs)

- 6 kV crest (1.2 x 50 μs)

## Functional specifications

### Range and sensor limits

**Table 2: Rosemount 3051CD, 3051CG, 3051CF, and 3051L Range and Sensor Limits**

Range <sup>(1)</sup>	Minimum span	Range and sensor limits				
		Upper (URL)	Lower (LRL)			
			Rosemount 3051CD Differential, 3051CF Flow Meters	Rosemount 3051CG Gage <sup>(3)</sup>	Rosemount 3051L Differential	Rosemount 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 Rosemount 3051CD. Range 1 only available with 3051CD, 3051CG, or 3051CF. inH<sub>2</sub>O referenced at 68 °F (20 °C).  
 (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 3: Rosemount 3051CA and 3051T Range and Sensor Limits**

Range	Rosemount 3051CA			Rosemount 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)	
0	N/A	N/A	N/A	0.25 psi (17.24 mbar)	5 psi (344.74 mbar)	N/A	-5 psi (-344.74 mbar)
1	0.30 psi (20.68 mbar)	30 psia (2.06 bar)	0 psia (0 bar)	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)	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)	5.33 psi (367.49 mbar)	800.00 psi (55.15 bar)	0 psia (0 bar)	-14.70 psig (-1.01 bar)

**Table 3: Rosemount 3051CA and 3051T Range and Sensor Limits (continued)**

Range	Rosemount 3051CA			Rosemount 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)	
4	26.67 psi (1.83 bar)	4000 psia (275.79 bar)	0 psia (0 bar)	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	2000 psi (137.86 bar)	10000.00 psi (689.47 bar)	0 psia (0 bar)	-14.70 psig (-1.01 bar)
6	N/A	N/A	N/A	4000 psi (275.79 bar)	20000.00 psi (1378.95 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**

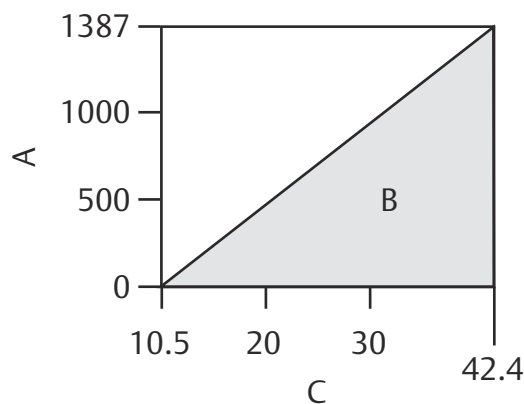
External power supply required. Standard transmitter (4–20 mA) operates on 10.5–42.4 Vdc with no load.

**Load limitations**

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

Max. loop resistance = 43.5 (power supply voltage - 10.5)

Communication requires a minimum loop resistance of 250 ohms.



- A. Load (Ωs)
- B. Operating region
- C. Voltage (Vdc)

**Note**

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

## Indication

Optional 2-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 4–20 mA, user selectable for linear or square root output. Digital process variable superimposed on 4–20 mA signal, available to any host that conforms to HART™ Protocol. The Rosemount 3051 Transmitter 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 LOI (M4).

## Loop Integrity diagnostics

The Loop Integrity diagnostic continuously monitors the electrical loop to detect changes that compromise the integrity of the transmitter 4-20 mA output signal. The diagnostics can detect loop problems such as 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.

## LOI

The LOI uses a two button menu with internal and external configuration buttons. Internal buttons are always configured for LOI. 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 [Reference Manual](#) for LOI configuration menu.

## FOUNDATION™ Fieldbus (output code F)

### Power supply

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

### 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



Block	Execution time
Signal characterizer	20 milliseconds
Integrator	20 milliseconds
Output splitter	20 milliseconds
Control selector	20 milliseconds

**FOUNDATION Fieldbus parameters**

- Links:** 25 (max.)
- Virtual communications relationship (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 display 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 INT function 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 20 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 Rosemount 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 Vdc transmitter terminal voltage. FISCO transmitters operate on 9.0 to 17.5 Vdc.

**Current draw**

17.5 mA for all configurations (including LCD display option)

**Output update rate**

Four times per second

**Standard function block**

<b>Analog input (AI block)</b>	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. The AI block is widely used for scaling functionality.
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**Note**

The channel, Set XD\_Scale, Set L\_Type, and sometimes Set Out\_Scale are typically configured by instrument personnel. Other AI block parameters, block links, and schedule are typically configured by the control systems configuration engineer.

**Indication**

Optional two-line LCD display

**LOI**

The LOI uses a two-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 three-line, seven-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 percent of URL.

### Update rate

User selectable 1 second to 60 minute.

### Wireless sensor module for in-line transmitters

The Rosemount 3051 Wireless Transmitter requires the engineered polymer housing to be selected. The standard sensor module will come with aluminum material. If SST is required, you must select the option WSM.

### 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>

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#### 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.

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## Low power output

### 1–5 Vdc HART low power (output code M)

#### Output

The default three-wire 1–5 Vdc is a 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. Option code C2 changes the output from 1–5 Vdc to 0.8–3.2 Vdc.

#### Power consumption

3.0 mA, 18–36 mW

#### Minimum load impedance

100 k $\Omega$  ( $V_{out}$  wiring)

#### Indication

Optional five-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)

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

- Range 4: 6000 psia (413.69 bar)

**Rosemount 3051TG/TA**

- Range 0: 60 psi (4.14 bar)
- 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)
- Range 6: 24000 psi (1654.74 bar)

For Rosemount 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 4: Rosemount 3051L and Level Flange Rating Limits**

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

**Static pressure limit**

**Rosemount 3051CD only**

Operates within specifications between static line pressures of 0.5 psia and 3626 psig (4500 psig (310.26 bar) for option code P9).

Range 0: 0.5 psia and 750 psig (0.03 bar and 51.71 bar)

Range 1: 0.5 psia and 2000 psig (0.03 bar and 137.90 bar)

**Burst pressure limits**

**Rosemount 3051C, 3051CF coplanar or traditional transmitter flange**

10081 psig (695,06 bar)

**Rosemount 3051T in-line**

- Ranges 0–4: 11016 psi (759.53 bar)
- Range 5: 26016 psig (1793.74 bar)
- Range 6: 46092 psi (3177.93 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	$\geq 21.75$ mA	$\leq 3.75$ mA
NAMUR compliant <sup>(1)</sup>	$\geq 22.5$ mA	$\leq 3.6$ 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)
- With option code BR5: –58 to 185 °F (–50 to 85 °C)
- With option code BR6: –76 to 185 °F (–60 to 85 °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

#### Note

If storage temperature is above 185 °F (85 °C), perform a sensor trim prior to installation.

- –76 to 230 °F (–60 to 110 °C)
- With LCD display: –76 to 185 °F (–60 to 85 °C)
- With wireless output: –40 °F to 185 °F (–40 °C to 85 °C)

### Process

At atmospheric pressures and above. See [Table 5](#).

**Table 5: Process Connection Temperature Limits**

Rosemount 3051CD, 3051CG, 3051CF, 3051CA	
Silicone fill sensor <sup>(1)</sup>	N/A
With coplanar flange	–40 to 250 °F (–40 to 121 °C) <sup>(2)</sup>

**Table 5: Process Connection Temperature Limits (continued)**

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 Rosemount 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>
With Option Code BR6, coplanar flange	-76 to 250 °F (-60 to 121 °C) <sup>(2)</sup>
With Option Code BR6, traditional flange	-75 to 300 °F (-60 to 149 °C) <sup>(2)</sup>
<b>Rosemount 3051T (process fill fluid)</b>	
Silicone fill sensor <sup>(1)</sup>	-40 to 250 °F (-40 to 121 °C) <sup>(2)</sup>
With Option Code BR6	-76 to 250 °F (-60 to 121 °C) <sup>(2)</sup>
Inert fill sensor <sup>(1)</sup>	-22 to 250 °F (-30 to 121 °C) <sup>(2)</sup>
<b>Rosemount 3051L low-side temperature limits</b>	
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>
<b>Rosemount 3051L high-side temperature limits (process fill fluid)</b>	
SYLTherm XLT	-102 to 293 °F (-75 to 145 °C)
D.C. Silicone 704	32 to 401 °F (0 to 205 °C)
D.C. Silicone 200	-49 to 401 °F (-45 to 205 °C)
Inert	-49 to 320 °F (-45 to 160 °C)
Glycerin and water	5 to 203 °F (-15 to 95 °C)
Neobee M-20	5 to 401 °F (-15 to 205 °C)
Propylene glycol and water	5 to 203 °F (-15 to 95 °C)

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

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

(3) Rosemount 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 Rosemount 3051CA.

## Humidity limits

0–100 percent 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.

### Note

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 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

½–14 NPT, G½, and M20 x 1.5 conduit. The polymer 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

- ¼–18 NPT on 2½-in. centers
- ½–14 NPT on 2-, 2½-, or 2¼-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: ¼–18 NPT on flange ½–14 NPT on adapter

#### Rosemount 3051T

- ½–14 NPT female
- G½ A DIN 16288 male (range 1–4 only)
- Autoclave type F-250-C (pressure relieved 9/16–18 gland thread; ¼ OD high pressure tube 60° cone; available for range 5–6 transmitters only).

#### Rosemount 3051CF

- For Rosemount 3051CFA, see Rosemount 485 Annubar [Product Data Sheet](#).
- For Rosemount 3051CFC, see Rosemount 405 Compact Orifice Plate [Product Data Sheet](#).

- For Rosemount 3051CFP, see Rosemount 1195 Integral Orifice [Product Data Sheet](#).

## Process-wetted parts

### Drain/vent valves

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

### Transmitter flanges and adapters

- Plated CS
- 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)	•	N/A	•
Tantalum (UNS R05440)	•	N/A	N/A
Gold-plated alloy 400	•	N/A	•
Gold-plated 316L SST	•	•	•

## Rosemount 3051L process wetted parts

Flanged process connection (transmitter high side)

<b>Process diaphragms, including process gasket surface</b>	316L SST, Alloy C-276, or Tantalum
<b>Extension</b>	CF-3M (Cast version of 316L SST, material per ASTM-A743), or Alloy C-276. Fits schedule 40 and 80 pipe.
<b>Mounting flange</b>	Zinc-cobalt plated CS or SST

Reference process connection (transmitter low side)

<b>Isolating diaphragms</b>	316L SST or Alloy C-276
<b>Reference flange and adapter</b>	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, IP65, IP66, IP68

Housing material code P: PBT/PC with NEMA 4X and IP66/67/68



**Coplanar sensor housing module**

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

**Bolts**

- Plated CS 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 (Rosemount 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**

**Note**

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

**Table 6: Transmitter Weights without Options**

Rosemount 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	<a href="#">Table 7</a>	<a href="#">Table 7</a>

**Table 7: Rosemount 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., Class 150	12.5 (5.7)	N/A	N/A	N/A
3-in., Class 150	17.5 (7.9)	19.5 (8.8)	20.5 (9.3)	21.5 (9.7)
4-in., Class 150	23.5 (10.7)	26.5 (12.0)	28.5 (12.9)	30.5 (13.8)
2-in., Class 300	17.5 (7.9)	N/A	N/A	N/A
3-in., Class 300	22.5 (10.2)	24.5 (11.1)	25.5 (11.6)	26.5 (12.0)
4-in., Class 300	32.5 (14.7)	35.5 (16.1)	37.5 (17.0)	39.5 (17.9)

**Table 7: Rosemount 3051L Weights without Options (continued)**

Flange	Flush lb (kg)	2-in. ext. lb (kg)	4-in. ext. lb (kg)	6-in. ext. lb (kg)
2-in., Class 600	15.3 (6.9)	N/A	N/A	N/A
3-in., Class 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
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 8: Transmitter Option Weights**

Code	Option	Add lb. (kg)
J, K, L, M	SST housing (T)	3.9 (1.8)
J, K, L, M	SST 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)
N/A	Power module (701PGNKF)	0.4 (0.18)

# Rosemount 3051 product certifications

Rev 2.13

## European directive information

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

## Ordinary location certification

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

## North America

### E5 USA Explosionproof (XP) and Dust-Ignitionproof (DIP)

#### Ranges 1-5 (HART)

**Certificate** FM16US0121

**Standards** FM Class 3600 – 2018, FM Class 3615 – 2018, FM Class 3616 - 2011, FM Class 3810 – 2005, ANSI/NEMA 250 – 2008

**Markings** XP CL I, DIV 1, GP B, C, D; DIP CL II, DIV 1, GP E, F, G; CL III; T5(-50 °C ≤ T<sub>a</sub> ≤ +85 °C); Factory Sealed; Type 4X

#### Range 1-6 (HART/Fieldbus)

**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

**Markings** XP Class I, Division 1, Groups B, C and D, T5, (-50 °C ≤ T<sub>a</sub> ≤ 85 °C) Suitable for Class I, Zone 1, Group IIB+H2, T5; DIP Class II and Class III, Division 1, Groups E, F and G, T5, (-50 °C ≤ T<sub>a</sub> ≤ 85 °C) ; Type 4X; Factory Sealed; Single Seal (See drawing 03031-1053)

### I5 USA Intrinsic Safety (IS) and Nonincendive (NI)

#### Range 1-5 (HART)

**Certificate** FM16US0120X

**Standards** FM Class 3600 - 2011, FM Class 3610 - 2010, FM Class 3611 - 2004, FM Class 3810 - 2005, ANSI/NEMA 250 - 2008

**Markings** IS CL I, DIV 1, GP A, B, C, D; CL II, DIV 1, GP E, 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 ≤ T<sub>a</sub> ≤ +70 °C) [HART], T4 (-50 °C ≤ T<sub>a</sub> ≤ +60 °C) [Fieldbus/PROFIBUS]; Type 4X

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

1. The Rosemount 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.

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

### Range 1-6 (HART/Fieldbus/PROFIBUS)

**Certificate** 1053834

**Standards** ANSI/ISA 12.27.01-2003, CSA Std. C22.2 No.142-M1987, CSA Std. C22.2. No.157-92

**Markings** IS Class I, II, III, Division 1 Groups A, B, C, D, E, F, and G when connected in accordance with Rosemount drawing 03031-1024, Suitable for Class I, Zone 0 Group IIC; Class I, Division 2, Groups A, B, C, and D; NIFW; Suitable for Class I, Zone 2, Group IIC; HART: T4 ( $-60^{\circ}\text{C} \leq T_a \leq +70^{\circ}\text{C}$ ), T5 ( $-60^{\circ}\text{C} \leq T_a \leq +40^{\circ}\text{C}$ ) Fieldbus/PROFIBUS: T4 ( $-60^{\circ}\text{C} \leq T_a \leq +60^{\circ}\text{C}$ ) Type 4X

## IE USA FISCO

### Range 1-5 (HART)

**Certificate** FM16US0120X

**Standards** FM Class 3600 - 2011, FM Class 3610 - 2010, FM Class 3611 - 2004, FM Class 3810 - 2005

**Markings** IS CLI, DIV 1, GP A, B, C, D when connected per Rosemount drawing 03031-1019 ( $-50^{\circ}\text{C} \leq T_a \leq +60^{\circ}\text{C}$ ); Type 4X

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

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

### Range 1-6 (HART/Fieldbus/PROFIBUS)

**Certificate** 1053834

**Standards** ANSI/ISA 12.27.01-2003, CSA Std. C22.2 No.142-M1987, CSA Std. C22.2. No.157-92

**Markings** IS Class I, Division 1 Groups A, B, C, D, T4 ( $-60^{\circ}\text{C} \leq T_a \leq +60^{\circ}\text{C}$ ) when connected in accordance with Rosemount drawing 03031-1024, Suitable for Class I, Zone 0 Group IIC; Type 4X; Factory Sealed; Single Seal (See drawing 03031-1053)

## C6 Canada 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

**Markings** Explosionproof for Class I, Division 1, Groups B, C and D; Suitable for Class I, Zone 1, Group IIB+H2, T5 ( $-50^{\circ}\text{C} \leq T_a \leq +85^{\circ}\text{C}$ );  
Dust-Ignitionproof Class II, III Division 1, Groups E, F, G; T5 ( $-50^{\circ}\text{C} \leq T_a \leq +85^{\circ}\text{C}$ );  
Intrinsically Safe Class I, Division 1, Groups A, B, C, D when connected in accordance with Rosemount drawing 03031-1024, Temperature Code T4; 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 Canada 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

**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; T5 (-50 °C ≤ Ta ≤ +85 °C); 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)

## Europe

### E8 ATEX Flameproof and Dust

**Certificate** KEMA00ATEX2013X; Baseefa11ATEX0275X

**Standards Used** EN60079-0:2012 + A11:2013, EN60079-1:2014, EN60079-26:2015, EN60079-31:2009

**Markings** Ⓢ II ½ G Ex db IIC T6...T4 Ga/Gb T6 (-60 °C ≤ Ta ≤ +70 °C), T4/T5 (-60 °C ≤ Ta ≤ +80 °C);  
 Ⓢ II 1 D Ex ta IIIC T95 °C T500 105 °C Da (-20 °C ≤ Ta ≤ +85 °C)

**Table 9: Process Temperature**

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

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

1. This device contains a thin wall diaphragm less than 1 mm thick that forms a boundary between Category 1 (process connection) and Category 2 (all other parts of the equipment). The model code and datasheet are to be consulted for details of the diaphragm material. During installation, maintenance, and use, the environmental conditions to which the diaphragm will be subjected shall be taken into account. The manufacturer's instructions for installation and maintenance shall be followed in detail to assure safety during its expected lifetime.
2. Flameproof joints are not intended for repair.
3. Non-standard paint options may cause risk from electrostatic discharge. Avoid installations that could cause electrostatic build-up on painted surfaces and only clean the painted surfaces with a damp cloth. If paint is ordered through a special option code, contact the manufacturer for more information.
4. 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 + A11:2013, EN60079-11:2012, EN60079-31:2014

**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 T500 105 °C Da (-20 °C ≤ Ta ≤ +85 °C)


**Table 10: Input Parameters**

	HART	Fieldbus/PROFIBUS
Voltage $U_i$	30 V	30 V
Current $I_i$	200 mA	300 mA
Power $P_i$	0.9 W	1.3 W
Capacitance $C_i$	0.012 $\mu$ F	0 $\mu$ F
Inductance $L_i$	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 clause 6.3.12 of EN60079-11: 2012. 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 of 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 + A11:2013, EN60079-11:2012  
**Markings**  II 1 G Ex ia IIC T4 Ga (-60 °C ≤ T<sub>a</sub> ≤ +60 °C)



**Table 11: Input Parameters**

	Fieldbus/PROFIBUS
Voltage $U_i$	17.5 V
Current $I_i$	380 mA
Power $P_i$	5.32 W
Capacitance $C_i$	≤5 nF
Inductance $L_i$	≤10 $\mu$ H

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

1. The apparatus is not capable of withstanding the 500 V insulation test required by clause 6.3.12 of EN60079-11: 2012. 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 of located in Zone 0.

**N1 ATEX Type n and Dust**

**Certificate** BAS00ATEX3105X; Baseefa11ATEX0275X  
**Standards** EN60079-0:2012 + A11:2013, EN60079-15:2010, EN60079-31:2014  
**Markings**  II 3 G Ex nA IIC T5 Gc (-40 °C ≤ T<sub>a</sub> ≤ +70 °C);  
 II 1 D Ex ta IIIC T95 °C T<sub>500</sub> 105 °C Da (-20 °C ≤ T<sub>a</sub> ≤ +85 °C)

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

1. This apparatus is not capable of withstanding the 500 V insulation test that is required by clause 6.8.1 of 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, IEC60079-1:2014-06, IEC60079-26:2014-10, IEC60079-31:2013

**Markings** Ex db IIC T6...T4 Ga/Gb T6(-60 °C ≤ T<sub>a</sub> ≤ +70 °C), T4/T5(-60 °C ≤ T<sub>a</sub> ≤ +80 °C); Ex ta IIIC T95 °C T<sub>500</sub>105 °C Da (-20 °C ≤ T<sub>a</sub> ≤ +85 °C)

**Table 12: Process Temperature**

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

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

1. This device contains a thin wall diaphragm less than 1 mm thick that forms a boundary between EPL Ga (process connection) and EPL Gb (all other parts of the equipment). The model code and datasheet are to be consulted for details of the diaphragm material. During installation, maintenance, and use, the environmental conditions to which the diaphragm will be subjected shall be taken into account. The manufacturer's instructions for installation and maintenance shall be followed in detail to assure safety during its expected lifetime.
2. Flameproof joints are not intended for repair.
3. Non-standard paint options may cause risk from electrostatic discharge. Avoid installations that could cause electrostatic build-up on painted surfaces and only clean the painted surfaces with a damp cloth. If paint is ordered through a special option code, contact the manufacturer for more information.
4. 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 ≤ T<sub>a</sub> ≤ +40 °C), T4 (-60 °C ≤ T<sub>a</sub> ≤ +70 °C)  
 Fieldbus/PROFIBUS: Ex ia IIC T4(-60 °C ≤ T<sub>a</sub> ≤ +60 °C)

**Table 13: Input Parameters**

	HART	Fieldbus/PROFIBUS
Voltage U <sub>i</sub>	30 V	30 V

**Table 13: Input Parameters (continued)**

	HART	Fieldbus/PROFIBUS
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 90 V transient suppressor, it is not capable of withstanding the 500 V insulation test required by clause 6.3.12 of IEC 60079-11. This must be taken into account when installing the apparatus.
2. The enclosure may be made of aluminum alloy and given a protective polyurethane paint finish; however, care should be taken to protect it from impact or abrasion of located in Zone 0.

**IECEx Mining (Special A0259)**

<b>Certificate</b>	IECEx TSA 14.0001X
<b>Standards</b>	IEC60079-0:2011, IEC60079-11:2011
<b>Markings</b>	Ex ia I Ma (-60 °C ≤ T <sub>a</sub> ≤ +70 °C)

**Table 14: 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 an optional 90 V transient suppressor, it is not capable of withstanding the 500 V 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 1 applications.

**IG IECEx FISCO**

<b>Certificate</b>	IECEx BAS 09.0076X
<b>Standards</b>	IEC60079-0:2011, IEC60079-11:2011
<b>Markings</b>	Ex ia IIC T4 Ga (-60 °C ≤ T <sub>a</sub> ≤ +60 °C)

**Table 15: Input Parameters**

	Fieldbus/PROFIBUS
Voltage U <sub>i</sub>	17.5 V



**Table 15: Input Parameters (continued)**

	Fieldbus/PROFIBUS
Current $I_i$	380 mA
Power $P_i$	5.32 W
Capacitance $C_i$	$\leq 5$ nF
Inductance $L_i$	$\leq 10$ $\mu$ H

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

1. If the apparatus is fitted with an optional 90 V transient suppressor, it is not capable of withstanding the 500 V insulation test required by clause 6.3.12 of IEC 60079-11. This must be taken into account when installing the apparatus.
2. The enclosure may be made of aluminum alloy and given a protective polyurethane paint finish; however, care should be taken to protect it from impact or abrasion of located in Zone 0.

**N7 IECEx Type n**

<b>Certificate</b>	IECEx BAS 09.0077X
<b>Standards</b>	IEC60079-0:2011, IEC60079-15:2010
<b>Markings</b>	Ex nA IIC T5 Gc (-40 °C $\leq$ T <sub>a</sub> $\leq$ +70 °C)

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

1. This apparatus is not capable of withstanding the 500 V insulation test required by clause 6.5.1 of IEC 60079-15. This must be taken into account when installing the apparatus.

**Brazil****E2 INMETRO Flameproof**

<b>Certificate</b>	UL-BR 13.0643X
<b>Standards</b>	ABNT NBR IEC 60079-0:2013; ABNT NBR IEC 60079-1:2016; ABNT NBR IEC 60079-26:2016
<b>Markings</b>	Ex db IIC T6...T4 Ga/Gb, T6(-60 °C $\leq$ T <sub>a</sub> $\leq$ +70 °C), T4/T5 (-60 °C $\leq$ T <sub>a</sub> $\leq$ +80 °C)

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

1. This device contains a thin wall diaphragm with less than 1 mm thickness that forms a boundary between zone 0 (process connection) and zone 1 (all other parts of the equipment). The model code and datasheet are to be consulted for details of the diaphragm material. 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. Flameproof joints are not intended for repair.
3. Non-standard paint options may cause risk from electrostatic discharge. Avoid installations that could cause electrostatic build-up on painted surfaces and only clean the painted surfaces with a damp cloth. If paint is ordered through a special option code, contact the manufacturer for more information.

**I2 INMETRO Intrinsic Safety**

<b>Certificate</b>	UL-BR 13.0584X
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<b>Standards</b>	ABNT NBR IEC60079-0:2013, ABNT NBR IEC60079-11:2013
<b>Markings</b>	HART: Ex ia IIC T5/T4 Ga, T5(-60 °C ≤ T <sub>a</sub> ≤ +40 °C), T4 (-60 °C ≤ T <sub>a</sub> ≤ +70 °C) Fieldbus/PROFIBUS: Ex ia IIC T4 Ga (-60 °C ≤ T <sub>a</sub> ≤ +60 °C)

**Table 16: 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 equipment is fitted with an optional 90 V transient suppressor, it is not capable of withstanding the 500 V insulation test required by ABNT NBR IEC 60079-11. This must be taken into account when installing the equipment.
2. The enclosure may be made of aluminum alloy and given protective polyurethane paint finish; however, care should be taken to protect it from impact or abrasion if equipment requires EPL Ga.

**IB INMETRO FISCO**

<b>Certificate</b>	UL-BR 13.0584X
<b>Standards</b>	ABNT NBR IEC60079-0:2013, ABNT NBR IEC60079-11:2013
<b>Markings</b>	Ex ia IIC T4 Ga (-60 °C ≤ T <sub>a</sub> ≤ +60 °C)

**Table 17: Input Parameters**

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

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

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

## China

### E3 China Flameproof

<b>Certificate</b>	GYJ19.1056X [Transmitters]; GYJ20.1486X [Flow meters]
<b>Standards</b>	GB3836.1-2010, GB3836.2-2010, GB3836.20-2010, GB12476.1-2013, GB12476.5-2013
<b>Markings</b>	3051 Series: Ex d IIC T6 ~ T4 Ga/Gb, Ex tD A20 IP66 T95 °C T <sub>500</sub> 105 °C (-20 °C ≤ T <sub>a</sub> ≤ +85 °C) 3051CF Series: Ex d IIC T5/T6 Ga/Gb

### I3 China Intrinsic Safety

<b>Certificate</b>	GYJ18.1419X; GYJ20.1488X [Flow meters]
<b>Standards</b>	GB3836.1-2010, GB3836.4-2010, GB3836.20-2010, GB12476.1-2000
<b>Markings</b>	3051 Series: Ex ia IIC T4/T5 Ga, DIP A20 T <sub>A</sub> 80 °C IP66 3051 CF Series: Ex ia IIC T4/T5 Ga

### N3 China Type n

<b>Certificate</b>	GYJ20.1110X
<b>Standards</b>	GB3836.1-2010, GB3836.8-2014
<b>Markings</b>	Ex nA IIC T5 Gc (-40 °C ≤ T <sub>a</sub> ≤ +70 °C)

## Japan

### E4 Japan Flameproof

<b>Certificate</b>	TC20577, TC20578, TC20583, TC20584 [HART]; TC20579, TC20580, TC20581, TC20582 [Fieldbus]
<b>Markings</b>	Ex d IIC T5

## Republic of Korea

### EP Republic of Korea Flameproof

<b>Certificate</b>	11-KB4BO-0188X [Mfg Singapore], 19-KA4BO-079X [Mfg USA]
<b>Markings</b>	Ex d IIC T6...T4 Ga/Gb

### IP Republic of Korea Intrinsic Safety

<b>Certificate</b>	13-KB4BO-0203X [HART – Mfg USA], 13-KB4BO-0204X [Fieldbus – Mfg USA], 10-KB4BO-0138X [HART – Mfg Singapore], 13-KB4BO-0206X [Fieldbus – Mfg Singapore] 18-KA4BO-0354X [HART – Mfg USA], 18-KA4BO-0355X [Fieldbus – Mfg USA]
<b>Markings</b>	Ex ia IIC T5/T4 (HART); Ex ia IIC T4 (Fieldbus)

## Technical Regulations Customs Union (EAC)

### EM EAC Flameproof

**Markings** Ga/Gb Ex db IIC T4...T6 X, T4/T5(-60 °C ≤ T<sub>a</sub> ≤ +80 °C), T6(-60 °C ≤ T<sub>a</sub> ≤ +70 °C)

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

See certificate for special conditions.

### IM EAC Intrinsically Safe

**Markings** HART: 0Ex ia IIC T4/T5 Ga X, T4(-60 °C ≤ T<sub>a</sub> ≤ +70 °C), T5(-60 °C ≤ T<sub>a</sub> ≤ +40 °C)  
Fieldbus/PROFIBUS: 0Ex ia IIC T4 Ga X (-60 °C ≤ T<sub>a</sub> ≤ +60 °C)

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

See certificate for special conditions.

## Combinations

<b>K2</b>	Combination of E2 and I2
<b>K5</b>	Combination of E5 and I5
<b>K6</b>	Combination of C6, E8, and I1
<b>K7</b>	Combination of E7, I7, and N7
<b>K8</b>	Combination of E8, I1, and N1
<b>KB</b>	Combination of E5, I5, and C6
<b>KD</b>	Combination of E8, I1, E5, I5, and C6
<b>KM</b>	Combination of EM and IM
<b>KP</b>	Combination of EP and IP

## Additional certifications

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

**Certificate** 18-HS1814795-PDA

**Intended use** Marine & Offshore Applications – Measurement of either gauge or absolute pressure for liquid, gas and vapor.

### SBV Bureau Veritas (BV) Type Approval

**Certificate** 23155

**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** TAA000004F  
**Intended Use** DNV GL rules for classification - ships and offshore units  
**Application** **Table 18: Location Classes**

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

### EU Declaration of conformity



# EU Declaration of Conformity



No: RMD 1017 Rev. AE

We,

**Rosemount, Inc.**  
8200 Market Boulevard  
Chanhassen, MN 55317-9685  
USA

declare under our sole responsibility that the product,

## Rosemount 3051 Pressure Transmitters

manufactured by,

**Rosemount, Inc.**  
8200 Market Boulevard  
Chanhassen, MN 55317-9685  
USA

to which this declaration relates, is in conformity with the provisions of the European Union Directives, including the latest amendments, as shown in the attached schedule.

Assumption of conformity is based on the application of the harmonized standards and, when applicable or required, a European Union notified body certification, as shown in the attached schedule.

(signature)

Vice President of Global Quality

(function)

Mark Lee

(name)

22-Jan-21; Boulder, CO USA

(date of issue & place)



# EMERSON EU Declaration of Conformity

No: RMD 1017 Rev. AE



## EMC Directive (2014/30/EU)

Harmonized Standards: EN 61326-1:2013, EN 61326-2-3:2013

## PED Directive (2014/68/EU)

**Rosemount 3051CA4; 3051CD2, 3, 4, 5; 3051HD2, 3, 4, 5; (also with P9 option)**

QS Certificate of Assessment - Certificate No. 12698-2018-CE-USA-ACCREDIA  
Module H Conformity Assessment

**All other Rosemount 3051 Pressure Transmitters**

Sound Engineering Practice

**Transmitter Attachments: Diaphragm Seal, Process Flange, or Manifold**

Sound Engineering Practice

**Rosemount 3051CFx DP Flowmeters**

See DSI 1000 Declaration of Conformity

## RoHS Directive (2011/65/EU)

**Models 3051 Pressure Transmitters**

Harmonized standard: EN 50581:2012

### Does not apply to the following options

- Wireless output code X
- Low power output code M

## ATEX Directive (2014/34/EU)

**BAS97ATEX1089X - Intrinsic Safety**

Equipment Group II Category 1 G

Ex ia IIC T5/T4 Ga

Harmonized Standards Used:

EN60079-0:2012 + A11:2013, EN60079-11:2012

**BAS00ATEX3105X - Type n**



# EU Declaration of Conformity



No: RMD 1017 Rev. AE

Equipment Group II Category 3 G  
Ex nA IIC T5 Gc

Harmonized Standards Used:  
EN60079-0:2012 + A11:2013, EN60079-15:2010

**Basefall1ATEX0275X - Dust**

Equipment Group II Category 1 D  
Ex ta IIIC T95°C T500105°C Da

Harmonized Standards Used:  
EN60079-0:2012 + A11:2013, EN60079-31:2014

**KEMA00ATEX2013X - Flam eproof**

Equipment Group II Category 1/2 G  
Ex db IIC T6...T4 Ga/Gb

Harmonized Standards Used:  
EN60079-0:2012 + A11:2013, EN60079-1:2014, EN60079-26:2015





**EMERSON EU Declaration of Conformity****No: RMD 1017 Rev. AE****PED Notified Body**

**DNV GL Business Assurance Italia S.r.l.** [Notified Body Number: 0496]  
Via Energy Park, 14, N-20871  
Vimercate (MB), Italy

**ATEX Notified Bodies**

**DEKRA** [Notified Body Number: 0344]  
Utrechtseweg 310, 6812 AR Arnhem  
P.O. Box 5185, 6802 ED Arnhem  
The Netherlands  
Postbank 6794687

**SGS FIMKO OY** [Notified Body Number: 0598]  
P.O. Box 30 (Särkiniementie 3)  
00211 HELSINKI  
Finland

**ATEX Notified Body for Quality Assurance**

**SGS FIMKO OY** [Notified Body Number: 0598]  
P.O. Box 30 (Särkiniementie 3)  
00211 HELSINKI  
Finland

## China RoHS

含有China RoHS管控物质超过最大浓度限值的部件型号列表 3051  
List of 3051 Parts with China RoHS Concentration above MCVs

部件名称 Part Name	有害物质 / Hazardous Substances					
	铅 Lead (Pb)	汞 Mercury (Hg)	镉 Cadmium (Cd)	六价铬 Hexavalent Chromium (Cr +6)	多溴联苯 Polybrominated biphenyls (PBB)	多溴联苯醚 Polybrominated diphenyl ethers (PBDE)
电子组件 Electronics Assembly	X	0	0	0	0	0
壳体组件 Housing Assembly	0	0	0	0	0	0
传感器组件 Sensor Assembly	X	0	0	0	0	0

本表格系依据SJ/T 11364的规定而制作。

This table is proposed in accordance with the provision of SJ/T 11364.

0: 意为该部件的所有均质材料中该有害物质的含量均低于GB/T 26572所规定的限量要求。

0: Indicate that said hazardous substance in all of the homogeneous materials for this part is below the limit requirement of GB/T 26572.

X: 意为在该部件所使用的所有均质材料里，至少有一类均质材料中该有害物质的含量高于GB/T 26572所规定的限量要求。

X: Indicate that said hazardous substance contained in at least one of the homogeneous materials used for this part is above the limit requirement of GB/T 26572.

部件名称 Part Name	组装备件说明 Spare Parts Descriptions for Assemblies
电子组件 Electronics Assembly	电子线路板组件 Electronic Board Assemblies 端子块组件 Terminal Block Assemblies 升级套件 Upgrade Kits 液晶显示屏或本地操作界面 LCD or LOI Display
壳体组件 Housing Assembly	电子外壳 Electrical Housing
传感器组件 Sensor Assembly	传感器模块 Sensor Module

# Rosemount 3051 Wireless product certifications

Rev 1.10

## European Directive information

A copy of the EU Declaration of Conformity can be found at the end of this guide. The most recent revision of the EU Declaration of Conformity can be found at [Emerson.com/Rosemount](https://emerson.com/rosemount).

## Telecommunications compliance

All wireless devices require certification to ensure 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

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

## Installing equipment in North America

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

## USA

### 15 U.S.A. Intrinsically Safe (IS)

**Ranges 1-5 Certificate** FM19US0050X

**Standards** FM Class 3600:2018, FM Class 3610:2018, FM Class 3810:2018, ANSI/ISA 60079-0:2013, ANSI/UL 60079-11:2014, NEMA 250:2003, ANSI/IEC 60529:2014, ANSI/UL 61010:2016

**Markings** IS CL I, DIV 1, GP A, B, C, D T4; CL 1, Zone 0 AEx ia IIC T4; T4(-40 °C ≤ T<sub>a</sub> ≤ +70 °C) when installed per Rosemount drawing 03031-1062; Type 4X/IP66/IP68

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

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

**Range 6 Certificate** CSA 2526009

**Standards** FM Class 3600 - 2011, FM Class 3610 - 2010, FM Class 3810 - 2005, ANSI/ISA 60079-0 - 2009, ANSI/ISA 60079-11 - 2009, UL 61010-1 (3rd edition), UL50E (1st Edition)

**Markings** IS CL I, DIV 1, GP A, B, C, D T4; CL 1, Zone 0 AEx ia IIC T4; T4(-40 °C ≤ T<sub>a</sub> ≤ +70 °C) when installed per Rosemount drawing 03031-1063; Type 4X/IP66/IP68

## Canada

### I6 Canada Intrinsically Safe

**Certificate** CSA 2526009

**Standards** CAN/CSA C22.2 No. 0-M91, CAN/CSA C22.2 No.94-M91, CSA Std C22.2 No. 142-M1987, CSA Std C22.2 No. 157-92, CSA Std C22.2 No. 60529:05

**Markings** Intrinsically Safe for Class I, Division 1, Groups A, B, C, D, T4 when installed per Rosemount drawing 03031-1063; Type 4X/IP66/IP68

## Europe

### I1 ATEX Intrinsic Safety

**Certificate** Baseefa12ATEX0228X

**Standards** EN 60079-0: 2012, EN 60079-11: 2012

**Markings** ⓈEx II 1 G Ex ia IIC T4 Ga, T4(-60 °C ≤ T<sub>a</sub> ≤ +70 °C) IP66/IP68

### 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 1 GΩ 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.

## International

### I7 IECEX Intrinsic Safety

<b>Certificate</b>	IECEX BAS 12.0124X
<b>Standards</b>	IEC 60079-0: 2011, IEC 60079-11: 2011
<b>Markings</b>	Ex ia IIC T4 Ga, T4(-60 °C ≤ T <sub>a</sub> ≤ +70 °C) IP66/IP68

#### 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 Emerson 701PGNKF Power Module may be replaced in a hazardous area. The power module has a surface resistivity greater than 1 GΩ 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.

## Brazil

### I2 INMETRO Intrinsic Safety

<b>Certificate</b>	UL-BR 13.0534X
<b>Standards</b>	ABNT NBR IEC 60079-0:2008 + Errata 1:2011, ABNT NBR IEC 60079-11:2009
<b>Markings</b>	Ex ia IIC T4 IP66 Ga, T4(-40 °C ≤ T <sub>a</sub> ≤ +70 °C)

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

See certificate for special conditions.

## China

### I3 China Intrinsic Safety

<b>Certificate</b>	: GYJ18.1419X; GYJ20.1488X [Flow Meters]
<b>Standards</b>	GB3836.1-2010, GB3836.4-2010, GB3836.20-2010
<b>Markings</b>	Ex ia IIC T4 Ga, T4(-60 ~ +70 °C)

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

See certificate for special conditions.

## Japan

### I4 TIIS Intrinsic Safety

<b>Certificate</b>	TC22022X (Rosemount 3051C/L), TC22023X (Rosemount 3051T), TC22024X (Rosemount 3051CFx)
<b>Markings</b>	Ex ia IIC T4 Ga, T4(-20 ~ +60 °C)

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

See certificate for special conditions.

**EAC – Belarus, Kazakhstan, Russia****IM Technical Regulation Customs Union (EAC) Intrinsic Safety**

<b>Certificate</b>	EAЭC RU C-US.EX01.B.00176/20
<b>Markings</b>	0Ex ia IIC T4 Ga X; (-60 °C ≤ T <sub>a</sub> ≤ +70 °C)

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

See certificate for special conditions.

**Korea****IP Korea Intrinsic Safety**

<b>Certificate</b>	13-KB4BO-0295X
<b>Markings</b>	Ex ia IIC T4 (-40 °C ≤ T <sub>a</sub> ≤ +70 °C)

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

See certificate for special conditions.

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

<b>Certificate</b>	15-HS1405241-PDA
<b>Intended Use</b>	Marine & Offshore Applications - Measurement of either gauge or absolute pressure for liquid, gas and vapor.

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

<b>Certificate</b>	23155
<b>Requirements</b>	Bureau Veritas Rules for the Classification of Steel Ships
<b>Application</b>	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**

<b>Certificate</b>	TAA000004F
<b>Intended Use</b>	DNV GL Rules for Classification - Ships and offshore units

Application:

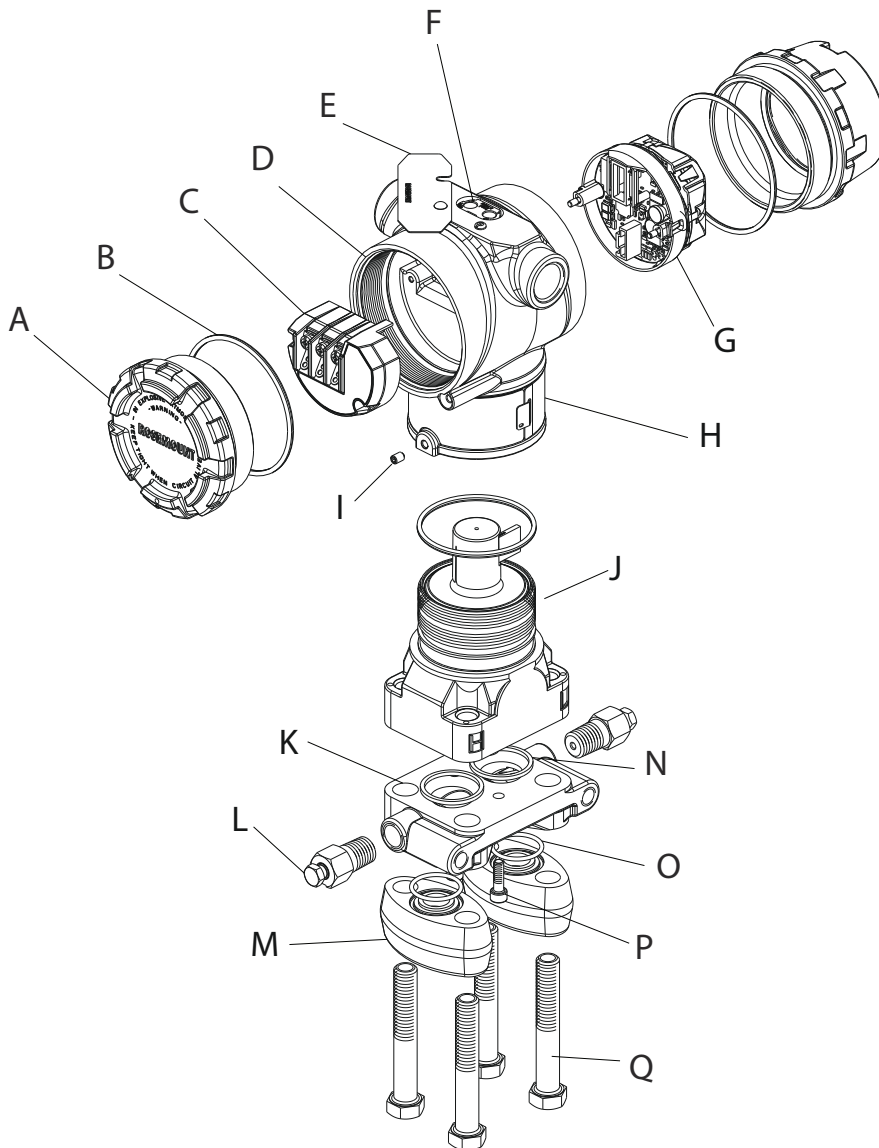
<b>Location classes</b>	
Temperature	D
Humidity	B
Vibration	A
EMC	B
Enclosure	D

# Dimensional drawings

**Note**

This section contains dimensional drawings for output codes A, F and X. For output codes W and M, visit [Emerson.com/en-us/support](https://emerson.com/en-us/support).

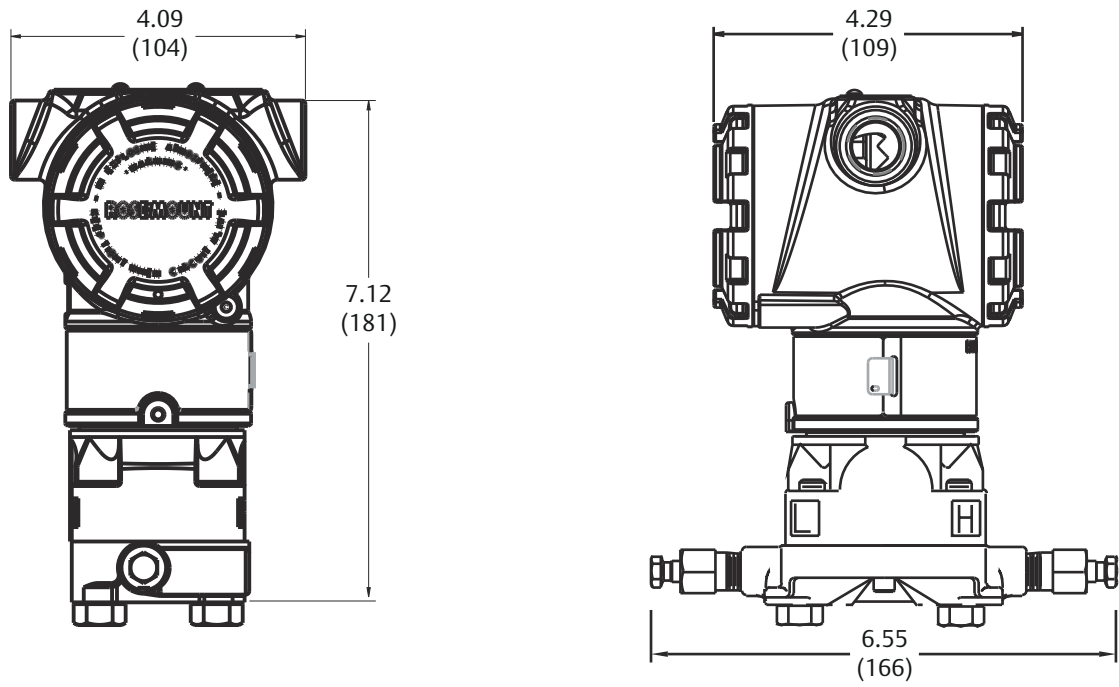
**Figure 7: Rosemount 3051C Exploded View**



- |                                |   |  |
|--------------------------------|---|--|
| 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                                    |

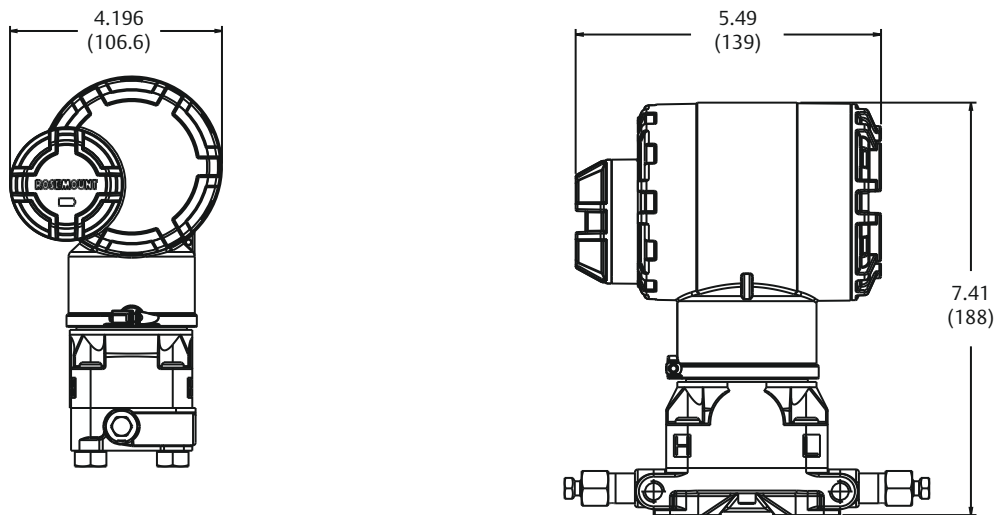


Figure 8: Rosemount 3051C Coplanar Flange



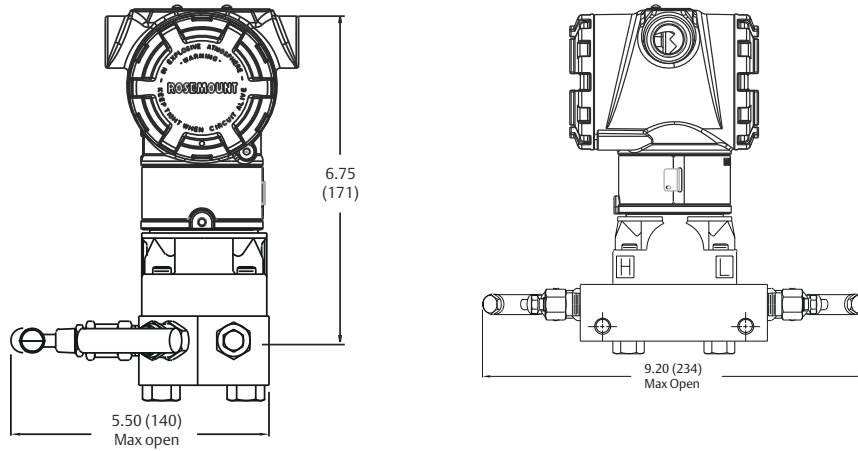
Dimensions are in inches (millimeters).

Figure 9: Rosemount 3051 Wireless Housing with Coplanar Flange



Dimensions are in inches (millimeters).

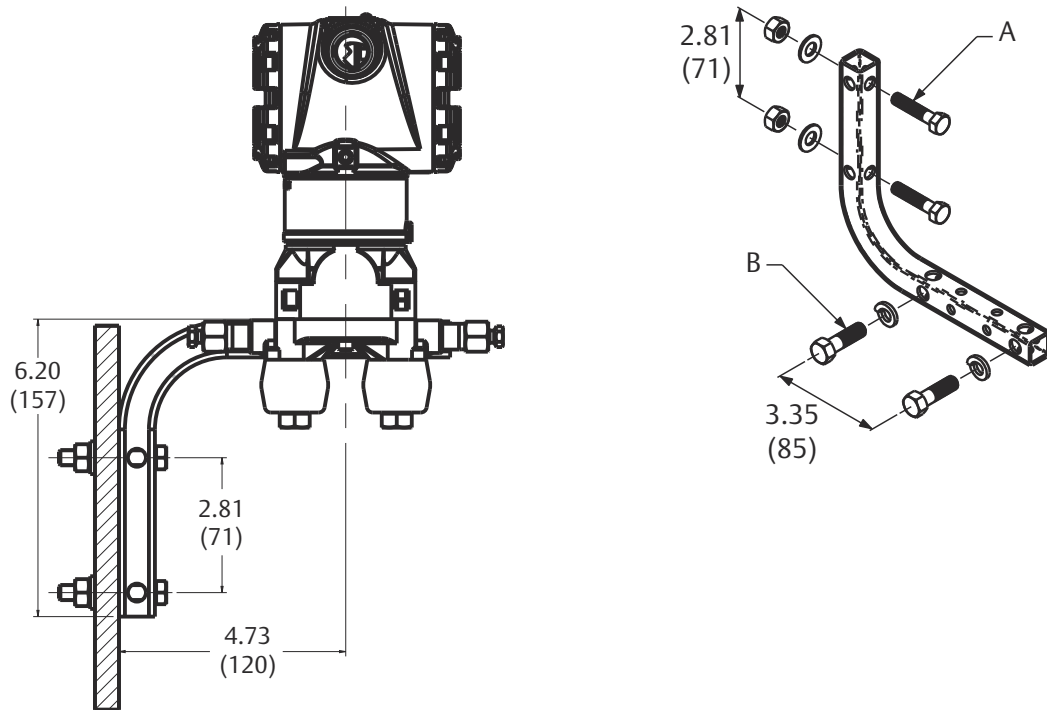
**Figure 10: Rosemount 3051C Coplanar Flange with Rosemount 305RC3 3-Valve Coplanar Integral Manifold**



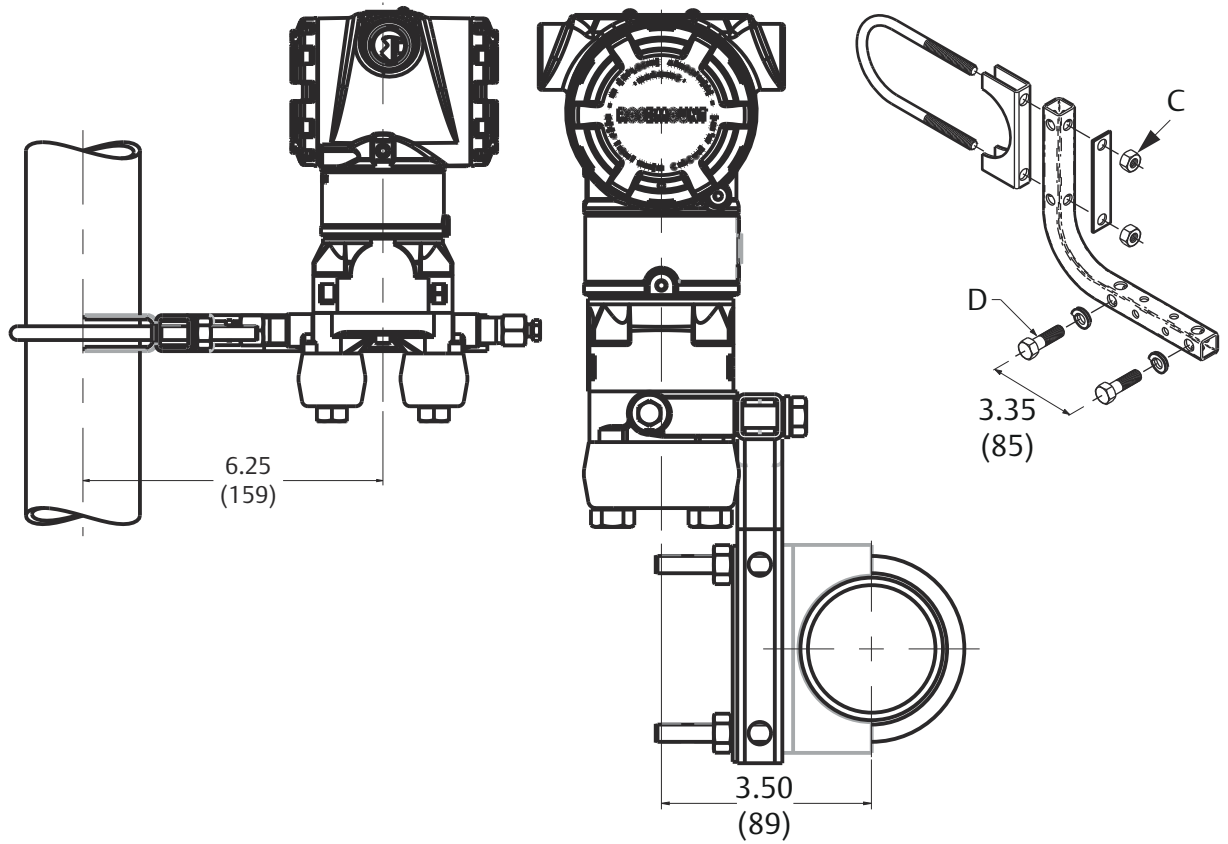
Dimensions are in inches (millimeters).

**Figure 11: Coplanar Flange Mounting Configurations with Optional Bracket (B4) for 2-in. Pipe or Panel Mounting**

Panel  
mounting



Pipe  
mounting



A. 5/16-18 bolts (not supplied)

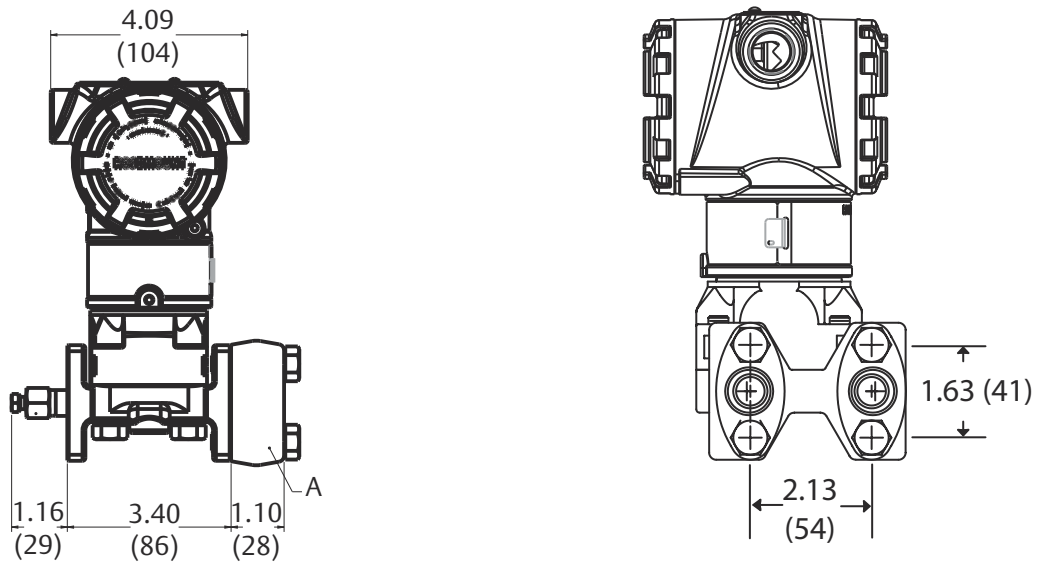
B. 3/8-16 bolts

C. 2-in. U-bolt

D. 3/8-16 bolts

Dimensions are in inches (millimeters).

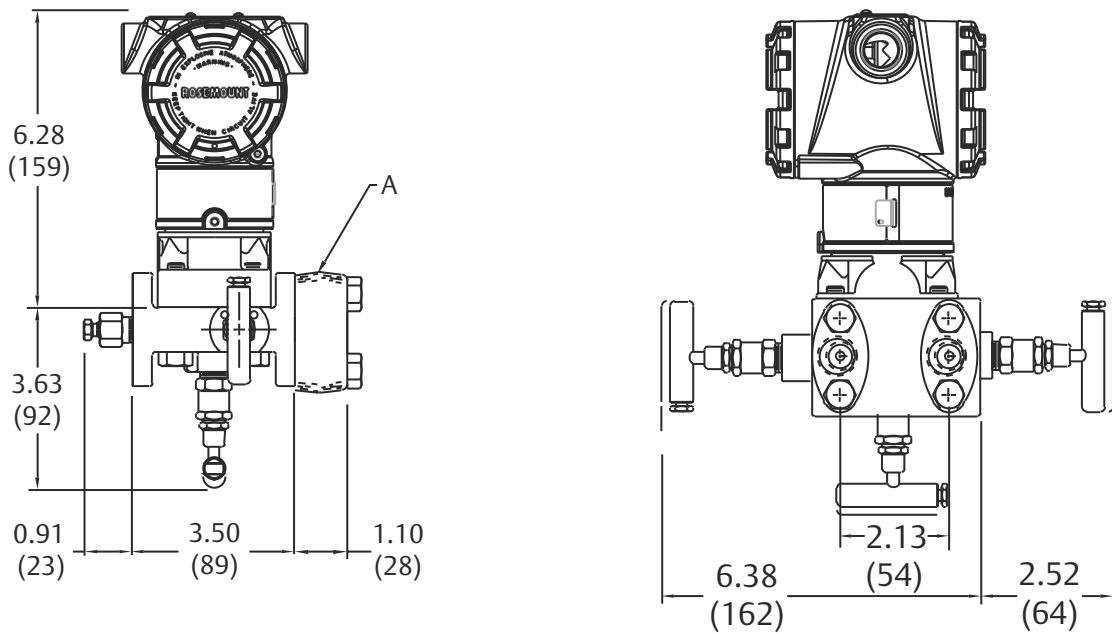
Figure 12: Rosemount 3051C Coplanar with Traditional Flange



A. Flange adapters (optional)

Dimensions are in inches (millimeters).

Figure 13: Rosemount 3051C Coplanar with Rosemount 305RT3 3-Valve Traditional Integral Manifold

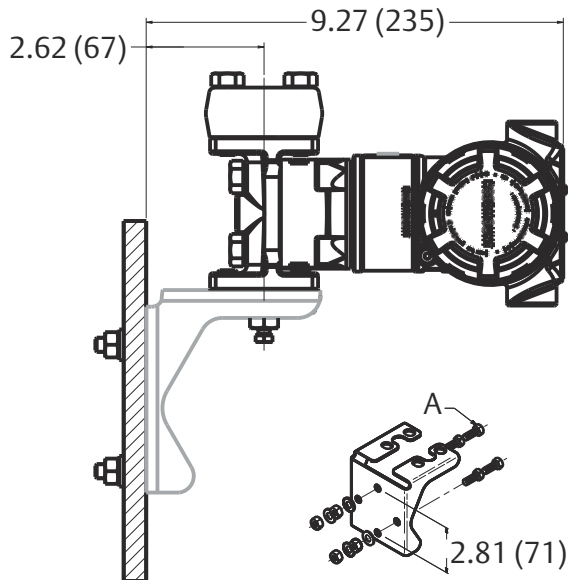


A. 1/2-14 NPT flange adapter (optional)

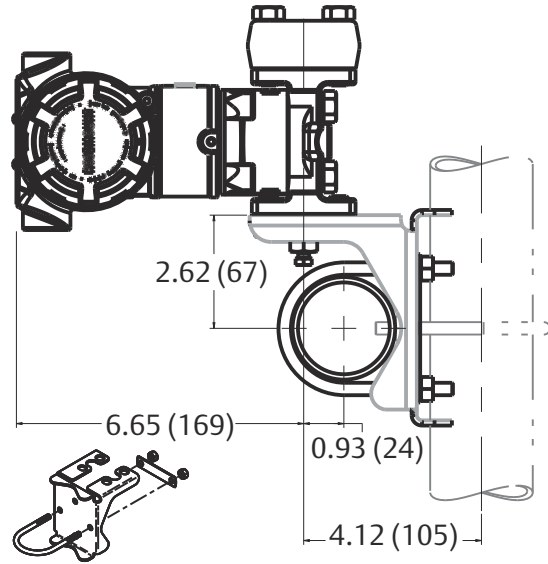
Dimensions are in inches (millimeters).

**Figure 14: Traditional Flange Mounting Configurations with Optional Brackets for 2-in. Pipe or Panel Mounting**

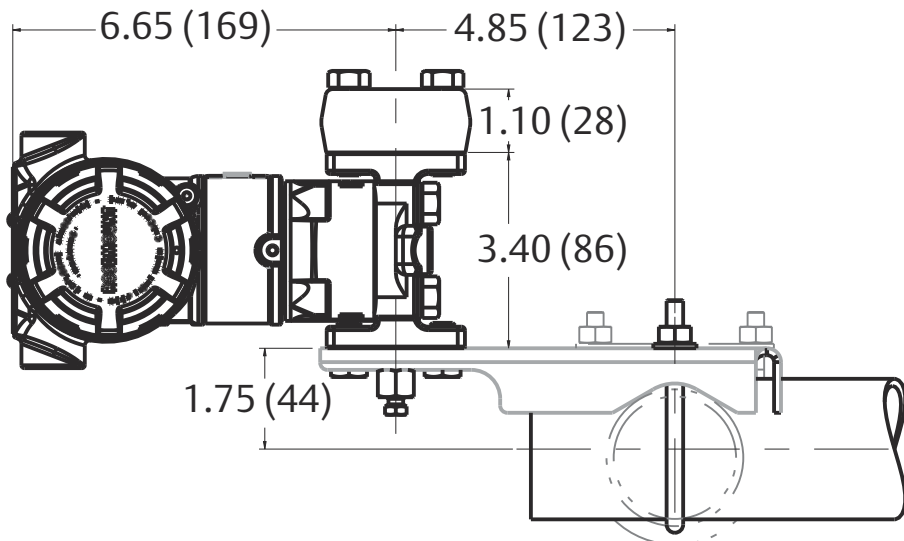
Panel mounting bracket (option B2/B8)



Pipe mounting bracket (option B1/B7/BA)



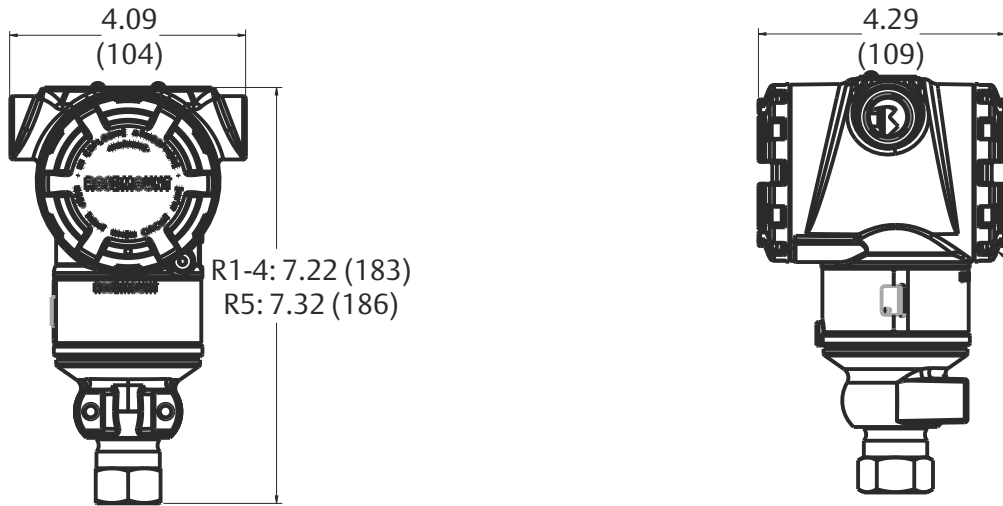
Pipe mounting bracket (option B3/B9/BC)



A. 5/16-18 bolts (not supplied)

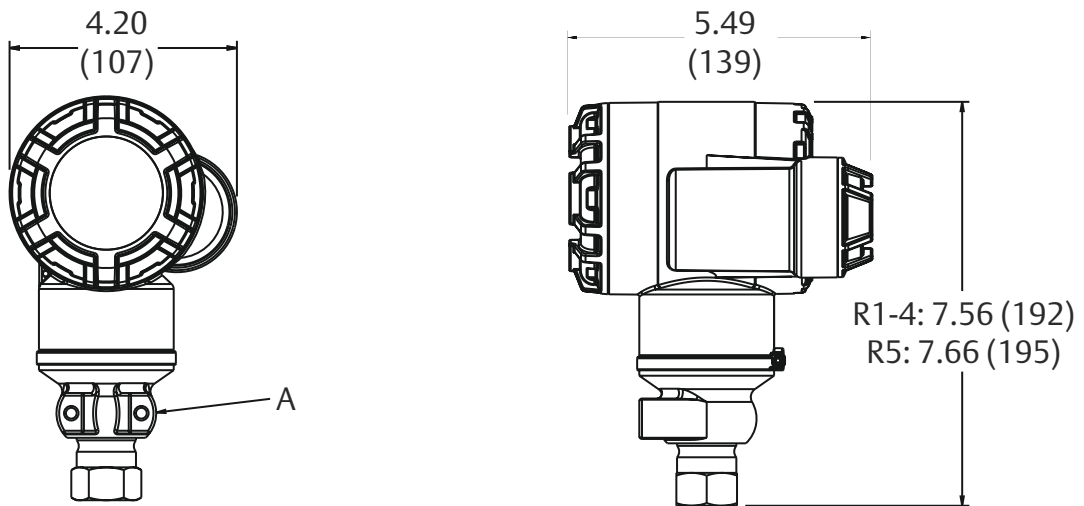
Dimensions are in inches (millimeters).

Figure 15: Rosemount 3051T



Dimensions are in inches (millimeters).

Figure 16: Rosemount 3051T Wireless Housing

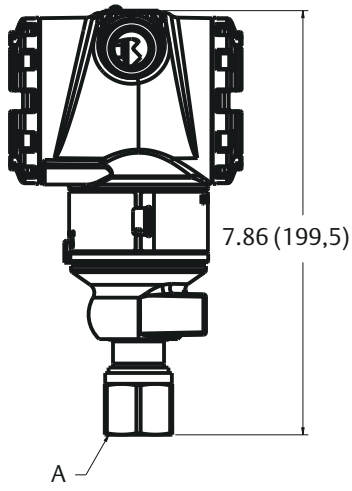


A. U-Bolt bracket

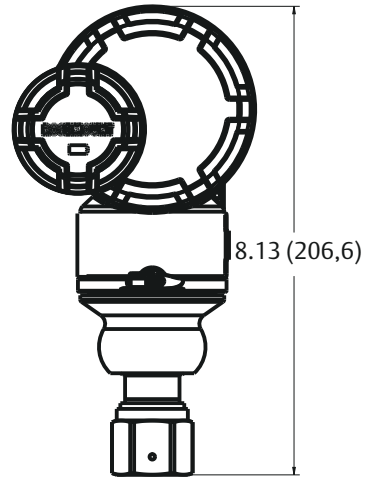
Dimensions are in inches (millimeters).

**Figure 17: Rosemount 3051T In-Line Range 6**

In-line



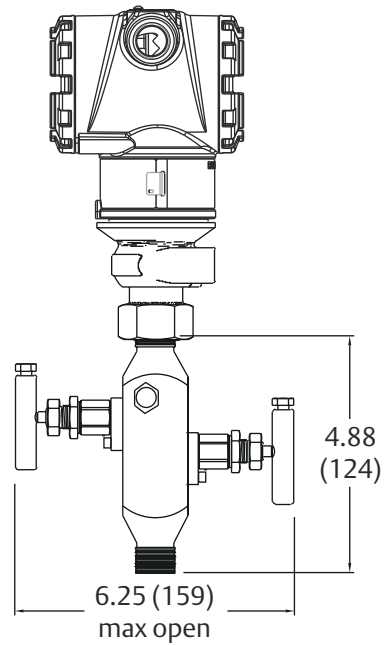
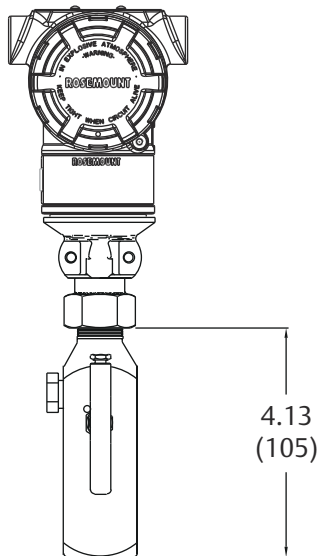
Wireless in-line



A. Autoclave type F-250-C

Dimensions are in inches (millimeters).

**Figure 18: Rosemount 3051T with Rosemount 306 2-Valve Integral Manifold**

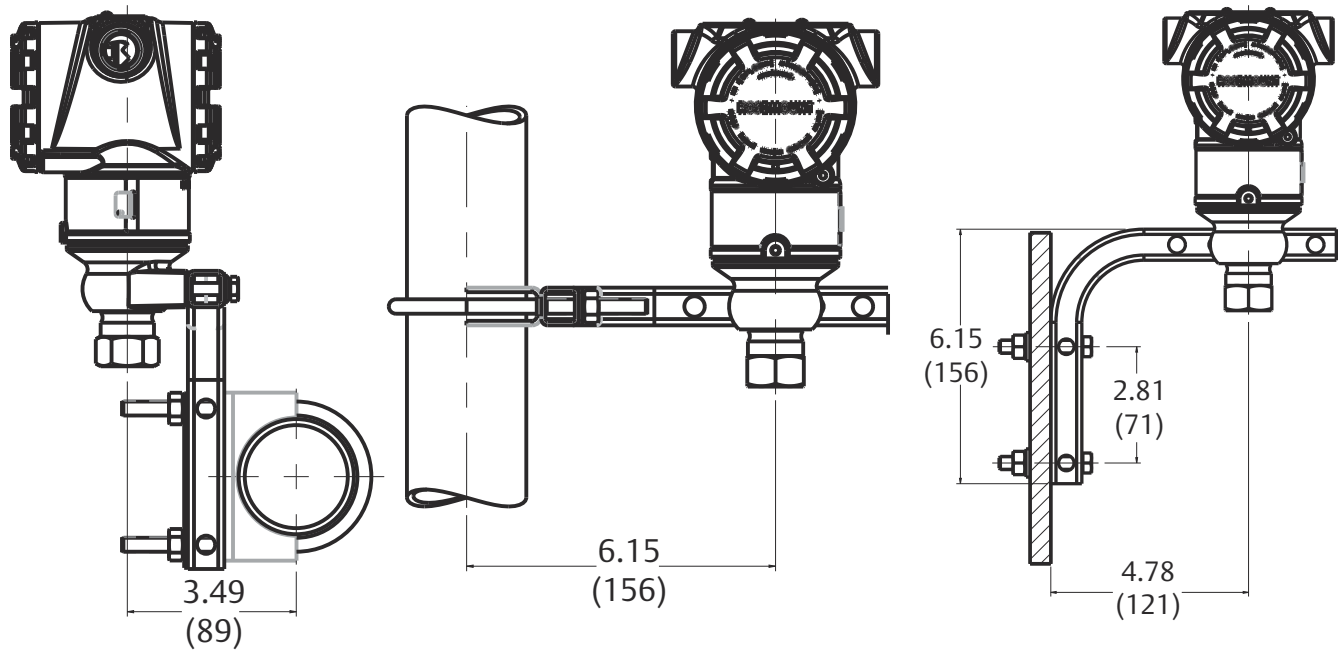


Dimensions are in inches (millimeters).

Figure 19: Rosemount 3051T Typical Mounting Configurations with Optional Mounting Bracket

Pipe mounting

Panel mounting



Dimensions are in inches (millimeters).



**Figure 20: Rosemount 3051CFA Pak-Lok Annubar Flow meter**

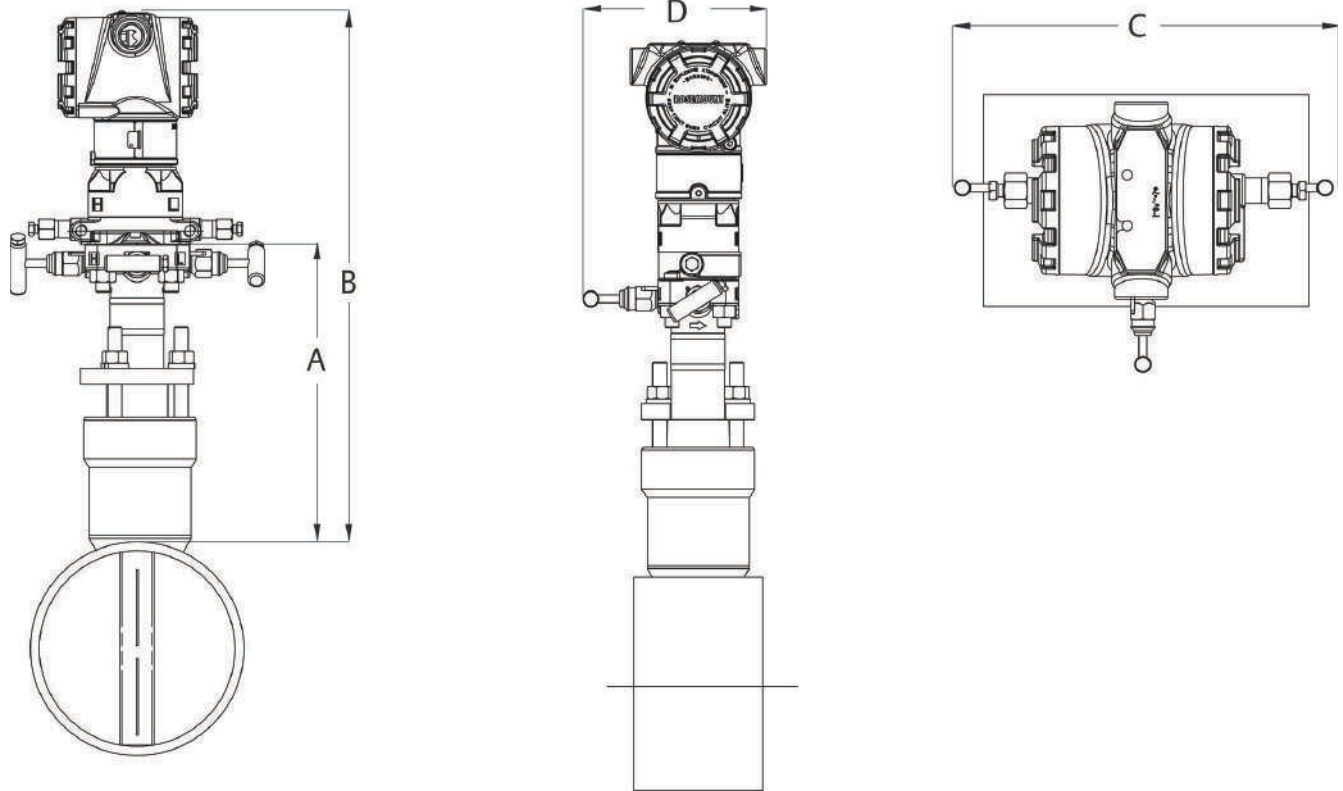
**Note**

The Pak-Lok Annubar model is available up to ASME B16.5 Class 600 rating (1440 psig at 100 °F [99 bar at 38 °C]).

Front View

Side View

Top View

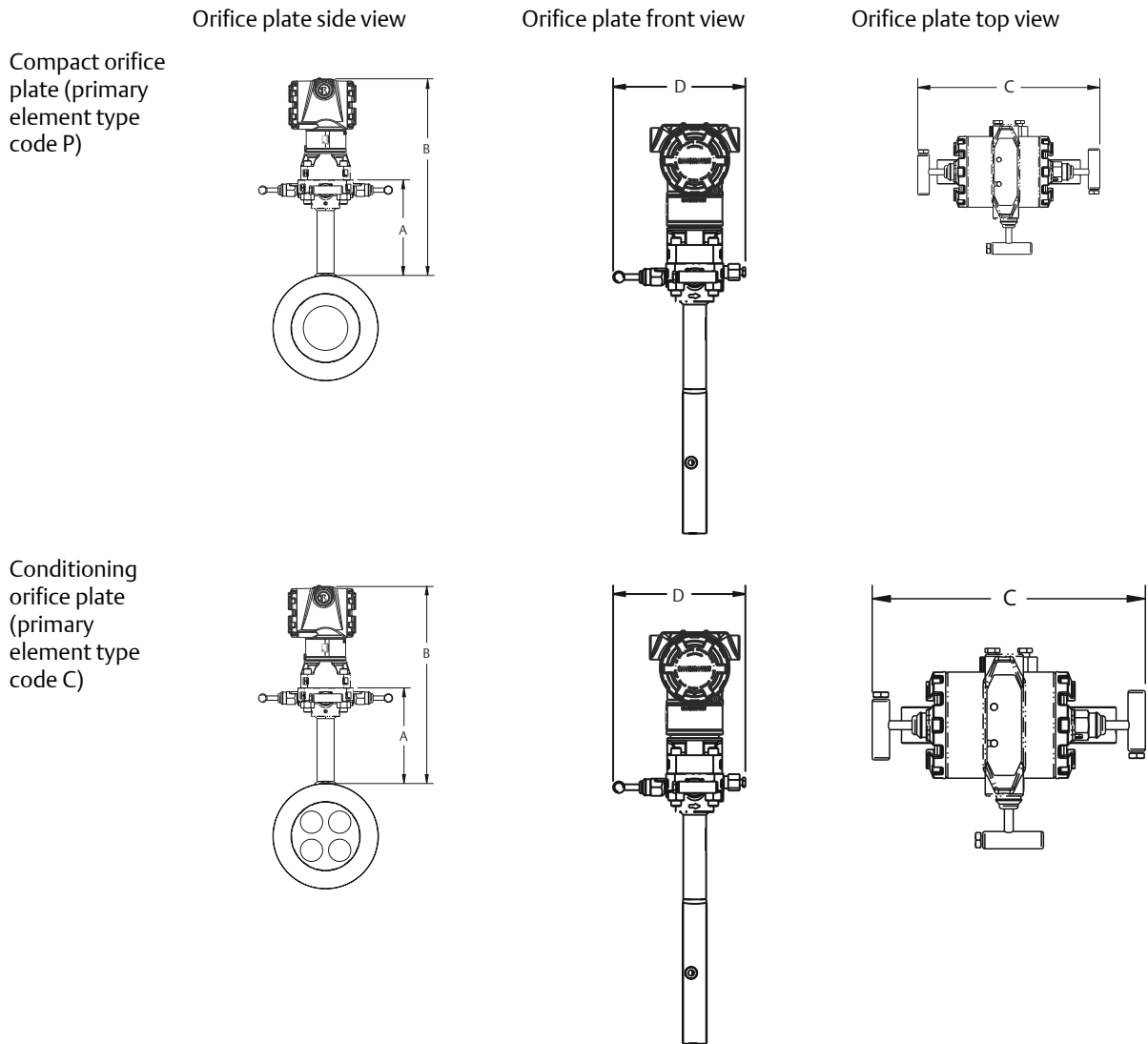


**Table 19: Rosemount 3051CFA Pak-Lok Annubar Flow meter Dimensional Data (Maximum Dimensions)**

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).

**Figure 21: Rosemount 3051CFC Compact Orifice Flow meter**

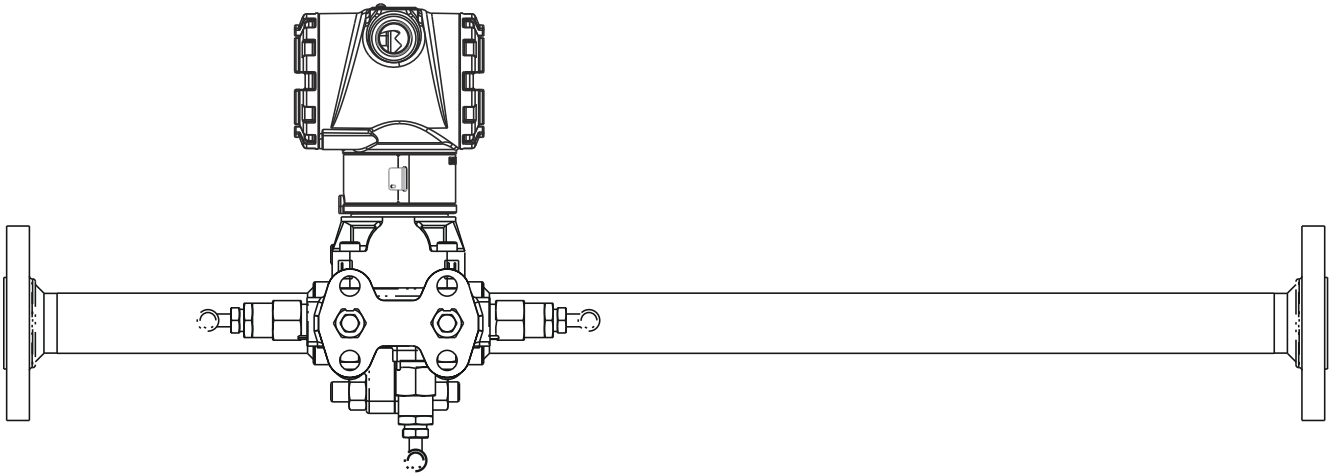


Primary element type	A	B	Transmitter height	C	D
Type P and C	5.62 (143)	Transmitter height + A	6.27 (159)	7.75 (197) - closed 8.25 (210) - open	6.00 (152) - closed 6.25 (159) - open

Dimensions are in inches (millimeters).

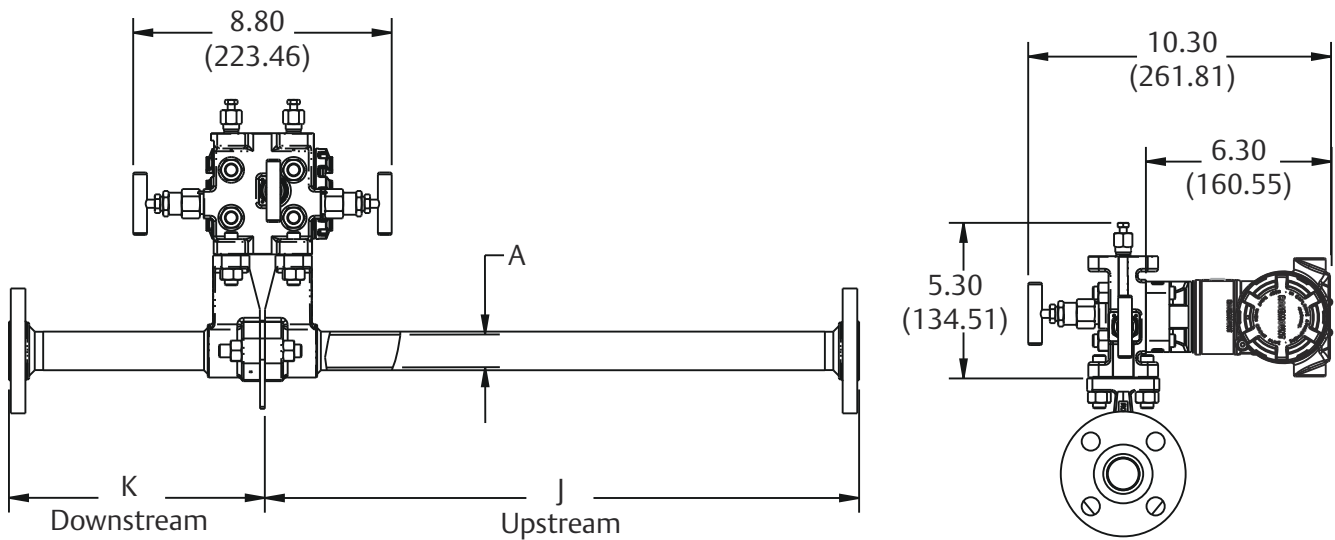
**Figure 22: Rosemount 3051CFP Integral Orifice Flow meter**

Side view



Bottom view

Front view



A. B.D. (bore diameter)

Dimensions are in inches (millimeters).

Dimension	Line size		
	½ -in. (15 mm)	1-in. (25 mm)	1½-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 Class 150, weld neck)	14.37 (364.9)	22.37 (568.1)	30.82 (782.9)
J (RF Class 300, weld neck)	14.56 (369.8)	22.63 (574.7)	31.06 (789.0)
J (RF Class 600, weld neck)	14.81 (376.0)	22.88 (581.0)	31.38 (797.1)

Dimension	Line size		
	½-in. (15 mm)	1-in. (25 mm)	1½-in. (40 mm)
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 Class 150, weld neck)	7.57 (192.3)	10.88 (276.3)	14.29 (363.1)
K (RF Class 300, weld neck)	7.76 (197.1)	11.14 (282.9)	14.53 (369.2)
K (RF Class 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).

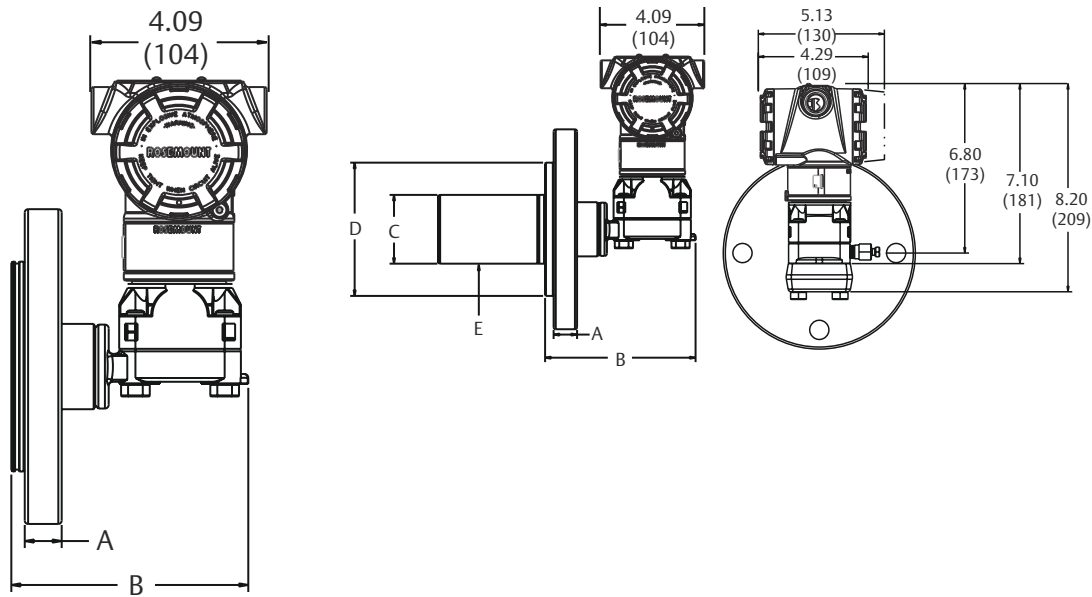
(1) Downstream length shown here includes plate thickness of 0.162-in. (4.11 mm).

**Figure 23: Rosemount 3051L Configurations**

2-in. flange Configuration (flush mount only)

3- and 4-in. flange configuration

Diaphragm assembly and mounting flange



E. 2-, 4-, or 6-in. extension (only available with 3- and 4-in., DN80, and DN100 flange configurations)

**Table 20: Rosemount 3051L Dimensional Specifications**

Class <sup>(1)</sup>	Pipe size	Flange thickness A	B	Extension diameter <sup>(1)</sup> C	O.D. gasket surface D
ASME B16.5 (ANSI) 150	2 (51)	0.69 (18)	5.65 (143)	N/A	3.6 (92)
	3 (76)	0.88 (22)	5.65 (143)	2.58 (66)	5.0 (127)
	4 (102)	0.88 (22)	5.65 (143)	3.5 (89)	6.2 (158)
ASME B16.5 (ANSI) 300	2 (51)	0.82 (21)	5.65 (143)	N/A	3.6 (92)
	3 (76)	1.06 (27)	5.65 (143)	2.58 (66)	5.0 (127)

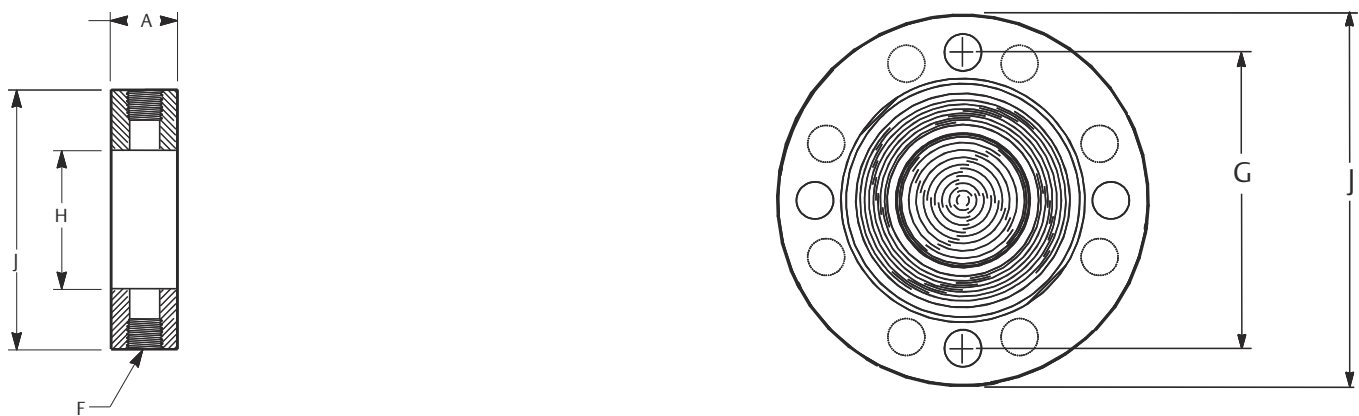
**Table 20: Rosemount 3051L Dimensional Specifications (continued)**

Class <sup>(1)</sup>	Pipe size	Flange thickness A	B	Extension diameter <sup>(1)</sup> C	O.D. gasket surface D
	4 (102)	1.19 (30)	5.65 (143)	3.5 (89)	6.2 (158)
ASME B16.5 (ANSI) 600	2 (51)	1.00 (25)	7.65 (194)	N/A	3.6 (92)
	3 (76)	1.25 (32)	7.65 (194)	2.58 (66)	5.0 (127)
DIN 2501 PN 10–40	DN 50	0.79 (20)	5.65 (143)	N/A	4.0 (102)
DIN 2501 PN 25/40	DN 80	0.94 (24)	5.65 (143)	2.6 (66)	5.4 (138)
	DN 100	0.94 (24)	5.65 (143)	3.5 (89)	6.2 (158)
DIN 2501 PN 10/16	DN 100	0.79 (20)	5.65 (143)	3.5 (89)	6.2 (158)

Dimensions are in inches (millimeters).

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

**Figure 24: Optional Flushing Connection Ring (Lower Housing) for Rosemount 3051L**



Class <sup>(1)</sup>	Pipe size	Flange thickness A	Lower housing F		Bolt circle diameter G	No. of bolts	Bolt hole diameter	Process side H	Outside diameter J
			¼-in. NPT	½-in. NPT					
ASME B16.5 (ANSI) 150	2 (51)	0.69 (18)	0.97 (25)	1.31 (33)	4.75 (121)	4	0.75 (19)	2.12 (54)	6.0 (152)
	3 (76)	0.88 (22)	0.97 (25)	1.31 (33)	6.0 (152)	4	0.75 (19)	3.60 (91)	7.5 (191)
	4 (102)	0.88 (22)	0.97 (25)	1.31 (33)	7.5 (191)	8	0.75 (19)	3.60 (91)	9.0 (229)
ASME B16.5 (ANSI) 300	2 (51)	0.82 (21)	0.97 (25)	1.31 (33)	5.0 (127)	8	0.75 (19)	2.12 (54)	6.5 (165)
	3 (76)	1.06 (27)	0.97 (25)	1.31 (33)	6.62 (168)	8	0.88 (22)	3.60 (91)	8.25 (210)
	4 (102)	1.19 (30)	0.97 (25)	1.31 (33)	7.88 (200)	8	0.88 (22)	3.60 (91)	10.0 (254)
ASME B16.5 (ANSI) 600	2 (51)	1.00 (25)	0.97 (25)	1.31 (33)	5.0 (127)	8	0.75 (19)	2.12 (54)	6.5 (165)
	3 (76)	1.25 (32)	0.97 (25)	1.31 (33)	6.62 (168)	8	0.88 (22)	3.60 (91)	8.25 (210)
DIN 2501 PN 10–40	DN 50	0.79 (20)	0.97 (25)	1.31 (33)	4.92 (125)	4	0.71 (18)	2.40 (61)	6.5 (165)
DIN 2501 PN 25/40	DN 80	0.94 (24)	0.97 (25)	1.31 (33)	6.3 (160)	8	0.71 (18)	3.60 (91)	7.87 (200)

Class <sup>(1)</sup>	Pipe size	Flange thickness A	Lower housing F		Bolt circle diameter G	No. of bolts	Bolt hole diameter	Process side H	Outside diameter J
			¼-in. NPT	½-in. NPT					
	DN 100	0.94 (24)	0.97 (25)	1.31 (33)	7.48 (190)	8	0.88 (22)	3.60 (91)	9.25 (235)
DIN 2501 PN 10/16	DN 100	0.79 (20)	0.97 (25)	1.31 (33)	7.09 (180)	8	0.71 (18)	3.60 (91)	8.66 (220)

# Options

## Standard configuration

Unless otherwise specified, transmitter is shipped as follows:

Engineering units	Setting
Differential/Gage	inH <sub>2</sub> O (Range 0, 1, 2, and 3)
Absolute/Rosemount 3051A/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 one second.

## Custom configuration

### Note

Not applicable to FOUNDATION Fieldbus or PROFIBUS PA Protocols.

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

Refer to the Rosemount 3051 [Configuration Data Sheet](#) for Rosemount 3051 HART® Protocol.

For Wireless, refer to the Rosemount 3051 Wireless [Configuration Data Sheet](#).

## Tagging (three options available)

- Standard SST hardware tag is stamped on the transmitter, 56 characters maximum.
- Tag may be wired to the transmitter upon request. Tag character height is 0.125 in. (3.18 mm), 56 characters maximum.
- Tag may be stored in transmitter memory. Character limit is dependent on protocol.
  - HART Revision 5: 8 characters
  - HART Revision 7 and Wireless: 32 characters
  - FOUNDATION Fieldbus: 32 characters
  - PROFIBUS PA: 32 characters

### Commissioning tag

#### Note

Only applicable to FOUNDATION Fieldbus.

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 Rosemount 3051C and 3051T transmitters. Refer to the following [Product Data Sheet](#) for Rosemount 304, 305, and 306 for additional information.

### Other seals

Refer to Rosemount DP Level Transmitters and 1199 Diaphragm Seal System [Product Data Sheet](#) 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 at 4 °C <sup>(2)</sup>	g/cm <sup>2</sup>	psi
mbar	mm H <sub>2</sub> O	kg/cm <sup>2</sup>	torr
bar	mm Hg	Pa	cm H <sub>2</sub> O at 4 °C <sup>(1)(2)</sup>
inH <sub>2</sub> O	mm H <sub>2</sub> O at 4 °C <sup>(2)</sup>	kPa	m H <sub>2</sub> O at 4 °C <sup>(1)(2)</sup>
inHg	ft H <sub>2</sub> O	MPa <sup>(2)</sup>	ft H <sub>2</sub> O at 60 °F <sup>(1)(2)</sup>
hPa <sup>(1)(2)</sup>	inH <sub>2</sub> O at 60 °F <sup>(2)</sup>	kg/m <sup>2</sup> <sup>(1)(2)</sup>	cmHg at 0 °C <sup>(1)(2)</sup>
m Hg at 0 °C <sup>(1)(2)</sup>	psf <sup>(1)(2)</sup>	ft H <sub>2</sub> O at 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 code M) or PROFIBUS PA (output option code W).

### Display and interface options

M4 Digital display with LOI

- Available for 4–20 mA HART and PROFIBUS PA

M5 Digital display

- Two-line, five-digit LCD display for low power output
- Two-line, eight-digit LCD display for 4–20 mA HART, FOUNDATION Fieldbus, and PROFIBUS PA
- Three-line, seven-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 digital display.

### 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 x 20  $\mu$ s)
- 6 kV crest (1.2 x 50  $\mu$ s)

### Bolts for flanges and adapters

- Options permit bolts for flanges and adapters to be obtained in various materials
- Standard material is plated CS per ASTM A449, Type 1
- L4 austenitic 316 SST bolts
- L5 ASTM A 193, Grade B7M bolts
- L6 alloy k-500 bolts

### Conduit plug

DO option replaces the standard CS plug with 316 SST 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
- SST construction with SST bolts

### Rosemount 3051C Traditional Flange bracket options

#### B1 Bracket for 2-in. pipe mounting

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

**B7 B1 Bracket with SST bolts**

- Same bracket as the B1 option with Series 300 SST bolts

**B8 B2 Bracket with SST bolts**

- Same bracket as the B2 option with Series 300 SST bolts

**B9 B3 Bracket with SST bolts**

- Same bracket as the B3 option with Series 300 SST bolts

**BA SST B1 bracket with SST bolts**

- B1 bracket in SST with Series 300 SST bolts

**BC SST B3 Bracket with SST bolts**

- B3 bracket in SST with Series 300 SST bolts



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