

# Rosemount™ 3051 Pressure Transmitter and Rosemount 3051CF Series Flow Meter

with PROFIBUS® PA Protocol



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# 1 About this guide

This guide provides installation basic guidelines for Rosemount 3051 Transmitters.

It does not provide instructions for configuration, diagnostics, maintenance, service, troubleshooting, explosion-proof, flameproof, or intrinsically safe (I.S.) installations. Refer to the [Rosemount 3051 Pressure Transmitter Reference Manual](#) for more instructions. This manual is also available electronically on [Emerson.com](#).

## 1.1 Safety messages

### **⚠ WARNING**

#### **Explosions**

Explosions could result in death or serious injury.

Installation of device in an explosive environment must be in accordance with appropriate local, national, and international standards, codes, and practices. Review for any restrictions associated with a safe installation.

Before connecting a communication device in an explosive atmosphere, ensure that the instruments 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 may cause harm or result in death.

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

### **⚠ 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.

**⚠ 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.

**NOTICE****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 × 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.

## 2 Transmitter installation

### 2.1 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>

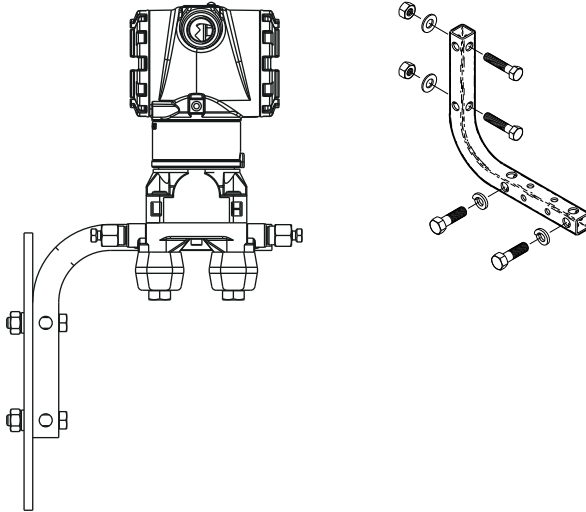
(1) *Maximum ambient temperature is reduced by 1.5 degree for 1 degree temperature rise in the process connection temperature beyond +185 °F (+85 °C).*

## 2.2 Mounting options

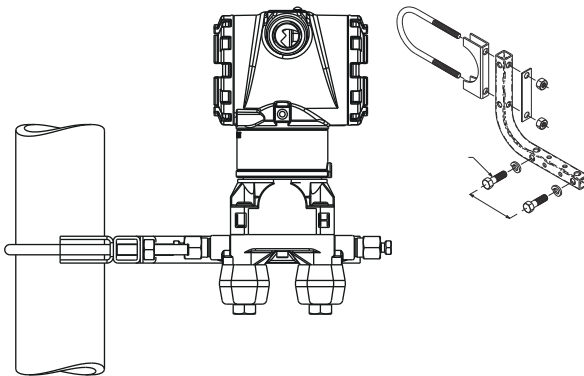
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**Figure 2-1: Panel Mount Coplanar™ Flange**

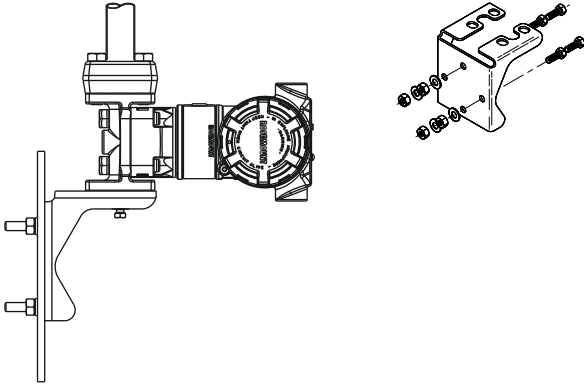
5/16 x 1½ panel bolts are customer supplied.



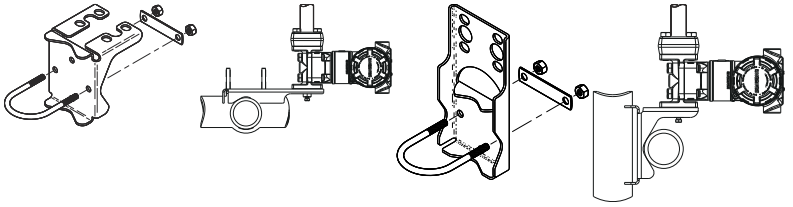
**Figure 2-2: Pipe Mount Coplanar Flange**



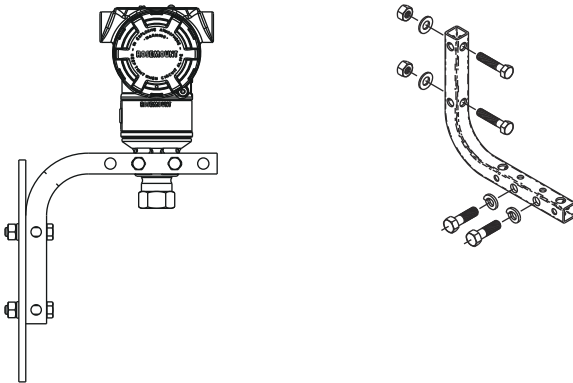
**Figure 2-3: Panel Mount Traditional Flange**



**Figure 2-4: Pipe Mount Traditional Flange**

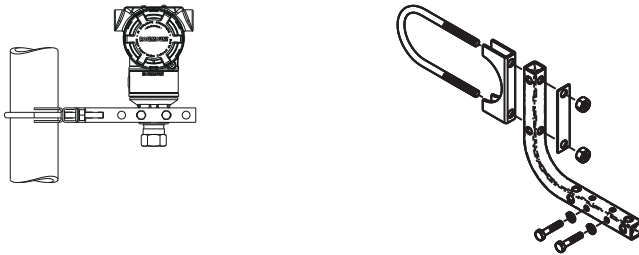


**Figure 2-5: Panel Mount Rosemount 3051T**



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**Figure 2-6: Pipe Mount 3051T**



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### 2.2.1 Mount the transmitter in liquid applications

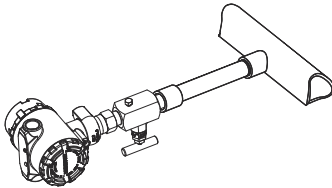
#### Procedure

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

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**Figure 2-7: Mounting the Transmitter in Liquid Applications**

In-line



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### 2.2.2 Mount the transmitter in gas applications

#### Procedure

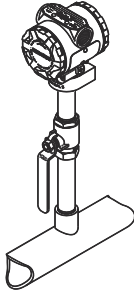
1. Place taps in the top or side of the line.
2. Mount beside or above the taps.



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**Figure 2-8: Mounting the Transmitter in Gas Applications**

In-line



**2.2.3 Mount the transmitter in steam applications**

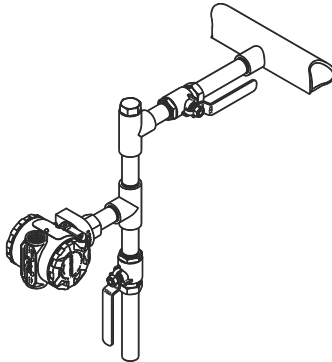
**Procedure**

1. Place taps to the side of the line.
2. Mount beside or below the taps.
3. Fill impulse lines with water.

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**Figure 2-9: Mounting the Transmitter in Steam Applications**

In-line



### 2.2.4 Install bolts

#### NOTICE

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

#### Procedure

1. Finger-tighten the bolts.
2. Torque the bolts to the initial torque value using a crossing pattern.

**Note**

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


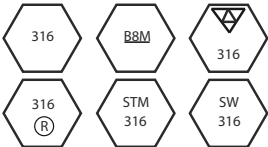
3. Torque the bolts to the final torque value using the same crossing pattern.

**Note**

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

4. Verify the flange bolts are protruding through the isolator plate before applying pressure.

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

Bolt material	Head markings	Initial torque	Final torque
Carbon steel (CS)		300 in-lb	650 in-lb
Stainless steel (SST)		150 in-lb	300 in-lb

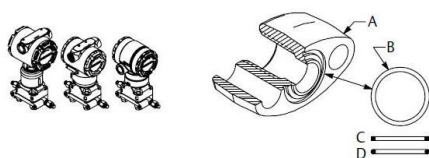
## 2.2.5 O-rings with flange adapters

### ▲ 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 2-10](#).

**Figure 2-10: O-ring location: Rosemount 3051S/3051/2051**



- A. Flange adapter
- B. O-ring
- C. PTFE-based profile (square)
- D. Elastomer profile (round)

### Note

Whenever the flanges or adapters are removed, visually inspect the O-rings. Replace them if there are any signs of damage, such as nicks or cuts. If you replace the O-rings, re-torque the flange bolts and alignment screws after installation to compensate for seating of the PTFE O-ring.

## 2.2.6 Environmental seal for housing

For NEMA® 4X, IP66, and IP68 requirements, use thread sealing PTFE tape or paste on male threads of conduit to provide a water and dust tight seal. Consult factory if other ingress protection ratings are required.

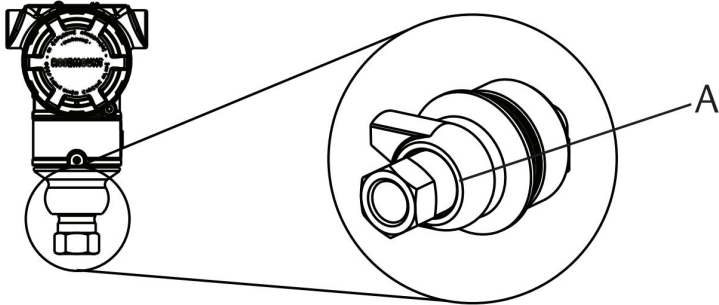
For M20 threads, install conduit plugs to full thread engagement or until mechanical resistance is met.

## 2.2.7 Inline gauge transmitter orientation

The low side pressure port (atmospheric reference) on the inline gauge transmitter is located in the neck of the transmitter, behind the housing. The vent path is 360 degrees around the transmitter between the housing and sensor (see [Figure 2-11](#)).

Keep the vent path free of any obstruction, such as paint, dust, and lubrication, by mounting the transmitter so that the process can drain away.

**Figure 2-11: Inline Gauge Low Side Pressure Port**



*A. Low side pressure port (atmospheric reference)*

### 2.2.8 Install high pressure coned and threaded connection

The transmitter comes with an autoclave connection designed for pressure applications. To connect the transmitter to your process:

#### Procedure

1. Apply a process-compatible lubricant to the gland nut threads.
2. Slip the gland nut onto the tube; then thread the collar onto the tube end.  
The collar is reverse threaded.
3. Apply a small amount of process-compatible lubricant to the tube cone to help prevent galling and facilitate sealing. Insert the tubing into the connection and finger tighten the bolts.
4. Tighten the gland nut to a torque of 25 ft-lb.

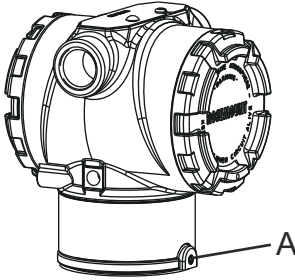
#### Note

Emerson has designed a weep hole into the transmitter for safety and leak detection. If fluid begins to leak from the weep hole, isolate the process pressure, disconnect the transmitter, and reseal until the leak is resolved.

## 2.3 Rotate housing

To improve field access to wiring or to better view the optional LCD display:

**Figure 2-12: Housing Rotation**



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

### Procedure

1. Loosen the housing rotation set screw using a 5/64-inch hex wrench.
2. Rotate the housing clockwise to the desired location.
3. If the desired location cannot be achieved due to thread limit, 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 it reaches the desired location.

## 2.4 Setting jumpers and switches

### 2.4.1 Security jumper

After the transmitter is configured, you may want to protect the configuration data from unwarranted changes.

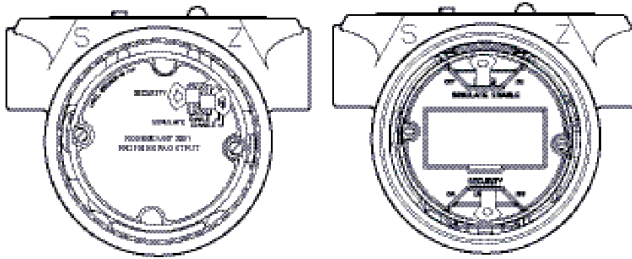
Each transmitter is equipped with a **Security** jumper that can be positioned **ON** to prevent the accidental or deliberate change of configuration data. The jumper is labeled **Security**. The **Security** jumper also prevents changes made using the local operator interface.

### 2.4.2 Simulate jumper

The **Simulate** jumper is used in conjunction with the analog input (AI) block. This jumper is used to simulate the pressure measurement and is used as a lock-out feature for the AI block. To enable the

simulate feature, move the jumper to the ON position after power is applied. This feature prevents the transmitter from being accidentally left in **Simulate** mode.

**Figure 2-13: Transmitter Jumper Locations**



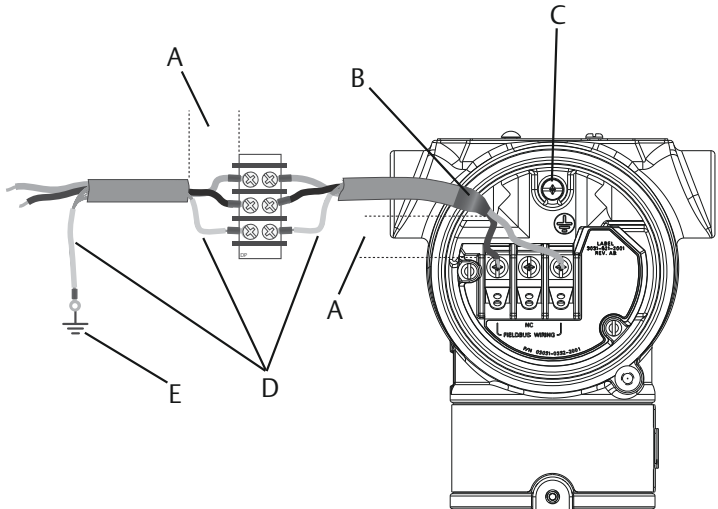
## 2.5 Connect wiring and power up

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 a minimum of 12 Vdc under normal operating conditions and 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 2-14: 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. Connect shield back to the power supply ground

## Note

The 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.

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**Note**

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

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### 2.5.1 Connect ground signal wiring

**⚠ WARNING**

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

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Emerson provides grounding terminations on the outside of the electronics housing and inside the terminal compartment. Use these grounds when transient protect terminal blocks are installed or to fulfill local regulations.

**Procedure**

1. Remove the field terminals housing cover.
2. Connect the wiring pair and ground as indicated in [Figure 2-14](#).
  - a) Trim the cable shield as short as practical and insulate from touching the transmitter housing.

**NOTICE**

If the cable shield touches the transmitter housing, it can create ground loops and interfere with communication.

Do not ground the cable shield at the transmitter.

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- b) Continuously connect the cable shields to the power supply ground.
- c) Connect the cable shields for the entire segment to a single good earth ground at the power supply.

**NOTICE**

Improper grounding is the most frequent cause of poor segment communications.

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3. Replace the housing cover.



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

4. Plug and seal unused conduit connections.

### 2.5.2 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.

### 2.5.3 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.

### 2.5.4 Fieldbus grounding

You cannot ground the Fieldbus segment signal wiring.

## NOTICE

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

### 2.5.5 Shield wire ground

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.

### 2.5.6 Signal termination

For every Fieldbus segment, install a terminator at the beginning and end of each segment.

### 2.5.7 Locating devices

Frequently, different personnel install, configure, and commission devices over time. A **Locate Device** capability uses the LCD display (when installed) to assist personnel in finding the desired device.

From the device **Overview** screen, select the **Locate Device** button. This launches 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).

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## 3 Basic configuration

### 3.1 Configure the transmitter

You can configure the transmitter via either the local operator interface (LOI) – option code M4, or via a Class 2 Master (device driver [DD ]or DTM™ based). The two basic configuration tasks for the PROFIBUS® PA Pressure transmitter are:

#### Procedure

1. Assign address.
2. Configure engineering units (scaling).

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#### Note

Emerson sets Rosemount 3051 PROFIBUS Profile 3.02 devices to identification number adaptation mode when shipping from the factory. This mode allows the transmitter to communicate with any PROFIBUS control host with either the generic Profile GSD (9700) or 3051 specific GSD (4444) loaded on the host; therefore, it is not required to change the transmitter identification number at startup.

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### 3.2 Assign address

Emerson ships the Rosemount 3051 with a temporary address of 126. You must change this to a unique value between 0 and 125 in order to establish communication with the host. Usually, addresses 0–2 are reserved for masters or couplers. Emerson recommends using addresses between 3 and 125 are recommended.

You can set the address using either:

- Local operator interface (LOI) – see [Table 3-1](#) and [Figure 3-1](#)
- Class 2 Master – see *Class 2 Master* manual for setting address

### 3.3 Configure engineering units

Unless the customer requests otherwise, Emerson ships the Rosemount 3051 Pressure Transmitter with the following settings:

- **Measurement Mode:** Pressure
- **Engineering Units:** inches H<sub>2</sub>O
- **Scaling:** None

Confirm or configure engineering units before installation.. You can configure units for pressure, flow, or level measurement.

You can set **Measurement Type, Units, Scaling,** and **Low Flow Cutoff** (when applicable) using either:

- local operator interface (LOI) – see [Table 3-1](#) and [Figure 3-1](#)
- Class 2 Master – see [Table 1](#) for parameter configuration

### 3.4 Configuration tools



#### 3.4.1 Local operator interface (LOI)

When ordered, you can use the LOI to commission the device. To activate the LOI, push either configuration button located under the top tag of the transmitter. See [Table 3-1](#) and [Figure 3-1](#) for operation and menu information. The **Security** jumper prevents someone from making changes using the LOI.

**Note**

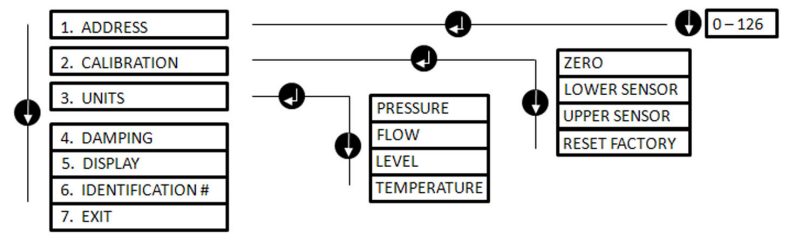
Buttons must be fully engaged ≈ 0.5 in. (10 mm) of travel.

**Table 3-1: LOI Button Operation**

Button	Action	Navigation	Character Entry	Save?
	Scroll	Moves down menu categories	Changes character value <sup>(1)</sup>	Changes between Save and Cancel
	Enter	Selects menu category	Enters character and advances	Saves

(1) Characters blink when they can be changed.

**Figure 3-1: LOI Menu**



## 3.5 Configure pressure using Class 2 Master

You can download the Rosemount 3051 PROFIBUS® device driver (DD) and DTM™ files at [Software and Drivers](#), or you can contact your local salesperson.

See the [Rosemount 3051 Pressure Transmitter Reference Manual](#) for flow or level configuration instructions.

### Procedure

1. Set blocks to Out of Service.
  - a) Put transducer block into Out of Service mode.
  - b) Put analog input block into Out of Service mode.
2. Select **Measurement Type**.
  - a) Set **Primary Value** type to Pressure.
3. Set **Engineering Units**.

Primary and secondary units must match.
4. Enter **Scaling**.
  - a) Set **Scale In** in transducer block to 0 – 100.
  - b) Set **Scale Out** in transducer block to 0 – 100.
  - c) Set **Primary Variable (PV) Scale** in analog input block to 0 – 100.
  - d) Set **Out Scale** in analog input block to 0 –100.
  - e) Set **Linearization** in analog input block to No Linearization.
5. Set blocks to Auto.
  - a) Set transducer block to Auto mode.
  - b) Set analog input block to Auto mode.

### 3.5.1 Host integration

#### Control host (Class 1)

The device uses condensed status as recommended by the Profile 3.02 specification and NE 107. See [Rosemount 3051 Pressure Transmitter Reference Manual](#) for condensed status bit assignment information.

Load the appropriate GSD file on the control host - Rosemount 3051 specific (*rmt4444.gsd*) or Profile 3.02 Generic (*pa139700.gsd*). These files can be found on [Emerson.com](https://www.emerson.com) or [Profibus.com](https://www.profibus.com).

### **Configuration host (Class 2)**

Install the appropriate device driver (DD) or DTM™ file in the configuration host. These files can be found at [Software & Drivers](#).

## 4 Trimming the transmitter

Emerson calibrates devices at the factory. After you install the device, Emerson recommends performing a zero trim on the sensor to eliminate error due to mounting position or static pressure effects.

You can perform a zero trim using:

- local operator interface (LOI) – see [Table 3-1](#) and [Figure 3-1](#)
- Class 2 Master – see [Configure pressure using Class 2 Master](#) for parameter configuration

### 4.1 Zero trim using Class 2 Master

#### Procedure

1. Place the transducer block into **Out of Service (OOS)** mode.
2. Apply zero pressure to device and allow to stabilize.
3. Go to **Device Basic Setup** → **Calibration** and set the **Lower Calibration Point** to 0 . 0.
4. Place the transducer block to **AUTO** mode.

## 5 Product certifications

### 5.1 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 [Emerson.com/global](https://www.emerson.com/global).

### 5.2 Federal Communication Commission (FCC) notice

This device complies with Part 15 of the Federal Communication Commission Rules.

Operation is subject to the following conditions: This device may not cause harmful interference; this device must accept any interference received, including interference that may cause undesired operation. This device must be installed to ensure a minimum antenna separation distance of 7.9 in. (20 cm) from all persons. Changes or modification to the equipment not expressly approved by Emerson could void the user's authority to operate the equipment.

### 5.3 Innovation, Science, and Economic Development (ISED) notice

This device contains license-exempt transmitter(s)/receiver(s) that comply with Innovation, Science, and Economic Development Canada's license-exempt RSS(s). Operation is subject to the following two conditions: This device may not cause interference. This device must accept any interference, including interference that may cause undesired operation of the device.

*Cet appareil est conformé à la norme RSS-247 Industrie Canada exempt de licence. Son fonctionnement est soumis aux deux conditions suivantes: (1) cet appareil ne doit pas provoquer d'interférences et (2) cet appareil doit accepter toute interférence, y compris les interférences pouvant causer un mauvais fonctionnement du dispositif.*

### 5.4 NCC notice

取得審驗證明之低功率射頻器材，非經核准，公司、商號或使用者均不得擅自變更頻率、加大功率或變更原設計之特性及功能。低功率射頻器材之使用不得影響飛航安全及干擾合法通信；經發現有干擾現象時，應立即停用，並改善至無干擾時方得繼續使用。前述合法通信，指依電信管理法規定作業之無線電通信。低功率射頻器材須忍受合法通信或工業、科學及醫療用電波輻



## 5.5 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).

### 5.5.1 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

## 5.6 North America

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

<b>Certificate</b>	FM16US0121 Range 1-5 (HART® only)
<b>Standards</b>	FM 3600: 2018, FM 3615: 2018, FM 3616: 2011, FM 3810: 2005, ANSI/NEMA® 250: 2008
<b>Markings</b>	XP: CL I, DIV 1, GP B, C, D, T5; DIP: CL II, DIV 1, GP E, F, G; CL III; T5 (-50 °C ≤ T <sub>a</sub> ≤ +85 °C) Type 4X
<b>Certificate</b>	1053834 Ranges 1-6
<b>Standards</b>	FM 3600: 2022, FM 3610: 2021, FM 3615: 2022, FM 3616: 2022, ANSI/UL 61010-1-2019 Third Edition, ANSI-ISA-12.27.01-2022, ANSI/UL 50E (First Edition)
<b>Markings</b>	XP: CL I, DIV 1, GP B, C, D T5; Seal not required DIP: CL II, DIV 1, GP E, F, G; CL III T5; (-50 °C ≤ T <sub>a</sub> ≤ +[85 °C) Type 4X, IP 68 Optional: single seal

### Specific Conditions for Use:

1. The Rosemount 3051 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.
4. Flameproof joints are not intended for repair.

### 5.6.2 15 USA Intrinsic Safety (IS) and Nonincendive (NI)

**Certificate** FM16US0120X

Ranges 1-5 (HART® only)

**Standards** FM 3600: 2011, FM 3610: 2010, FM 3611: 2004, FM 3810: 2005, ANSI/NEMA 250: 2008

**Markings** IS: CL I, DIV 1, GP A, B, C, D T4

CL II, DIV 1, GP E, F, G; CL III

NI: CL 1, DIV 2, GP A, B, C, D; T4

HART:  $(-50\text{ °C} \leq T_a \leq +70\text{ °C})$

FOUNDATION™ Fieldbus/PROFIBUS®-PA:  $(-50\text{ °C} \leq T_a \leq +60\text{ °C})$

Install per 03031-1019.

Type 4X

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

1. The Rosemount 3051 Transmitter housing contains aluminum and is considered a potential risk of ignition by impact or friction. Care must be taken into account during installation and use to prevent impact and friction.
2. The Rosemount 3051 Transmitter with the transient terminal block (option code T1) will not pass the 500 Vrms dielectric strength test, and this must be taken into account during installation.

**Certificate** 1053834

Ranges 1-6

**Standards** FM 3600: 2022, FM 3610: 2018, FM 3611: 2021, ANSI/UL 61010-1-2019 Third Edition, ANSI/UL 60079-0:

2017, ANSI/UL 60079-11: 2013, ANSI-ISA-12.27.01-2022, ANSI/UL 50E (First Edition)

**Markings** IS: CL I GP ABCD T4  
 IS: CL II GP EFG; CL III T4  
 CL I ZN 0 AEx ia IIC T4 Ga  
 NI: CL I DIV 2 GP ABCD T4  
 $-76\text{ }^{\circ}\text{F} (-60\text{ }^{\circ}\text{C}) \leq T_a \leq 158\text{ }^{\circ}\text{F} (70\text{ }^{\circ}\text{F})$   
 Optional: single seal  
 Type 4X IP 68  
 INSTALL PER 03031-1024

### Specific Conditions for Use

1. The Rosemount 3051 Transmitter housing contains aluminum and is considered a potential risk of ignition by impact or friction. Care must be taken into account during installation and use to prevent impact and friction.
2. The Rosemount 3051 Transmitter with the transient terminal block (option code T1) will not pass the 500 Vrms dielectric strength test, and this must be taken into account 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.

### 5.6.3 IE USA FISCO

**Certificate** FM16US0120X  
 Ranges 1-5

**Standards** FM 3600: 2011, FM 3610: 2010, FM 3611: 2004, FM 3810: 2005, ANSI/NEMA<sup>®</sup> 250: 2008

**Markings** IS: CL I, DIV 1, GP A, B, C, D T4;  
 CL II, DIV 1, GP E, F, G; CL III  
 $-50\text{ }^{\circ}\text{C} \leq T_a \leq +60\text{ }^{\circ}\text{C}$   
 FISCO  
 Install per 03031-1019  
 Type 4X

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

1. The Rosemount 3051 Transmitter housing contains aluminum and is considered a potential risk of ignition by impact or friction. Care must be taken into account during installation and use to prevent impact and friction.

**Certificate** 1053834

**Standards** FM 3600: 2022, FM 3610: 2018, FM 3611: 2021, ANSI/UL 61010-1-2019 Third Edition, ANSI/UL 60079-0: 2017, ANSI/UL 60079-11: 2013, ANSI-ISA-12.27.01-2022, ANSI/UL 50E (First Edition)

**Markings** IS: CL I GP ABCD T4  
 CL I ZN 0 AEx ia IIC T4 Ga  
 $-60\text{ }^{\circ}\text{C} \leq T_a \leq +70\text{ }^{\circ}\text{C}$   
 FISCO  
 Optional: single seal  
 Type 4X, IP 68  
 Install per 03031-1024.

### Specific Conditions for Use

1. The Rosemount 3051 Transmitter housing contains aluminum and is considered a potential risk of ignition by impact or friction. Care must be taken into account 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.

#### 5.6.4 C6 Canada Explosion-proof, Dust-Ignitionproof, Intrinsic Safety, and Nonincendive

**Certificate** 1053834

**Standards** CAN/CSA C22.2 No. 61010-1-12, CAN/CSA C22.2 No. 94.2-20, CSA C22.2 No. 25-17, CAN/CSA C22.2 No. 30:20, CAN/CSA C22.2 No. 213-17 +UPD1 (2018)+UPD2 (2019)+UPD3 (2021), CAN/CSA C22.2 No. 60079-0:19, CAN/CSA C22.2 No. 60079-1:16, CAN/CSA-60079-11:14, ANSI-ISA-12.27.01-2021

**Markings** XP: CL I, DIV 1, GP B, C, D T5  
 Ex db IIC T5 Gb

Seal not required  
 ( $-50\text{ }^{\circ}\text{C} \leq T_a \leq +85\text{ }^{\circ}\text{C}$ );  
 DIP: CL II, DIV 1, GP E, F, G; CL III T5;  
 T5:  $-50\text{ }^{\circ}\text{C} \leq T_a \leq +85\text{ }^{\circ}\text{C}$   
 IS: CL I DIV 2 GP ABCD T4  
 T4:  $-60\text{ }^{\circ}\text{C} \leq T_a \leq +70\text{ }^{\circ}\text{C}$ ;  
 Install per 03031-1024 (IS/NI only)  
 Single seal - temp limits 03031-1053  
 Type 4X, IP68

### Specific Conditions for Use:

1. The Rosemount 3051 Transmitter housing contains aluminum and is considered a potential risk of ignition by impact or friction. Care must be taken into account 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. The Rosemount 3051 Transmitter with the transient terminal block (option code T1) will not pass the 500 Vrms dielectric strength test, and this must be taken into account during installation.
4. Flameproof joints are not intended for repair.

## 5.6.5 E6 Canada Explosion-proof, Dust-Ignitionproof, and Division 2

**Certificate** 1053834

**Standards** CAN/CSA C22.2 No. 61010-1-12, CAN/CSA C22.2 No. 94.2-20, CSA C22.2 No. 25-17, CAN/CSA C22.2 No. 30:20, CAN/CSA C22.2 No. 213-17 +UPD1 (2018) +UPD2 (2019) +UPD3 (2021), CAN/CSA C22.2 No. 60079-0:19, CAN/CSA C22.2 No. 60079-1:16, ANSI-ISA-12.27.01-2021

**Markings** XP: CL I, DIV 1, GP B, C, D T5  
 Ex db IIC T5 Gb  
 Seal not required  
 DIP: CL II, DIV 1, GP E, F, G; CL III T5;  
 T5:  $-50\text{ }^{\circ}\text{C} \leq T_a \leq +85\text{ }^{\circ}\text{C}$   
 NI: CL I DIV 2 GP ABCD T4  
 T4:  $-60\text{ }^{\circ}\text{C} \leq T_a \leq +70\text{ }^{\circ}\text{C}$ ;  
 Single seal - temp limits per 03031-1053

## Type 4X, IP68

**Specific Conditions for Use:**



1. The Rosemount 3051 Transmitter housing contains aluminum and is considered a potential risk of ignition by impact or friction. Care must be taken into account 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. Flameproof joints are not intended for repair.

## 5.7 Europe

### 5.7.1 E8 ATEX Flameproof and Dust

**ATEX Certificate** KEMA00ATEX2013X (Ex db); Baseefa11ATEX0275X (Ex ta)

**Standards Used** EN IEC 60079-0: 2018, EN 60079-1: 2014, EN 60079-26: 2015, EN 60079-31: 2014

**Markings**  II ½ G Ex db IIC T6...T4 Ga/Gb T6  
 T6:  $-60\text{ °C} \leq T_a \leq +70\text{ °C}$   
 T4/T5:  $-60\text{ °C} \leq T_a \leq +80\text{ °C}$ ;  
 II 1 D Ex ta IIIC T<sub>500</sub>105 °C Da  
 $-20\text{ °C} \leq T_a \leq +85\text{ °C}$

**Table 5-1: Process 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.
4. Some variants of the equipment have reduced markings on the nameplate. Refer to the Certificate for full equipment marking.
5. Variants with a paint finish must not be installed in a dust-laden airflow.

### 5.7.2 I1 ATEX Intrinsic Safety and Dust

**Certificate** BAS97ATEX1089X; Baseefa11ATEX0275X

**Standards** EN IEC 60079-0: 2018, EN60079-11: 2012, EN60079-31: 2014

**Markings** IS:  II 1 G Ex ia IIC T4 Ga  
 HART®:  $-60\text{ °C} \leq T_a \leq +70\text{ °C}$   
 Fieldbus/PROFIBUS®:  $-60\text{ °C} \leq T_a \leq +60\text{ °C}$   
 Dust:  II 1 D Ex ta IIIC T<sub>500</sub> 105 °C Da  
 $-20\text{ °C} \leq T_a \leq +85\text{ °C}$

**Table 5-2: 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>	1.0 W	1.3 W
Capacitance C <sub>i</sub>	0.012 μF	0 μF
Inductance L <sub>i</sub>	0 mH	0 mH

### Specific Conditions of Use (X):

1. The apparatus is not capable of withstanding the 500 V insulation test required by clause 6.3.12 of EN60079-11: 2012. This must be taken into account when installing the apparatus.
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. Some variants of the equipment have reduced markings on the nameplate. Refer to the Certificate for full equipment marking.
4. 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.

### 5.7.3 IA ATEX FISCO

<b>Certificate</b>	BAS97ATEX1089X
<b>Standards</b>	EN IEC 60079-0: 2018, EN60079-11: 2012
<b>Markings</b>	⊕ II 1 G Ex ia IIC T4 Ga -60 °C ≤ T <sub>a</sub> ≤ +60 °C

**Table 5-3: Input parameters**

	Fieldbus/PROFIBUS®
Voltage U <sub>i</sub>	17.5 V
Current I <sub>i</sub>	380 mA
Power P <sub>i</sub>	5.32 W
Capacitance C <sub>i</sub>	≤ 5 nF
Inductance L <sub>i</sub>	≤ 10 μH

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

1. The apparatus is not capable of withstanding the 500 V insulation test required by clause 6.3.12 of EN60079-11: 2012. This must be taken into account when installing the apparatus.
2. The enclosure may be made of aluminum alloy and given a protective polyurethane paint finish; however, care should be taken to protect it from impact or abrasion if located in Zone 0.





- Some variants of the equipment have reduced markings on the nameplate. Refer to the Certificate for full equipment marking.

#### 5.7.4 N1 ATEX Type n and Dust

**Certificate** BAS00ATEX3105X; Baseefa11ATEX0275X

**Standards** EN IEC 60079-0: 2018, EN60079-15: 2010, EN60079-31: 2014

**Markings**  II 3 G Ex nA IIC T5 Gc  
 $-40\text{ °C} \leq T_a \leq +70\text{ °C}$ ;  
 II 1 D Ex ta IIIC T<sub>500</sub> 105 °C Da  
 $-20\text{ °C} \leq T_a \leq +85\text{ °C}$

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

- The apparatus is not capable of withstanding the 500 V insulation test required by EN 60079-15: 2010. This must be taken into account when installing the apparatus.
- 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.
- Variants with a paint finish must not be installed in a dust-laden airflow.
- Some variants of the equipment have reduced markings on the nameplate. Refer to the Certificate for full equipment marking.

## 5.8 International

### 5.8.1 E7 IECEx Flameproof and Dust

**Certificate** IECEx KEM 09.0034X; IECEx BAS 10.0034X

**Standards** IEC 60079-0: 2017, IEC 60079-1: 2014-06, IEC 60079-26: 2014-10, IEC 60079-31: 2013

**Markings** Ex db IIC T6...T4 Ga/Gb  
 $T6: -60\text{ °C} \leq T_a \leq +70\text{ °C}$ ;  
 $T4/T5: -60\text{ °C} \leq T_a \leq +80\text{ °C}$ ;  
 Ex ta IIIC T<sub>500</sub>105 °C Da  
 $-20\text{ °C} \leq T_a \leq +85\text{ °C}$

**Table 5-4: Process Temperature**

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

**Specific Conditions of Use:**

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.
4. Some variants of the equipment have reduced markings on the nameplate. Refer to the Certificate for full equipment marking.

**5.8.2 I7 IECEx Intrinsic Safety**

<b>Certificate</b>	IECEX BAS 09.0076X
<b>Standards</b>	IEC 60079-0: 2017, IEC60079-11: 2011
<b>Markings</b>	Ex ia IIC T4 Ga HART®: $-60\text{ °C} \leq T_a \leq +70\text{ °C}$ Fieldbus/PROFIBUS®: $-60\text{ °C} \leq T_a \leq +60\text{ °C}$

**Table 5-5: Input Parameters**

	HART	Fieldbus/PROFIBUS
Voltage $U_i$	30 V	30 V
Current $I_i$	200 mA	300 mA

**Table 5-5: Input Parameters (continued)**

	HART	Fieldbus/PROFIBUS
Power $P_i$	1.0 W	1.3 W
Capacitance $C_i$	0.012 $\mu$ F	0 $\mu$ F
Inductance $L_i$	0 mH	0 mH

**Specific Conditions of Use:**

1. If the apparatus is fitted with an optional 90 V transient suppressor, it is not capable of withstanding the 500 V insulation test required by clause 6.3.12 of IEC 60079-11. This must be taken into account when installing the apparatus.
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.

**IECEx Mining (Special A0259)**

<b>Certificate</b>	IECEx TSA 14.0001X
<b>Standards</b>	IEC 60079-0: 2011, IEC 60079-11: 2011
<b>Markings</b>	Ex ia I Ma (-60 °C $\leq$ T <sub>a</sub> $\leq$ +70 °C)

**Table 5-6: Input Parameters**

	HART	Fieldbus/ PROFIBUS	FISCO
Voltage $U_i$	30 V	30 V	17.5 V
Current $I_i$	200 mA	300 mA	380 mA
Power $P_i$	0.9 W	1.3 W	5.32 W
Capacitance $C_i$	0.012 $\mu$ F	0 $\mu$ F	< 5 nF
Inductance $L_i$	0 mH	0 mH	< 10 $\mu$ H

**Specific Conditions of Use:**

1. If the apparatus is fitted with an optional 90 V transient suppressor, it is not capable of withstanding the 500 V insulation test required by IEC60079-11. This must be taken into account when installing the apparatus.
2. It is a condition of safe use that the above input parameters shall be taken into account during installation.

- It is a condition of manufacture that only the apparatus fitted with housing, covers, and sensor module housing made out of stainless steel are used in Group 1 applications.

### 5.8.3 IG IECEx FISCO

<b>Certificate</b>	IECEX BAS 09.0076X
<b>Standards</b>	IEC 60079-0: 2017, IEC60079-11: 2011
<b>Markings</b>	Ex ia IIC T4 Ga -60 °C ≤ T <sub>a</sub> ≤ +60 °C

**Table 5-7: Input Parameters**

	Fieldbus/PROFIBUS®
Voltage U <sub>i</sub>	17.5 V
Current I <sub>i</sub>	380 mA
Power P <sub>i</sub>	5.32 W
Capacitance C <sub>i</sub>	≤ 5 nF
Inductance L <sub>i</sub>	≤ 10 μH

#### Specific Conditions for Safe Use:

- If the apparatus is fitted with an optional 90 V transient suppressor, it is not capable of withstanding the 500 V insulation test required by clause 6.3.12 of IEC 60079-11. This must be taken into account when installing the apparatus.
- 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.

### 5.8.4 N7 IECEx Type n

<b>Certificate</b>	IECEX BAS 09.0077X
<b>Standards</b>	IEC60079-0: 2017, IEC60079-15: 2010
<b>Markings</b>	Ex nA IIC T5 Gc (-40 °C ≤ T <sub>a</sub> ≤ +70 °C)

#### Specific Condition for Safe Use (X):

- The apparatus is not capable of withstanding the 500 V insulation test required by clause 6.5.1 of IEC 60079-15. This must be taken into account when installing the apparatus.

## 5.9 Brazil

### 5.9.1 E2 Brazil Flameproof

**Certificate** UL-BR 13.0643X

**Standards** ABNT NBR IEC 60079-0: 2013; ABNT NBR IEC 60079-1: 2016; ABNT NBR IEC 60079-26: 2016

**Markings** Ex db IIC T6...T4 Ga/Gb  
 T6:  $-60\text{ °C} \leq T_a \leq +70\text{ °C}$   
 T4/T5:  $-60\text{ °C} \leq T_a \leq +80\text{ °C}$

#### 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.

### 5.9.2 I2 Brazil Intrinsic Safety

**Certificate** UL-BR 13.0584X

**Standards** ABNT NBR IEC60079-0: 2013, ABNT NBR IEC60079-11: 2013

**Markings** HART®: Ex ia IIC T5/T4 Ga, T5 ( $-60\text{ °C} \leq T_a \leq +40\text{ °C}$ ), T4 ( $-60\text{ °C} \leq T_a \leq +70\text{ °C}$ )  
 Fieldbus/PROFIBUS®: Ex ia IIC T4 Ga ( $-60\text{ °C} \leq T_a \leq +60\text{ °C}$ )

**Table 5-8: Input Parameters**

	HART	Fieldbus/PROFIBUS
Voltage $U_i$	30 V	30 V

**Table 5-8: Input Parameters (continued)**

	HART	Fieldbus/PROFIBUS
Current $I_i$	200 mA	300 mA
Power $P_i$	0.9 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 not capable of withstanding the 500 V insulation test required by ABNT NBR IRC 60079-11. This must be taken into account when installing the equipment.
2. The enclosure may be made of aluminum alloy and given protective polyurethane paint finish; however, care must be taken to protect it from impact or abrasion if equipment requires EPL Ga.

**5.9.3 IB Brazil FISCO**

**Certificate** UL-BR 13.0584X

**Standards** ABNT NBR IEC60079-0: 2013, ABNT NBR IEC60079-11: 2013

**Markings** Ex ia IIC T4 Ga (-60 °C  $\leq$  T<sub>a</sub>  $\leq$  +60 °C)

**Table 5-9: Input Parameters**

	FISCO
Voltage $U_i$	17.5 V
Current $I_i$	380 mA
Power $P_i$	5.32 W
Capacitance $C_i$	$\leq$ 5 nF
Inductance $L_i$	$\leq$ 10 $\mu$ H

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

1. If the equipment is fitted with an optional 90 V transient suppressor, it is not capable of withstanding the 500 V insulation test required by ABNT NBR IRC 60079-11. This must be taken into account when installing the equipment.

- The enclosure may be made of aluminum alloy and given protective polyurethane paint finish; however, care must be taken to protect it from impact or abrasion if equipment requires EPL Ga.

## 5.10 China

### 5.10.1 E3 China Flameproof

**Certificate** GYJ24.1006X [Transmitters]; GYJ20.1486X [Flow meters]

**Standards** GB/T 3836.1-2021, GB/T 3836.2-2021, GB/T 3836.20-2021, GB/T 3836.31-2021

**Markings** 3051 Series: Ex db IIC T6~T4 Ga/Gb, Ex ta IIIC T200  
105 °C Da (-20 °C ≤ Ta ≤ +85 °C)  
3051CF Series: Ex d IIC T6~T4 Ga/Gb

#### 一、产品安全使用特殊条件

证书编号后缀“X”表明产品具有安全使用特殊条件：涉及隔爆接合面的维修须联系产品制造商。

- 涉及隔爆接合面的维修须联系产品制造商。
- 产品使用厚度小于 1mm 的隔膜作为 0 区（过程连接）和 1 区（产品其他部分）的隔离，安装和维护时需严格遵守制造商提供的说明书，以确保安全性。
- 产品外部涂层可能产生静电危险，使用时须防止产生静电火花，只能用湿布清理。

#### 二、产品使用注意事项

- 用于爆炸性气体环境中，产品温度组别和使用环境温度之间的关系为：（变送器）

温度组别	使用环境温度	过程温度
T6	-60 °C ~ +70 °C	-60 °C ~ +70 °C
T5	-60 °C ~ +80 °C	-60 °C ~ +80 °C
T4	-60 °C ~ +80 °C	-60 °C ~ +120 °C

用于爆炸性气体环境中，产品温度组别和使用环境温度之间的关系为：（流量计）

温度组别	使用环境温度
T6	-50 °C ~ +65 °C
T5	-50 °C ~ +80 °C

2. 用于爆炸性粉尘环境中，产品使用环境温度为： $-20^{\circ}\text{C} \leq \text{Ta} \leq +85^{\circ}\text{C}$
3. 产品外壳设有接地端子，用户在使用时应可靠接地。
4. 安装现场应不存在对产品外壳有腐蚀作用的有害气体。
5. 现场安装时，电缆引入口须选用国家指定的防爆检验机构按检验认可、具有 Ex d II C, Ex tD A20 IP66 防爆等级的电缆引入装置或堵封件，冗余电缆引入口须用堵封件有效密封。
6. 用于爆炸性气体环境中，现场安装、使用和维护必须严格遵守“断电后开盖！”的警告语。用于爆炸性粉尘环境中，现场安装、使用和维护必须严格遵守“爆炸性粉尘场所严禁开盖！”的警告语。
7. 用于爆炸性粉尘环境中，产品外壳表面需保持清洁，以防粉尘堆积，但严禁用压缩空气吹扫。
8. 用户不得自行更换该产品的零部件，应会同产品制造商共同解决运行中出现的故障，以杜绝损坏现象的发生。
9. 产品的安装、使用和维护应同时遵守产品使用说明书、GB3836.13-2013“爆炸性环境 第 13 部分：设备的修理、检修、修复和改造”、GB/T3836.15-2017“爆炸性环境 第 15 部分：电气装置的设计、选型和安装”、GB/T3836.16-2017“爆炸性环境 第 16 部分：电气装置的检查与维护”、GB50257-2014“电气装置安装工程爆炸和火灾危险环境电力装置施工及验收规范”和 GB15577-2007“粉尘防爆安全规程” GB12476.2-2010“可燃性粉尘环境用电气设备 第 1 部分：用外壳和限制表面温度保护的电气设备 第 2 节 电气设备的选择、安装和维护”的有关规定。

### 5.10.2 I3 China Intrinsic Safety

**Certificate** GYJ23.1139X; GYJ20.1488X [Flow meters]

**Standards** GB/T 3836.1-2021, GB/T 3836.4-2021, GB/T 3836.31-2021

**Markings** 3051 Series: Ex ia IIC T4 Ga, Ex ta IIIC T<sub>500</sub> 105 °C Da  
3051CF Series: Ex ia IIC T4 Ga, Ex ta IIIC T<sub>500</sub> 105 °C Da

- 产品安全使用特殊条件:

证书编号后缀“X”表明产品具有安全使用特殊条件:

1. 产品（选用铝合金外壳）外壳含有轻金属，用于 0 区时需注意防止由于冲击或摩擦产生的点燃危险。
2. 当选择 T1 瞬态抑制端子时，此设备不能承受 GB3836.4-2010 标准中第 6.3.12 条规定的 500V 交流有效值试验电压的介电强度试验。
3. Transmitter output 为 X 时，需使用由厂家提供的型号为 701PG 的 Smart Power Green Power Module 电池。



4. 产品外壳含有非金属部件，使用时须防止产生静电火花，只能用湿布清理。
- 产品使用注意事项：
    1. 产品使用环境温度范围：

气体/粉尘	Transmitter output	温度组别	环境温度范围
气体	A, M	T5	-60 °C ~ +40 °C
气体	A, M	T4	-60 °C ~ +70 °C
气体	F, W	T4	-60 °C ~ +60 °C
气体	X	T4	-40 °C ~ +70 °C
粉尘	A, F, W	T80 °C	-20 °C ~ +40 °C

2. 本安电气参数：

Transmitter output	最高输入电压 $U_i$ (V)	最大输入电流 $I_i$ (mA)	最大输入功率 $P_i$ (W)	最大内部等效参数	
				Ci (nF)	Li ( $\mu$ H)
A, M	30	200	0.9	12	0
F, W	30	300	1.3	0	0
F, W (FISCO)	17.5	380	5.32	5	10

注：Transmitter Output 为 F、W (FISCO) 时，本安电气参数符合 GB3836.19-2010 对 FISCO 现场仪表的参数要求。

3. 该产品必须与已通过防爆认证的关联设备配套共同组成本安防爆系统方可使用于爆炸性气体环境。其系统接线必须同时遵守本产品和所配关联设备的使用说明书要求，接线端子不得接错。
4. 该产品与关联设备的连接电缆应为带绝缘护套的屏蔽电缆，其屏蔽层应在安全场所接地。
5. 对于爆炸性粉尘环境，最大输入电压为：

Transmitter output	最高输入电压
A	55 V
F, W	40 V

6. 安装现场应不存在对产品外壳有腐蚀作用的有害气体。

7. 现场安装时，电缆引入口须选用国家指定的防爆检验机构按检验认可、具有 DIP A20 IP66 防爆等级的电缆引入装置、转接头或堵封件，冗余电缆引入口须用堵封件有效密封。
8. 对于爆炸性粉尘环境，现场安装、使用和维护必须严格遵守“爆炸性粉尘场所严禁开盖！”的警告语。
9. 用户不得自行更换该产品的零部件，应会同产品制造商共同解决运行中出现的故障，以杜绝损坏现象的发生。
10. 安装现场确认无可燃性粉尘存在时方可维修。
11. 产品的安装、使用和维护应同时遵守产品使用说明书、GB3836.13-2013“爆炸性环境 第 13 部分：设备的修理、检修、修复和改造”、GB3836.15-2000“爆炸性气体环境用电气设备 第 15 部分：危险场所电气安装（煤矿除外）”、GB3836.16-2006“爆炸性气体环境用电气设备 第 16 部分：电气装置的检查和维护（煤矿除外）”、GB3836.18-2010“爆炸性环境 第 18 部分：本质安全系统”和 GB50257-2014“电气装置安装工程爆炸和火灾危险环境电力装置施工及验收规范”，GB50527-1996“电气装置安装工程爆炸和火灾危险环境电气装置施工验收规范”以及 GB15577-2007“粉尘防爆安全规程”、GB12476.2-2006“可燃性粉尘环境用电气设备 第 1 部分：用外壳和限制表面温度保护的电气设备 第 2 节：电气设备的选择、安装和维护”的有关规定。

### 5.10.3 N3 China Type n

<b>Certificate</b>	GYJ20.1110X
<b>Standards</b>	GB/T 3836.1-2021, GB/T 3836.3-2021
<b>Markings</b>	Ex ec IIC T5 Gc

- 产品安全使用特殊条件  
产品防爆合格证号后缀“X”代表产品安全使用有特殊条件：产品不能承受 GB3836.8-2003 标准第 8.1 条中规定的 500V 对地电压试验 1 分钟，安装时需考虑在内。
- 产品使用注意事项
  1. 产品使用环境温度范围为： $-40^{\circ}\text{C} \leq T_a \leq +70^{\circ}\text{C}$
  2. 最高输入电压：

Transmitter output	最高输入电压
A, M (3051 Enhanced and 3051 Low Power HART®)	55 Vdc
F, W	40 Vdc

3. 现场安装时，电缆引入口须选用经国家指定的防爆检验机构检验认可的、具有 Ex e 或 Ex n 型的电缆引入装置或堵封件，冗余电缆引入口须用堵封件有效密封。
4. 安装现场确认无可燃性气体存在时方可维修。
5. 用户不得自行更换该产品的零部件，应会同产品制造商共同解决运行中出现的故障，以杜绝损坏现象的发生。
6. 产品的安装、使用和维护应同时遵守产品使用说明书、GB3836.13-2013“爆炸性环境 第 13 部分：设备的修理、检修、修复和改造”、GB3836.15-2000“爆炸性气体环境用电气设备 第 15 部分：危险场所电气安装（煤矿除外）”、GB3836.16-2006“爆炸性气体环境用电气设备 第 16 部分：电气装置的检查和维护（煤矿除外）”、GB50257-1996“电气装置安装工程爆炸和火灾危险环境电力装置施工及验收规范”的有关规定。

## 5.11 Japan

### 5.11.1 E4 Japan Flameproof

**Certificate** CML20JPN1098X

**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.

## 5.12 Republic of Korea

### 5.12.1 EP Republic of Korea Flameproof

**Certificate** 11-KB4BO-0188X [Manufacturing Singapore], 19-KA4BO-079X [Manufacturing USA]

**Markings** Ex d IIC T6...T4 Ga/Gb

### 5.12.2 IP Republic of Korea Intrinsic Safety

**Certificate** 13-KB4BO-0203X [HART® – Manufacturing USA], 13-KB4BO-0204X [Fieldbus – Manufacturing USA], 10-KB4BO-0138X [HART – Manufacturing Singapore], 13-KB4BO-0206X [Fieldbus – Manufacturing Singapore], 18-KA4BO-0354X [HART – Manufacturing USA], 18-KA4BO-0355X [Fieldbus – Manufacturing USA]

**Markings** Ex ia IIC T5/T4 (HART); Ex ia IIC T4 (Fieldbus)

## 5.13 Combinations

- K2** Combination of E2 and I2
- K5** Combination of E5 and I5
- K6** Combination of C6, E8, and I1
- K7** Combination of E7, I7, and N7
- K8** Combination of E8, I1, and N1
- KB** Combination of E5, I5, and C6
- KD** Combination of E8, I1, E5, I5, and C6
- KM** Combination of EM and IM
- KP** Combination of EP and IP

## 5.14 Additional certifications

### 5.14.1 SBS American Bureau of Shipping (ABS) Type Approval

**Certificate** 18-HS1814795-PDA

**Intended use** Marine and offshore applications – Measurement of either gauge or absolute pressure for liquid, gas, and vapor.

### 5.14.2 SBV Bureau Veritas (BV) Type Approval

**Certificate** 23155

- Requirements** Bureau Veritas rules for the classification of steel ships
- Application** Class notations: AUT-UMS, AUT-CCS, AUT-PORT, and AUT-IMS; Pressure transmitter type 3051 cannot be installed on diesel engines.

### 5.14.3 SDN Det Norske Veritas (DNV) Type Approval

- Certificate** TAA000004F
- Intended Use** DNV GL rules for classification - ships and offshore units
- Application** **Table 5-10: Location Classes**

Temperature	D
Humidity	B
Vibration	A
Electromagnetic compatibility (EMC)	B
Enclosure	D




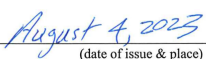
### 5.14.4 SLL Lloyds Register (LR) Type Approval



- Certificate** LR21173788TA
- Application** Environmental categories ENV1, ENV2, ENV3, and ENV5



### 5.14.5 C5 Custody Transfer - Measurement Canada Accuracy Approval

- Certificate** AG-0226; AG-0454; AG-0477

### 5.15 EU Declaration of Conformity

	<h2 style="margin: 0;">EU Declaration of Conformity</h2> <p style="margin: 0;">No: RMD 1017 Rev. AJ</p>	
<p>We,</p> <p style="margin-left: 40px;"><b>Rosemount, Inc.</b> 6021 Innovation Blvd. Shakopee, MN 55379 USA</p> <p>declare under our sole responsibility that the product,</p> <p style="text-align: center;"><b>Rosemount 3051 Pressure Transmitters</b></p> <p>manufactured by,</p> <p style="margin-left: 40px;"><b>Rosemount, Inc.</b> 6021 Innovation Blvd. Shakopee, MN 55379 USA</p> <p>to which this declaration relates, is in conformity with the provisions of the European Union Directives, including the latest amendments, as shown in the attached schedule.</p> <p>Assumption of conformity is based on the application of the harmonized standards and, when applicable or required, a European Union notified body certification, as shown in the attached schedule.</p>		
 <hr style="border: 0; border-top: 1px solid black;"/> <p>(signature)</p>	<p>Vice President of Global Quality</p> <hr style="border: 0; border-top: 1px solid black;"/> <p>(function)</p>	
<p>Mark Lee</p> <hr style="border: 0; border-top: 1px solid black;"/> <p>(name)</p>	 <hr style="border: 0; border-top: 1px solid black;"/> <p>(date of issue &amp; place)</p>	
<p>Page 1 of 4</p>		

	<b>EU Declaration of Conformity</b> No: RMD 1017 Rev. AJ	
<b>EMC Directive (2014/30/EU)</b> Harmonized Standards: EN 61326-1:2013, EN 61326-2-3:2013		
<b>Radio Equipment Directive (RED) (2014/53/EU)</b> Harmonized Standards: EN 300 328 V2.2.2 EN 301 489-1 V2.2.0 EN 301 489-17 V3.2.4: 2020 EN 61010-1: 2010 EN 62311: 2020		
<b>PED Directive (2014/68/EU)</b>  <b>Rosemount 3051CA4; 3051CD2, 3, 4, 5; 3051HD2, 3, 4, 5; (also with P9 option)</b> QS Certificate of Assessment - Certificate No. 12698-2018-CE-USA-ACCREDIA Module H Conformity Assessment Other Standards Used: ANSI/ISA61010-1:2004  <b>All other Rosemount 3051 Pressure Transmitters</b> Sound Engineering Practice  <b>Transmitter Attachments: Diaphragm Seal, Process Flange, or Manifold</b> Sound Engineering Practice  <b>Rosemount 3051CFx DP Flowmeters</b> See DSI 1000 Declaration of Conformity		
<b>RoHS Directive (2011/65/EU)</b>  <b>Model 3051 Pressure Transmitters</b> Harmonized standard: EN IEC 63000:2018  <b>Does not apply to the following options:</b> - Wireless output code X - Low power output code M		
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 **EU Declaration of Conformity**   
No: RMD 1017 Rev. AJ

**ATEX Directive (2014/34/EU)**

**BAS97ATEX1089X - Intrinsic Safety**  
Equipment Group II Category 1 G  
Ex ia IIC T5/T4 Ga  
Harmonized Standards Used:  
EN IEC 60079-0: 2018, EN 60079-11: 2012

**BAS00ATEX3105X - Type n**  
Equipment Group II Category 3 G  
Ex nA IIC T5 Gc  
Harmonized Standards Used:  
EN IEC 60079-0: 2018, EN 60079-15: 2010

**Baseefa11ATEX0275X - Dust**  
Equipment Group II Category 1 D  
Ex ta IIIC T<sub>500</sub> 105 °C Da  
Harmonized Standards Used:  
EN IEC 60079-0: 2018, EN 60079-31: 2014

**KEMA00ATEX2013X - Flameproof**  
Equipment Group II Category 1/2 G  
Ex db IIC T6...T4 Ga/Gb  
Harmonized Standards Used:  
EN IEC 60079-0: 2018, EN 60079-1: 2014, EN 60079-26: 2015

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# EU Declaration of Conformity

No: RMD 1017 Rev. AJ



## PED Notified Body

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

## ATEX Notified Bodies

**DEKRA** [Notified Body Number: 0344]  
Utrechtseweg 310, 6812 AR Arnhem  
P.O. Box 5185, 6802 ED Arnhem  
The Netherlands  
Postbank 6794687

**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

## 5.16 China RoHS

含有China RoHS管控物质超过最大浓度限值的部件型号列表 3051  
List of 3051 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	O	O	O	O	O
壳体组件 Housing Assembly	O	O	O	O	O	O
传感器组件 Sensor Assembly	X	O	O	O	O	O

本表格系依据SJ/T 11364的规定而制作

This table is proposed in accordance with the provision of SJ/T 11364.

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

## 5.17 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.

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**Quick Start Guide**  
**00825-0100-4797, Rev. HC**  
**November 2024**

For more information: [Emerson.com/global](https://www.emerson.com/global)

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