Product Data Sheet
00813-0100-4001, Rev WE
April 2023

Rosemount™ 3051 Pressure Transmitter



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

ROSEMOUNT™

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Setting the standard for pressure measurement

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



- More than ten 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
- SIL 2/3 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 a broad offering.

Advanced functionality

Bluetooth® technology

- Increase productivity, reliability, and personnel safety. No hot work permit needed. No climbing tanks or building scaffolding.
- Quickly configure, service, and troubleshoot with access to all devices near the technician at speeds up to 10 times faster than traditional HART® connections.



Diagnostics

- The Loop Integrity diagnostic continuously monitors the electrical loop to detect issues that affect the communication signal and will alert you to corrosion, water in the housing, or an unstable power supply.
- The Plugged Impulse Line diagnostic continuously monitors for plugged impulse lines and alerts you to abnormal conditions so you can take proactive measures before it affects the quality of the process.
- Diagnostic events are tracked in the built-in diagnostic log which allows you to see the device status at all times.
- These capabilities are safety certified for your most critical applications.



Enhanced software

- Application specific configuration allows you to transform your pressure transmitter into a flow meter with a totalizer or a level transmitter with volume calculations.
- Process alerts can be configured for any dynamic variable. They can be given a custom name, assigned target thresholds, and can notify via HART alert or analog output alarm.

Quick service buttons

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



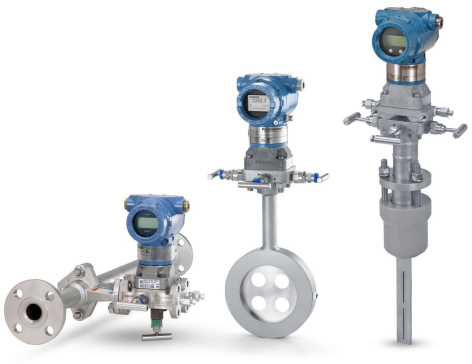


Industry leading capabilities extended to IEC 62591 (*Wireless*HART®)



- 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



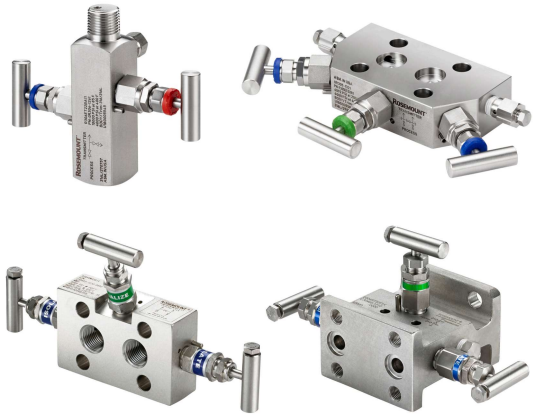
- Fully assembled and leak tested for out-of-the-box installation.
- Easy commissioning with factory configuration of flow rate and totalized flow.
- Reduce straight pipe requirements, lower permanent pressure loss, and achieve accurate measurement in small line sizes.
- Up to 1.65 percent volumetric 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.
- Configuration wizard guides you through complex level applications and enables volume measurement.
- 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 – high 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.

- Loop Integrity and Plugged Impulse Line Diagnostics detect issues that might compromise the integrity of the output signal (code DA1).
- Bluetooth® Connectivity enables efficient, reliable, and safe configuration and maintenance (code BLE).
- Back-lit Graphical Display with Local Language Capability (code M6).
- Safety certification and proof testing (code QT and T9).

CONFIGURE > 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 1.

Figure 1: Model Code Example

3051CD3A22A1A (1) **WR5M6BLEDA1** (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 the fastest delivery times. 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(1)	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)	
0(1)	–3 to 3 inH_2O (-7.46 to 7.46 mbar)	N/A	N/A	
1	–25 to 25 inH_2O (–62.16 to 62.16 mbar)	–25 to 25 inH_2O (–62.16 to 62.16 mbar)	0 to 30 psia (0 to 2.06 bar)	★
2	–250 to 250 inH_2O (–621.60 to 621.60 mbar)	–250 to 250 inH_2O (–621.60 to 621.60 mbar)	0 to 150 psia (0 to 10.34 bar)	★
3	–1000 to 1000 inH_2O (–2.48 to 2.48 bar)	–393 to 1000 inH_2O (–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	★

(1) *Rosemount 3051CD0 is only available with 4-20 mA HART or wireless HART outputs (code A and code X). For 4-20 mA HART 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 wireless 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	4–20 mA with digital signal based on HART® Protocol	★
F	FOUNDATION™ Fieldbus Protocol	★

W[1]	PROFIBUS® PA Protocol	★
X[2]	Wireless (requires wireless options and engineered polymer housing)	★
M[3]	Low-power, 1–5 Vdc with digital signal based on HART Protocol	

(1) *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, and N3.*
(2) *This option is only available with intrinsically safe approvals.*
(3) *Only available with C6, E2, E5, I5, K5, KB, EM, IM, KM, EP, and E8 product certifications.*

Materials of construction

Code	Transmitter flange type	Flange material	Drain/vent	
2	Coplanar	SST	SST	★
3[1]	Coplanar	Cast C-276	Alloy C-276	★
4	Coplanar	Alloy 400	Alloy 400/K-500	★
5	Coplanar	Plated CS	SST	★
7[1]	Coplanar	SST	Alloy C-276	★
8[1]	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[1]	316L SST	★
3[1]	Alloy C-276	★
4[2]	Alloy 400	
5[2]	Tantalum (available on Rosemount 3051CD and CG, ranges 2–5 only; not available on Rosemount 3051CA)	
6[2]	Gold-plated alloy 400 (use in combination with O-ring option code B)	
7[2]	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[1]	Inert (differential and gage only)	★

(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	★
J	SST	½–14 NPT	★
K	SST	M20 x 1.5	★
P[1]	Engineered polymer	No conduit entries	★
D[2]	Aluminum	G½	
M[2]	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. These options are only available with product certifications options I1, I2, I3, I7, IA, IB, IM, KA, N1, N3, N7. Product certifications options E4 and IG are available with aluminum only (option D).*

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 *Wireless*HART®	★

Antenna and SmartPower™

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

Additional options

Local wireless device access

Code	Description	
BLE(1)	Bluetooth® configuration and maintenance	★

(1) *Requires the Graphical LCD Display (code M6).*

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(1)	Loop Integrity Diagnostic	★
DA1(1)	Loop Integrity and Plugged Impulse Line Diagnostics	★
D01	FOUNDATION™ Fieldbus Diagnostics Suite	★

(1) *Only available with 4-20 mA HART protocol (code A).*

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(1)	Traditional flange, alloy C, alloy C-276 drain/vent	★
H4	Traditional flange, cast alloy 400, alloy 400/K-500 drain/vent	★
H7(1)	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(2)	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(1)	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(1)	Assemble to one Rosemount seal	★
S2(2)	Assemble to two Rosemount 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	★
I1[1]	ATEX Intrinsic Safety	★
IA	ATEX FISCO Intrinsic Safety; for FOUNDATION™ Fieldbus or PROFIBUS® PA Protocol only	★
N1	ATEX Type n Certification	★
K8	ATEX Flameproof, Intrinsic Safety, Type n, Dust (combination of E8, I1 and N1)	★
E4[2]	Japan Flameproof	★
E5	USA Explosion-proof, Dust Ignition-proof	★
I5[3]	USA Intrinsically Safe, Nonincendive	★
K5	USA Explosion-proof, Dust Ignition-proof, Intrinsically Safe, and Division 2	★
E6	Canada Explosion-proof, Dust Ignition-proof, Division 2	★
I6	Canada Intrinsic Safety	★
C6	Canada Explosion-proof, Dust Ignition-proof, Intrinsically Safe, and Division 2	★
K6	Canada and ATEX Explosion-proof, Intrinsically Safe, and Division 2 (combination of C6, E8, and I1)	★
E7	IECEx Flameproof	★
I7	IECEx Intrinsic Safety	★
N7	IECEx Type n Certification	★
K7	IECEx Flameproof, Dust Ignition-proof, Intrinsic Safety, and Type n (combination of I7, N7, and E7)	★
IG	IECEx FISCO Intrinsically Safe; for FOUNDATION Fieldbus or PROFIBUS PA Protocols only	★
E2	Brazil Flameproof	★
I2	Brazil Intrinsic Safety	★
IB	Brazil FISCO intrinsically safe; for FOUNDATION Fieldbus or PROFIBUS PA Protocols only	★
K2	Brazil Flameproof, Intrinsic Safety	★
E3	China Flameproof	★
I3	China Intrinsic Safety	★
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[4]	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 wireless (output code X). See Rosemount 3051 product certifications for wireless approvals.*
(2) *Only available with 4-20 mA HART®(output code A), FOUNDATION™ Fieldbus (output code F), or PROFIBUS®PA (output code W). Only available with aluminum housing and G½ conduit entry size (housing material code D).*
(3) *Nonincendive certification not provided with wireless (output code X).*
(4) *Only available with wireless (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

Not available with wireless output (code X).

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

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

M5	Description	
M6(1)	Graphical LCD display	★
M5	LCD display	★
M4(2)	LCD display with LOI	★

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

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

Calibration certificate

Code	Description	
Q4	Calibration certificate	★
QP	Calibration certification and tamper evident seal	★

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	★

Enhanced safety

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

Code	Description	
T9	Enhanced SIS proof testing and logging	★

Configuration buttons

Code	Description	
D1(1)	Quick service buttons	★
D4(2)	Analog zero and span	★
DZ(3)	Digital zero trim	★

(1) *Only available with Graphical LCD Display (code M6).*
(2) *Only available with HART® 4–20 mA (output code A).*
(3) *Only available with HART 4–20 mA (output code A) and wireless (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 code A) and wireless (output code X).

Code	Description	
C1	Custom software configuration (For wired, see the Rosemount 3051 Configuration Data Sheet. For wireless, see the Rosemount 3051 Wireless Configuration Data Sheet.)	★

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(1)	Analog output levels compliant with NAMUR recommendation NE 43, alarm high	★
CN(1)	Analog output levels compliant with NAMUR recommendation NE 43, alarm low	★
CR	Custom alarm and saturation signal levels, high alarm (requires C1)	★
CS	Custom alarm and saturation signal levels, low alarm (requires C1)	★
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(1)	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	★

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	★

Enhanced software

Enhanced software enables application specific configuration, expanded process alerts, and logging capabilities.

Code	Description	
RK	Enhanced software	★

Cold temperature

This option is only available for pressure ranges 1–5 with 4-20 mA HART® and FOUNDATION Fieldbus 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, GE, GM, L4, L5, L6, or P9.

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

(1) *If Product Certification Options are required, the BR5 option is only available with approval codes C6, E2, E5, E6, E7, EM, I2, I3, I5, I6, I7, IA, IB, IM, IP, K2, K5, K7, KB, KM, and KP.*

(2) *If Product Certification Options are required, the BR6 option is only available with approval codes E2, E7, EM, I2, I3, I6, I7, IB, IM, IP, K2, K7, and KM.*

Wireless power accessory

This option is only available with wireless 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.

- Loop Integrity and Plugged Impulse Line Diagnostics detect issues that might compromise the integrity of the output signal (code DA1).
- Bluetooth® Connectivity enables efficient, reliable, and safe configuration and maintenance (code BLE).
- Back-lit Graphical Display with Local Language Capability (code M6).
- Safety certification and proof testing (code QT and T9).

CONFIGURE > 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 2.

Figure 2: Model Code Example

3051TG3A2B21A (1) **WR5M6BLEDA1** (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 the fastest delivery times. 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(1)	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)(1)	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(2)	–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	4–20 mA with digital signal based on HART® Protocol	★
F	FOUNDATION™ Fieldbus Protocol	★
W(1)	PROFIBUS® PA Protocol	★
X(2)	Wireless (requires wireless options and engineered polymer housing)	★
M(3)	Low-power, 1–5 Vdc with digital signal based on HART Protocol	

(1) *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, and N3.*
(2) *This option is only available with intrinsically safe approvals.*

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

Process connection style

Code	Description	
2B	½-14 NPT female (range 0-5 only)	★
2C[1]	G½ A EN837-1 male (range 0-4 only)	★
2F[2]	Coned and threaded, compatible with autoclave Type F-250-C (range 5-6 only)	
61[3][4]	Non-threaded instrument flange (range 1-4 only)	

(1) *Not available with S1, S5, or WSM. Wireless output (code X) not available with absolute pressure type or C-276 diaphragm material.*
(2) *Not available with wireless (output code X) for range 5.*
(3) *Not available with wireless (output code X).*
(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[1]	Inert	

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

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[1]	Engineered polymer	No conduit entries	★
D[2]	Aluminum	G½	
M[2]	Stainless steel	G½	

(1) *Only available with wireless (output code X). Only available with gauge pressure ranges 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. Product certifications options E4 and IG are available with aluminum only (option D).*

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 *Wireless*HART®	★

Antenna and SmartPower™

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

Additional options

Local wireless device access

Code	Description	
BLE(1)	Bluetooth® configuration and maintenance	★

(1) *Requires the Graphical LCD Display (code M6).*

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(1)	Loop Integrity Diagnostic	★
DA1(1)	Loop Integrity and Plugged Impulse Line Diagnostics	★
D01	FOUNDATION™ Fieldbus Diagnostics Suite	★

(1) *Only available with 4-20 mA HART protocol (code A).*

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 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	★
I1[(1)]	ATEX Intrinsic Safety	★
IA	ATEX FISCO Intrinsic Safety; for FOUNDATION™ Fieldbus or PROFIBUS® PA Protocol only	★
N1	ATEX Type n Certification	★
K8	ATEX Flameproof, Intrinsic Safety, Type n, Dust (combination of E8, I1 and N1)	★
E4[(2)]	Japan Flameproof	★
E5	USA Explosion-proof, Dust Ignition-proof	★
I5[(3)]	USA Intrinsically Safe, Nonincendive	★
K5	USA Explosion-proof, Dust Ignition-proof, Intrinsically Safe, and Division 2	★
E6	Canada Explosion-proof, Dust Ignition-proof, Division 2	★
I6	Canada Intrinsic Safety	★
C6	Canada Explosion-proof, Dust Ignition-proof, Intrinsically Safe, and Division 2	★
K6	Canada and ATEX Explosion-proof, Intrinsically Safe, and Division 2 (combination of C6, E8, and I1)	★
E7	IECEx Flameproof	★
I7	IECEx Intrinsic Safety	★
N7	IECEx Type n Certification	★
K7	IECEx Flameproof, Dust Ignition-proof, Intrinsic Safety, and Type n (combination of I7, N7, and E7)	★
IG	IECEx FISCO Intrinsically Safe; for FOUNDATION Fieldbus or PROFIBUS PA Protocols only	★
E2	Brazil Flameproof	★
I2	Brazil Intrinsic Safety	★
IB	Brazil FISCO intrinsically safe; for FOUNDATION Fieldbus or PROFIBUS PA Protocols only	★
K2	Brazil Flameproof, Intrinsic Safety	★

E3	China Flameproof	★
I3	China Intrinsic Safety	★
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(4)	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 wireless (output code X). See Rosemount 3051 product certifications for wireless approvals.*
(2) *Only available with 4-20 mA HART®(output code A), FOUNDATION™ Fieldbus (output code F), or PROFIBUS® PA (output code W). Only available with aluminum housing and G½ conduit entry size (housing material code D).*
(3) *Nonincendive certification not provided with wireless (output code X).*
(4) *Only available with wireless (output code X).*

Drinking water approval

Not available with alloy C-276 isolator (code 3), assemble-to manifolds (code S5), assemble-to seals (code S1), and surface finish certification (code Q16).

Code	Description	
DW	NSF drinking water approval	★

Shipboard approvals

Not available with wireless output (code X).

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

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

Enhanced safety

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

Code	Description	
T9	Enhanced SIS proof testing and logging	★

Configuration buttons

Code	Description	
D1(1)	Quick service buttons	★
D4(2)	Analog zero and span	★
DZ(3)	Digital zero trim	★

(1) *Only available with Graphical LCD Display (code M6)*
(2) *Only available with HART 4–20 mA output (code A).*
(3) *Only available with HART 4–20 mA output (output code A) and wireless output (output code X).*

Display and interface options

Code	Description	
M6(1)	Graphical LCD display	★
M5	LCD display	★

Code	Description	
M4[2]	LCD display with LOI	★

(1) *Only available with 4-20 mA HART® output (code A).*
(2) *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. (For wired, see the Rosemount 3051 Configuration Data Sheet. For wireless, see the Rosemount 3051 Wireless Configuration Data Sheet.)	★

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[1]	Analog output levels compliant with NAMUR recommendation NE 43, alarm high	★
CN[1]	Analog output levels compliant with NAMUR recommendation NE 43, alarm low	★
CR	Custom alarm and saturation signal levels, high alarm (requires C1)	★
CS	Custom alarm and saturation signal levels, low alarm (requires C1)	★
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[1]	Hydrostatic testing with certificate	★

(1) *Not available with pressure range 0.*

Cleaning process area

Not valid with alternate process connection (code 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	★

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	★

Enhanced software

Enhanced software enables application specific configuration, expanded process alerts, and logging capabilities.

Code	Description	
RK	Enhanced software	★

Cold temperature

This option is only available for pressure ranges 1–5 with 4-20 mA HART® and FOUNDATION Fieldbus Protocol, and silicone sensor fill fluid. BR5 and BR6 are not available with Non-threaded instrument flange (code 61) or the assemble to one Rosemount seal (option S1).

Code	Description	
BR5[1]	–58 °F (–50 °C) cold temperature operation	★
BR6[2]	–76 °F (–60 °C) cold temperature operation	★

(1) *If Product Certification Options are required, the BR5 option is only available with approval codes C6, E2, E5, E6, E7, EM, EP, I2, I5, I6, I7, IM, IP, K2, K5, K7, KB, KM, and KP.*

(2) *If Product Certification Options are required, the BR6 option is only available with approval codes E2, E7, EM, I2, I6, I7, IM, IP, K2, K7, and KM.*

Wireless power accessory

This option is only available with wireless 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.

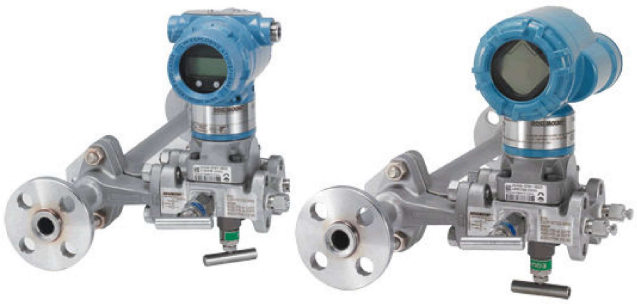
Rosemount 3051CFC Compact Conditioning Flow Meter



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



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.

- 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.
- Simplified flow configuration with clearly displayed flow rate and added totalizer (code M6, BLE, D1, DA1, T9, or RK).
- Loop Integrity and Plugged Impulse Line Diagnostics detect issues that might compromise the integrity of the output signal (code DA1).
- Bluetooth®enables efficient, reliable, and safe configuration and maintenance (code BLE).
- Back-lit Graphical Display with Local Language Capability (code M6).
- Safety certification and proof testing (code QT and T9).
- Typical 3051CFA model code: **3051CFA D L 060 D C H P S 2 T1 0 0 0 3 2 A A 1**

CONFIGURE > 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.

Sizing and selection

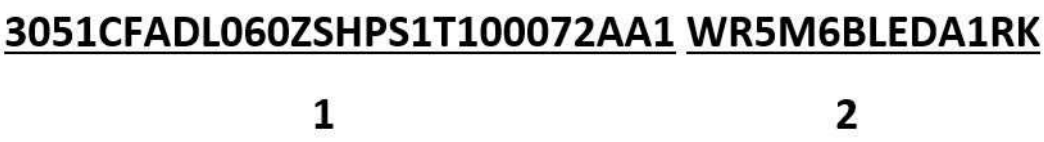
All Rosemount flow meters can be sized to meet your application specific requirements in the DP Flow sizing and selection tool. This tool will verify if a selected product meets your application requirements, provide a comparison between different primary elements, and generate a detailed accuracy comparison graph.

Once a sizing is completed, the configuration tool will help create a complete and valid model code to match your requirements and include any additional options or approvals.

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



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 the fastest delivery times. 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

Actual units are built to customer supplied pipe ID and wall dimensions. Line size codes in model are used as a nominal size and auto-selected by the sizing program.

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)	★
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)	

Code	Description	
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

Code	Description	
Z	Custom manufactured for customer's supplied pipe ID	★

Pipe material/mounting assembly material

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

(1) *For customer-supplied mounting or isolation valve, provide relevant dimension at time of sizing and order.*

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	★

Code	Description	
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(1)	Class 900 RF ASME B16.5	
AF(1)	Class 1500 RF ASME B16.5	
AT(1)	Class 2500 RF ASME B16.5	
D1	PN16 EN-1092-1 RF	★
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(1)	Class 900 RTJ ASME B16.5	
RF(1)	Class 1500 RTJ ASME B16.5	
RT(1)	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)				
C	NPT threaded opposite support assembly			★
D	Welded opposite support assembly			★
Packing gland (required for Flo-Tap models)				
	Packing gland material	**Rod material**	**Packing material**	
J(1)	Stainless steel packing gland/cage nipple	Carbon steel	PTFE	
K(1)	Stainless steel packing gland/cage nipple	Stainless steel	PTFE	
L(1)	Stainless steel packing gland/cage nipple	Carbon steel	Graphite	
N(1)	Stainless steel packing gland/cage nipple	Stainless steel	Graphite	
R	Alloy C-276 packing gland/cage nipple	Stainless steel	Graphite	

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

Isolation valve for Flo-Tap models

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

(1) *For customer-supplied mounting or isolation valve, provide relevant dimension at time of sizing and order.*

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_2O (0 to 62.16 mbar)	★
2	0 to 250 in H_2O (0 to 621.60 mbar)	★
3	0 to 1000 in H_2O (0 to 2.49 bar)	★

Transmitter output

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

(1) *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, and N3.*
(2) *This option is only available with intrinsically safe approvals.*
(3) *Only available with C6, E2, E5, I5, K5, KB, EM, IM, KM, EP, and E8 product certifications.*

Housing material

Code	Description	Conduit entry size	
A	Aluminum	½–14 NPT	★
B	Aluminum	M20 x 1.5	★
J	SST	½–14 NPT	★
K	SST	M20 x 1.5	★
P(1)	Engineered polymer	No conduit entries	★
D(2)	Aluminum	G½	
M(2)	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. These options are only available with product certifications options I1, I2, I3, I7, IA, IB, IM, KA, N1, N3, and N7. Product certifications options E4 and IG are available with aluminum only (option D).*

Transmitter performance class

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

Wireless options

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

Wireless transmit rate, operating frequency, and protocol

Code	Description	
WA3	User configurable transmit rate, 2.4 GHz *Wireless*HART	★

Antenna and SmartPower™

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

Additional options

Local wireless device access

Code	Description	
BLE(1)	Bluetooth® configuration and maintenance	★

(1) *Requires the Graphical LCD Display (code M6).*

Extended product warranty

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

Alternate transmitter diaphragm material

Code	Description	
ID2	316 SST	
ID3	Alloy C-276	
ID4(1)	Alloy 400	
ID5(1)	Tantalum	
ID6 (1)	Gold-plated Alloy 400 (includes graphite-filled PTFE O-ring)	
ID7(1)	Gold-plated SST	

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

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	
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.

Selecting J5 option will provide Alloy C-276 transmitter diaphragms.

Code	Description	
J5	Certificate of Compliance to NACE MR0175/ISO 15156 for wetted materials	

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

Refer to Rosemount 485 specifications section for spool section lengths and schedules

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	

Plantweb™ control functionality

Code	Description	
A01	FOUNDATION™ Fieldbus control function block suite	★

Plantweb™ diagnostic functionality

Code	Description	
DA0[1]	Loop Integrity Diagnostic	★
DA1[1]	Loop Integrity and Plugged Impulse Line Diagnostics	★
D01	FOUNDATION™ Fieldbus Diagnostics Suite	★

(1) *Only available with 4-20 mA HART protocol (code A).*

Product certifications

Code	Description	
E8	ATEX Flameproof and Dust Certification	★
I1[1]	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	Japan Flame-proof	★
I4	Japan Intrinsic Safety	★
E5	USA Explosion-proof, Dust Ignition-Proof	★
I5[2]	USA Intrinsically Safe, Nonincendive	★
K5	USA Explosion-proof, Dust Ignition-Proof, Intrinsically Safe, and Division 2	★
E6	Canada Explosion-proof, Dust Ignition-proof, Division 2	★
I6 [3]	Canada Intrinsic Safety	★
N7	IECEx Type n Certification	★
C6	Canada Explosion-proof, Dust Ignition-proof, Intrinsically Safe, and Division 2	★
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	★
K7	IECEx Flame-proof, Dust Ignition-proof, Intrinsic Safety, and Type n (combination of I7, N7, and E7)	★
E2	Brazil Flameproof	★
I2	Brazil Intrinsic Safety	★
IB	Brazil FISCO intrinsically safe; for FOUNDATION Fieldbus or PROFIBUS PA Protocols only	★
K2	Brazil Flameproof, Intrinsic Safety	★
E3	China Flameproof	★
I3	China Intrinsic Safety	★
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)	★

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

Sensor fill fluid and O-ring options

Code	Description	
L1[1]	Inert sensor fill fluid (silicone fill fluid is standard)	★
L2	Graphite-filled (PTFE) O-ring	★
LA[1]	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	★

Display and interface options

Code	Description	
M6[1]	Graphical LCD display	★
M5	LCD display	★
M4[2]	LCD display with LOI	★

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

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 low power HART output code M only)	

Alarm levels

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

Code	Description	
C4(1)	NAMUR alarm and saturation levels, high alarm	★
CN(1)	NAMUR alarm and saturation levels, low alarm	★
CR	Custom alarm and saturation signal levels, high alarm (see Rosemount 3051 Configuration Data Sheet)	★
CS	Custom alarm and saturation signal levels, low alarm (see Rosemount 3051 Configuration Data Sheet)	★
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.*

Enhanced safety

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

Code	Description	
T9	Enhanced SIS proof testing and logging	★

Configuration buttons

Code	Description	
D1(1)	Quick service buttons	★
D4(2)	Analog zero and span	★
DZ(3)	Digital zero trim	★

(1) *Only available with Graphical LCD Display (code M6).*
(2) *Only available with 4–20 mA HART® (output code A).*
(3) *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	★

Enhanced software

Enhanced software enables application specific configuration, expanded process alerts, and logging capabilities.

Code	Description	
RK	Enhanced software	★

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 1.75 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.
- Simplified flow configuration with clearly displayed flow rate and added totalizer (code M6, BLE, D1, DA1, T9, or RK).
- Loop Integrity and Plugged Impulse Line Diagnostics detect issues that might compromise the integrity of the output signal (code DA1).
- Bluetooth® enables efficient, reliable, and safe configuration and maintenance (code BLE).
- Back-lit Graphical Display with Local Language Capability (code M6).
- Safety certification and proof testing (code QT and T9).
- Typical 3051CFC model code: **3051CFC D C S 060 N 065 0 3 2 X P 1 WA3 WP5 WC M5 DZ**

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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.

Sizing and selection

All Rosemount flow meters can be sized to meet your application specific requirements in the DP Flow sizing and selection tool. This tool will verify if a selected product meets your application requirements, provide a comparison between different primary elements, and generate a detailed accuracy comparison graph.

Once a sizing is completed, the configuration tool will help create a complete and valid model code to match your requirements and include any additional options or approvals.

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

3051CFADL060ZSHPS1T100072AA1 WR5M6BLEDA1RK

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 the fastest delivery times. 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(1)	½-in. (15 mm)	★
010 (1)	1-in. (25 mm)	★
015(1)	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(2)	10-in. (250 mm)	★
120(2)	12-in. (300 mm)	★

(1) *Available with orifice plate (code P) only.*

(2) *10-in. (250 mm) and 12-in. (300 mm) line sizes not available with annubar (code A).*

Primary element type

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

(1) *For 2-in. (50 mm) line sizes, the Primary Element Type is 0.60 for conditioning orifice plate (code C).*

Temperature measurement

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

(1) *Available with annubar (code A) only.*

Transmitter connection platform

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

Differential pressure range

Code	Description	
1	0 to 25 in H_2O (0 to 62.16 mbar)	★
2	0 to 250 in H_2O (0 to 621.60 mbar)	★
3	0 to 1000 in H_2O (0 to 2.49 bar)	★

Transmitter output

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

(1) *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, and N3.*
(2) *This option is only available with intrinsically safe approvals.*
(3) *Only available with C6, E2, E5, I5, K5, KB, EM, IM, KM, EP, and E8 product certifications.*

Housing material

Code	Description	Conduit entry size	
A	Aluminum	½–14 NPT	★

B	Aluminum	M20 x 1.5	★
J	SST	½–14 NPT	★
K	SST	M20 x 1.5	★
P(1)	Engineered polymer	No conduit entries	★
D(2)	Aluminum	G½	
M(2)	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. These options are only available with product certifications options I1, I2, I3, I7, IA, IB, IM, KA, N1, N3, and N7. Product certifications options E4 and IG are available with aluminum only (option D).*

Transmitter performance class

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

Wireless options

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

Wireless transmit rate, operating frequency, and protocol

Code	Description	
WA3	User configurable transmit rate, 2.4 GHz *Wireless*HART®	★

Antenna and SmartPower™

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

Additional options

Local wireless device access

Code	Description	
BLE(1)	Bluetooth® configuration and maintenance	★

(1) *Requires the Graphical LCD Display (code M6).*

Extended product warranty

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

Alternate transmitter diaphragm material

Code	Description	
ID2	316 SST	
ID3	Alloy C-276	

Code	Description	
ID4(1)	Alloy 400	
ID5(1)	Tantalum	
ID6 (1)	Gold-plated Alloy 400 (includes graphite-filled PTFE O-ring)	
ID7(1)	Gold-plated SST	

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

Installation accessories

Code	Description	
AB(1)	ANSI alignment ring (Class 150)	★
AC(1)	ANSI alignment ring (Class 300)	★
AD(1)	ANSI alignment ring (Class 600)	★
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)	

(1) *Only required for 10-in. (250 mm) and 12-in. (300 mm) line sizes.*

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

Code	Description	
WC	Flow calibration, 3 pt, conditioning orifice option C	
WD(1)	Flow calibration, 10 pt, conditioning option C, Annubar option A	

(1) *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	

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.

Selecting J5 option will provide Alloy C-276 transmitter diaphragms.

Code	Description	
J5	Certificate of Compliance to NACE MR0175/ISO 15156 for wetted materials	

Country certification

Code	Description	
J1	Canadian Registration	
J8	Chinese Certificate of Special Equipment Type Test	

Product certifications

Code	Description	
E8	ATEX Flameproof and Dust Certification	★
I1[1]	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)	★
E5	USA Explosion-proof, Dust Ignition-Proof	★
I5[2]	USA Intrinsically Safe, Nonincendive	★
K5	USA Explosion-proof, Dust Ignition-Proof, Intrinsically Safe, and Division 2	★
E6	Canada Explosion-proof, Dust Ignition-proof, Division 2	★
I6 [3]	Canada Intrinsic Safety	★
C6	Canada Explosion-proof, Dust Ignition-proof, Intrinsically Safe, and Division 2	★
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)	★
E2	Brazil Flameproof	★
I2	Brazil Intrinsic Safety	★
IB	Brazil FISCO intrinsically safe; for FOUNDATION Fieldbus or PROFIBUS PA Protocols only	★
K2	Brazil Flameproof, Intrinsic Safety	★
E3	China Flameproof	★
I3	China Intrinsic Safety	★
EP	Republic of Korea Flameproof	★
IP	Republic of Korea Intrinsic Safety	★
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)	★
KP	Republic of Korea Flameproof and Intrinsic Safety	★

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

Sensor fill fluid and O-ring options

Code	Description	
L1[1]	Inert sensor fill fluid	★
L2	Graphite-filled (PTFE) O-ring	★
LA[1]	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	★

Display and interface options

Code	Description	
M6[1]	Graphical LCD display	★
M5	LCD display	★
M4[2]	LCD display with LOI	★

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

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 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[1]	Loop Integrity Diagnostic	★
DA1[1]	Loop Integrity and Plugged Impulse Line Diagnostics	★
D01	FOUNDATION™ Fieldbus Diagnostics Suite	★

(1) *Only available with 4-20 mA HART protocol (code 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

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

Code	Description	
C4(1)	NAMUR alarm and saturation levels, high alarm	★
CN(1)	NAMUR alarm and saturation levels, low alarm	★
CR	Custom alarm and saturation signal levels, high alarm (See Rosemount 3051 Configuration Data Sheet)	★
CS	Custom alarm and saturation signal levels, low alarm (See Rosemount 3051 Configuration Data Sheet)	★
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	★

Enhanced safety

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

Code	Description	
T9	Enhanced SIS proof testing and logging	★

Configuration buttons

Code	Description	
D1(1)	Quick service buttons	★
D4(2)	Analog zero and span	★
DZ(3)	Digital zero trim	★

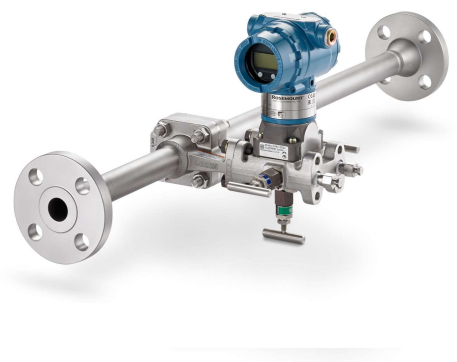
(1) *Only available with Graphical LCD Display (code M6).*
(2) *Only available with HART® 4-20 mA (output code A).*
(3) *Only available with HART 4–20 mA (output code A) and wireless (output code X).*

Enhanced software

Enhanced software enables application specific configuration, expanded process alerts, and logging capabilities.

Code	Description	
RK	Enhanced software	★

Rosemount 3051CFP Integral Orifice Flow Meter ordering information



Rosemount 3051CFP Integral Orifice Flow Meters enable highly accurate flow measurement in small line sizes. Internal pipe diameter variation in combination with plate centering issues can greatly magnify flow measurement errors in small line sizes. Integral Orifice Flow Meters use a precision honed pipe section to minimize internal pipe diameter variation along with a self-centering plate design to eliminate alignment errors.

- 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.
- Simplified flow configuration with clearly displayed flow rate and added totalizer (code M6, BLE, D1, DA1, T9, or RK).
- Loop Integrity and Plugged Impulse Line Diagnostics detect issues that might compromise the integrity of the output signal (code DA1).
- Bluetooth® enables efficient, reliable, and safe configuration and maintenance (code BLE).
- Back-lit Graphical Display with Local Language Capability (code M6).
- Safety certification and proof testing (code QT and T9).
- Typical 3051CFP model code: **3051CFP D F010 W1 S 0500 D3 2 A A 1 E5 M5**

CONFIGURE > 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.

Sizing and selection

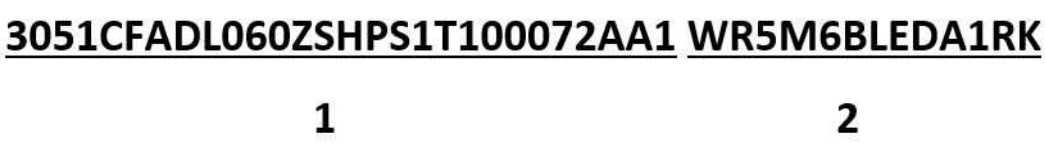
All Rosemount flow meters can be sized to meet your application specific requirements in the DP Flow sizing and selection tool. This tool will verify if a selected product meets your application requirements, provide a comparison between different primary elements, and generate a detailed accuracy comparison graph.

Once a sizing is completed, the configuration tool will help create a complete and valid model code to match your requirements and include any additional options or approvals.

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



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 the fastest delivery times. 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	★

Material type and body

Code	Description	
F	316 SST, enhanced support body	★

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[(1)]	Socket weld body (not available with remote thermowell and RTD)	★

Code	Description	
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, Class 150 RF ASME B16.5, weld-neck	★
W3	Pipe ends: flanged, Class 300 RF ASME B16.5, weld-neck	★
W6	Pipe ends: flanged, Class 600 RF ASME B16.5, weld-neck	★
W9	Pipe ends: flanged, Class 900 RF ASME B16.5, weld-neck	
A1	Pipe ends: flanged, Class 150 RF ASME B16.5, slip-on	
A3	Pipe ends: flanged, Class 300 RF ASME B16.5, slip-on	
A6	Pipe ends: flanged, Class 600 RF ASME B16.5, slip-on	
R1	Pipe ends: flanged, Class 150 RTJ ASME B16.5, slip-on	
R3	Pipe ends: flanged, Class 300 RTJ ASME B16.5, slip-on	
R6	Pipe ends: flanged, 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	
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	
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	★

Code	Description	
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	★
XXXX	Special bore size (X.XXX-in.)	

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(1)	Direct-mount, 3-valve manifold, alloy C-276	
D6(1)	Direct-mount, 5-valve manifold, alloy C-276	
R4	Remote-mount, 3-valve manifold, alloy C-276	
R6	Remote-mount, 5-valve manifold, alloy C-276	

(1) *Changes the transmitter orientation of the assembly. Please refer to the D4, D6 option for C-276 manifold assembly in the product drawing.*

Differential pressure range

Code	Description	
1	0 to 25 in H_2O (0 to 62.16 mbar)	★
2	0 to 250 in H_2O (0 to 621.60 mbar)	★
3	0 to 1000 in H_2O (0 to 2.49 bar)	★

Transmitter output

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

M[3]	Low-power, 1–5 Vdc with digital signal based on HART Protocol	

(1) *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, and N3.*
(2) *This option is only available with intrinsically safe approvals.*
(3) *Only available with C6, E2, E5, I5, K5, KB, EM, IM, KM, EP, and E8 product certifications.*

Housing material

Code	Description	Conduit entry size	
A	Aluminum	½–14 NPT	★
B	Aluminum	M20 x 1.5	★
J	SST	½–14 NPT	★
K	SST	M20 x 1.5	★
P[1]	Engineered polymer	No conduit entries	★
D[2]	Aluminum	G½	
M[2]	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. These options are only available with product certifications options I1, I2, I3, I7, IA, IB, IM, KA, N1, N3, and N7. Product certifications options E4 and IG are available with aluminum only (option D).*

Transmitter performance class

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

Wireless options

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

Wireless transmit rate, operating frequency, and protocol

Code	Description	
WA3	User configurable transmit rate, 2.4 GHz *Wireless*HART®	★

Antenna and SmartPower™

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

Additional options

Local wireless device access

Code	Description	
BLE[1]	Bluetooth® configuration and maintenance	★

(1) *Requires the Graphical LCD Display (code M6).*

Extended product warranty

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

Alternate transmitter diaphragm material

Code	Description	
ID2	316 SST	
ID3	Alloy C-276	
ID4(1)	Alloy 400	
ID5(1)	Tantalum	
ID6 (1)	Gold-plated Alloy 400 (includes graphite-filled PTFE O-ring)	
ID7(1)	Gold-plated SST	

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

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. Option P1 may not be ordered in combination with P2.

Code	Description	
P1	Hydrostatic testing with certificate	

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

This option is not available for bore sizes 0010, 0014, 0020, 0034, 0066, or 0109. This option does not apply to process connection codes T1 and S1.

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[(1)]	ANSI/ASME B31.1	
J3[(1)]	ANSI/ASME B31.3	

(1) *Changes the transmitter orientation of the assembly. Please refer to the J2, J3 options for B31 compliant assembly in the product drawing.*

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.

Selecting J5 option will provide Alloy C-276 transmitter diaphragms.

Code	Description	
J5	Certificate of Compliance to NACE MR0175/ISO 15156 for wetted materials	

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 availabe with HART® 4-20 mA output (code A).

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

Product certification

Code	Description	
E8	ATEX Flameproof and Dust Certification	★
I1[(1)]	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)	★
E5	USA Explosion-proof, Dust Ignition-Proof	★
I5[(2)]	USA Intrinsically Safe, Nonincendive	★
K5	USA Explosion-proof, Dust Ignition-Proof, Intrinsically Safe, and Division 2	★
E6	Canada Explosion-proof, Dust Ignition-proof, Division 2	★
I6 [(3)]	Canada Intrinsic Safety	★
C6	Canada Explosion-proof, Dust Ignition-proof, Intrinsically Safe, and Division 2	★
IE	USA FISCO Intrinsically Safe	★
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	★
IG	IECEx FISCO Intrinsically Safe; for FOUNDATION Fieldbus or PROFIBUS PA Protocols only	
N7	IECEx Type n Certification	★
K7	IECEx Flame-proof, Dust Ignition-proof, Intrinsic Safety, and Type n (combination of I7, N7, and E7)	★
E2	Brazil Flameproof	★

Code	Description	
I2	Brazil Intrinsic Safety	★
IB	Brazil FISCO intrinsically safe; for FOUNDATION Fieldbus or PROFIBUS PA Protocols only	★
K2	Brazil Flameproof, Intrinsic Safety	★
E3	China Flameproof	★
I3	China Intrinsic Safety	★
EP	Republic of Korea Flameproof	
IP	Republic of Korea Intrinsic Safety	
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)	★
KP	Republic of Korea Flameproof, Intrinsic Safety	

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

Sensor fill fluid and O-ring options

Code	Description	
L1[(1)]	Inert sensor fill fluid (silicone fill fluid is standard)	★
L2	Graphite-filled (PTFE) O-ring	★
LA[(1)]	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	★

Display and interface options

Code	Description	
M6[(1)]	Graphical LCD display	★
M5	LCD display	★
M4[(2)]	LCD display with LOI	★

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

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	★

Plantweb™ control functionality

Code	Description	
A01	FOUNDATION™ Fieldbus control function block suite	★

Plantweb™ diagnostic functionality

Code	Description	
DA0(1)	Loop Integrity Diagnostic	★
DA1(1)	Loop Integrity and Plugged Impulse Line Diagnostics	★
D01	FOUNDATION™ Fieldbus Diagnostics Suite	★

(1) *Only available with 4-20 mA HART protocol (code 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

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

Code	Description	
C4(1)	NAMUR alarm and saturation levels, high alarm	★
CN(1)	NAMUR alarm and saturation levels, low alarm	★
CR	Custom alarm and saturation signal levels, high alarm (See Rosemount 3051 Configuration Data Sheet)	★
CS	Custom alarm and saturation signal levels, low alarm (See Rosemount 3051 Configuration Data Sheet)	★
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	★

Enhanced safety

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

Code	Description	
T9	Enhanced SIS proof testing and logging	★

Configuration buttons

Code	Description	
D1[1]	Quick service buttons	★
D4[2]	Analog zero and span	★
DZ[3]	Digital zero trim	★

(1) *Only available with Graphical LCD Display (code M6).*
(2) *Only available with HART® 4-20 mA (output code A).*
(3) *Only available with HART 4–20 mA (output code A) and wireless (output code X).*

Enhanced software

Enhanced software enables application specific configuration, expanded process alerts, and logging capabilities.

Code	Description	
RK	Enhanced software	★

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.

- Quantify and optimize total system performance (code QZ).
- Tuned-System assembly (code S1).
- Loop Integrity Diagnostic detects issues that might compromise the integrity of the output signal (code DA1).
- Bluetooth® enables efficient, reliable, and safe configuration and maintenance (code BLE).
- Simplify level configuration with a built-in level configurator method that guides you through setting up your transmitter to measure level and volume (code M6, BLE, D1, DA1, T9, or RK).
- Back-lit Graphical Display with Local Language Capability (code M6).
- Safety certification and proof testing (code QT and T9).

CONFIGURE > 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 6.

Figure 6: Model Code Example

3051L3AA01D11AA **WR5M6BLEDA1RK**

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 the fastest delivery times. 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_2O (–621.60 to 621.60 mbar)	★
3	–1000 to 1000 inH_2O (–2.48 to 2.48 bar)	★
4	–300 to 300 psi (–20.68 to 20.68 bar)	★

Transmitter output

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

(1) *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, and N3.*
(2) *This option is only available with intrinsically safe approvals.*
(3) *Only available with C6, E2, E5, I5, K5, KB, EM, IM, KM, EP, and E8 product certifications.*

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

Code	Process connection size	Material	Extension length	
G0[1]	2-in./DN 50/A	316L SST	Flush mount only	★
H0[1]	2-in./DN 50	Alloy C-276	Flush mount only	★
J0	2-in./DN 50	Tantalum	Flush mount only	★
A0[1]	3-in./DN 80	316L SST	Flush mount	★
A2[1]	3-in./DN 80	316L SST	2-in./50 mm	★
A4[1]	3-in./DN 80	316L SST	4-in./100 mm	★
A6[1]	3-in./DN 80	316L SST	6-in./150 mm	★
B0[1]	4-in./DN 100	316L SST	Flush mount	★
B2[1]	4-in./DN 100	316L SST	2-in./50 mm	★
B4[1]	4-in./DN 100	316L SST	4-in./100 mm	★
B6[1]	4-in./DN 100	316L SST	6-in./150 mm	★
C0[1]	3-in./DN 80	Alloy C-276	Flush mount	★
C2[1]	3-in./DN 80	Alloy C-276	2-in./50 mm	★
C4[1]	3-in./DN 80	Alloy C-276	4-in./100 mm	★
C6[1]	3-in./DN 80	Alloy C-276	6-in./150 mm	★
D0[1]	4-in./DN 100	Alloy C-276	Flush mount	★
D2[1]	4-in./DN 100	Alloy C-276	2-in./50 mm	★
D4[1]	4-in./DN 100	Alloy C-276	4-in./100 mm	★
D6[1]	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(1)	2-in.	ASME B16.5 Class 150	316 SST	★
F(1)	3-in.		316 SST	★
G(1)	4-in.		316 SST	★
Y(1)	2-in.	ASME B16.5 Class 300	316 SST	★
H(1)	3-in.		316 SST	★
J(1)	4-in.		316 SST	★
Z(1)	2-in.	ASME B16.5 Class 600	316 SST	★
L(1)	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(1)	DN 50	PN 10-40 per EN 1092-1	316 SST	★
T(1)	DN 80	PN 40 per EN 1092-1	316 SST	★
U(1)	DN 100		316 SST	★
W(1)	DN 100	PN 10/16 per EN 1092-1	316 SST	★
7(1)	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(1)	N/A	10K per JIS B2238	CS	
5(1)	N/A	20K per JIS B2238	316 SST	
6(1)	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 Technical Note.	★
L	Silicone 704 diffusion pump fluid	1.07	32 to 401 °F (0 to 205 °C)	★
C	Silicone 704 for vacuum applications	1.07	For use in vacuum applications below 14.7 psia (1 bar-a), refer to vapor pressure curves in Rosemount DP Level Fill Fluid Specification Technical Note.	★
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(1)	Gauge	SST	316L SST	Silicone	★
21	Differential	SST	316 SST	Silicone	★
22(1)	Differential	SST	Alloy C-276	Silicone	★
2A(2)	Differential	SST	316 SST	Inert (halocarbon)	★
2B(1)(2)	Differential	SST	Alloy C-276	Inert (halocarbon)	★
31(1)	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	★
E	Aluminum, ultra low copper	½–14 NPT	
F	Aluminum, ultra low copper	M20 x 1.5	
J	SST	½–14 NPT	★

Code	Material	Conduit entry size	
K	SST	M20 x 1.5	★
P[1]	Engineered polymer	No conduit entries	★
D[2]	Aluminum	G½	
M[2]	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, and N7. Product certifications options E4 and IG are available with aluminum only (option D).*

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 *Wireless*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.

Local wireless device access

Code	Description	
BLE[1]	Bluetooth® configuration and maintenance	★

(1) *Requires the Graphical LCD Display (code M6).*

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[1]	Loop Integrity Diagnostic	★
DA1[1]	Loop Integrity and Plugged Impulse Line Diagnostics	★
D01	FOUNDATION™ Fieldbus Diagnostics Suite	★

(1) *Only available with 4-20 mA HART protocol (code A).*

Seal assemblies

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

Code	Description	
S1	Assembled to one Rosemount Seal	★

Remote seal diaphragm coating

Code	Description	
SZ	0.0002-in. (5 µm) gold-plated diaphragm	
FP[1]	CorrosionShield™ PFA coated diaphragm	

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

Product certifications

Code	Description	
E8	ATEX Flameproof	★
I1[1]	ATEX Intrinsic Safety	★
IA	ATEX FISCO Intrinsic Safety; for FOUNDATION™ Fieldbus or PROFIBUS® PA Protocol only	★
N1	ATEX Type n Certification	★
K8	ATEX Flameproof, Intrinsic Safety, Type n, Dust (combination of E8, I1 and N1)	★
E4[2]	Japan Flameproof	★
E5	USA Explosion-proof, Dust Ignition-proof	★
I5[3]	USA Intrinsically Safe, Nonincendive	★
K5	USA Explosion-proof, Dust Ignition-proof, Intrinsically Safe, and Division 2	★
E6	Canada Explosion-proof, Dust Ignition-proof, Division 2	★
I6	Canada Intrinsic Safety	★
C6	Canada Explosion-proof, Dust Ignition-proof, Intrinsically Safe, and Division 2	★
K6	Canada and ATEX Explosion-proof, Intrinsically Safe, and Division 2 (combination of C6, E8, and I1)	★
E7	IECEx Flameproof	★
I7	IECEx Intrinsic Safety	★
N7	IECEx Type n Certification	★
K7	IECEx Flameproof, Dust Ignition-proof, Intrinsic Safety, and Type n (combination of I7, N7, and E7)	★
IG	IECEx FISCO Intrinsically Safe; for FOUNDATION Fieldbus or PROFIBUS PA Protocols only	★
E2	Brazil Flameproof	★

I2	Brazil Intrinsic Safety	★
IB	Brazil FISCO intrinsically safe; for FOUNDATION Fieldbus or PROFIBUS PA Protocols only	★
K2	Brazil Flameproof, Intrinsic Safety	★
E3	China Flameproof	★
I3	China Intrinsic Safety	★
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[4]	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 wireless (output code X). See Rosemount 3051 product certifications for wireless approvals.*
(2) *Only available with 4-20 mA HART®(output code A), FOUNDATION™Fieldbus (output code F), or PROFIBUS®PA (output code W). Only available with aluminum housing and G½ conduit entry size (housing material code D).*
(3) *Nonincendive certification not provided with wireless (output code X).*
(4) *Only available with wireless (output code X).*

Shipboard approvals

Not available with wireless output (code X).

Code	Description	
SBS	American Bureau of Shipping	★
SBV[1]	Bureau Veritas (BV)	★
SDN	Det Norske Veritas	★
SLL[1]	Lloyds Register (LR)	★

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

Bolting material

Code	Description	
L4	Austenitic 316 SST bolts	★

Display and interface options

M5	Description	
M6[1]	Graphical LCD display	★
M5	LCD display	★
M4[2]	LCD display with LOI	★

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

Calibration certificate

Code	Description	
Q4	Calibration certificate	★
QP	Calibration certification and tamper evident seal	★

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	★

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®)	★

Enhanced safety

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

Code	Description	
T9	Enhanced SIS proof testing and logging	★

Configuration buttons

Code	Description	
D1[(1)]	Quick service buttons	★
D4[(2)]	Analog zero and span	★

DZ[3]	Digital zero trim	★

(1) *Only available with Graphical LCD Display (code M6).*
(2) *Only available with HART® 4–20 mA (output code A).*
(3) *Only available with HART 4–20 mA (output code A) and wireless (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 code A) and wireless (output code X).

Code	Description	
C1	Custom software configuration (For wired, see the Rosemount 3051 Configuration Data Sheet. For wireless, see the Rosemount 3051 Wireless Configuration Data Sheet.)	★

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[1]	Analog output levels compliant with NAMUR recommendation NE 43, alarm high	★
CN[1]	Analog output levels compliant with NAMUR recommendation NE 43, alarm low	★
CR	Custom alarm and saturation signal levels, high alarm (requires C1)	★
CS	Custom alarm and saturation signal levels, low alarm (requires C1)	★
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	★
FV	Assemble to Rosemount 319 Flushing Ring			★

Lower housing intermediate gasket material

Code	Description	
S0	No gasket for lower housing	★
SY(1)	Klingersil C-4401 gasket	★

(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	★

Enhanced software

Enhanced software enables application specific configuration, expanded process alerts, and logging capabilities.

Code	Description	
RK	Enhanced software	★

Wireless power accessory

This option is only available with wireless output (code X).

Code	Description	
HS	Hot swap power adapter for power module replacement	

Specifications

Performance specifications

Conformance to specifications (±3σ [Sigma])

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

Reference accuracy

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

Models	Rosemount 3051 and *Wireless*HART®
Rosemount 3051C[1]	
Range 5	±0.065% of span For spans less than 10:1, accuracy = $\pm\left[0{,}015 + 0{,}005\left(\frac{URL}{Span}\right)\right]$% of Span
Ranges 2–4	± 0.04% of span For spans less than 10:1[2], accuracy = $\pm\left[0{,}015 + 0{,}005\left(\frac{URL}{Span}\right)\right]$% of Span
Range 1	± 0.10% of span For spans less than 15:1, accuracy = $\pm\left[0{,}025 + 0{,}005\left(\frac{URL}{Span}\right)\right]$% of Span
Range 0 (CD)	± 0.10% of span For spans less than 2:1, accuracy = ± 0.05% of URL
Rosemount 3051CA	
Ranges 1–4	± 0.04% of span[3] For spans less 10:1, accuracy = $\pm\left[0{,}0075\left(\frac{URL}{Span}\right)\right]$% of Span
Rosemount 3051T[1]	
Range 0	± 0.04% of span[3] For spans less 5:1 to 20:1, accuracy = $\pm\left[0{,}05 + 0{,}01\left(\frac{URL}{Span}\right)\right]$% of span

Ranges 1–4	± 0.04% of span[3] For spans less than 10:1, accuracy = $\pm\left[0{,}0075\left(\frac{URL}{Span}\right)\right]$% 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 = $\pm\left[0{,}025 + 0{,}005\left(\frac{URL}{Span}\right)\right]$% of Span

(1) *For Rosemount 3051C and 3051T with seal 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[1]		
Ranges 2–3	β= 0.4	±2.00% of flow rate at 8:1 flow turndown
	β= 0.65	±2.00% of flow rate at 8:1 flow turndown
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

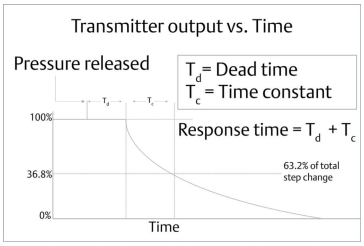
Models	Total performance[1]
Rosemount 3051C Ranges 2–5	± 0.14% of span
Rosemount 3051L Ranges 2–4	Use Instrument Toolkit or the QZ option to quantify the total performance of a remote seal assembly under operating conditions.

(1) *For output code W, F, and M, total performance is ±0.15 percent of span.*

Long term stability

Models	Long term stability
Rosemount 3051C	
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
Rosemount 3051CA Low Range	
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.
Rosemount 3051T	
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.
Rosemount 3051L	
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®(1)	FOUNDATION™ Fieldbus and PROFIBUS® PA Protocols(2)	Typical HART transmitter response time
Total Response Time ($T_d + T_c$)(3):			
Rosemount 3051C			
Ranges 2-5(4)	85 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 (Td)	45 ms (nominal)	97 ms	
Update rate(5)	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) *With option codes M6, RK, T9, DA1, response time is 85 ms. All other options response time is 100 ms.*
(5) *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 *Wireless*HART®, 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
Zero error	
Ranges 2–3	±0.05% of URL/1000 psi (68.95 bar) for line pressures from 0 to 2000 psi (0 to 137.90 bar)
Range 1	±0.25% of URL/1000 psi (68.95 bar) for line pressures from 0 to 2000 psi (0 to 137.90 bar)
Range 0	±0.125% of URL/100 psi (6.89 bar) for line pressures from 0 to 750 psi (0 to 51.71 bar)
Span error	
Ranges 2–3	±0.1% of reading/1000 psi (68.95 bar)
Range 1	±0.4% of reading/1000 psi (68.95 bar)
Range 0	±0.15% of reading/100 psi (6.895 bar)

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

Models	Ambient temperature effect
Rosemount 3051C	
Range 0	±(0.25% URL + 0.05% span) from 1:1 to 30:1
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
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
Rosemount 3051CA	
Ranges 1–4	±(0.025% URL + 0.125% span) from 1:1 to 30:1 ±(0.035% URL + 0.125% span) from 30:1 to 150:1
Rosemount 3051T	
Range 0	±(0.15% URL + 0.075% span) from 1:1 to 20:1
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 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 5–6	±(0.1% URL + 0.15% span) from 1:1 to 5:1
Rosemount 3051L	**See Instrument Toolkit™ software.**

Mounting position effects

Models	Mounting position effects
Rosemount 3051C	Zero shifts up to ±1.25 in H_2O (3.11 mbar), which can be calibrated out. No span effect.
Rosemount 3051CA, 3051T	Zero shifts up to ±2.5 in H_2O (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_2O (2.49 mbar). With diaphragm in horizontal plane, zero shift of up to ±5 in H_2O (12.43 mbar) plus extension length on extended units. All zero shifts can be calibrated out. No span effect.

Vibration effect

Less than ±0.1 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 % span during EMC disturbance.

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[1]	Minimum span	Range and sensor limits				
	Rosemount 3051CD, 3051CG, 3051CF, 3051L[2]	Upper (URL)	Lower (LRL)			
			Rosemount 3051CD Differential, 3051CF Flow Meters	Rosemount 3051CG Gage[3]	Rosemount 3051L Differential	Rosemount 3051L Gage[3]
0	0.10 inH_2O (0.24 mbar)	3.00 inH_2O (7.45 mbar)	–3.00 inH_2O (–7.45 mbar)	N/A	N/A	N/A
1	0.50 inH_2O (1.24 mbar)	25.00 inH_2O (62.16 mbar)	–25.00 inH_2O (–62.16 mbar)	–25.00 inH_2O (–62.16 mbar)	N/A	N/A
2	1.67 inH_2O (4.15 mbar)	250.00 inH_2O (621.60 mbar)	–250.00 inH_2O (–621.60 mbar)	–250.00 inH_2O (–621.60 mbar)	–250.00 inH_2O (–621.60 mbar)	–250.00 inH_2O (–621.60 mbar)
3	6.67 inH_2O (16.58 mbar)	1000.00 inH_2O (2.48 bar)	–1000.00 inH_2O (–2.48 bar)	0.50 psia (34.47 mbar)	–1000.00 inH_2O (–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) *inH_2O referenced at 68 °F (20 °C). Range 0 only available with Rosemount 3051CD. Range 1 only available with 3051CD, 3051CG, or 3051CF.*
(2) *For outputs options W and M, minimum span are: range 2 - 2.50 inH_2O (6.21 mbar), range 3 - 10.00 inH_2O (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[1]	Upper (URL)	Lower (LRL)	Minimum span[1]	Upper (URL)	Lower (LRL) (absolute)	Lower[2] (LRL) (gage)
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)
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 (137.89 bar)	10000.00 psi (689.47 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[1]	Upper (URL)	Lower (LRL)	Minimum span[1]	Upper (URL)	Lower (LRL) (absolute)	Lower[2] (LRL) (gage)
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).*
(2) *Assumes atmospheric pressure of 14.7 psig.*

Service

Liquid, gas, and vapor applications.

4–20 mA HART® (output code A)

Power supply

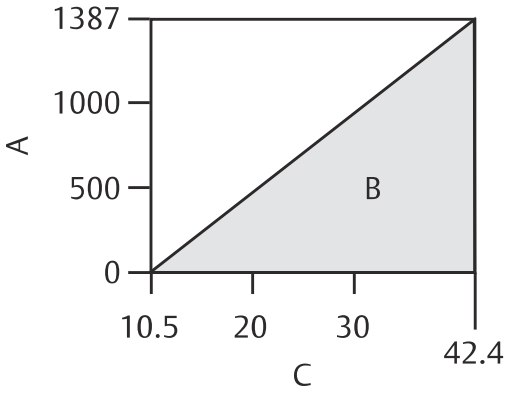
External power supply required. Standard transmitter (4–20 mA) operates on 10.5–42.4 Vdc with no load.

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 3-line Graphical Display with Backlight and Local Language

- Languages include: English, Chinese, French, German, Italian, Portuguese, Russian, and Spanish

Optional configuration buttons

Configuration buttons need to be specified:

- Quick service buttons (option D1) allow for straightforward commissioning using a simple menu without needing to remove the housing cover. The quick service button option allows users to zero, rerange their device, perform a loop test, view configuration, and flip the graphical LCD display screen in the field.
- Digital Zero trim (option code DZ) changes digital value of the transmitter and is used for performing a sensor zero trim.
- Analog Zero and 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.

Bluetooth® Connectivity

Typical Range: At least 50 ft. (15 m) line of sight. Maximum communication range will vary depending on orientation, obstacles (person, metal, wall, etc.), or electromagnetic environment.

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 display option)

Indication

Optional two-line LCD display

FOUNDATION Fieldbus block execution times

Block	Execution time
Resource	N/A
Sensor and SPM transducer	N/A
LCD display	N/A
Analog input 1, 2	20 milliseconds
PID	25 milliseconds
Input selector	20 milliseconds
Arithmetic	20 milliseconds
Signal characterizer	20 milliseconds
Integrator	20 milliseconds
Output splitter	20 milliseconds
Control selector	20 milliseconds

FOUNDATION Fieldbus parameters

Links:	25 (max.)
Virtual communications 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

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

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 (*Wireless*HART®), 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(1).

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

Low power output

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

Output

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 kΩ (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)
- 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)

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

- 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:

Table 5: Failure mode alarm

	High alarm	Low alarm
Default	≥ 21.75[1] mA	≤ 3.75 mA
NAMUR compliant [2]	≥ 22.5 mA	≤ 3.6 mA
Custom levels [3]	20.2 – 23.0 mA	3.6 – 3.8 mA

(1) *High Alarm default is ≥22.5 mA for some options (codes M6, DA1, T9, RK).*

(2) *See option codes C4 or CN.*
(3) *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 display[1][2][3]: –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) *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).*
(3) *Graphical LCD display updates will be slower at temperatures below 32 °F (0 °C). Graphical LCD display may not be readable below -22 °F (-30 °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 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 6.

Table 6: Process Connection Temperature Limits

Rosemount 3051CD, 3051CG, 3051CF, 3051CA	
Silicone fill sensor[1]	N/A
With coplanar flange	–40 to 250 °F (–40 to 121 °C)[2]
With traditional flange	–40 to 300 °F (–40 to 149 °C)[2][3]
With level flange	–40 to 300 °F (–40 to 149 °C)[2]
With Rosemount 305 Integral Manifold	–40 to 300 °F (–40 to 149 °C)[2]
Inert fill sensor[1][4]	–40 to 185 °F (–40 to 85 °C) [5][6]
With Option Code BR6, coplanar flange	–76 to 250 °F (–60 to 121 °C)[2]
With Option Code BR6, traditional flange	–75 to 300 °F (–60 to 149 °C)[2]
Rosemount 3051T (process fill fluid)	
Silicone fill sensor[1]	–40 to 250 °F (–40 to 121 °C)[2]
With Option Code BR6	–76 to 250 °F (–60 to 121 °C)[2]

Table 6: Process Connection Temperature Limits *(continued)*

Inert fill sensor[1]	–22 to 250 °F (–30 to 121 °C)[2]
Rosemount 3051L low-side temperature limits	
Silicone fill sensor[1]	–40 to 250 °F (–40 to 121 °C)[2]
Inert fill sensor[1]	–40 to 185 °F (–40 to 85 °C)[5]
Rosemount 3051L high-side temperature limits (process fill fluid)	
SYLTHERM XLT	–157 to 293 °F (–105 to 145 °C)
Silicone 704	32 to 401 °F (0 to 205 °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^3 (0.08 cm^3)

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 2⅛-in. centers
- ½–14 NPT on 2-, 2⅛-, 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 DP Flow Meters and Primary Elements Product Data Sheet in the Rosemount 485 Annubar section .
- For Rosemount 3051CFC, see Rosemount DP Flow Meters and Primary Elements Product Data Sheet in the Rosemount 405 Compact Orifice Plate section.
- For Rosemount 3051CFP, see Rosemount DP Flow Meters and Primary Elements Product Data Sheet in the Rosemount 1195 Integral Orifice section.

Transmitter 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)

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

Reference process connection (transmitter low side)

Isolating diaphragms	316L SST or Alloy C-276
Reference flange and adapter	CF-8M (cast version of 316 SST, material per ASTM-A743)

Non-wetted parts

Electronics housing

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

Enclosure type 4X, 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, Silicone 704, 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 7: 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	Table 8	Table 8

Table 8: 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)
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 9: 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)

Table 9: Transmitter Option Weights *(continued)*

Code	Option	Add lb. (kg)
M4/M5/M6	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

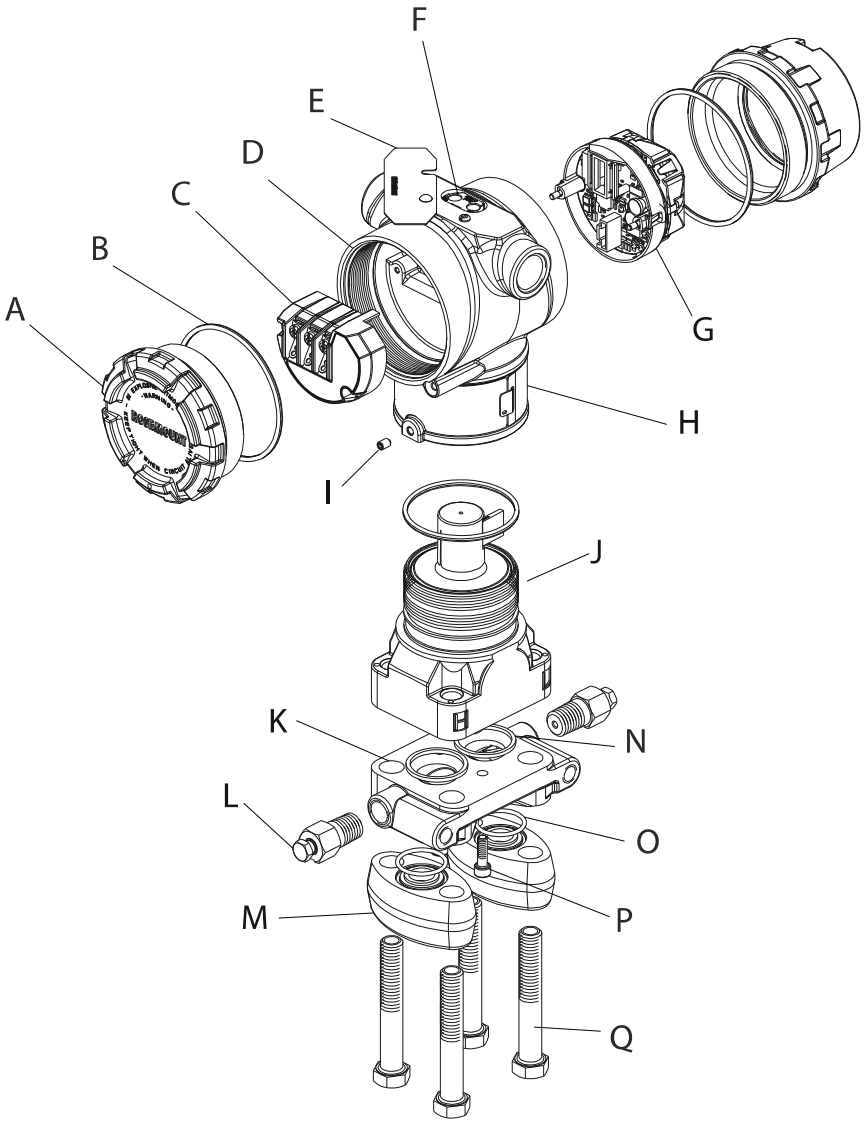
See the Rosemount 3051 Quick Start Guides for detailed information on the existing approvals and certifications.

Product approval information	Links
Rosemount 3051 Pressure Transmitter and 3051CF Series Flow Meter with 4-20 mA HART® Protocol	Link
Rosemount 3051 Pressure Transmitter and 3051CF Series Flow Meter with FOUNDATION™ Fieldbus Protocol	Link
Rosemount 3051 Pressure Transmitter and 3051CF Series Flow Meter with Profibus-PA Protocol	Link
Rosemount 3051 Pressure Transmitter and 3051CF Series Flow Meter with 1-5 VDC Low Power	Link
Rosemount 3051 Pressure Transmitter and Rosemount 3051CF Series Flow Meter with *Wireless*HART® Protocol	Link

Dimensional drawings

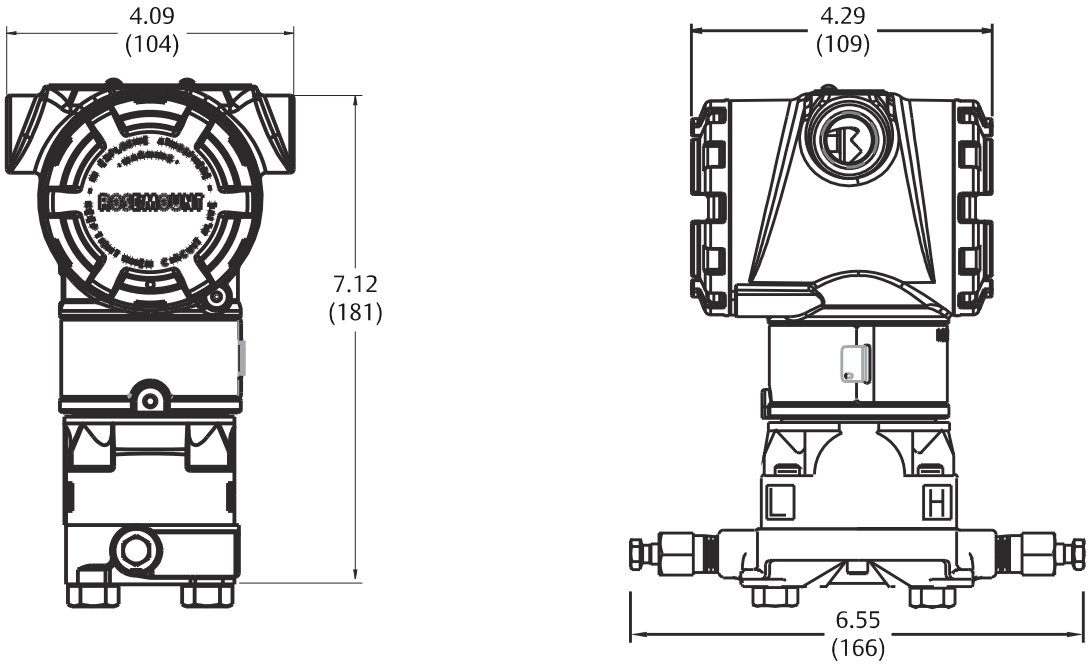
Note
This section contains dimensional drawings for output codes A, F and X. For output codes W and M, visit Emerson.com/en-us/support.

Figure 7: Rosemount 3051C Exploded View



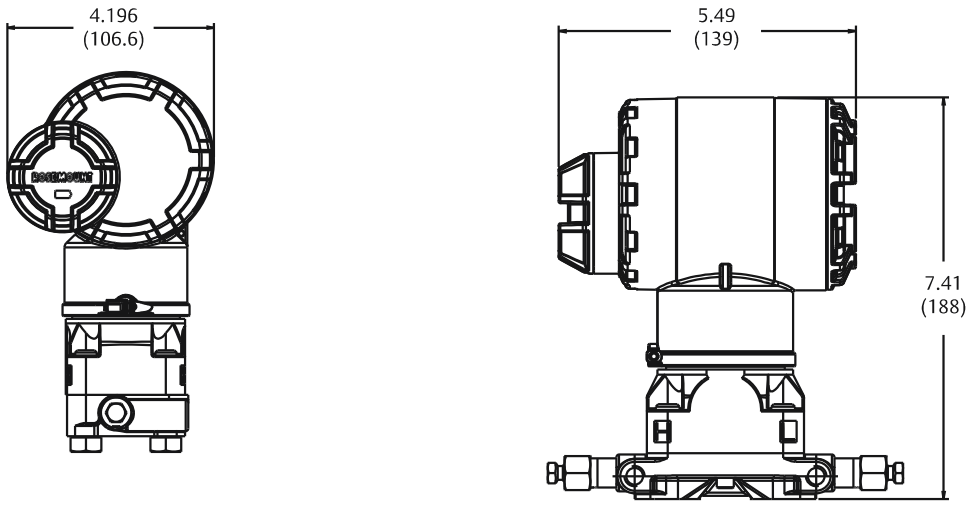
A. Cover
B. Cover O-ring
C. Terminal block
D. Electronics housing
E. Configuration buttons cover
F. Local configuration buttons
G. Electronics board
H. Name plate
I. Housing rotation set screw (180 degree maximum rotation without further disassembly)
J. Sensor module
K. Coplanar flange
L. Drain/vent valve
M. Flange adapters
N. Process O-ring
O. Flange adapter O-ring
P. Flange alignment screw (not pressure retaining)
Q. Flange bolts

Figure 8: Rosemount 3051C Coplanar Flange



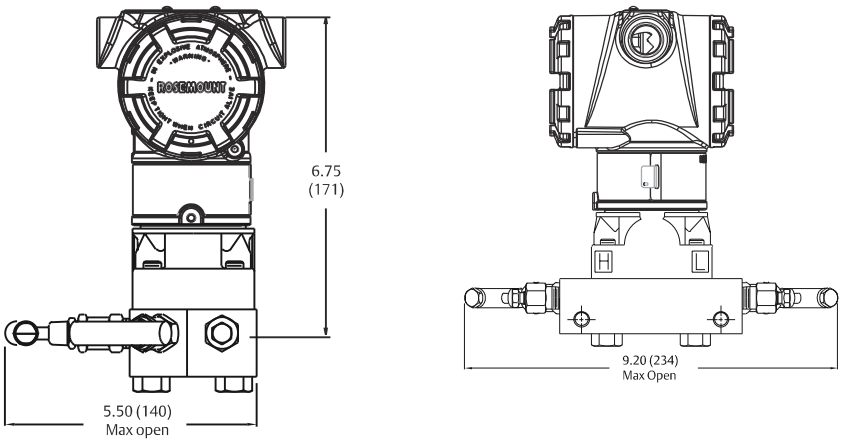
Dimensions are in inches (millimeters).

Figure 9: Rosemount 3051 Wireless Housing with Coplanar Flange



Dimensions are in inches (millimeters).

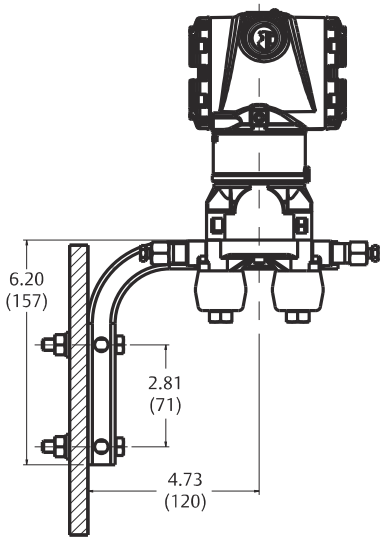
Figure 10: Rosemount 3051C Coplanar Flange with Rosemount 305RC3 3-Valve Coplanar Integral Manifold

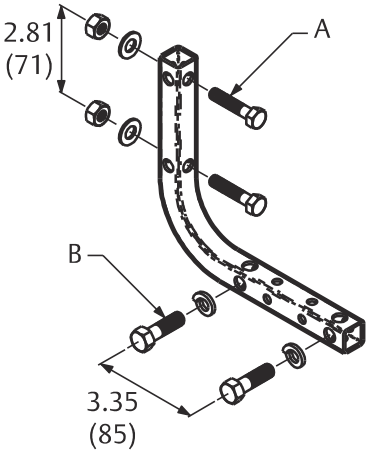


Dimensions are in inches (millimeters).

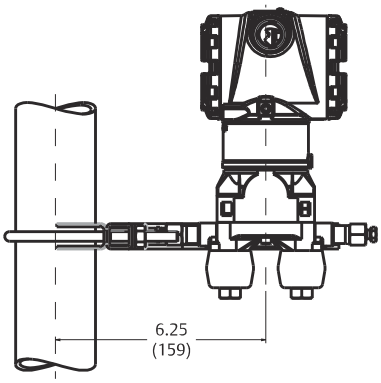
Figure 11: Coplanar Flange Mounting Configurations with Optional Bracket (B4) for 2-in. Pipe or Panel Mounting

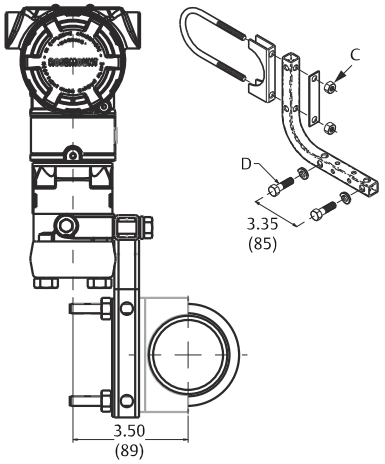
Panel mounting





Pipe mounting

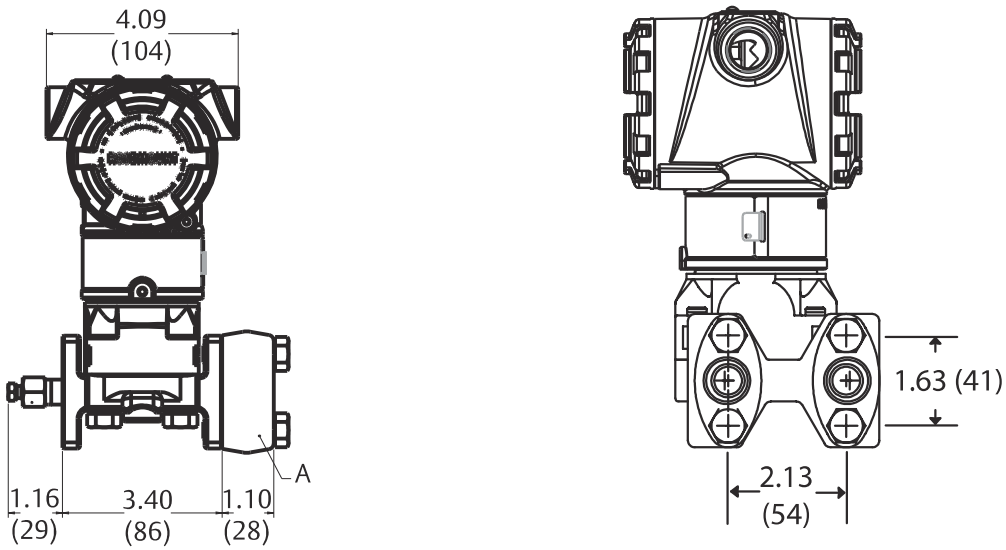




A. 5/16-18 bolts (not supplied)
B. ⅜-16 bolts
C. 2-in. U-bolt
D. ⅜-16 bolts

Dimensions are in inches (millimeters).

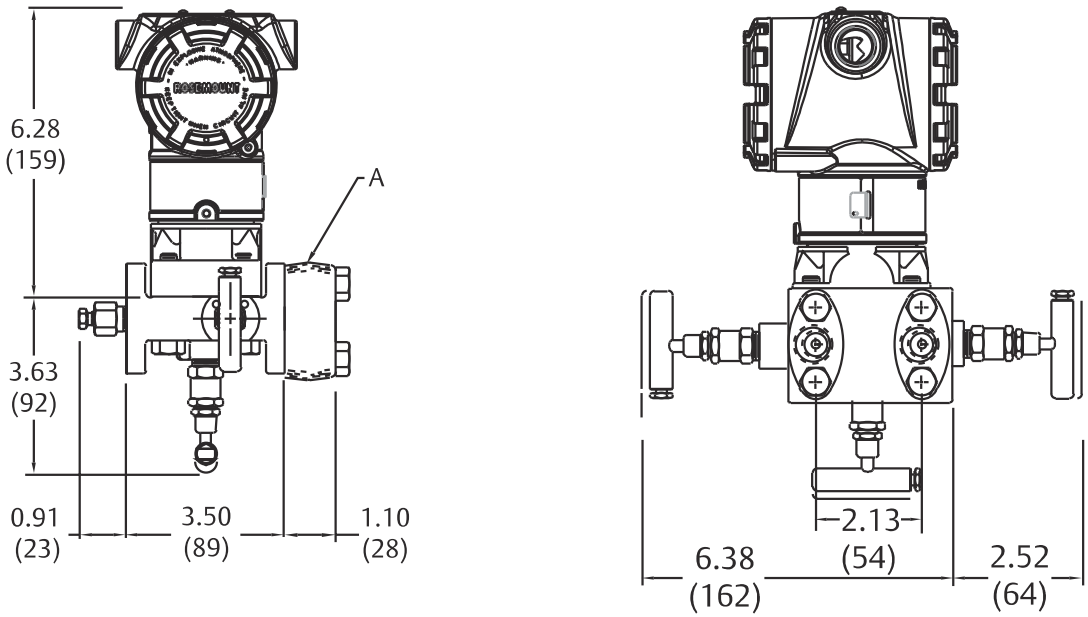
Figure 12: Rosemount 3051C Coplanar with Traditional Flange



A. Flange adapters (optional)

Dimensions are in inches (millimeters).

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

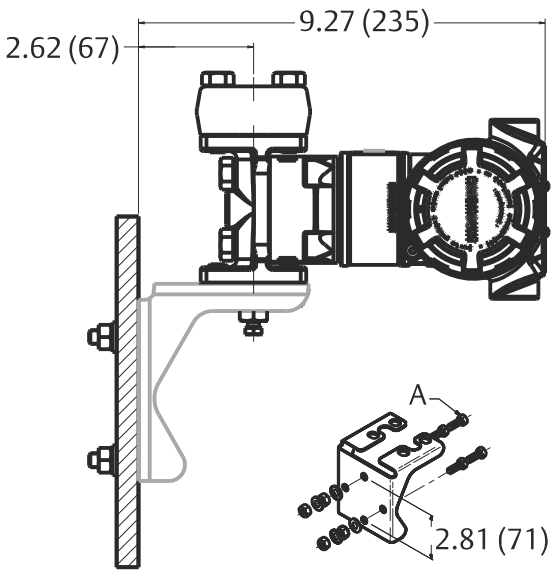


A. ½-14 NPT flange adapter (optional)

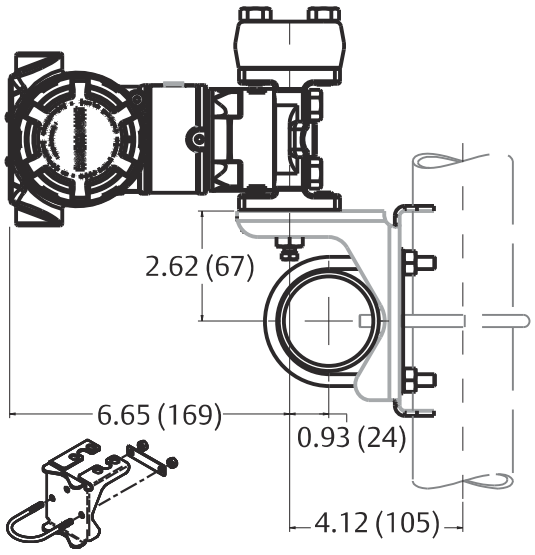
Dimensions are in inches (millimeters).

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

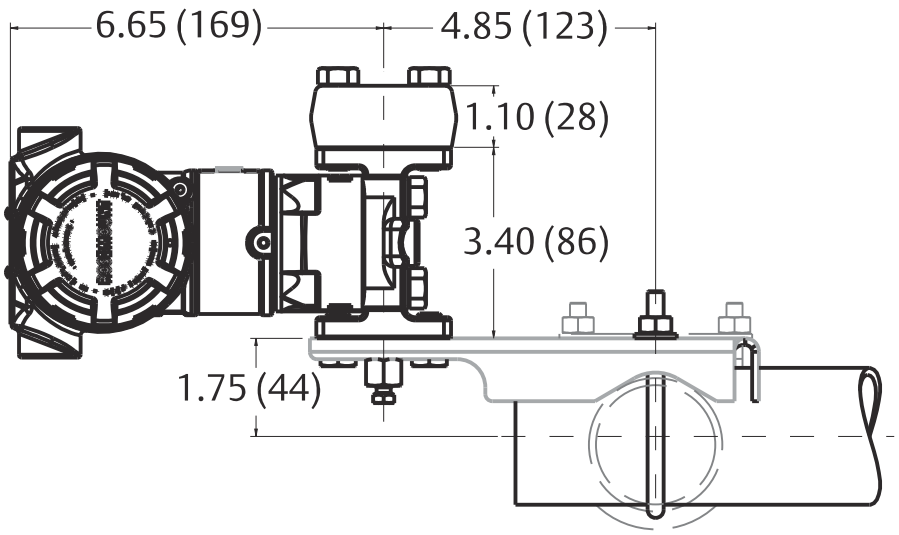
Panel mounting bracket (option B2/B8)



Pipe mounting bracket (option B1/B7/BA)



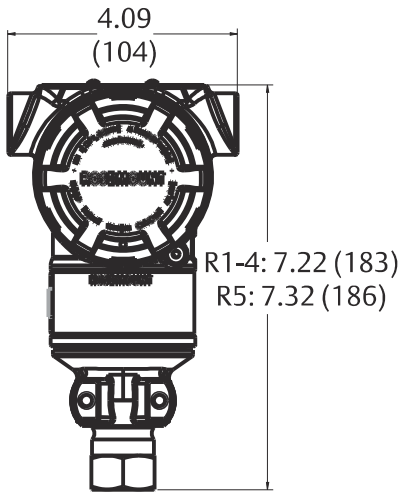
Pipe mounting bracket (option B3/B9/BC)

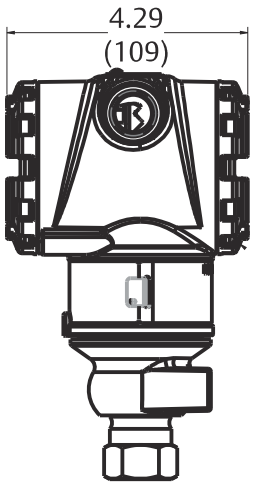


A. 5/16-18 bolts (not supplied)

Dimensions are in inches (millimeters).

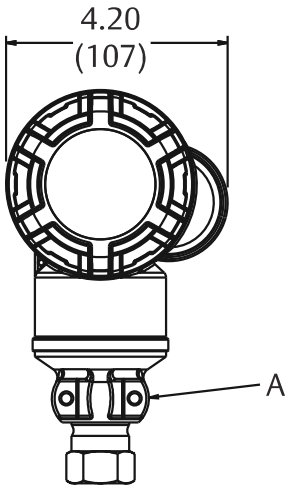
Figure 15: Rosemount 3051T

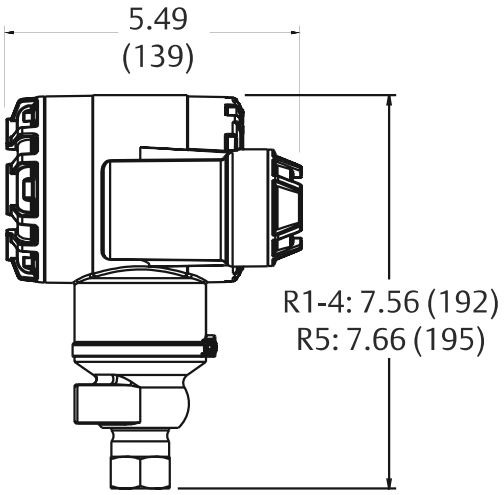




Dimensions are in inches (millimeters).

Figure 16: Rosemount 3051T Wireless Housing

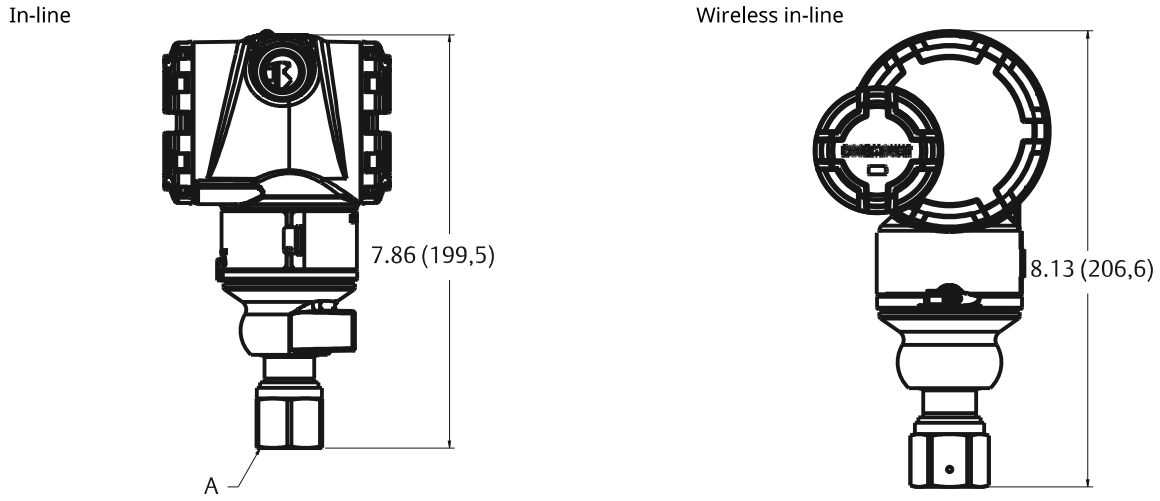




A. U-Bolt bracket

Dimensions are in inches (millimeters).

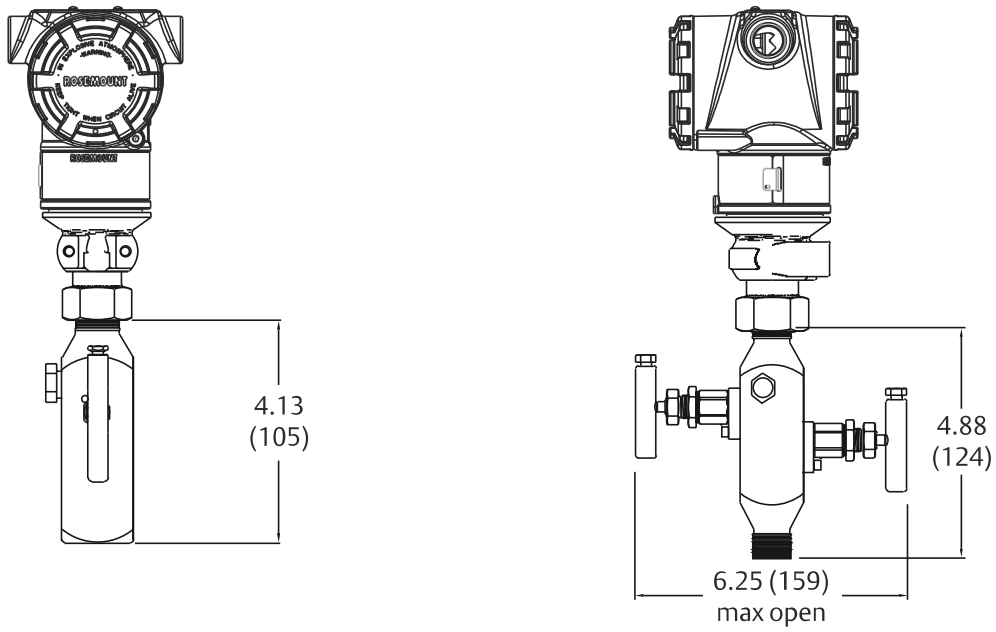
Figure 17: Rosemount 3051T In-Line Range 6



A. Autoclave type F-250-C

Dimensions are in inches (millimeters).

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

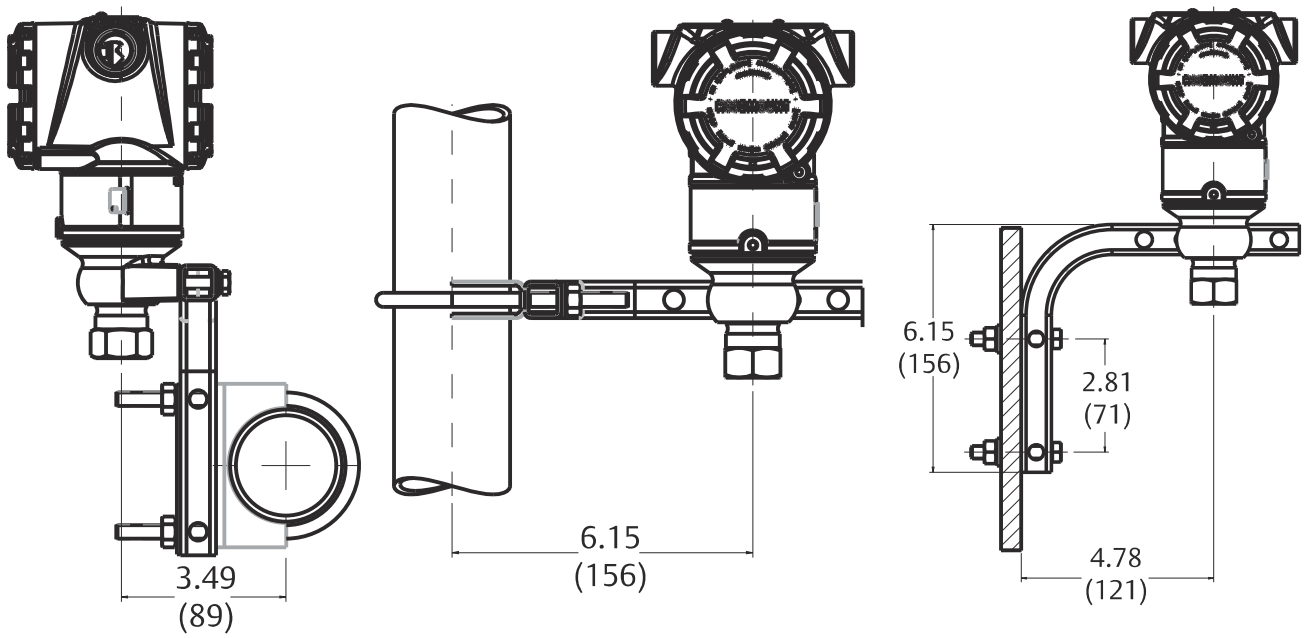


Dimensions are in inches (millimeters).

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

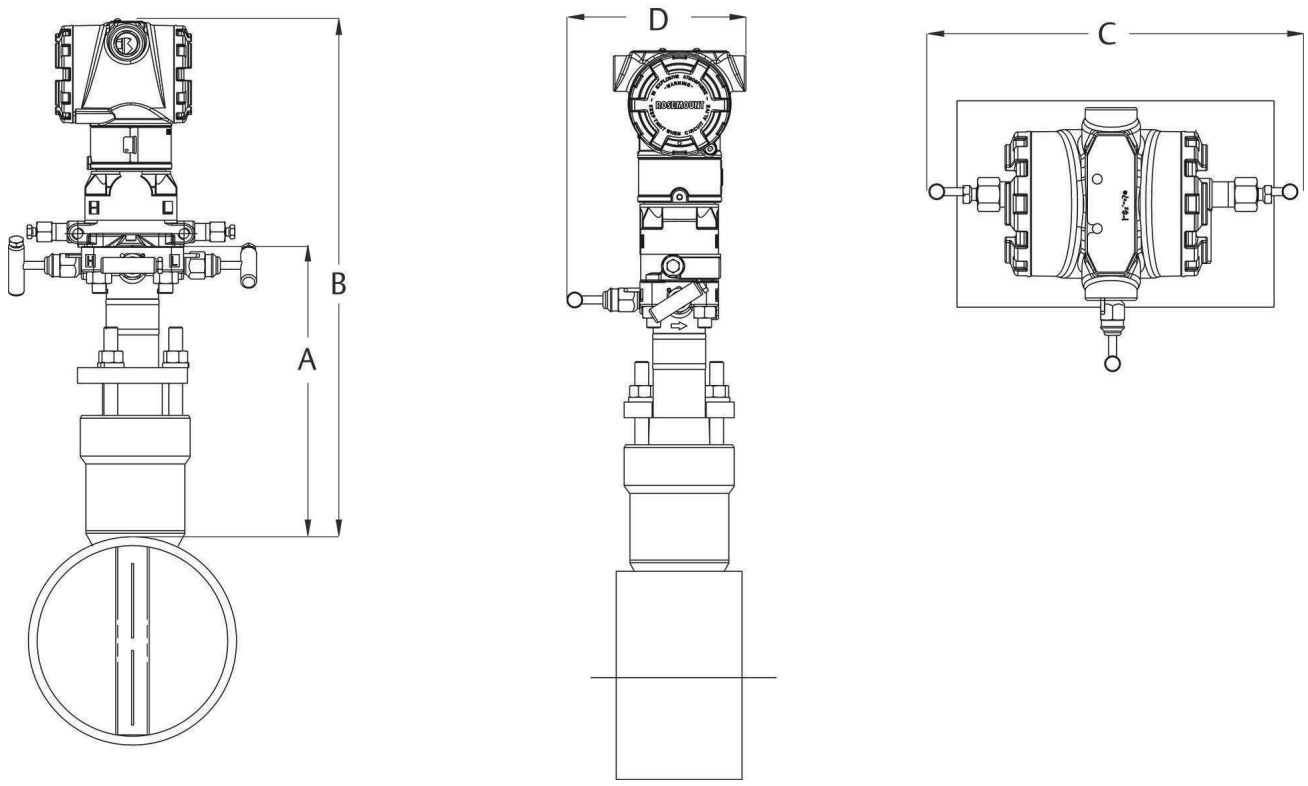
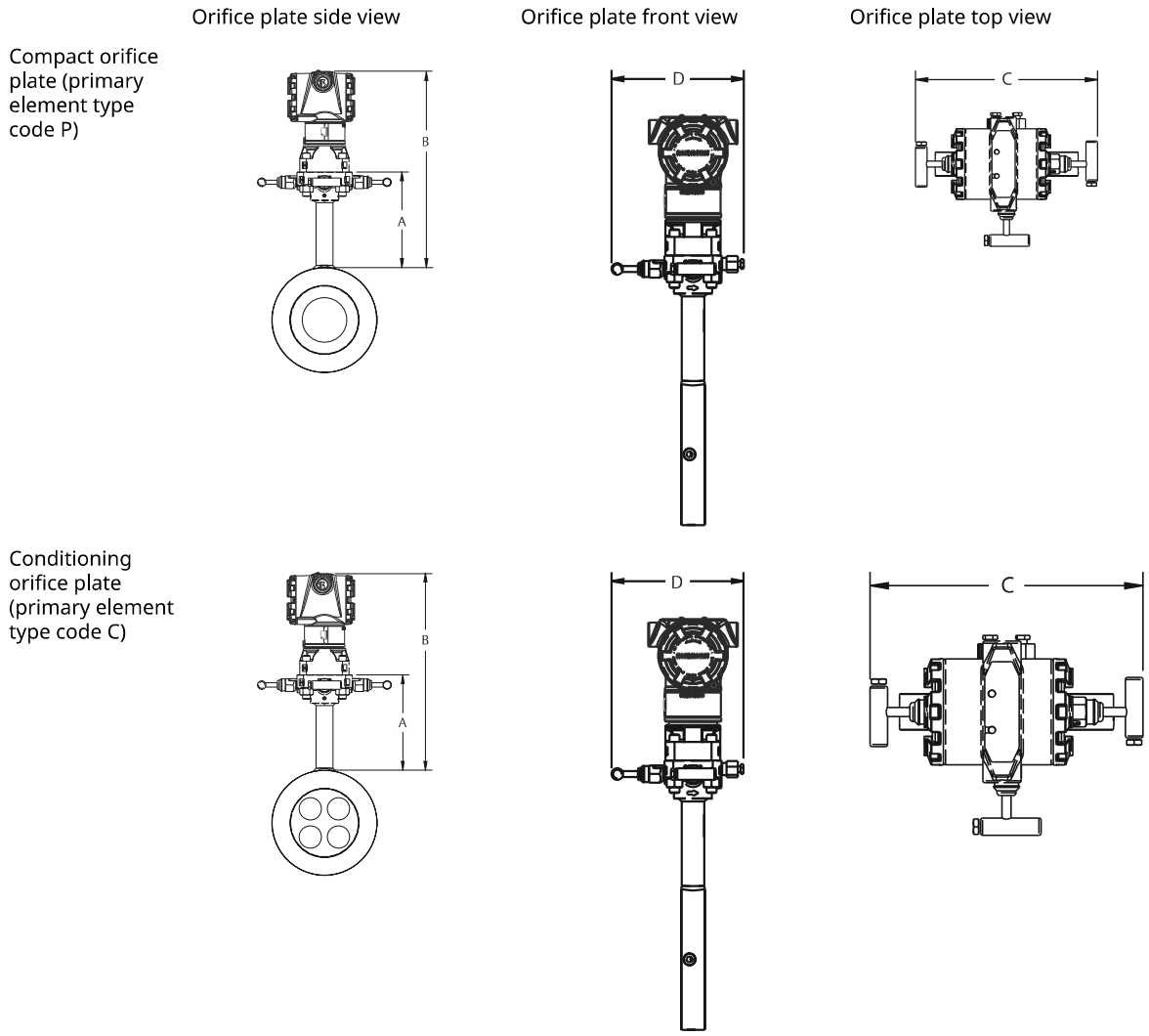


Table 10: Rosemount 3051CFA Pak-Lok Annubar Flow meter Dimensional Data (Maximum Dimensions)

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

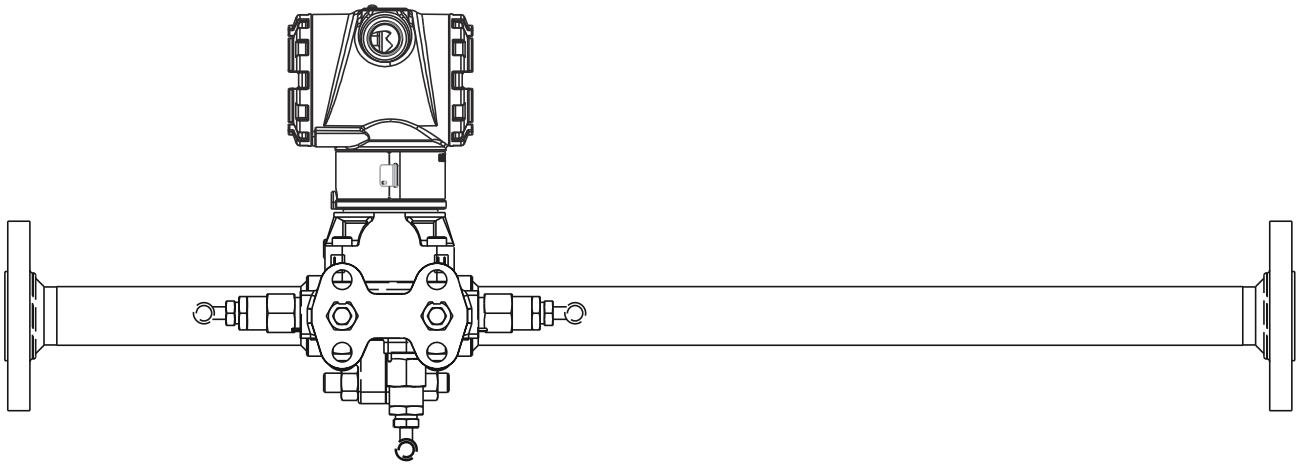


Primary element type	A	B	Transmitter height	C	D
Type P and C	5.62 (143)	Transmitter height + A	6.27 (159)	7.75 (197) - closed 8.25 (210) - open	6.00 (152) - closed 6.25 (159) - open

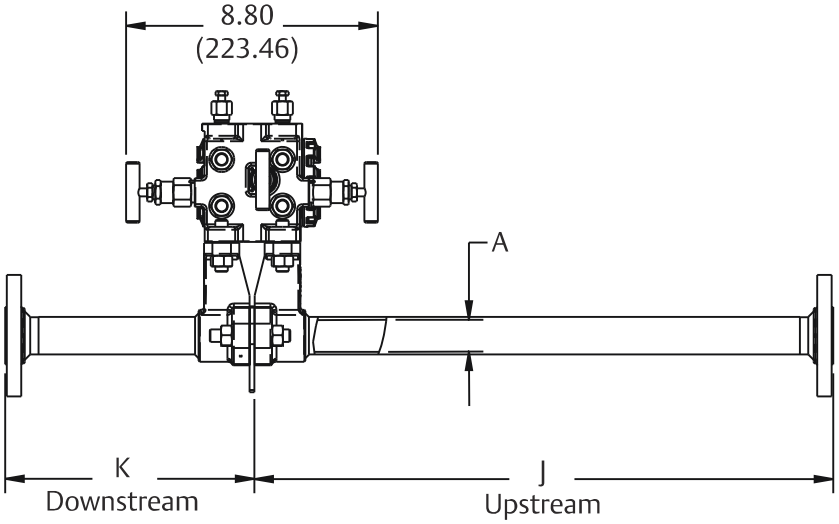
Dimensions are in inches (millimeters).

Figure 22: Rosemount 3051CFP Integral Orifice Flow meter

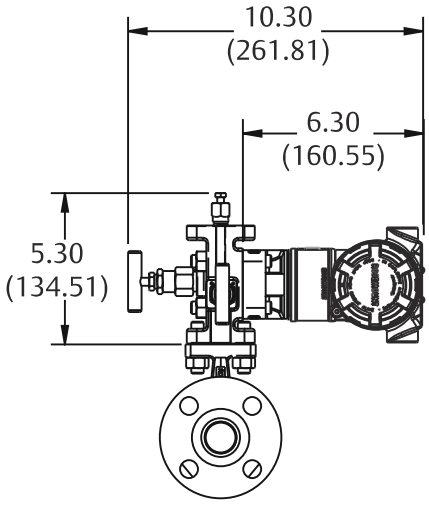
Side view



Bottom view



Front view



A. B.D. (bore diameter)

Dimensions are in inches (millimeters).

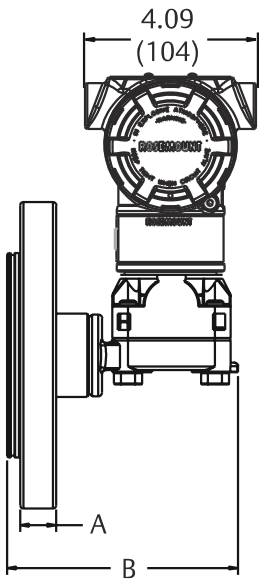
	Line size		
Dimension	**½ -in. (15 mm)**	**1-in. (25 mm)**	**1½-in. (40 mm)**
J (Beveled/threaded pipe ends)	12.54 (318.4)	20.24 (514.0)	28.44 (722.4)
J (RF slip-on, RTJ slip-on, RF-DIN slip on)	12.62 (320.4)	20.32 (516.0)	28.52 (724.4)
J (RF Class 150, weld neck)	14.37 (364.9)	22.37 (568.1)	30.82 (782.9)
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)
K (Beveled/threaded pipe ends)	5.74 (145.7)	8.75 (222.2)	11.91 (302.6)

	Line size		
Dimension	**½ -in. (15 mm)**	**1-in. (25 mm)**	**1½-in. (40 mm)**
K (RF slip-on, RTJ slip-on, RF-DIN slip on) (1)	5.82 (147.8)	8.83 (224.2)	11.99 (304.6)
K (RF 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).			

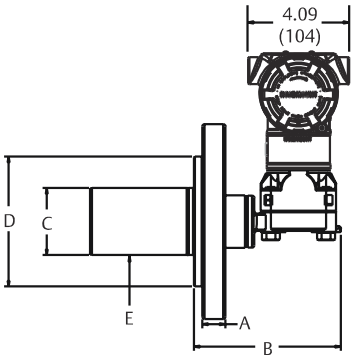
(1) *Downstream length shown here includes plate thickness of 0.162-in. (4.11 mm).*

Figure 23: Rosemount 3051L Configurations

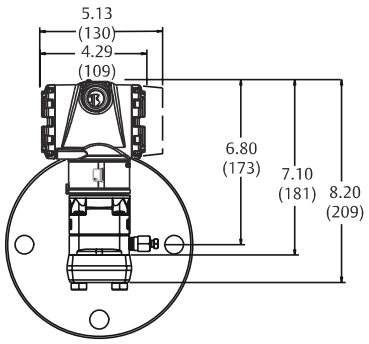
2-in. flange Configuration (flush mount only)



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 11: Rosemount 3051L Dimensional Specifications

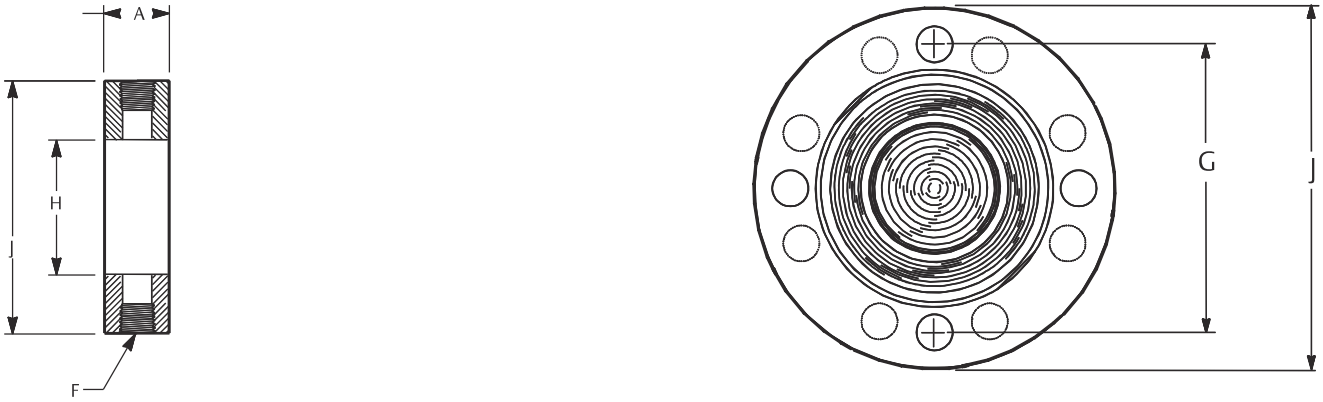
Class(1)	**Pipe size**	**Flange thickness A**	**B**	**Extension diameter(1) C**	**O.D. gasket surface D**
ASME B16.5 (ANSI) 150	2 (51)	0.69 (18)	5.65 (143)	N/A	3.6 (92)
	3 (76)	0.88 (22)	5.65 (143)	2.58 (66)	5.0 (127)
	4 (102)	0.88 (22)	5.65 (143)	3.5 (89)	6.2 (158)
ASME B16.5 (ANSI) 300	2 (51)	0.82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

Table 11: Rosemount 3051L Dimensional Specifications *(continued)*

Class[1]	Pipe size	Flange thickness A	B	Extension diameter[1] C	O.D. gasket surface D
	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[1]	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)
	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_2O at 68 °F (Range 0, 1, 2, and 3)
Absolute/Rosemount 3051TA/3051TG	psi (all ranges)
4 mA(1)	0 (engineering units above)
20 mA(1)	Upper range limit
Output - Transfer function	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
Display	None
Alarm(1)	High
Software tag	(Blank)
Damping	0.4 seconds (2)

(1) *Not applicable to FOUNDATION Fieldbus, PROFIBUS PA, or wireless.*
(2) *For Fieldbus Protocols, default damping is one second.*

Display default settings

Unless otherwise specified, transmitter is shipped as follows when a display is ordered:

Table 12: Graphical LCD Display (Code M6)

Language	English
Backlight	On
Decimal digit precision	Automatic
GP/AP unit label	Disable
Decimal separator	Period
Bluetooth®(1)	Enable
Display parameters	Pressure

(1) *Bluetooth Configuration and Maintenance (Code BLE) only.*

Custom configuration

Note
Not applicable to WirelessHART®, Low-power,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.

- Transmitter information
- Output information
- Display parameters
- Graphical LCD display settings
- Process variable output assignments
- Security information
- Custom alarm and saturation signal levels
- Process Alerts
- Application Specific Configuration

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, 32 characters maximum.

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 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			
inH_2O (68 °F)	mbar	inH_2O (60 °F)(1)	ftH_2O (4 °C)(1)
inHg (0 °C)	g/cm^2	cmH_2O (4 °C)(1)	ftH_2O (60 °F)(1)
ftH_2O (68 °F)	kg/cm^2	mH_2O (4 °C)(1)	mHg (0 °C)(1)
mmH_2O (68 °F)	Pa	cmHg (0 °C)(1)	MPa(1)
mmHg (0 °C)	kPa	lb/ft^2	inH_2O (4 °C)(1)
psi	Torr	hPa(1)	mmH_2O (4 °C)(1)
bar	atm	$kg/m^{2(1)}$	psf (1)(2)

Flow			
User-defined			
Totalizer – Flow Units of Time			
Seconds	Minutes	Hours	Days
Level			
Feet (ft)	Meters (m)	Inches (in)	Centimeters (cm)
Millimeters (mm)			
Volume			
Gallons	Liters	Imperial Gallons	Cubic Meters
Barrels	Cubic Yards	Cubic Feet	Cubic Inches

(1) *Not available with Low Power (output code M) or PROFIBUS PA (output option code W).*
(2) *Not available with 4-20 mA HART (output code A).*

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

M6 Graphical LCD display

- Available for 4–20 mA HART
- Three-line, fourteen character graphical LCD display
- Backlit
- Available in English, Chinese, French, German, Italian, Portuguese, Russian, and Spanish
- Bluetooth®, square root, and NAMUR compliant maintenance icons
- 90-degree physical rotation and 180-degree software rotation capability for easy viewing
- User adjustable decimal precision and decimal separator
- Gage or absolute unit labels

Configuration buttons

Rosemount 3051 will ship with no buttons unless option D1 (quick service buttons), 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 µs–100 kHz)
- 3 kA crest (8 x 20 µs)
- 6 kV crest (1.2 x 50 µs)

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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