Product Data Sheet
00813-0100-4001, Rev UB
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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 3051C Coplanar Pressure Transmitter ordering information

Rosemount 3051C Coplanar Pressure Transmitters are the industry standard for differential, gage, and absolute pressure measurement. The coplanar platform enables seamless integration with manifolds, flow, and level solutions. Capabilities include:

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

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 on material selection.

Model codes

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

Figure 1: Model Code Example

3051C D 2 X 2 2 1 A	WA3 WP5	M5 B4
1	2	3

1. Required model components (choices available on most)
2. Wireless options (optional for many products, required for wireless products)
3. Additional options (variety of features and functions that may be added to products)

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

Required model components

Model

Code	Description	
3051C	Coplanar pressure transmitter	★

Measurement type

Code	Description	
D	Differential	★
G	Gage	★
A(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)	
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	★
0(1)	–3 to 3 inH_2O (-7.46 to 7.46 mbar)	N/A	N/A	

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

Transmitter output

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

M[4]	Low-power, 1–5 Vdc with digital signal based on HART Protocol	

(1) *HART Revision 5 is the default HART output.*
(2) *For local addressing and configuration, M4 (LOI) is required.*
(3) *Available approvals are FM Intrinsically Safe, (option code I5), CSA Intrinsically Safe (option code I6), ATEX Intrinsic Safety (option code I1), IECEx Intrinsic Safety (option code I7) and EAC Intrinsic Safety (option code IM).*
(4) *Only available with C6, E2, E5, I5, K5, KB and E8 product certifications. Not available with GE, GM, SBS, DA0, M4, D4, DZ, QT, HR5, HR7, CR, CS, CT.*

Materials of construction

Code	Process 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	★
E	Aluminum, ultra low copper	½–14 NPT	★
F	Aluminum, ultra low copper	M20 x 1.5	★
J	SST	½–14 NPT	★
K	SST	M20 x 1.5	★
P(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. Not available with product certifications options E8, K8, E5, K5, C6, K6, E7, K7, E2, K2, E3, KB, or KD.*

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

Extended product warranty

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

Plantweb control functionality

Code	Description	
A01	FOUNDATION Fieldbus control function block suite	★

Plantweb diagnostic functionality

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

Alternate flange

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

Code	Description	
H2	Traditional flange, 316 SST, SST drain/vent	★
H3(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) *Process 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 1199 seal	★
S2(2)	Assemble to two Rosemount 1199 seals	★

(1) *Not valid with option code D9 for RC½ adapters.*
(2) *Not valid for option codes DF and D9 for adapters.*

Mounting bracket

Panel mounting bolts are not supplied.

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

Product certifications

Code	Description	
E8	ATEX Flameproof and Dust Certification	★

I1[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[2]	TIIS Flame-proof	★
E5	USA Explosion-proof, Dust Ignition-Proof	★
I5[3]	USA Intrinsically Safe, Nonincendive	★
IE	USA FISCO Intrinsically Safe; for FOUNDATION Fieldbus or PROFIBUS PA Protocol only	★
K5	USA Explosion-proof, Dust Ignition-Proof, Intrinsically Safe, and Division 2	★
C6	Canada Explosion-proof, Dust Ignition-proof, Intrinsically Safe, and Division 2	★
E6	Canada Explosion-proof, Dust Ignition-proof, Division 2	★
I6[4]	Canada Intrinsic Safety	★
K6	Canada and ATEX Explosion-proof, Intrinsically Safe, and Division 2 (combination of C6, E8, and I1)	★
E7	IECEx Flameproof, Dust Ignition-proof	★
I7	IECEx Intrinsic Safety	★
N7	IECEx Type n Certification	★
K7	IECEx Flame-proof, Dust Ignition-proof, Intrinsic Safety, and Type n (combination of I7, N7, and E7)	★
E2	INMETRO Flameproof	★
I2	INMETRO Intrinsic Safety	★
IB	INMETRO FISCO intrinsically safe; for FOUNDATION Fieldbus or PROFIBUS PA Protocols only	★
K2	INMETRO Flameproof, Intrinsic Safety	★
E3	China Flameproof	★
I3	China Intrinsic Safety	★
N3	China Type n	★
EM	Technical Regulations Customs Union (EAC) Flameproof	★
IM	Technical Regulations Customs Union (EAC) Intrinsic Safety	★
KM	Technical Regulations Customs Union (EAC) Flameproof and Intrinsic Safety	★
KB	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)	★
EP[5]	Republic of Korea Flameproof	★
IP[6]	Republic of Korea Intrinsic Safety	★
KP[7]	Republic of Korea Flameproof, Intrinsic Safety	★

(1) *Dust approval not applicable to output code X. See C5 Custody Transfer - Measurement Canada Accuracy Approval for wireless approvals.*
(2) *Only available with output codes A - 4–20 mA HART, F - FOUNDATION Fieldbus, and W - PROFIBUS PA. Also only available with G½ housing thread types.*
(3) *Nonincendive certification not provided with Wireless output option code (X).*
(4) *Panel mounting bolts are not supplied.*
(5) *Only available with HART 4-20 mA output (code A), FOUNDATION Fieldbus output (code F), and Low Power output (code M) and with housing codes A, B, E, F, J, and K. Not available with codes DZ, V5, GE, GM, BR5, or BR6.*

(6) *Only available with HART 4-20 mA output (code A), FOUNDATION Fieldbus output (code F), Wireless output (code X), and PROFIBUS-PA output (code W) and with housing codes A, B, E, F, J, K, and P. Not available with codes V5, GE, or GM.*

(7) *Only available with HART 4-20 mA output (code A) and FOUNDATION Fieldbus output (code F) and housing codes A, B, E, F, J, and K. Not available with codes DA0, DZ, V5, GE, GM, or BR6.*

Drinking water approval

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

Code	Description	
DW	NSF drinking water approval	★

Shipboard approvals

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

Code	Description	
SBS	American Bureau of Shipping	★
SBV(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, N7*

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	Austenitic 316 SST bolts	★
L5	ASTM A 193, grade B7M bolts	★
L6	Alloy K-500 bolts	★

Display and interface options

Code	Description	
M4(1)	LCD display with LOI	★
M5	LCD display	★

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

Calibration certificate

Code	Description	
Q4	Calibration Certificate	★
QG[1]	Calibration Certificate and GOST Verification Certificate	★
QP	Calibration certification and tamper evident seal	★

(1) *Contact an Emerson representative for availability.*

Material traceability certification

Code	Description	
Q8	Material Traceability Certification per EN 10204 3.1	★

Positive material identification (PMI)

Code	Description	
Q76	PMI verification and certificate	★

Quality certification for safety

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

Code	Description	
QS	Prior-use certificate of FMEDA data	★
QT	Safety certified to IEC 61508 with certificate of FMEDA	★

Configuration buttons

Code	Description	
D4[1]	Analog zero and span	★
DZ[2]	Digital zero trim	★

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

Transient protection

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

Code	Description	
T1	Transient protection terminal block	★

Software configuration

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

Code	Description	
C1	Custom software configuration (For wired, see the Rosemount 3051 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 and Rosemount 3051 Configuration Data Sheet)	★
CS	Custom alarm and saturation signal levels, low alarm (requires C1 and 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.*

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	★

Toolkit total system performance reports

Code	Description	
QZ	Remote seal system performance calculation report	★

Conduit electrical connector

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

Code	Description	
GE	M12, 4-pin, male connector (eurofast®)	★

GM	A size mini, 4-pin, male connector (minifast®)	★

NACE certificate

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

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

Cold temperature

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

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

(1) *BR5 option is only available with approval codes E2, E5, EM, I2, I5, I7, IM, IP, K5, KM, and KP.*
(2) *BR6 option is only available with approval codes EM, I2, I7, IM, IP, and KM.*

HART revision configuration (requires HART Protocol output code A)

HART Revision 5 is the default HART output.

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

Wireless power accessory

This option is only available with output code X.

Code	Description	
HS	Hot swap power adapter for power module replacement	