

Rosemount 3051C Coplanar Pressure Transmitter



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

- Power advisory can proactively detect degraded electrical loop integrity issues (option code DA0)
- LOI with straightforward menus and built-in configuration buttons (option code M4)
- Safety Certification (option code QT)

Additional information:

Specifications: [page 44](#)

Certifications: [page 56](#)

Dimensional drawings: [page 67](#)

See [Specifications](#) and options for more details on each configuration. Specification and selection of product materials, options, or components must be made by the purchaser of the equipment. See [page 53](#) for more information on material selection.

Table 1. Rosemount 3051C Coplanar Pressure Transmitters Ordering Information

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.

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

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| Materials of construction | | | | |
|---------------------------|---|--------------------------|-----------------|---|
| | Process flange type | Flange material | Drain/vent | |
| 2 | Coplanar | Stainless steel (SST) | SST | ★ |
| 3 ⁽⁸⁾ | Coplanar | Cast C-276 | Alloy C-276 | ★ |
| 4 | Coplanar | Alloy 400 | Alloy 400/K-500 | ★ |
| 5 | Coplanar | Plated carbon steel (CS) | SST | ★ |
| 7 ⁽⁸⁾ | Coplanar | SST | Alloy C-276 | ★ |
| 8 ⁽⁸⁾ | Coplanar | Plated CS | Alloy C-276 | ★ |
| 0 | Alternate process connection | | | ★ |
| Isolating diaphragm | | | | |
| 2 ⁽⁸⁾ | 316L SST | | | ★ |
| 3 ⁽⁸⁾ | Alloy C-276 | | | ★ |
| 4 ⁽⁹⁾ | Alloy 400 | | | |
| 5 ⁽⁹⁾ | Tantalum (available on Rosemount 3051CD and CG, ranges 2–5 only; not available on Rosemount 3051CA) | | | |
| 6 ⁽⁹⁾ | Gold-plated alloy 400 (use in combination with O-ring option code B) | | | |
| 7 ⁽⁹⁾ | Gold-plated 316 SST | | | |
| O-ring | | | | |
| A | Glass-filled PTFE | | | ★ |
| B | Graphite-filled PTFE | | | ★ |
| Sensor fill fluid | | | | |
| 1 | Silicone | | | ★ |
| 2 ⁽⁹⁾ | Inert (differential and gage only) | | | ★ |
| Housing material | | Conduit entry size | | |
| A | Aluminum | 1/2–14 NPT | | ★ |
| B | Aluminum | M20 x 1.5 | | ★ |
| E | Aluminum, ultra low copper | 1/2–14 NPT | | ★ |
| F | Aluminum, ultra low copper | M20 x 1.5 | | ★ |
| J | SST | 1/2–14 NPT | | ★ |
| K | SST | M20 x 1.5 | | ★ |
| P ⁽¹⁰⁾ | Engineered polymer | No conduit entries | | ★ |
| D ⁽¹¹⁾ | Aluminum | G1/2 | | |
| M ⁽¹¹⁾ | SST | G1/2 | | |

Wireless options (requires wireless output code X and engineered polymer housing code P)

| Wireless transmit rate, operating frequency, and protocol | | | |
|---|--|--|---|
| WA3 | User Configurable Transmit Rate, 2.4GHz WirelessHART Protocol | | ★ |
| Antenna and SmartPower™ | | | |
| WP5 | Internal antenna, compatible with Green Power Module (I.S. Power Module sold separately) | | ★ |

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Options (include with selected model number)

| | | |
|--|---|---|
| Extended product warranty | | |
| WR3 | 3-year limited warranty | ★ |
| WR5 | 5-year limited warranty | ★ |
| Plantweb™ control functionality⁽¹²⁾ | | |
| A01 | FOUNDATION Fieldbus control function block suite | ★ |
| Plantweb diagnostic functionality | | |
| DA0 ⁽¹³⁾ | Power Advisory HART Diagnostic | ★ |
| D01 ⁽¹²⁾ | FOUNDATION Fieldbus Diagnostics Suite | ★ |
| Alternate flange⁽¹⁴⁾ | | |
| H2 | Traditional flange, 316 SST, SST drain/vent | ★ |
| H3 ⁽⁸⁾ | Traditional flange, alloy C, alloy C-276 drain/vent | ★ |
| H4 | Traditional flange, cast alloy 400, alloy 400/K-500 drain/vent | ★ |
| H7 ⁽⁸⁾ | Traditional flange, 316 SST, alloy C-276 drain/vent | ★ |
| HJ | DIN-compliant traditional flange, SST, 7/16-in. adapter/manifold bolting | ★ |
| FA | Level flange, SST, 2-in., ANSI class 150, vertical mount 316 SST drain/vent | ★ |
| FB | Level flange, SST, 2-in., ANSI Class 300, vertical mount 316 SST drain/vent | ★ |
| FC | Level flange, SST, 3-in., ANSI Class 150, vertical mount 316 SST drain/vent | ★ |
| FD | Level flange, SST, 3-in., ANSI Class 300, vertical mount 316 SST drain/vent | ★ |
| FP | DIN level flange, SST, DN 50, PN 40, vertical mount 316 SST drain/vent | ★ |
| FQ | DIN level flange, SST, DN 80, PN 40, vertical mount 316 SST drain/vent | ★ |
| HK ⁽¹⁵⁾ | DIN compliant traditional flange, SST, 10 mm adapter/manifold bolting 316 SST | |
| HL | DIN compliant traditional flange, SST, 12 mm adapter/manifold bolting 316 SST | |
| Manifold assembly⁽¹⁶⁾ | | |
| S5 | Assemble to Rosemount 305 Integral Manifold | ★ |
| S6 | Assemble to Rosemount 304 Manifold or Connection System | ★ |
| Integral mount primary element⁽¹⁵⁾⁽¹⁶⁾ | | |
| S3 | Assemble to Rosemount 405 Compact Orifice Plate | ★ |
| S4 ⁽¹⁷⁾ | Assemble to Rosemount Annubar™ or Rosemount 1195 Integral Orifice | ★ |
| Seal assemblies⁽¹⁶⁾ | | |
| S1 ⁽¹⁸⁾ | Assemble to one Rosemount 1199 seal | ★ |
| S2 ⁽¹⁹⁾ | Assemble to two Rosemount 1199 seals | ★ |
| Mounting bracket⁽²⁰⁾ | | |
| B4 | Coplanar flange bracket, all SST, 2-in. pipe and panel | ★ |
| B1 | Traditional flange bracket, CS, 2-in. pipe | ★ |
| B2 | Traditional flange bracket, CS, panel | ★ |
| B3 | Traditional flange flat bracket, CS, 2-in. pipe | ★ |
| B7 | Traditional flange bracket, B1 with SST bolts | ★ |
| B8 | Traditional flange bracket, B2 with SST bolts | ★ |
| B9 | Traditional flange bracket, B3 with SST bolts | ★ |

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| | | |
|---|---|---|
| BA | Traditional flange bracket, B1, all SST | ★ |
| BC | Traditional flange bracket, B3, all SST | ★ |
| Product certifications | | |
| E8 | ATEX Flameproof and Dust Certification | ★ |
| I1 ⁽²¹⁾ | 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 ⁽²²⁾ | TIIS Flame-proof | ★ |
| E5 | FM Explosion-proof, Dust Ignition-Proof | ★ |
| I5 ⁽²³⁾ | FM Intrinsically Safe, Nonincendive | ★ |
| IE | FM FISCO Intrinsically Safe; for FOUNDATION Fieldbus or PROFIBUS PA Protocol only | ★ |
| K5 | FM Explosion-proof, Dust Ignition-Proof, Intrinsically Safe, and Division 2 | ★ |
| C6 | CSA Explosion-proof, Dust Ignition-proof, Intrinsically Safe, and Division 2 | ★ |
| I6 ⁽¹⁰⁾ | CSA Intrinsic Safety | ★ |
| K6 | CSA and ATEX Explosion-proof, Intrinsically Safe, and Division 2 (combination of C6, E8, and I1) | ★ |
| E7 | IECEX Flameproof, Dust Ignition-proof | ★ |
| I7 | IECEX Intrinsic Safety | ★ |
| N7 | IECEX Type n Certification | ★ |
| K7 | IECEX Flame-proof, Dust Ignition-proof, Intrinsic Safety, and Type n (combination of I7, N7, and E7) | ★ |
| E2 | INMETRO Flameproof | ★ |
| I2 | INMETRO Intrinsic Safety | ★ |
| IB | INMETRO FISCO intrinsically safe; for FOUNDATION Fieldbus or PROFIBUS PA Protocols only | ★ |
| K2 | INMETRO Flameproof, Intrinsic Safety | ★ |
| E3 | China Flameproof | ★ |
| I3 | China Intrinsic Safety | ★ |
| N3 | China Type n | ★ |
| EM | Technical Regulations Customs Union (EAC) Flameproof | ★ |
| IM | Technical Regulations Customs Union (EAC) Intrinsic Safety | ★ |
| KM | Technical Regulations Customs Union (EAC) Flameproof and Intrinsic Safety | ★ |
| KB | FM and CSA Explosion-proof, Dust Ignition Proof, Intrinsically Safe, and Division 2 (combination of K5 and C6) | ★ |
| KD | FM, CSA, and ATEX Explosion-proof, Intrinsically Safe (combination of K5, C6, I1, and E8) | ★ |
| Drinking water approval⁽²⁴⁾ | | |
| DW | NSF drinking water approval | ★ |
| Shipboard approvals⁽⁹⁾ | | |
| SBS | American Bureau of Shipping | ★ |
| SBV ⁽²⁵⁾ | Bureau Veritas (BV) | ★ |
| SDN | Det Norske Veritas | ★ |
| SLL ⁽²⁵⁾ | Lloyds Register (LR) | ★ |
| Custody transfer⁽¹³⁾ | | |
| C5 | Measurement Canada Accuracy Approval (limited availability depending on transmitter type and range; contact an Emerson™ representative) | ★ |

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| Bolting material | | |
|--|---|---|
| L4 | Austenitic 316 SST bolts | ★ |
| L5 | ASTM A 193, grade B7M bolts | ★ |
| L6 | Alloy K-500 bolts | ★ |
| Display and interface options | | |
| M4 ⁽²⁶⁾ | LCD display with LOI | ★ |
| M5 | LCD display | ★ |
| Calibration certificate | | |
| Q4 | Calibration Certificate | ★ |
| QG ⁽²⁷⁾ | Calibration Certificate and GOST Verification Certificate | ★ |
| QP | Calibration certification and tamper evident seal | ★ |
| Material traceability certification | | |
| Q8 | Material Traceability Certification per EN 10204 3.1 | ★ |
| Quality certification for safety⁽¹³⁾ | | |
| QS | Prior-use certificate of FMEDA data | ★ |
| QT | Safety certified to IEC 61508 with certificate of FMEDA | ★ |
| Configuration buttons | | |
| D4 ⁽¹³⁾ | Analog zero and span | ★ |
| DZ ⁽²⁸⁾ | Digital zero trim | ★ |
| Transient protection⁽⁹⁾⁽²⁹⁾ | | |
| T1 | Transient protection terminal block | ★ |
| Software configuration⁽²⁸⁾ | | |
| 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 | | |
| C2 | 0.8–3.2 Vdc output with digital signal based on HART Protocol (available with output code M only) | ★ |
| Gage pressure calibration | | |
| C3 | Gage calibration (Rosemount 3051ca4 only) | ★ |
| Alarm levels⁽¹³⁾ | | |
| C4 | Analog output levels compliant with NAMUR recommendation NE 43, alarm high | ★ |
| CN | 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 | ★ |
| Pressure testing | | |
| P1 | Hydrostatic testing with certificate | |

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| Cleaning process area | | |
|--|--|---|
| P2 | Cleaning for special service | |
| P3 | Cleaning for <1 PPM chlorine/fluorine | |
| Flange adapters ⁽³⁰⁾ | | |
| DF | 1/2–14 NPT flange adapter(s) | ★ |
| Vent/drain valves | | |
| D7 | Coplanar flange without drain/vent ports | |
| Conduit plug ⁽⁹⁾⁽³¹⁾ | | |
| DO | 316 SST conduit plug | ★ |
| RC ¹ / ₄ RC ¹ / ₂ process connection ⁽³²⁾ | | |
| D9 | RC ¹ / ₄ flange with RC ¹ / ₂ flange adapter - SST | |
| Max static line pressure | | |
| P9 | 4500 psig (310,26 bar) static pressure limit (Rosemount 3051CD ranges 2–5 only) | ★ |
| Ground screw ⁽⁹⁾⁽³³⁾ | | |
| V5 | External ground screw assembly | ★ |
| Surface finish | | |
| Q16 | Surface finish certification for sanitary remote seals | ★ |
| Toolkit total system performance reports | | |
| QZ | Remote seal system performance calculation report | ★ |
| Conduit electrical connector ⁽⁹⁾ | | |
| GE | M12, 4-pin, male connector (eurofast®) | ★ |
| GM | A size Mini, 4-pin, male connector (minifast®) | ★ |
| NACE® certificate ⁽³⁴⁾ | | |
| Q15 | Certificate of Compliance to NACE MR0175/ISO 15156 for wetted materials | ★ |
| Q25 | Certificate of Compliance to NACE MR0103 for wetted materials | ★ |
| Cold temperature ⁽³⁵⁾ | | |
| BR5 | –58 °F (–50 °C) cold temperature | ★ |
| BR6 | –76 °F (–60 °C) cold temperature | ★ |
| HART Revision configuration (requires HART output code A) ⁽⁴⁾ | | |
| HR5 | Configured for HART Revision 5 | ★ |
| HR7 | Configured for HART Revision 7 | ★ |
| Typical model number: 3051CD 2 A 2 2 A 1 A B4 | | |

- Select configuration buttons (option code D4 or DZ) or LOI (option code M4) if local configuration buttons are required.
- If ordered with Wireless output code X, only range 1–4, 316L SST diaphragm material (code 2), silicone fill fluid (code 1) and wireless housing (code P) are available.
- 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.

4. Option HR5 configures the HART output to HART Revision 5. Option HR7 configures the HART output to HART Revision 7. The device can be field configured to HART Revision 5 or 7 if desired. HART Revision 5 is the default HART output.
5. For local addressing and configuration, M4 LOI is required.
6. Available approvals are FM Intrinsically Safe, (option code I5), CSA Intrinsically Safe (option code I6), ATEX Intrinsic Safety (option code I1), IECEx Intrinsic Safety (option code I7) and EAC Intrinsic Safety (option code IM).
7. Only available with C6, E2, E5, I5, K5, KB, and E8 product certifications. Not available with GE, GM, SBS, DA0, M4, D4, DZ, QT, HR5, HR7, CR, CS, and CT.
8. Materials of Construction comply with recommendations per NACE MR0175/ISO 15156 for sour oil field production environments. Environmental limits apply to certain materials. Consult latest standard for details. Selected materials also conform to NACE MR0103 for sour refining environments.
9. Not available with wireless output (code X).
10. Only available with wireless output (code X).
11. Not available with Product certifications options E8, K8, E5, K5, C6, K6, E7, K7, E2, K2, E3, KB, and KD.
12. Only valid with FOUNDATION Fieldbus output (code F).
13. Only available with HART 4–20 mA output (code A).
14. Requires 0 code in materials of construction for alternate process connection.
15. Not valid with option code P9 for 4500 psi static pressure.
16. “Assemble-to” items are specified separately and require a completed model number.
17. Process flange limited to coplanar (option codes 2, 3, 5, 7, 8) or traditional (option codes H2, H3, H7).
18. Not valid with option code D9 for RC¹/2 adapters.
19. Not valid for option codes DF and D9 for adapters.
20. Panel mounting bolts are not supplied.
21. Dust approval not applicable to output code X. See “Certificate: AG-0226; AG-0454; AG-0477” on page 62 for wireless approvals.
22. Only available with output codes A - 4–20mA HART, F - FOUNDATION Fieldbus, and W - PROFIBUS PA. Also only available with G¹/2 housing thread types.
23. Nonincendive certification not provided with Wireless output (code X).
24. 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).
25. Only available with product certifications E7, E8, I1, I7, IA, K7, K8, KD, N1, and N7
26. Not available with FOUNDATION Fieldbus (code F), wireless (code X), or low power (code M).
27. Contact an Emerson representative for availability.
28. Only available with HART 4–20 mA output (code A) and wireless output (code X)
29. The T1 option is not needed with FISCO Product Certifications; transient protection is included in the FISCO product certification codes IA, IB, and IE.
30. Not valid with alternate process connection options S3, S4, S5, and S6.
31. Transmitter is shipped with a 316 SST conduit plug (uninstalled) in place of standard CS conduit plug.
32. Not available with alternate process connection; DIN flanges and level flanges.
33. The V5 option is not needed with the T1 option; external ground screw assembly is included with the T1 option.
34. NACE compliant wetted materials are identified by [Footnote 8](#).
35. Only available on pressure ranges 1–5, with silicone sensor fill fluid and SST or C-276 isolating diaphragms.