Rosemount™ 3051HT Hygienic Pressure Transmitter

with FOUNDATION™ Fieldbus Protocol
NOTICE

This guide provides basic guidelines for the Rosemount 3051HT Transmitter. It does not provide instructions for configuration, diagnostics, maintenance, service, troubleshooting, Explosion-proof, Flameproof, or intrinsically safe (I.S.) installations.

WARNING

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

Electrical shock could cause death or serious injury.
Avoid contact with the leads and terminals. High voltage that may be present on leads can cause electrical shock.

Process leaks could result in death or serious injury.
To avoid process leaks, only use the gasket designed to seal with the corresponding flange adapter.

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 to protecting your system. Restrict physical access by unauthorized personnel to protect end users’ assets. This is true for all systems used within the facility.

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.

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1 System readiness

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

1.1 Confirm correct device driver

- Verify the latest device driver (DD/DTM™) is loaded on your systems to ensure proper communications.
- Download the latest device driver at Emerson.com or FieldCommGroup.org.

Rosemount 3051 device revisions and drivers

Table 1-1 provides the information necessary to ensure you have the correct device driver and documentation for your device.

Table 1-1: Rosemount 3051 Device Revision 8 and Drivers

FOUNDATION™ Fieldbus device revision can be read using a FOUNDATION Fieldbus capable configuration tool.

<table>
<thead>
<tr>
<th>Host</th>
<th>Device driver (DD)(1)</th>
<th>Obtain at</th>
<th>Device driver (DTM)</th>
<th>Manual document number</th>
</tr>
</thead>
<tbody>
<tr>
<td>All</td>
<td>DD4: DD Rev 1</td>
<td>FieldCommGroup.org</td>
<td>Emerson.com</td>
<td>00809-0100-4774, Rev CA or newer</td>
</tr>
<tr>
<td>All</td>
<td>DD5: DD Rev 1</td>
<td>FieldCommGroup.org</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Emerson</td>
<td>AMS Device Manager V 10.5 or higher: DD Rev 2</td>
<td>Emerson.com</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Emerson</td>
<td>AMS Device Manager V 8 to 10.5: DD Rev 1</td>
<td>Emerson.com</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Emerson</td>
<td>375/475: DD Rev 2</td>
<td>Easy Upgrade Utility</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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

Figure 2-1: Installation Flowchart

2.1 Mount the transmitter

Place the transmitter to the desired orientation before mounting. Transmitter must not be securely mounted or clamped in place when changing transmitter orientation.

Conduit entry orientation

When installing a Rosemount 3051HT, it is recommended installing so a conduit entry faces downward or parallel to the ground to maximize drainability when cleaning.

Environmental seal for housing

Thread sealing (PTFE) tape or paste on male threads of conduit is required to provide a watertight/dustproof conduit seal and meets requirements of NEMA® Type 4X, IP66, IP68, and IP69K. Consult factory if other Ingress Protection ratings are required.

Note

IP69K rating only available on units with a SST housing and option code V9 in the model string.

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

In-line gauge transmitter orientation

The low side pressure port (atmospheric reference) on the in-line gage transmitter is located on the neck of the transmitter via a protected gage vent (See Figure 2-2).

Keep the vent path free from obstructions including but not limited to paint, dust, and viscous fluids by mounting the transmitter so the process can drain away.
Figure 2-2: In-line Protected Gage Vent Low Side Pressure Port

A. Low side pressure port (atmospheric reference)

**Clamping**

When installing clamp, follow recommended torque values provided by gasket manufacturer.

**Note**

To maintain performance, torquing a 1.5-in. Tri Clamp beyond 50 in-lb. is not recommended on pressure ranges below 20 psi.
2.2 **Commissioning (paper) tag**

To identify which device is at a particular location use the removable tag provided with the transmitter. Ensure the physical device tag (PD Tag field) is properly entered in both places on the removable commissioning tag and tear off the bottom portion for each transmitter.

---

**Figure 2-3: Commissioning Tag**

![Commissioning Tag Diagram]

A. Device revision

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**Note**

The device description loaded in the host system must be at the same revision as this device. The device description can be downloaded from the host system website, from Emerson.com/Rosemount, or from FieldCommGroup.org.
2.3 The security and simulate switches

The security and simulate switches are located on the electronics.

**Figure 2-4: Transmitter Electronics Board**

![Electronics Board Diagram]

A. Simulate switch  
B. Security switch

2.3.1 Setting the security switch

The security switch allows (✓) or prevents (✗) any configuration of the transmitter.

**Note**
Default security is off (✗).

Setting the simulate switch

The security switch can be enabled or disabled in the software.

**Procedure**

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

**WARNING**

Explosions could result in death or serious injury.

In an explosion-proof/flameproof installation, do not remove the transmitter covers when power is applied to the unit.
3. Slide the security switch into the preferred position.
4. Reattach the transmitter housing cover.
   Tighten the cover until there is no gap between the cover and housing to comply with explosion proof requirements.

2.3.2 Setting the simulate switch
The simulate switch is used in conjunction with the transmitter simulate software to simulate process variables and/or alerts and alarms.

Note
The simulate switch enables or disables simulated alerts and simulated AI Block status and values. The default simulate switch position is enabled.

- To simulate variables and/or alerts and alarms, the simulate switch must be moved to the enable position and the software enabled through the host before installation of the transmitter.
- To disable simulation, the switch must be in the disable position or the software simulate parameter must be disabled through the host.

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

⚠️ WARNING

Explosions could result in death or serious injury.

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

3. Slide the simulate switch into the preferred position.
4. Reattach the transmitter housing cover.
   Tighten the cover until there is no gap between the cover and housing to comply with explosion proof requirements.

2.4 Connect the wiring and power up
Procedure to connect the wiring and power up the transmitter.

Prerequisites
- Use copper wire of sufficient size to ensure the voltage across the transmitter power terminals does not drop below 9 Vdc. A minimum of 12 Vdc under normal operating conditions is recommended. Shielded twisted pair Type A cable is recommended.
• Power supply voltage can be variable, especially under abnormal conditions such as when operating on battery backup.

Procedure

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

   Note
   The Rosemount 3051 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, terminal polarity should be followed. When wiring to the screw terminals, the use of crimped legs is recommended.

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

   Note
   The use of a pin or a ferrule wire terminal is not recommended as the connection may be more susceptible to loosening over time or under vibration.

3. Ensure proper grounding. It is important the instrument cable shield be:
   a) Trimmed close and insulated from touching the transmitter housing.
   b) Connected to the next shield if cable is routed through a junction box.
   c) Connected to a good earth ground at the power supply end.

4. If transient protection is needed, refer to section Signal ground wiring for grounding instructions.

5. Plug and seal unused conduit connections.

6. Reattach the transmitter covers.
   a) 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 2-5: Wiring

Aluminum

Polished 316 SST
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

2.4.1 Signal ground wiring

Do not run signal wiring in conduit or open trays with power wiring, or near heavy electrical equipment. Grounding terminations are provided on the outside of the electronics housing and inside the Terminal Compartment. These grounds are used 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 2-5
   a) Trim the cable shield as short as practical and insulate from touching the transmitter housing.

   **Note**  
   Do NOT ground the cable shield at the transmitter; if the cable shield touches the transmitter housing, it can create ground loops and interfere with communications.

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

3. Replace the housing cover. It is recommended that the cover be tightened until there is no gap between the cover and the housing.
4. Plug and seal unused conduit connections.

Note
The Rosemount 3051HT polished 316 SST housing only provides ground termination inside the terminal compartment.

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

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.

Grounding
Signal wiring of the Fieldbus segment can not be grounded. Grounding out one of the signal wires will shut down the entire Fieldbus segment.

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.

Signal termination
For every Fieldbus segment a terminator should be installed at the beginning and at the end of each segment.

Locating devices
Devices are frequently installed, configured, and commissioned over time by different personnel. 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 will launch a method allowing the user to display a “Find me” message or enter a custom message to display on the device LCD display. When the user exits the “Locate Device” method, the device LCD display automatically returns to normal operation.
2.5 Configure

Each FOUNDATION™ Fieldbus host or configuration tool has a different way of displaying and performing configurations. Some use device descriptions (DD) or DD methods for configuration and to display data consistently across platforms. There is no requirement that a host or configuration tool support these features. Use the following block examples to do basic configuration to the transmitter. For more advanced configurations, see the Rosemount 3051 FOUNDATION Fieldbus Reference Manual.

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

2.5.1 Configure the AI block

Navigation instructions for each step are provided in the Figure 2-7. In addition, the screens used for each step are shown in the Figure 2-6.
2.5.2 Before you begin configuration

Before beginning configuration, you may need to verify the device tag or deactivate hardware and software write protection on the transmitter. Use this procedure to verify the device tag and the software write lock switch.

- **Standard Text** – Navigation selections available
- **(Text)** – Name of selection used on parent menu screen to access this screen
- **Bold Text** – Automated methods
- **Underlined Text** – Configuration task numbers from configuration flow chart
Procedure

1. To verify the device tag, from the Overview screen, select Device Information.

2. To disable the software write lock (devices ship from the factory with the software write lock disabled):

   Note
   The software write lock switch must be in the unlocked position if the switch has been enabled in the software.

   a) From the Overview screen, select Device Information and then select the Security and Simulation tab.

   b) To disable the software write lock, perform write lock setup.

   Note
   Place the control loop in Manual mode before beginning analog input block configuration.

2.5.3 Guided setup of the AI Block Configuration

This procedure is for the guided setup of the AI Block Configuration.

Prerequisites
Navigate to Configure → Guided Setup.

Procedure

1. Select AI Block Unit Setup.

2. Select the signal conditioning L_TYPE from the menu.
   - Select Direct for pressure measurements using the device default units.
   - Select Indirect for other pressure or level units.

3. Set the XD_SCALE to the 0% and 100% scale points (the transmitter range).
   a) Select the XD_SCALE_UNITS from the menu.
   b) Enter the XD_SCALE 0% point.
      This may be elevated or suppressed for level applications.
   c) Enter the XD_SCALE 100% point.
      This may be elevated or suppressed for level applications.
   d) If the L_TYPE is Direct, guided setup automatically places the AI block into AUTO mode to return the device to service.
4. If the L_TYPE selected is Indirect or Indirect Square Root, set OUT_SCALE to change engineering units.
   a) Select **OUT_SCALE UNITS** from the menu.
   b) Set the OUT_SCALE low value. This may be elevated or suppressed for level applications.
   c) Set the OUT_SCALE high value. This may be elevated or suppressed for level applications.
   d) If the L_TYPE selected is Indirect, guided setup automatically places the AI block into AUTO mode to return the device to service.

5. To change damping, select **Change Damping**

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

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

7. To configure the LCD display (if installed).

8. Select **Local Display Setup**.

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

10. To review the transmitter configuration, navigate using the manual setup navigation sequences for “AI Block Unit Setup”, “Change Damping”, and “Set up LCD Display”.

11. Change any values as necessary.

12. Return to the Overview screen.

13. If mode is “Not in Service”, click **Change**, and then select **Return All to Service**.

   **Note**
   If hardware or software write protection is not needed, **Step 14** can be skipped.

14. Set switches and software write lock.
   a) Check switches (see **Figure 2-4**).
2.5.4 Manual setup of the AI block configuration

This procedure describes the manual setup of the AI Block Configuration.

**Prerequisites**

Navigate to **Configure → Manual Setup → Process Variable.**

**Note**

When using manual setup perform the steps in the order described in [Figure 2-7](#).

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**Figure 2-7: Configuration Flowchart**

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**Note**

For convenience, AI block 1 is pre-linked to the transmitter primary variable and should be used for this purpose. AI block 2 is pre-linked to the transmitter sensor temperature. The channel must be selected for AI blocks 3 and 4.

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

If the FOUNDATION™ Fieldbus Diagnostics Suite Option Code D01 is enabled, these additional channels are available.

- Channel 12 is the SPM mean.
- Channel 13 is the SPM standard deviation.
To configure SPM, refer to the Rosemount 3051 FOUNDATION Fieldbus Reference Manual.

**Procedure**

1. Select **AI Block Unit Setup**.
2. Place the AI Block in Out of Service mode.
3. Select the signal conditioning **L_TYPE** from the menu.
   - Select **Direct** for pressure measurements using the device default units.
   - Select **Indirect** for other pressure or level units.
4. Set the **XD_SCALE** to the 0% and 100% scale points (the transmitter range).
   a) Select the **XD_SCALE_UNITS** from the menu.
   b) Enter the **XD_SCALE** 0% point.
      This may be elevated or suppressed for level applications.
   c) Enter the **XD_SCALE** 100% point.
      This may be elevated or suppressed for level applications.
5. If the **L_TYPE** selected is Direct, the AI block may be placed in AUTO mode to return the device to service.
6. If the **L_TYPE** selected is Indirect or Indirect Square Root, set **OUT_SCALE** to change engineering units.
   a) Select **OUT_SCALE_UNITS** from the menu.
   b) Set the **OUT_SCALE** low value.
      This may be elevated or suppressed for level applications.
   c) Set the **OUT_SCALE** high value.
      This may be elevated or suppressed for level applications.
   d) If the **L_TYPE** selected is Indirect, the AI Block may be placed in AUTO mode to return the device to service.
7. To change damping, select **Change Damping**.
8. Enter the desired damping value in seconds.
    The permitted range of values is 0.4 to 60 seconds.
9. To configure the LCD display (if installed).
10. Select **Local Display Setup**.
11. Check the box next to each parameter to be displayed to a maximum of four parameters.
The LCD display will continuously scroll through the selected parameters.

12. To review the transmitter configuration, navigate using the manual setup navigation sequences for “AI Block Unit Setup”, “Change Damping”, and “Set up LCD Display”.

13. Change any values as necessary.

14. Return to the Overview screen.

15. If mode is “Not in Service”, click Change, and then select Return All to Service.

**Note**
If hardware or software write protection is not needed, Step 16 can be skipped.

16. Set switches and software write lock.
   a) Check switches (see Figure 2-4).

   **Note**
The write lock switch can be left in the locked or unlocked position. The simulate enable/disable switch may be in either position for normal device operation.

2.5.5 Enable software write lock

**Procedure**

1. Navigate from the Overview screen.
   a) Select Device Information.
   b) Select the Security and Simulation tab.

2. Perform Write Lock Setup to enable software write lock.
2.5.6 AI block configuration parameters

Use the pressure example for a guide.

<table>
<thead>
<tr>
<th>Parameters</th>
<th>Enter data</th>
</tr>
</thead>
<tbody>
<tr>
<td>Channel</td>
<td>1 = Pressure, 2 = Sensor temp, 12 = SPM mean, 13 = SPM standard deviation</td>
</tr>
<tr>
<td>L_Type</td>
<td>Direct, indirect, or square root</td>
</tr>
<tr>
<td>XD_Scale</td>
<td>Scale and engineering units$^{(1)}$</td>
</tr>
<tr>
<td></td>
<td>Pa, bar, torr at 0 °C, ft H₂O at 4 °C, m H₂O at 4 °C</td>
</tr>
<tr>
<td></td>
<td>kPa, mbar, kg/cm², ft H₂O at 60 °F, mm Hg at 0 °C</td>
</tr>
<tr>
<td></td>
<td>mPa, psf, kg/cm², ft H₂O at 68 °F, cm Hg at 0 °C</td>
</tr>
<tr>
<td></td>
<td>hPa, Atm, in H₂O at 4 °C, mm H₂O at 4 °C, in Hg at 0 °C</td>
</tr>
<tr>
<td></td>
<td>°C, psi, in H₂O at 60 °F, mm H₂O at 68 °F, in Hg at 0 °C</td>
</tr>
<tr>
<td></td>
<td>°F, g/cm², in H₂O at 68 °F, cm H₂O at 4 °C</td>
</tr>
<tr>
<td>Out_Scale</td>
<td>Scale and engineering units</td>
</tr>
</tbody>
</table>

(1) Select only the units that are supported by the device.

Table 2-1: Pressure example

<table>
<thead>
<tr>
<th>Parameters</th>
<th>Enter data</th>
</tr>
</thead>
<tbody>
<tr>
<td>Channel</td>
<td>1</td>
</tr>
<tr>
<td>L_Type</td>
<td>Direct</td>
</tr>
<tr>
<td>XD_Scale</td>
<td>See list of supported engineering units$^{(1)}$.</td>
</tr>
<tr>
<td>Out_Scale</td>
<td>Set values outside operating range.</td>
</tr>
</tbody>
</table>

(1) Select only the units that are supported by the device.

2.5.7 Display pressure on the LCD display

Select the Pressure check box on the Display Configuration screen.

2.6 Zero trim the transmitter

Procedure to zero trim the transmitter, which is a single-point adjustment used for compensating mounting position and line pressure effects.

Prerequisites

When performing a zero trim, ensure that the equalizing valve is open and all wet legs are filled to the correct level.
Note
Transmitters are shipped fully calibrated per request or by the factory default of full scale (span = upper range limit).

The transmitter will only allow 3–5 percent URL Zero error to be trimmed.
For greater zero errors, compensate for the offset by using the XD_Scaling, Out_Scaling and Indirect L_Type which are part of the AI Block Configure.

Procedure

Guided Setup
1. Navigate to Configure → Guided Setup.
2. Select Zero Trim.
   The method will execute the zero trim.

Manual Setup
3. Navigate to Overview → Calibration → Sensor Trim.
4. Select Zero Trim.
   The method will execute the zero trim.
3  Product certifications

Rev. 1.6

3.1  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.

3.2  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).

<table>
<thead>
<tr>
<th>Altitude</th>
<th>Pollution degree</th>
</tr>
</thead>
<tbody>
<tr>
<td>5000 m max</td>
<td>4 (metallic enclosure)</td>
</tr>
<tr>
<td></td>
<td>2 (non-metallic enclosure)</td>
</tr>
</tbody>
</table>

3.3  Installing Equipment in North America

The US National Electrical Code® (NEC) and the Canadian Electrical Code (CEC) permit the use of Division marked equipment in Zones and Zone marked equipment in Divisions. The markings must be suitable for the area classification, gas, and temperature class. This information is clearly defined in the respective codes.

3.4  USA

I5 Intrinsic Safety; Nonincendive

Certificate: 1053834


Markings: IS CL I, DIV 1, GP A, B, C, D when connected per Rosemount drawing 03031-1024, CL I ZONE 0 AEx ia IIC T4; NI CL 1, DIV 2, GP A, B, C, D T5; T4 (–20 °C ≤ T_a ≤ +70 °C) [HART]; T4 (–20 °C ≤ T_a ≤ +60 °C) [Fieldbus]; Type 4x

3.5  Canada

I6 Intrinsic Safety

Certificate: 1053834
**Standards:** ANSI/ISA 12.27.01-2003, CSA Std. C22.2 No.142-M1987, CSA Std. C22.2 No.157-92, CSA Std. C22.2 No. 213 - M1987

**Markings:** Intrinsically Safe Class I, Division 1 Groups A, B, C, D when connected in accordance with Rosemount drawing 03031-1024, Temperature Code T4; Suitable for Class I, Zone 0; Type 4X; Factory Sealed; Single Seal (See drawing 03031-1053)

### 3.6 Europe

**I1 ATEX Intrinisc Safety**

**Certificate:** BAS97ATEX1089X

**Standards:** EN 60079-0:2012 + A11:2013, EN 60079-11:2012

**Markings:** HART™ II 1 G Ex ia IIC T5/T4 Ga, T5(–20 °C ≤ T_a ≤ +40 °C), T4(–20 °C ≤ T_a ≤ +70 °C) Fieldbus: II 1 G Ex ia IIC Ga T4(–20 °C ≤ T_a ≤ +60 °C)

**Table 3-1: Input Parameters**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>HART</th>
<th>Fieldbus/PROFIBUS®</th>
</tr>
</thead>
<tbody>
<tr>
<td>Voltage U_i</td>
<td>30 V</td>
<td>30 V</td>
</tr>
<tr>
<td>Current I_i</td>
<td>200 mA</td>
<td>300 mA</td>
</tr>
<tr>
<td>Power P_i</td>
<td>0.9 W</td>
<td>1.3 W</td>
</tr>
<tr>
<td>Capacitance C_i</td>
<td>0.012 µF</td>
<td>0 µF</td>
</tr>
<tr>
<td>Inductance L_i</td>
<td>0 mH</td>
<td>0 mH</td>
</tr>
</tbody>
</table>

**Special 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.

### 3.7 International

**I7 IECEx Intrinisc Safety**

**Certificate:** IECEx BAS 09.0076X

**Standards:** IEC 60079-0:2011, IEC 60079-11:2011
Markings:  
HART™: Ex ia IIC T5/T4 Ga, T5(–20 °C ≤ T_a ≤ +40 °C), T4(–20 °C ≤ T_a ≤ +70 °C)  
PROFIBUS®: Ex ia IIC T4 (–20 °C ≤ T_a ≤ +60 °C)

<table>
<thead>
<tr>
<th>Parameter</th>
<th>PROFIBUS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Voltage U_i</td>
<td>30 V</td>
</tr>
<tr>
<td>Current I_i</td>
<td>300 mA</td>
</tr>
<tr>
<td>Power P_i</td>
<td>1.3 W</td>
</tr>
<tr>
<td>Capacitance C_i</td>
<td>0 µF</td>
</tr>
<tr>
<td>Inductance L_i</td>
<td>0 mH</td>
</tr>
</tbody>
</table>

Special 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.

3.8 Brazil

I2 INMETRO Intrinsic Safety

Certificate: UL-BR 13.0584X


Markings: HART™: Ex ia IIC T5/T4 Ga, T5(–20 °C ≤ T_a ≤ +40 °C), T4(–20 °C ≤ T_a ≤ +70 °C) Fieldbus: Ex ia IIC T4 Ga (–20 °C ≤ T_a ≤ +60 °C)

<table>
<thead>
<tr>
<th>Parameter</th>
<th>HART</th>
<th>PROFIBUS®</th>
</tr>
</thead>
<tbody>
<tr>
<td>Voltage U_i</td>
<td>30 V</td>
<td>30 V</td>
</tr>
<tr>
<td>Current I_i</td>
<td>200 mA</td>
<td>300 mA</td>
</tr>
<tr>
<td>Power P_i</td>
<td>0.9 W</td>
<td>1.3 W</td>
</tr>
<tr>
<td>Capacitance C_i</td>
<td>0.012 µF</td>
<td>0 µF</td>
</tr>
<tr>
<td>Inductance L_i</td>
<td>0 mH</td>
<td>0 mH</td>
</tr>
</tbody>
</table>

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 should be taken to protect it from impact or abrasion if equipment requires EPL Ga.

3.9 Additional certifications

3-A®
All Rosemount 3051HT transmitters with the following connections are 3-A approved and labeled:

T32: 1½-in. Tri Clamp
T42: 2-in. Tri Clamp

If process connection B11 is selected, see reference the ordering table of the Rosemount 1199 Diaphragm Seal PDS (00813-0100-4016) for availability of 3-A certifications.

A 3-A certificate of compliance is available by selecting option code QA.

EHEDG
All Rosemount 3051HT transmitters with the following connections are EHEDG approved and labeled:

T32: 1½-in. Tri Clamp
T42: 2-in. Tri Clamp

If process connection B11 is selected, see reference the ordering table of the Rosemount 1199 Diaphragm Seal PDS (00813-0100-4016) for availability of EHEDG certifications.

An EHEDG certificate of compliance is available by selecting option code QE.

Ensure gasket selected for installation is approved to meet both application and EHEDG certification requirements.

ASME-BPE
All Rosemount 3051HT Transmitters with option F2 and the following connections are designed to ASME-BPE SF4 standards:

T32: 1½-in. Tri Clamp
T42: 2-in. Tri Clamp

A self-certified certificate of compliance to ASME-BPE is also available (option QB)

(1) Per Clause SD-2.4.4.2 (m), suitability of painted aluminum housings to be determined by end user.
EU Declaration of Conformity
No: RMD 1106 Rev. 1

We,

Rosemount, Inc.
8200 Market Boulevard
Chanhassen, MN 55317-9685
USA

declare under our sole responsibility that the product,

Rosemount™ 3051HT Pressure Transmitters

manufactured by,

Rosemount, Inc.
8200 Market Boulevard
Chanhassen, MN 55317-9685
USA

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.

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.

(signature)

Vice President of Global Quality

(date of issue & place)

(name)

Page 1 of 3
EMC Directive (2014/30/EU)
Models 3051HT Pressure Transmitters

RoHS Directive (2011/65/EU)
Models 3051HT Pressure Transmitters
Harmonized Standard: EN 50581:2012

Regulation (EC) No. 1935/2004 on materials and articles intended to come into contact with food

Regulation (EC) No. 2023/2006 on good manufacturing practice for materials and articles intended to come into contact with food (GMP).

The surface and material in contact with food consist of the below materials:

<table>
<thead>
<tr>
<th>Product</th>
<th>Description</th>
<th>Food Contact Materials</th>
</tr>
</thead>
<tbody>
<tr>
<td>3051HT</td>
<td>Pressure Transmitter</td>
<td>316L, SST</td>
</tr>
</tbody>
</table>

The user is responsible for testing the suitability of the units for the intended application. The customer is responsible for deciding whether the specific phrasings regarding the intended application comply with the applicable laws.

ATEX Directive (2014/34/EU)
Model 3051HT Pressure Transmitter
Bas97ATEX1089X – Intrinsic Safety
Equipment Group II Category 1 G
Ex ia IIC T5/T4 Ga

ATEX Notified Body

SGS FIMKO OY [Notified Body Number: 0598]
P.O. Box 30 (Särkkäiemietie 3)
00211 HELSINKI
Finland

ATEX Notified Body for Quality Assurance
Figure 3-3: Rosemount 3051HT Declaration of Conformity

EU Declaration of Conformity
No: RMD 1106 Rev. 1

SGS FIMKO OY [Notified Body Number: 0598]
P.O. Box 30(Särkinenemtie 3)
00211 HELSINKI
Finland
### China RoHS

<table>
<thead>
<tr>
<th>部件名称</th>
<th>Part Name</th>
<th>有害物质 / Hazardous Substances</th>
</tr>
</thead>
<tbody>
<tr>
<td>铅 (Pb)</td>
<td>铅 (Pb)</td>
<td>铅 (Pb)</td>
</tr>
<tr>
<td>汞 (Hg)</td>
<td>汞 (Hg)</td>
<td>铅 (Pb)</td>
</tr>
<tr>
<td>镉 (Cd)</td>
<td>镉 (Cd)</td>
<td>铅 (Pb)</td>
</tr>
<tr>
<td>六价铬 (Cr+6)</td>
<td>六价铬 (Cr+6)</td>
<td>铅 (Pb)</td>
</tr>
<tr>
<td>多溴联苯 (PBB)</td>
<td>多溴联苯 (PBB)</td>
<td>铅 (Pb)</td>
</tr>
<tr>
<td>多溴联苯醚 (PBDE)</td>
<td>多溴联苯醚 (PBDE)</td>
<td>铅 (Pb)</td>
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<table>
<thead>
<tr>
<th>电子组件</th>
<th>Electronics Assembly</th>
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</thead>
<tbody>
<tr>
<td>X</td>
<td>O</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>壳体组件</th>
<th>Housing Assembly</th>
</tr>
</thead>
<tbody>
<tr>
<td>X</td>
<td>O</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>传感器组件</th>
<th>Sensor Assembly</th>
</tr>
</thead>
<tbody>
<tr>
<td>X</td>
<td>O</td>
</tr>
</tbody>
</table>

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

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

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

### Spare Parts Descriptions for Assemblies

<table>
<thead>
<tr>
<th>部件名称</th>
<th>Part Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>电子组件</td>
<td>Electronics Assembly</td>
</tr>
<tr>
<td>壳体组件</td>
<td>Housing Assembly</td>
</tr>
<tr>
<td>传感器组件</td>
<td>Sensor Assembly</td>
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</table>

<table>
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<tr>
<th>组装条件说明</th>
<th>Spare Parts Descriptions for Assemblies</th>
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<tr>
<td>电子线路板组件</td>
<td>Electronic Board Assemblies</td>
</tr>
<tr>
<td>端子块组件</td>
<td>Terminal Block Assemblies</td>
</tr>
<tr>
<td>升级套件</td>
<td>Upgrade Kits</td>
</tr>
<tr>
<td>液晶显示或本地操作界面</td>
<td>LCD or LOI Display</td>
</tr>
<tr>
<td>电子外壳</td>
<td>Electrical Housing</td>
</tr>
<tr>
<td>传感器模块</td>
<td>Sensor Module</td>
</tr>
</tbody>
</table>
Quick Start Guide
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