



## PRODUCT DATASHEET

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# Rosemount 3051SF DP Flowmeters



- Direct or remote mount configurations available
- Up to 0.80% mass flow rate accuracy
- MultiVariable capabilities allow for real time fully compensated mass and energy flow
- Advanced diagnostics predict and prevent abnormal process conditions
- Installation ready wireless flow solution
- Ultra for Flow measures percent-of-reading performance over 14:1 flow turndown
- 10-year stability, 12-year warranty

# Rosemount 3051SF DP Flowmeters



Rosemount 3051SF Flowmeters integrate industry leading transmitters with industry leading primary elements. Capabilities include:

- Flowmeters are factory configured to meet your application needs (Configuration Data Sheet required)
- MultiVariable capabilities allow scalable flow compensation (Measurement Types 1-7)
- HART 4-20, Wireless, and FOUNDATION fieldbus protocols
- Ultra for Flow for improved flow performance across wider flow ranges
- Integral temperature measurement (Option Code T)
- Advanced Diagnostics (Option Code DA2)
- Direct or remote mount configurations available

**Additional Information**

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Dimensional Drawings: [page 50](#)

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### Rosemount 3051SFA Annubar Flowmeter

- Annubar flowmeters reduce permanent pressure loss by creating less blockage in the pipe
- Ideal for large line size installations when cost, size and weight of the flowmeter are concerns

**Table 1. Rosemount 3051SFA Annubar Flowmeter Ordering Information**

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

| Model                   | Product Description                                                                               | Measurement Type |     | • = Available<br>— = Unavailable |
|-------------------------|---------------------------------------------------------------------------------------------------|------------------|-----|----------------------------------|
|                         |                                                                                                   | D                | 1-7 |                                  |
| 3051SFA                 | Annubar Flowmeter                                                                                 | •                | •   |                                  |
| <b>Measurement Type</b> |                                                                                                   |                  |     |                                  |
| <b>Standard</b>         |                                                                                                   |                  |     | <b>Standard</b>                  |
| 1                       | Fully Compensated Mass & Energy Flow Calculations – Differential & Static Pressures w/Temperature | —                | •   | ★                                |
| 2                       | Compensated Flow Calculations – Differential & Static Pressures                                   | —                | •   | ★                                |
| 3                       | Compensated Flow Calculations – Differential Pressure & Temperature                               | —                | •   | ★                                |
| 4                       | Compensated Flow Calculations – Differential Pressure                                             | —                | •   | ★                                |
| D                       | Differential Pressure                                                                             | •                | —   | ★                                |
| <b>Expanded</b>         |                                                                                                   |                  |     |                                  |
| 5                       | Process Variables Only (No Flow Calculations) – Differential & Static Pressures with Temperature  | —                | •   |                                  |
| 6                       | Process Variables Only (No Flow Calculations) – Differential & Static Pressures                   | —                | •   |                                  |
| 7                       | Process Variables Only (No Flow Calculations)                                                     | —                | •   |                                  |
| <b>Fluid Type</b>       |                                                                                                   |                  |     |                                  |
| <b>Standard</b>         |                                                                                                   |                  |     | <b>Standard</b>                  |
| L                       | Liquid                                                                                            | •                | •   | ★                                |
| G                       | Gas                                                                                               | •                | •   | ★                                |
| S                       | Steam                                                                                             | •                | •   | ★                                |
| <b>Line Size</b>        |                                                                                                   |                  |     |                                  |
| <b>Standard</b>         |                                                                                                   |                  |     | <b>Standard</b>                  |
| 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)                                                                                   | •                | •   | ★                                |
| <b>Expanded</b>         |                                                                                                   |                  |     |                                  |
| 140                     | 14-in. (350 mm)                                                                                   | •                | •   |                                  |
| 160                     | 16-in. (400 mm)                                                                                   | •                | •   |                                  |
| 180                     | 18-in. (450 mm)                                                                                   | •                | •   |                                  |
| 200                     | 20-in. (500 mm)                                                                                   | •                | •   |                                  |
| 240                     | 24-in. (600 mm)                                                                                   | •                | •   |                                  |

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|                                                   |                                                                         |          |            |                 |
|---------------------------------------------------|-------------------------------------------------------------------------|----------|------------|-----------------|
| 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)                                                        | •        | •          |                 |
| <b>Expanded</b>                                   |                                                                         |          |            |                 |
| 780                                               | 78-in. (1950 mm)                                                        | •        | •          |                 |
| 840                                               | 84-in. (2100 mm)                                                        | •        | •          |                 |
| 900                                               | 90-in. (2250 mm)                                                        | •        | •          |                 |
| 960                                               | 96-in. (2400 mm)                                                        | •        | •          |                 |
| <b>Pipe I.D. Range</b>                            |                                                                         |          |            |                 |
| <b>Standard</b>                                   |                                                                         |          |            | <b>Standard</b> |
| C                                                 | Range C from the Pipe I.D. table                                        | •        | •          | ★               |
| D                                                 | Range D from the Pipe I.D. table                                        | •        | •          | ★               |
| <b>Expanded</b>                                   |                                                                         |          |            |                 |
| A                                                 | Range A from the Pipe I.D. table                                        | •        | •          |                 |
| B                                                 | Range B from the Pipe I.D. table                                        | •        | •          |                 |
| E                                                 | Range E from the Pipe I.D. table                                        | •        | •          |                 |
| Z                                                 | Non-standard Pipe I.D. Range or Line Sizes greater than 12-in. (300 mm) | •        | •          |                 |
| <b>Pipe Material / Mounting Assembly Material</b> |                                                                         |          |            |                 |
| <b>Standard</b>                                   |                                                                         |          |            | <b>Standard</b> |
| C                                                 | Carbon steel (A105)                                                     | •        | •          | ★               |
| S                                                 | 316 Stainless Steel                                                     | •        | •          | ★               |
| 0 <sup>(1)</sup>                                  | No Mounting (Customer Supplied)                                         | •        | •          | ★               |
| <b>Expanded</b>                                   |                                                                         |          |            |                 |
| G                                                 | Chrome-Moly Grade F-11                                                  | •        | •          |                 |
| N                                                 | Chrome-Moly Grade F-22                                                  | •        | •          |                 |
| J                                                 | Chrome-Moly Grade F-91                                                  | •        | •          |                 |
| <b>Piping Orientation</b>                         |                                                                         |          |            |                 |
| <b>Standard</b>                                   |                                                                         |          |            | <b>Standard</b> |
| H                                                 | Horizontal Piping                                                       | •        | •          | ★               |
| D                                                 | Vertical Piping with Downwards Flow                                     | •        | •          | ★               |
| U                                                 | Vertical Piping with Upwards Flow                                       | •        | •          | ★               |
| <b>Annubar Type</b>                               |                                                                         | <b>D</b> | <b>1-7</b> |                 |
| <b>Standard</b>                                   |                                                                         |          |            | <b>Standard</b> |
| P                                                 | Pak-Lok                                                                 | •        | •          | ★               |
| F                                                 | Flanged with opposite side support                                      | •        | •          | ★               |
| <b>Expanded</b>                                   |                                                                         |          |            |                 |
| L                                                 | Flange-Lok                                                              | •        | •          |                 |
| G                                                 | Gear-Drive Flo-Tap                                                      | •        | •          |                 |
| M                                                 | Manual Flo-Tap                                                          | •        | •          |                 |
| <b>Sensor Material</b>                            |                                                                         |          |            |                 |
| <b>Standard</b>                                   |                                                                         |          |            | <b>Standard</b> |
| S                                                 | 316 Stainless Steel                                                     | •        | •          | ★               |

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

|                                                            |                                                                                        |                     |                         |          |            |                 |
|------------------------------------------------------------|----------------------------------------------------------------------------------------|---------------------|-------------------------|----------|------------|-----------------|
| <b>Expanded</b>                                            |                                                                                        |                     |                         |          |            |                 |
| H                                                          | Alloy C-276                                                                            |                     |                         | •        | •          |                 |
| <b>Sensor Size</b>                                         |                                                                                        |                     |                         |          |            |                 |
| <b>Standard</b>                                            |                                                                                        |                     |                         |          |            | <b>Standard</b> |
| 1                                                          | Sensor size 1 — Line sizes 2-in. (50 mm) to 8-in. (200 mm)                             |                     |                         | •        | •          | ★               |
| 2                                                          | Sensor size 2 — Line sizes 6-in. (150 mm) to 96-in. (2400 mm)                          |                     |                         | •        | •          | ★               |
| 3                                                          | Sensor size 3 — Line sizes greater than 12-in. (300 mm)                                |                     |                         | •        | •          | ★               |
| <b>Mounting Type</b>                                       |                                                                                        |                     |                         |          |            |                 |
| <b>Standard</b>                                            |                                                                                        |                     |                         |          |            | <b>Standard</b> |
| T1                                                         | Compression/Threaded Connection                                                        |                     |                         | •        | •          | ★               |
| A1                                                         | 150# RF ANSI                                                                           |                     |                         | •        | •          | ★               |
| A3                                                         | 300# RF ANSI                                                                           |                     |                         | •        | •          | ★               |
| A6                                                         | 600# RF ANSI                                                                           |                     |                         | •        | •          | ★               |
| D1                                                         | DN PN16 Flange                                                                         |                     |                         | •        | •          | ★               |
| D3                                                         | DN PN40 Flange                                                                         |                     |                         | •        | •          | ★               |
| D6                                                         | DN PN100 Flange                                                                        |                     |                         | •        | •          | ★               |
| <b>Expanded</b>                                            |                                                                                        |                     |                         |          |            |                 |
| A9 <sup>(2)</sup>                                          | 900# RF ANSI                                                                           |                     |                         | •        | •          |                 |
| AF <sup>(2)</sup>                                          | 1500# RF ANSI                                                                          |                     |                         | •        | •          |                 |
| AT <sup>(2)</sup>                                          | 2500# RF ANSI                                                                          |                     |                         | •        | •          |                 |
| R1                                                         | 150# RTJ Flange                                                                        |                     |                         | •        | •          |                 |
| R3                                                         | 300# RTJ Flange                                                                        |                     |                         | •        | •          |                 |
| R6                                                         | 600# RTJ Flange                                                                        |                     |                         | •        | •          |                 |
| R9 <sup>(2)</sup>                                          | 900# RTJ Flange                                                                        |                     |                         | •        | •          |                 |
| RF <sup>(2)</sup>                                          | 1500# RTJ Flange                                                                       |                     |                         | •        | •          |                 |
| RT <sup>(2)</sup>                                          | 2500# RTJ Flange                                                                       |                     |                         | •        | •          |                 |
| <b>Opposite Side Support or Packing Gland</b>              |                                                                                        |                     |                         |          |            |                 |
| <b>Standard</b>                                            |                                                                                        |                     |                         |          |            | <b>Standard</b> |
| 0                                                          | No opposite side support or packing gland (Required for Pak-Lok and Flange-Lok models) |                     |                         | •        | •          | ★               |
| <b>Opposite Side Support – Required for Flanged Models</b> |                                                                                        |                     |                         |          |            |                 |
| C                                                          | NPT Threaded Opposite Support Assembly – Extended Tip                                  |                     |                         | •        | •          | ★               |
| D                                                          | Welded Opposite Support Assembly – Extended Tip                                        |                     |                         | •        | •          | ★               |
| <b>Expanded</b>                                            |                                                                                        |                     |                         |          |            |                 |
| <b>Packing Gland – Required for Flo-Tap Models</b>         |                                                                                        |                     |                         |          |            |                 |
|                                                            | <i>Packing Gland Material</i>                                                          | <i>Rod Material</i> | <i>Packing Material</i> |          |            |                 |
| J <sup>(3)</sup>                                           | Stainless Steel Packing Gland / Cage Nipple                                            | Carbon Steel        | PTFE                    | •        | •          |                 |
| K <sup>(3)</sup>                                           | Stainless Steel Packing Gland / Cage Nipple                                            | Stainless Steel     | PTFE                    | •        | •          |                 |
| L <sup>(3)</sup>                                           | Stainless Steel Packing Gland / Cage Nipple                                            | Carbon Steel        | Graphite                | •        | •          |                 |
| N <sup>(3)</sup>                                           | Stainless Steel Packing Gland / Cage Nipple                                            | Stainless Steel     | Graphite                | •        | •          |                 |
| R                                                          | Alloy C-276 Packing Gland / Cage Nipple                                                | Stainless Steel     | Graphite                | •        | •          |                 |
| <b>Isolation Valve for Flo-Tap Models</b>                  |                                                                                        |                     |                         | <b>D</b> | <b>1-7</b> |                 |
| <b>Standard</b>                                            |                                                                                        |                     |                         |          |            | <b>Standard</b> |
| 0 <sup>(1)</sup>                                           | Not Applicable or Customer Supplied                                                    |                     |                         | •        | •          | ★               |

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|                                        |                                                                                                           |   |   |                 |
|----------------------------------------|-----------------------------------------------------------------------------------------------------------|---|---|-----------------|
| <b>Expanded</b>                        |                                                                                                           |   |   |                 |
| 1                                      | Gate Valve, Carbon Steel                                                                                  | • | • |                 |
| 2                                      | Gate Valve, Stainless Steel                                                                               | • | • |                 |
| 5                                      | Ball Valve, Carbon Steel                                                                                  | • | • |                 |
| 6                                      | Ball Valve, Stainless Steel                                                                               | • | • |                 |
| <b>Temperature Measurement</b>         |                                                                                                           |   |   |                 |
| <b>Standard</b>                        |                                                                                                           |   |   | <b>Standard</b> |
| T <sup>(4)</sup>                       | Integral RTD – not available with Flanged model greater than class 600#                                   | • | • | ★               |
| 0 <sup>(5)</sup>                       | No Temperature Sensor                                                                                     | • | • | ★               |
| <b>Expanded</b>                        |                                                                                                           |   |   |                 |
| R <sup>(4)</sup>                       | Remote Thermowell and RTD                                                                                 | • | • |                 |
| <b>Transmitter Connection Platform</b> |                                                                                                           |   |   |                 |
| <b>Standard</b>                        |                                                                                                           |   |   | <b>Standard</b> |
| 3                                      | Direct-mount, Integral 3-valve Manifold– not available with Flanged model greater than class 600          | • | • | ★               |
| 5                                      | Direct -mount, 5-valve Manifold – not available with Flanged model greater than class 600                 | • | • | ★               |
| 7                                      | Remote-mount NPT Connections (1/2-in. FNPT)                                                               | • | • | ★               |
| <b>Expanded</b>                        |                                                                                                           |   |   |                 |
| 6                                      | Direct-mount, High Temperature 5-valve Manifold – not available with Flanged model greater than class 600 | • | • |                 |
| 8                                      | Remote-mount SW Connections (1/2-in.)                                                                     | • | • |                 |
| <b>Differential Pressure Range</b>     |                                                                                                           |   |   |                 |
| <b>Standard</b>                        |                                                                                                           |   |   | <b>Standard</b> |
| 1                                      | 0 to 25 in H <sub>2</sub> O (0 to 62.3 mbar)                                                              | • | • | ★               |
| 2                                      | 0 to 250 in H <sub>2</sub> O (0 to 623 mbar)                                                              | • | • | ★               |
| 3                                      | 0 to 1000 in H <sub>2</sub> O (0 to 2.5 bar)                                                              | • | • | ★               |
| <b>Static Pressure Range</b>           |                                                                                                           |   |   |                 |
| <b>Standard</b>                        |                                                                                                           |   |   | <b>Standard</b> |
| A <sup>(6)</sup>                       | None                                                                                                      | • | • | ★               |
| D                                      | Absolute 0 to 800 psia (0 to 55.2 bar)                                                                    | — | • | ★               |
| E <sup>(7)</sup>                       | Absolute 0 to 3626 psia (0 to 250 bar)                                                                    | — | • | ★               |
| J                                      | Gage -14.2 to 800 psig (-0.979 to 55.2 bar)                                                               | — | • | ★               |
| K <sup>(7)</sup>                       | Gage -14.2 to 3626 psig (-0.979 to 250 bar)                                                               | — | • | ★               |
| <b>Transmitter Output</b>              |                                                                                                           |   |   |                 |
| <b>Standard</b>                        |                                                                                                           |   |   | <b>Standard</b> |
| A                                      | 4–20 mA with digital signal based on HART protocol                                                        | • | • | ★               |
| F                                      | FOUNDATION fieldbus protocol (requires PlantWeb housing)                                                  | • | — | ★               |
| X <sup>(8)</sup>                       | Wireless (Requires wireless options and Wireless Plantweb housing)                                        | • | — | ★               |

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| Transmitter Housing Style                                           |                                                                                                          | Material | Conduit Entry Size |          |            |                 |
|---------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------|----------|--------------------|----------|------------|-----------------|
| <b>Standard</b>                                                     |                                                                                                          |          |                    |          |            | <b>Standard</b> |
| 00                                                                  | None (Customer-supplied electrical connection)                                                           |          |                    | •        | —          | ★               |
| 1A                                                                  | PlantWeb Housing                                                                                         | Aluminum | 1/2-14 NPT         | •        | •          | ★               |
| 1B                                                                  | PlantWeb Housing                                                                                         | Aluminum | M20 x 1.5          | •        | •          | ★               |
| 1J                                                                  | PlantWeb Housing                                                                                         | SST      | 1/2-14 NPT         | •        | •          | ★               |
| 1K                                                                  | PlantWeb Housing                                                                                         | SST      | M20 x 1.5          | •        | •          | ★               |
| 2A                                                                  | Junction Box Housing                                                                                     | Aluminum | 1/2-14 NPT         | •        | —          | ★               |
| 2B                                                                  | Junction Box Housing                                                                                     | Aluminum | M20 x 1.5          | •        | —          | ★               |
| 2E                                                                  | Junction Box housing with output for remote display and interface                                        | Aluminum | 1/2-14 NPT         | •        | —          | ★               |
|                                                                     |                                                                                                          |          |                    | <b>D</b> | <b>1-7</b> |                 |
| 2F                                                                  | Junction Box housing with output for remote display and interface                                        | Aluminum | M20 x 1.5          | •        | —          | ★               |
| 2J                                                                  | Junction Box Housing                                                                                     | SST      | 1/2-14 NPT         | •        | —          | ★               |
| 2M                                                                  | Junction Box housing with output for remote display and interface                                        | SST      | 1/2-14 NPT         | •        | —          | ★               |
| 5A <sup>(9)</sup>                                                   | Wireless PlantWeb housing                                                                                | Aluminum | 1/2-14 NPT         | •        | —          | ★               |
| 5J <sup>(9)</sup>                                                   | Wireless PlantWeb housing                                                                                | SST      | 1/2-14 NPT         | •        | —          | ★               |
| 7J <sup>(8)(10)</sup>                                               | Quick Connect (A size Mini, 4-pin male termination)                                                      |          |                    | •        | —          | ★               |
| <b>Expanded</b>                                                     |                                                                                                          |          |                    |          |            |                 |
| 1C                                                                  | PlantWeb Housing                                                                                         | Aluminum | G1/2               | •        | •          |                 |
| 1L                                                                  | PlantWeb Housing                                                                                         | SST      | G1/2               | •        | •          |                 |
| 2C                                                                  | Junction Box Housing                                                                                     | Aluminum | G1/2               | •        | —          |                 |
| 2G                                                                  | Junction Box housing with output for remote display and interface                                        | Aluminum | G1/2               | •        | —          |                 |
| <b>Transmitter Performance Class</b>                                |                                                                                                          |          |                    | <b>D</b> | <b>1-7</b> |                 |
| <b>Standard</b>                                                     |                                                                                                          |          |                    |          |            | <b>Standard</b> |
| 3051S MultiVariable SuperModule, Measurement Types 1, 2, 5, and 6   |                                                                                                          |          |                    |          |            |                 |
| 3                                                                   | Ultra for Flow: 0.8% flow rate accuracy, 14:1 flow turndown, 10-year stability, limited 12-year warranty |          |                    | •        | •          | ★               |
| 5                                                                   | Classic MV: 1.15% flow rate accuracy, 8:1 flow turndown, 5-yr. stability                                 |          |                    | —        | •          | ★               |
| 3051S Single Variable SuperModule, Measurement Types 3, 4, 7, and D |                                                                                                          |          |                    |          |            |                 |
| 1                                                                   | Ultra: up to 0.95% flow rate accuracy, 8:1 flow turndown, 10-year stability, limited 12-year warranty    |          |                    | •        | —          | ★               |
| 2                                                                   | Classic: up to 1.4% flow rate accuracy, 8:1 flow turndown, 5-year stability                              |          |                    | •        | —          | ★               |
| 3 <sup>(11)</sup>                                                   | Ultra for Flow: 0.8% flow rate accuracy, 14:1 flow turndown, 10-year stability. limited 12-year warranty |          |                    | •        | •          | ★               |

**Wireless Options (Requires option code X and wireless PlantWeb housing)**

| Update Rate, Operating Frequency and Protocol |                                        |   |   |                 |
|-----------------------------------------------|----------------------------------------|---|---|-----------------|
| <b>Standard</b>                               |                                        |   |   | <b>Standard</b> |
| WA                                            | User Configurable Update Rate          | • | — | ★               |
| <b>Operating Frequency and Protocol</b>       |                                        |   |   |                 |
| <b>Standard</b>                               |                                        |   |   |                 |
| 3                                             | 2.4 GHz DSSS, IEC 62591 (WirelessHART) | • | — | ★               |

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| Omnidirectional Wireless Antenna |                                                                    |   |   |   |
|----------------------------------|--------------------------------------------------------------------|---|---|---|
| <b>Standard</b>                  |                                                                    |   |   |   |
| WK                               | External Antenna                                                   | • | — | ★ |
| WM                               | Extended Range, External Antenna                                   | • | — | ★ |
| <b>Expanded</b>                  |                                                                    |   |   |   |
| WN                               | High-Gain, Remote Antenna                                          | • | — |   |
| <b>SmartPower™</b>               |                                                                    |   |   |   |
| <b>Standard</b>                  |                                                                    |   |   |   |
| 1 <sup>(12)</sup>                | Adapter for Black Power Module (I.S. Power Module Sold Separately) | • | — | ★ |

**Other Options (Include with selected model number)**

|                                            |                                                            |          |            |   |
|--------------------------------------------|------------------------------------------------------------|----------|------------|---|
| <b>Pressure Testing</b>                    |                                                            |          |            |   |
| <b>Expanded</b>                            |                                                            |          |            |   |
| p1 <sup>(13)</sup>                         | Hydrostatic Testing with Certificate                       | •        | •          |   |
| pX <sup>(13)</sup>                         | Extended Hydrostatic Testing                               | •        | •          |   |
| <b>Special Cleaning</b>                    |                                                            |          |            |   |
| <b>Expanded</b>                            |                                                            |          |            |   |
| P2                                         | Cleaning for Special Services                              | •        | •          |   |
| PA                                         | Cleaning per ASTM G93 level D (section 11.4)               | •        | •          |   |
| <b>Material Testing</b>                    |                                                            | <b>D</b> | <b>1-7</b> |   |
| <b>Expanded</b>                            |                                                            |          |            |   |
| V1                                         | Dye Penetrant Exam                                         | •        | •          |   |
| <b>Material Examination</b>                |                                                            |          |            |   |
| <b>Expanded</b>                            |                                                            |          |            |   |
| V2                                         | Radiographic Examination                                   | •        | •          |   |
| <b>Flow Calibration</b>                    |                                                            |          |            |   |
| <b>Expanded</b>                            |                                                            |          |            |   |
| W1                                         | Flow Calibration (Average K)                               | •        | •          |   |
| WZ                                         | Special Calibration                                        | •        | •          |   |
| <b>Special Inspection</b>                  |                                                            |          |            |   |
| <b>Standard</b>                            |                                                            |          |            |   |
| QC1                                        | Visual & Dimensional Inspection with Certificate           | •        | •          | ★ |
| QC7                                        | Inspection & Performance Certificate                       | •        | •          | ★ |
| <b>Surface Finish</b>                      |                                                            |          |            |   |
| <b>Standard</b>                            |                                                            |          |            |   |
| RL                                         | Surface finish for Low Pipe Reynolds Number in Gas & Steam | •        | •          | ★ |
| RH                                         | Surface finish for High Pipe Reynolds Number in Liquid     | •        | •          | ★ |
| <b>Material Traceability Certification</b> |                                                            |          |            |   |
| <b>Standard</b>                            |                                                            |          |            |   |
| Q8 <sup>(14)</sup>                         | Material Traceability Certificate per EN 10204:2004 3.1    | •        | •          | ★ |
| <b>Code Conformance</b>                    |                                                            |          |            |   |
| <b>Expanded</b>                            |                                                            |          |            |   |
| J2 <sup>(15)</sup>                         | ANSI / ASME B31.1                                          | •        | •          |   |
| J3 <sup>(15)</sup>                         | ANSI / ASME B31.3                                          | •        | •          |   |

**Table 1. Rosemount 3051SFA Annubar Flowmeter Ordering Information**

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

| <b>Material Conformance</b>                           |                                                                                     |          |            |                 |
|-------------------------------------------------------|-------------------------------------------------------------------------------------|----------|------------|-----------------|
| <b>Expanded</b>                                       |                                                                                     |          |            |                 |
| J5 <sup>(16)</sup>                                    | NACE MR-0175 / ISO 15156                                                            | •        | •          |                 |
| <b>Country Certification</b>                          |                                                                                     |          |            |                 |
| <b>Standard</b>                                       |                                                                                     |          |            | <b>Standard</b> |
| J6                                                    | European Pressure Directive (PED)                                                   | •        | •          | ★               |
| <b>Expanded</b>                                       |                                                                                     |          |            |                 |
| J1                                                    | Canadian Registration                                                               | •        | •          |                 |
| <b>Installed in Flanged Pipe Spool Section</b>        |                                                                                     |          |            |                 |
| <b>Expanded</b>                                       |                                                                                     |          |            |                 |
| H3                                                    | 150# Flanged Connection with Rosemount Standard Length and Schedule                 | •        | •          |                 |
| H4                                                    | 300# Flanged Connection with Rosemount Standard Length and Schedule                 | •        | •          |                 |
| H5                                                    | 600# Flanged Connection with Rosemount Standard Length and Schedule                 | •        | •          |                 |
| <b>Instrument Connections for Remote Mount Option</b> |                                                                                     |          |            |                 |
| <b>Standard</b>                                       |                                                                                     |          |            | <b>Standard</b> |
| G2                                                    | Needle Valves, Stainless Steel                                                      | •        | •          | ★               |
| G6                                                    | OS&Y Gate Valve, Stainless Steel                                                    | •        | •          | ★               |
| <b>Expanded</b>                                       |                                                                                     |          |            |                 |
| G1                                                    | Needle Valves, Carbon Steel                                                         | •        | •          |                 |
| G3                                                    | Needle Valves, Alloy C-276                                                          | •        | •          |                 |
| G5                                                    | OS&Y Gate Valve, Carbon Steel                                                       | •        | •          |                 |
| G7                                                    | OS&Y Gate Valve, Alloy C-276                                                        | •        | •          |                 |
| <b>Special Shipment</b>                               |                                                                                     |          |            |                 |
| <b>Standard</b>                                       |                                                                                     |          |            | <b>Standard</b> |
| Y1                                                    | Mounting Hardware Shipped Separately                                                | •        | •          | ★               |
| <b>Special Dimensions</b>                             |                                                                                     | <b>D</b> | <b>1-7</b> |                 |
| <b>Expanded</b>                                       |                                                                                     |          |            |                 |
| VM                                                    | Variable Mounting                                                                   | •        | •          |                 |
| VT                                                    | Variable Tip                                                                        | •        | •          |                 |
| VS                                                    | Variable length Spool Section                                                       | •        | •          |                 |
| <b>Transmitter Calibration Certification</b>          |                                                                                     |          |            |                 |
| <b>Standard</b>                                       |                                                                                     |          |            | <b>Standard</b> |
| Q4                                                    | Calibration Certificate for Transmitter                                             | •        | •          | ★               |
| QP                                                    | Calibration Certificate & Tamper Evident Seal                                       | •        | •          | ★               |
| <b>Quality Certification For Safety</b>               |                                                                                     |          |            |                 |
| <b>Standard</b>                                       |                                                                                     |          |            | <b>Standard</b> |
| QS <sup>(19)(25)</sup>                                | Prior-use Certificate of FMEDA data                                                 | •        | —          | ★               |
| QT <sup>(18)(19)(25)</sup>                            | Safety certified to IEC 61508 with certificate of FMEDA data                        | •        | —          | ★               |
| <b>Product Certifications</b>                         |                                                                                     |          |            |                 |
| <b>Standard</b>                                       |                                                                                     |          |            | <b>Standard</b> |
| E1                                                    | ATEX Flameproof                                                                     | •        | •          | ★               |
| I1                                                    | ATEX Intrinsic Safety                                                               | •        | •          | ★               |
| IA                                                    | ATEX FISCO Intrinsic Safety; for FOUNDATION fieldbus protocol only                  | •        | —          | ★               |
| N1                                                    | ATEX Type n                                                                         | •        | •          | ★               |
| ND                                                    | ATEX Dust                                                                           | •        | •          | ★               |
| K1                                                    | ATEX Flameproof, Intrinsic Safety, Type n, Dust (combination of E1, I1, N1, and ND) | •        | •          | ★               |

**Table 1. Rosemount 3051SFA Annubar Flowmeter Ordering Information**

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

|                                             |                                                                                                                     |          |            |                 |
|---------------------------------------------|---------------------------------------------------------------------------------------------------------------------|----------|------------|-----------------|
| E4                                          | TIIS Flameproof                                                                                                     | •        | •          | ★               |
| E5                                          | FM Explosion-proof, Dust Ignition-proof                                                                             | •        | •          | ★               |
| I5                                          | FM Intrinsically Safe, Division 2                                                                                   | •        | •          | ★               |
| K5                                          | FM Explosion-proof, Dust Ignition-proof, Intrinsically Safe, Division 2 (combination of E5 and I5)                  | •        | •          | ★               |
| E6 <sup>(17)</sup>                          | CSA Explosion-proof, Dust Ignition-proof, Division 2                                                                | •        | •          | ★               |
| <b>Standard</b>                             |                                                                                                                     |          |            | <b>Standard</b> |
| I6                                          | CSA Intrinsically Safe                                                                                              | •        | •          | ★               |
| K6 <sup>(17)</sup>                          | CSA Explosion-proof, Dust Ignition-proof, Intrinsically Safe, Division 2 (combination of E6 and I6)                 | •        | •          | ★               |
| E7                                          | IECEX Flameproof, Dust Ignition-proof                                                                               | •        | •          | ★               |
| I7                                          | IECEX Intrinsic Safety                                                                                              | •        | •          | ★               |
| K7                                          | IECEX Flameproof, Dust Ignition-proof, Intrinsic Safety, Type n (combination of E7, I7, and N7)                     | •        | •          | ★               |
| E3                                          | China Flameproof                                                                                                    | •        | •          | ★               |
| I3                                          | China Intrinsic Safety                                                                                              | •        | •          | ★               |
| KA <sup>(17)</sup>                          | ATEX and CSA Explosion-proof, Intrinsically Safe, Division 2 (combination of E1, I1, E6, and I6)                    | •        | •          | ★               |
| KB <sup>(17)</sup>                          | FM and CSA Explosion-proof, Dust Ignition-proof, Intrinsically Safe, Division 2 (combination of E5, E6, I5, and I6) | •        | •          | ★               |
| KC                                          | FM and ATEX Explosion-proof, Intrinsically Safe, Division 2 (combination of E5, E1, I5, and I1)                     | •        | •          | ★               |
| KD <sup>(17)</sup>                          | FM, CSA, and ATEX Explosion-proof, Intrinsically Safe (combination of E5, I5, E6, I6, E1, and I1)                   | •        | •          | ★               |
| <b>Shipboard Approvals</b>                  |                                                                                                                     |          |            |                 |
| <b>Standard</b>                             |                                                                                                                     |          |            | <b>Standard</b> |
| SBS                                         | American Bureau of Shipping                                                                                         | •        | •          | ★               |
| <b>Sensor Fill Fluid and O-ring Options</b> |                                                                                                                     |          |            |                 |
| <b>Standard</b>                             |                                                                                                                     |          |            | <b>Standard</b> |
| L1                                          | Inert Sensor Fill Fluid                                                                                             | •        | •          | ★               |
| L2                                          | Graphite-Filled (PTFE) O-ring                                                                                       | •        | •          | ★               |
| LA                                          | Inert Sensor Fill Fluid and Graphite-Filled (PTFE) O-ring                                                           | •        | •          | ★               |
| <b>Digital Display<sup>(18)</sup></b>       |                                                                                                                     |          |            |                 |
| <b>Standard</b>                             |                                                                                                                     |          |            | <b>Standard</b> |
| M5                                          | PlantWeb LCD display (Requires PlantWeb housing)                                                                    | •        | •          | ★               |
| M7 <sup>(19)(20)(21)</sup>                  | Remote mount LCD display and interface, PlantWeb housing, no cable; SST bracket                                     | •        | •          | ★               |
| M8 <sup>(19)(20)</sup>                      | Remote mount LCD display and interface, PlantWeb housing, 50 ft. (15 m) cable; SST bracket                          | •        | •          | ★               |
| M9 <sup>(19)(20)</sup>                      | Remote mount LCD display and interface, PlantWeb housing, 100 ft. (31 m) cable; SST bracket                         | •        | •          | ★               |
| <b>Transient Protection</b>                 |                                                                                                                     |          |            |                 |
| <b>Standard</b>                             |                                                                                                                     |          |            | <b>Standard</b> |
| T1 <sup>(22)</sup>                          | Transient terminal block                                                                                            | •        | •          | ★               |
| <b>Manifold for Remote Mount Option</b>     |                                                                                                                     | <b>D</b> | <b>1-7</b> |                 |
| <b>Standard</b>                             |                                                                                                                     |          |            | <b>Standard</b> |
| F2                                          | 3-Valve Manifold, Stainless Steel                                                                                   | •        | •          | ★               |
| F6                                          | 5-Valve Manifold, Stainless Steel                                                                                   | •        | •          | ★               |

**Table 1. Rosemount 3051SFA Annubar Flowmeter Ordering Information**

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

|                                                                               |                                                                                     |   |   |                 |
|-------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|---|---|-----------------|
| <b>Expanded</b>                                                               |                                                                                     |   |   |                 |
| F1                                                                            | 3-Valve Manifold, Carbon Steel                                                      | • | • |                 |
| F3                                                                            | 3-Valve Manifold, Alloy C-276                                                       | • | • |                 |
| F5                                                                            | 5-Valve Manifold, Carbon Steel                                                      | • | • |                 |
| F7                                                                            | 5-Valve Manifold, Alloy C-276                                                       | • | • |                 |
| <b>PlantWeb Control Functionality</b>                                         |                                                                                     |   |   |                 |
| <b>Standard</b>                                                               |                                                                                     |   |   | <b>Standard</b> |
| A01                                                                           | FOUNDATION fieldbus Advanced Control Function Block Suite                           | • | — | ★               |
| <b>PlantWeb Diagnostic Functionality</b>                                      |                                                                                     |   |   |                 |
| <b>Standard</b>                                                               |                                                                                     |   |   | <b>Standard</b> |
| D01                                                                           | FOUNDATION fieldbus Diagnostics Suite                                               | • | — | ★               |
| DA2 <sup>(23)</sup>                                                           | Advanced HART Diagnostic Suite                                                      | • | — | ★               |
| <b>PlantWeb Enhanced Measurement Functionality</b>                            |                                                                                     |   |   |                 |
| <b>Standard</b>                                                               |                                                                                     |   |   | <b>Standard</b> |
| H01 <sup>(24)</sup>                                                           | FOUNDATION fieldbus Fully Compensated Mass Flow Block                               | • | — | ★               |
| <b>Cold Temperature</b>                                                       |                                                                                     |   |   |                 |
| <b>Standard</b>                                                               |                                                                                     |   |   | <b>Standard</b> |
| BRR                                                                           | -60 °F (-51 °C) Cold Temperature Start-up                                           | — | • | ★               |
| <b>Alarm Limit<sup>(19)(25)</sup></b>                                         |                                                                                     |   |   |                 |
| <b>Standard</b>                                                               |                                                                                     |   |   | <b>Standard</b> |
| C4                                                                            | NAMUR Alarm & Saturation Levels, High Alarm                                         | • | • | ★               |
| C5                                                                            | NAMUR Alarm & Saturation Levels, Low Alarm                                          | • | • | ★               |
| C6                                                                            | Custom Alarm & Saturation Levels, High Alarm                                        | • | • | ★               |
| C7                                                                            | Custom Alarm & Saturation Levels, Low Alarm                                         | • | • | ★               |
| C8                                                                            | Low Alarm (Standard Rosemount Alarm & Saturation Levels)                            | • | • | ★               |
| <b>Hardware Adjustments and Ground Screw</b>                                  |                                                                                     |   |   |                 |
| <b>Standard</b>                                                               |                                                                                     |   |   | <b>Standard</b> |
| D1 <sup>(19)(25)(26)</sup>                                                    | Hardware Adjustments (zero, span, alarm, security)                                  | • | — | ★               |
| D4                                                                            | External Ground Screw Assembly                                                      | • | • | ★               |
| DA <sup>(19)(25)(26)</sup>                                                    | Hardware Adjustments (zero, span, alarm, security) & External Ground Screw Assembly | • | — | ★               |
| <b>Conduit Plug</b>                                                           |                                                                                     |   |   |                 |
| <b>Standard</b>                                                               |                                                                                     |   |   | <b>Standard</b> |
| DO                                                                            | 316 SST Conduit Plug ( <i>standard for all 3051SF Models</i> )                      | • | • | ★               |
| <b>Conduit Electrical Connector</b>                                           |                                                                                     |   |   |                 |
| <b>Standard</b>                                                               |                                                                                     |   |   | <b>Standard</b> |
| GE <sup>(27)</sup>                                                            | M12, 4-pin, Male Connector ( <i>eurofast</i> ®)                                     | • | • | ★               |
| GM <sup>(27)</sup>                                                            | A size Mini, 4-pin, Male Connector ( <i>minifast</i> ®)                             | • | • | ★               |
| <b>Typical Model Number: 3051SFA D L 060 D C H P S 2 T1 0 0 0 3 2A A 1A 3</b> |                                                                                     |   |   |                 |

(1) Provide the “A” dimension for Flanged, Flange-Lok, and Threaded Flo-Tap models. Provide the “B” dimension for Flange Flo-Tap models.

(2) Available in remote mount applications only.

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

(4) Temperature Measurement Option code T or R is required for Measurement Type codes 1, 3, 5, and 7.

(5) Required for Measurement Type codes 2, 4, 6, and D.

- (6) Required for Measurement Type codes 3, 4, 7, and D.
- (7) For Measurement Type 1, 2, 5, and 6 with DP range 1, absolute limits are 0.5 to 2000 psi (0,03 to 137,9 bar) and gage limits are -14.2 to 2000 psig (-0,98 to 137,9 bar).
- (8) Available approvals are FM Intrinsically Safe, Division 2 (option code I5), CSA Intrinsically Safe (option code I6), ATEX Intrinsic Safety (option code I1), and IECEx Intrinsic Safety (option code I7).
- (9) Only available with output code X.
- (10) Available with output code A only.
- (11) Only available with differential pressure ranges 2 and 3, and silicone fill fluid.
- (12) Long-life Power Module must be shipped separately, order Part No. 00753-9220-0001.
- (13) Applies to assembled flowmeter only, mounting not tested.
- (14) Instrument Connections for Remote Mount Options and Isolation Valves for Flo-tap Models are not included in the Material Traceability Certification.
- (15) Not available with Transmitter Connection Platform 6.
- (16) Materials of Construction comply with metallurgical requirements 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.
- (17) Not available with M20 or G ½ conduit entry size.
- (18) Not available with housing code 7J.
- (19) Not available with output code X.
- (20) Not available with output code F, option code DA2, or option code QT.
- (21) See the 3051S Reference Manual (document number 00809-0100-4801) for cable requirements. Contact an Emerson Process Management representative for additional information.
- (22) Not available with Housing code 5A, 5J, or 7J. External ground screw assembly (option code D4) is included with the T1 option. The T1 option is not needed with FISCO Product Certifications, transient protection is included with the FISCO Product Certification code IA.
- (23) Includes Hardware Adjustments (option code D1) as standard. Not available with output code X.
- (24) Requires Rosemount Engineering Assistant version 5.5.1 to configure.
- (25) Not available with Output Protocol code F.
- (26) Not available with housing style codes 2E, 2F, 2G, 2M, 5A, 5J, or 7J.
- (27) Not available with Housing code 5A, 5J, or 7J. Available with Intrinsically Safe approvals only. For FM Intrinsically Safe, Division 2 (option code I5) or FM FISCO Intrinsically Safe (option code IE), install in accordance with Rosemount drawing 03151-1009 to maintain outdoor rating (NEMA 4X and IP66).



### Rosemount 3051SFC Compact Orifice Flowmeter

- Compact Conditioning flowmeters reduce straight piping requirements to 2D upstream and 2D downstream from a flow disturbance
- Simple installation of Compact flowmeters between any existing raised-face flanges

**Table 2. Rosemount 3051SFC Compact Orifice Flowmeter Ordering Information**

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

| Model                                             | Product Description                                                                                | Measurement Type |     | • = Available<br>— = Unavailable |
|---------------------------------------------------|----------------------------------------------------------------------------------------------------|------------------|-----|----------------------------------|
|                                                   |                                                                                                    | D                | 1-7 |                                  |
| 3051SFC                                           | Compact Orifice Flowmeter                                                                          | •                | •   |                                  |
| <b>Transmitter Feature Board Measurement Type</b> |                                                                                                    |                  |     |                                  |
| <b>Standard</b>                                   |                                                                                                    |                  |     | <b>Standard</b>                  |
| 1                                                 | Fully Compensated Mass & Energy Flow Calculations – Differential & Static Pressures w/ Temperature | —                | •   | ★                                |
| 2                                                 | Compensated Flow Calculations – Differential & Static Pressures                                    | —                | •   | ★                                |
| 3                                                 | Compensated Flow Calculations – Differential Pressure & Temperature                                | —                | •   | ★                                |
| 4                                                 | Compensated Flow Calculations – Differential Pressure                                              | —                | •   | ★                                |
| D                                                 | Differential Pressure                                                                              | •                | —   | ★                                |
| <b>Expanded</b>                                   |                                                                                                    |                  |     |                                  |
| 5                                                 | Process Variables Only (No Flow Calculations) – Differential & Static Pressures with Temperature   | —                | •   |                                  |
| 6                                                 | Process Variables Only (No Flow Calculations) – Differential & Static Pressures                    | —                | •   |                                  |
| 7                                                 | Process Variables Only (No Flow Calculations)                                                      | —                | •   |                                  |
| <b>Primary Element Technology</b>                 |                                                                                                    |                  |     |                                  |
| <b>Standard</b>                                   |                                                                                                    |                  |     | <b>Standard</b>                  |
| A                                                 | Annubar® Averaging Pilot Tube                                                                      | •                | •   | ★                                |
| C                                                 | Conditioning Orifice Plate                                                                         | •                | •   | ★                                |
| P                                                 | Orifice Plate                                                                                      | •                | •   | ★                                |
| <b>Material Type</b>                              |                                                                                                    |                  |     |                                  |
| <b>Standard</b>                                   |                                                                                                    |                  |     | <b>Standard</b>                  |
| S                                                 | 316 SST                                                                                            | •                | •   | ★                                |
| <b>Line Size</b>                                  |                                                                                                    |                  |     |                                  |
| <b>Standard</b>                                   |                                                                                                    |                  |     | <b>Standard</b>                  |
| 005 <sup>(1)</sup>                                | 1/2-in. (15 mm)                                                                                    | •                | •   | ★                                |
| 010 <sup>(1)</sup>                                | 1-in. (25 mm)                                                                                      | •                | •   | ★                                |
| 015 <sup>(1)</sup>                                | 1 1/2-in. (40 mm)                                                                                  | •                | •   | ★                                |
| 020                                               | 2-in. (50 mm)                                                                                      | •                | •   | ★                                |
| 030                                               | 3-in. (80 mm)                                                                                      | •                | •   | ★                                |
| 040                                               | 4-in. (100 mm)                                                                                     | •                | •   | ★                                |
| 060                                               | 6-in. (150 mm)                                                                                     | •                | •   | ★                                |
| 080                                               | 8-in. (200 mm)                                                                                     | •                | •   | ★                                |
| 100 <sup>(2)(3)</sup>                             | 10-in. (250 mm) <sup>(2) (3)</sup>                                                                 | •                | •   | ★                                |
| 120 <sup>(2)(3)</sup>                             | 12-in. (300 mm) <sup>(2) (3)</sup>                                                                 | •                | •   | ★                                |

**Table 2. Rosemount 3051SFC Compact Orifice Flowmeter Ordering Information**

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

| Primary Element Type                   |                                                    |                 |                           |          |            |                 |
|----------------------------------------|----------------------------------------------------|-----------------|---------------------------|----------|------------|-----------------|
| <b>Standard</b>                        |                                                    |                 |                           |          |            | <b>Standard</b> |
| N000                                   | Annubar Sensor Size 1                              |                 |                           | •        | •          | ★               |
| N040                                   | 0.40 Beta Ratio ( $\beta$ )                        |                 |                           | •        | •          | ★               |
| N065 <sup>(4)</sup>                    | 0.65 Beta Ratio ( $\beta$ )                        |                 |                           | •        | •          | ★               |
| <b>Temperature Measurement</b>         |                                                    |                 |                           |          |            |                 |
| <b>Standard</b>                        |                                                    |                 |                           |          |            | <b>Standard</b> |
| T <sup>(6)</sup>                       | Integral RTD                                       |                 |                           | —        | •          | ★               |
| Q <sup>(5)</sup>                       | No Temperature Sensor                              |                 |                           | •        | •          | ★               |
| <b>Expanded</b>                        |                                                    |                 |                           |          |            |                 |
| R <sup>(6)</sup>                       | Remote Thermowell and RTD                          |                 |                           | •        | •          |                 |
| <b>Transmitter Connection Platform</b> |                                                    |                 |                           | <b>D</b> | <b>1-7</b> |                 |
| <b>Standard</b>                        |                                                    |                 |                           |          |            | <b>Standard</b> |
| 3                                      | Direct-mount                                       |                 |                           | •        | •          | ★               |
| 7                                      | Remote-mount, NPT Connections                      |                 |                           | •        | •          | ★               |
| <b>Differential Pressure Range</b>     |                                                    |                 |                           |          |            |                 |
| <b>Standard</b>                        |                                                    |                 |                           |          |            | <b>Standard</b> |
| 1                                      | 0 to 25 inH <sub>2</sub> O (0 to 62.3 mbar)        |                 |                           | •        | •          | ★               |
| 2                                      | 0 to 250 inH <sub>2</sub> O (0 to 623 mbar)        |                 |                           | •        | •          | ★               |
| 3                                      | 0 to 1000 inH <sub>2</sub> O (0 to 2.5 bar)        |                 |                           | •        | •          | ★               |
| <b>Static Pressure Range</b>           |                                                    |                 |                           |          |            |                 |
| <b>Standard</b>                        |                                                    |                 |                           |          |            | <b>Standard</b> |
| A <sup>(7)</sup>                       | None                                               |                 |                           | •        | •          | ★               |
| D                                      | Absolute 0 to 800 psia (0 to 55.2 bar)             |                 |                           | —        | •          | ★               |
| E <sup>(8)</sup>                       | Absolute 0 to 3626 psia (0 to 250 bar)             |                 |                           | —        | •          | ★               |
| J                                      | Gage -14.2 to 800 psig (-0.979 to 55.2 bar)        |                 |                           | —        | •          | ★               |
| K <sup>(8)</sup>                       | Gage -14.2 to 3626 psig (-0.979 to 250 bar)        |                 |                           | —        | •          | ★               |
| <b>Transmitter Output</b>              |                                                    |                 |                           |          |            |                 |
| <b>Standard</b>                        |                                                    |                 |                           |          |            | <b>Standard</b> |
| A                                      | 4–20 mA with digital signal based on HART protocol |                 |                           | •        | •          | ★               |
| F <sup>(9)</sup>                       | FOUNDATION fieldbus protocol                       |                 |                           | •        | —          | ★               |
| X <sup>(10)(11)</sup>                  | Wireless                                           |                 |                           | •        | —          | ★               |
| <b>Transmitter Housing Style</b>       |                                                    | <b>Material</b> | <b>Conduit Entry Size</b> |          |            |                 |
| <b>Standard</b>                        |                                                    |                 |                           |          |            | <b>Standard</b> |
| 00                                     | None (Customer-supplied electrical connection)     |                 |                           | •        | —          | ★               |
| 1A                                     | PlantWeb Housing                                   | Aluminum        | 1/2-14 NPT                | •        | •          | ★               |
| 1B                                     | PlantWeb Housing                                   | Aluminum        | M20 x 1.5                 | •        | •          | ★               |
| 1J                                     | PlantWeb Housing                                   | SST             | 1/2-14 NPT                | •        | •          | ★               |
| 1K                                     | PlantWeb Housing                                   | SST             | M20 x 1.5                 | •        | •          | ★               |
| 2A                                     | Junction Box Housing                               | Aluminum        | 1/2-14 NPT                | •        | —          | ★               |
| 2B                                     | Junction Box Housing                               | Aluminum        | M20 x 1.5                 | •        | —          | ★               |

**Table 2. Rosemount 3051SFC Compact Orifice Flowmeter Ordering Information**

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

|                                                                            |                                                                                                       | Material | Conduit Entry Size            |          |            |                 |
|----------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------|----------|-------------------------------|----------|------------|-----------------|
| <b>Standard</b>                                                            |                                                                                                       |          |                               |          |            | <b>Standard</b> |
| 2E                                                                         | Junction Box housing with output for remote display and interface                                     | Aluminum | 1/2-14 NPT                    | •        | —          | ★               |
| 2F                                                                         | Junction Box housing with output for remote display and interface                                     | Aluminum | M20 x 1.5                     | •        | —          | ★               |
| 2J                                                                         | Junction Box Housing                                                                                  | SST      | 1/2-14 NPT                    | •        | —          | ★               |
| 2M                                                                         | Junction Box housing with output for remote display and interface                                     | SST      | 1/2-14 NPT                    | •        | —          | ★               |
| 5A <sup>(12)</sup>                                                         | Wireless PlantWeb housing                                                                             | Aluminum | 1/2-14 NPT                    | •        | —          | ★               |
| 5J <sup>(12)</sup>                                                         | Wireless PlantWeb housing                                                                             | SST      | 1/2-14 NPT                    | •        | —          | ★               |
| 7J <sup>(10)(13)</sup>                                                     | Quick Connect (A size Mini, 4-pin male termination)                                                   |          |                               | •        | —          | ★               |
| <b>Expanded</b>                                                            |                                                                                                       |          |                               |          |            |                 |
| 1C                                                                         | PlantWeb Housing                                                                                      | Aluminum | G <sup>1</sup> / <sub>2</sub> | •        | •          |                 |
| 1L                                                                         | PlantWeb Housing                                                                                      | SST      | G <sup>1</sup> / <sub>2</sub> | •        | •          |                 |
| 2C                                                                         | Junction Box Housing                                                                                  | Aluminum | G <sup>1</sup> / <sub>2</sub> | •        | —          |                 |
| 2G                                                                         | Junction Box housing with output for remote display and interface                                     | Aluminum | G <sup>1</sup> / <sub>2</sub> | •        | —          |                 |
| <b>Transmitter Performance Class</b>                                       |                                                                                                       |          |                               | <b>D</b> | <b>1-7</b> |                 |
| <b>Standard</b>                                                            |                                                                                                       |          |                               |          |            | <b>Standard</b> |
| <b>3051S MultiVariable SuperModule, Measurement Types 1, 2, 5, and 6</b>   |                                                                                                       |          |                               | •        | •          |                 |
| 3                                                                          | Ultra for Flow: 0.75% flow rate accuracy, 14:1 flow turndown, 10-yr stability, limited 12-yr warranty |          |                               | •        | •          | ★               |
| 5                                                                          | Classic MV: 1.10% flow rate accuracy, 8:1 flow turndown, 5-yr stability                               |          |                               | —        | •          | ★               |
| <b>3051S Single Variable SuperModule, Measurement Types 3, 4, 7, and D</b> |                                                                                                       |          |                               | •        | •          |                 |
| 1                                                                          | Ultra: 0.90% flow rate accuracy, 8:1 flow turndown, 10-yr stability, limited 12-yr warranty           |          |                               | •        | —          | ★               |
| 2                                                                          | Classic: 1.40% flow rate accuracy, 8:1 flow turndown, 5-yr stability                                  |          |                               | •        | —          | ★               |
| 3 <sup>(14)</sup>                                                          | Ultra for Flow: 0.75% flow rate accuracy, 14:1 flow turndown, 10-yr stability, limited 12-yr warranty |          |                               | •        | •          | ★               |

**Wireless Options (Requires option code X and wireless PlantWeb housing)**

|                                                       |                                                                    |   |   |                 |
|-------------------------------------------------------|--------------------------------------------------------------------|---|---|-----------------|
| <b>Update Rate, Operating Frequency, and Protocol</b> |                                                                    |   |   |                 |
| <b>Standard</b>                                       |                                                                    |   |   | <b>Standard</b> |
| WA                                                    | User Configurable Update Rate                                      | • | — | ★               |
| <b>Operating Frequency and Protocol</b>               |                                                                    |   |   |                 |
| <b>Standard</b>                                       |                                                                    |   |   | <b>Standard</b> |
| 3                                                     | 2.4 GHz DSSS, IEC 62591 (WirelessHART)                             | • | — | ★               |
| <b>Omnidirectional Wireless Antenna</b>               |                                                                    |   |   |                 |
| <b>Standard</b>                                       |                                                                    |   |   | <b>Standard</b> |
| WK                                                    | External Antenna                                                   | • | — | ★               |
| WM                                                    | Extended Range, External Antenna                                   | • | — | ★               |
| <b>Expanded</b>                                       |                                                                    |   |   |                 |
| WN                                                    | High-Gain, Remote Antenna                                          | • | — |                 |
| <b>SmartPower™</b>                                    |                                                                    |   |   |                 |
| <b>Standard</b>                                       |                                                                    |   |   | <b>Standard</b> |
| 1 <sup>(15)</sup>                                     | Adapter for Black Power Module (I.S. Power Module Sold Separately) | • | — | ★               |

**Table 2. Rosemount 3051SFC Compact Orifice Flowmeter Ordering Information**

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

**Other Options (Include with selected model number)**

| <b>Installation Accessories</b>              |                                                                                                |          |            |                 |
|----------------------------------------------|------------------------------------------------------------------------------------------------|----------|------------|-----------------|
| <b>Standard</b>                              |                                                                                                |          |            | <b>Standard</b> |
| A                                            | ANSI Alignment Ring (150#) (Only required for 10-in. (250 mm) and 12-in. (300mm) line sizes)   | •        | •          | ★               |
| C                                            | ANSI Alignment Ring (300#) (Only required for 10-in. (250 mm) and 12-in. (300mm) line sizes)   | •        | •          | ★               |
| D                                            | ANSI Alignment Ring (600#) (Only required for 10-in. (250 mm) and 12-in. (300mm) line sizes)   | •        | •          | ★               |
| G                                            | DIN Alignment Ring (PN 16)                                                                     | •        | •          | ★               |
| H                                            | DIN Alignment Ring (PN 40)                                                                     | •        | •          | ★               |
| J                                            | DIN Alignment Ring (PN 100)                                                                    | •        | •          | ★               |
| <b>Expanded</b>                              |                                                                                                |          |            |                 |
| B                                            | JIS Alignment Ring (10K)                                                                       | •        | •          |                 |
| R                                            | JIS Alignment Ring (20K)                                                                       | •        | •          |                 |
| S                                            | JIS Alignment Ring (40K)                                                                       | •        | •          |                 |
| <b>Remote Adapters</b>                       |                                                                                                |          |            |                 |
| <b>Standard</b>                              |                                                                                                |          |            | <b>Standard</b> |
| E                                            | Flange adapters 316 SST (1/2-in. NPT)                                                          | •        | •          | ★               |
| <b>High Temperature Applications</b>         |                                                                                                |          |            |                 |
| <b>Expanded</b>                              |                                                                                                |          |            |                 |
| T                                            | Graphite Valve Packing (Tmax = 850 °F)                                                         | •        | •          |                 |
| <b>Flow Calibration</b>                      |                                                                                                |          |            |                 |
| <b>Expanded</b>                              |                                                                                                |          |            |                 |
| WC <sup>(16)</sup>                           | Flow Calibration, 3 Pt, Conditioning Option C (All Pipe Schedules)                             | •        | •          |                 |
| WD <sup>(17) (18)</sup>                      | Flow Calibration, 10 Pt, Conditioning Option C (All Schedules), Annubar Option A (Schedule 40) | •        | •          |                 |
| <b>Pressure Testing</b>                      |                                                                                                |          |            |                 |
| <b>Expanded</b>                              |                                                                                                |          |            |                 |
| P1                                           | Hydrostatic Testing with Certificate                                                           | •        | •          |                 |
| <b>Special Cleaning</b>                      |                                                                                                | <b>D</b> | <b>1-7</b> |                 |
| <b>Expanded</b>                              |                                                                                                |          |            |                 |
| p2 <sup>(19)</sup>                           | Cleaning for Special Processes                                                                 | •        | •          |                 |
| PA                                           | Cleaning per ASTM G93 Level D (section 11.4)                                                   | •        | •          |                 |
| <b>Special Inspection</b>                    |                                                                                                |          |            |                 |
| <b>Standard</b>                              |                                                                                                |          |            | <b>Standard</b> |
| QC1                                          | Visual & Dimensional Inspection with Certificate                                               | •        | •          | ★               |
| QC7                                          | Inspection & Performance Certificate                                                           | •        | •          | ★               |
| <b>Transmitter Calibration Certification</b> |                                                                                                |          |            |                 |
| <b>Standard</b>                              |                                                                                                |          |            | <b>Standard</b> |
| Q4                                           | Calibration Data Certificate for Transmitter                                                   | •        | •          | ★               |
| QP                                           | Calibration Certificate and Tamper Evident Seal                                                | •        | •          | ★               |
| <b>Quality Certification for Safety</b>      |                                                                                                |          |            |                 |
| <b>Standard</b>                              |                                                                                                |          |            | <b>Standard</b> |
| QS <sup>(20)(21)</sup>                       | Prior-use certificate of FMEDA data                                                            | •        | —          | ★               |
| QT <sup>(20)(21)(24)</sup>                   | Safety Certified to IEC 61508 with certificate of FMEDA data                                   | •        | —          | ★               |

**Table 2. Rosemount 3051SFC Compact Orifice Flowmeter Ordering Information**

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

| Material Traceability Certifications |                                                                                                                     |   |     |          |
|--------------------------------------|---------------------------------------------------------------------------------------------------------------------|---|-----|----------|
| Standard                             |                                                                                                                     |   |     | Standard |
| Q8                                   | Material Traceability Certification per EN 10204:2004 3.1                                                           | • | •   | ★        |
| Code Conformance                     |                                                                                                                     |   |     |          |
| Expanded                             |                                                                                                                     |   |     |          |
| J2                                   | ANSI / ASME B31.1                                                                                                   | • | •   |          |
| J3                                   | ANSI / ASME B31.3                                                                                                   | • | •   |          |
| J4                                   | ANSI / ASME B31.8                                                                                                   | • | •   |          |
| Material Conformance                 |                                                                                                                     |   |     |          |
| Expanded                             |                                                                                                                     |   |     |          |
| J5 <sup>(22)</sup>                   | NACE MR-0175 / ISO 15156                                                                                            | • | •   |          |
| Country Certification                |                                                                                                                     |   |     |          |
| Expanded                             |                                                                                                                     |   |     |          |
| J1                                   | Canadian Registration                                                                                               | • | •   |          |
| Product Certifications               |                                                                                                                     |   |     |          |
| Standard                             |                                                                                                                     |   |     | Standard |
| E1                                   | ATEX Flameproof                                                                                                     | • | •   | ★        |
| I1                                   | ATEX Intrinsic Safety                                                                                               | • | •   | ★        |
| IA                                   | ATEX FISCO Intrinsic Safety; for FOUNDATION fieldbus protocol only                                                  | • | —   | ★        |
| N1                                   | ATEX Type n                                                                                                         | • | •   | ★        |
| ND                                   | ATEX Dust                                                                                                           | • | •   | ★        |
| K1                                   | ATEX Flameproof, Intrinsic Safety, Type n, Dust (combination of E1, I1, N1, and ND)                                 | • | •   | ★        |
| E4                                   | TIIS Flameproof                                                                                                     | • | •   | ★        |
| E5                                   | FM Explosion-proof, Dust Ignition-proof                                                                             | • | •   | ★        |
| I5                                   | FM Intrinsically Safe, Division 2                                                                                   | • | •   | ★        |
| K5                                   | FM Explosion-proof, Dust Ignition-proof, Intrinsically Safe, Division 2 (combination of E5 and I5)                  | • | •   | ★        |
| E6 <sup>(23)</sup>                   | CSA Explosion-proof, Dust Ignition-proof, Division 2                                                                | • | •   | ★        |
| I6                                   | CSA Intrinsically Safe                                                                                              | • | •   | ★        |
| K6 <sup>(23)</sup>                   | CSA Explosion-proof, Dust Ignition-proof, Intrinsically Safe, Division 2 (combination of E6 and I6)                 | • | •   | ★        |
| E7                                   | IECEx Flameproof, Dust Ignition-proof                                                                               | • | •   | ★        |
| I7                                   | IECEx Intrinsic Safety                                                                                              | • | •   | ★        |
| K7                                   | IECEx Flameproof, Dust Ignition-proof, Intrinsic Safety, Type n (combination of E7, I7, and N7)                     | • | •   | ★        |
| E3                                   | China Flameproof                                                                                                    | • | •   | ★        |
| I3                                   | China Intrinsic Safety                                                                                              | • | •   | ★        |
| Standard                             |                                                                                                                     |   |     | Standard |
| KA <sup>(23)</sup>                   | ATEX and CSA Flameproof, Intrinsically Safe, Division 2 (combination of E1, I1, E6, and I6)                         | • | •   | ★        |
| KB <sup>(23)</sup>                   | FM and CSA Explosion-proof, Dust Ignition-proof, Intrinsically Safe, Division 2 (combination of E5, E6, I5, and I6) | • | •   | ★        |
| KC                                   | FM and ATEX Explosion-proof, Intrinsically Safe, Division 2 (combination of E5, E1, I5, and I1)                     | • | •   | ★        |
| KD <sup>(23)</sup>                   | FM, CSA, and ATEX Explosion-proof, Intrinsically Safe (combination of E5, E6, E1, I5, I6, and I1)                   | • | •   | ★        |
| Shipboard Approvals                  |                                                                                                                     | D | 1-7 |          |
| Standard                             |                                                                                                                     |   |     | Standard |
| SBS                                  | American Bureau of Shipping                                                                                         | • | •   | ★        |

**Table 2. Rosemount 3051SFC Compact Orifice Flowmeter Ordering Information**

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

| Sensor Fill Fluid and O-ring Options               |                                                                                            |   |   |                 |
|----------------------------------------------------|--------------------------------------------------------------------------------------------|---|---|-----------------|
| <b>Standard</b>                                    |                                                                                            |   |   | <b>Standard</b> |
| L1                                                 | Inert Sensor Fill Fluid                                                                    | • | • | ★               |
| L2                                                 | Graphite-filled (PTFE) O-ring                                                              | • | • | ★               |
| LA                                                 | Inert sensor fill fluid and graphite-filled (PTFE) O-ring                                  | • | • | ★               |
| <b>Digital Display<sup>(24)</sup></b>              |                                                                                            |   |   |                 |
| <b>Standard</b>                                    |                                                                                            |   |   | <b>Standard</b> |
| M5                                                 | PlantWeb LCD display                                                                       | • | • | ★               |
| M7 <sup>(21)(25)(26)</sup>                         | Remote mount LCD display and interface, PlantWeb housing, no cable, SST bracket            | • | • | ★               |
| M8 <sup>(21)(25)</sup>                             | Remote mount LCD display and interface, PlantWeb housing, 50 ft. (15m) cable, SST bracket  | • | • | ★               |
| M9 <sup>(21)(25)</sup>                             | Remote mount LCD display and interface, PlantWeb housing, 100 ft. (31m) cable, SST bracket | • | • | ★               |
| <b>Transient Protection</b>                        |                                                                                            |   |   |                 |
| <b>Standard</b>                                    |                                                                                            |   |   | <b>Standard</b> |
| T1 <sup>(27)</sup>                                 | Transient terminal block                                                                   | • | • | ★               |
| <b>Manifold for Remote Mount Option</b>            |                                                                                            |   |   |                 |
| <b>Standard</b>                                    |                                                                                            |   |   | <b>Standard</b> |
| F2                                                 | 3-Valve Manifold, SST                                                                      | • | • | ★               |
| F6                                                 | 5-Valve Manifold, SST                                                                      | • | • | ★               |
| <b>PlantWeb Control Functionality</b>              |                                                                                            |   |   |                 |
| <b>Standard</b>                                    |                                                                                            |   |   | <b>Standard</b> |
| A01                                                | FOUNDATION fieldbus Advanced Control Function Block Suite                                  | • | — | ★               |
| <b>PlantWeb Diagnostic Functionality</b>           |                                                                                            |   |   |                 |
| <b>Standard</b>                                    |                                                                                            |   |   | <b>Standard</b> |
| D01                                                | FOUNDATION fieldbus Diagnostics Suite                                                      | • | — | ★               |
| DA2 <sup>(28)</sup>                                | Advanced HART Diagnostic Suite                                                             | • | — | ★               |
| <b>PlantWeb Enhanced Measurement Functionality</b> |                                                                                            |   |   |                 |
| <b>Standard</b>                                    |                                                                                            |   |   | <b>Standard</b> |
| H01 <sup>(29)</sup>                                | FOUNDATION fieldbus Fully Compensated Mass Flow Block                                      | • | — | ★               |
| <b>Cold Temperature</b>                            |                                                                                            |   |   |                 |
| <b>Standard</b>                                    |                                                                                            |   |   | <b>Standard</b> |
| BRR                                                | -60 °F (-51 °C) Cold Temperature Start-up                                                  | • | • | ★               |
| <b>Alarm Limit<sup>(20)(21)</sup></b>              |                                                                                            |   |   |                 |
| <b>Standard</b>                                    |                                                                                            |   |   | <b>Standard</b> |
| C4                                                 | NAMUR Alarm & Saturation Levels, High Alarm                                                | • | • | ★               |
| C5                                                 | NAMUR Alarm & Saturation Levels, Low Alarm                                                 | • | • | ★               |
| C6                                                 | Custom Alarm & Saturation Levels, High Alarm                                               | • | • | ★               |
| C7                                                 | Custom Alarm & Saturation Levels, Low Alarm                                                | • | • | ★               |
| C8                                                 | Low Alarm (Standard Rosemount Alarm & Saturation Levels)                                   | • | • | ★               |
| <b>Hardware Adjustments and Ground Screw</b>       |                                                                                            |   |   |                 |
| <b>Standard</b>                                    |                                                                                            |   |   | <b>Standard</b> |
| D1 <sup>(20)(21)(30)</sup>                         | Hardware Adjustments (zero, span, alarm, security)                                         | • | — | ★               |
| D4                                                 | External ground screw assembly                                                             | • | • | ★               |
| DA <sup>(20)(21)(30)</sup>                         | Hardware adjustments (zero, span, alarm, security) and external ground screw assembly      | • | — | ★               |

**Table 2. Rosemount 3051SFC Compact Orifice Flowmeter Ordering Information**

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

| Conduit Plug                                                  |                                               |   |   |          |
|---------------------------------------------------------------|-----------------------------------------------|---|---|----------|
| Standard                                                      |                                               |   |   | Standard |
| DO                                                            | 316 SST Conduit Plug                          | • | • | ★        |
| Conduit Electrical Connector                                  |                                               |   |   |          |
| Standard                                                      |                                               |   |   | Standard |
| ZE <sup>(31)</sup>                                            | M12, 4-pin, Male Connector (eurofast)         | • | • | ★        |
| ZM                                                            | A size Mini, 4-pin, Male Connector (minifast) | • | • | ★        |
| Typical Model Number: 3051SFC 1 C S 060 N 065 T 3 2 J A 1 A 3 |                                               |   |   |          |

- (1) Available with primary element technology P only.
- (2) For the line sizes 10-in. (250 mm) and 12-in. (300 mm) line size, the alignment ring must be ordered (Installation Accessories).
- (3) For the line sizes 10-in. (250 mm) and 12-in. (300 mm) line sizes not available with Primary Element Technology A.
- (4) For 2-in. (50 mm) line sizes the Primary Element Type is 0.6 for Primary Element Technology Code C.
- (5) Required for Measurement Type codes 2, 4, 6, and D.
- (6) Only available with Transmitter Feature Board Measurement Type: 1, 3, 5, 7.
- (7) Required for Measurement Type codes 3, 4, 7, and D.
- (8) For Measurement Type 1, 2, 5, and 6 with DP range 1, absolute limits are 0.5 to 2000 psi (0,03 to 137,9 bar) and gage limits are -14.2 to 2000 psig (-0,98 to 137,9 bar).
- (9) Requires PlantWeb housing.
- (10) Available approvals are FM Intrinsically Safe, Division 2 (option code I5), CSA Intrinsically Safe (option code I6), ATEX Intrinsic Safety (option code I1), and IECEx Intrinsic Safety (option code I7).
- (11) Requires wireless options and wireless PlantWeb housing.
- (12) Only available with output code X.
- (13) Available with output code A only.
- (14) Only available with differential pressure ranges 2 and 3, and silicone fill fluid.
- (15) Long-life Power Module must be shipped separately, order Part No. 00753-9220-0001.
- (16) Available with primary element technology C only.
- (17) Available with primary element technology C or A only.
- (18) For Annubar Option A, consult factory for pipe schedules other than Sch. 40
- (19) Available with primary element technology C or P only.
- (20) Not available with Output Protocol code F.
- (21) Not available with output code X.
- (22) 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.
- (23) Not available with M20 or G ½ conduit entry size.
- (24) Not available with housing code 7J.

- (25) Not available with output code F, option code DA2, or option code QT.
- (26) See the 3051S Reference Manual (document number 00809-0100-4801) for cable requirements. Contact an Emerson Process Management representative for additional information.
- (27) Not available with Housing code 00, 5A, 5J, or 7J. External ground screw assembly (option code D4) is included with the T1 option. The T1 option is not needed with FISCO Product Certifications, transient protection is included with the FISCO Product Certification code IA.
- (28) Includes Hardware Adjustments (option code D1) as standard. Not available with output code X.
- (29) Requires Rosemount Engineering Assistant version 5.5.1 to configure.
- (30) Not available with housing style codes 2E, 2F, 2G, 2M, 5A, 5J, or 7J.
- (31) Not available with Housing code 5A, 5J, or 7J. Available with Intrinsically Safe approvals only. For FM Intrinsically Safe, Division 2 (option code I5) or FM FISCO Intrinsically Safe (option code IE), install in accordance with Rosemount drawing 03151-1009 to maintain outdoor rating (NEMA 4X and IP66).



### Rosemount 3051 SFP Integral Orifice Flowmeter

- Precision honed pipe section for increased accuracy in small line sizes
- Self-centering plate design prevents alignment errors that magnify measurement inaccuracies in small line sizes

**Table 3. Rosemount 3051 SFP Integral Orifice Flowmeter Ordering Information**

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

| Model                     | Product Description                                                                                | Measurement Type |     | • = Available<br>— = Unavailable |
|---------------------------|----------------------------------------------------------------------------------------------------|------------------|-----|----------------------------------|
|                           |                                                                                                    | D                | 1-7 |                                  |
| 3051 SFP                  | Integral Orifice Flowmeter                                                                         | •                | •   |                                  |
| <b>Measurement Type</b>   |                                                                                                    |                  |     |                                  |
| <b>Standard</b>           |                                                                                                    |                  |     | <b>Standard</b>                  |
| 1                         | Fully Compensated Mass & Energy Flow Calculations – Differential & Static Pressures w/ Temperature | —                | •   | ★                                |
| 2                         | Compensated Flow Calculations – Differential & Static Pressures                                    | —                | •   | ★                                |
| 3                         | Compensated Flow Calculations – Differential Pressure & Temperature                                | —                | •   | ★                                |
| 4                         | Compensated Flow Calculations – Differential Pressure                                              | —                | •   | ★                                |
| D                         | Differential Pressure                                                                              | •                | —   | ★                                |
| <b>Expanded</b>           |                                                                                                    |                  |     |                                  |
| 5                         | Process Variables Only (No Flow Calculations) – Differential & Static Pressures with Temperature   | —                | •   |                                  |
| 6                         | Process Variables Only (No Flow Calculations) – Differential & Static Pressures                    | —                | •   |                                  |
| 7                         | Process Variables Only (No Flow Calculations)                                                      | —                | •   |                                  |
| <b>Body Material</b>      |                                                                                                    |                  |     |                                  |
| <b>Standard</b>           |                                                                                                    |                  |     | <b>Standard</b>                  |
| S                         | 316 SST                                                                                            | •                | •   | ★                                |
| <b>Line Size</b>          |                                                                                                    |                  |     |                                  |
| <b>Standard</b>           |                                                                                                    |                  |     | <b>Standard</b>                  |
| 005                       | 1/2-in. (15 mm)                                                                                    | •                | •   | ★                                |
| 010                       | 1-in. (25 mm)                                                                                      | •                | •   | ★                                |
| 015                       | 1 1/2-in. (40 mm)                                                                                  | •                | •   | ★                                |
| <b>Process Connection</b> |                                                                                                    |                  |     |                                  |
| <b>Standard</b>           |                                                                                                    |                  |     | <b>Standard</b>                  |
| T1                        | NPT Female Body (Not Available with Remote Thermowell and RTD)                                     | •                | •   | ★                                |
| S1 <sup>(1)</sup>         | Socket Weld Body (Not Available with Remote Thermowell and RTD)                                    | •                | •   | ★                                |
| P1                        | Pipe Ends: NPT threaded                                                                            | •                | •   | ★                                |
| P2                        | Pipe Ends: Beveled                                                                                 | •                | •   | ★                                |
| D1                        | Pipe Ends: Flanged, DIN PN16, slip-on                                                              | •                | •   | ★                                |
| D2                        | Pipe Ends: Flanged, DIN PN40, slip-on                                                              | •                | •   | ★                                |
| D3                        | Pipe Ends: Flanged, DIN PN100, slip-on                                                             | •                | •   | ★                                |
| W1                        | Pipe Ends: Flanged, ANSI Class 150, weld-neck                                                      | •                | •   | ★                                |
| W3                        | Pipe Ends: Flanged, ANSI Class 300, weld-neck                                                      | •                | •   | ★                                |
| W6                        | Pipe Ends: Flanged, ANSI Class 600, weld-neck                                                      | •                | •   | ★                                |
| A1                        | Pipe Ends: Flanged, RF, ANSI Class 150, slip-on                                                    | •                | •   | ★                                |
| A3                        | Pipe Ends: Flanged, RF, ANSI Class 300, slip-on                                                    | •                | •   | ★                                |
| A6                        | Pipe Ends: Flanged, RF, ANSI Class 600, slip-on                                                    | •                | •   | ★                                |

**Table 3. Rosemount 3051SFP Integral Orifice Flowmeter Ordering Information**

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

|                                        |                                                  |          |            |                 |
|----------------------------------------|--------------------------------------------------|----------|------------|-----------------|
| <b>Expanded</b>                        |                                                  |          |            |                 |
| R1                                     | Pipe Ends: Flanged, RTJ, ANSI Class 150, slip-on | •        | •          |                 |
| R3                                     | Pipe Ends: Flanged, RTJ, ANSI Class 300, slip-on | •        | •          |                 |
| R6                                     | Pipe Ends: Flanged, RTJ, ANSI Class 600, slip-on | •        | •          |                 |
| P9                                     | Special Process Connection                       | •        | •          |                 |
| <b>Orifice Plate Material</b>          |                                                  |          |            |                 |
| <b>Standard</b>                        |                                                  |          |            | <b>Standard</b> |
| S                                      | 316 SST                                          | •        | •          | ★               |
| <b>Expanded</b>                        |                                                  |          |            |                 |
| H                                      | Alloy C-276                                      | •        | •          |                 |
| M                                      | Alloy 400                                        | •        | •          |                 |
| <b>Bore Size Option</b>                |                                                  | <b>D</b> | <b>1-7</b> |                 |
| <b>Standard</b>                        |                                                  |          |            | <b>Standard</b> |
| 0066                                   | 0.066-in. (1.68 mm) for 1/2-in. pipe             | •        | •          | ★               |
| 0109                                   | 0.109-in. (2.77 mm) for 1/2-in. pipe             | •        | •          | ★               |
| 0160                                   | 0.160-in. (4.06 mm) for 1/2-in. pipe             | •        | •          | ★               |
| 0196                                   | 0.196-in. (4.98 mm) for 1/2-in. pipe             | •        | •          | ★               |
| 0260                                   | 0.260-in. (6.60 mm) for 1/2-in. pipe             | •        | •          | ★               |
| 0340                                   | 0.340-in. (8.64 mm) for 1/2-in. pipe             | •        | •          | ★               |
| 0150                                   | 0.150-in. (3.81 mm) for 1-in. pipe               | •        | •          | ★               |
| 0250                                   | 0.250-in. (6.35 mm) for 1-in. pipe               | •        | •          | ★               |
| 0345                                   | 0.345-in. (8.76 mm) for 1-in. pipe               | •        | •          | ★               |
| 0500                                   | 0.500-in. (12.70 mm) for 1-in. pipe              | •        | •          | ★               |
| 0630                                   | 0.630-in. (16.00 mm) for 1-in. pipe              | •        | •          | ★               |
| 0800                                   | 0.800-in. (20.32 mm) for 1-in. pipe              | •        | •          | ★               |
| 0295                                   | 0.295-in. (7.49 mm) for 1 1/2-in. pipe           | •        | •          | ★               |
| 0376                                   | 0.376-in. (9.55 mm) for 1 1/2-in. pipe           | •        | •          | ★               |
| 0512                                   | 0.512-in. (13.00 mm) for 1 1/2-in. pipe          | •        | •          | ★               |
| 0748                                   | 0.748-in. (19.00 mm) for 1 1/2-in. pipe          | •        | •          | ★               |
| 1022                                   | 1.022-in. (25.96 mm) for 1 1/2-in. pipe          | •        | •          | ★               |
| 1184                                   | 1.184-in. (30.07 mm) for 1 1/2-in. pipe          | •        | •          | ★               |
| <b>Expanded</b>                        |                                                  |          |            |                 |
| 0010                                   | 0.010-in. (0.25 mm) for 1/2-in. pipe             | •        | •          |                 |
| 0014                                   | 0.014-in. (0.36 mm) for 1/2-in. pipe             | •        | •          |                 |
| 0020                                   | 0.020-in. (0.51 mm) for 1/2-in. pipe             | •        | •          |                 |
| 0034                                   | 0.034-in. (0.86 mm) for 1/2-in. pipe             | •        | •          |                 |
| <b>Transmitter Connection Platform</b> |                                                  |          |            |                 |
| <b>Standard</b>                        |                                                  |          |            | <b>Standard</b> |
| D3                                     | Direct-mount, 3-valve Manifold, SST              | •        | •          | ★               |
| D5                                     | Direct-mount, 5-valve Manifold, SST              | •        | •          | ★               |
| R3                                     | Remote-mount, 3-valve Manifold, SST              | •        | •          | ★               |
| R5                                     | Remote-mount, 5-valve Manifold, SST              | •        | •          | ★               |
| <b>Expanded</b>                        |                                                  |          |            |                 |

**Table 3. Rosemount 3051SFP Integral Orifice Flowmeter Ordering Information**

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

|                             |                                                                    |          |                    |   |          |   |
|-----------------------------|--------------------------------------------------------------------|----------|--------------------|---|----------|---|
| D4                          | Direct-mount, 3-valve Manifold, Alloy C-276                        |          |                    | • | •        |   |
| D6                          | Direct-mount, 5-valve Manifold, Alloy C-276                        |          |                    | • | •        |   |
| D7                          | Direct-mount, High Temperature, 5-valve Manifold, SST              |          |                    | • | •        |   |
| R4                          | Remote-mount, 3-valve Manifold, Alloy C-276                        |          |                    | • | •        |   |
| R6                          | Remote-mount, 5-valve Manifold, Alloy C-276                        |          |                    | • | •        |   |
| Differential Pressure Range |                                                                    |          |                    |   |          |   |
| Standard                    |                                                                    |          |                    |   | Standard |   |
| 1                           | 0 to 25 inH <sub>2</sub> O (0 to 62.3 mbar)                        |          |                    | • | •        | ★ |
| 2                           | 0 to 250 inH <sub>2</sub> O (0 to 623 mbar)                        |          |                    | • | •        | ★ |
| 3                           | 0 to 1000 inH <sub>2</sub> O (0 to 2.5 bar)                        |          |                    | • | •        | ★ |
| Static Pressure Range       |                                                                    |          |                    |   |          |   |
| Standard                    |                                                                    |          |                    |   | Standard |   |
| A <sup>(2)</sup>            | None                                                               |          |                    | • | •        | ★ |
| D                           | Absolute 0 to 800 psia (0 to 55.2 bar)                             |          |                    | — | •        | ★ |
| E <sup>(3)</sup>            | Absolute 0 to 3626 psia (0 to 250 bar)                             |          |                    | — | •        | ★ |
| J                           | Gage -14.2 to 800 psig (-0.979 to 55.2 bar)                        |          |                    | — | •        | ★ |
| K <sup>(3)</sup>            | Gage -14.2 to 3626 psig (-0.979 to 250 bar)                        |          |                    | — | •        | ★ |
| Transmitter Output          |                                                                    |          |                    | D | 1-7      |   |
| Standard                    |                                                                    |          |                    |   | Standard |   |
| A                           | 4–20 mA with digital signal based on HART protocol                 |          |                    | • | •        | ★ |
| F                           | FOUNDATION fieldbus (Requires PlantWeb housing)                    |          |                    | • | —        | ★ |
| X <sup>(4)</sup>            | Wireless (Requires wireless options and wireless PlantWeb housing) |          |                    | • | —        | ★ |
| Transmitter Housing Style   |                                                                    | Material | Conduit Entry Size |   |          |   |
| Standard                    |                                                                    |          |                    |   | Standard |   |
| 00                          | None (Customer-supplied electrical connection)                     |          |                    | • | —        | ★ |
| 1A                          | PlantWeb Housing                                                   | Aluminum | 1/2-14 NPT         | • | •        | ★ |
| 1B                          | PlantWeb Housing                                                   | Aluminum | M20 x 1.5          | • | •        | ★ |
| 1J                          | PlantWeb Housing                                                   | SST      | 1/2-14 NPT         | • | •        | ★ |
| 1K                          | PlantWeb Housing                                                   | SST      | M20 x 1.5          | • | •        | ★ |
| 2A                          | Junction Box Housing                                               | Aluminum | 1/2-14 NPT         | • | —        | ★ |
| 2B                          | Junction Box Housing                                               | Aluminum | M20 x 1.5          | • | —        | ★ |
| 2E                          | Junction Box Housing with output for remote display and interface  | Aluminum | 1/2-14 NPT         | • | —        | ★ |
| 2F                          | Junction Box Housing with output for remote display and interface  | Aluminum | M20 x 1.5          | • | —        | ★ |
| 2J                          | Junction Box Housing                                               | SST      | 1/2-14 NPT         | • | —        | ★ |
| 2M                          | Junction Box Housing with output for remote display and interface  | SST      | 1/2-14 NPT         | • | —        | ★ |
| 5A <sup>(5)</sup>           | Wireless PlantWeb Housing                                          | Aluminum | 1/2–14 NPT         | • | —        | ★ |
| 5J <sup>(5)</sup>           | Wireless PlantWeb Housing                                          | SST      | 1/2–14 NPT         | • | —        | ★ |
| 7J <sup>(4)(6)</sup>        | Quick Connect (A size Mini, 4-pin male termination)                |          |                    | • | —        | ★ |
| Expanded                    |                                                                    |          |                    |   |          |   |

**Table 3. Rosemount 3051SFP Integral Orifice Flowmeter Ordering Information**

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

|                                                                     |                                                                                                           |          |                  |   |   |          |
|---------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------|----------|------------------|---|---|----------|
| 1C                                                                  | PlantWeb Housing                                                                                          | Aluminum | G <sup>1/2</sup> | • | • |          |
| 1L                                                                  | PlantWeb Housing                                                                                          | SST      | G <sup>1/2</sup> | • | • |          |
| 2C                                                                  | Junction Box Housing                                                                                      | Aluminum | G <sup>1/2</sup> | • | — |          |
| 2G                                                                  | Junction Box Housing with output for remote display and interface                                         | Aluminum | G <sup>1/2</sup> | • | — |          |
| Transmitter Performance Class                                       |                                                                                                           |          |                  |   |   |          |
| Standard                                                            |                                                                                                           |          |                  |   |   | Standard |
| 3051S MultiVariable SuperModule, Measurement Types 1, 2, 5, and 6   |                                                                                                           |          |                  |   |   |          |
| 3 <sup>(7)</sup>                                                    | Ultra for Flow: 0.95% flow rate accuracy, 14:1 flow turndown, 10-year stability, limited 12-year warranty |          |                  | • | • | ★        |
| 5                                                                   | Classic MV: 1.25% flow rate accuracy, 8:1 flow turndown, 5-year stability                                 |          |                  | — | • | ★        |
| 3051S Single Variable SuperModule, Measurement Types 3, 4, 7, and D |                                                                                                           |          |                  |   |   |          |
| 1                                                                   | Ultra: 1.05% flow rate accuracy, 8:1 flow turndown, 10-year stability, limited 12-year warranty           |          |                  | • | • | ★        |
| 2                                                                   | Classic: 1.50% flow rate accuracy, 8:1 flow turndown, 5-year stability                                    |          |                  | • | • | ★        |
| 3 <sup>(7)</sup>                                                    | Ultra for Flow: 0.95% flow rate accuracy, 14:1 flow turndown, 10-year stability, limited 12-year warranty |          |                  | • | • | ★        |

**Wireless Options (Requires option code X and wireless PlantWeb housing)**

| Update Rate, Operating Frequency, and Protocol |                                                                    |   |     |          |
|------------------------------------------------|--------------------------------------------------------------------|---|-----|----------|
| Standard                                       |                                                                    |   |     | Standard |
| WA                                             | User Configurable Update Rate                                      | • | —   | ★        |
| Operating Frequency and Protocol               |                                                                    |   |     |          |
| Standard                                       |                                                                    |   |     | Standard |
| 3                                              | 2.4 GHz DSSS, IEC 62591 (WirelessHART)                             | • | —   | ★        |
| Omnidirectional Wireless Antenna               |                                                                    |   |     |          |
| Standard                                       |                                                                    |   |     | Standard |
| WK                                             | External Antenna                                                   | • | —   | ★        |
| WM                                             | Extended Range, External Antenna                                   | • | —   | ★        |
| Expanded                                       |                                                                    |   |     |          |
| WN                                             | High-Gain, Remote Antenna                                          | • | —   |          |
| SmartPower™                                    |                                                                    | D | 1-7 |          |
| Standard                                       |                                                                    |   |     | Standard |
| 1 <sup>(8)</sup>                               | Adapter for Black Power Module (I.S. Power Module Sold Separately) | • | —   | ★        |

**Other Options (Include with selected model number)**

| Transmitter / Body Bolt Material |                                           |  | D | 1-7 |          |
|----------------------------------|-------------------------------------------|--|---|-----|----------|
| Expanded                         |                                           |  |   |     |          |
| G <sup>(9)</sup>                 | High temperature Option (850 °F (454 °C)) |  |   | •   | •        |
| Temperature Sensor               |                                           |  |   |     |          |
| Standard                         |                                           |  |   |     | Standard |
| T <sup>(10)</sup>                | Thermowell and RTD                        |  |   | •   | •        |
| Optional Connection              |                                           |  |   |     |          |
| Standard                         |                                           |  |   |     | Standard |
| G1                               | DIN 19213 Transmitter Connection          |  |   | •   | •        |
| Pressure Testing                 |                                           |  |   |     |          |
| Expanded                         |                                           |  |   |     |          |

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★ The Standard offering represents the most common options. The starred options (★) should be selected for best delivery.  
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|                                              |                                                                                       |   |   |                 |
|----------------------------------------------|---------------------------------------------------------------------------------------|---|---|-----------------|
| p1 <sup>(11)</sup> (12)                      | Hydrostatic Testing with Certificate                                                  | • | • |                 |
| <b>Special Cleaning</b>                      |                                                                                       |   |   |                 |
| <b>Expanded</b>                              |                                                                                       |   |   |                 |
| P2                                           | Cleaning for Special Services                                                         | • | • |                 |
| PA                                           | Cleaning per ASTM G93 Level D (Section 11.4)                                          | • | • |                 |
| <b>Material Testing</b>                      |                                                                                       |   |   |                 |
| <b>Expanded</b>                              |                                                                                       |   |   |                 |
| V1                                           | Dye Penetrant Exam                                                                    | • | • |                 |
| <b>Material Examination</b>                  |                                                                                       |   |   |                 |
| <b>Expanded</b>                              |                                                                                       |   |   |                 |
| V2                                           | Radiographic Examination (available only with Process Connection code W1, W3, and W6) | • | • |                 |
| <b>Flow Calibration</b>                      |                                                                                       |   |   |                 |
| <b>Expanded</b>                              |                                                                                       |   |   |                 |
| WD <sup>(13)</sup>                           | Discharge Coefficient Verification                                                    | • | • |                 |
| WZ <sup>(13)</sup>                           | Special Calibration                                                                   | • | • |                 |
| <b>Special Inspection</b>                    |                                                                                       |   |   |                 |
| <b>Standard</b>                              |                                                                                       |   |   | <b>Standard</b> |
| QC1                                          | Visual & Dimensional Inspection with Certificate                                      | • | • | ★               |
| QC7                                          | Inspection & Performance Certificate                                                  | • | • | ★               |
| <b>Material Traceability Certification</b>   |                                                                                       |   |   |                 |
| <b>Standard</b>                              |                                                                                       |   |   | <b>Standard</b> |
| Q8                                           | Material certification per EN 10204:2004 3.1                                          | • | • | ★               |
| <b>Code Conformance</b>                      |                                                                                       |   |   |                 |
| <b>Expanded</b>                              |                                                                                       |   |   |                 |
| J2 <sup>(14)</sup>                           | ANSI / ASME B31.1                                                                     | • | • |                 |
| J3 <sup>(14)</sup>                           | ANSI / ASME B31.3                                                                     | • | • |                 |
| J4 <sup>(14)</sup>                           | ANSI / ASME B31.8                                                                     | • | • |                 |
| <b>Materials Conformance</b>                 |                                                                                       |   |   |                 |
| <b>Expanded</b>                              |                                                                                       |   |   |                 |
| J5 <sup>(15)</sup>                           | NACE MR-0175 / ISO 15156                                                              | • | • |                 |
| <b>Country Certification</b>                 |                                                                                       |   |   |                 |
| <b>Standard</b>                              |                                                                                       |   |   | <b>Standard</b> |
| J6                                           | European Pressure Directive (PED)                                                     | • | • | ★               |
| <b>Expanded</b>                              |                                                                                       |   |   |                 |
| J1                                           | Canadian Registration                                                                 | • | • |                 |
| <b>Transmitter Calibration Certification</b> |                                                                                       |   |   |                 |
| <b>Standard</b>                              |                                                                                       |   |   | <b>Standard</b> |
| Q4                                           | Calibration Data Certificate for Transmitter                                          | • | • | ★               |
| <b>Quality Certification for Safety</b>      |                                                                                       |   |   |                 |
| <b>Standard</b>                              |                                                                                       |   |   | <b>Standard</b> |
| Q5 <sup>(16)</sup> (17)                      | Prior-use Certificate of FMEDA data                                                   | • | — | ★               |

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|                                             |                                                                                                                     |   |   |                 |
|---------------------------------------------|---------------------------------------------------------------------------------------------------------------------|---|---|-----------------|
| QT <sup>(16)(17)(19)</sup>                  | Safety-certified to IEC 61508 with Certificate of FMEDA data                                                        | • | — | ★               |
| <b>Product Certifications</b>               |                                                                                                                     |   |   |                 |
| <b>Standard</b>                             |                                                                                                                     |   |   | <b>Standard</b> |
| E1                                          | ATEX Flameproof                                                                                                     | • | • | ★               |
| I1                                          | ATEX Intrinsic Safety                                                                                               | • | • | ★               |
| IA                                          | ATEX FISCO Intrinsic Safety; for FOUNDATION fieldbus protocol only                                                  | • | — | ★               |
| N1                                          | ATEX Type n                                                                                                         | • | • | ★               |
| ND                                          | ATEX Dust                                                                                                           | • | • | ★               |
| K1                                          | ATEX Flameproof, Intrinsic Safety, Type n, Dust (combination of E1, I1, N1, and ND)                                 | • | • | ★               |
| E4                                          | TIIS Flameproof                                                                                                     | • | • | ★               |
| E5                                          | FM Explosion-proof, Dust Ignition-proof                                                                             | • | • | ★               |
| I5                                          | FM Intrinsically Safe, Division 2                                                                                   | • | • | ★               |
| K5                                          | FM Explosion-proof, Dust Ignition-proof, Intrinsically Safe, Division 2 (combination of E5 and I5)                  | • | • | ★               |
| E6 <sup>(18)</sup>                          | CSA Explosion-proof, Dust Ignition-proof, Division 2                                                                | • | • | ★               |
| I6                                          | CSA Intrinsically Safe                                                                                              | • | • | ★               |
| K6 <sup>(18)</sup>                          | CSA Explosion-proof, Dust Ignition-proof, Intrinsically Safe, Division 2 (combination of E6 and I6)                 | • | • | ★               |
| <b>Standard</b>                             |                                                                                                                     |   |   | <b>Standard</b> |
| E7                                          | IECEX Flameproof, Dust Ignition-proof                                                                               | • | • | ★               |
| I7                                          | IECEX Intrinsic Safety                                                                                              | • | • | ★               |
| K7                                          | IECEX Flameproof, Dust Ignition-proof, Intrinsic Safety, Type n (combination of E7, I7, and N7)                     | • | • | ★               |
| E3                                          | China Flameproof                                                                                                    | • | • | ★               |
| <b>Standard</b>                             |                                                                                                                     |   |   | <b>Standard</b> |
| I3                                          | China Intrinsic Safety                                                                                              | • | • | ★               |
| KA <sup>(18)</sup>                          | ATEX and CSA Flameproof, Intrinsically Safe, Division 2 (combination of E1, I1, E6, and I6)                         | • | • | ★               |
| KB <sup>(18)</sup>                          | FM and CSA Explosion-proof, Dust Ignition-proof, Intrinsically Safe, Division 2 (combination of E5, E6, I5, and I6) | • | • | ★               |
| KC                                          | FM and ATEX Explosion-proof, Intrinsically Safe, Division 2 (combination of E5, E1, I5, and I1)                     | • | • | ★               |
| KD <sup>(18)</sup>                          | FM, CSA, and ATEX Explosion-proof, Intrinsically Safe (combination of E5, I5, E6, I6, E1, and I1)                   | • | • | ★               |
| <b>Shipboard Approvals</b>                  |                                                                                                                     |   |   |                 |
| <b>Standard</b>                             |                                                                                                                     |   |   | <b>Standard</b> |
| SBS                                         | American Bureau of Shipping                                                                                         | • | • | ★               |
| <b>Sensor Fill Fluid and O-ring Options</b> |                                                                                                                     |   |   |                 |
| <b>Standard</b>                             |                                                                                                                     |   |   | <b>Standard</b> |
| L1                                          | Inert Sensor Fill Fluid                                                                                             | • | • | ★               |
| L2                                          | Graphite-filled (PTFE) O-ring                                                                                       | • | • | ★               |
| LA                                          | Inert sensor fill fluid and graphite-filled (PTFE) O-ring                                                           | • | • | ★               |
| <b>Digital Display<sup>(19)</sup></b>       |                                                                                                                     |   |   |                 |
| <b>Standard</b>                             |                                                                                                                     |   |   | <b>Standard</b> |

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

|                                                                         |                                                                                             |          |            |                 |
|-------------------------------------------------------------------------|---------------------------------------------------------------------------------------------|----------|------------|-----------------|
| M5                                                                      | PlantWeb LCD display (Requires PlantWeb housing)                                            | •        | •          | ★               |
| M7 <sup>(16)(20)(21)</sup>                                              | Remote mount LCD display and interface, PlantWeb housing, no cable, SST bracket             | •        | —          | ★               |
| M8 <sup>(16)(21)</sup>                                                  | Remote mount LCD display and interface, PlantWeb housing, 50 ft. (15 m) cable, SST bracket  | •        | —          | ★               |
| M9 <sup>(16)(21)</sup>                                                  | Remote mount LCD display and interface, PlantWeb housing, 100 ft. (31 m) cable, SST bracket | •        | —          | ★               |
| <b>Transient Protection</b>                                             |                                                                                             |          |            |                 |
| <b>Standard</b>                                                         |                                                                                             |          |            | <b>Standard</b> |
| T1 <sup>(22)</sup>                                                      | Transient terminal block                                                                    | •        | •          | ★               |
| <b>PlantWeb Control Functionality</b>                                   |                                                                                             |          |            |                 |
| <b>Standard</b>                                                         |                                                                                             |          |            | <b>Standard</b> |
| A01                                                                     | FOUNDATION fieldbus Advanced Control Function Block Suite                                   | •        | —          | ★               |
| <b>PlantWeb Diagnostic Functionality</b>                                |                                                                                             |          |            |                 |
| <b>Standard</b>                                                         |                                                                                             |          |            | <b>Standard</b> |
| D01                                                                     | FOUNDATION fieldbus Diagnostics Suite                                                       | •        | —          | ★               |
| DA2 <sup>(23)</sup>                                                     | Advanced HART Diagnostics Suite                                                             | •        | —          | ★               |
| <b>PlantWeb Enhanced Measurement Functionality</b>                      |                                                                                             | <b>D</b> | <b>1-7</b> |                 |
| <b>Standard</b>                                                         |                                                                                             |          |            | <b>Standard</b> |
| H01 <sup>(24)</sup>                                                     | FOUNDATION fieldbus Fully Compensated Mass Flow Block                                       | •        | —          | ★               |
| <b>Cold Temperature</b>                                                 |                                                                                             |          |            |                 |
| <b>Standard</b>                                                         |                                                                                             |          |            | <b>Standard</b> |
| BRR                                                                     | -60 °F (-51 °C) Cold Temperature Start-up                                                   | —        | •          | ★               |
| <b>Alarm Limit<sup>(16)(17)</sup></b>                                   |                                                                                             |          |            |                 |
| <b>Standard</b>                                                         |                                                                                             |          |            | <b>Standard</b> |
| C4                                                                      | NAMUR Alarm & Saturation Levels, High Alarm                                                 | •        | •          | ★               |
| C5                                                                      | NAMUR Alarm & Saturation Levels, Low Alarm                                                  | •        | •          | ★               |
| C6                                                                      | Custom Alarm & Saturation Levels, High Alarm                                                | •        | •          | ★               |
| C7                                                                      | Custom Alarm & Saturation Levels, Low Alarm                                                 | •        | •          | ★               |
| C8                                                                      | Low Alarm (Standard Rosemount Alarm & Saturation Levels)                                    | •        | •          | ★               |
| <b>Hardware Adjustments and Ground Screw</b>                            |                                                                                             |          |            |                 |
| <b>Standard</b>                                                         |                                                                                             |          |            | <b>Standard</b> |
| D1 <sup>(16)(17)(25)</sup>                                              | Hardware Adjustments (zero, span, alarm, security)                                          | •        | —          | ★               |
| D4                                                                      | External ground screw assembly                                                              | •        | •          | ★               |
| DA <sup>(16)(17)(25)</sup>                                              | Hardware adjustments (zero, span, alarm, security) & External Ground Screw Assembly         | •        | —          | ★               |
| <b>Conduit Plug</b>                                                     |                                                                                             |          |            |                 |
| DO                                                                      | 316 SST Conduit Plug                                                                        |          |            |                 |
| <b>Conduit Electrical Connector</b>                                     |                                                                                             |          |            |                 |
| <b>Expanded</b>                                                         |                                                                                             |          |            |                 |
| CE <sup>(26)</sup>                                                      | M12, 4-pin, Male Connector ( <i>eufofast</i> ®)                                             | •        | •          |                 |
| GM <sup>(26)</sup>                                                      | A size Mini, 4-pin, Male Connector ( <i>minifast</i> ®)                                     | •        | •          |                 |
| <b>Typical Model Number: 3051SFP 1 S 010 W3 S 0150 D3 1 J A 1A 3 M5</b> |                                                                                             |          |            |                 |

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

(2) Required for Measurement Type codes 3, 4, 7, and D.

- (3) For Measurement Type 1, 2, 5, and 6 with DP range 1, absolute limits are 0.5 to 2000 psi (0,03 to 137,9 bar) and gage limits are -14.2 to 2000 psig (-0,98 to 137,9 bar).
- (4) Available approvals are FM Intrinsically Safe, Division 2 (option code I5), CSA Intrinsically Safe (option code I6), ATEX Intrinsic Safety (option code I1), and IECEx Intrinsic Safety (option code I7).
- (5) Only available with output code X.
- (6) Only available with output code A.
- (7) Only available with differential pressure ranges 2 and 3, and silicone fill fluid.
- (8) Long-life Power Module must be shipped separately, order Part No. 00753-9220-0001.
- (9) Not available with 1 1/2-in. (38 mm) line size.
- (10) Thermowell material is the same as the body material.
- (11) Does not apply to Process Connection codes T1 and S1.
- (12) Option P1 may not be ordered in combination with P2 or PA.
- (13) Not available for bore sizes 0010, 0014, 0020, 0034, 0066, or 0109.
- (14) Not available with DIN Process Connection codes D1, D2, or D3.
- (15) Materials of Construction comply with metallurgical requirements within NACE MR0175/ISO for sour oil field production environments. Environmental limits apply to certain materials. Consult latest standard for details. Selected materials also conform to NACE MR0103 for sour refining environments.
- (16) Not available with output code X.
- (17) Not available with Output Protocol code F.
- (18) Not available with M20 or G 1/2 conduit entry size.
- (19) Not available with housing code 7J.
- (20) See the 3051S Reference Manual (document number 00809-0100-4801) for cable requirements. Contact an Emerson Process Management representative for additional information.
- (21) Not available with output code F, option code DA2, or option code QT.
- (22) Not available with Housing code 5A, 5J, or 7J. The T1 option is not needed with FISCO Product Certifications, transient protection is included with the FISCO Product Certification code IA.
- (23) Includes Hardware Adjustments (option code D1) as standard. Not available with output code X.
- (24) Requires Rosemount Engineering Assistant version 5.5.1 to configure.
- (25) Not available with housing style codes 2E, 2F, 2G, 2M, 5A, 5J, or 7J.
- (26) Not available with Housing code 5A, 5J, or 7J. Available with Intrinsically Safe approvals only. For FM Intrinsically Safe, Division 2 (option code I5) or FM FISCO Intrinsically Safe (option code IE), install in accordance with Rosemount drawing 03151-1009 to maintain outdoor rating (NEMA 4X and IP66).

# 3051SF Series Specifications

## 3051SF Performance specifications

Performance assumptions include: measured pipe I.D, transmitter is trimmed for optimum flow accuracy, and performance is dependent on application parameters.

**Table 4. MultiVariable Flow Performance - Flow Reference Accuracy (Measurement Type 1)<sup>(1)(2)</sup>**

| 3051SFA Annubar Flowmeter                                           |                     |                                |                                     |
|---------------------------------------------------------------------|---------------------|--------------------------------|-------------------------------------|
|                                                                     |                     | Classic MV (8:1 flow turndown) | Ultra for Flow (14:1 flow turndown) |
| Ranges 2-3                                                          |                     | ±1.15% of Flow Rate            | ±0.80% of Flow Rate                 |
| 3051SFC_A Compact Annubar Flowmeter - Annubar Option A              |                     |                                |                                     |
|                                                                     |                     | Classic MV (8:1 flow turndown) | Ultra for Flow (14:1 flow turndown) |
| Ranges 2-3                                                          | Uncalibrated        | ±1.60% of Flow Rate            | ±1.55% of Flow Rate                 |
|                                                                     | Calibrated          | ±1.00% of Flow Rate            | ±0.80% of Flow Rate                 |
| 3051SFC Compact Orifice Flowmeter - Conditioning Option C           |                     |                                |                                     |
|                                                                     |                     | Classic MV (8:1 flow turndown) | Ultra for Flow (14:1 flow turndown) |
| Ranges 2-3                                                          | $\beta = 0.4$       | ±1.10% of Flow Rate            | ±0.75% of Flow Rate                 |
|                                                                     | $\beta = 0.65$      | ±1.45% of Flow Rate            | ±1.15% of Flow Rate                 |
| 3051SFC Compact Orifice Flowmeter - Orifice Option P <sup>(3)</sup> |                     |                                |                                     |
|                                                                     |                     | Classic MV (8:1 flow turndown) | Ultra for Flow (14:1 flow turndown) |
| Ranges 2-3                                                          | $\beta = 0.4$       | ±1.45% of Flow Rate            | ±1.30% of Flow Rate                 |
|                                                                     | $\beta = 0.65$      | ±1.45% of Flow Rate            | ±1.30% of Flow Rate                 |
| 3051SFP Integral Orifice Flowmeter                                  |                     |                                |                                     |
|                                                                     |                     | Classic MV (8:1 flow turndown) | Ultra for Flow (14:1 flow turndown) |
| Ranges 2-3                                                          | $\beta < 0.1$       | ±2.65% of Flow Rate            | ±2.60% of Flow Rate                 |
|                                                                     | $0.1 < \beta < 0.2$ | ±1.60% of Flow Rate            | ±1.40% of Flow Rate                 |
|                                                                     | $0.2 < \beta < 0.6$ | ±1.25% of Flow Rate            | ±0.95% of Flow Rate                 |
|                                                                     | $0.6 < \beta < 0.8$ | ±1.80% of Flow Rate            | ±1.60% of Flow Rate                 |

(1) Measurement Types 2 - 4 assume that the unmeasured variables are constant. Additional uncertainty will depend on the variation in the unmeasured variables.

(2) Range 1 flowmeters experience an additional uncertainty up to 0.9%. Consult your Emerson Process Management Representative for exact specifications.

(3) For line size less than 2 in. (50 mm) or greater than 8 in. (200 mm), add an additional 0.5% uncertainty.

**Table 5. Flow Performance - Flow Reference Accuracy (Measurement Type D)<sup>(1)(2)(3)</sup>**

| <b>3051SFA Annubar Flowmeter</b>                                          |                     |                                    |                                  |                                            |
|---------------------------------------------------------------------------|---------------------|------------------------------------|----------------------------------|--------------------------------------------|
|                                                                           |                     | <b>Classic (8:1 flow turndown)</b> | <b>Ultra (8:1 flow turndown)</b> | <b>Ultra for Flow (14:1 flow turndown)</b> |
| Ranges 2-3                                                                |                     | ±1.25% of Flow Rate                | ±0.95% of Flow Rate              | ±0.80% of Flow Rate                        |
| <b>3051SFC_A Compact Annubar Flowmeter - Annubar Option A</b>             |                     |                                    |                                  |                                            |
|                                                                           |                     | <b>Classic (8:1 flow turndown)</b> | <b>Ultra (8:1 flow turndown)</b> | <b>Ultra for Flow (14:1 flow turndown)</b> |
| Ranges 2-3                                                                | Uncalibrated        | ±1.70% of Flow Rate                | ±1.65% of Flow Rate              | ±1.55% of Flow Rate                        |
|                                                                           | Calibrated          | ±1.25% of Flow Rate                | ±0.95% of Flow Rate              | ±0.80% of Flow Rate                        |
| <b>3051SFC Compact Orifice Flowmeter – Conditioning Option C</b>          |                     |                                    |                                  |                                            |
|                                                                           |                     | <b>Classic (8:1 flow turndown)</b> | <b>Ultra (8:1 flow turndown)</b> | <b>Ultra for Flow (14:1 flow turndown)</b> |
| Ranges 2-3                                                                | $\beta = 0.4$       | ±1.10% of Flow Rate                | ±0.9% of Flow Rate               | ±0.75% of Flow Rate                        |
|                                                                           | $\beta = 0.65$      | ±1.40% of Flow Rate                | ±1.25% of Flow Rate              | ±1.15% of Flow Rate                        |
| <b>3051SFC Compact Orifice Flowmeter – Orifice Option P<sup>(4)</sup></b> |                     |                                    |                                  |                                            |
|                                                                           |                     | <b>Classic (8:1 flow turndown)</b> | <b>Ultra (8:1 flow turndown)</b> | <b>Ultra for Flow (14:1 flow turndown)</b> |
| Ranges 2-3                                                                | $\beta = 0.4$       | ±1.80% of Flow Rate                | ±1.35% of Flow Rate              | ±1.30% of Flow Rate                        |
|                                                                           | $\beta = 0.65$      | ±1.80% of Flow Rate                | ±1.35% of Flow Rate              | ±1.30% of Flow Rate                        |
| <b>3051SFP Integral Orifice Flowmeter</b>                                 |                     |                                    |                                  |                                            |
|                                                                           |                     | <b>Classic (8:1 flow turndown)</b> | <b>Ultra (8:1 flow turndown)</b> | <b>Ultra for Flow (14:1 flow turndown)</b> |
| Ranges 2-3                                                                | $\beta < 0.1$       | ±2.70% of Flow Rate                | ±2.65% of Flow Rate              | ±2.60% of Flow Rate                        |
|                                                                           | $0.1 < \beta < 0.2$ | ±1.80% of Flow Rate                | ±1.45% of Flow Rate              | ±1.40% of Flow Rate                        |
|                                                                           | $0.2 < \beta < 0.6$ | ±1.50% of Flow Rate                | ±1.05% of Flow Rate              | ±0.95% of Flow Rate                        |
|                                                                           | $0.6 < \beta < 0.8$ | ±2.00% of Flow Rate                | ±1.70% of Flow Rate              | ±1.60% of Flow Rate                        |

(1) For Measurement Types 5 - 7, refer to the Reference Accuracy specification for the 3051SMV with Measurement Type P.

(2) These flow measurement accuracies assume a constant density, viscosity, and expansibility factor.

(3) Range 1 flowmeters experience an additional uncertainty up to 0.9%. Consult your Emerson Process Management Representative for exact specifications.

(4) For line size less than 2 in. (50 mm) or greater than 8 in. (200 mm), add an additional 0.5% uncertainty.

## 3051SF Dynamic performance

**Total Time Response at 75 °F (24 °C), includes dead time<sup>(1)</sup>**

| <b>3051SF_D</b>       | <b>3051SF_1, 2, 5, or 6</b> | <b>3051SF_3, 4, or 7</b> |
|-----------------------|-----------------------------|--------------------------|
| DP Ranges 2-5: 100 ms | DP Range 1: 310 ms          | DP Ranges 2-5: 145 ms    |
| Range 1: 255 ms       | DP Range 2: 170 ms          | DP Range 1: 300 ms       |
| Range 0: 700 ms       | DP Range 3: 155 ms          | DP Range 0: 745 ms       |
|                       | AP & GP: 240 ms             |                          |

(1) For FOUNDATION fieldbus (output code F), add 52 ms to stated values (not including segment macro-cycle).  
For option code DA2, add 45 ms (nominal) to stated values.

**Dead Time<sup>(1)</sup>**

| 3051SF_D        | 3051SF_1-7         |
|-----------------|--------------------|
| 45 ms (nominal) | DP: 100 ms         |
|                 | AP & GP: 140 ms    |
|                 | RTD Interface: 1 s |

(1) For option code DA2, dead time is 90 milliseconds (nominal).

**Update Rate<sup>(1)</sup>**

| 3051SF_D            | 3051SF_1-7                       |                                                  |
|---------------------|----------------------------------|--------------------------------------------------|
| 22 updates per sec. | DP: 22 updates per sec.          | <u>Calculated Variables:</u>                     |
|                     | AP & GP: 11 updates per sec.     | Mass / Volumetric Flow Rate: 22 updates per sec. |
|                     | RTD Interface: 1 update per sec. | Energy Flow Rate: 22 updates per sec.            |
|                     |                                  | Totalized Flow: 1 update per sec.                |

(1) Does not apply to Wireless (output code X). See [“Wireless Self-Organizing Networks” on page 36](#) for wireless update rate.

**Mounting position effects**

| Models               |               | Ultra, Ultra for Flow, Classic and Classic MV                                                       |
|----------------------|---------------|-----------------------------------------------------------------------------------------------------|
| 3051SF_3, 4, 7, or D |               | Zero shifts up to $\pm 1.25$ inH <sub>2</sub> O (3,11 mbar), which can be zeroed<br>Span: no effect |
| 3051SF_1, 2, 5, or 6 | DP Sensor:    | Zero shifts up to $\pm 1.25$ inH <sub>2</sub> O (3,11 mbar), which can be zeroed<br>Span: no effect |
|                      | GP/AP Sensor: | Zero shifts to $\pm 2.5$ inH <sub>2</sub> O (6,22 mbar), which can be zeroed<br>Span: no effect     |

**Vibration Effect for 3051SFA, 3051SFC, and 3051SFP**

Less than  $\pm 0.1\%$  of URL when tested per the requirements of IEC60770-1 field with general application or pipeline with low vibration level (10-1000 Hz test frequency range, 0.15mm displacement peak amplitude, 20m/s<sup>2</sup> acceleration amplitude).<sup>(1)</sup>

**Power supply effect**

Less than  $\pm 0.005\%$  of calibrated span per volt change in voltage at the transmitter terminals

(1) Stainless steel temperature housing is not recommended with primary element technology A in application with mechanical vibration.

### **Electromagnetic Compatibility (EMC)**

Meets all relevant requirements of EN 61326 and NAMUR NE-21.<sup>(1)</sup> <sup>(2)</sup>

### **Transient Protection (Option T1)**

Meets IEEE C62.41.2-2002, Location Category B

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

3 kA crest (8  $\times$  20 microseconds)

6 kV crest (1.2  $\times$  50 microseconds)

Meets IEEE C37.90.1-2002 Surge Withstand Capability

SWC 2.5 kV crest, 1.0 MHz wave form

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

(2) 3051SMV and 3051SF\_1, 2, 3, 4, 5, 6, 7 requires shielded cable for both temperature and loop wiring.

## 3051SF Functional specifications

### Range and Sensor limits

#### Flowmeter with Coplanar Sensor Module

| Range | DP Sensor (3051SF_3, 4, or 7) |                                    |
|-------|-------------------------------|------------------------------------|
|       | Lower (LRL)                   | Upper (URL)                        |
| 1     | 0 inH <sub>2</sub> O (0 mbar) | 25 inH <sub>2</sub> O (62,3 mbar)  |
| 2     | 0 inH <sub>2</sub> O (0 bar)  | 250 inH <sub>2</sub> O (0,62 bar)  |
| 3     | 0 inH <sub>2</sub> O (0 bar)  | 1000 inH <sub>2</sub> O (2,49 bar) |

#### Flowmeter with MultiVariable Sensor Module

| Range | DP Sensor (3051SF1, 2, 5, or 6)                                       |                                                      |
|-------|-----------------------------------------------------------------------|------------------------------------------------------|
|       | Lower (LRL)                                                           | Upper (URL)                                          |
| 1     | 0 inH <sub>2</sub> O (0 mbar)                                         | 25.0 inH <sub>2</sub> O (62,3 mbar)                  |
| 2     | 0 inH <sub>2</sub> O (0 bar)                                          | 250.0 inH <sub>2</sub> O (0,62 bar)                  |
| 3     | 0 inH <sub>2</sub> O (0 bar)                                          | 1000.0 inH <sub>2</sub> O (2,49 bar)                 |
| Range | Static Pressure Sensor (GP/AP)                                        |                                                      |
|       | Lower (LRL)                                                           | Upper (URL) <sup>(1)</sup>                           |
| 3     | GP <sup>(2)</sup> : -14.2 psig (0,98 bar)<br>AP: 0.5 psia (34,5 mbar) | GP: 800 psig (55,16 bar)<br>AP: 800 psia (55,16 bar) |
| 4     | GP <sup>(2)</sup> : -14.2 psig (0,98 bar)<br>AP: 0.5 psia (34,5 mbar) | GP: 3626 psig (250 bar)<br>AP: 3626 psia (250 bar)   |

(1) For SP Range 4 with DP Range 1, the URL is 2000 psi (137,9 bar).

(2) Inert Fill: Minimum pressure = 1.5 psia (0,10 bar) or -13.2 psig (-0,91 bar).

#### Process Temperature RTD Interface (3051SF\_1, 3, 5 or 7)<sup>(1)</sup>

| Lower (LRL)       | Upper (URL)      |
|-------------------|------------------|
| -328 °F (-200 °C) | 1562 °F (850 °C) |

(1) Transmitter is compatible with any Pt 100 RTD sensor. Examples of compatible RTDs include Rosemount Series 68 and 78 RTD Temperature Sensors.

### Minimum Span limits

#### Transmitter with Coplanar Sensor Module (Single variable)

| Range | DP Sensor (3051SF_D, 3, 4 or 7)    |                                     |
|-------|------------------------------------|-------------------------------------|
|       | Ultra & Ultra for Flow             | Classic                             |
| 1     | 0.5 inH <sub>2</sub> O (1,24 mbar) | 0.5 inH <sub>2</sub> O (1,24 mbar)  |
| 2     | 1.3 inH <sub>2</sub> O (3,11 mbar) | 2.5 inH <sub>2</sub> O (6,23 mbar)  |
| 3     | 5.0 inH <sub>2</sub> O (12,4 mbar) | 10.0 inH <sub>2</sub> O (24,9 mbar) |

#### Transmitter with MultiVariable Sensor Module

| Range | DP Sensor (3051SF_1, 2, 5, or 6)   |                                     |
|-------|------------------------------------|-------------------------------------|
|       | Ultra for Flow                     | Classic MV                          |
| 1     | 0.5 inH <sub>2</sub> O (1,24 mbar) | 0.5 inH <sub>2</sub> O (1,24 mbar)  |
| 2     | 1.3 inH <sub>2</sub> O (3,11 mbar) | 2.5 inH <sub>2</sub> O (6,23 mbar)  |
| 3     | 5.0 inH <sub>2</sub> O (12,4 mbar) | 10.0 inH <sub>2</sub> O (24,9 mbar) |
| Range | Static Pressure Sensor (GP/AP)     |                                     |
|       | Ultra for Flow                     | Classic MV                          |
| 3     | 4.0 psi (276 mbar)                 | 8.0 psi (522 mbar)                  |
| 4     | 18.13 psi (1,25 bar)               | 36.26 psi (2,50 bar)                |

### Process Temperature RTD interface (3051SF\_1, 3, 5 or 7)

Minimum Span = 50 °F (28 °C)

#### Service

#### 3051SF\_5, 6, 7, or D (Direct Process Variable Output):

Liquid, gas, and steam applications

#### 3051SF\_1, 2, 3, or 4 (Mass and Energy Flow Output):

Some fluid types are only supported by certain measurement types

### Fluid Compatibility with Pressure and Temperature Compensation

• Available

— Not available

| Ordering Code | Measurement Type               | Fluid Types |                 |                   |                     |
|---------------|--------------------------------|-------------|-----------------|-------------------|---------------------|
|               |                                | Liquids     | Saturated Steam | Superheated Steam | Gas and Natural Gas |
| 1             | DP / P / T (Full Compensation) | •           | •               | •                 | •                   |
| 2             | DP / P                         | •           | •               | •                 | •                   |
| 3             | DP / T                         | •           | •               | —                 | —                   |
| 4             | DP only                        | •           | •               | —                 | —                   |

### 4–20 mA/HART

#### Zero and Span Adjustment

Zero and span values can be set anywhere within the range.

Span must be greater than or equal to the minimum span.

#### Output

Two-wire 4–20 mA is user-selectable for linear or square root output. Digital process variable superimposed on 4–20 mA signal, available to any host that conforms to the HART protocol.

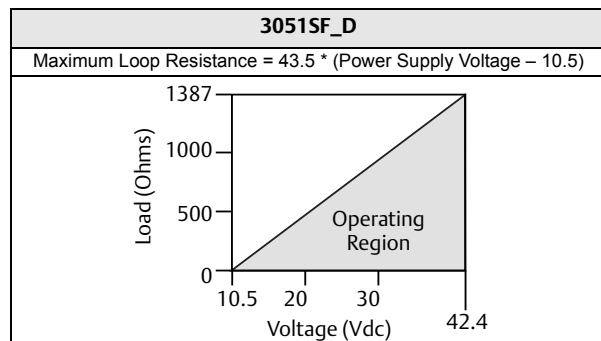
#### Power Supply

External power supply required.

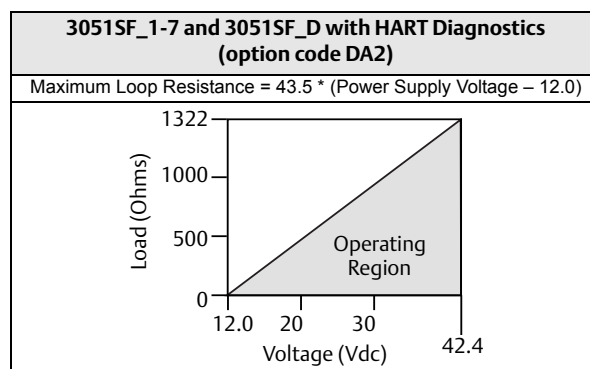
- 3051SF\_D: 10.5 to 42.4 Vdc with no load
- 3051SF\_D with Advanced HART Diagnostics Suite: 12 to 42.4 Vdc with no load
- 3051SF\_1-7: 12 to 42.4 Vdc with no load

#### Load Limitations

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



The Field Communicator requires a minimum loop resistance of 250Ω for communication.



The Field Communicator requires a minimum loop resistance of 250Ω for communication.

### Advanced HART Diagnostics Suite (Option Code DA2)

The 3051SF provides Abnormal Situation Prevention indication for a breakthrough in diagnostic capability. The 3051SF ASP Diagnostics Suite for HART includes Statistical Process Monitoring (SPM), variable logging with time stamp and advanced process alerts. The enhanced EDDL graphic display provides an intuitive and user-friendly interface to better visualize these diagnostics.

The integral SPM technology calculates the mean and standard deviation of the process variable 22 times per second and makes them available to the user. The 3051SF uses these values and highly flexible configuration options for customization to detect many user-defined or application specific abnormal situations (e.g. detecting plugged impulse lines and fluid composition change). Variable logging with time stamp and advanced process alerts capture valuable process and sensor data to enable quick troubleshooting of application and installation issues.

**FOUNDATION fieldbus****Power Supply**

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

**Current Draw**

17.5 mA for all configurations (including LCD display option)

**FOUNDATION fieldbus Parameters**

|                                            |              |
|--------------------------------------------|--------------|
| Schedule Entries                           | 14<br>(max.) |
| Links                                      | 30<br>(max.) |
| Virtual Communications Relationships (VCR) | 20<br>(max.) |

**Standard Function Blocks****Resource Block**

- Contains hardware, electronics, and diagnostic information.

**Transducer Block**

- Contains actual sensor measurement data including the sensor diagnostics and the ability to trim the pressure sensor or recall factory defaults.

**LCD Block**

- Configures the local display.

**2 Analog Input Blocks**

- Processes the measurements for input into other function blocks. The output value is in engineering or custom units and contains a status indicating measurement quality.

**PID Block with Auto-tune**

- Contains all logic to perform PID control in the field including cascade and feedforward. Auto-tune capability allows for superior tuning for optimized control performance.

**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.

**Software Upgrade in the Field**

Software for the 3051SF with FOUNDATION fieldbus is easy to upgrade in the field using the FOUNDATION fieldbus Common Device Software Download procedure.

**PlantWeb Alerts**

Enable the full power of the PlantWeb digital architecture by diagnosing instrumentation issues, communicating advisory, maintenance, and failure details, and recommending a solution.

**Advanced Control Function Block Suite****(Option Code A01)****Input Selector Block**

- Selects between inputs and generates an output using specific selection strategies such as minimum, maximum, midpoint, average, or first “good.”

**Arithmetic Block**

- Provides pre-defined application-based equations including flow with partial density compensation, electronic remote seals, hydrostatic tank gauging, ratio control and others.

**Signal Characterizer Block**

- Characterizes or approximates any function that defines an input/output relationship by configuring up to twenty X, Y coordinates. The block interpolates an output value for a given input value using the curve defined by the configured coordinates.

**Integrator Block**

- Compares the integrated or accumulated value from one or two variables to pre-trip and trip limits and generates discrete output signals when the limits are reached. This block is useful for calculating total flow, total mass, or volume over time.

**Output Splitter Block**

- Splits the output of one PID or other control block so that the PID will control two valves or other actuators.

**Control Selector Block**

- Selects one of up to three inputs (highest, middle, or lowest) that are normally connected to the outputs of PID or other control function blocks.

| Block                | Execution Time  |
|----------------------|-----------------|
| Resource             | -               |
| Transducer           | -               |
| LCD Block            | -               |
| Analog Input 1, 2    | 20 milliseconds |
| PID with Auto-tune   | 35 milliseconds |
| Input Selector       | 20 milliseconds |
| Arithmetic           | 20 milliseconds |
| Signal Characterizer | 20 milliseconds |
| Integrator           | 20 milliseconds |
| Output Splitter      | 20 milliseconds |
| Control Selector     | 20 milliseconds |

**Fully Compensated Mass Flow Block (Option Code H01)**

Calculates fully compensated mass flow based on differential pressure with external process pressure and temperature measurements over the fieldbus segment. Configuration for the mass flow calculation is easily accomplished using the Rosemount Engineering Assistant.

### ASP Diagnostics Suite for FOUNDATION fieldbus (Option Code D01)

The 3051SF ASP Diagnostics Suite for FOUNDATION fieldbus provides Abnormal Situation Prevention indication and enhanced EDDL graphic displays for easy visual analysis. The integral Statistical Process Monitoring (SPM) technology calculates the mean and standard deviation of the process variable 22 times per second and makes them available to the user. The 3051SF uses these values and highly flexible configuration options for customization to detect many user-defined or application specific abnormal situations (e.g. detecting plugged impulse lines and fluid composition change).

### Wireless Self-Organizing Networks

#### Output

WirelessHART, 2.4 GHz DSSS.

#### Local Display

The optional five-digit LCD can display user-selectable information such as primary variable in engineering units, percent of range, sensor module temperature, and electronics temperature. Display updates at up to once per minute.

#### Update Rate

WirelessHART, user selectable 8 sec. to 60 min.

#### Power Module

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

(1) Reference conditions are 70 °F (21 °C), and routing data for three additional network devices.  
Note: Continuous exposure to ambient temperature limits of -40 °F or 185 °F (-40 °C or 85 °C) may reduce specified life by less than 20 percent.

### Overpressure Limits

Transmitters withstand the following limits without damage:

### Coplanar Sensor Module (Single Variable)

| Range | DP <sup>(1)</sup>    |
|-------|----------------------|
|       | 3051SF_3, 4, 7, or D |
| 1     | 2000 psi (137,9 bar) |
| 2     | 3626 psi (250,0 bar) |
| 3     | 3626 psi (250,0 bar) |

(1) The overpressure limit of a DP Sensor with the P9 option is 4500 psig (310,3 bar). The overpressure limit of a DP Sensor with the P0 option is 6092 psig (420 bar).

### Coplanar MultiVariable Sensor Module (3051SF\_1, 2, 5, or 6)

| Static Pressure | Differential Pressure |                      |                      |
|-----------------|-----------------------|----------------------|----------------------|
|                 | Range 1               | Range 2              | Range 3              |
| Range 3 GP/AP   | 1600 psi (110,3 bar)  | 1600 psi (110,3 bar) | 1600 psi (110,3 bar) |
| Range 4 GP/AP   | 2000 psi (137,9 bar)  | 3626 psi (250 bar)   | 3626 psi (250 bar)   |

### Static Pressure Limits

#### Coplanar Sensor Module

Operates within specifications between static line pressures of:

| Range | DP Sensor <sup>(1)</sup>                  |
|-------|-------------------------------------------|
|       | 3051SF_3, 4, 7, or D                      |
| 1     | 0.5 psia to 2000 psig (0,03 to 137,9 bar) |
| 2     | 0.5 psia to 3626 psig (0,03 to 150 bar)   |
| 3     | 0.5 psia to 3626 psig (0,03 to 150 bar)   |

(1) The static pressure limit of a DP Sensor with the P9 option is 4500 psig (310,3 bar). The static pressure limit of a DP Sensor with the P0 option is 6092 psig (420 bar).

### Coplanar MultiVariable Sensor Module (3051SF\_1, 2, 5, or 6)

Operates within specifications between static line pressures of 0.5 psia (0,03 bar) and the values in the table below:

| Static Pressure | Differential Pressure |                     |                     |
|-----------------|-----------------------|---------------------|---------------------|
|                 | Range 1               | Range 2             | Range 3             |
| Range 3 GP/AP   | 800 psi (57,91 bar)   | 800 psi (57,91 bar) | 800 psi (57,91 bar) |
| Range 4 GP/AP   | 2000 psi (137,9 bar)  | 3626 psi (250 bar)  | 3626 psi (250 bar)  |

### Burst Pressure Limits

#### Coplanar Sensor Module

10000 psig (689,5 bar)

## Temperature Limits

### Ambient

-40 to 185 °F (-40 to 85 °C)

With LCD display<sup>(1)</sup>: -40 to 175 °F (-40 to 80 °C)

With option code P0: -20 to 185 °F (-29 to 85 °C)

(1) LCD display may not be readable and LCD updates will be slower at temperatures below -4 °F (-20 °C).

### Storage

-50 to 185 °F (-46 to 85 °C)

With LCD display: -40 to 185 °F (-40 to 85 °C)

With Wireless Output: -40 to 185 °F (-40 to 85 °C)

### Process Temperature Limits

#### 3051SFA Process Temperature Limits

Direct Mount Transmitter

- 500 °F (260 °C)
- 750 °F (398 °C) when used with a direct mount, high temperature 5-valve manifold (Transmitter Connection Platform code 6). Maximum temperature limit for steam processes is 650 °F (343 °C).
- 400 °F (204 °C) when top mounted in steam service

#### 3051SFC Process Temperature Limits

Direct Mount Transmitter

- -40 to 450 °F (-40 to 232 °C)
- Up to 400 °F (204 °C) when top mounted in steam service

Remote Mount Transmitter

- -148 to 850 °F (-100 to 454 °C) – Stainless Steel

#### 3051SFP Process Temperature Limits

Standard (direct/remote mount):

- -40 to 450 °F (-40 to 232 °C)

Extended (remote mount only with option code G):

- -148 to 850 °F (-100 to 454 °C)

### Humidity Limits

0–100% relative humidity

### Turn-On Time<sup>(1)</sup>

When power is applied to the transmitter during startup, performance will be within specifications per the time period described below:

| Transmitter            | Turn-On Time (Typical) |
|------------------------|------------------------|
| 3051S, 3051SF_D        | 2 seconds              |
| Diagnostics            | 5 seconds              |
| 3051SMV,<br>3051SF_1-7 | 5 seconds              |

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

## Volumetric Displacement

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

### Damping<sup>(1)</sup>

Analog output response time to a step change is user-selectable from 0 to 60 seconds for one time constant. For 3051SF\_1-7, each variable can be individually adjusted. Software damping is in addition to sensor module response time.

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

## Failure Mode Alarm

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

If self-diagnostics detect a gross transmitter failure, the analog signal will be driven offscale to alert the user. Rosemount standard (default), NAMUR, and custom alarm levels are available (see [Alarm Configuration](#) below).

High or low alarm signal is software-selectable or hardware-selectable via the optional switch (option D1).

### Alarm Configuration

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

(1) Analog output levels are compliant with NAMUR recommendation NE 43, see option codes C4 or C5.

(2) Low alarm must be 0.1 mA less than low saturation and high alarm must be 0.1 mA greater than high saturation.

## Physical Specifications

### Safety-Certified Transmitter Failure Values<sup>(1)</sup>

Safety accuracy: 2.0%<sup>(2)</sup>

Safety response time: 1.5 seconds

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

(2) A 2% variation of the transmitter mA output is allowed before a safety trip. Trip values in the DCS or safety logic solver should be derated by 2%.

### Electrical Connections

$\frac{1}{2}$ –14 NPT,  $G\frac{1}{2}$ , and M20  $\times$  1.5 conduit. HART interface connections fixed to terminal block for Output code A and X.

### Process Connections

| Coplanar Sensor Module |                                                       |
|------------------------|-------------------------------------------------------|
| Standard               | $\frac{1}{4}$ –18 NPT on 2 $\frac{1}{8}$ -in. centers |

### Process-Wetted Parts

#### 3051SFA Wetted Parts - Annubar Sensor Material

- 316 Stainless Steel
- Alloy C-276

#### 3051SFC Wetted Parts - Material of Construction

Body/Plate

- 316/316L SST
- 50 micro-inch Ra surface finish

Manifold Head/Valves

- 316 SST

Flange Studs and Nuts

- Customer supplied
- Available as a spare part

Transmitter Connection Studs and Nuts

- Studs– A193 Grade B8M.
- Nuts– A194 Grade 8M.

Gasket and O-rings

- Gaskets are customer supplied.
- Durlon 8500 fiber gaskets are recommended. Consult an Emerson Process Management representative for use with other gaskets.
- Available as a spare part

#### NOTE

Gaskets and O-rings should be replaced when the 405 is disassembled.

#### 3051SFP Wetted Parts - Material of Construction

Orifice Plate

- 316/316L SST
- Alloy C-276
- Alloy 400

Body

- 316 SST (CF8M), material per ASTM A351

Pipe Material (If Applicable)

- A312 Gr 316/316L, B622 UNS N10276, Alloy C-276

Flange

- A182 Gr 316/316L, SB-564 UNS N10276, Alloy C-276
- Flange pressure limits are per ANSI B16.5
- Flange face finish per ANSI B16.5, 125 to 250 RMS

Body Bolts/Studs

- ASTM A193 Gr B8M studs
- ASTM A193 Gr B8M Class 2 body studs provided for high temperature option code G

Transmitter Connection Studs

- ASTM A193 Gr B8M studs

Gaskets/O-rings

- Glass filled PTFE
- Inconel<sup>®</sup> X-750 provided for high temperature option code G
- Gaskets and O-rings must be replaced each time the 3051SFP is disassembled for installation or maintenance.

### Process Isolating Diaphragms

| Coplanar Sensor Module                                                                                                                      |
|---------------------------------------------------------------------------------------------------------------------------------------------|
| 316L SST (UNS S31603), Alloy C-276 (UNS N10276), Alloy 400 (UNS N04400), Tantalum (UNS R05440), Gold-Plated Alloy 400, Gold-plated 316L SST |

### Drain/Vent Valves

316 SST, Alloy C-276, or Alloy 400/K-500 material  
(Drain vent seat: Alloy 400, Drain vent stem: Alloy K-500)

### Process Flanges and Adapters

Plated carbon steel

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

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

Cast Alloy 400: M-30C per ASTM A494

### Non-Wetted Parts

#### Electronics Housing

Low-copper aluminum alloy or CF-8M (Cast 316 SST)

NEMA 4X, IP 66, IP 68 (66 ft (20 m) for 168 hours)

Note: IP 68 not available with Wireless Output.

#### Paint for Aluminum Housing

Polyurethane

#### Coplanar Sensor Module Housing

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

**Bolts**

Plated carbon steel per ASTM A449, Type 1

Austenitic 316 SST per ASTM F593

ASTM A453, Class D, Grade 660 SST

ASTM A193, Grade B7M alloy steel

ASTM A193, Class 2, Grade B8M SST

Alloy K-500

**Sensor Module Fill Fluid**

Silicone or inert halocarbon

**Cover O-rings**

Nitrile Butadiene (NBR)

**Wireless Antenna**

PBT/ polycarbonate (PC) integrated omnidirectional antenna

**Power Module**

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

## 3051SF Measurement Type 1-7 Certifications

### Approved manufacturing locations

Rosemount Inc. — Chanhassen, Minnesota USA

Emerson Process Management GmbH & Co. — Wessling, Germany

Emerson Process Management Asia Pacific Private Limited —  
Singapore

### Ordinary location certification for FM

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

### European directive information

The EC declaration of conformity for all applicable European directives for this product can be found at [www.rosemount.com](http://www.rosemount.com). A hard copy may be obtained by contacting an Emerson Process Management representative.

### ATEX Directive (94/9/EC)

Emerson Process Management complies with the ATEX Directive.

### European Pressure Equipment Directive (PED) (97/23/EC)

Models with Differential Pressure Ranges = 2 through 5 and/or Static Pressure Range 4 or options P0 and P9.

QS Certificate of Assessment - EC No.

59552-2009-CE-HOU-DNV,

Module H Conformity Assessment

— Sound Engineering Practice

Transmitter Attachments: Diaphragm Seal - Process Flange -  
Manifold — Sound Engineering Practice

Primary Elements, Flowmeter

— See appropriate Primary Element QIG

### Electro Magnetic Compatibility (EMC) (2004/108/EC)

EN 61326-1:2006 and EN 61326-2-3:2006

### Hazardous locations certifications

#### North American certifications

#### FM Approvals

- E5 Explosion-proof for Class I, Division 1, Groups B, C, and D; dust-ignition proof for Class II and Class III, Division 1, Groups E, F, and G;  $T_a = 85^\circ\text{C}$ ; hazardous locations; enclosure Type 4X, conduit seal not required.

- I5 Intrinsically Safe for use in Class I, Division 1, Groups A, B, C, and D; Class II, Division 1, Groups E, F, and G; Class III, Division 1; Class I, Zone 0 AEx ia IIC when connected in accordance with Rosemount drawing 03151-1206;  $T_a = 70^\circ\text{C}$ ;  
Non-incendive for Class I, Division 2, Groups A, B, C, and D Enclosure Type 4X  
For entity parameters see control drawing 03151-1206.

#### Canadian Standards Association (CSA)

All CSA hazardous approved transmitters are certified per ANSI/ISA 12.27.01-2003.

- E6 Explosion-proof for Class I, Division 1, Groups B, C, and D; Dust-Ignition-Proof for Class II and Class III, Division 1, Groups E, F, and G; suitable for Class I, Division 2, Groups A, B, C, and D, CSA Enclosure Type 4X; conduit seal not required. Dual Seal. T5 ( $T_a = -40^\circ\text{C}$  to  $85^\circ\text{C}$ ).
- I6 Intrinsically Safe for Class I, Division 1, Groups A, B, C, and D, T3C; when connected in accordance with Rosemount drawings 03151-1207; Dual Seal.  
For entity parameters see control drawing 03151-1207.

#### Measurement Canada Approvals

- D3 Accuracy Approval to the Electricity and Gas Inspection Act for the purchase and sale of Natural Gas.

#### European Certifications

- I1 ATEX Intrinsic Safety  
Certificate No.: Baseefa 08ATEX0064X  II 1G  
Ex ia IIC T4 ( $-60^\circ\text{C} \leq T_{amb} \leq +70^\circ\text{C}$ )  
CE 1180

#### Field Connection / 4-20 mA Loop Parameters

$U_i = 30\text{ V}$   
 $I_i = 300\text{ mA}$   
 $P_i = 1.0\text{ W}$   
 $C_i = 14.8\text{ nF}$   
 $L_i = 0$

#### RTD Connection Parameters

$U_O = 30\text{ V}$   
 $I_O = 2.31\text{ mA}$   
 $P_O = 17.32\text{ mW}$   
 $C_i = 0$   
 $L_i = 0$

#### Special conditions for safe use (x)

If the equipment is fitted with the optional 90 V transient suppressor, it is incapable of withstanding the 500 V isolation from earth test and this must be taken into account during installation.

N1 ATEX Type n  
 Certificate No.: Baseefa 08ATEX0065X  II 3 G  
 Ex nA nL IIC T4 ( $-40^{\circ}\text{C} \leq T_{\text{amb}} \leq +70^{\circ}\text{C}$ )  
 $U_i = 45 \text{ Vdc max}$   
 $U_0 = 30 \text{ V (RTD Connection)}$   
 IP66  
**CE**

#### Special conditions for safe use (x)

If fitted with a 90 V transient suppressor, the equipment is not capable of withstanding the 500 V electrical strength test as defined in Clause 6.8.1 of EN 60079-15:2005. This must be taken into account during installation.

ND ATEX Dust  
 Certificate No.: BAS01ATEX1374X  II 1 D  
 Ex tD A20 IP66 T105°C ( $-20^{\circ}\text{C} \leq T_{\text{amb}} \leq 85^{\circ}\text{C}$ )  
 IP66  
**CE** 1180

#### Special conditions for safe use (x)

1. Cable entries must be used which maintain the ingress protection of the enclosure to at least IP66.
2. Unused cable entries must be filled with suitable blanking plugs which maintain the ingress protection of the enclosure to at least IP66.
3. Cable entries and blanking plugs must be suitable for the ambient temperature range of the apparatus and capable of withstanding a 7J impact test.
4. The 3051S SuperModule must be securely screwed in place to maintain the ingress protection of the enclosure.

E1 ATEX Flameproof  
 Certificate No.: KEMA00ATEX2143X  II 1/2 G  
 Ex d IIC T6 ( $-50^{\circ}\text{C} \leq T_{\text{amb}} \leq 65^{\circ}\text{C}$ )  
 Ex d IIC T5 ( $-50^{\circ}\text{C} \leq T_{\text{amb}} \leq 80^{\circ}\text{C}$ )  
 $V_{\text{max}} = 42.4\text{V}$   
**CE** 1180

#### Special conditions for safe use (x)

1. The Ex d blanking elements, cable glands and wiring shall be suitable for a temperature of  $90^{\circ}\text{C}$ .
2. Transmitter Model 3051S contains a thin wall diaphragm. Installation, maintenance and use shall take into account the environmental conditions to which the diaphragm will be subjected. The manufacturer's instructions for maintenance shall be followed in detail to assure safety during its expected lifetime.
3. In case of repair, contact the manufacturer for information on the dimensions of the flameproof joints.

#### Japanese Certifications

E4 TIIS Flameproof  
 Ex d IIC T6  
 TC19070 With RTD and LCD Display  
 TC19071 With LCD  
 TC19072 RTD without LCD Display  
 TC19073 Without LCD

#### Brazil Certifications

E2 INMETRO Flameproof  
 Certificate number: NCC 5886/09X  
 BR-Ex d IIC T5/T6 Gb IP66W  
 T6 ( $-50^{\circ}\text{C}$  to  $65^{\circ}\text{C}$ )  
 T5 ( $-50^{\circ}\text{C}$  to  $80^{\circ}\text{C}$ )

#### Special conditions for safe use (x)

1. Appropriate ex d blanking plugs, cable glands, and wiring needs to be suitable for a temperature of  $90^{\circ}\text{C}$ .
2. This device contains a thin wall diaphragm. Installation, maintenance, and use shall take into account the environmental conditions to which the diaphragm will be subjected. The manufacturer's instructions for maintenance shall be followed in detail to assure safety during its expected lifetime.
3. The 3051SMV does not comply with the requirements of IEC 60079-1 Clause 5.2, Table 2 for all joints. Contact Emerson Process Management for information on the dimensions of flameproof joints.

I2 INMETRO Intrinsic Safety  
 Certificate No. NCC 5870/09X  
 BR-Ex ia IIC T4 ( $-60^{\circ}\text{C} \leq T_a \leq 70^{\circ}\text{C}$ ) Ga IP66W

#### Field Connection / 4-20 mA Loop Parameters

$U_i = 30 \text{ V}$   
 $I_i = 300 \text{ mA}$   
 $P_i = 1.0 \text{ W}$   
 $C_i = 14.8 \text{ nF}$   
 $L_i = 0$

#### RTD Connection Parameters

$U_0 = 30 \text{ V}$   
 $I_0 = 2.31 \text{ mA}$   
 $P_0 = 17.32 \text{ mW}$   
 $C_i = 0$   
 $L_i = 0$

#### Special conditions for safe use (x)

If the equipment is fitted with the optional 90 V transient suppressor, it is incapable of withstanding the 500 V isolation from earth test and this must be taken into account during installation.

**China Certifications**

- E3 China Flameproof  
NEPSI Certificate No.: GYJ091001  
Ex d IIC T5/T6  
T6 (-50 °C to 65 °C)  
T5 (-50 °C to 80 °C)

**NOTE**

Refer to Appendix B of the 3051S MultiVariable Reference Manual (document number 00809-0100-4803) for Special Conditions for Safe Use.

- I3 China Intrinsic Safety  
NEPSI Certificate No.: GYJ091002X  
Ex ia IIC T4 (-60 °C to 70 °C)

**Field Connection / 4-20 mA Loop Parameters**

$$U_i = 30 \text{ V}$$

$$I_i = 300 \text{ mA}$$

$$P_i = 1.0 \text{ W}$$

$$C_i = 14.8 \text{ nF}$$

$$L_i = 0$$

**RTD Connection Parameters**

$$U_O = 30 \text{ V}$$

$$I_O = 2.31 \text{ mA}$$

$$P_O = 17.32 \text{ mW}$$

$$C_i = 0$$

$$L_i = 0$$

**NOTE**

Refer to Appendix B of the 3051S MultiVariable Reference Manual (document number 00809-0100-4803) for Special Conditions for Safe Use.

**IECEX Certifications**

- I7 IECEx Intrinsic Safety  
Certificate No.: IECExBAS08.0025X  
Ex ia IIC T4 (-60 °C ≤ T<sub>a</sub> ≤ 70 °C)  
IP66

**Field Connection / 4-20 mA Loop Parameters**

$$U_i = 30 \text{ V}$$

$$I_i = 300 \text{ mA}$$

$$P_i = 1.0 \text{ W}$$

$$C_i = 14.8 \text{ nF}$$

$$L_i = 0$$

**RTD Connection Parameters**

$$U_O = 30 \text{ V}$$

$$I_O = 2.31 \text{ mA}$$

$$P_O = 17.32 \text{ mW}$$

$$C_i = 0$$

$$L_i = 0$$

**Special conditions for safe use (x)**

If the equipment is fitted with the optional 90 V transient suppressor, it is incapable of withstanding the 500 V isolation from earth test and this must be taken into account during installation.

- N7 IECEx Type n  
Certificate No.: IECExBAS08.0026X  
Ex nAnL IIC T4 (-40 °C ≤ T<sub>a</sub> ≤ 70 °C)  
U<sub>i</sub> = 45 Vdc MAX  
U<sub>O</sub> = 30 V (RTD Connection)  
IP66

**Special conditions for safe use (x)**

If fitted with a 90 V transient suppressor, the equipment is not capable of withstanding the 500 V electrical strength test as defined in Clause 6.8.1 of EN 60079-15:2005. This must be taken into account during installation.

- E7 IECEx Flameproof  
Certificate No.: IECExKEM08.0010X  
Ex d IIC T6 (-50 °C ≤ T<sub>amb</sub> ≤ 65 °C)  
Ex d IIC T5 (-50 °C ≤ T<sub>amb</sub> ≤ 80 °C)

**Special conditions for safe use (x)**

1. The Ex d blanking elements, cable glands and wiring shall be suitable for a temperature of 90 °C.
2. Transmitter Model 3051S contains a thin wall diaphragm. Installation, maintenance and use shall take into account the environmental conditions to which the diaphragm will be subjected. The manufacturer's instructions for maintenance shall be followed in detail to assure safety during its expected lifetime.
3. In case of repair, contact the manufacturer for information on the dimensions of the flameproof joints.

**Combinations of Certifications**

Stainless steel certification tag is provided when optional approval is specified. Once a device labeled with multiple approval types is installed, it should not be reinstalled using any other approval types. Permanently mark the approval label to distinguish it from unused approval types.

- K1 Combination of E1, I1, N1, and ND  
K4 Combination of E4 and I4  
K5 Combination of E5 and I5  
K6 Combination of E6 and I6  
K7 Combination of E7, I7, and N7  
KA Combination of E1, E6, I1, and I6  
KB Combination of E5, E6, I5, and I6  
KC Combination of E5, E1, I5, and I1  
KD Combination of E5, E6, E1, I5, I6, and I1

# 3051SF Measurement Type D Certifications

## Approved manufacturing locations

Rosemount Inc. — Chanhassen, Minnesota USA  
 Emerson Process Management GmbH & Co. — Wessling, Germany  
 Emerson Process Management Asia Pacific Private Limited — Singapore  
 Beijing Rosemount Far East Instrument Co., LTD — Beijing, China  
 Emerson Process Management LTDA — Sorocaba, Brazil  
 Emerson Process Management (India) Pvt. Ltd. — Mumbai, India  
 Emerson Process Management, Emerson FZE — Dubai, United Arab Emirates

## Ordinary location certification for FM

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

## European directive Information

The EC declaration of conformity for all applicable European directives for this product can be found at [www.rosemount.com](http://www.rosemount.com). A hard copy may be obtained by contacting an Emerson Process Management representative.

### ATEX Directive (94/9/EC)

Emerson Process Management complies with the ATEX Directive.

### European Pressure Equipment Directive (PED) (97/23/EC)

Models 3051S\_CA4; 3051S\_CD2, 3, 4, 5; (also with P9 option)

Pressure Transmitters — QS Certificate of Assessment - EC No. 59552-2009-CE-HOU-DNV, Module H Conformity Assessment

All other Model 3051S Pressure Transmitters

— Sound Engineering Practice

Transmitter Attachments: Diaphragm Seal - Process Flange - Manifold — Sound Engineering Practice

Primary Elements, Flowmeter

— See appropriate Primary Element QIG

### Electro Magnetic Compatibility (EMC) (2004/108/EC)

EN 61326-1:2006

EN 61326-2-3:2006

## HART & FOUNDATION Fieldbus

## Hazardous Locations Certifications

### North American Certifications

#### FM Approvals

- E5 Explosion-proof for Class I, Division 1, Groups B, C, and D, T5 ( $T_a = 85^\circ\text{C}$ ); Dust Ignition-proof for Class II and Class III, Division 1, Groups E, F, and G, T5 ( $T_a = 85^\circ\text{C}$ ); hazardous locations; enclosure Type 4X, conduit seal not required when installed according to Rosemount drawing 03151-1003.
- I5/IE Intrinsically Safe for use in Class I, Division 1, Groups A, B, C, and D, T4 ( $T_a = 70^\circ\text{C}$  for output options A or X;  $T_a = 60^\circ\text{C}$  for output option F); Class II, Division 1, Groups E, F, and G; Class III, Division 1; Class I, Zone 0 AEx ia IIC T4 ( $T_a = 70^\circ\text{C}$  for output options A or X;  $T_a = 60^\circ\text{C}$  for output option F) when connected in accordance with Rosemount drawing 03151-1006; Non-Incendive for Class I, Division 2, Groups A, B, C, and D; T4 ( $T_a = 70^\circ\text{C}$  for output options A or X;  $T_a = 60^\circ\text{C}$  for output option F) Enclosure Type 4X  
 For entity parameters see control drawing 03151-1006.

### Canadian Standards Association (CSA)

All CSA hazardous approved transmitters are certified per ANSI/ISA 12.27.01-2003.

- E6 Explosion-proof for Class I, Division 1, Groups B, C, and D; Dust Ignition-proof for Class II and Class III, Division 1, Groups E, F, and G; suitable for Class I, Division 2, Groups A, B, C, and D, when installed per Rosemount drawing 03151-1013, CSA Enclosure Type 4X; conduit seal not required; Dual Seal.
- I6/IF Intrinsically Safe for Class I, Division 1, Groups A, B, C, and D when connected in accordance with Rosemount drawings 03151-1016; Dual Seal.  
 For entity parameters see control drawing 03151-1016.

**European Certifications****I1/IA ATEX Intrinsic Safety**

Certificate No.: BAS01ATEX1303X  II 1 G  
 Ex ia IIC T4 ( $T_a = -60\text{ °C}$  to  $70\text{ °C}$ ) -HART/Remote  
 Display/Quick Connect/HART Diagnostics  
 Ex ia IIC T4 ( $T_a = -60\text{ °C}$  to  $70\text{ °C}$ ) -FOUNDATION fieldbus  
 Ex ia IIC T4 ( $T_a = -60\text{ °C}$  to  $40\text{ °C}$ ) -FISCO  
**CE** 1180

**Input parameters**

| Loop / Power                                | Groups                                                                              |
|---------------------------------------------|-------------------------------------------------------------------------------------|
| $U_i = 30\text{ V}$                         | HART / FOUNDATION fieldbus/ Remote<br>Display / Quick Connect / HART<br>Diagnostics |
| $U_i = 17.5\text{ V}$                       | FISCO                                                                               |
| $I_i = 300\text{ mA}$                       | HART / FOUNDATION fieldbus/ Remote<br>Display / Quick Connect / HART<br>Diagnostics |
| $I_i = 380\text{ mA}$                       | FISCO                                                                               |
| $P_i = 1.0\text{ W}$                        | HART / Remote Display / Quick Connect /<br>HART Diagnostics                         |
| $P_i = 1.3\text{ W}$                        | FOUNDATION fieldbus                                                                 |
| $P_i = 5.32\text{ W}$                       | FISCO                                                                               |
| $C_i = 30\text{ nF}$                        | SuperModule Platform                                                                |
| $C_i = 11.4\text{ nF}$                      | HART / HART Diagnostics / Quick Connect                                             |
| $C_i = 0$                                   | FOUNDATION fieldbus / Remote Display /<br>FISCO                                     |
| $L_i = 0$                                   | HART / FOUNDATION fieldbus/ FISCO / Quick<br>Connect / HART Diagnostics             |
| $L_i = 60\text{ }\mu\text{H}$               | Remote Display                                                                      |
| <b>RTD Assembly (3051SFx Option T or R)</b> |                                                                                     |
| $U_i = 5\text{ Vdc}$                        |                                                                                     |
| $I_i = 500\text{ mA}$                       |                                                                                     |
| $P_i = 0.63\text{ W}$                       |                                                                                     |

**Special conditions for safe use (x)**

- The apparatus, excluding the Types 3051 S-T and 3051 S-C (In-line and Coplanar SuperModule Platforms respectively), is not capable of withstanding the 500V test as defined in Clause 6.4.12 of EN 60079-11. This must be considered during installation.
- The terminal pins of the Types 3051 S-T and 3051 S-C must be protected to IP20 minimum.

**N1 ATEX Type n**

Certificate No.: BAS01ATEX3304X  II 3 G  
 Ex nL IIC T4 ( $T_a = -40\text{ °C}$  TO  $70\text{ °C}$ )  
 $U_i = 45\text{ Vdc max}$   
 $C_i = 11.4\text{ nF}$  (Transmitter Output Option A)  
 $C_i = 0$  (Transmitter Output Option F)  
 $L_i = 0$

For remote display,  $C_i = 0$ ,  $L_i = 60\text{ }\mu\text{H}$

IP66

**CE**

**Special conditions for safe use (x)**

The apparatus is not capable of withstanding the 500V insulation test required by Clause 6.8.1 of EN 60079-15. This must be taken into account when installing the apparatus.

**NOTE**

RTD Assembly is not included with the 3051SFx Type n Approval.

**ND ATEX Dust**

Certificate No.: BAS01ATEX1374X  II 1 D  
 Ex tD A20 IP66 T105°C ( $-20\text{ °C} \leq T_{amb} \leq 85\text{ °C}$ )  
 $V_{max} = 42.4\text{ volts max}$   
 IP66  
**CE** 1180

**Special conditions for safe use (x)**

- Cable entries must be used which maintain the ingress protection of the enclosure to at least IP66.
- Unused cable entries must be filled with suitable blanking plugs which maintain the ingress protection of the enclosure to at least IP66.
- Cable entries and blanking plugs must be suitable for the ambient range of the apparatus and capable of withstanding a 7J impact test.
- The 3051S SuperModule must be securely screwed in place to maintain the ingress protection of the enclosure. (The 3051S SuperModule must be properly assembled to the 3051S housing to maintain ingress protection.)

**E1 ATEX Flameproof**

Certificate No.: KEMA00ATEX2143X  II 1/2 G  
 Ex d IIC T6 ( $-50\text{ °C} \leq T_{amb} \leq 65\text{ °C}$ )  
 Ex d IIC T5 ( $-50\text{ °C} \leq T_{amb} \leq 80\text{ °C}$ )  
 $V_{max} = 42.4\text{ V}$   
**CE** 1180

**Special conditions for safe use (x)**

- The Ex d blanking elements, cable glands and wiring shall be suitable for a temperature of  $90\text{ °C}$ .
- The 3051S SuperModule contains a thin wall diaphragm. Installation, maintenance and use shall take into account the environmental conditions to which the diaphragm will be subjected. The manufacturer's instructions for maintenance shall be followed in detail to assure safety during its expected lifetime.
- In case of repair, contact the manufacturer for information on the dimensions of the flameproof joints.

### Japanese Certifications

E4 TIIS Flameproof  
Ex d IIC T6

| Certificate | Description                                                          |
|-------------|----------------------------------------------------------------------|
| TC15682     | Coplanar with Junction Box Housing                                   |
| TC15683     | Coplanar with PlantWeb Housing                                       |
| TC15684     | Coplanar with PlantWeb Housing and LCD Display                       |
| TC15685     | In-Line SST with Junction Box Housing                                |
| TC15686     | In-Line Alloy C-276 with Junction Box Housing                        |
| TC15687     | In-Line SST with PlantWeb Housing                                    |
| TC15688     | In-Line Alloy C-276 with PlantWeb Housing                            |
| TC15689     | In-Line SST with PlantWeb Housing and LCD Display                    |
| TC15690     | In-Line Alloy C-276 with PlantWeb Housing and LCD Display            |
| TC17102     | Remote Display                                                       |
| TC17099     | 3051SFA/C/P SST/Alloy C-276 with PlantWeb Housing and LCD Display    |
| TC17100     | 3051SFA/C/P SST/Alloy C-276 with PlantWeb Housing and Remote Display |
| TC17101     | 3051SFA/C/P SST/Alloy C-276 with Junction Box Housing                |

### China Certifications

E3 China Flameproof, Dust Ignition-proof  
NEPSI Certificate No. (manufactured in Chanhassen, MN): GYJ091035  
Certificate No. (manufactured in Beijing, China): GYJ06366  
Certificate No. (manufactured in Singapore): GYJ06364  
Certificate No. (3051SFx RTC, BMMC, SMMC): GYJ071086  
Ex d IIB+H<sub>2</sub> T3~T5  
DIP A21 T<sub>A</sub> T3~T5 IP66

#### NOTE

Refer to Appendix B of the 3051S Reference Manual (document number 00809-0100-4801) for Special Conditions for Safe Use.

I3 China Intrinsic Safety, Dust Ignition-proof  
NEPSI Certificate No. (manufactured in Chanhassen, MN): GYJ081078  
Certificate No. (manufactured in Beijing, China): GYJ06367  
Certificate No. (manufactured in Singapore): GYJ06365  
Certificate No. (3051SFx RTC, BMMC, SMMC): GYJ071293  
Ex ia IIC T4  
DIP A21 T<sub>A</sub> T4 IP66

#### NOTE

Refer to Appendix B of the 3051S Reference Manual (document number 00809-0100-4801) for Special Conditions for Safe Use.

### Input Parameters

| Loop / Power                                | Groups                                                                         |
|---------------------------------------------|--------------------------------------------------------------------------------|
| $U_i = 30 \text{ V}$                        | HART / FOUNDATION fieldbus / Remote Display / Quick Connect / HART Diagnostics |
| $I_i = 300 \text{ mA}$                      | HART / FOUNDATION fieldbus / Remote Display / Quick Connect / HART Diagnostics |
| $P_i = 1.0 \text{ W}$                       | HART / Remote Display / Quick Connect / HART Diagnostics                       |
| $P_i = 1.3 \text{ W}$                       | FOUNDATION fieldbus                                                            |
| $C_i = 38 \text{ nF}$                       | SuperModule Platform                                                           |
| $C_i = 11.4 \text{ nF}$                     | HART / HART Diagnostics / Quick Connect                                        |
| $C_i = 0$                                   | FOUNDATION fieldbus / Remote Display                                           |
| $L_i = 0$                                   | SuperModule Platform / FOUNDATION fieldbus                                     |
| $L_i = 2.4 \mu\text{H}$                     | HART / Quick Connect / HART Diagnostics                                        |
| $L_i = 58.2 \mu\text{H}$                    | Remote Display                                                                 |
| <b>RTD Assembly (3051SFx Option T or R)</b> |                                                                                |
| $U_i = 5 \text{ Vdc}$                       |                                                                                |
| $I_i = 500 \text{ mA}$                      |                                                                                |
| $P_i = 0.63 \text{ W}$                      |                                                                                |

N3 China Type n - Energy Limited  
NEPSI Certificate No.: GYJ101112X  
Ex nL IIC T5 (-40 °C □ Ta □ 70 °C)  
IP66

| Loop / Power            | Transmitter Output                        |
|-------------------------|-------------------------------------------|
| $U_i = 30 \text{ V}$    | HART / FOUNDATION fieldbus                |
| $I_i = 300 \text{ mA}$  | HART / FOUNDATION fieldbus                |
| $P_i = 1.0 \text{ W}$   | HART                                      |
| $P_i = 1.3 \text{ W}$   | FOUNDATION fieldbus                       |
| $C_i = 11.4 \text{ nF}$ | HART                                      |
| $C_i = 0 \text{ nF}$    | FOUNDATION fieldbus                       |
| $L_i = 0 \mu\text{H}$   | HART <sup>(1)</sup> / FOUNDATION fieldbus |

(1) For remote meter option (M7, M8, M9),  $L_i = 60 \mu\text{H}$ .

#### NOTE

Refer to Appendix B of the 3051S Reference Manual (document number 00809-0100-4801) for Special Conditions for Safe Use.

**Brazil Certifications****I2 INMETRO Intrinsic Safety**

Certificate number: CEPEL-EX-0722/05X  
(manufacturing in Chanhassen, MN and Singapore)  
Certificate number: CEPEL-EX-1414/07X  
(manufacturing in Brazil)  
INMETRO Marking: BR-Ex ia IIC T4 IP66W

**Special conditions for safe use (x)**

The apparatus, excluding the Types 3051S-T and 3051S-C (In-line and Coplanar SuperModule Platforms respectively), is not capable of withstanding the 500V test as defined in Clause 6.4.12 of IEC60079-11. This must be considered during installation.

**E2 INMETRO Flameproof**

Certificate number: CEPEL-EX-140/2003X  
(manufacturing in Chanhassen, MN and Singapore)  
Certificate number: CEPEL-EX-1413/07X  
(manufacturing in Brazil)  
INMETRO Marking: BR-Ex d IIC T5/T6 IP66W

**Special conditions for safe use (x)**

1. This device contains a thin wall diaphragm. Installation, maintenance, and use shall take into account the environmental conditions to which the diaphragm will be subjected. The manufacturer's instructions for installation and maintenance shall be followed in detail to assure safety during its expected lifetime.
2. For ambient temperature above 60 °C, cable wiring must have minimum isolation temperature of 90 °C, to be in accordance to equipment operation temperature.
3. The accessory of cable entries or conduit must be certified as flameproof and needs to be suitable for use conditions.
4. Where electrical entry is via conduit, the required sealing device must be assembled immediately close to enclosure.

**IECEx Certifications****E7 IECEx Flameproof and Dust (each listed separately)**

IECEx Flameproof  
Certificate No.: IECExKEM08.0010X  
Ex d IIC T5 or T6 Ga/Gb  
T6 (-50 °C ≤ T<sub>amb</sub> ≤ 65 °C)  
T5 (-50 °C ≤ T<sub>amb</sub> ≤ 80 °C)  
V<sub>max</sub> = 42.4V

**Special conditions for safe use (x)**

1. The Ex d blanking elements, cable glands and wiring shall be suitable for a temperature of 90 °C.
2. The 3051S SuperModule contains a thin wall diaphragm. Installation, maintenance and use shall take into account the environmental conditions to which the diaphragm will be subjected. The manufacturer's instructions for maintenance shall be followed in detail to assure safety during its expected lifetime.
3. In case of repair, contact the manufacturer for information on the dimensions of the flameproof joints.

**IECEx Dust**

Certificate No. IECExBAS09.0014X  
Ex tD A20 IP66 T105 °C (-20 °C ≤ T<sub>a</sub> ≤ 85 °C)  
V<sub>max</sub> = 42.4 V  
A = 22 mA  
IP66

**Special conditions for safe use (x)**

1. Cable entries must be used which maintain the ingress protection of the enclosure to at least IP66.
2. Unused cable entries must be filled with suitable blanking plugs which maintain the ingress protection of the enclosure to at least IP66.
3. Cable entries and blanking plugs must be suitable for the ambient range of the apparatus and capable of withstanding a 7J impact test.
4. The 3051S SuperModule must be securely screwed in place to maintain the ingress protection of the enclosure. (The 3051S SuperModule must be properly assembled to the 3051S housing to maintain ingress protection.)

**I7/IG IECEx Intrinsic Safety**

Certificate No.: IECExBAS04.0017X  
Ex ia IIC T4 (T<sub>a</sub> = -60 °C to 70 °C) -HART/Remote Display/Quick Connect/HART Diagnostics  
Ex ia IIC T4 (T<sub>a</sub> = -60 °C to 70 °C) -FOUNDATION fieldbus  
Ex ia IIC T4 (T<sub>a</sub> = -60 °C to 40 °C) -FISCO  
IP66

**Input Parameters**

| Loop / Power            | Groups                                                                        |
|-------------------------|-------------------------------------------------------------------------------|
| U <sub>i</sub> = 30 V   | HART / FOUNDATION fieldbus/ Remote Display / Quick Connect / HART Diagnostics |
| U <sub>i</sub> = 17.5 V | FISCO                                                                         |
| I <sub>i</sub> = 300 mA | HART / FOUNDATION fieldbus/ Remote Display / Quick Connect / HART Diagnostics |
| I <sub>i</sub> = 380 mA | FISCO                                                                         |

**Input Parameters**

| Loop / Power                                | Groups                                                               |
|---------------------------------------------|----------------------------------------------------------------------|
| $P_i = 1.0 \text{ W}$                       | HART / Remote Display / Quick Connect / HART Diagnostics             |
| $P_i = 1.3 \text{ W}$                       | FOUNDATION fieldbus                                                  |
| $P_i = 5.32 \text{ W}$                      | FISCO                                                                |
| $C_i = 30 \text{ nF}$                       | SuperModule Platform                                                 |
| $C_i = 11.4 \text{ nF}$                     | HART / HART Diagnostics / Quick Connect                              |
| $C_i = 0$                                   | FOUNDATION fieldbus / Remote Display / FISCO                         |
| $L_i = 0$                                   | HART / FOUNDATION fieldbus/ FISCO / Quick Connect / HART Diagnostics |
| $L_i = 60 \mu \text{ H}$                    | Remote Display                                                       |
| <b>RTD Assembly (3051SFx Option T or R)</b> |                                                                      |
| $U_i = 5 \text{ Vdc}$                       |                                                                      |
| $I_i = 500 \text{ mA}$                      |                                                                      |
| $P_i = 0.63 \text{ W}$                      |                                                                      |

KB Combination of E5, I5, I6, and E6

KC Combination of E5, E1, I5, and I1

KD Combination of E5, I5, E6, I6, E1, and I1

**Special conditions for safe use (x)**

1. The 3051S HART 4-20 mA, 3051S FOUNDATION fieldbus, and 3051S FISCO are not capable of withstanding the 500V test as defined in clause 6.4.12 of IEC 60079-11. This must be taken into account during installation.
2. The terminal pins of the Types 3051S-T and 3051S-C must be protected to IP20 minimum.

N7 IECEx Type n  
 Certificate No.: IECExBAS04.0018X  
 Ex nC IIC T4 (-40 °C □ T<sub>a</sub> □ +70 °C)  
 IP66  
 Special conditions for safe use (x)  
 The apparatus is not capable of withstanding the 500 V insulation test required by Clause 8 of IEC 60079-15:1987.

**Combinations of Certifications**

Stainless steel certification tag is provided when optional approval is specified. Once a device labeled with multiple approval types is installed, it should not be reinstalled using any other approval types. Permanently mark the approval label to distinguish it from unused approval types.

- K1 Combination of E1, I1, N1, and ND
- K2 Combination of E2 and I2
- K5 Combination of E5 and I5
- K6 Combination of E6 and I6
- K7 Combination of E7, I7, and N7
- KA Combination of E1, I1, E6, and I6

## 3051SF Wireless Certifications

### Approved manufacturing locations

Rosemount Inc. — Chanhassen, Minnesota USA  
 Emerson Process Management GmbH & Co. — Wessling, Germany  
 Emerson Process Management Asia Pacific Private Limited — Singapore  
 Beijing Rosemount Far East Instrument Co., LTD — Beijing, China  
 Emerson Process Management LTDA — Sorocaba, Brazil  
 Emerson Process Management (India) Pvt. Ltd. — Mumbai, India

### Telecommunication compliance

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

### FCC and IC approvals

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

### Ordinary location certification for FM

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

### European directive information

The EC declaration of conformity for all applicable European directives for this product can be found at [www.rosemount.com](http://www.rosemount.com). A hard copy may be obtained by contacting an Emerson Process Management representative.

### ATEX Directive (94/9/EC)

Emerson Process Management complies with the ATEX Directive.

### European Pressure Equipment Directive (PED) (97/23/EC)

Models 3051S\_CA4; 3051S\_CD2, 3, 4, 5; (also with P9 option)  
 Pressure Transmitters — QS Certificate of Assessment -  
 EC No. 59552-2009-CE-HOU-DNV,  
 Module H Conformity Assessment  
 All other Model 3051S Pressure Transmitters

— Sound Engineering Practice

Transmitter Attachments: Diaphragm Seal - Process Flange -  
 Manifold — Sound Engineering Practice

Primary Elements, Flowmeter

— See appropriate Primary Element QIG

### Electro Magnetic Compatibility (EMC) (2004/108/EC)

EN 61326-1:2006

EN 61326-2-3:2006

### Radio and Telecommunications Terminal Equipment Directive (R&TTE)(1999/5/EC)

Emerson Process Management complies with the R&TTE Directive.

### Hazardous Locations Certifications

#### North American Certifications

##### Factory Mutual (FM) Approvals

- I5 FM Intrinsically Safe, Non-Incendive, and Dust Ignition-proof.  
 Intrinsically Safe for Class I/II/III, Division 1, Groups A, B, C, D, E, F, and G.  
 Zone Marking: Class I, Zone 0, AEx ia IIC  
 Temperature Codes T4 ( $T_{amb} = -50$  to  $70^{\circ}\text{C}$ )  
 Non-Incendive for Class I, Division 2, Groups A, B, C, and D.  
 Dust Ignition-proof for Class II/III, Division 1, Groups E, F, and G.  
 Ambient temperature limits:  $-50$  to  $85^{\circ}\text{C}$   
 For use with Rosemount SmartPower options 00753-9220-0001 only.  
 Enclosure Type 4X / IP66

#### CSA - Canadian Standards Association

##### Process Sealing

All CSA hazardous approved transmitters are certified per ANSI/ISA 12.27.01-2003.

- I6 CSA Intrinsically Safe  
 Intrinsically Safe for Class I, Division 1, Groups A, B, C, and D.  
 Temp Code T3C  
 Enclosure Type 4X / IP66  
 For use with Rosemount SmartPower options 00753-9220-0001 only.

### European Certifications

- I1 ATEX Intrinsic Safety  
 Certificate No.: BAS01ATEX1303X  II 1G  
 Ex ia IIC T4 (T<sub>a</sub> = -60 °C to 70 °C)  
 IP66  
 For use with Rosemount SmartPower options  
 00753-9220-0001 only.

#### Special conditions for safe use (x)

The surface resistivity of the antenna is greater than one gigaohm. To avoid electrostatic charge build-up, it must not be rubbed or cleaned with solvents or a dry cloth.

CE 1180

CE 

| Country  | Restriction                                                                                        |
|----------|----------------------------------------------------------------------------------------------------|
| Bulgaria | General authorization required for outdoor use and public service                                  |
| France   | Outdoor use limited to 10mW e.i.r.p.                                                               |
| Italy    | If used outside of own premises, general authorization is required.                                |
| Norway   | May be restricted in the geographical area within a radius of 20 km from the center of Ny-Alesund. |
| Romania  | Use on a secondary basis. Individual license required.                                             |

### IECEX Certifications

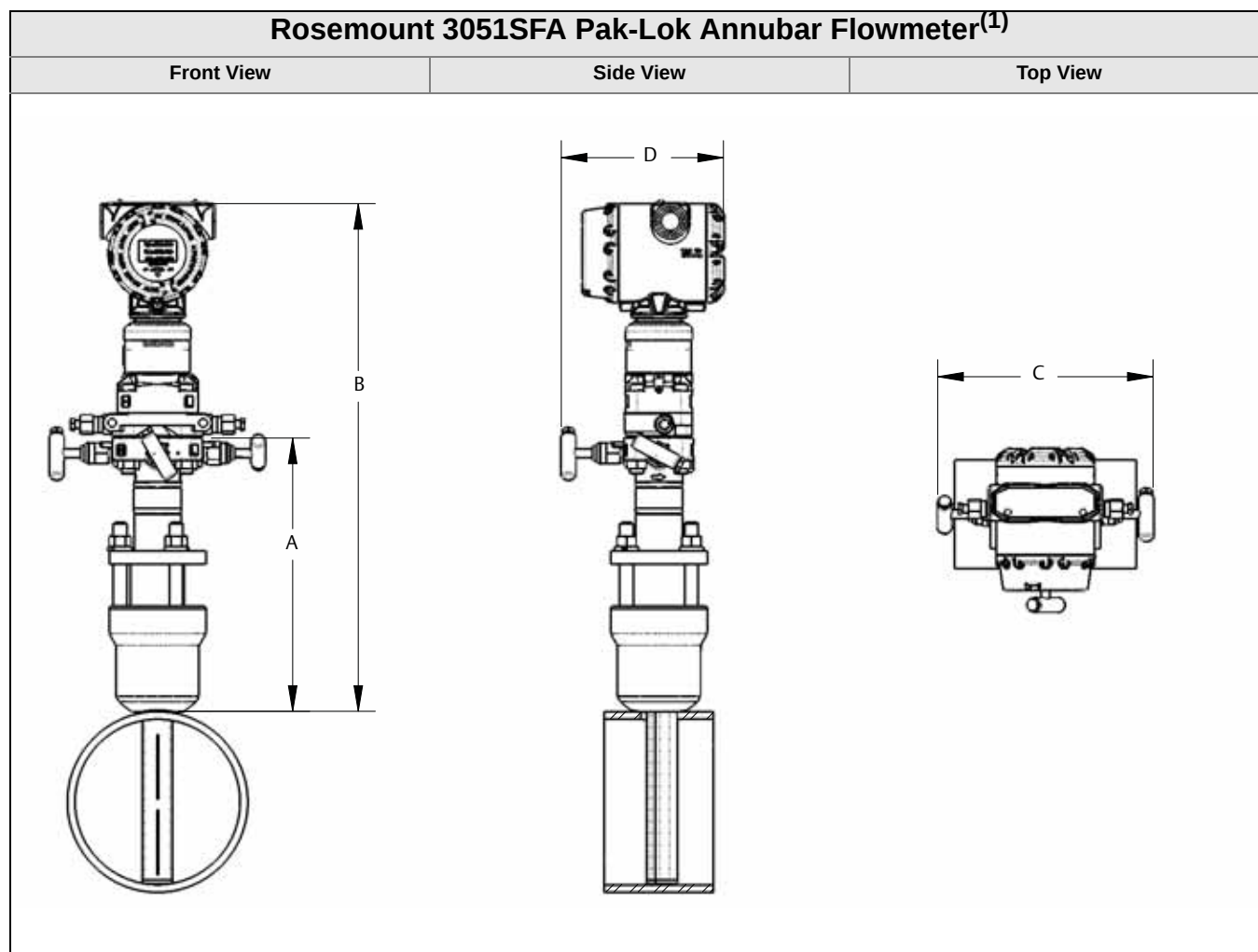
- I7 IECEx Intrinsic Safety  
 Certificate No.: IECEx BAS 04.0017X  
 Ex ia IIC T4 (T<sub>a</sub> = -60 °C to 70 °C)  
 For use with Rosemount SmartPower options  
 00753-9220-0001 only.  
 IP66

#### Special conditions for safe use (x)

The surface resistivity of the antenna is greater than one gigaohm. To avoid electrostatic charge build-up, it must not be rubbed or cleaned with solvents or a dry cloth.

# Dimensional Drawings

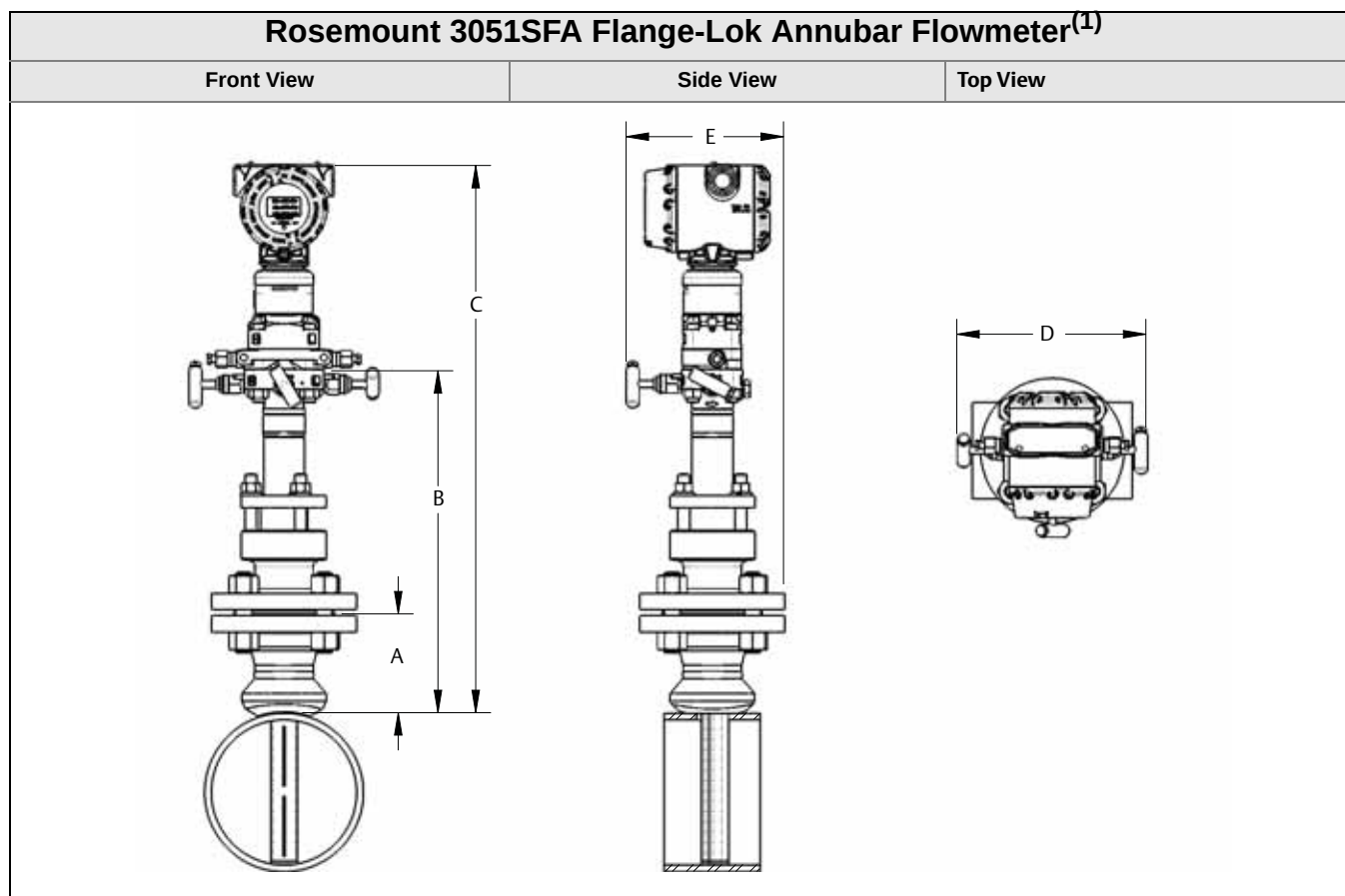
## 3051SF Dimensional Drawings



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

**Table 6. 3051SFA Pak-Lok Annubar Flowmeter Dimensional Data**

| Sensor Size                                   | A (Max)       | B (Max)       | C (Max)      | D (Max)      |
|-----------------------------------------------|---------------|---------------|--------------|--------------|
| 1                                             | 8.50 (215.9)  | 16.03 (407.2) | 9.00 (228.6) | 6.90 (175.3) |
| 2                                             | 11.00 (279.4) | 17.78 (451.6) | 9.00 (228.6) | 6.90 (175.3) |
| 3                                             | 12.00 (304.8) | 20.53 (521.5) | 9.00 (228.6) | 6.90 (175.3) |
| <i>Dimensions are in inches (millimeters)</i> |               |               |              |              |

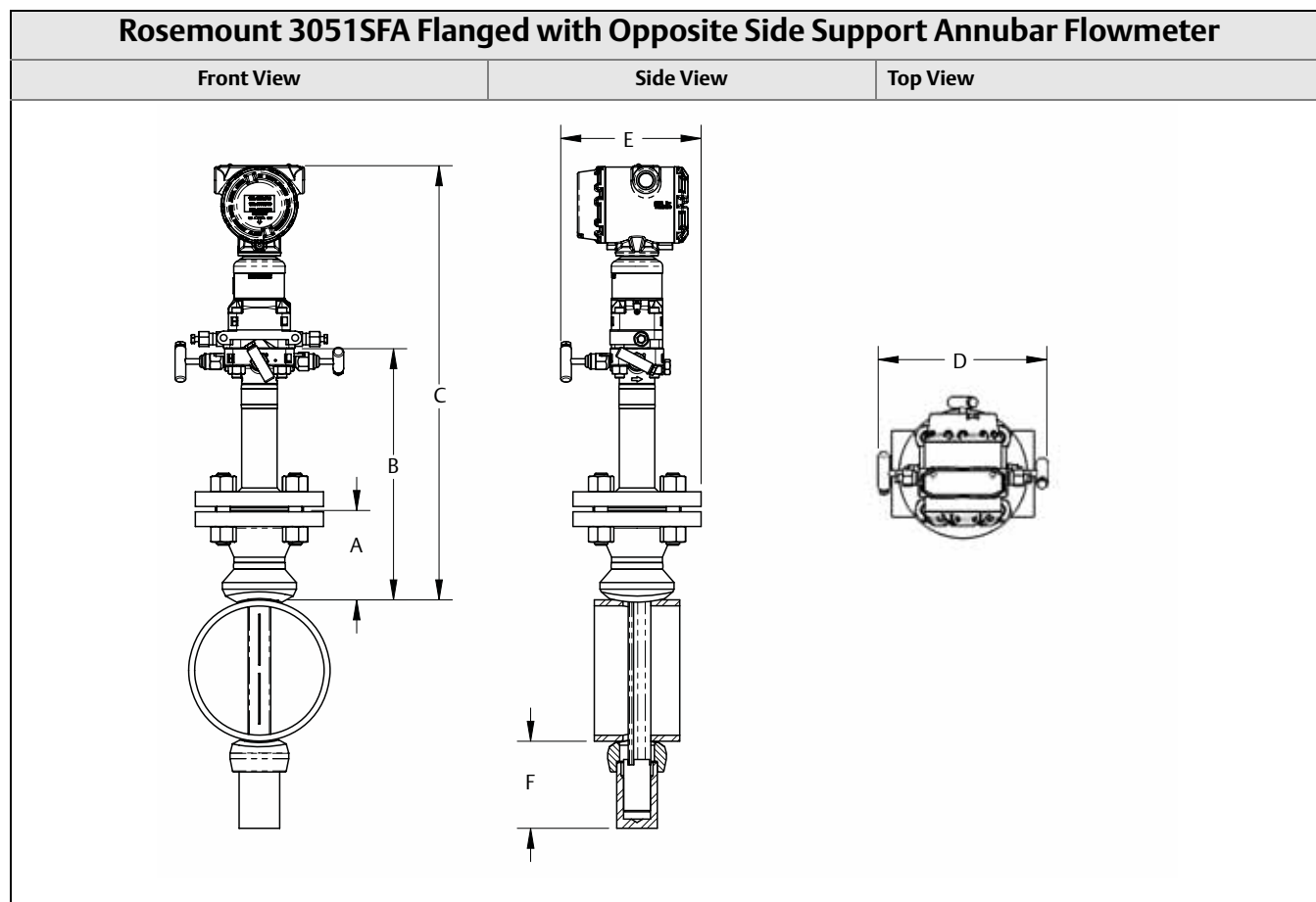


(1) The Flange-Lok Annubar model is available up to 600# ANSI (1440 psig at 100 °F (99 bar at 38 °C)).

**Table 7. 3051SFA Flange-Lok Annubar Flowmeter Dimensional Data**

| Sensor Size | Flange Size and Rating | A ± 0.125<br>(3.2) | B ± 0.25<br>(6.4) | C (Max)       | D (Max)      | E (Max)      |
|-------------|------------------------|--------------------|-------------------|---------------|--------------|--------------|
| 1           | 1½ – 150#              | 3.88 (98.6)        | 12.25 (311.2)     | 20.78 (527.8) | 9.00 (228.6) | 6.30 (160.0) |
| 1           | 1½ – 300#              | 4.13 (104.9)       | 12.25 (311.2)     | 20.78 (527.8) | 9.00 (228.6) | 6.86 (174.2) |
| 1           | 1½ – 600#              | 4.44 (112.8)       | 12.25 (311.2)     | 20.78 (527.8) | 9.00 (228.6) | 6.86 (174.2) |
| 1           | DN40/PN16              | 3.09 (78.5)        | 12.25 (311.2)     | 20.78 (527.8) | 9.00 (228.6) | 6.86 (174.2) |
| 1           | DN40/PN40              | 3.21 (81.5)        | 12.25 (311.2)     | 20.78 (527.8) | 9.00 (228.6) | 6.86 (174.2) |
| 1           | DN40/ PN100            | 3.88 (98.6)        | 12.25 (311.2)     | 20.78 (527.8) | 9.00 (228.6) | 6.86 (174.2) |
| 2           | 2 – 150#               | 4.13 (104.9)       | 14.25 (362.0)     | 22.78 (578.6) | 9.00 (228.6) | 6.80 (172.7) |
| 2           | 2 – 300#               | 4.38 (111.3)       | 14.25 (362.0)     | 22.78 (578.6) | 9.00 (228.6) | 7.05 (179.1) |
| 2           | 2 – 600#               | 4.75 (120.7)       | 14.25 (362.0)     | 22.78 (578.6) | 9.00 (228.6) | 7.05 (179.1) |
| 2           | DN50/PN16              | 3.40 (86.4)        | 14.25 (362.0)     | 22.78 (578.6) | 9.00 (228.6) | 7.05 (179.1) |
| 2           | DN50/PN40              | 3.52 (89.4)        | 14.25 (362.0)     | 22.78 (578.6) | 9.00 (228.6) | 7.05 (179.1) |
| 2           | DN50/ PN100            | 4.30 (109.2)       | 14.25 (362.0)     | 22.78 (578.6) | 9.00 (228.6) | 7.05 (179.1) |
| 3           | 3 – 150#               | 4.63 (117.6)       | 17.50 (444.5)     | 26.03 (661.2) | 9.00 (228.6) | 7.55 (191.8) |
| 3           | 3 – 300#               | 5.00 (127.0)       | 17.50 (444.5)     | 26.03 (661.2) | 9.00 (228.6) | 7.93 (201.3) |
| 3           | 3 – 600#               | 5.38 (136.7)       | 17.50 (444.5)     | 26.03 (661.2) | 9.00 (228.6) | 7.93 (201.3) |
| 3           | DN80/PN16              | 3.85 (97.8)        | 17.50 (444.5)     | 26.03 (661.2) | 9.00 (228.6) | 7.93 (201.3) |
| 3           | DN80/PN40              | 4.16 (105.7)       | 17.50 (444.5)     | 26.03 (661.2) | 9.00 (228.6) | 7.93 (201.3) |
| 3           | DN80/ PN100            | 4.95 (125.7)       | 17.50 (444.5)     | 26.03 (661.2) | 9.00 (228.6) | 7.93 (201.3) |

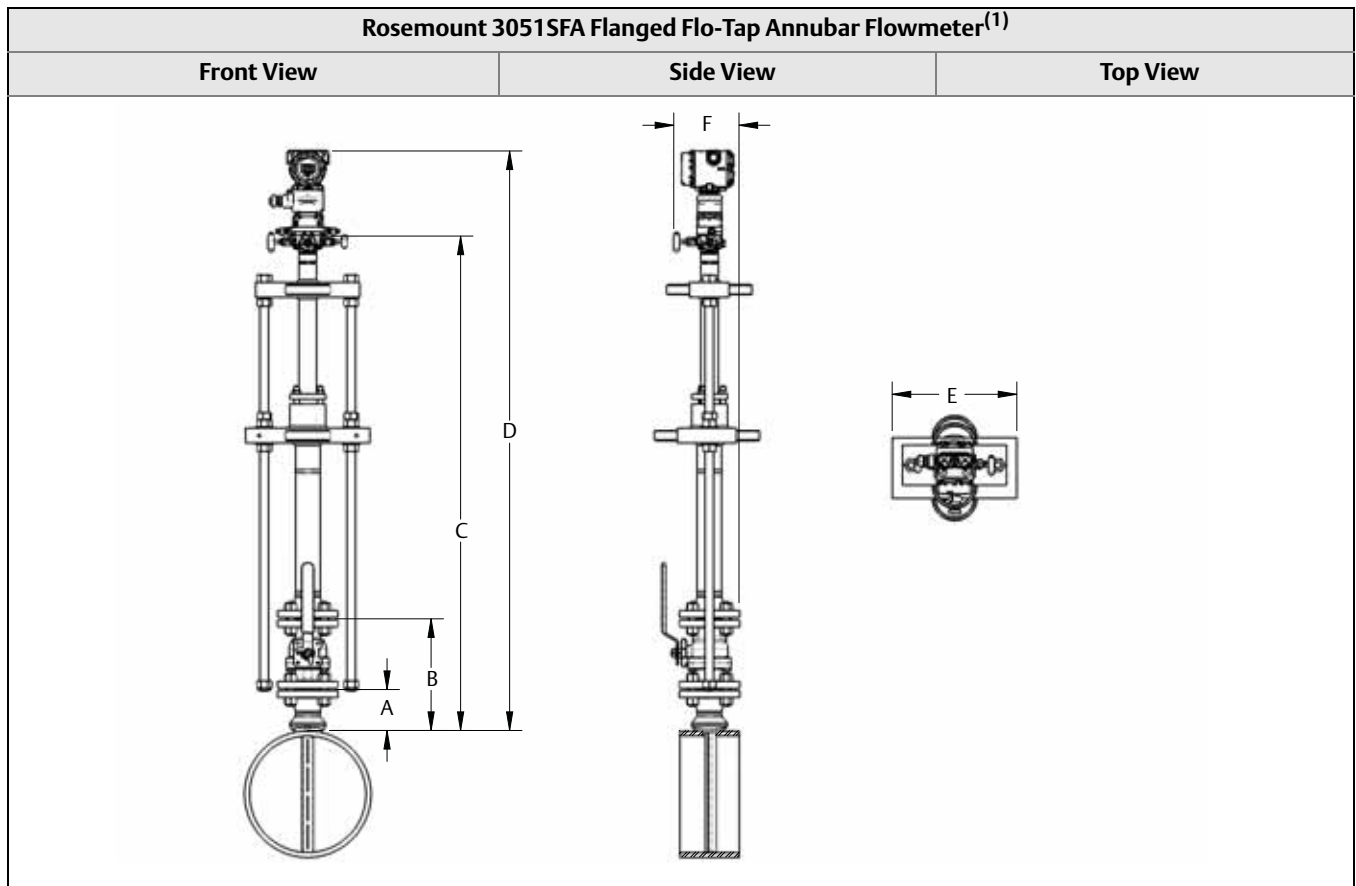
*Dimensions are in inches (millimeters)*

**Table 8. 3051SFA Flanged Annubar Flowmeter Dimensional Data**

| Sensor Size | Flange Size and Rating | A ± 0.125 (3.2) | B ± 0.25 (6.4) | C ± 0.25 (6.4) | D (Max)      | E (Max)      | F (Max)      |
|-------------|------------------------|-----------------|----------------|----------------|--------------|--------------|--------------|
| 1           | 1½ – 150#              | 3.88 (98.6)     | 11.00 (279.4)  | 19.53 (496.1)  | 9.00 (228.6) | 6.30 (160.0) | 3.50 (88.9)  |
| 1           | 1½ – 300#              | 4.13 (104.9)    | 11.00 (279.4)  | 19.53 (496.1)  | 9.00 (228.6) | 6.86 (174.2) | 3.50 (88.9)  |
| 1           | 1½ – 600#              | 4.44 (112.8)    | 11.00 (279.4)  | 19.53 (496.1)  | 9.00(228.6)  | 6.86 (174.2) | 3.50 (88.9)  |
| 1           | DN40/PN16              | 3.09 (78.5)     | 11.00 (279.4)  | 19.53 (496.1)  | 9.00 (228.6) | 6.86 (174.2) | 3.50 (88.9)  |
| 1           | DN40/PN40              | 3.21 (81.5)     | 11.00 (279.4)  | 19.53 (496.1)  | 9.00 (228.6) | 6.86 (174.2) | 3.50 (88.9)  |
| 1           | DN40/ PN100            | 3.88 (98.6)     | 11.00 (279.4)  | 19.53 (496.1)  | 9.00(228.6)  | 6.86 (174.2) | 3.50 (88.9)  |
| 1           | 1½ – 900#              | 4.94 (125.5)    | 9.31 (236.5)   | —              | —            | —            | 3.50 (88.9)  |
| 1           | 1½ – 1500#             | 4.94 (125.5)    | 9.31 (236.5)   | —              | —            | —            | 3.50 (88.9)  |
| 1           | 1½ – 2500#             | 6.76 (171.7)    | 11.63 (295.4)  | —              | —            | —            | 4.00 (101.6) |
| 2           | 2 – 150#               | 4.13 (104.9)    | 12.00 (304.8)  | 20.53 (521.5)  | 9.00 (228.6) | 6.80 (172.7) | 5.00 (127.0) |
| 2           | 2 – 300#               | 4.38 (111.3)    | 12.00 (304.8)  | 20.53 (521.5)  | 9.00 (228.6) | 7.05 (179.1) | 5.00 (127.0) |
| 2           | 2 – 600#               | 4.75 (120.7)    | 12.00 (304.8)  | 20.53 (521.5)  | 9.00 (228.6) | 7.05 (179.1) | 5.00 (127.0) |
| 2           | DN50/PN16              | 3.40 (86.4)     | 12.00 (304.8)  | 20.53 (521.5)  | 9.00 (228.6) | 7.05 (179.1) | 5.00 (127.0) |
| 2           | DN50/PN40              | 3.52 (89.4)     | 12.00 (304.8)  | 20.53 (521.5)  | 9.00 (228.6) | 7.05 (179.1) | 5.00 (127.0) |
| 2           | DN50/ PN100            | 4.30 (109.2)    | 12.00 (304.8)  | 20.53 (521.5)  | 9.00 (228.6) | 7.05 (179.1) | 5.00 (127.0) |
| 2           | 2 – 900#               | 5.88 (149.4)    | 10.50 (266.7)  | —              | —            | —            | 5.00 (127.0) |
| 2           | 2 – 1500#              | 5.88 (149.4)    | 10.50 (266.7)  | —              | —            | —            | 5.00 (127.0) |
| 2           | 3 – 2500#              | 9.88 (251.0)    | 15.63 (397.0)  | —              | —            | —            | 4.50 (114.3) |

**Table 8. 3051SFA Flanged Annubar Flowmeter Dimensional Data**

| Sensor Size                            | Flange Size and Rating | A ± 0.125 (3.2) | B ± 0.25 (6.4) | C ± 0.25 (6.4) | D (Max)      | E (Max)      | F (Max)      |
|----------------------------------------|------------------------|-----------------|----------------|----------------|--------------|--------------|--------------|
| 3                                      | 3 – 150#               | 4.63 (117.6)    | 13.50 (342.9)  | 22.03 (559.6)  | 9.00 (228.6) | 7.55 (191.8) | 4.00 (101.6) |
| 3                                      | 3 – 300#               | 5.00 (127.0)    | 13.50 (342.9)  | 22.03 (559.6)  | 9.00 (228.6) | 7.93 (201.3) | 4.00 (101.6) |
| 3                                      | 3 – 600#               | 5.38 (136.7)    | 13.50 (342.9)  | 22.03 (559.6)  | 9.00 (228.6) | 7.93 (201.3) | 4.00 (101.6) |
| 3                                      | DN80/PN16              | 3.85 (97.8)     | 13.50 (342.9)  | 22.03 (559.6)  | 9.00 (228.6) | 7.93 (201.3) | 4.00 (101.6) |
| 3                                      | DN80/PN40              | 4.16 (105.7)    | 13.50 (342.9)  | 22.03 (559.6)  | 9.00 (228.6) | 7.93 (201.3) | 4.00 (101.6) |
| 3                                      | DN80/PN100             | 4.95 (125.7)    | 13.50 (342.9)  | 22.03 (559.6)  | 9.00 (228.6) | 7.93 (201.3) | 4.00 (101.6) |
| 3                                      | 4 – 900#               | 8.19 (208.0)    | 13.06 (331.7)  | —              | —            | —            | 7.00 (177.8) |
| 3                                      | 4 – 1500#              | 8.56 (217.4)    | 13.81 (350.8)  | —              | —            | —            | 7.00 (177.8) |
| 3                                      | 4 – 2500#              | 11.19 (284.2)   | 17.31 (439.7)  | —              | —            | —            | 7.00 (177.8) |
| Dimensions are in inches (millimeters) |                        |                 |                |                |              |              |              |



(1) The Flanged Flo-Tap Annubar Flowmeter is available with either the manual or gear drive options.

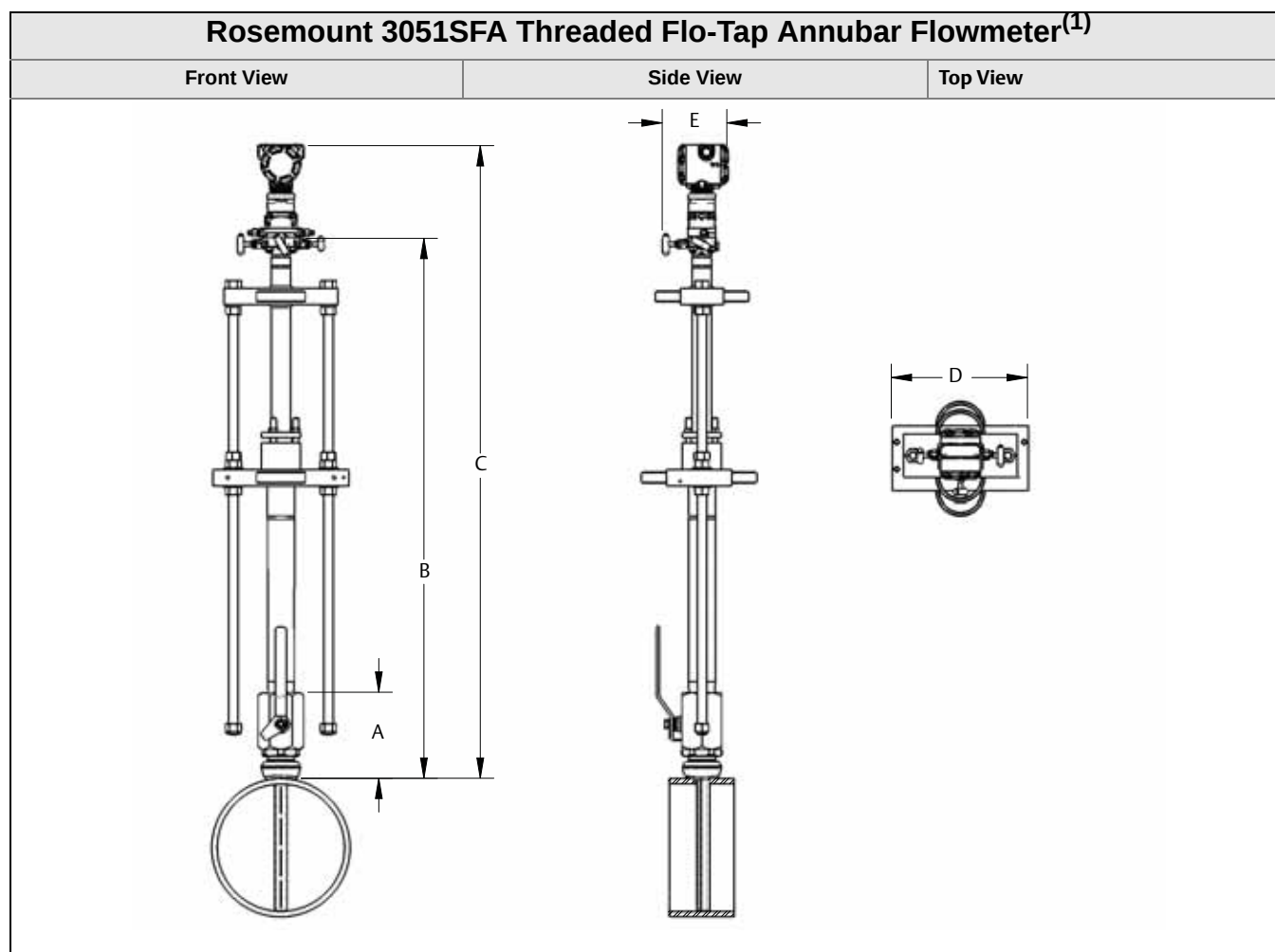
**Table 9. 3051SFA Flanged Flo-Tap Annubar Flowmeter Dimensional Data**

| Sensor Size | Flange Size and Rating    | A ± 0.125 (3.2) | B ± 0.25 (6.4) | C <sup>1</sup> (Max) (Gear Drive) | C <sup>1</sup> (Max) (Manual) | D (Max)          | E (Max)       | F (Max)      |
|-------------|---------------------------|-----------------|----------------|-----------------------------------|-------------------------------|------------------|---------------|--------------|
| 1           | 1 1/2 – 150#              | 3.88 (98.6)     | 10.50 (266.7)  | —                                 | 17.77 (451.4)                 | C + 8.53 (216.7) | 10.50 (266.7) | 6.30 (160.0) |
| 1           | 1 1/2 – 300#              | 4.13 (104.9)    | 11.75 (298.5)  | —                                 | 17.77 (451.4)                 | C + 8.53 (216.7) | 10.50 (266.7) | 6.86 (174.2) |
| 1           | 1 1/2 – 600#              | 4.44 (112.8)    | 14.06 (357.2)  | —                                 | 17.77 (451.4)                 | C + 8.53 (216.7) | 10.50 (266.7) | 6.86 (174.2) |
| 1           | DN40/PN16 <sup>(1)</sup>  | 3.09 (78.5)     | See Note 1.    | —                                 | 17.77 (451.4)                 | C + 8.53 (216.7) | 10.50 (266.7) | 6.86 (174.2) |
| 1           | DN40/PN40 <sup>(1)</sup>  | 3.21 (81.5)     | See Note 1.    | —                                 | 17.77 (451.4)                 | C + 8.53 (216.7) | 10.50 (266.7) | 6.86 (174.2) |
| 1           | DN40/PN100 <sup>(1)</sup> | 3.88 (98.6)     | See Note 1.    | —                                 | 17.77 (451.4)                 | C + 8.53 (216.7) | 10.50 (266.7) | 6.86 (174.2) |
| 2           | 2 – 150#                  | 4.13 (104.9)    | 11.25 (285.8)  | 24.44 (620.8)                     | 21.20 (538.5)                 | C + 8.53 (216.7) | 12.56 (319.0) | 6.80 (172.7) |

**Table 9. 3051SFA Flanged Flo-Tap Annubar Flowmeter Dimensional Data**

| Sensor Size                            | Flange Size and Rating    | A ± 0.125 (3.2) | B ± 0.25 (6.4) | C <sup>1</sup> (Max) (Gear Drive) | C <sup>1</sup> (Max) (Manual) | D (Max)          | E (Max)       | F (Max)      |
|----------------------------------------|---------------------------|-----------------|----------------|-----------------------------------|-------------------------------|------------------|---------------|--------------|
| 2                                      | 2 – 300#                  | 4.38 (111.3)    | 13.00 (330.2)  | 24.44 (620.8)                     | 21.20 (538.5)                 | C + 8.53 (216.7) | 12.56 (319.0) | 7.05 (179.1) |
| 2                                      | 2 – 600#                  | 4.75 (120.7)    | 16.38 (416.0)  | 24.44 (620.8)                     | 21.20 (538.5)                 | C + 8.53 (216.7) | 12.56 (319.0) | 7.05 (179.1) |
| 2                                      | DN50/PN16 <sup>(1)</sup>  | 3.40 (86.4)     | See Note 1.    | 24.44 (620.8)                     | 21.20 (538.5)                 | C + 8.53 (216.7) | 12.56 (319.0) | 7.05 (179.1) |
| 2                                      | DN50/PN40 <sup>(1)</sup>  | 3.52 (89.4)     | See Note 1.    | 24.44 (620.8)                     | 21.20 (538.5)                 | C + 8.53 (216.7) | 12.56 (319.0) | 7.05 (179.1) |
| 2                                      | DN50/PN100 <sup>(1)</sup> | 4.30 (109.2)    | See Note 1.    | 24.44 (620.8)                     | 21.20 (538.5)                 | C + 8.53 (216.7) | 12.56 (319.0) | 7.05 (179.1) |
| 3                                      | 3 – 150#                  | 4.63 (117.6)    | 12.75 (323.9)  | 26.37 (669.8)                     | 23.14 (587.8)                 | C + 8.53 (216.7) | 14.13 (358.9) | 7.55 (191.8) |
| 3                                      | 3 – 300#                  | 5.00 (127.0)    | 16.25 (412.8)  | 26.37 (669.8)                     | 23.14 (587.8)                 | C + 8.53 (216.7) | 14.13 (358.9) | 7.93 (201.3) |
| 3                                      | 3 – 600#                  | 5.38 (136.7)    | 19.50 (495.3)  | 26.37 (669.8)                     | 23.14 (587.8)                 | C + 8.53 (216.7) | 14.13 (358.9) | 7.93 (201.3) |
| 3                                      | DN80/PN16 <sup>(1)</sup>  | 3.85 (97.8)     | See Note 1.    | 26.37 (669.8)                     | 23.14 (587.8)                 | C + 8.53 (216.7) | 14.13 (358.9) | 7.93 (201.3) |
| 3                                      | DN80/PN40 <sup>(1)</sup>  | 4.16 (105.7)    | See Note 1.    | 26.37 (669.8)                     | 23.14 (587.8)                 | C + 8.53 (216.7) | 14.13 (358.9) | 7.93 (201.3) |
| 3                                      | DN80/PN100 <sup>(1)</sup> | 4.95 (125.7)    | See Note 1.    | 26.37 (669.8)                     | 23.14 (587.8)                 | C + 8.53 (216.7) | 14.13 (358.9) | 7.93 (201.3) |
| Dimensions are in inches (millimeters) |                           |                 |                |                                   |                               |                  |               |              |

(1) DIN Valves are not offered

Inserted, C Dimension = Pipe I.D. + Wall Thickness + B + C<sup>1</sup>Retracted, C Dimension = 2 x (Pipe I.D. + Wall Thickness + B) + C<sup>1</sup>

(1) The Threaded Flo-Tap Annubar Flowmeter is available with both the manual and gear drive options.

**Table 10. 3051SFA Threaded Flo-Tap Annubar Flowmeter Dimensional Data**

| Sensor Size                                                  | A ± 0.50<br>(12.7) | B <sup>I</sup> (Max)<br>(Gear Drive) | B <sup>I</sup> (Max)<br>(Manual) |                  | D (Max)       | E (Max)      |
|--------------------------------------------------------------|--------------------|--------------------------------------|----------------------------------|------------------|---------------|--------------|
|                                                              |                    |                                      |                                  | C (Max)          |               |              |
| 1                                                            | 7.51 (190.9)       | —                                    | 16.96 (430.8)                    | B + 8.53 (216.7) | 10.50 (266.7) | 6.90 (175.3) |
| 2                                                            | 8.17 (207.5)       | 23.62 (599.9)                        | 20.39 (517.9)                    | B + 8.53 (216.7) | 12.56 (319.0) | 6.90 (175.3) |
| <i>Sensor Size 3 is not available in a Threaded Flo-Tap.</i> |                    |                                      |                                  |                  |               |              |
| <i>Dimensions are in inches (millimeters)</i>                |                    |                                      |                                  |                  |               |              |

Inserted, B Dimension = Pipe I.D. + Wall Thickness + A + B<sup>I</sup>

Retracted, B Dimension = 2 x (Pipe I.D. + Wall Thickness + A) + B<sup>I</sup>

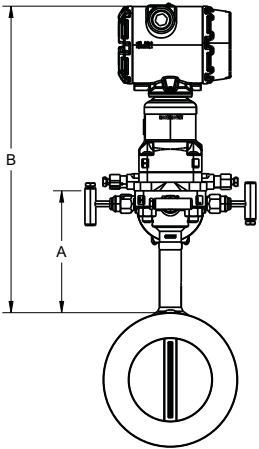
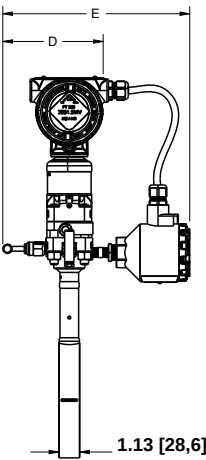
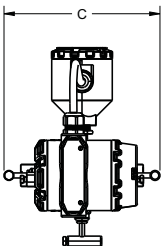
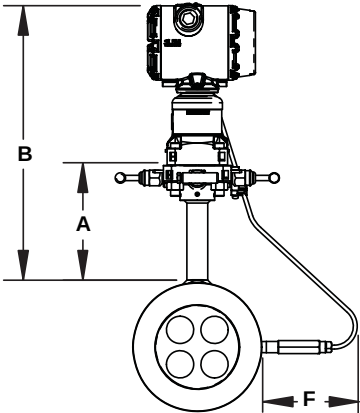
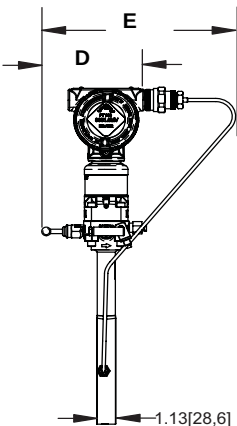
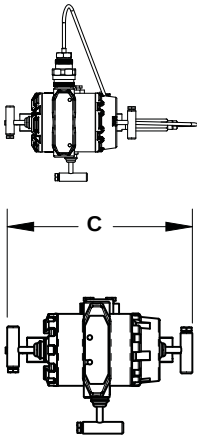
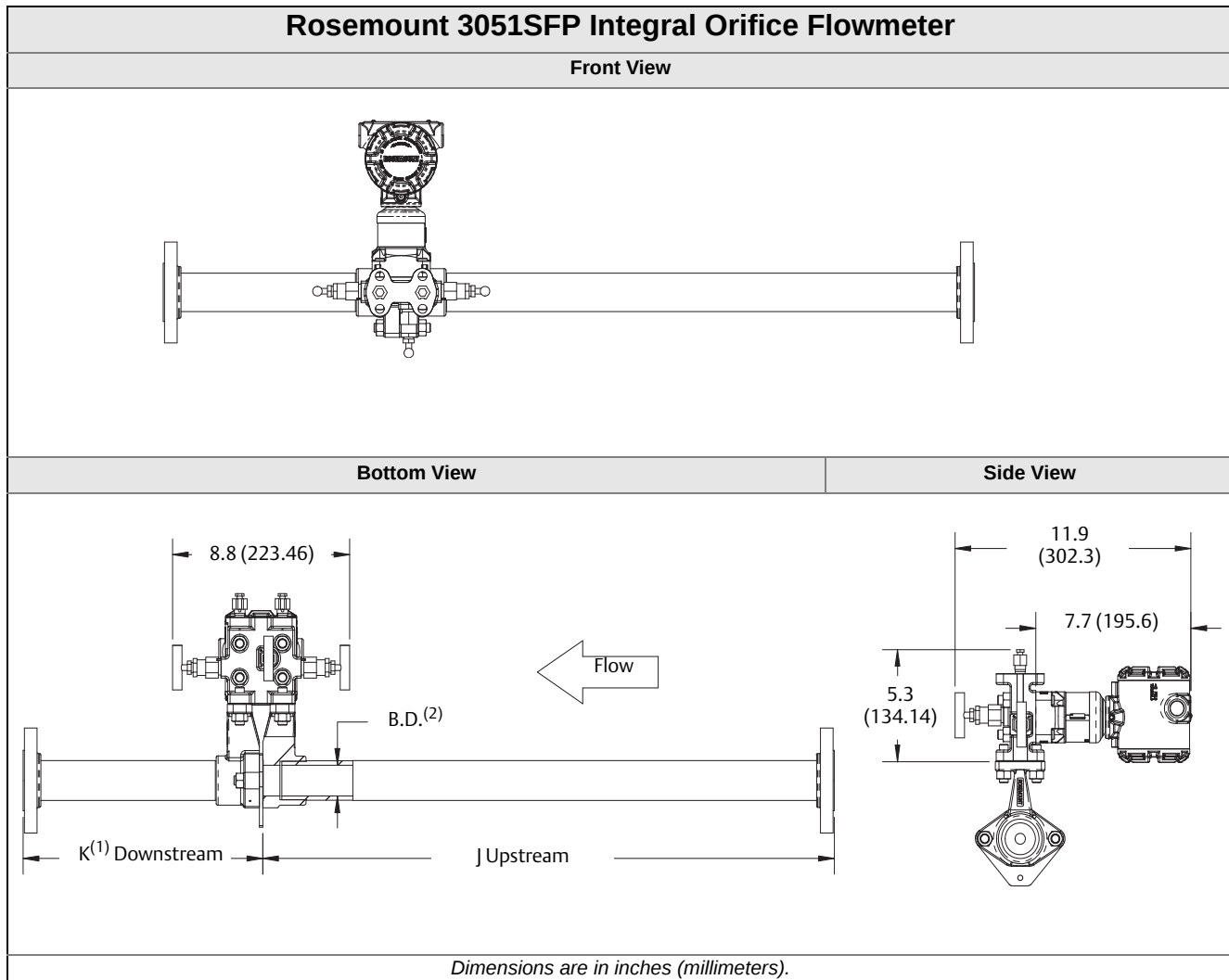
| Rosemount 3051SFC Compact Flowmeter                           |                                                                                    |                                                                                    |                                                                                      |
|---------------------------------------------------------------|------------------------------------------------------------------------------------|------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|
|                                                               | Front View                                                                         | Side View                                                                          | Top View                                                                             |
| Compact Flowmeter<br>(Primary Element Type code A)            |   |   |   |
| Conditioning Flowmeter<br>(Primary Element Type code C and P) |  |  |  |

Table 11. 3051SFC Compact Dimensional Data<sup>(1)</sup>

| Primary Element Type | A          | B                      | Transmitter Height | C                                        | D                                        | E                                            | F               |
|----------------------|------------|------------------------|--------------------|------------------------------------------|------------------------------------------|----------------------------------------------|-----------------|
| Type A               | 5.62 (143) | Transmitter Height + A | 8.53 (217)         | 7.75 (197) - closed<br>8.25 (210) - open | 6.00 (152) - closed<br>6.25 (159) - open | 10.0 (254)- closed<br>10.25 (260.3)-open     |                 |
| Type P and C         | 5.62 (143) | Transmitter Height + A | 7.70 (196)         | 7.75 (197) - closed<br>8.25 (210) - open | 6.00 (152) - closed<br>6.25 (159) - open | 10.2 (257.8) - closed<br>10.4 (264.2) - open | Max of 6.7 (71) |

(1) Measurement in inches (millimeters).

**Table 12. 3051SFP Integral Orifice Flowmeter Dimensional Data**

| Dimension                                                  | Line Size       |               |                   |
|------------------------------------------------------------|-----------------|---------------|-------------------|
|                                                            | 1/2-in. (15 mm) | 1-in. (25 mm) | 1 1/2-in. (40 mm) |
| J (Beveled/Threaded pipe ends)                             | 12.54 (318.4)   | 20.24 (514.0) | 28.44 (722.4)     |
| J (RF slip-on, RTJ slip-on, RF-DIN slip on)                | 12.62 (320.4)   | 20.32 (516.0) | 28.52 (724.4)     |
| J (RF 150#, weld neck)                                     | 14.37 (364.9)   | 22.37 (568.1) | 30.82 (782.9)     |
| J (RF 300#, weld neck)                                     | 14.56 (369.8)   | 22.63 (574.7) | 31.06 (789.0)     |
| J (RF 600#, weld neck)                                     | 14.81 (376.0)   | 22.88 (581.0) | 31.38 (797.1)     |
| K (Beveled/Threaded pipe ends)                             | 5.74 (145.7)    | 8.75 (222.2)  | 11.91 (302.6)     |
| K (RF slip-on, RTJ slip-on, RF-DIN slip on) <sup>(1)</sup> | 5.82 (147.8)    | 8.83 (224.2)  | 11.99 (304.6)     |
| K (RF 150#, weld neck)                                     | 7.57 (192.3)    | 10.88 (276.3) | 14.29 (363.1)     |
| K (RF 300#, weld neck)                                     | 7.76 (197.1)    | 11.14 (282.9) | 14.53 (369.2)     |
| K (RF 600#, weld neck)                                     | 8.01 (203.4)    | 11.39 (289.2) | 14.85 (377.2)     |
| B.D. (Bore Diameter)                                       | 0.664 (16.87)   | 1.097 (27.86) | 1.567 (39.80)     |

*Dimensions are in inches (millimeters).*

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

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