

Rosemount™ 2051HT Hygienic Pressure Transmitter

with FOUNDATION™ Fieldbus Protocol



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1 About this guide

1.1 Safety messages

This guide provides basic guidelines for the Rosemount 2051HT Transmitter. It does not provide instructions for configuration, diagnostics, maintenance, service, troubleshooting, Explosion-proof, Flameproof, or intrinsically safe (I.S.) installations.

CAUTION

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

⚠ WARNING**Explosions could result in death or serious injury.**

Installation of this transmitter in an explosive environment must be in accordance with the appropriate local, national, and international standards, codes, and practices. Review the approvals section of this manual for any restrictions associated with a safe

- Before connecting a Field Communicator in an explosive atmosphere, ensure the instruments in the loop are installed in accordance with intrinsically safe or non-incendive field wiring practices.
- In an explosion-proof/flameproof installation, do not remove the transmitter covers when power is applied to the unit.

Process leaks may cause harm or result in death.

- Install and tighten process connectors before applying pressure.
- Do not attempt to loosen or remove flange bolts while the transmitter is in service.

Electrical shock can result in death or serious injury.

- Avoid contact with the leads and terminals. High voltage that may be present on leads can cause electrical shock.
- Before connecting a handheld communicator in an explosive atmosphere, ensure the instruments in the loop are installed in accordance with intrinsically safe or non-incendive field wiring practices.
- In an Explosion-Proof/Flameproof installation, do not remove the transmitter covers when power is applied to the unit.

Process leaks may cause harm or result in death.

- Install and tighten process connectors before applying pressure.

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.
-

⚠ WARNING

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

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

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

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

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.
-

2 System readiness

2.1 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.

2.1.1 Device revisions and drivers

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

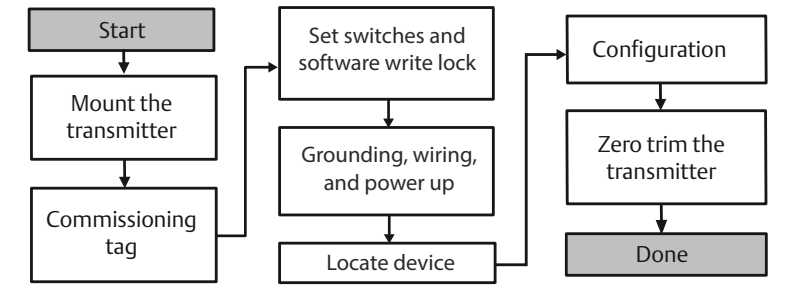
Table 2-1: FOUNDATION Fieldbus Device Revisions and Files

Device Revision (1)	Host	Device driver (DD) ⁽²⁾	Obtain at	Device driver (DTM)	Manual Document Number
2	All	DD4: DD Rev 1	FieldCommGroup.org	Emerson.com	Rosemount 2051 Pressure Transmitter Reference Manual or newer
	All	DD5: DD Rev 1	FieldCommGroup.org		
	Emerson	AMS Device Manager V 10.5 or higher: DD Rev 2	Emerson.com		
	Emerson	AMS Device Manager V 8 to 10.5: DD Rev 1	Emerson.com		
	Emerson	Field Communicator: DD Rev 2	Easy upgrade utility		

- (1) FOUNDATION Fieldbus device revision can be read using a FOUNDATION Fieldbus capable configuration tool.
- (2) Device driver file names use device and DD revision. To access functionality, the correct device driver must be installed on your control and asset management hosts, and on your configuration tools.

3 Transmitter installation

Figure 3-1: Installation Flowchart



3.1 Mount the transmitter

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

3.1.1 Conduit entry orientation

When installing a Rosemount 2051HT, it is recommended installing so a conduit entry faces downward toward the ground to maximize drainability when cleaning.

3.1.2 Environmental seal for housing

Thread sealing (PTFE) tape or paste on male threads of conduit is required to provide a water/dust tight conduit seal and meets requirements of NEMA[®] Type 4X, IP66, IP68, and IP69K. 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.

Note

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

Note

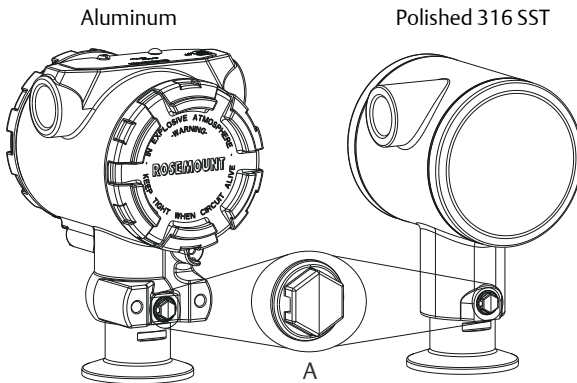
For aluminum housings ordered with M20 conduit entries, transmitters shipped will have NPT threads machined into the housing and a NPT to M20 thread adapter will be provided. Considerations for environmental sealing listed above should be taken into account when installing the thread adapter.

3.1.3 In-line gage 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 3-2](#)).

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. Recommended installations have a conduit entry facing the ground so the gage vent port is pointing parallel to the ground.

Figure 3-2: In-line Protected Gage Vent Low Side Pressure Port



A. Low side pressure port (atmospheric reference)

3.1.4 Clamping

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

Note

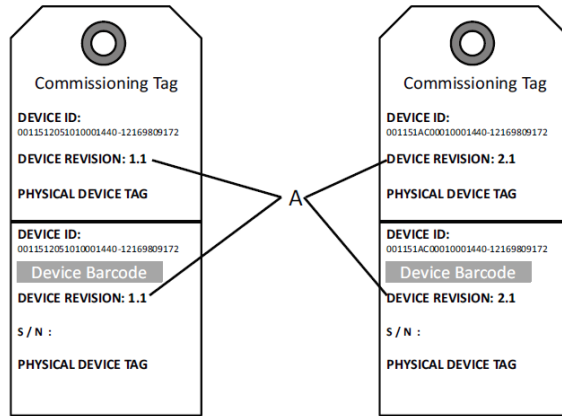
To maintain performance, torquing a 1.5. Tri-Clamp® beyond 50 in-lb is not recommended on pressure ranges below 20 psi.

3.2 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.

Note

The device description loaded in the host system must be at the same revision as this device.

Figure 3-3: Commissioning Tag

A. Device revision

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 or Emerson.com/Rosemount by selecting **Download Device Drivers** under *Product Quick Links*. You can also visit Fieldbus.org and select **End User Resources**.

3.3 Setting security switch

Prerequisites

Set Simulate and Security switch configuration before installation as shown in [Figure 3-4](#).

- The simulate switch enables or disables simulated alerts and simulated AI Block status and values. The default simulate switch position is enabled.
- The Security switch allows (unlocked symbol) or prevents (locked symbol) any configuration of the transmitter.
- Default security is off (unlocked symbol).
- The security switch can be enabled or disabled in software.

Use the following procedures to change the switch configuration:

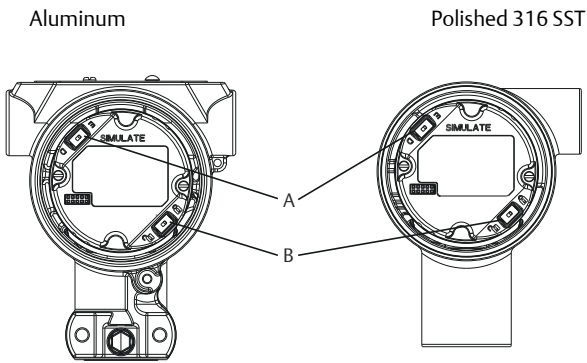
Procedure

1. If the transmitter is installed, secure the loop, and remove power.
2. Remove the housing cover opposite the field terminal side. Do not remove the instrument cover in explosive atmospheres when the circuit is live.
3. Slide the security and simulate switches into the preferred position.
4. Reattach transmitter housing cover; it is recommended the cover be tightened until there is no gap between the cover and housing to comply with explosion proof requirements.

3.4 Setting simulate switch

The simulate switch is located on the electronics. It is used in conjunction with the transmitter simulate software to simulate process variables and/or alerts and alarms. 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. To disable simulation, the switch must be in the disable position or the software simulate parameter must be disabled through the host.

Figure 3-4: Transmitter Electronics Board



- A. *Simulate switch*
- B. *Security switch*

3.5 Connect the wiring and power up

Use copper wire of sufficient size to ensure 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. A minimum of 12 Vdc under normal operating conditions is recommended. Shielded twisted pair type A cable is recommended.

Use the following steps to wire the transmitter:

Procedure

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

Note

The Rosemount 2051 power terminals are polarity insensitive, which means the electrical polarity of the power leads does not matter when connecting to the power terminals. If polarity sensitive devices are connected to the segment, 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

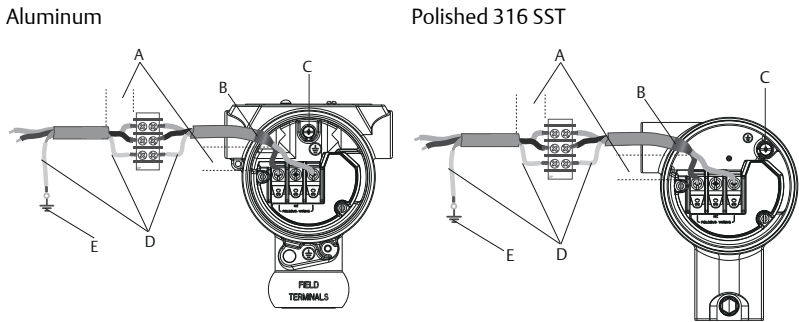
The use of a pin or a ferrule wire terminal is not recommended as the connection may be more susceptible to loosening over time or under vibration.

3. Ensure proper grounding. It is important the instrument cable shield be:
 4. Trimmed close and insulated from touching the transmitter housing.
 5. Connected to the next shield if cable is routed through a junction box.
 6. Connected to a good earth ground at the power supply end.
 7. If transient protection is needed, refer to section “[Signal ground wiring](#)” for grounding instructions.
 8. Plug and seal unused conduit connections.
 9. Reattach the transmitter covers. It is recommended that the cover be tightened until there is no gap between the cover and the housing.

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

Example

Figure 3-5: Wiring



- 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

3.5.1 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 3-5](#).
 - 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.

3. Continuously connect the cable shields to the power supply ground.
 - a) 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.

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

Note

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

3.5.2 Power supply

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

3.5.3 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.

3.5.4 Grounding

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

3.5.5 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.

3.5.6 Signal termination

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

3.5.7 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.

Note

Some hosts do not support “Locate Device” in the DD.

3.6 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 2051 [Reference Manual](#).

Note

DeltaV™ users should use DeltaV Explorer for the Resource and Transducer blocks and Control Studio for the Function Blocks.

3.6.1 Configure the AI block

If your configuration tool supports Dashboard DD's or DTM's you may use either guided setup or manual setup. If your configuration tools don't support Dashboard DD's or DTM's, use manual setup. Navigation instructions for each step are provided below. In addition the screens used for each step are shown in [Device revisions and drivers](#).

Figure 3-6: Configuration Flowchart

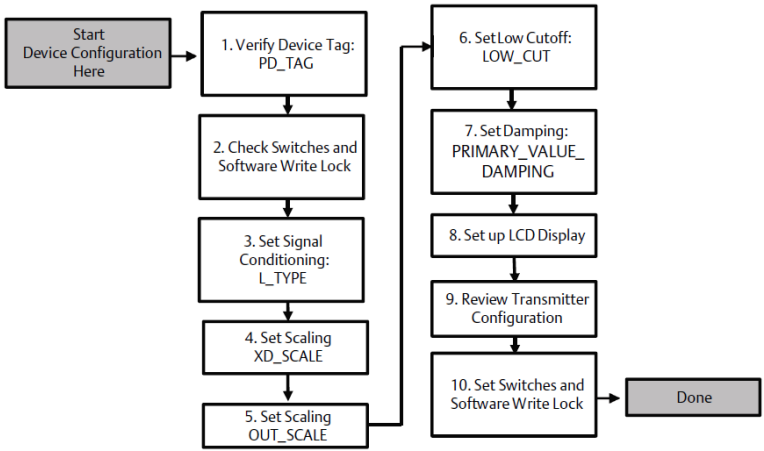
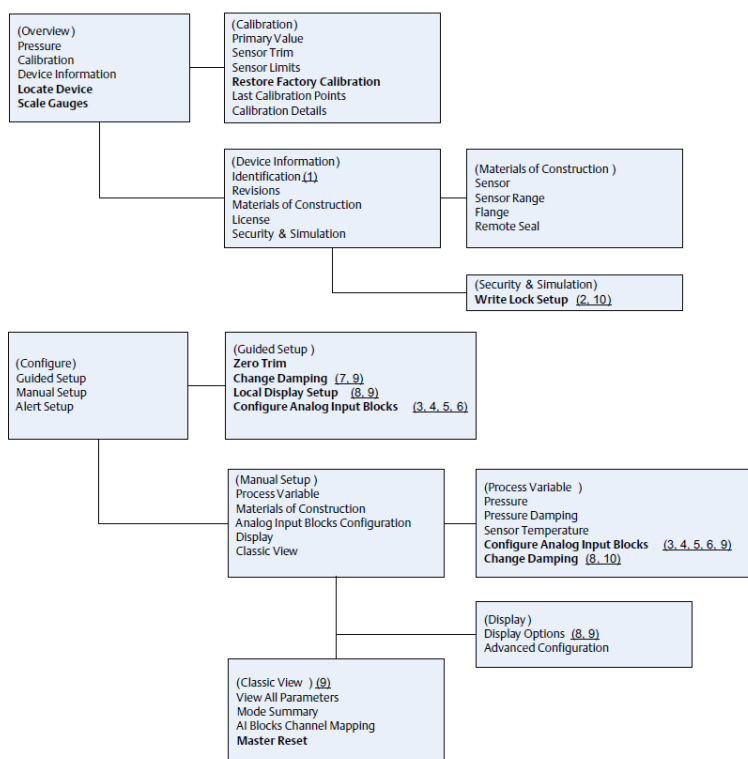


Figure 3-7: Basic Configuration Menu Tree

Standard text: Available navigation options

Text in parentheses: Name of option used in parent menu

Bold text: Automated methods

Underlined text: Configuration task numbers from configuration flow chart

3.6.2 Before you begin

See [Figure 3-6](#) to graphically view the step-by-step process for basic device configuration. Before beginning configuration you may need to verify the Device Tag or deactivate hardware or software write protection on the transmitter. To do this perform this task. Otherwise, continue at navigating to [AI block configuration](#).

Procedure

1. To verify the device tag:
 - a) Navigation: from the Overview screen, select **Device Information** to verify the device tag.
2. To check the switches (see [Figure 3-4](#)):
 - a) Verify the write lock switch is in the unlocked position if the switch has been enabled in software.
3. To disable the software write lock:
 - a) Navigation: from the *Overview* screen, select **Device Information** and then select the **Security and Simulation** tab.
 - b) Perform “Write Lock Setup” to disable software write lock.
 - c) Place the control loop in “Manual” mode before beginning [AI block configuration](#).

Note

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

3.6.3 AI block configuration

Procedure

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

Note

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

2. To use manual setup:
 - a) Navigate to *Configure > Manual Setup > Process Variable*.
 - b) Select **AI Block Unit Setup**.
 - c) Place the AI Block in “Out of Service” mode.

Note

When using manual setup, perform the steps in the order described in the [Configure the AI block](#).

Note

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

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

Note

Step 4 through step 7 are all performed in a single step-by-step method under guided setup, or on a single screen using manual setup.

Note

If the L_TYPE selected in step 3 is “Direct”, step 4, step 5, and step 6 are not needed. If the L_TYPE selected is “Indirect”, step 6 is not needed. If guided setup is used, any unneeded steps will automatically be skipped.

3. To select the signal conditioning “L_TYPE” from the dropdown menu:
 - a) Select L_TYPE: “Direct” for pressure measurements using the device default units.
 - b) Select L_TYPE: “Indirect” for other pressure or level units.
 - c) Select L_TYPE: “Indirect Square Root” for flow units.
4. To set “XD_SCALE” to the 0% and 100% scale points (the transmitter range):
 - a) Select the XD_SCALE_UNITS from the drop down 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 L_TYPE is “Direct”, the AI Block may be placed in AUTO mode to return the device to service. Guided Setup does this automatically.
5. If L_TYPE is “Indirect” or “Indirect Square Root”, set “OUT_SCALE” to change engineering units.
 - a) Select the OUT_SCALE UNITS from the dropdown 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 L_TYPE is “Indirect”, the AI Block may be placed in AUTO mode to return the device to service. Guided Setup does this automatically.
6. Change damping.
- a) To use guided setup:
 - Navigate to *Configure > Guided Setup*, and select **Change Damping**.

Note

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

- Enter the desired damping value in seconds. The permitted range of values is 0.4 to 60 seconds.
- b) To use manual setup:
 - Navigate to *Configure > Manual Setup > Process Variable* and select **Change Damping**.
 - Enter the desired damping value in seconds. The permitted range of values is 0.4 to 60 seconds.
7. Configure LCD display (if installed).
- a) To use guided setup:
 - Navigate to *Configure > Guided Setup*, and select **Local Display Setup**.

Note

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

- 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.

- b) To use manual setup:
 - Navigate to *Configure > Manual Setup* and select **Local Display Setup**.
 - Check each parameter to be displayed. The LCD display will continuously scroll through the selected parameters.

8. Review transmitter configuration and place in service
 - a) To review the transmitter configuration, navigate using the guided setup navigation sequences for “AI Block Unit Setup”, “Change Damping”, and “Set up LCD Display”.
 - b) Change any values as necessary.
 - c) Return to the Overview screen.
 - d) If Mode is “Not in Service”, select the **Change** button, and then select **Return All to Service**.

Note

If hardware or software write protection is not needed, step 10 can be skipped.

9. Set switches and software write lock.
 - a) Check switches (see [Figure 3-4](#)).

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.

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.

AI block configuration parameters

Use the pressure examples for guides.

Parameters	Enter data				
Channel	1 = Pressure, 2 = Sensor Temp				
L-Type	Direct, Indirect, or Square Root				
XD_Scale	Scale and Engineering Units				
Note Select only the units that are supported by the device.	Pa	bar	torr at 0 °C	ftH ₂ O at 4 °C	mH ₂ O at 4 °C
	kPa	mbar	kg/cm ²	ftH ₂ O at 60 °F	mmHg at 0 °C
	mPa	psf	kg/m ²	ftH ₂ O at 68 °F	cmHg at 0 °C
	hPa	Atm	inH ₂ O at 4°C	mH ₂ O at 4 °C	inHg at 0 °C
	°C	psi	inH ₂ O at 60 °F	mmH ₂ O at 68 °C	mHg at 0 °C
	°F	g/cm ²	inH ₂ O at 68 °F	cmH ₂ O at 4 °C	
Out_Scale	Scale and Engineering Units				

Pressure example

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

3.6.4 Display pressure on the LCD display

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

3.7 Zero trim the transmitter

Note

Transmitters are shipped fully calibrated per request or by the factory default of full scale (span = upper range limit).

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

The transmitter will only allow three to five percent 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.

Procedure

1. To use guided setup:
 - a) Navigate to *Configure > Guided Setup* and select **Zero Trim**.
 - b) The method will execute the zero trim.
2. To use manual setup:
 - a) Navigate to *Overview > Calibration > Sensor Trim* and select **Zero Trim**.
 - b) The method will execute the zero trim.

4 Product certifications

Rev 1.2

4.1 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/Rosemount.

4.2 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).

4.3 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.

4.4 Hazardous Locations Certifications

Note

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

4.5 North America

4.5.1 I5 USA Intrinsic Safety (IS) and Nonincendive (NI)

Certificate: FM16US0231X (HART)

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

Markings: IS CL I, DIV 1, GP A, B, C, D; CL II, DIV 1, GP E, F, G; Class III; DIV 1 when connected per Rosemount drawing 02051-1009; Class I, Zone 0; AEx ia IIC T4; NI CL 1, DIV 2, GP A, B, C, D; T4(-50 °C ≤ T_a ≤ +70 °C); Type 4x

Specific Condition of Use:

1. The Model 2051 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: 2041384 (HART/Fieldbus/PROFIBUS®)

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

Markings: IS CL I, DIV 1, GP A, B, C, D; CL II, DIV 1, GP E, F, G; Class III; DIV 1 when connected per Rosemount drawing 02051-1009; Class I, Zone 0; AEx ia IIC T4; NI CL 1, DIV 2, GP A, B, C, D; T4(-50 °C ≤ T_a ≤ +70 °C); Type 4x

4.5.2 I6 Canada Intrinsic Safety

Certificate: 2041384

Standards: CSA Std. C22.2 No. 142 - M1987, CSA Std. C22.2 No. 213 - M1987, CSA Std. C22.2 No. 157 - 92, CSA Std. C22.2 No. 213 - M1987, ANSI/ISA 12.27.01 – 2003, CAN/CSA-E60079-0:07, CAN/CSA-E60079-11:02

Markings: Intrinsically safe for Class I, Division 1, Groups A, B, C, and D when connected in accordance with Rosemount drawing 02051-1008. Ex ia IIC T3C. Single Seal. Enclosure Type 4X

4.6 Europe

4.6.1 I1 ATEX Intrinsic Safety

Certificate: Baseefa08ATEX0129X

Standards: EN60079-0:2012+A11:2013, EN60079-11:2012

Markings: Ex II 1 G Ex ia IIC T4 Ga (-60 °C ≤ T_a ≤ +70 °C)

Table 4-1: Input Parameters

Parameter	HART	Fieldbus/PROFIBUS
Voltage U _i	30 V	30 V
Current I _i	200 mA	300 mA
Power P _i	1 W	1.3 W
Capacitance C _i	0.012 μF	0 μF
Inductance L _i	0 mH	0 mH

Specific Conditions of Safe Use (X):

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

4.7 International

4.7.1 I7 IECEx Intrinsic Safety

Certificate: IECEx BAS 08.0045X**Standards:** IEC 60079-0:2011, IEC 60079-11:2011**Markings:** Ex ia IIC T4 Ga ($-60\text{ }^{\circ}\text{C} \leq T_a \leq +70\text{ }^{\circ}\text{C}$)**Table 4-2: Input Parameters**

Parameter	HART	Fieldbus/PROFIBUS
Voltage U_i	30 V	30 V
Current I_i	200 mA	300 mA
Power P_i	1 W	1.3 W
Capacitance C_i	0.012 μF	0 μF
Inductance L_i	0 mH	0 mH

Specific Conditions of Safe Use (X):

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

4.8 Additional Certifications

3-A®

All Rosemount 2051HT 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, please reference the ordering table of the Rosemount 1199 Diaphragm Seal [Product Data Sheet](#) for availability of 3-A certifications.

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

EHEDG

All Rosemount 2051HT 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, please reference the ordering table of the Rosemount 1199 Diaphragm Seal [Product Data Sheet](#) 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.


4.9 Rosemount 2051HT Declaration of Conformity

	EU Declaration of Conformity No: RMD 1115 Rev. C	
<p>We,</p>		
<p>Rosemount Inc. 8200 Market Boulevard Chanhassen, MN 55317-9685 USA</p>		
<p>declare under our sole responsibility that the product,</p>		
<p>Rosemount™ 2051HT Pressure Transmitters</p>		
<p>manufactured by,</p>		
<p>Rosemount Inc. 8200 Market Boulevard Chanhassen, MN 55317-9685 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>		
	<p>Vice President of Global Quality (function)</p>	
<p>(signature)</p>	<p>28-Oct-19; Shakopee, MN USA (date of issue & place)</p>	
<p>Chris LaPoint (name)</p>		
<p>Page 1 of 3</p>		



EU Declaration of Conformity

No: RMD 1115 Rev. C



EMC Directive (2014/30/EU)
Rosemount 2051HT Pressure Transmitters
 Harmonized Standards: EN 61326-1:2013, EN 61326-2-3:2013

RoHS Directive (2011/65/EU)
Rosemount 2051HT 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:

Product	Description	Food Contact Materials
2051HT	Pressure Transmitter	316L SST

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



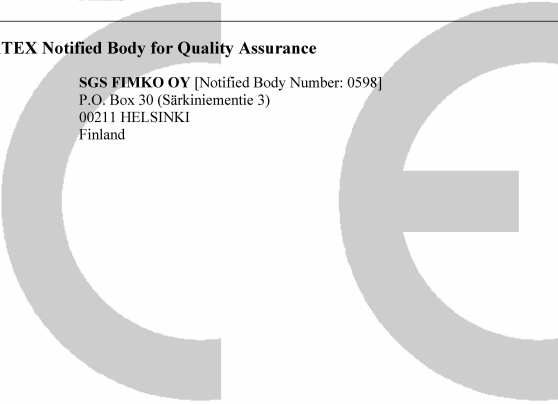
ATEX Directive (2014/34/EU)

Rosemount 2051HT Pressure Transmitters

BASEEFA08ATEX0129X - Intrinsic Safety Certificate
 Equipment Group II Category 1 G
 Ex ia IIC T4 Ga, T4(-20°C ≤ Ta ≤ +70°C)

Harmonized Standards:
 EN 60079-0: 2012 + A11: 2013
 EN 60079-11: 2012

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ATEX Notified Bodies		
SGS FIMKO OY [Notified Body Number: 0598] P.O. Box 30 (Särkiniementie 3) 00211 HELSINKI Finland		
ATEX Notified Body for Quality Assurance		
SGS FIMKO OY [Notified Body Number: 0598] P.O. Box 30 (Särkiniementie 3) 00211 HELSINKI Finland		
		
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4.10 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 Rosemount 2051HT
List of Rosemount 2051HT 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/T11364的规定而制作。

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

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

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

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

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



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