

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

with 4–20 mA HART® and 1–5 Vdc Low Power HART Protocol (Revision 5 and 7)



## Safety messages

This guide provides basic installation guidelines for the Rosemount 2051 Pressure Transmitter. It does not provide instructions for configuration, diagnostics, maintenance, service, troubleshooting, explosion-proof, flameproof, or intrinsically safe (IS) installations.

### **⚠ WARNING**

#### **Explosions**

Explosions could result in death or serious injury.

Installation of this transmitter in an explosive environment must be in accordance with the appropriate local, national, and international standards, codes, and practices. Review the *Product certifications* section of the *Quick Start Guide* for any restrictions associated with a safe installation.

Before connecting a handheld communicator in an explosive atmosphere, ensure that the instruments in the loop are installed in accordance with intrinsically safe or non-incendive field wiring practices.

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

### **⚠ WARNING**

#### **Process leaks**

Process leaks could result in death or serious injury.

Install and tighten process connectors before applying pressure.

Do not attempt to loosen or remove flange bolts while the transmitter is in service.

### **⚠ WARNING**

#### **Electrical shock**

Electrical shock can result in death or serious injury.

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

Before connecting a handheld communicator in an explosive atmosphere, ensure that the instruments in the loop are installed in accordance with intrinsically safe or non-incendive field wiring practices.

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

### **⚠ 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**

Replacement equipment or spare parts not approved by Emerson for use as spare parts could reduce the pressure retaining capabilities of the transmitter and may render the instrument dangerous.

Use only bolts supplied or sold by Emerson as spare parts.

**NOTICE**

Improper assembly of manifolds to traditional flange can damage sensor module.

For safe assembly of manifold to traditional flange, bolts must break back plane of flange web (bolt hole) but must not contact sensor module housing.

**⚠ 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.

**⚠ CAUTION**

**Static electricity**

Static electricity can damage sensitive components.

Observe safe handling precautions for static-sensitive components.

**NOTICE**

The products described in this document are NOT designed for nuclear-qualified applications. Using non-nuclear qualified products in applications that require nuclear-qualified hardware or products may cause inaccurate readings. For information on Rosemount nuclear-qualified products, contact your local Emerson Sales Representative.

**Contents**

System readiness..... 5

Mounting the transmitter..... 6

Connect the wiring and power up..... 15

Verifying configuration..... 18

Zero trim the transmitter..... 22

Safety instrumented systems..... 26

Product certifications..... 27



# 1 System readiness

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## Note

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

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## 1.1 Confirm HART® Revision capability

If using HART-based control or AMS, confirm the HART capability of those systems prior to transmitter installation.

Not all systems are capable of communicating with HART Revision 7 protocol. You can configure this transmitter for either HART Revision 5 or 7.

## Related information

[Switch HART Revision mode](#)

## 1.2 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 Mounting the transmitter

### ⚠ WARNING

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

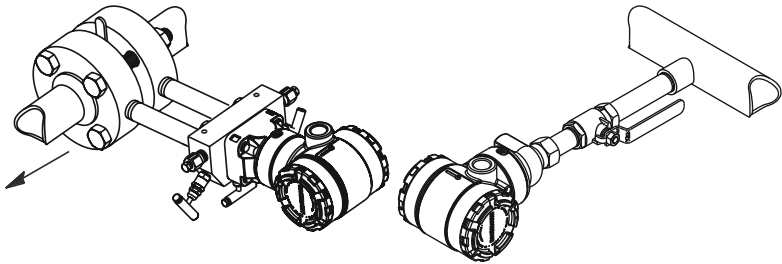
Consider process connection and ambient temperatures when installing the transmitter with hazardous location certifications. See [Table 2-1](#).

**Table 2-1: 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) <sup>(1)</sup>

(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).

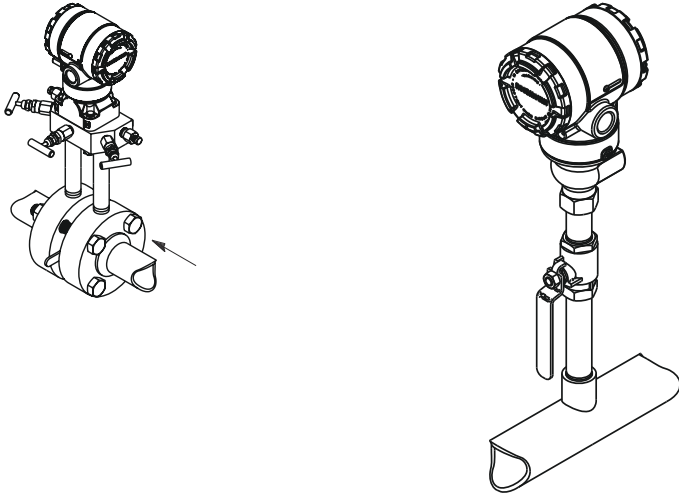
### 2.1 Mount the transmitter in liquid applications



#### 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.

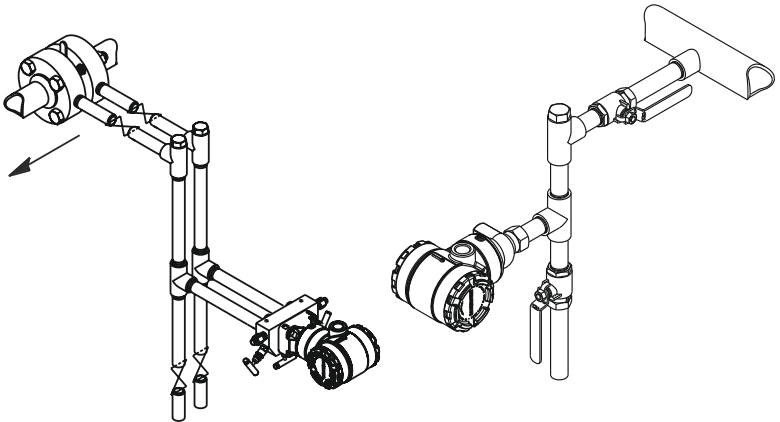
## 2.2 Mount the transmitter in gas applications



### Procedure

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

## 2.3 Mount the transmitter in steam applications



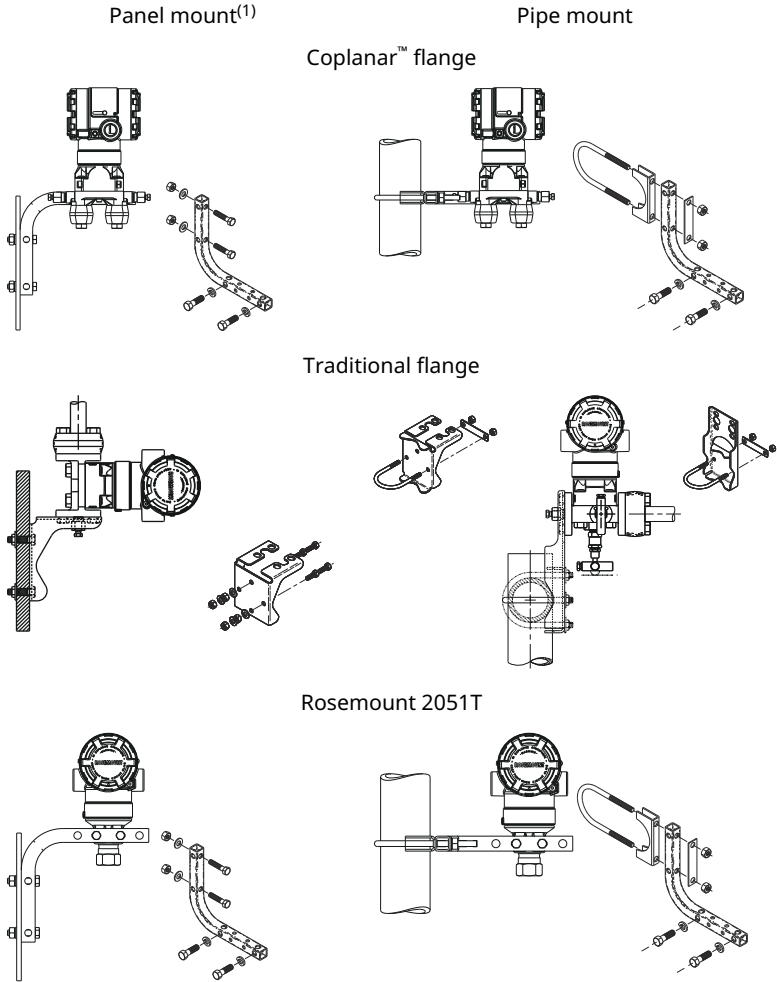
### Procedure

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

3. Fill impulse lines with water.

## 2.4 Panel and pipe mounting

**Figure 2-1: Panel and Pipe Mounting**



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

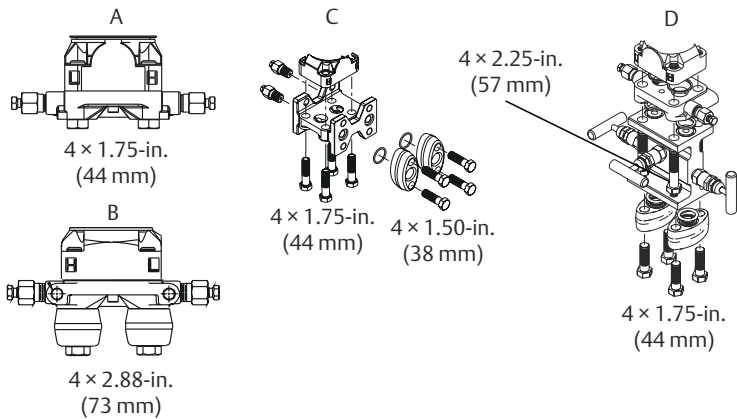


## 2.5 Install bolts

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 2-2](#) illustrates common transmitter assemblies with the bolt length required for proper transmitter assembly.

**Figure 2-2: 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 2-2](#). If bolt material is not shown in [Table 2-2](#), 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.


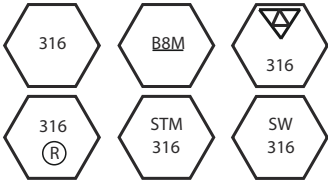
See [Table 2-2](#) for initial torque value.

3. Torque the bolts to the final torque value using the same crossing pattern.

See [Table 2-2](#) for final torque value.

4. Verify the flange bolts are protruding through the sensor module bolt holes before applying pressure.

**Table 2-2: 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.

## 2.6 O-rings

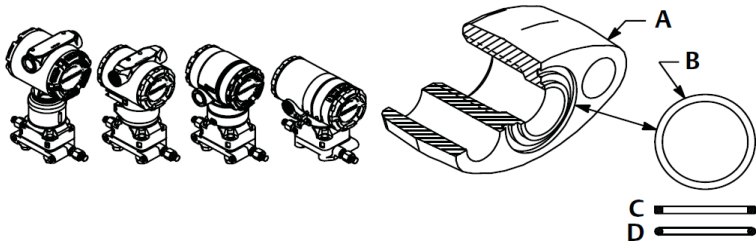
The two styles of Rosemount flange adapters (Rosemount 3051/2051/2024/3095) each require a unique O-ring (see [Figure 2-3](#)). Use only the O-ring designed for the corresponding flange adapter.

### **⚠ 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 2-3](#). When compressed, PTFE O-rings tend to cold flow, which aids in their sealing capabilities.

**Figure 2-3: 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.

## 2.7 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.

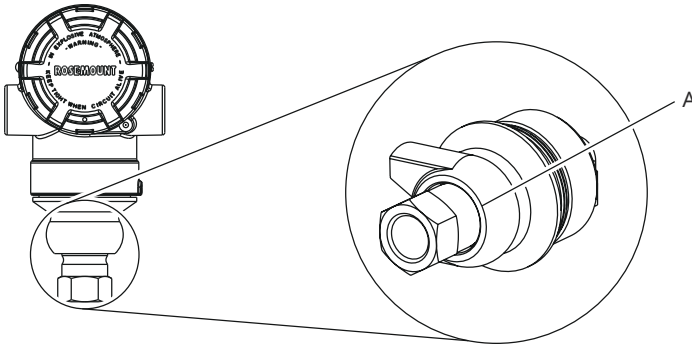
For M20 threads, install conduit plugs to full thread engagement or until mechanical resistance is met.

## 2.8 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 2-4](#).

## 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.

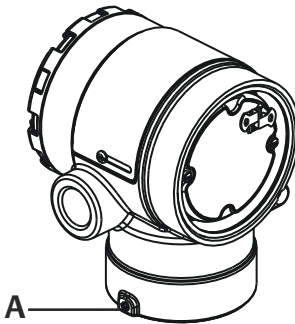
**Figure 2-4: In-line Gauge Low Side Pressure Port***A. Pressure port location*

## 2.9 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 2-5: Housing Rotation***A. Housing rotation set screw (5/64 in.)*

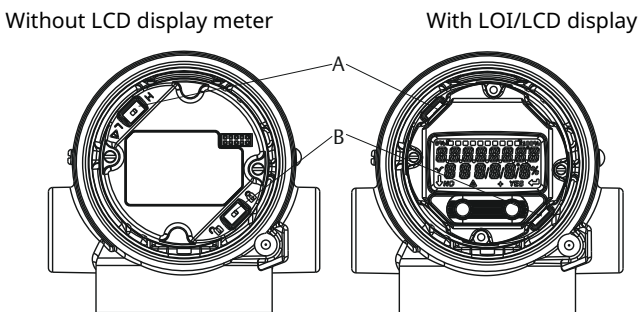
2. Rotate the housing clockwise to the desired location.
3. If the desired location cannot be achieved due to thread limitation, rotate the housing counterclockwise to the desired location (up to 360° from thread limit).

- Retighten the housing rotation set screw to no more than 7 in.-lbs. when desired location is reached.

## 2.10 Set the switches

Set alarm and security switch configuration before installation as shown in [Figure 2-6](#).

**Figure 2-6: Transmitter Electronics Board**



- A. **Alarm**
- B. **Security**

- The alarm switch sets the analog output alarm to high or low.
- Default alarm is high.
- The security switch allows (🔓) or prevents (🔒) any configuration of the transmitter.
- Default security is off (🔓).

To change the switch configuration:

### Procedure

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

### **⚠ WARNING**

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

- Slide the **Security** and **Alarm** switches into the preferred position using a small screwdriver.

4. Reattach the transmitter cover.

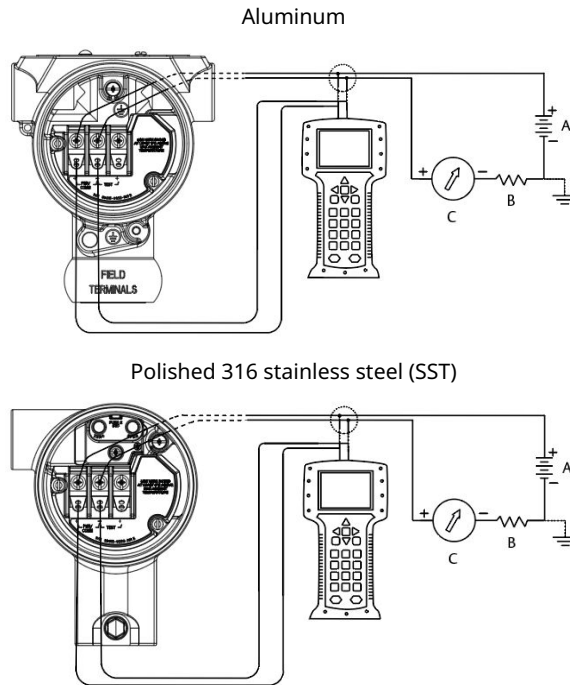
**⚠ WARNING**

The cover must be fully engaged to comply with explosion-proof requirements.

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### 3 Connect the wiring and power up

Figure 3-1: Transmitter Wiring Diagrams (4–20 mA)



- A. 24 Vdc supply
- B.  $R_L \geq 250$
- C. Current meter (optional)

Use shielded twisted pair cable for best results. Use 24 American Wire Gauge (AWG) or larger wire that does not exceed 5,000 ft. (1500 m) in length. If applicable, install wiring with a drip loop. Arrange the drip loop so the bottom is lower than the conduit connections and the transmitter housing.

**⚠ WARNING**

Installation of the transient protection terminal block does not provide transient protection unless the Rosemount 2051HT case is properly grounded.

Do not run signal wiring in conduit or open trays with power wiring, or near heavy electrical equipment.

Do not connect the powered signal wiring to the test terminals. Power could damage the test diode in the terminal block.

To wire the transmitter:

**Procedure**

1. Remove the housing cover on the **FIELD TERMINALS** side.
2. Connect the positive lead to the “+” terminal (PWR/COMM) and the negative lead to the “-” terminal.
3. 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.

**NOTICE**

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

4. Ground housing to fulfill local grounding regulations.
5. Ensure proper grounding.  
It is important the instrument cable shield be:
  - trimmed close and insulated from touching the transmitter housing
  - connected to the next shield if cable is routed through a junction box
  - connected to a good earth ground at the power supply end
6. If transient protection is needed, refer to [Grounding for transient terminal block](#) for grounding instructions.
7. Plug and seal unused conduit connections.

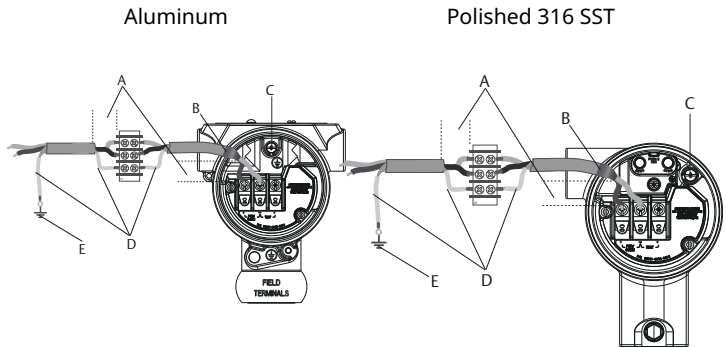


### 8. Reattach the transmitter covers.

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

The covers must only be capable of being released or removed with the aid of a tool to comply with applicable ordinary locations requirements.

**Figure 3-2: Wiring**



- A. *Minimize distance*
- B. *Trim shield and insulate*
- C. *Protective grounding terminal*
- D. *Insulate shield*
- E. *Connect shield back to the power supply ground*

## 3.1 Grounding for transient terminal block

Ground termination is provided on the outside of the electronics housing and inside the terminal compartment. These grounds are used when the transient protection terminal blocks are installed. Emerson recommends using 18 American Wire Gauge (AWG) or larger wire to connect housing ground to earth ground (internal or external).

### NOTICE

The Rosemount 2051HT polished 316 stainless steel (SST) housing only provides ground termination inside the terminal compartment.

## 4 Verifying configuration

Verify the configuration using any HART®-capable configuration tool or local operator interface (LOI) - option code M4. Configuration instructions for a handheld communicator and LOI are included in this section.

### 4.1 Verify configuration with a handheld communicator

#### Prerequisites

Install a Rosemount 2051 device driver (DD) on the handheld communicator to verify configuration.

Fast key sequences for the latest DD are shown in [Table 4-1](#). For fast key sequences using legacy DDs, contact your local Emerson representative.

#### NOTICE

Emerson recommends installing the latest DD to access the complete functionality. Visit [Emerson.com/FieldCommunicator](https://www.emerson.com/FieldCommunicator) for information on updating the DD library.

#### Procedure

Verify device configuration using the Fast Key sequences in [Table 4-1](#). A check (✓) indicates the basic configuration parameters. At minimum, verify these parameters as part of configuration and startup.

**Table 4-1: Device Revision 9 and 10 (HART® 7), DD Revision 1 Fast Key Sequence**

	Function	HART 7	HART 5
✓	Alarm and Saturation Levels	2, 2, 2, 5, 7	2, 2, 2, 5, 7
✓	Damping	2, 2, 1, 1, 5	2, 2, 1, 1, 5
✓	Range Values	2, 2, 2	2, 2, 2
✓	Tag	2, 2, 7, 1, 1	2, 2, 7, 1, 1
✓	Transfer Function	2, 2, 1, 1, 6	2, 2, 1, 1, 6
✓	Units	2, 2, 1, 1, 4	2, 2, 1, 1, 4
	Burst Mode	2, 2, 5, 3	2, 2, 5, 3
	Custom Display Configuration	2, 2, 4	2, 2, 4
	Date	2, 2, 7, 1, 4	2, 2, 7, 1, 3

**Table 4-1: Device Revision 9 and 10 (HART® 7), DD Revision 1 Fast Key Sequence (continued)**

	Function	HART 7	HART 5
	<b>Descriptor</b>	2, 2, 7, 1, 5	2, 2, 7, 1, 4
	<b>Digital to Analog Trim (4–20 mA output)</b>	3, 4, 2	3, 4, 2
	<b>Disable Configuration Buttons</b>	2, 2, 6, 3	2, 2, 6, 3
	<b>Rerange with Keypad</b>	2, 2, 2, 1	2, 2, 2, 1
	<b>Loop Test</b>	3, 5, 1	3, 5, 1
	<b>Lower Sensor Trim</b>	3, 4, 1, 2	3, 4, 1, 2
	<b>Message</b>	2, 2, 7, 1, 6	2, 2, 7, 1, 5
	<b>Scaled D/A Trim (4–20 mA output)</b>	3, 4, 2	3, 4, 2
	<b>Sensor Temperature/Trend</b>	3, 3, 2	3, 3, 2
	<b>Upper Sensor Trim</b>	3, 4, 1, 1	3, 4, 1, 1
	<b>Digital Zero Trim</b>	3, 4, 1, 3	3, 4, 1, 3
	<b>Password</b>	2, 2, 6, 5	2, 2, 6, 4
	<b>Scaled Variable</b>	3, 2, 2	3, 2, 2
	<b>HART Revision 5 to HART Revision 7 switch</b>	2, 2, 5, 2, 3	2, 2, 5, 2, 3
	<b>Long Tag<sup>(1)</sup></b>	2, 2, 7, 1, 2	N/A
	<b>Find Device<sup>(1)</sup></b>	3, 4, 5	N/A
	<b>Simulate Digital Signal<sup>(1)</sup></b>	3, 4, 5	N/A

(1) Only available in HART Revision 7 mode.

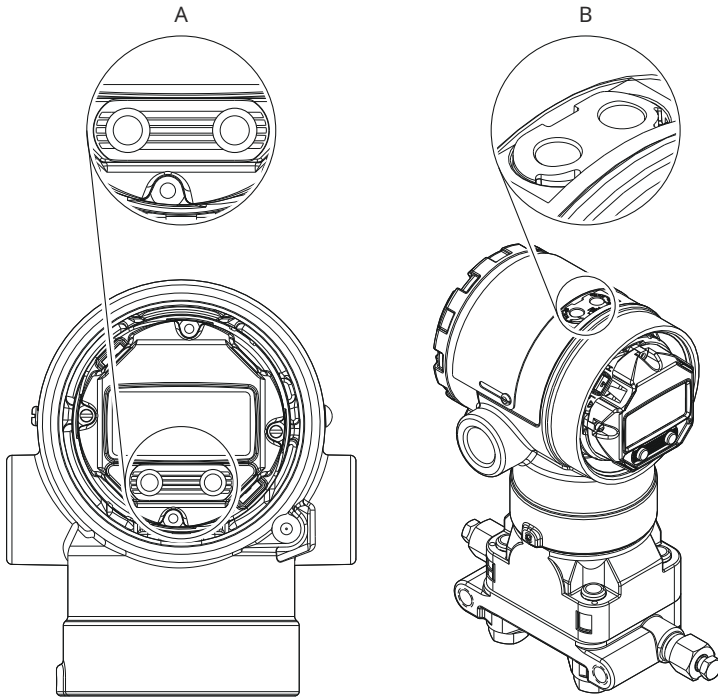
## 4.2 Verify configuration with local operator interface (LOI)

You can use the optional LOI to configure the device.

The LOI is a two-button design with internal and external/rear buttons. On a polished stainless steel housing, buttons are located internally both on the display and terminal side of the transmitter. On an aluminum housing, buttons are located on the display and externally underneath the top metal tag.

To activate the LOI, push any button. LOI button functionality is shown on the bottom corners of the display. See [Table 4-2](#) and [Figure 4-2](#) for button operation and menu information.

**Figure 4-1: Internal and External LOI Buttons**



- A. Internal buttons
- B. External buttons

**Table 4-2: LOI Button Operation**


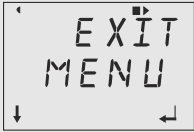
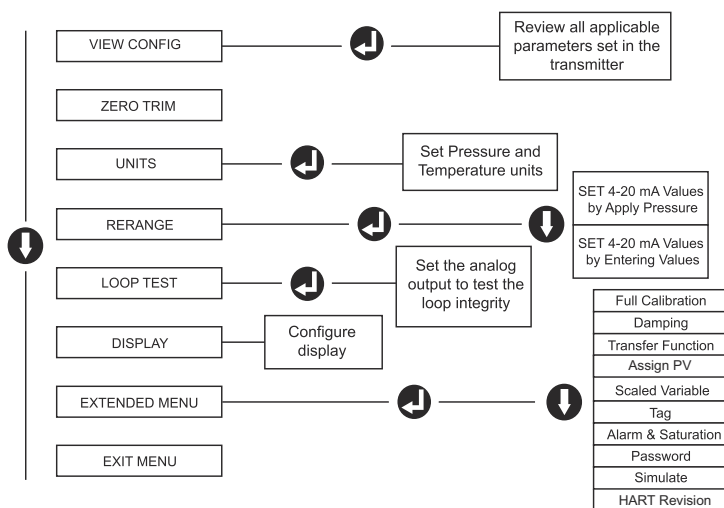
Button		
Left	<b>No</b>	SCROLL
Right	<b>Yes</b>	ENTER

Figure 4-2: LOI Menu



### 4.3 Switch HART® Revision mode

If the HART configuration tool is not capable of communicating with HART Revision 7, the transmitter will load a generic menu with limited capability. To switch the HART Revision mode from the generic menu:

#### Procedure

Navigate to **Manual Setup** → **Device Information** → **Identification** → **Message**.

- To change to HART Revision 5, enter HART5 in the Message field.
- To change to HART Revision 7, enter HART7 in the Message field.

## 5 Zero trim the transmitter

Emerson calibrates devices at the factory. Once you have installed the transmitter, Emerson recommends performing a zero trim on gauge transmitters to eliminate error due to mounting position or static pressure effects. You can use either a handheld communicator or configuration buttons to perform a zero trim.

### NOTICE

When performing a zero trim, ensure the equalization valve is open and all wet legs are filled to the correct level.

### NOTICE

Emerson does not recommend zeroing an absolute transmitter, such as the Rosemount 2051HT Hygienic Pressure Transmitter.

### Procedure

Choose your trim procedure:

- **Analog zero trim**      Sets the analog output to 4 mA.  
 Also referred to as a rerange, it sets the lower range value (LRV) equal to the measured pressure.  
 The display and digital HART® output remains unchanged.
- **Digital zero trim**      Recalibrates the sensor zero.  
 The LRV is unaffected. The pressure value will be zero (on display and HART output). 4 mA point may not be at zero.  
 This requires that the factory calibrated zero pressure is within a range of three percent of the upper range value (URV) [ $0 \pm 3\% \times \text{URV}$ ].

### Example

URV = 250 inH<sub>2</sub>O

Applied Zero Pressure =  $\pm 0.03 \times 250 \text{ inH}_2\text{O} = \pm 7.5 \text{ inH}_2\text{O}$  (compared to factory settings). The transmitter will reject values outside this range.

## 5.1 Zero trim the transmitter with a handheld communicator

### Procedure

1. Connect the handheld communicator.
2. Follow the HART® menu to perform the desired zero trim.

	Analog zero (set 4 mA)	Digital zero
Fast key sequence	3, 4, 2	3, 4, 1, 3

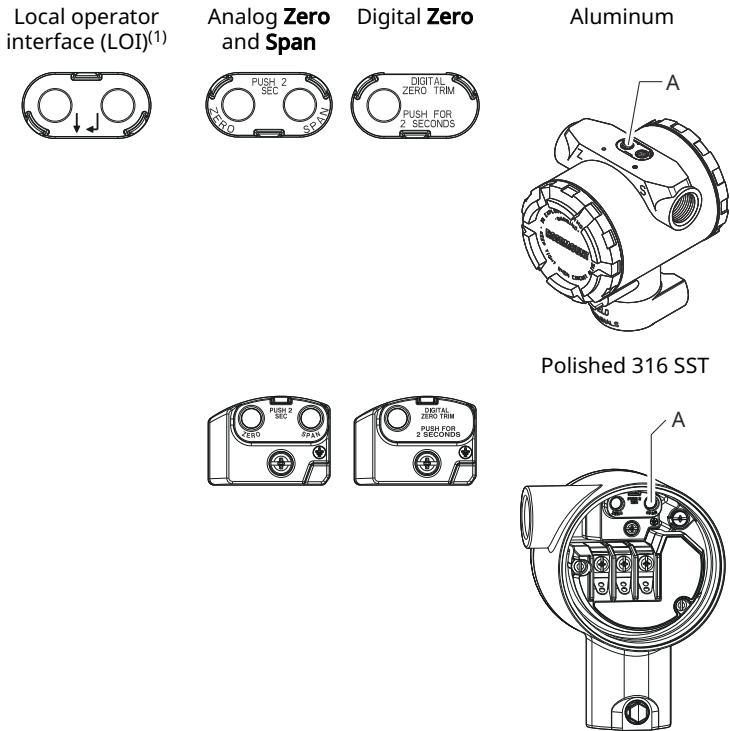
## 5.2 Zero trim the transmitter with configuration buttons

You can perform a zero trim using one of the three possible sets of configuration buttons located above the terminal block or under the top tag.

### Procedure

Access the configuration buttons.

- To access the configuration buttons on a polished stainless steel (SST) housing, remove the terminal side housing cover.
- To access the configuration buttons on an aluminum housing, loosen the screw on the top tag and slide the tag on top of the transmitter.

**Figure 5-1: External or Rear/Terminal Side Configuration Buttons**

A. Configuration buttons

- (1) LOI buttons (option M4) only offer front facing buttons on SST housing (option 1). You can purchase options D4 and DZ for rear/terminal-side facing buttons.

### 5.2.1 Zero trim with local operator interface (LOI): option M4

#### Procedure

1. Set the transmitter pressure.
2. See [Figure 4-2](#) for the operating menu.
  - To perform an analog zero trim, select **Rerange**.
  - To perform a digital zero trim, select **Zero Trim**.



## 5.2.2 Zero trim with analog **Zero** and **Span** (option D4)

### Procedure

1. Set the transmitter pressure.
2. Press and hold the **Zero** button for two seconds.

## 5.2.3 Zero trim with digital zero (option DZ)

### Procedure

1. Set the transmitter pressure.
2. Press and hold the **Zero** button for two seconds.

## 6 Safety instrumented systems

For safety certified installations, refer to the [Rosemount 2051 Pressure Transmitter Manual](#) for installation procedure and system requirements.

## 7 Product certifications

### 7.1 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](http://www.Emerson.com).

### 7.2 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).

#### 7.2.1 Functional specifications

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

### 7.3 Hazardous location certification

#### NOTICE

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

### 7.4 North America

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

<b>Certificate</b>	2041384
<b>Standards</b>	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)
<b>Markings</b>	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)

<b>Certificate</b>	2041384
<b>Standards</b>	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)
<b>Markings</b>	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

<b>Certificate</b>	2041384
<b>Standards</b>	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)
<b>Markings</b>	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

<b>Certificate</b>	2041384
<b>Standards</b>	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)
<b>Markings:</b>	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;  
 $-50\text{ °C} \leq T_a \leq +85\text{ °C}$   
 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)

<b>Certificate</b>	2041384
<b>Standards</b>	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)
<b>Markings</b>	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 $-50\text{ °C} \leq T_a \leq +70\text{ °C}$ 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

<b>Certificate</b>	2041384
<b>Standards</b>	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)
<b>Markings:</b>	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).

## 7.5 Europe

### E1 ATEX Flameproof

<b>Certificate</b>	KEMA 08ATEX0090X
<b>Standards</b>	EN IEC 60079-0: 2018, EN 60079-1: 2014, EN 60079-26: 2015
<b>Markings:</b>	⊕ 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 7-1: 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**

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



**Table 7-2: 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 $\mu$ F	0 $\mu$ 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**

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

**Table 7-3: Input Parameters**

	FISCO
Voltage $U_i$	17.5 V
Current $I_i$	380 mA
Power $P_i$	5.32 W
Capacitance $C_i$	0 $\mu$ 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

<b>Certificate</b>	Baseefa08ATEX0130X
<b>Standards</b>	EN IEC 60079-0: 2018, EN60079-15: 2010
<b>Markings</b>	⊕ 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

<b>Certificate</b>	Baseefa08ATEX0182X
<b>Standards</b>	EN IEC 60079-0: 2018, EN60079-31: 2014
<b>Markings</b>	⊕ II 1 D Ex ta IIIC T <sub>500</sub> 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.

## 7.6 International

### E7 IECEx Flameproof

<b>Certificate</b>	IECExKEM08.0024X
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<b>Standards</b>	IEC 60079-0: 2017, IEC 60079-1: 2014, IEC 60079-26: 2014
<b>Markings</b>	Ex db IIC T6...T4 Ga/Gb T6 ( $-60\text{ °C} \leq T_a \leq +70\text{ °C}$ ), T4/T5 ( $-60\text{ °C} \leq T_a \leq +80\text{ °C}$ )

**Table 7-4: 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**

<b>Certificate</b>	IECEx BAS 08.0045X
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<b>Standards</b>	IEC 60079-0: 2017, IEC 60079-11: 2011
<b>Marking:</b>	Ex ia IIC T4 Ga (-60 °C ≤ Ta ≤ +70 °C)

**Table 7-5: Input Parameters**

	<b>HART®</b>	<b>Fieldbus/PROFIBUS®</b>
Voltage U <sub>i</sub>	30 V	30 V
Current I <sub>i</sub>	200 mA	300 mA
Power P <sub>i</sub>	1 W	1.3 W
Capacitance C <sub>i</sub>	12 nF	0 μF
Inductance L <sub>i</sub>	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 IECEx FISCO**

<b>Certificate</b>	IECEX BAS 08.0045X
<b>Standards</b>	IEC 60079-0: 2017, IEC60079-11: 2011
<b>Markings</b>	Ex ia IIC T4 Ga (-60 °C ≤ Ta ≤ +60 °C)

**Table 7-6: Input Parameters**

	<b>FISCO</b>
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 $\mu$ 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**

<b>Certificate</b>	IECEx BAS 08.0046X
<b>Standards</b>	IEC 60079-0: 2017, IEC60079-15: 2010
<b>Markings</b>	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.

## 7.7 Brazil

**E2 Brazil Flameproof**

<b>Certificate</b>	UL-BR 14.0375X (Sorocaba, Sao Pao Paulo, Brazil), UL-BR22.3806X (Shakopee, MN, USA)
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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 7-7: Input Parameters**

	HART®	Fieldbus/PROFIBUS®
Voltage U <sub>i</sub>	30 V	30 V
Current I <sub>i</sub>	200 mA	300 mA
Power P <sub>i</sub>	1 W	1.3 W
Capacitance C <sub>i</sub>	12 nF	0
Inductance L <sub>i</sub>	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**

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

**Table 7-8: Input Parameters**

	<b>FISCO</b>
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 μH

**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.

**7.8 China**

**China Flameproof**

<b>Certificate</b>	GYJ23.1236X; GYJ20.1485X [Flow meters]
<b>Standards</b>	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 iaIIC T4 Ga, Ex db+ib/ibIIC T4 Ga/Gb

## 7.9 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.

## 7.10 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.

## 7.11 EAC

### EM EAC Flameproof

<b>Certificate</b>	EAЭEC KZ 7500525.01.01.00647
<b>Markings</b>	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

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

#### Special Conditions for Safe Use (X):

See certificate for special conditions.

## 7.12 Combinations

<b>K1</b>	Combination of E1, I1, N1, and ND
<b>K2</b>	Combination of E2 and I2
<b>K5</b>	Combination of E5 and I5
<b>K6</b>	Combination of E6 and I6
<b>K7</b>	Combination of E7, I7, N7, and IECEx Dust

### IECEx Dust

<b>Certificate</b>	IEC 60079-0: 2017, IEC 60079-31: 2013
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<b>Standards</b>	IEC 60079-0: 2011, IEC 60079-31: 2008
<b>Markings</b>	Ex ta IIIC T <sub>500</sub> 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.

<b>KA</b>	Combination of E1, I1, and K6
<b>KB</b>	Combination of K5 and K6
<b>KC</b>	Combination of E1, I1, and K5
<b>KD</b>	Combination of K1, K5, and K6
<b>KP</b>	Combination of EP and IP
<b>KM</b>	Combination of EM and IM

## 7.13 Y3 ATEX/IECEx RFID tag approvals

<b>Certificate</b>	IECEx EPS 15.0042X, EPS 15 ATEX 1 1011 X
<b>Markings</b>	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.

# 7.14 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)	JUNE 27, 2024	Mark Lee		Vice President, Quality		Boulder, CO, USA
		(name)		(function)		(place of issue)

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

Regulatory Compliance Shared Services Department  
Email: [europereproductcompliance@emerson.com](mailto:europereproductcompliance@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: 0575] Veritasveien 1, N-1322, Hovik, Norway*

**ATEX Notified Bodies for EU Type Examination Certificates:**  
**DEKRA Certification B.V.** [Notified Body Number: 0344]  
Mesander 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 T<sub>500</sub>105°C Da

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

## 7.15 China RoHS

有害物质成分表  
03031-9021, Rev AB

罗斯蒙特产品型号 2051  
3/29/201

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.

○: 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**  
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