

Rosemount™ 2051 Pressure Transmitter and Rosemount 2051CF Series Flow Meter

with FOUNDATION™ Fieldbus Protocol



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1 About this guide

This guide provides basic guidelines for installing Rosemount 2051 Pressure Transmitters. It does not provide instructions for configuration, diagnostics, maintenance, service, troubleshooting, explosionproof, flameproof, or intrinsically safe (I.S.) installations. Refer to the [Rosemount 2051 Pressure Transmitter Reference Manual](#) for more instructions. This guide is also available electronically at Emerson.com.

1.1 Safety messages

▲ WARNING

Explosions could result in death or serious injury.

Installation of these transmitters in an explosive environment must be in accordance with the appropriate local, national, and international standards, codes, and practices. Review the approvals section of the [Rosemount 2051 Pressure Transmitter Reference Manual](#) for any restrictions associated with a safe installation.

In an explosion-proof/flameproof installation, do not remove the transmitter covers when power is applied to the transmitter.

Process leaks could result in death or serious injury.

To avoid process leaks, only use the O-ring designed to seal with the corresponding flange adapter.

Electrical shock could cause death or serious injury.

Avoid contact with the leads and terminals. High voltage that may be present on leads can cause electrical shock.

Conduit/cable entries

Unless marked, the conduit/cable entries in the housing use a ½–14 NPT thread form. Entries marked M20 are M20 × 1.5 thread form. On devices with multiple conduit entries, all entries will have the same thread form. Only use plugs, adapters, glands, or conduit with a compatible thread form when closing these entries.

⚠ WARNING**Physical access**

Unauthorized personnel may potentially cause significant damage to and/or misconfiguration of end users' equipment. This could be intentional or unintentional and needs to be protected against.

Physical security is an important part of any security program and fundamental in protecting your system. Restrict physical access by unauthorized personnel to protect end users' assets. This is true for all systems used within the facility.

⚠ WARNING

Refer to the *Product certifications* section of this Quick Start Guide documentation when using the RFID tag (option code Y3) for required installation conditions.

2 System readiness

Note

Before installing the transmitter, confirm the correct device driver is loaded on the host systems.

2.1 Confirm correct device driver

- Verify the correct device driver (DD/DTM™) is loaded on your systems to ensure proper communications.
- Download the correct device driver at your host vendor download site, [Software & Drivers](#), or [FieldCommGroup.org](#).

2.1.1 Device revisions and drivers

[Table 2-1](#) provides the information necessary to ensure you have the correct device driver and documentation for your device.

Table 2-1: Rosemount 2051 FOUNDATION™ Fieldbus device revisions and files

| Device revision (1) | Host | Device driver (DD) ⁽²⁾ | Obtain at | Device driver (DTM™) | Reference document |
|---------------------|---------|---|---------------------------------|-----------------------------|--|
| 2 | All | DD4: DD Rev 1 | FieldComm Group | Emerson.com | 00809-0200-4101 , Rev BA or newer |
| | All | DD5: DD Rev 1 | FieldComm Group | | |
| | Emerson | AMS Device Manager V 10.5 or higher: DD Rev 2 | Emerson.com | | |
| | Emerson | AMS Device Manager V 8 to 10.5: DD Rev 1 | Emerson.com | | |
| 1 | All | DD4: DD Rev 4 | FieldComm Group | Emerson.com | 00809-0200-4101 , Rev BA |
| | All | DD5: N/A | N/A | | |
| | Emerson | AMS Device Manager V 8 or higher: DD Rev 2 | Emerson.com | | |

(1) FOUNDATION Fieldbus device revision can be read using a FOUNDATION Fieldbus capable configuration tool.

- (2) *Device driver file names use device and DD revision. To access functionality, the correct device driver must be installed on your control and asset management hosts and on your configuration tools.*

2.1.2 Set up transmitter

Procedure

1. Install transmitter.
2. Fill out commissioning tag.
3. Rotate housing if necessary.
4. Set switches and software **Write Lock**.
5. Ground, wire, and power up.
6. Locate device.
7. Configure device.
8. Zero trim the transmitter.

3 Mounting the transmitter

⚠ WARNING

Process connection temperatures above +185 °F (+85 °C) require a limited ambient temperature, reduced by a 1:1.5 ratio.

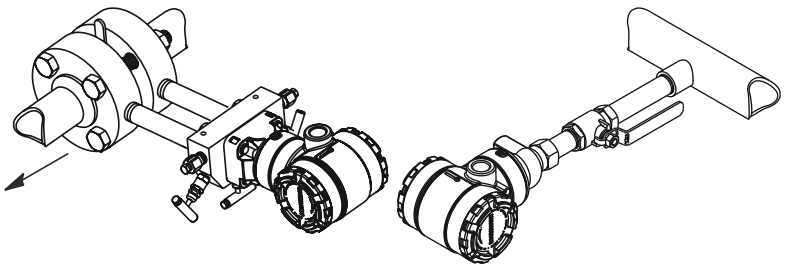
Consider process connection and ambient temperatures when installing the transmitter with hazardous location certifications. See [Table 3-1](#).

Table 3-1: Intrinsically Safe/Increased Safety

| Process connection temperature | Maximum ambient temperature |
|----------------------------------|---|
| -76 to +185 °F (-60 to +85 °C) | +158 °F (+70 °C) |
| +185 to +250 °F (+85 to +121 °C) | +158 to +60 °F (+70 to +16 °C) ⁽¹⁾ |

(1) Maximum ambient temperature is reduced by 1.5 degree for 1 degree temperature rise in the process connection temperature beyond +185 °F (+85 °C).

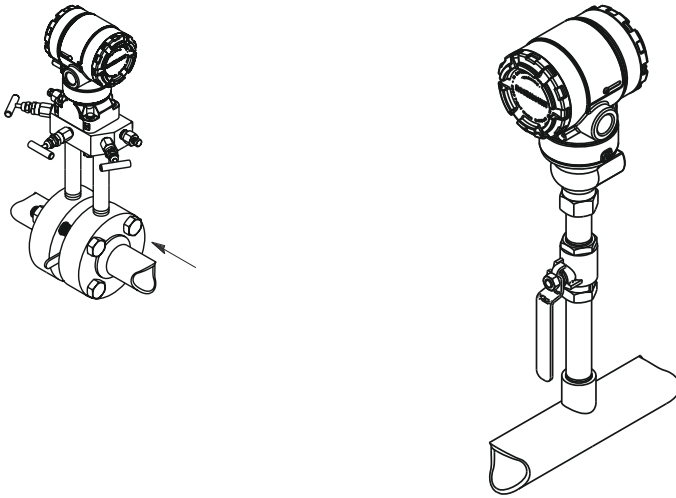
3.1 Mount the transmitter in liquid applications



Procedure

1. Place taps to the side of the line.
2. Mount the transmitter beside or below the taps.
Mount the transmitter so the drain/vent valves are oriented upward.

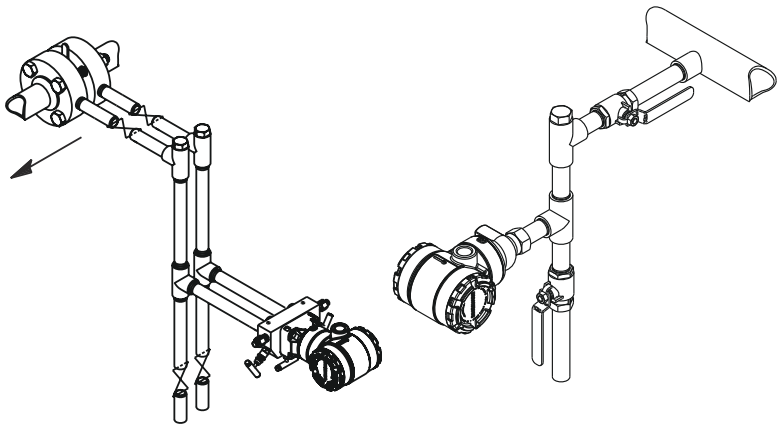
3.2 Mount the transmitter in gas applications



Procedure

1. Place taps on the top or side of the line.
2. Mount the transmitter beside or above the taps.

3.3 Mount the transmitter in steam applications



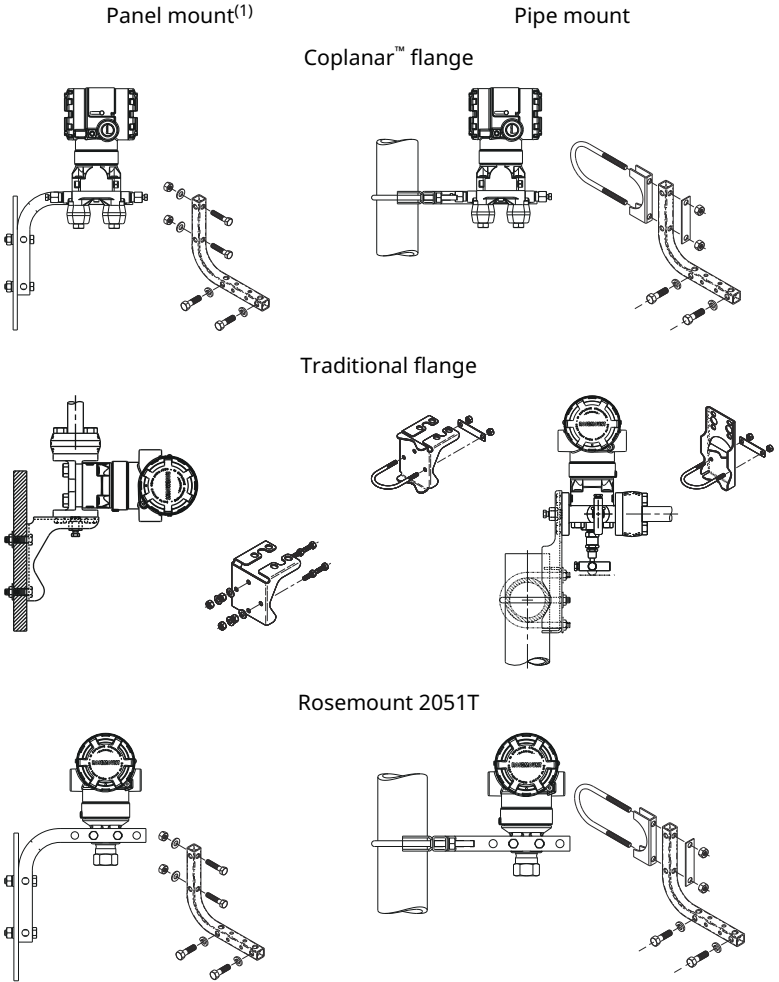
Procedure

1. Place taps to the side of the line.
2. Mount the transmitter beside or below the taps.

3. Fill impulse lines with water.

3.4 Panel and pipe mounting

Figure 3-1: Panel and Pipe Mounting



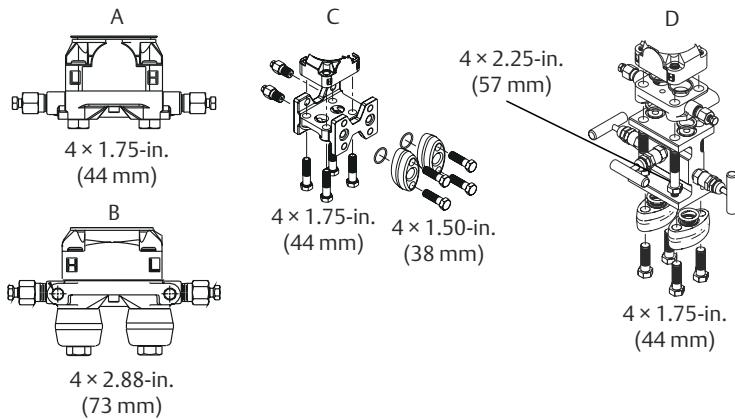
(1) 5/16 × 1½ panel bolts are customer supplied.

3.5 Install bolts

If the transmitter installation requires assembly of the process flanges, manifolds, or flange adapters, follow the assembly guidelines to ensure a tight seal for optimal performance characteristics of the transmitter.

Use only bolts supplied with the transmitter or sold by Emerson as spare parts. [Figure 3-2](#) illustrates common transmitter assemblies with the bolt length required for proper transmitter assembly.

Figure 3-2: Common Transmitter Assemblies



- A. Transmitter with Coplanar™ flange
- B. Transmitter with Coplanar flange and optional flange adapters
- C. Transmitter with traditional flange and optional flange adapters
- D. Transmitter with Coplanar flange and optional manifold and flange adapters

Bolts are typically Carbon Steel (CS) or Stainless Steel (SST). Confirm the material by viewing the markings on the head of the bolt and referencing [Table 3-2](#). If bolt material is not shown in [Table 3-2](#), contact a local Emerson representative for more information.


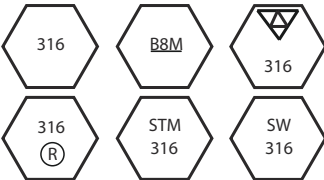
Carbon steel bolts do not require lubrication, and the stainless steel bolts are coated with a lubricant to ease installation. However, do not apply any additional lubricant when installing either type of bolt.

Procedure

1. Tighten the bolts by hand.
2. Torque the bolts to the initial torque value using a crossing pattern.

- See [Table 3-2](#) for initial torque value.
- Torque the bolts to the final torque value using the same crossing pattern.
See [Table 3-2](#) for final torque value.
 - Verify the flange bolts are protruding through the sensor module bolt holes before applying pressure.

Table 3-2: Torque Values for the Flange and Flange Adapter Bolts

| Bolt material | Head markings | Initial torque | Final torque |
|---------------|---|----------------|--------------|
| CS |  | 300 in.-lb. | 650 in.-lb. |
| SST |  | 150 in.-lb. | 300 in.-lb. |

3.6 O-rings

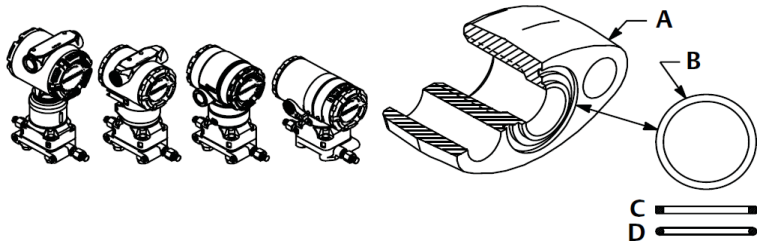
The two styles of Rosemount flange adapters (Rosemount 3051/2051/2024/3095) each require a unique O-ring (see [Figure 3-3](#)). Use only the O-ring designed for the corresponding flange adapter.

⚠ WARNING

Failure to install proper flange adapter O-rings may cause process leaks, which can result in death or serious injury.

The two flange adapters are distinguished by unique O-ring grooves. Only use the O-ring that is designed for its specific flange adapter, as shown in [Figure 3-3](#). When compressed, PTFE O-rings tend to cold flow, which aids in their sealing capabilities.

Figure 3-3: O-rings for Rosemount 3051S, 3051, 2051, 3001, 3095, and 2024



- A. Flange adapter
- B. O-ring
- C. PTFE based
- D. Elastomer

NOTICE

If the flange adapter is removed, then the PTFE O-rings must be replaced.

3.7 Environmental seal for housing

Thread sealing (PTFE) tape or paste on male threads of conduit is required to provide a water/dust tight conduit seal and meets requirements of NEMA® Type 4X, IP66, and IP68. Consult factory if other ingress protection ratings are required.

For M20 threads, install conduit plugs to full thread engagement or until mechanical resistance is met.

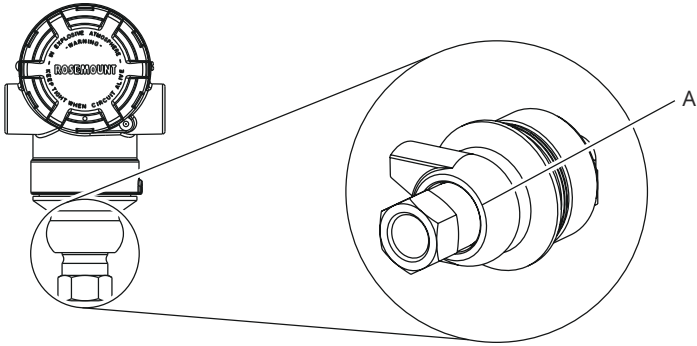
3.8 In-line gauge transmitter orientation

The low side pressure port (atmospheric reference) on the in-line gauge transmitter is located in the neck of the transmitter, behind the housing. The vent path is 360° around the transmitter between the housing and sensor. See [Figure 3-4](#).

NOTICE

Keep the vent path free of any obstruction, including but not limited to paint, dust, and lubrication by mounting the transmitter so fluids can drain away.

Figure 3-4: In-line Gauge Low Side Pressure Port



A. Pressure port location

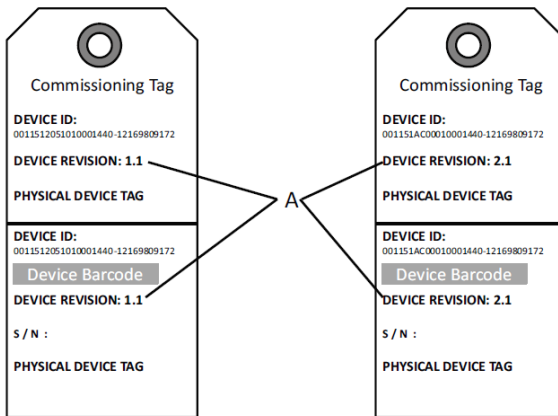
4 Tagging

4.1 Commissioning (paper) tag

To identify which device is at a particular location, use the removable tag provided with the transmitter.

Ensure the `PHYSICAL_DEVICE_TAG` field is properly entered in both places on the removable commissioning tag and tear off the bottom portion for each transmitter.

Figure 4-1: Commissioning Tag



A. Device revision

Note

The device driver loaded in the host system must be at the same revision as this device. You can download the device driver from the host system website or [Software & Drivers](#). You can also visit [FieldComm Group](#) and select **RESOURCES**.

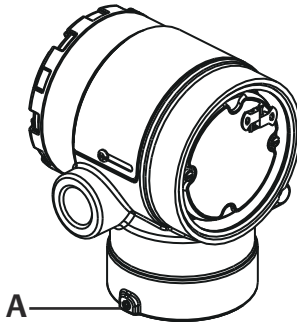
5 Rotate housing

You can rotate the electronics housing up to 180 degrees in either direction to improve field access to wiring or to better view the optional LCD display.

Procedure

1. Loosen the housing rotation set screw using a 5/64-inch hex wrench.
-

Figure 5-1: Housing Rotation



A. Housing rotation set screw (5/64 in.)

2. Rotate the housing clockwise to the desired location.
3. If the desired location cannot be achieved due to thread limitation, rotate the housing counterclockwise to the desired location (up to 360° from thread limit).
4. Retighten the housing rotation set screw to no more than 7 in-lb when desired location is reached.

6 Set the switches

Set **Simulate** and **Security** switch configuration before installation as shown in [Figure 6-1](#).

- The **Simulate** switch enables or disables simulated alerts and simulated analog input (AI) block status and values. The default **Simulate** switch position is enabled.
- The **Security** switch allows (unlocked symbol) or prevents (locked symbol) any configuration of the transmitter.
- Default **Security** is off (unlocked symbol).
- You can enable or disable the **Security** switch in the software.

Use the following procedure to change the switch configuration:

Procedure

1. If the transmitter is installed, secure the loop, and remove power.
2. Remove the housing cover opposite the field terminal side.

WARNING

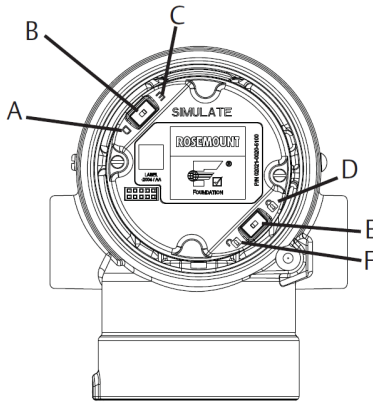
Do not remove the instrument cover in explosive atmospheres when the circuit is live.

3. Slide the **Security** and **Simulate** switches into the preferred position.
4. Replace the housing cover.

NOTICE

Emerson recommends tightening the cover until there is no gap between the cover and housing.

Figure 6-1: Simulate and Security Switches



- A. **Simulate** disabled position
- B. **Simulate** switch
- C. **Simulate** enabled position (default)
- D. **Security** locked position
- E. **Security** switch
- F. **Security** unlocked position (default)

7 Wire, ground, and power up

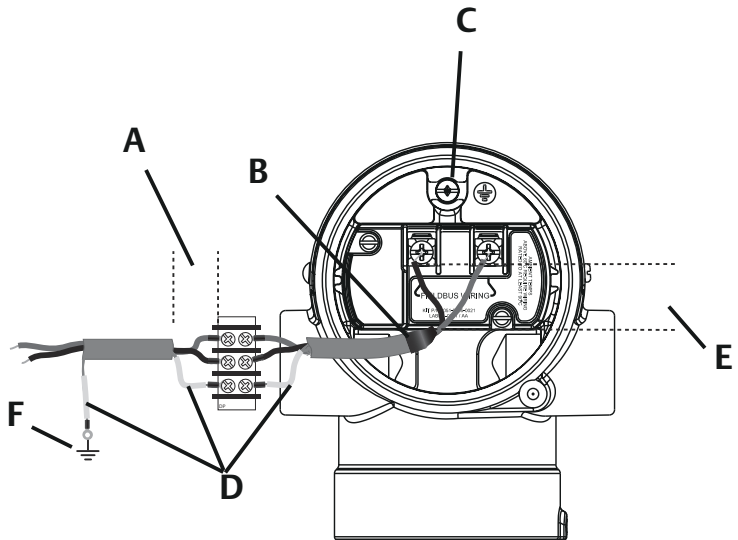
Prerequisites

Use copper wire of sufficient size to ensure that the voltage across the transmitter power terminals does not drop below 9 Vdc. Power supply voltage can be variable, especially under abnormal conditions, such as when operating on battery backup. Emerson recommends using a minimum of 12 Vdc under normal operating conditions and using shielded twisted pair Type A cable.

Procedure

1. To power the transmitter, connect the power leads to the terminals indicated on the terminal block label.

Figure 7-1: Wiring terminals



- A. Minimize distance
- B. Trim shield and insulate
- C. Protective grounding terminal (do not ground cable shield at the transmitter)
- D. Insulate shield
- E. Minimize distance
- F. Connect shield back to the power supply ground

NOTICE

The Rosemount 2051 power terminals are polarity insensitive, which means the electrical polarity of the power leads does not matter when connecting to the power terminals. If polarity sensitive devices are connected to the segment, follow terminal polarity. When wiring to the screw terminals, Emerson recommends using crimped legs.

2. Ensure full contact with terminal block screw and washer. When using a direct wiring method, wrap wire clockwise to ensure it is in place when tightening the terminal block screw. No additional power is needed.

NOTICE

Emerson does not recommend using a pin or ferrule wire, as the connection may be more susceptible to loosening over time or under vibration.

7.1 Power supply

The transmitter requires between 9 and 32 Vdc (9 and 30 Vdc for intrinsic safety, and 9 and 17.5 Vdc for FISCO intrinsic safety) to operate and provide complete functionality.

7.2 Power conditioner

A Fieldbus segment requires a power conditioner to isolate the power supply, filter, and decouple the segment from other segments attached to the same power supply.

7.3 Grounding

NOTICE

Grounding out one of the signal wires will shut down the entire Fieldbus segment.

Do not ground the Fieldbus segment's signal wiring.

7.4 Ground shield wire

NOTICE

To protect the Fieldbus segment from noise, grounding techniques for shield wire require a single grounding point for shield wire to avoid creating a ground loop.

Connect the cable shields for the entire segment to a single good earth ground at the power supply.

7.5 Signal termination

Install a terminator at the beginning and at the end of every Fieldbus segment.

7.6 Locate devices

Devices are frequently installed, configured, and commissioned over time by different personnel. Emerson provides a **Locate Device** capability to assist personnel in finding a device.

From the device **Overview** screen, select **Locate Device**. This will launch a method allowing you to display a `Find me` message or enter a custom message to display on the device LCD display.

When you exit the **Locate Device** method, the device LCD display automatically returns to normal operation.

Note

Some hosts do not support **Locate Device** in the device driver (DD).

8 Configuration

Each FOUNDATION™ Fieldbus host or configuration tool has a different way of displaying and performing configurations.

Some use device drivers (DDs) or DD methods for configuration and to display data consistently across platforms. There is no requirement that a host or configuration tool support these features. Use the following block examples to do basic configuration to the transmitter. For more advanced configurations, see the [Rosemount 2051 Pressure Transmitter Reference Manual](#).

Note

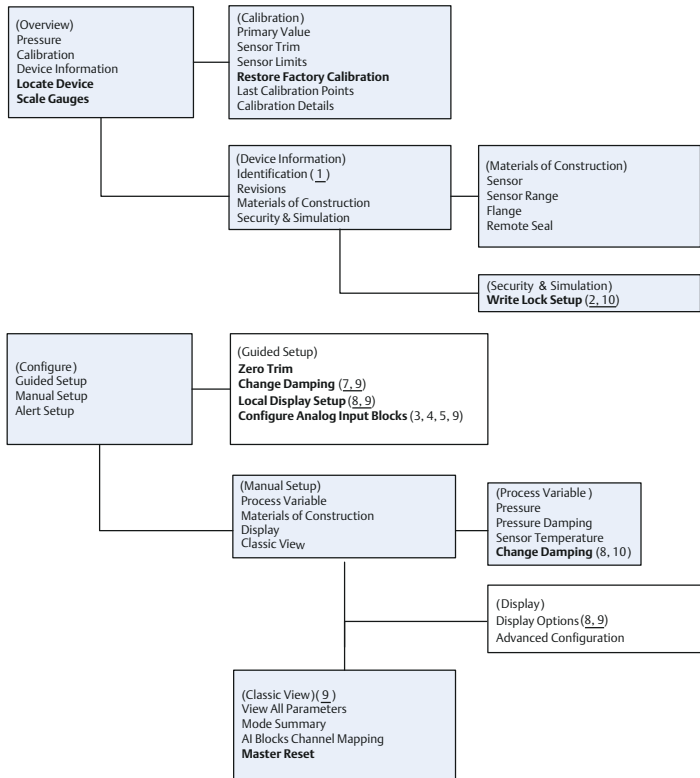
DeltaV™ users should use DeltaV Explorer for the resource and transducer blocks and Control Studio for the function blocks.

8.1 Configure the analog input (AI) block

If your configuration tool supports dashboard device drivers (DDs) or DTMs™, you may use either guided setup or manual setup. If

your configuration tools don't support dashboard DDs or DTMs, use manual setup.

Figure 8-1: Basic Configuration Menu Tree



- Standard text – navigation selections available
- (Text) – name of selection used on parent menu screen to access this screen
- Bold text – automated methods

Procedure

1. Verify device tag: PD_TAG.
2. Check switches and software **Write Lock**.
3. Set signal conditioning: L_TYPE.
4. Set scaling: XD_SCALE.
5. Set scaling: OUT_SCALE.
6. Set low cutoff: LOW_CUT.

7. Set damping: PRIMARY_VALUE_DAMPING.
8. Set up LCD display.
9. Review transmitter configuration.
10. Set switches and software **Write Lock**.

8.2 Prepare for configuration

Before beginning configuration, you may need to verify the Device Tag or deactivate hardware or software write protection on the transmitter.

To do this, see the following procedure. Otherwise, continue to [Configure the analog input \(AI\) block](#).

Procedure

1. To verify the device tag, go to **Overview** → **Device Information**.
2. To check the switches, verify the **Write Lock** switch is in the unlocked position if the switch has been enabled in software. See [Figure 6-1](#).
3. To disable the software write lock:
 - a) From the **Overview** screen, go to **Device Information** → **Security and Simulation**.
 - b) Perform `Write Lock Setup` to disable software **Write Lock**.
 - c) Place the control loop in Manual mode.

Postrequisites

Continue to [Configure the analog input \(AI\) block](#).

8.3 Configure the analog input (AI) block

Procedure

1. To use guided setup:
 - a) Navigate to **Configure** → **Guided Setup**.
 - b) Select **AI Block Unit Setup**.

Note

Guided setup will automatically go through each step in the proper order.

Note

For convenience, AI Block 1 is pre-linked to the transmitter primary variable and should be used for this purpose. AI Block 2 is pre-linked to the transmitter sensor temperature.

- Channel 1 is the primary variable.
 - Channel 2 is the sensor temperature.
-

Note

[Step 3](#) through [Step 6](#) are all performed in a single step-by-step method under guided setup or on a single screen using manual setup.

Note

If the **L_TYPE** selected in [Step 2](#) is Direct, [Step 3](#), [Step 4](#), and [Step 5](#) are not needed. If guided setup is used, any unneeded steps will automatically be skipped.

2. To select the signal conditioning **L_TYPE** from the drop-down menu:
 - Select Direct for pressure measurements using the device default units.
 - Select Indirect for other pressure or level units.
 - Select Indirect Square Root for flow units.
3. To set **XD_SCALE** to the 0% and 100% scale points (the transmitter range):
 - a) Select the **XD_SCALE_UNITS** from the drop-down list.
 - b) Enter the **XD_SCALE 0%** point.
This may be elevated or suppressed for level applications.
 - c) Enter the **XD_SCALE 100%** point.
This may be elevated or suppressed for level applications.

If **L_TYPE** is Direct, the AI Block may be placed in mode to return the device to service. Guided setup does this automatically.

4. If **L_TYPE** is Indirect or Indirect Square Root, set **OUT_SCALE** to change engineering units.
 - a) Select the **OUT_SCALE UNITS** from the drop-down list.
 - b) Set the **OUT_SCALE** low value.

This may be elevated or suppressed for level applications.

- c) Set the **OUT_SCALE** high value.

This may be elevated or suppressed for level applications.

If **L_TYPE** is Indirect, the AI Block may be placed in AUTO mode to return the device to service. Guided setup does this automatically.

5. Change damping.

- To use guided setup:
 - a. Navigate to **Configure** → **Guided Setup** and select **Change Damping**.

Note

Guided setup will automatically go through each step in the proper order.

- b. Enter the desired damping value in seconds. The permitted range of values is 0.4 to 60 seconds.

- To use manual setup:
 - a. Navigate to **Configure** → **Manual Setup** → **Process Variable** and select **Change Damping**.
 - b. Enter the desired damping value in seconds. The permitted range of values is 0.4 to 60 seconds.

6. Configure LCD display (if installed).

- To use guided setup:
 - a. Navigate to **Configure** → **Guided Setup** and select **Local Display Setup**.

Note

Guided setup will automatically go through each step in the proper order.

- b. Check the box next to each parameter to be displayed to a maximum of four parameters. The LCD display will continuously scroll through the selected parameters.

- To use manual setup:
 - a. Navigate to **Configure** → **Manual Setup** and select **Local Display Setup**.

- b. Check each parameter to be displayed. The LCD display will continuously scroll through the selected parameters.
7. Review transmitter configuration and place in service.
- a) To review the transmitter configuration, navigate using the guided setup navigation sequences for AI Block Unit Setup, Change Damping, and Set up LCD Display.
 - b) Change any values as necessary.
 - c) Return to the **Overview** screen.
 - d) If Mode is Not in Service, select the **Change** button and then select **Return All to Service**.

Note

If hardware or software write protection is not needed, you can skip [Step 8](#).

8. Set switches and software **Write Lock**. Check switches. See [Figure 6-1](#).

Note

The **Write Lock** switch can be left in the locked or unlocked position. The **Simulate** enable/disable switch may be in either position for normal device operation.

8.4 Enable software **Write Lock**

Procedure

1. Go to **Overview** → **Device Information** → **Security and Simulation**.
2. Perform Write Lock Setup to enable software **Write Lock**.

8.5 Analog input (AI) block configuration parameters

Use [Table 8-1](#), [Table 8-2](#), and [Table 8-3](#) for guides.

| Parameters | Enter data |
|------------|--|
| Channel | <p>1 Pressure</p> <p>2 Sensor Temp</p> |
| L-Type | Direct, Indirect, or Square Root |

| Parameters | Enter data | | | | |
|--|------------------------------------|-------------------|-----------------------------|-----------------------------|---------------------------|
| XD_Scale | Scale and engineering units | | | | |
| Note Select only the units that are supported by the device. | Pa | bar | torr at 0 °C | ftH ₂ O at 4 °C | mH ₂ O at 4 °C |
| | kPa | mbar | kg/cm ² | ftH ₂ O at 60 °F | mmHg at 0 °C |
| | mPa | psf | kg/m ² | ftH ₂ O at 68 °F | cmHg at 0 °C |
| | hPa | Atm | inH ₂ O at 4 °C | mH ₂ O at 4 °C | inHg at 0 °C |
| | °C | psi | inH ₂ O at 60 °F | mmH ₂ O at 68 °C | mHg at 0 °C |
| | °F | g/cm ² | inH ₂ O at 68 °F | cmH ₂ O at 4 °C | |
| Out_Scale | Scale and Engineering Units | | | | |

Table 8-1: Pressure Example

| Parameters | Enter data |
|--|--|
| Channel | 1 |
| L_Type | Direct |
| XD_Scale | See list of supported engineering units. |
| Note Select only the units that are supported by the device. | |
| Out_Scale | Set values outside operating range. |

Table 8-2: Differential Pressure (DP) Flow Example

| Parameters | Enter data |
|--|-----------------------------------|
| Channel | 1 |
| L_Type | Square Root |
| XD_Scale | 0–100 inH ₂ O at 68 °F |
| Note Select only the units that are supported by the device. | |
| Out_Scale | 0–20 GPM |
| Low_Flow_Cutoff | inH ₂ O at 68 °F |

Table 8-3: DP Level Example

| Parameters | Enter data |
|--|-----------------------------------|
| Channel | 1 |
| L_Type | Indirect |
| XD_Scale | 0–300 inH ₂ O at 68 °F |
| Note Select only the units that are supported by the device. | |
| Out_Scale | 0–25 ft. |

8.6 Display pressure on the LCD display meter

Select the Pressure check box on the **Display Configuration** screen.

9 Zero trim the transmitter

Note

Emerson ships transmitters fully calibrated per request or by the factory default of full scale (span = upper range limit).

A zero trim is a single-point adjustment used for compensating mounting position and line pressure effects. When performing a zero trim, ensure the equalizing valve is open and all wet legs are filled to the correct level.

The transmitter will only allow three to five percent upper range limit (URL) zero error to be trimmed. For greater zero errors, compensate for the offset by using the XD_Scaling, Out_Scaling, and Indirect L_Type, which are part of the analog input (AI) block.

Procedure

Zero trim the transmitter.

- To use guided setup, navigate to **Configure** → **Guided Setup** and select **Zero Trim**. The method will execute the zero trim.
- To use manual setup, navigate to **Overview** → **Calibration** → **Sensor Trim** and select **Zero Trim**. The method will execute the zero trim.

10 Product certifications

10.1 European Directive information

A copy of the EU Declaration of Conformity can be found at the end of the Quick Start Guide. The most recent revision of the EU Declaration of Conformity can be found at www.Emerson.com.

10.2 Ordinary location certification

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

10.2.1 Functional specifications

| | |
|------------------------------|---|
| Pollution degree | 4 |
| Altitude | 16,404.2 ft. (5000 m) maximum |
| Humidity | All models: 0 to 100 percent relative humidity |
| Supply voltage (VMAX) | 4-20 mA (HART®): 42.4 Vdc FOUNDATION™ Fieldbus, PROFIBUS™ PA: 32 Vdc |

10.3 Hazardous location certification

NOTICE

Device ambient temperature ratings and electrical parameters may be limited to the levels dictated by the hazardous location certificate parameters.

10.4 North America

E5 USA Explosion-proof (XP) and Dust Ignition-proof (DIP)

| | |
|--------------------|---|
| Certificate | 2041384 |
| Standards | FM 3600: 2022, FM 3615: 2022, FM 3616: 2022, ANSI/UL 61010-1-2019 Third Edition, ANSI/UL 12.27.01: 2022 (Fourth Edition), ANSI/UL 50E (First Edition) |
| Markings | XP CL I, DIV I, GP B, C, & D T5; |

Seal not required
 DIP CL II, DIV I, GP E, F, & G; CL III T5;
 T5: (-50 °C ≤ Ta ≤ +85 °C)
 Type 4X, IP 68
 Optional: single seal

Specific Conditions of Use:

1. The Rosemount 2051 transmitter housing may contain aluminum and is considered a potential risk of ignition by impact or friction. Care must be taken during installation and use to prevent impact and friction.
2. Equipment evaluated for atmospheric pressure range between 80 kPa (0.8 bar) to 110 kPa (1.1 bar).
3. Process temperature limits shall be in accordance with 03031-1053.

I5 USA Intrinsic Safety (IS), Nonincendive (NI)

| | |
|--------------------|---|
| Certificate | 2041384 |
| Standards | FM3600: 2022, FM3610: 2021, FM3611: 2021, ANSI/UL61010-1-2019 Third Edition, ANSI/UL60079-0: 2017, ANSI/UL60079-11: 2013, ANSI/UL12.27.01: 2022 (Fourth Edition), ANSI/UL50E (First Edition) |
| Markings | IS: CL I GP A, B, C, D T4; CL II GP EFG; CL III T4; CL I ZN 0 AEx ia IIC T4 Ga; NI: CL I DIV 2 GP ABCD T4; (-50 °C ≤ Ta ≤ +70 °C) Install per 02051-1008. Type 4X, IP 68 Optional: single seal |

Specific Conditions of Use:

1. The 2051 transmitter housing may contain aluminum and is considered a potential risk of ignition by impact or friction. Care must be taken during installation and use to prevent impact and friction.
2. The 2051 with the transient terminal block (Option code T1) will not pass the 500 VRMS dielectric strength test; this must be considered during installation.

3. Equipment evaluated for atmospheric pressure range between 80 kPa (0.8 bar) to 110 kPa (1.1 bar).
4. Maximum process temperature limits shall be in accordance with 03031-1053.

IE USA FISCO

| | |
|--------------------|--|
| Certificate | 2041384 |
| Standards | FM 3600: 2022, FM 3610: 2021, FM 3611: 2021, ANSI/UL 61010-1-2019 Third Edition, ANSI/UL 60079-0: 2017, ANSI/UL 60079-11: 2013, ANSI/UL 12.27.01: 2022 (Fourth Edition), ANSI/UL 50E (First Edition) |
| Markings | IS: CL I GP ABCD T4 CL I ZN 0 AEx ia IIC T4 Ga -50 °C ≤ Ta ≤ +60 °C FISCO Type 4X, IP 68 Install per 02051-1008 Optional: single seal |

Specific Conditions of Use:

1. The 2051 transmitter housing may contain aluminum and is considered a potential risk of ignition by impact or friction. Care must be taken during installation and use to prevent impact and friction.
2. Equipment evaluated for atmospheric pressure range between 80 kPa (0.8 bar) to 110 kPa (1.1 bar).
3. Maximum process temperature limits shall be in accordance with 03031-1053.

E6 Canada Explosion-proof, Dust Ignition-proof

| | |
|--------------------|--|
| Certificate | 2041384 |
| Standards | CAN/CSA C22.2 No. 61010-1-12, CAN/CSA C22.2 No. 94.2-07, CSA C22.2 No. 25-17, CAN/CSA C22.2 No. 30:20, CAN/CSA C22.2 No. 60079-0:19, CAN/CSA C22.2 No. 60079-1:16, ANSI/UL 12.27.01: 2022 (Fourth Edition) |
| Markings: | XP: CL I, DIV I, GP B,C, D T5; Ex db IIC T5 Gb; |

Seal not required
 DIP: CL II, DIV I, GP E, F, & G; CL III T5;
 $-50\text{ }^{\circ}\text{C} \leq T_a \leq +85\text{ }^{\circ}\text{C}$
 Single seal - temp limits 03031-1053
 Type 4X, IP 68

Specific Conditions of Use:

1. The 2051 transmitter housing may contain aluminum and is considered a potential risk of ignition by impact or friction. Care must be taken during installation and use to prevent impact and friction.
2. Equipment evaluated for atmospheric pressure range between 80 kPa (0.8 bar) to 110 kPa (1.1 bar).

I6 Canada Intrinsic Safety (IS)

| | |
|--------------------|---|
| Certificate | 2041384 |
| Standards | C22.2 No. 61010-1-12, C22.2 No. 25-17, C22.2 No. 94.2-20 Third Edition, CSA Std C22.2 No. 213-17 + UPD 1 (2018) + UPD 2 (2019) + UPD 3 (2021), CAN/CSA-60079-0:19, CAN/CSA-60079-11:14, ANSI/UL 122701: 2022 (Fourth Edition), ANSI/UL 50E (First Edition) |
| Markings | IS: CL I GP A, B, C, D T4; CL II GP E, F, G, CL III T4; Ex ia IIC T4 Ga; NI: CL I DIV 2 GP A, B, C, D $-50\text{ }^{\circ}\text{C} \leq T_a \leq +70\text{ }^{\circ}\text{C}$ Install per 02051-1008 Single seal - temp limits per 03031-1053 Type 4X, IP 68 |

Specific Conditions of Use:

1. The 2051 transmitter housing may contain aluminum and is considered a potential risk of ignition by impact or friction. Care must be taken during installation and use to prevent impact and friction.
2. The 2051 with the transient terminal block (Option code T1) will not pass the 500 VRMS dielectric strength test; this must be considered during installation.

- Equipment evaluated for atmospheric pressure range between 80 kPa (0.8 bar) to 110 kPa (1.1 bar).

IF Canada FISCO

| | |
|--------------------|---|
| Certificate | 2041384 |
| Standards | C22.2 No. 61010-1-12, C22.2 No. 25-17, C22.2 No. 94.2-20 Third Edition, CSA Std C22.2 No. 213-17 + UPD 1 (2018) + UPD 2 (2019) + UPD 3 (2021), CAN/CSA-60079-0:19, CAN/CSA-60079-11:14, ANSI/UL 12.27.01:2022 (Fourth Edition), ANSI/UL 50E (First Edition) |
| Markings: | IS: CL I GP ABCD T4; Ex ia IIC T4 Ga -50 °C ≤ Ta ≤ +60 °C FISCO Install per 02051-1008 Single seal - temp limits per 03031-1053 Type 4X, IP 68 |

Specific Conditions of Use:

- The 2051 transmitter housing may contain aluminum and is considered a potential risk of ignition by impact or friction. Care must be taken during installation and use to prevent impact and friction.
- Equipment evaluated for atmospheric pressure range between 80 kPa (0.8 bar) to 110 kPa (1.1 bar).

10.5 Europe

E1 ATEX Flameproof

| | |
|--------------------|---|
| Certificate | KEMA 08ATEX0090X |
| Standards | EN IEC 60079-0: 2018, EN 60079-1: 2014, EN 60079-26: 2015 |
| Markings: | ⊕ II 1/2 G Ex db IIC T6...T4 Ga/Gb, T6 (-60 °C ≤ Ta ≤ +70 °C), T4/T5 (-60 °C ≤ Ta ≤ +80 °C) |

Table 10-1: Process Connection Temperature

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

Special Conditions for Safe Use (X):

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

Conduit/cable entries

Unless otherwise marked, the conduit/cable entries in the housing enclosure use a ½-14 NPT form. Only use plugs, adapters, glands, or conduit with a compatible thread form when closing these entries. Entries marked M20 are M20 x 1.5 thread form. On devices with multiple conduit entries, all entries will have the same thread form. When installing in a hazardous location, use only appropriately listed or Ex certified plugs, glands, or adapters in cable/conduit entries.

I1 ATEX Intrinsic Safety

| | |
|--------------------|---|
| Certificate | Baseefa08ATEX0129X |
| Standards | EN IEC 60079-0: 2018, EN60079-11: 2012 |
| Markings | ⊕ II 1 G Ex ia IIC T4 Ga (-60 °C ≤ Ta ≤ +70 °C) |

Table 10-2: Input Parameters

| | HART® | Fieldbus/PROFIBUS® |
|-------------------|---------------|--------------------|
| Voltage U_i | 30 V | 30 V |
| Current I_i | 200 mA | 300 mA |
| Power P_i | 1 W | 1.3 W |
| Capacitance C_i | 0.012 μ F | 0 μ F |
| Inductance L_i | 0 mH | 0 mH |

Special Conditions for Safe Use (X):

1. If the equipment is fitted with an optional 90 V transient suppressor, it is incapable of withstanding the 500 V isolation from earth test, and this must be taken into account during installation.
2. The enclosure may be made of aluminum alloy and given a protective polyurethane paint finish; however, care must be taken to protect it from impact or abrasion if located in Zone 0.

IA ATEX FISCO

| | |
|--------------------|---|
| Certificate | Baseefa08ATEX0129X |
| Standards | EN IEC 60079-0: 2018, EN60079-11: 2012 |
| Markings | ⊕ II 1 G Ex ia IIC T4 Ga (-60 °C ≤ Ta ≤ +60 °C) |

Table 10-3: Input Parameters

| | FISCO |
|-------------------|-----------|
| Voltage U_i | 17.5 V |
| Current I_i | 380 mA |
| Power P_i | 5.32 W |
| Capacitance C_i | 0 μ F |
| Inductance L_i | 0 mH |

Special Conditions for Safe Use (X):

1. If the equipment is fitted with an 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.

- The enclosure may be made of aluminum alloy and given a protective polyurethane paint finish; however, care must be taken to protect it from impact or abrasion if located in Zone 0.

N1 ATEX Type n

| | |
|--------------------|---|
| Certificate | Baseefa08ATEX0130X |
| Standards | EN IEC 60079-0: 2018, EN60079-15: 2010 |
| Markings | ⊕ II 3 G Ex nA IIC T4 Gc (-40 °C ≤ Ta ≤ +70 °C) |

Special Conditions for Safe Use (X):

- If the equipment is fitted with an optional 90 V transient suppressor, it is incapable of withstanding the 500 V electrical strength test as defined in clause 6.5.1 of by EN 60079-15: 2010. This must be taken into account during installation.

ND ATEX Dust

| | |
|--------------------|---|
| Certificate | Baseefa08ATEX0182X |
| Standards | EN IEC 60079-0: 2018, EN60079-31: 2014 |
| Markings | ⊕ II 1 D Ex ta IIIC T ₅₀₀ 105 °C Da (-20 °C ≤ Ta ≤ +85 °C) |

Special Conditions for Safe Use (X):

- If the equipment is fitted with an 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.
- Variants with a paint finish must not be installed in a dust-laden airflow.
- Non-standard paint options may cause risk from electrostatic discharge. Avoid installations that could cause electrostatic build-up on painted surfaces and only clean the painted surfaces with a damp cloth. If paint is ordered through a special option code, contact the manufacturer for more information.

10.6 International

E7 IECEx Flameproof

| | |
|--------------------|------------------|
| Certificate | IECExKEM08.0024X |
|--------------------|------------------|

| | |
|------------------|---|
| Standards | IEC 60079-0: 2017, IEC 60079-1: 2014, IEC 60079-26: 2014 |
| Markings | Ex db IIC T6...T4 Ga/Gb T6 (-60 °C ≤ Ta ≤ +70 °C), T4/T5 (-60 °C ≤ Ta ≤ +80 °C) |

Table 10-4: Process Connection Temperature

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

Special Conditions for Safe Use (X):

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

Conduit/cable entries

Unless otherwise marked, the conduit/cable entries in the housing enclosure use a ½-14 NPT form. Only use plugs, adapters, glands, or conduit with a compatible thread form when closing these entries. Entries marked M20 are M20 x 1.5 thread form. On devices with multiple conduit entries, all entries will have the same thread form. When installing in a hazardous location, use only appropriately listed or Ex certified plugs, glands, or adapters in cable/conduit entries.

I7 IECEx Intrinsic Safety

| | |
|--------------------|--------------------|
| Certificate | IECEx BAS 08.0045X |
|--------------------|--------------------|

Standards IEC 60079-0: 2017, IEC 60079-11: 2011

Marking: Ex ia IIC T4 Ga ($-60\text{ °C} \leq T_a \leq +70\text{ °C}$)

Table 10-5: Input Parameters

| | HART® | Fieldbus/PROFIBUS® |
|-------------------|--------|--------------------|
| Voltage U_i | 30 V | 30 V |
| Current I_i | 200 mA | 300 mA |
| Power P_i | 1 W | 1.3 W |
| Capacitance C_i | 12 nF | 0 μ F |
| Inductance L_i | 0 mH | 0 mH |

Special Conditions for Safe Use (X):

1. If the equipment is fitted with an optional 90 V transient suppressor, it is incapable of withstanding the 500 V isolation from earth test, and this must be taken into account during installation.
2. The enclosure may be made of aluminum alloy and given a protective polyurethane paint finish; however, care must be taken to protect it from impact or abrasion if located in Zone 0.
3. The equipment contains thin wall diaphragms. The installation, maintenance, and use shall take into account the environmental conditions to which the diaphragms will be subjected. The manufacturer's instructions for installation and maintenance shall be followed in detail to assure safety during its expected lifetime.

IG IEEx FISCO

Certificate IEEx BAS 08.0045X

Standards IEC 60079-0: 2017, IEC60079-11: 2011

Markings Ex ia IIC T4 Ga ($-60\text{ °C} \leq T_a \leq +60\text{ °C}$)

Table 10-6: Input Parameters

| | FISCO |
|-------------------|--------------|
| Voltage U_i | 17.5 V |
| Current I_i | 380 mA |
| Power P_i | 5.32 W |
| Capacitance C_i | 0 nF |
| Inductance L_i | 0 μ H |

Special Conditions for Safe Use (X):

1. If the equipment is fitted with an 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.
2. The enclosure may be made of aluminum alloy and given a protective polyurethane paint finish; however, care must be taken to protect it from impact or abrasion if located in Zone 0.
3. The equipment contains thin wall diaphragms. The installation, maintenance, and use shall take into account the environmental conditions to which the diaphragms will be subjected. The manufacturer's instructions for installation and maintenance shall be followed in detail to assure safety during its expected lifetime.

N7 IECEx Type n

| | |
|--------------------|--|
| Certificate | IECEX BAS 08.0046X |
| Standards | IEC 60079-0: 2017, IEC60079-15: 2010 |
| Markings | Ex nA IIC T4 Gc (-40 °C ≤ Ta ≤ +70 °C) |

Special Conditions for Safe Use (X):

1. 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 6.5.1 of IEC60079-15: 2010. This must be taken into account during installation.

10.7 Brazil**E2 Brazil Flameproof**

| | |
|--------------------|--|
| Certificate | UL-BR 14.0375X (Sorocaba, Sao Pao Paulo, Brazil), UL-BR22.3806X (Shakopee, MN, USA) |
|--------------------|--|

| | |
|------------------|---|
| | UL-BR22.3807X (Singapore) |
| Standards | ABNT NBR IEC 60079-0, ABNT NBR IEC 60079-1, ABNT NBR IEC 60079-26 |
| Markings: | Ex db IIC T6...T4 Ga/Gb IP66, T6 (-60 °C ≤ Ta ≤ +70 °C), T4/T5 (-60 °C ≤ Ta ≤ +80 °C) |

Special Conditions for Safe Use (X):

1. This device contains a thin wall diaphragm with less than 1 mm thickness that forms a boundary between zone 0 (process connection) and zone 1 (all other parts of the equipment). The model code and datasheet are to be consulted for details of the diaphragm material. Installation, maintenance, and use shall take into account the environmental conditions to which the diaphragm will be subjected. The manufacturer's instructions for installation and maintenance shall be followed in detail to assure safety during its expected lifetime.
2. Flameproof joints are not intended to be repaired.
3. Non-standard paint options may cause risk from electrostatic discharge. Avoid installations that could cause electrostatic build-up on painted surfaces and only clean the painted surfaces with a damp cloth. If paint is ordered through a special option code, contact the manufacturer for more information.

I2 Brazil Intrinsic Safety

| | |
|--------------------|---|
| Certificate | UL-BR 14.0759X |
| Standards | ABNT NBR IEC 60079-0: 2013; ABNT NBR IEC 60079-11: 2013 |
| Markings | Ex ia IIC T4 Ga (-60 °C ≤ Ta ≤ +70 °C) |

Table 10-7: Input Parameters

| | HART® | Fieldbus/PROFIBUS® |
|-------------------|--------|--------------------|
| Voltage U_i | 30 V | 30 V |
| Current I_i | 200 mA | 300 mA |
| Power P_i | 1 W | 1.3 W |
| Capacitance C_i | 12 nF | 0 |
| Inductance L_i | 0 | 0 |

Special Conditions for Safe Use (X):

1. If the equipment is fitted with an optional 90 V transient suppressor, it is incapable of withstanding the 500 V insulation from earth test, and this must be taken into account during installation.
2. The enclosure may be made of aluminum alloy and given a protective polyurethane finish; however, care should be taken to protect it from impact and abrasion when located in atmospheres that require EPL Ga.

IB Brazil FISCO

| | |
|--------------------|---|
| Certificate | UL-BR 14.0759X |
| Standards | ABNT NBR IEC 60079-0: 2008 + Errata 1: 2011; ABNT NBR IEC 60079-11: 2009 |
| Markings | Ex ia IIC T4 Ga (-60 °C ≤ Ta ≤ +60 °C) |

Table 10-8: Input Parameters

| | FISCO |
|-------------------|--------------|
| Voltage U_i | 17.5 V |
| Current I_i | 380 mA |
| Power P_i | 5.32 W |
| Capacitance C_i | 0 nF |
| Inductance L_i | 0 μ H |

Special Conditions for Safe Use (X):

1. If the equipment is fitted with an optional 90 V transient suppressor, it is incapable of withstanding the 500 V insulation from earth test, and this must be taken into account during installation.
2. The enclosure may be made of aluminum alloy and given a protective polyurethane finish; however, care should be taken to protect it from impact and abrasion when located in atmospheres that require EPL Ga.

10.8 China**China Flameproof**

| | |
|--------------------|---|
| Certificate | GYJ23.1236X; GYJ20.1485X [Flow meters] |
| Standards | GB/T 3836.1-2021, GB/T 3836.2-2021, GB 3836.20-2010 |

Markings Pressure transmitter: Ex db IIC T6...T4 Ga/Gb
 Flow meter: Ex d II C T6~T4 Ga/Gb

I3 China Intrinsic Safety

Certificate GYJ22.1834X; GYJ20.1487X [Flow meters]

Standards GB3/T 3836.1-2021, GB/T 3836.4-2021, GB3836.20-2010

Markings Ex ia IIC T4 Ga, FISCO: Ex iaIICT4 Ga, Ex db+ib/ibIICT4 Ga/Gb

10.9 Korea

EP Korea Flameproof

Certificate 12-KB4BO-0342X, 19-KB4BO-0978X

Markings Ex db IIC T6...T4 Ga/Gb, T4/T5 (-60 °C ≤ Ta ≤ +80 °C), T6 (-60 °C ≤ Ta ≤ +70 °C)

Special Conditions for Safe Use (X):

See certificate for special conditions.

IP Korea Intrinsic Safety

Certificate 12-KB4BO-0343X, 13-KB4BO-0207X, 18-KA4BO-0309X

Markings Ex ia IIC T4 (-60 °C ≤ Ta ≤ +70 °C)

Special Conditions for Safe Use (X):

See certificate for special conditions.

10.10 Japan

E4 Japan Flameproof

Certificate CML20JPN112X

Markings Ex db IIC T6...T4 Ga/Gb, T6 (-60 °C ≤ Ta ≤ +70 °C), T5/T4 (-60 °C ≤ Ta ≤ +80 °C)

Special Conditions for Safe Use (X):

1. This device contains a thin wall diaphragm less than 1 mm thick that forms a boundary between EPL Ga (process connection) and EPL Gb (all other parts of the equipment). The model code and datasheet are to be consulted for details of the diaphragm material. During installation, maintenance, and

use, the environmental conditions to which the diaphragm will be subjected shall be taken into account. The manufacturer's instructions for installation and maintenance shall be followed in detail to assure safety during its expected lifetime.

2. Flameproof joints are not intended to be repaired.
3. Non-standard paint options may cause risk from electrostatic discharge. Avoid installations that could cause electrostatic build-up on painted surfaces and only clean the painted surfaces with a damp cloth. If paint is ordered through a special option code, contact the manufacturer for more information.

10.11 EAC

EM EAC Flameproof

| | |
|--------------------|--|
| Certificate | EAЭEC KZ 7500525.01.01.00647 |
| Markings | Ga/Gb Ex db IIC T4...T6 X, T4/T5 (-60 °C ≤ Ta ≤ +80 °C), T6 (-60 °C ≤ Ta ≤ +70 °C) |

Special Conditions for Safe Use (X):

See certificate for special conditions.

IM EAC Intrinsically Safe

| | |
|--------------------|---|
| Certificate | EAЭEC KZ 7500525.01.01.00647 |
| Markings | 0Ex ia IIC T4 Ga X (-60 °C ≤ Ta ≤ +70 °C) |

Special Conditions for Safe Use (X):

See certificate for special conditions.

10.12 Combinations

| | |
|-----------|---|
| 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, N7, and IECEx Dust |

IECEx Dust

| | |
|--------------------|---------------------------------------|
| Certificate | IEC 60079-0: 2017, IEC 60079-31: 2013 |
|--------------------|---------------------------------------|

| | |
|------------------|--|
| Standards | IEC 60079-0: 2011, IEC 60079-31: 2008 |
| Markings | Ex ta IIIC T ₅₀₀ 105 °C Da (-20 °C ≤ Ta ≤ +85 °C) |

Special Conditions for Safe Use (X):

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

| | |
|-----------|-------------------------------|
| KA | Combination of E1, I1, and K6 |
| KB | Combination of K5 and K6 |
| KC | Combination of E1, I1, and K5 |
| KD | Combination of K1, K5, and K6 |
| KP | Combination of EP and IP |
| KM | Combination of EM and IM |

10.13 Y3 ATEX/IECEX RFID tag approvals

| | |
|--------------------|--|
| Certificate | IECEX EPS 15.0042X, EPS 15 ATEX 1 1011 X |
| Markings | II 2G Ex ia IIC T6/T4 Gb, II 2D Ex ia IIC T80/T130C Db |

Conditions of certification

Maximum operating temperature: -58 °F (-50 °C) to +158 °F (+70 °C)

The RFID tags shall never be exposed to high electromagnetic field strengths according to IEC 60079-14.

Electrostatic charges shall be avoided. The tags shall never be used next to strong charge generating processes.

⚠ WARNING

Additional warnings

The plastic enclosure may present a potential electrostatic ignition hazard.

RFID tag has limitations in ambient temperature and zone installation areas (Zones 1 & 21) as compared to the gauge.

10.14 Declaration of Conformity



EU DECLARATION OF CONFORMITY



This declaration of conformity is issued under the sole responsibility of

Rosemount Inc.
6021 Innovation Blvd
Shakopee, MN 55379
USA

that the following products,

Rosemount™ 2051 Series Pressure Transmitters

comply with the provisions of the European Union Directives, including the latest amendments, valid at the time this declaration was signed.

| | | | | |
|--|----------------------|----------------------|---|--------------------------------------|
|  (signature & date of issue) | <u>JUNE 27, 2024</u> | Mark Lee (name) | Vice President, Quality (function) | Boulder, CO, USA (place of issue) |
|--|----------------------|----------------------|---|--------------------------------------|

Authorized Representative in Europe:
Emerson S.R.L., company No. J12/88/2006
Emerson 4 street, Parcul Industrial
Tetaram II, Cluj-Napoca 400638, Romania

Regulatory Compliance Shared Services Department
Email: europaeproductcompliance@emerson.com Phone: +40 374 132 035

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

Note – equipment manufactured prior to 20 October 2018 may be marked with the previous PED Notified Body number; previous PED Notified Body information was as follows: Det Norske Veritas (DNV) [Notified Body Number: 0375] Veritasveien 1, N-1322, Hovik, Norway

ATEX Notified Bodies for EU Type Examination Certificates:
DEKRA Certification B.V. [Notified Body Number: 0344]
Meander 1051, P.O. Box 5185,
6825 MJ ARNHEM 6802 ED ARNHEM
Netherlands Netherlands

SGS Fimko Oy [Notified Body Number: 0598]
Takomotie 8
FI-00380 Helsinki
Finland

ATEX Notified Body for Quality Assurance:
SGS Fimko Oy [Notified Body Number: 0598]
Takomotie 8
FI-00380 Helsinki
Finland



EU DECLARATION OF CONFORMITY

**EMC Directive (2014/30/EU)**

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

PED Directive (2014/68/EU)

Rosemount 2051CD2, 3, 4, 5 (also with P9 option)
QS Certificate of Assessment - Certificate No. 12698-2018-CE-ACCREDIA
Module H Conformity Assessment

All other Rosemount 2051 Pressure Transmitters
Sound Engineering Practice

Transmitter Attachments: Diaphragm Seal, Process Flange, or Manifold
Sound Engineering Practice

Rosemount 2051CFx DP Flowmeter
See DSI 1000 Declaration of Conformity

RoHS Directive (2011/65/EU)

Harmonized Standards:
EN IEC 63000:2018
Does not apply to the following options:
- Wireless output code X
- Low power output option code M

ATEX Directive (2014/34/EU)**EU-Type Examination Certificate: Baseefa08ATEX0129X**

Equipment protection by intrinsic safety "i"
Equipment Group II, Category 1 G
Ex ia IIC T4 Ga
Equipment Group II, Category 1/2 G
Ex db+ib/ib IIC T4 Ga/Gb

Harmonized Standards:
EN IEC 60079-0:2018
EN 60079-1:2014
EN 60079-11:2012
EN 60079-26:2015

EU-Type Examination Certificate: Baseefa08ATEX0130X

Equipment protection by type of protection "n"
Equipment Group II, Category 3 G
Ex nA IIC T4 Gc

Equipment protection by increased safety "e"
Equipment Group II, Category 3 G
Ex ec IIC T4 Gc

Harmonized Standards:
EN IEC 60079-0:2018
EN IEC 60079-7:2015+A1:2018
EN 60079-15:2010

EU-Type Examination Certificate: KEMA08ATEX0090X

Equipment protection by flameproof enclosure "d"
Equipment Group II, Category 1/2 G
Ex db IIC T6...T4 Ga/Gb

Harmonized Standards:
EN IEC 60079-0:2018
EN 60079-1:2014
EN 60079-26:2015

EU-Type Examination Certificate: Baseefa08ATEX0182X

Equipment dust ignition protection by enclosure "t"
Equipment Group II, Category 1 D
Ex ta IIIC T₃₀₀105°C Da

Harmonized Standards:
EN IEC 60079-0:2018
EN 60079-31:2014

10.15 China RoHS

有害物质成分表
03031-9021, Rev AB

罗斯蒙特产品型号 2051
3/29/2021

含有China RoHS管控物质超过最大浓度限值的部件型号列表 2051
List of 2051 Parts with China RoHS Concentration above MCVs

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

本表格系依据SJ/T11364的规定而制作。

This table is proposed in accordance with the provision of SJ/T11364.

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

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

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

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

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



Quick Start Guide
00825-0600-4101, Rev. DD
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