

# Rosemount 3051 Pressure Transmitter and Rosemount 3051CF Series Flowmeters

with FOUNDATION™ fieldbus protocol



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## Note

Before installing the transmitter, confirm the correct device driver is loaded on the host systems. See “System readiness” on page 3.

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**NOTICE**

This guide provides basic guidelines for Rosemount 3051 Transmitters. It does not provide instructions for configuration, diagnostics, maintenance, service, troubleshooting, Explosion-Proof, Flame-Proof, or intrinsically safe (I.S.) installations. Refer to the Rosemount 3051 Reference Manual (document number 00809-0100-4774) for more instruction. This manual is also available electronically on [www.rosemount.com](http://www.rosemount.com).

**⚠ 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. Please review the approvals section of the 3051 reference manual for any restrictions associated with a safe installation.

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

**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.

**Electrical shock can result in death or serious injury.**

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

**Conduit/cable entries**

- Unless marked, the conduit/cable entries in the transmitter housing use a 1/2-14 NPT thread form. Only use plugs, adapters, glands, or conduit with a compatible thread form when closing these entries.

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# System readiness

## Confirm correct device driver

- Verify the correct device driver (DD/DTM™) is loaded on your systems to ensure proper communications.
- Download the correct device driver at your host vendor download site, [www.emersonprocess.com](http://www.emersonprocess.com) or [www.fieldbus.org](http://www.fieldbus.org).

## Rosemount 3051 device revisions and drivers

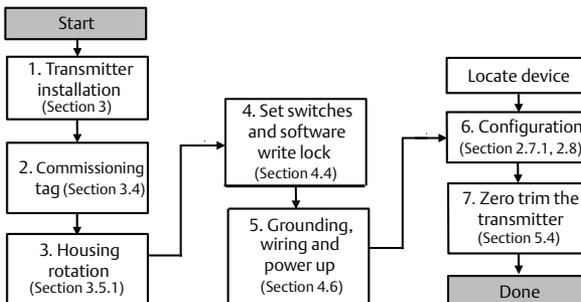
Table 1 provides the information necessary to ensure you have the correct device driver and documentation for your device.

**Table 1. Rosemount 3051 FOUNDATION fieldbus Device Revisions and Files**

Device revision (1)	Host	Device driver (DD) <sup>(2)</sup>	Obtain at	Device driver (DTM)	Manual document number
8	All	DD4: DD Rev 1	<a href="http://www.fieldbus.org">www.fieldbus.org</a>	www.emersonprocess.com	00809-0100-4774 Rev. CA or newer
	All	DD5: DD Rev 1	<a href="http://www.fieldbus.org">www.fieldbus.org</a>		
	Emerson	AMS® V 10.5 or higher: DD Rev 2	<a href="http://www.emersonprocess.com">www.emersonprocess.com</a>		
	Emerson	AMS V 8 to 10.5: DD Rev 1	<a href="http://www.emersonprocess.com">www.emersonprocess.com</a>		
	Emerson	375 / 475: DD Rev 2	Easy Upgrade Utility		
7	All	DD4: DD Rev 3	<a href="http://www.fieldbus.org">www.fieldbus.org</a>	www.emersonprocess.com	00809-0100-4774 Rev. BA
	All	DD5: NA	N/A		
	Emerson	AMS V 10.5 or higher: DD Rev 6	<a href="http://www.emersonprocess.com">www.emersonprocess.com</a>		
	Emerson	AMS V 8 to 10.5: DD Rev 4	<a href="http://www.emersonprocess.com">www.emersonprocess.com</a>		
	Emerson	375 / 475: DD Rev 6	Easy Upgrade Utility		

- FOUNDATION fieldbus device revision can be read using a FOUNDATION fieldbus capable configuration tool.
- 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.

**Figure 1. Installation Flowchart**



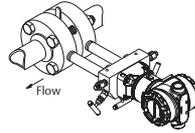
# Transmitter installation

## Step 1: Mount the transmitter

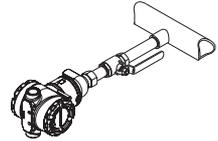
### Liquid applications

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

Coplanar

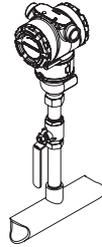
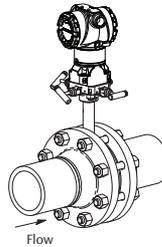


In-Line



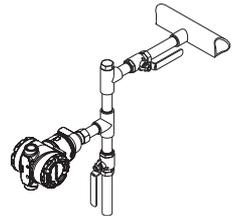
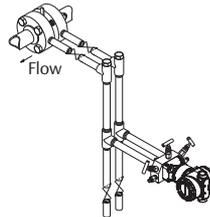
### Gas applications

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

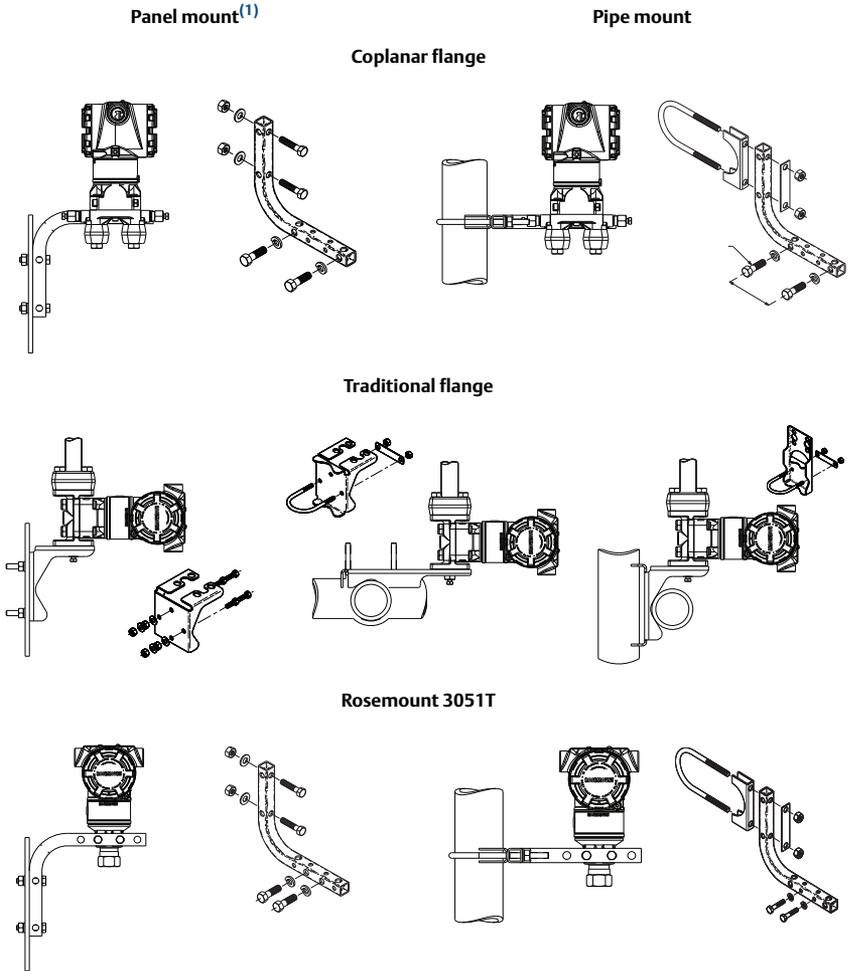


### Steam applications

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



**Figure 2. Panel and Pipe Mounting**

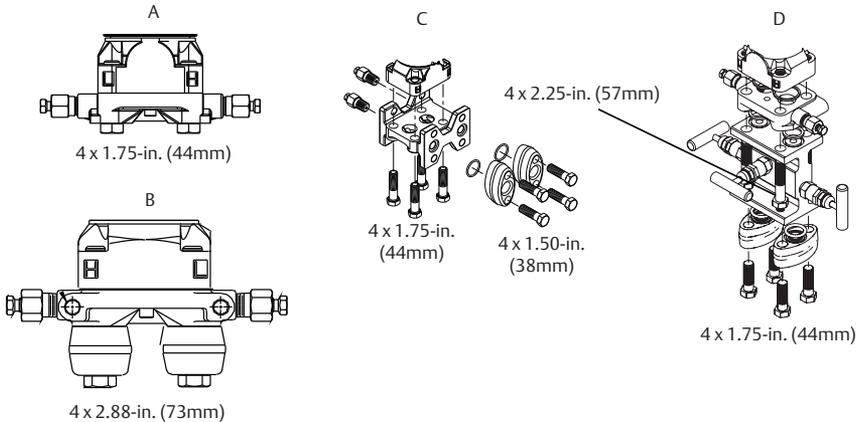


1.  $5/16 \times 1\frac{1}{2}$  Panel Bolts are customer supplied.

## Bolting considerations

If the transmitter installation requires assembly of the process flanges, manifolds, or flange adapters, follow the assembly guidelines to ensure a tight seal for optimal performance characteristics of the transmitters. Use only bolts supplied with the transmitter or sold by Emerson as spare parts. [Figure 3 on page 6](#) illustrates common transmitter assemblies with the bolt length required for proper transmitter assembly.

**Figure 3. Common Transmitter Assemblies**



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

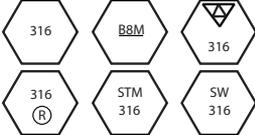
Bolts are typically carbon steel or stainless steel. Confirm the material by viewing the markings on the head of the bolt and referencing [Table 2 on page 7](#). If bolt material is not shown in [Table 2](#), contact a local Emerson Process Management representative for more information.

Carbon steel bolts do not require lubrication and the stainless steel bolts are coated with a lubricant to ease installation. However, no additional lubricant should be applied when installing either type of bolt.

Use the following bolt installation procedure:

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

**Table 2. Torque Values for the Flange and Flange Adapter Bolts**

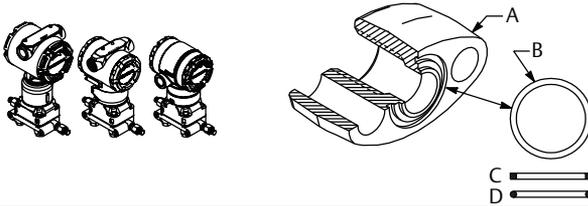
Bolt material	Head markings	Initial torque	Final torque
Carbon Steel (CS)		300 in.-lbs.	650 in.-lbs.
Stainless Steel (SST)		150 in.-lbs.	300 in.-lbs.

## O-rings with flange adapters

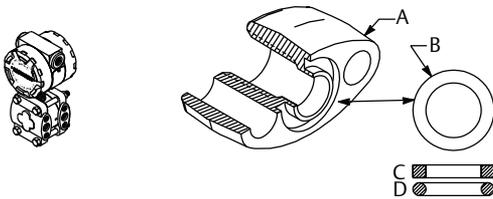
### WARNING

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 below.

Rosemount 3051S / 3051 / 2051 / 3001 / 3095



Rosemount 1151



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



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.

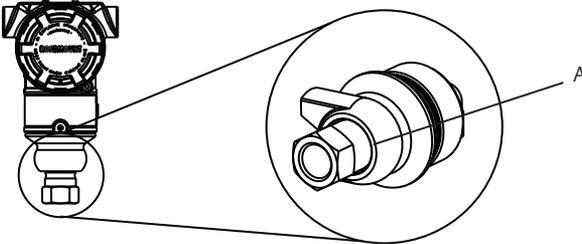
## In-line gage transmitter orientation

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

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

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**Figure 4. In-line Gage Low Side Pressure Port**



A. Pressure port location

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## Step 2: Tagging

### 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.

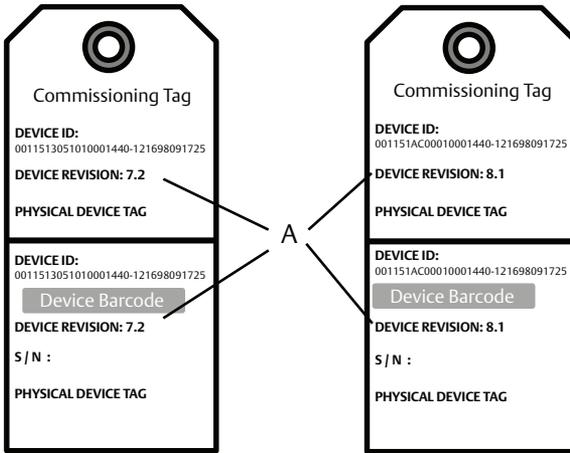
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#### Note

The device description loaded in the host system must be at the same revision as this device, see “System readiness” on page 3.

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Figure 5. Commissioning Tag



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 or [www.rosemount.com](http://www.rosemount.com) by selecting **Download Device Drivers** under Product Quick Links. You can also visit [www.fieldbus.org](http://www.fieldbus.org) and select End User Resources.

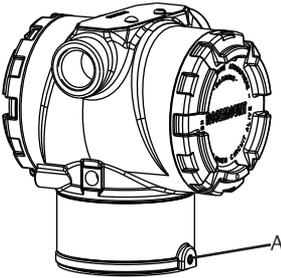
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## Step 3: Housing rotation

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

1. Loosen the housing rotation set screw using a  $\frac{5}{64}$ -in. 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  $360^\circ$  from thread limit).
4. Retighten the housing rotation set screw to no more than 7 in.-lbs when desired location is reached.

**Figure 6. Housing Rotation**



A. Housing rotation set screw ( $\frac{5}{64}$ -in.)

## Step 4: Set the switches

Set Simulate and Security switch configuration before installation as shown in Figure 7.

- 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.

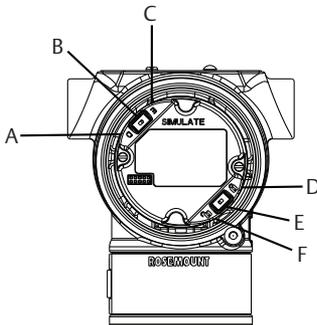
Use the following procedure to change the switch configuration:

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. Replace the housing cover.

### Note

It is recommended the cover be tightened until there is no gap between the cover and the housing.

**Figure 7. Simulate and Security Switches**



- A. Simulate disabled position
- B. Simulate switch
- C. Simulate enabled position (default)

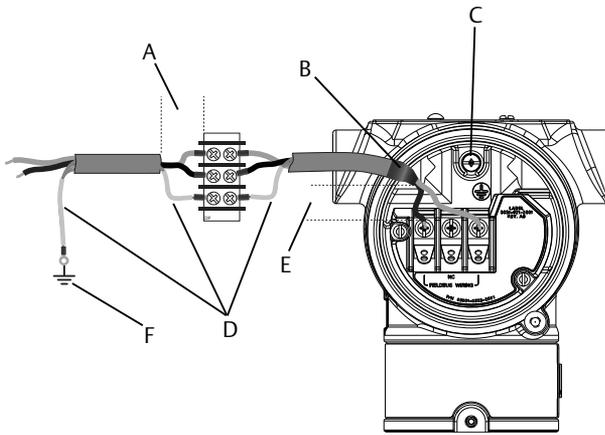
- D. Security locked position
- E. Security switch
- F. Security unlocked position (default)

## Step 5: Wire, ground, and power up

Use of 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. A minimum of 12 vdc under normal operating conditions is recommended. Shielded twisted pair Type A cable is recommended.

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

**Figure 8. Wiring Terminals**



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

### Note

The 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. Tighten the terminal screws to ensure adequate contact. No additional power is needed.

## Signal wiring grounding

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.

1. Remove the Field Terminals housing cover.
2. Connect the wiring pair and ground as indicated in [Figure 8](#).
  - a. Trim the cable shield as short as practical and insulate from touching the transmitter housing.

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### 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.

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### 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.

## Power supply

The transmitter requires between 9 and 32 V dc (9 and 30 V dc for intrinsic safety, and 9 and 17.5 V dc for FISCO 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.

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### Note

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

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## Step 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 3051 Reference Manual (document number 00809-0100-4774, Rev. CA or newer).

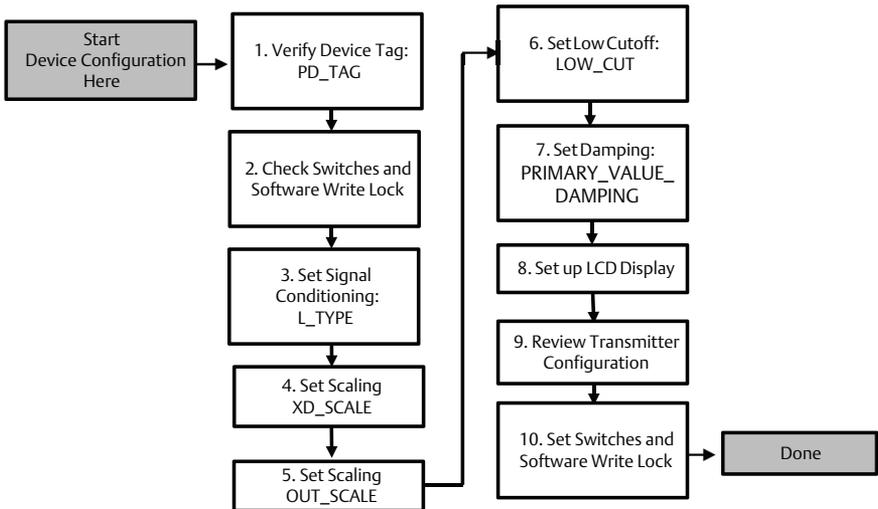
### Note

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

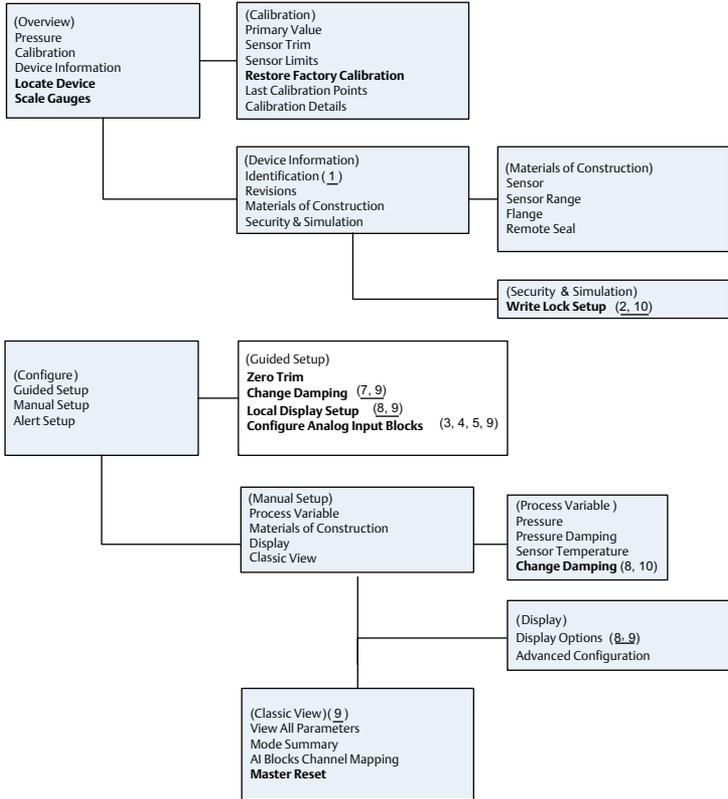
## Configure the AI block

Navigation instructions for each step are provided below. In addition the screens used for each step are shown in [Figure 10](#), Basic Configuration Menu Tree.

**Figure 9. Configuration Flowchart**



**Figure 10. Basic Configuration Menu Tree**



Standard Text – Navigation selections available

(Text) – Name of selection used on parent menu screen to access this screen

**Bold Text – Automated methods**

Underlined Text – Configuration task numbers from configuration flow chart

## Before you begin

See [Figure 9](#) 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 and software write protection on the transmitter. To do this follow [Step 1](#) and [Step 2](#) below. Otherwise continue at “[AI block configuration](#)” below.

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 7](#)):
  - a. The write lock switch must be in the unlocked position if the switch has been enabled in software.
  - b. To disable the Software Write Lock (devices ship from the factory with the software write lock disabled):
    - Navigation: from the *Overview* screen, select **Device Information** and then select the **Security and Simulation** tab.
    - Perform **Write Lock Setup** to disable Software Write Lock.

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**Note**

Place the control loop in “Manual” mode before beginning Analog Input Block configuration.

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### AI block configuration

To use guided setup:

- Navigate to **Configure>Guided Setup**.
- Select **AI Block Unit Setup**.

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**Note**

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

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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.

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- 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 3051 FOUNDATION fieldbus Reference Manual document number 00809-0100-4774.

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**Note**

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

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**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. Any unneeded steps will automatically be skipped.

---

3. To select the Signal Conditioning “L\_TYPE” from the drop down 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 drop down 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. If L\_TYPE is “Indirect Square Root”, a LOW FLOW CUTOFF function is available.
  - a. Enable **LOW FLOW CUTOFF**.
  - b. Set the **LOW\_CUT VALUE** in **XD\_SCALE UNITS**.
  - c. The AI Block may be placed in **AUTO** mode to return the device to service. Guided Setup does this automatically.
7. Change damping.
  - a. To use guided setup:
    - Navigate to **Configure>Guided Setup**.
    - Select **Change Damping**.

---

**Note**

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

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- 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**.
    - Select **Change Damping**.
    - Enter the desired damping value in seconds. The permitted range of values is 0.4 to 60 seconds.

8. Configure optional LCD display (if installed).
  - a. To use guided setup:
    - Navigate to **Configure>Guided Setup**.
    - Select **Local Display Setup**.

---

**Note**

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

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- 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>Guided Setup**.
    - Select **Local Display Setup**.
    - Check each parameter to be displayed. The LCD display will continuously scroll through the selected parameters.
9. Review transmitter configuration and place in service.
  - a. To review the transmitter configuration navigate using the manual 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”, click on the **Change** button, and then click on **Return All to Service**.

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**Note**

If hardware or software write protection is not needed, [Step 10](#) can be skipped.

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10. Set switches and software write lock.
  - a. Check switches (see [Figure 7](#)).

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**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.

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### Enable software write lock

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, DP Flow, and DP Level examples for guides.

Parameters	Enter data				
Channel	1 = Pressure, 2 = Sensor Temp, 12 = SPM mean, 13 = SPM standard deviation				
L_Type	Direct, Indirect, or Square Root				
XD_Scale	Scale and Engineering Units				
<b>Note</b> Select only the units that are supported by the device.	Pa	bar	torr @ 0 °C	ft H <sub>2</sub> O @ 4 °C	m H <sub>2</sub> O @ 4 °C
	kPa	mbar	kg/cm <sup>2</sup>	ft H <sub>2</sub> O @ 60 °F	mm Hg @ 0 °C
	mPa	psf	kg/m <sup>2</sup>	ft H <sub>2</sub> O @ 68 °F	cm Hg @ 0 °C
	hPa	Atm	in H <sub>2</sub> O @ 4 °C	mm H <sub>2</sub> O @ 4 °C	in Hg @ 0 °C
	Deg C	psi	in H <sub>2</sub> O @ 60 °F	mm H <sub>2</sub> O @ 68 °C	m Hg @ 0 °C
	Deg F	g/cm <sup>2</sup>	in H <sub>2</sub> O @ 68 °F	cm H <sub>2</sub> O @ 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.
<b>Note</b> Select only the units that are supported by the device.	
Out_Scale	Set values outside operating range.

### DP Flow example

Parameters	Enter data
Channel	1
L_Type	Square Root
XD_Scale	0 - 100 inH <sub>2</sub> O @ 68 °F
<b>Note</b> Select only the units that are supported by the device.	
Out_Scale	0 - 20 GPM
Low_Cut	inH <sub>2</sub> O @ 68 °F

## DP Level example

Parameters	Enter data
Channel	1
L_Type	Indirect
XD_Scale	0 - 300 inH <sub>2</sub> O @ 68 °F
<b>Note</b> Select only the units that are supported by the device.	
Out_Scale	0-25 ft.

## Display pressure on the LCD display

Select the **Pressure** check box on the display configuration screen.

## Step 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 that the equalizing valve is open and all wet legs are filled to the correct level. The transmitter will only allow 3-5% 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.

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

# Product Certifications

## European Directive Information

A copy of the EC Declaration of Conformity can be found at the end of the Quick Start Guide. The most recent revision of the EC Declaration of Conformity can be found at [www.rosemount.com](http://www.rosemount.com).

## 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).

## North America

### E5 USA Explosionproof (XP) and Dust-Ignitionproof (DIP)

Certificate: 0T2H0.AE

Standards: FM Class 3600 - 2011, FM Class 3615 - 2006, FM Class 3810 - 2005, ANSI/NEMA 250 - 2003

Markings: XP CL I, DIV 1, GP B, C, D; DIP CL II, DIV 1, GP E, F, G; CL III; T5(-50 °C ≤ T<sub>a</sub> ≤ +85 °C); Factory Sealed; Type 4X

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

Certificate: 1Q4A4.AX

Standards: FM Class 3600 - 2011, FM Class 3610 - 2010, FM Class 3611 - 2004, FM Class 3810 - 2005

Markings: IS CL I, DIV 1, GPA, B, C, D; CL II, DIV 1, GP E, F, G; Class III; DIV 1 when connected per Rosemount drawing 03031-1019; NI CL 1, DIV 2, GP A, B, C, D; T4(-50 °C ≤ T<sub>a</sub> ≤ +70 °C)[HART®], T5(-50 °C ≤ T<sub>a</sub> ≤ +40 °C) [HART]; T4(-50 °C ≤ T<sub>a</sub> ≤ +60 °C) [Fieldbus/PROFIBUS®]; Type 4x

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

1. The Model 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 Model 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.

### IE USA FISCO

Certificate: 1Q4A4.AX

Standards: FM Class 3600 – 1998, FM Class 3610 – 2010, FM Class 3611 – 2004, FM Class 3810 – 2005

Markings: IS CL I, DIV 1, GP A, B, C, D when connected per Rosemount drawing 03031-1019 (-50 °C ≤ T<sub>a</sub> ≤ +60 °C); Type 4x

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

1. The Model 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 Model 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
- C6** Canada Explosionproof, Dust-Ignitionproof, Intrinsic Safety and Nonincendive Certificate: 1053834  
 Standards: ANSI/ISA 12.27.01-2003, CSA Std. C22.2 No. 30 -M1986, CSA Std. C22.2 No.142-M1987, CSA Std. C22.2. No.157-92, CSA Std. C22.2 No. 213 - M1987  
 Markings: Explosionproof for Class I, Division 1, Groups B, C and D; Suitable for Class I, Zone 1, Group IIB+H2, T5; Dust-Ignitionproof Class II, Division 1, Groups E, F, G; Class III Division 1; Intrinsically Safe Class I, Division 1 Groups A, B, C, D when connected in accordance with Rosemount drawing 03031-1024, Temperature Code T3C; Suitable for Class I, Zone 0; Class I Division 2 Groups A, B, C and D, T5; Suitable for Class I Zone 2, Group IIC; Type 4X; Factory Sealed; Single Seal (See drawing 03031-1053)
- E6** Canada Explosionproof, Dust-Ignitionproof and Division 2 Certificate: 1053834  
 Standards: ANSI/ISA 12.27.01-2003, CSA Std. C22.2 No. 30 -M1986, CSA Std. C22.2 No.142-M1987, CSA Std. C22.2 No. 213 - M1987  
 Markings: Explosionproof Class I, Division 1, Groups B, C and D; Suitable for Class I, Zone 1, Group IIB+H2, T5; Dust-Ignitionproof for Class II and Class III, Division 1, Groups E, F and G; Class I, Division 2, Groups A, B, C and D; Suitable for Class I Zone 2, Group IIC; Type 4X; Factory Sealed; Single Seal (See drawing 03031-1053)

## Europe

- E8** ATEX Flameproof and Dust Certificate: KEMA00ATEX2013X; Baseefa11ATEX0275X  
 Standards: EN60079-0:2012, EN60079-1:2007, EN60079-26:2007, EN60079-31:2009  
 Markings: Ⓢ II 1/2 G Ex d IIC T6/T5 Ga/Gb, T6(-50 °C ≤ T<sub>a</sub> ≤ +65 °C), T5(-50 °C ≤ T<sub>a</sub> ≤ +80 °C);  
 Ⓢ II 1 D Ex ta IIIC T95 °C T<sub>500</sub> 105 °C Da (-20 °C ≤ T<sub>a</sub> ≤ +85 °C)

**Table 3. Process Temperature**

Temperature class	Process temperature
T6	-50 °C to +65 °C
T5	-50 °C to +80 °C

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

1. This device contains a thin wall diaphragm. 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. For information on the dimensions of the flameproof joints the manufacturer shall be contacted.
3. The capacitance of the wrap around label, being 1.6 nF, exceed the limit in Table 9 of EN60079-0. The user shall determine suitability for the specific application.
4. Some variants of the equipment have reduced markings on the nameplate. Refer to the Certificate for full equipment marking.

**I1** ATEX Intrinsic Safety and Dust

Certificate: BAS97ATEX1089X; Baseefa11ATEX0275X

Standards: EN60079-0:2012, EN60079-11:2012, EN60079-31:2009

Markings: HART: Ⓢ II 1 G Ex ia IIC T5/T4 Ga, T5(-60 °C ≤ T<sub>a</sub> ≤ +40 °C),  
T4(-60 °C ≤ T<sub>a</sub> ≤ +70 °C)Fieldbus/PROFIBUS: Ⓢ II 1 G Ex ia IIC Ga T4(-60 °C ≤ T<sub>a</sub> ≤ +60 °C)DUST: Ⓢ II 1 D Ex ta IIIC T95 °C T<sub>500</sub> 105 °C Da (-20 °C ≤ T<sub>a</sub> ≤ +85 °C)**Table 4. Input Parameters**

	HART	Fieldbus/PROFIBUS
<b>Voltage U<sub>i</sub></b>	30 V	30 V
<b>Current I<sub>i</sub></b>	200 mA	300 mA
<b>Power P<sub>i</sub></b>	0.9 W	1.3 W
<b>Capacitance C<sub>i</sub></b>	0.012 μF	0 μF
<b>Inductance L<sub>i</sub></b>	0 mH	0 mH

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

**IA** ATEX FISCO

Certificate: BAS97ATEX1089X

Standards: EN60079-0:2012, EN60079-11:2009

Markings: Ⓢ II 1 G Ex ia IIC T4 Ga (-60 °C ≤ T<sub>a</sub> ≤ +60 °C)**Table 5. Input Parameters**

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

**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.

**N1** ATEX Type n and Dust

Certificate: BAS00ATEX3105X; Baseefa11ATEX0275X

Standards: EN60079-0:2012, EN60079-15:2010, EN60079-31:2009

Markings: Ⓜ II 3 G Ex nA IIC T5 Gc (-40 °C ≤ T<sub>a</sub> ≤ +70 °C);

Ⓜ II 1 D Ex ta IIIC T95 °C T<sub>500</sub> 105 °C Da (-20 °C ≤ T<sub>a</sub> ≤ +85 °C)

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

1. This apparatus is not capable of withstanding the 500 V insulation test that is required by clause 6.8.1 by EN60079-15. This must be taken into account when installing the apparatus.
2. Some variants of the equipment have reduced markings on the nameplate. Refer to the Certificate for full equipment marking.

## International

**E7** IECEx Flameproof and Dust

Certificate: IECEx KEM 09.0034X; IECEx BAS 10.0034X

Standards: IEC60079-0:2011, IEC60079-1:2007-04, IEC60079-26:2006, IEC60079-31:2008

Markings: Ex d IIC T6/T5 Ga/Gb, T6(-50 °C ≤ T<sub>a</sub> ≤ +65 °C), T5(-50 °C ≤ T<sub>a</sub> ≤ +80 °C);

Ex ta IIIC T95 °C T<sub>500</sub> 105 °C Da (-20 °C ≤ T<sub>a</sub> ≤ +85 °C)

**Table 6. Process Temperature**

Temperature class	Process temperature
T6	-50 °C to +65 °C
T5	-50 °C to +80 °C

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

1. This device contains a thin wall diaphragm. 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. For information on the dimensions of the flameproof joints the manufacturer shall be contacted.
3. The capacitance of the wrap around label, being 1.6 nF, exceed the limit in Table 9 of EN60079-0. The user shall determine suitability for the specific application.
4. Some variants of the equipment have reduced markings on the nameplate. Refer to the Certificate for full equipment marking.

**I7** IECEx Intrinsic Safety

Certificate: IECEx BAS 09.0076X

Standards: IEC60079-0:2011, IEC60079-11:2011

Markings: HART: Ex ia IIC T5/T4 Ga, T5(-60 °C ≤ T<sub>a</sub> ≤ +40 °C), T4(-60 °C ≤ T<sub>a</sub> ≤ +70 °C)

Fieldbus/PROFIBUS: Ex ia IIC T4(-60 °C ≤ T<sub>a</sub> ≤ +60 °C)

**Table 7. Input Parameters**

	HART	Fieldbus/PROFIBUS
<b>Voltage U<sub>i</sub></b>	30 V	30 V
<b>Current I<sub>i</sub></b>	200 mA	300 mA
<b>Power P<sub>i</sub></b>	0.9 W	1.3 W
<b>Capacitance C<sub>i</sub></b>	0.012 μF	0 μF
<b>Inductance L<sub>i</sub></b>	0 mH	0 mH

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

1. If the apparatus is fitted with optional 90 V transient suppressor, it is not capable of withstanding the 500 V insulation test required by clause 6.3.12 of IEC60079-11. 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 should be taken to protect it from impact or abrasion if located in Zone 0.

IECEx Mining (Special A0259)

Certificate: IECEx TSA 14.0001X

Standards: IEC60079-0:2011, IEC60079-11:2011

Markings: Ex ia I Ma (-60 °C ≤ T<sub>a</sub> ≤ +70 °C)

**Table 8. Input Parameters**

	HART	Fieldbus/PROFIBUS	FISCO
<b>Voltage U<sub>i</sub></b>	30 V	30 V	17.5 V
<b>Current I<sub>i</sub></b>	200 mA	300 mA	380 mA
<b>Power P<sub>i</sub></b>	0.9 W	1.3 W	5.32 W
<b>Capacitance C<sub>i</sub></b>	0.012 μF	0 μF	≤ 5 nF
<b>Inductance L<sub>i</sub></b>	0 mH	0 mH	≤ 10 μH

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

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.
3. 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 I applications.

**IG IECEx FISCO**

Certificate: IECEx BAS 09.0076X

Standards: IEC60079-0:2011, IEC60079-11:2011

Markings: Ex ia IIC T4 Ga (-60 °C ≤ T<sub>a</sub> ≤ +60 °C)

**Table 9. Input Parameters**

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

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

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 IEC60079-11. 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 should be taken to protect it from impact or abrasion if located in Zone 0.

**N7** IECEx Type n

Certificate: IECEx BAS 09.0077X

Standards: IEC60079-0:2011, IEC60079-15:2010

Markings: Ex nA IIC T5 Gc ( $-40\text{ °C} \leq T_a \leq +70\text{ °C}$ )**Special Condition for Safe Use (X):**

1. The apparatus is not capable of withstanding the 500 V insulation test required by IEC60079-15. This must be taken into account when installing the apparatus.

**Brazil****E2** INMETRO Flameproof

Certificate: UL-BR 13.0643X

Standards: ABNT NBR IEC60079-0:2008 + Errata 1:2011,  
ABNT NBR IEC60079-1:2009 + Errata 1:2011,  
ABNT NBR IEC60079-26:2008 + Errata 1:2008Markings: Ex d IIC T6/T5 Ga/Gb, T6( $-50\text{ °C} \leq T_a \leq +65\text{ °C}$ ), T5( $-50\text{ °C} \leq T_a \leq +80\text{ °C}$ )**Special Conditions for Safe Use (X):**

1. This device contains a thin wall diaphragm. 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. In case of repair, contact the manufacturer for information on the dimensions of the flameproof joints.
  3. The capacitance of the wrap around label, being 1.6 nF, exceeds the limit in Table 9 of ABNT NBR IEC 60079-0. The user shall determine suitability for the specific application.
- I2** INMETRO Intrinsic Safety  
Certificate: UL-BR 13.0584X  
Standards: ABNT NBR IEC60079-0:2008 + Errata 1:2011, ABNT NBR IEC60079-11:2009  
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 10. Input Parameters**

	HART	Fieldbus/PROFIBUS
<b>Voltage <math>U_i</math></b>	30 V	30 V
<b>Current <math>I_i</math></b>	200 mA	300 mA
<b>Power <math>P_i</math></b>	0.9 W	1.3 W
<b>Capacitance <math>C_i</math></b>	0.012 $\mu$ F	0 $\mu$ F
<b>Inductance <math>L_i</math></b>	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 a protective polyurethane paint finish; however, care should be taken to protect it from impact or abrasion if located in Zone 0.

**IB INMETRO FISCO**

Certificate: UL-BR 13.0584X

Standards: ABNT NBR IEC60079-0:2008 + Errata 1:2011, ABNT NBR IEC60079-11:2009

Markings: Ex ia IIC T4 Ga (-60 °C ≤ T<sub>a</sub> ≤ +60 °C)**Table 11. Input Parameters**

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

**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 IEC 60079-11. This must be taken into account when installing the equipment.
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.

**China****E3 China Flameproof**

Certificate: GYJ14.1041X; GYJ10.1313X [Flowmeters]

Standards: GB3836.1-2000, GB3836.2-2010, GB12476-2000

Markings: Ex d IIC T6/T5, T6(-50 °C ≤ T<sub>a</sub> ≤ +65 °C), T5(-50 °C ≤ T<sub>a</sub> ≤ +80 °C)**Special Conditions for Safe Use (X):**

1. The relation between ambient temperature arrange and temperature class is as follows:

<b>T<sub>a</sub></b>	<b>Temperature class</b>
-50 °C ~ +80 °C	T5
-50 °C ~ +65 °C	T6

When used in a combustible dust environment, the maximum ambient temperature is 80 °C.

2. The earth connection facility in the enclosure should be connected reliably.
3. Cable entry certified by notified body with type of protection Ex d IIC in accordance with GB3836.1-2000 and GB3836.2-2000, should be applied when installed in a hazardous location. When used in combustible dust environment, cable entry in accordance with IP66 or higher level should be applied.
4. Obey the warning "Keep tight when the circuit is alive."
5. End users are not permitted to change any internal components.
6. During installation, use and maintenance of this product, observe the following standards: GB3836.13-1997, GB3836.15-2000, GB3836.16-2006, GB50257-1996, GB12476.2-2006, GB15577-2007.

**I3** China Intrinsic Safety

Certificate: GYJ13.1362X; GYJ101312X [Flowmeters]

Standards: GB3836.1-2010, GB3836.4-2010, GB3836.20-2010, GB12476.1-2000

Markings: Ex ia IIC Ga T4/T5

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

1. Symbol "X" is used to denote specific conditions of use:
  - a. If the apparatus is fitted with an optional 90 V transient suppressor, it is not capable of withstanding the 500 V insulation test for 1 minute. This must be taken into account when installing the apparatus.
  - b. 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.
2. The relation between T code and ambient temperature range is:

Model	T code	Temperature range
HART	T5	$-60\text{ }^{\circ}\text{C} \leq T_a \leq +40\text{ }^{\circ}\text{C}$
HART	T4	$-60\text{ }^{\circ}\text{C} \leq T_a \leq +70\text{ }^{\circ}\text{C}$
Fieldbus/PROFIBUS/FISCO	T4	$-60\text{ }^{\circ}\text{C} \leq T_a \leq +60\text{ }^{\circ}\text{C}$
Flowmeter with 644 Temp Housing	T4	$-40\text{ }^{\circ}\text{C} \leq T_a \leq +60\text{ }^{\circ}\text{C}$

3. Intrinsically Safe parameters:

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

Note 1: FISCO parameters apply to both Group IIC and IIB.

Note 2: [For Flowmeters] When 644 temperature transmitter is used, the 644 temperature transmitter should be used with Ex-certified associated apparatus to establish explosion protection system that can be used in explosive gas atmospheres. Wiring and terminals should comply with the instruction manual of both 644 temperature transmitter and associated apparatus. The cables between 644 temperatures transmitter and associated apparatus should be shielded cables (the cables must have insulated shield). The shielded cable has to be grounded reliably in a non-hazardous area.

4. Transmitters comply with the requirements for FISCO field devices specified in IEC60079-27:2008. For the connection of an intrinsically safe circuit in accordance with FISCO Model, FISCO parameters are listed in the table above.
5. The product should be used with Ex-certified associated apparatus to establish explosion protection system that can be used in explosive gas atmospheres. Wiring and terminals should comply with the instruction manual of the product and associated apparatus.
6. The cables between this product and associated apparatus should be shielded cables (the cables must have insulated shield). The shielded cable has to be grounded reliably in a non-hazardous area.
7. End users are not permitted to change any intern components but to settle the problem in conjunction with the manufacturer to avoid damage to the product.

8. During installation, use and maintenance of this product, observe the following standards: GB3836.13-1997, GB3836.15-2000, GB3836.16-2006, GB50257-1996, GB12476.2-2006, GB15577-2007.

**N3** China Type n

Certificate: GYJ101111X

Standards: GB3836.1-2000, GB3836.8-2003

Markings: Ex nA IIC T5(-40 °C ≤ T<sub>a</sub> ≤ +70 °C)**Special Condition for Safe Use (X):**

1. Symbol "X" is used to denote specific conditions of use: The apparatus is not capable of withstanding the 500 V test to earth for one minute. The must be taken into consideration during installation.
2. The ambient temperature range is -40 °C ≤ T<sub>a</sub> ≤ +70 °C.
3. Maximum input voltage: 55 V.
4. Cable glands, conduit or blanking plugs, certified by NEPSI with Ex e or Ex n protection type and IP66 degree of protection provided by enclosure, should be used on external connections and redundant cable entries.
5. Maintenance should be done in non-hazardous location.
6. End users are not permitted to change any internal components but to settle the problem in conjunction with manufacturer to avoid damage to the product.
7. During installation, use and maintenance of this product, observe the following standards: GB3836.13-1997, GB3836.15-2000, GB3836.16-2006, GB50257-1996.

## Japan

**E4** Japan Flameproof

Certificate: TC20577, TC20578, TC20583, TC20584 [HART]; TC20579, TC20580, TC20581, TC20582 [Fieldbus]

Markings: Ex d IIC T5

## Technical Regulations Customs Union (EAC)

**EM** EAC Flameproof

Certificate: RU C-US.Gb05.B.00400

Markings: Ga/Gb Ex d IIC T5/T6 X, T5(-60 °C ≤ T<sub>a</sub> ≤ +80 °C), T6(-60 °C ≤ T<sub>a</sub> ≤ +65 °C)**Special Condition for Safe Use (X):**

See certificate for special conditions.

**IM** EAC Intrinsically Safe

Certificate: RU C-US.Gb05.B.00400

Markings: HART: 0Ex ia IIC T4/T5 Ga X, T4(-60 °C ≤ T<sub>a</sub> ≤ +70 °C), T5(-60 °C ≤ T<sub>a</sub> ≤ +40 °C)  
Fieldbus/PROFIBUS: 0Ex ia IIC T4 Ga X (-60 °C ≤ T<sub>a</sub> ≤ +60 °C)**Special Condition for Safe Use (X):**

See certificate for special conditions.

## 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

## Conduit Plugs and Adapters

IECEx Flameproof and Increased Safety

Certificate: IECEx FMG 13.0032X

Standards: IEC60079-0:2011, IEC60079-1:2007, IEC60079-7:2006-2007

Markings: Ex de IIC Gb

ATEX Flameproof and Increased Safety

Certificate: FM13ATEX0076X

Standards: EN60079-0:2012, EN60079-1:2007, IEC60079-7:2007

Markings: Ⓜ II 2 G Ex de IIC Gb

**Table 12. Conduit Plug Thread Sizes**

Thread	Identification mark
M20 × 1.5	M20
1/2- 14 NPT	1/2 NPT
G <sup>1/2</sup> A	G <sup>1/2</sup>

**Table 13. Thread Adapter Thread Sizes**

Male thread	Identification mark
M20 × 1.5	M20
1/2- 14 NPT	1/2 NPT
G <sup>1/2</sup> A	G <sup>1/2</sup>
Female thread	Identification mark
M20 × 1.5 - 6H	M20
1/2- 14 NPT	1/2- 14 NPT
PG 13.5	PG 13.5

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

1. When the thread adapter or blanking plug is used with an enclosure in type of protection increased safety “e” the entry thread shall be suitably sealed in order to maintain the ingress protection rating (IP) of the enclosure.
2. The blanking plug shall not be used with an adapter.
3. Blanking Plug and Threaded Adapter shall be either NPT or Metric thread forms. G<sup>1/2</sup> and PG 13.5 thread forms are only acceptable for existing (legacy) equipment installations.

## Additional Certifications

**SBS** American Bureau of Shipping (ABS) Type Approval

Certificate: 09-HS446883A-PDA

Intended Use: Measure gauge or absolute pressure of liquid, gas or vapor applications on ABS classed vessels, marine, and offshore installations.

ABS Rules: 2009 Steel Vessels Rules 1-1-4/7.7, 4-6-2/5.15, 4-8-3/13.1

**SBV** Bureau Veritas (BV) Type Approval

Certificate: 23155/A3 BV

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

**SDN** Det Norske Veritas (DNV) Type Approval

Certificate: A-14086

Intended Use: Det Norske Veritas' Rules for Classification of Ships, High Speed & Light Craft and Det Norske Veritas' Offshore Standards

Application:

Location classes	
Temperature	D
Humidity	B
Vibration	A
EMC	B
Enclosure	D

**SLL** Lloyds Register (LR) Type Approval

Certificate: 11/60002

Application: Environmental categories ENV1, ENV2, ENV3, and ENV5

**C5** Custody Transfer - Measurement Canada Accuracy Approval

Certificate: AG-0226; AG-0454; AG-0477

Figure 11. Rosemount 3051 EC Declaration of Conformity

<b>ROSEMOUNT</b>	<b>CE</b>
<b>EC Declaration of Conformity</b>	
No: RMD 1017 Rev. T	
3051	
We,	
<b>Rosemount Inc.</b> <b>8200 Market Boulevard</b> <b>Chanhassen, MN 55317-9685</b> <b>USA</b>	
declare under our sole responsibility that the product,	
<b>Model 3051 Pressure Transmitters</b>	
manufactured by,	
<b>Rosemount Inc.</b> <b>8200 Market Boulevard</b> <b>Chanhassen, MN 55317-9685</b> <b>USA</b>	
to which this declaration relates, is in conformity with the provisions of the European Community 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 Community notified body certification, as shown in the attached schedule.	
 (signature)	Vice President of Global Quality (function name - printed)
Kelly Klein (name - printed)	14-Apr-2014 (date of issue)
	Page 1 of 4
Document Rev: 2013_A	

**ROSEMOUNT**

## EC Declaration of Conformity

No: RMD 1017 Rev. T

### EMC Directive (2004/108/EC)

#### All Models 3051 Pressure Transmitters

EN 61326-1:2006  
EN 61326-2-3:2006

### PED Directive (97/23/EC)

#### Models 3051CA4; 3051CD2, 3, 4, 5; 3051HD2, 3, 4, 5; (also with P9 option)

##### Pressure Transmitters

QS Certificate of Assessment - EC Certificate No. 59552-2009-CE-HOU-DNV  
Module H Conformity Assessment  
Other Standards Used: ANSI/ISA61010-1:2004, EN60770-1:1999

#### All other model 3051 Pressure Transmitters

Sound Engineering Practice

#### Transmitter Attachments: Diaphragm Seal - Process Flange - Manifold

Sound Engineering Practice

#### Model 3051CFx Flowmeter Transmitters (All 3051CFx models are SEP except as noted in the table below)

QS Certificate of Assessment - CE-41-PED-H1-RMT-001-04-USA  
Module H Conformity Assessment  
Evaluation standards: ASME B31.3:2010

Model/Range	PED Category	
	Group 1 Fluid	Group 2 Fluid
3051CFA: 1500# & 2500# All Lines	II	SEP
3051CFA: Sensor Size 2 150# 6"to 24" Line	I	SEP
3051CFA: Sensor Size 2 300# 6"to 24" Line	II	I
3051CFA: Sensor Size 2 600# 6"to 16" Line	II	I
3051CFA: Sensor Size 2 600# 18"to 24" Line	III	II
3051CFA: Sensor Size 3 150# 12"to 44" Line	II	I
3051CFA: Sensor Size 3 150# 46"to 72" Line	III	II
3051CFA: Sensor Size 3 300# 12"to 72" Line	III	II
3051CFA: Sensor Size 3 600# 12"to 48" Line	III	II
3051CFA: Sensor Size 3 600# 60"to 72" Line	IV	III
3051CFP: 150#, 300#, 600# 1-1/2"	I	SEP
3051CFP: 300# & 600# 1-1/2"	II	I
3051CFP: 1-1/2" Threaded & Welded	II	I

  
**EMERSON**  
Process Management

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**EC Declaration of Conformity**

**No: RMD 1017 Rev. T**

**ATEX Directive (94/9/EC)**

**Model 3051 Pressure Transmitter**

**BAS97ATEX1089X - Intrinsic Safety**  
Equipment Group II Category 1 G  
Ex ia IIC T5/T4 Ga

Harmonized Standards Used:  
EN60079-11:2012  
Other Standards Used:  
EN60079-0:2012

**BAS00ATEX3105X - Type n and Certificate**  
Equipment Group II Category 3 G  
Ex nA IIC T5 Gc

Harmonized Standards Used:  
EN60079-15:2010  
Other Standards Used:  
EN60079-0:2012

**Basefa11ATEX0275X - Dust Certificate**  
Equipment Group II Category 1 D  
Ex ta IIIC T95°C T<sub>500</sub>105°C Da

Harmonized Standards Used:  
EN60079-31:2009  
Other Standards Used:  
EN60079-0:2012

**KEMA00ATEX2013X - Flameproof Certificate**  
Equipment Group II Category 1/2 G  
Ex d IIC T6 or T5 Ga/Gb

Harmonized Standards Used:  
EN60079-1:2007, EN60079-26:2007  
Other Standards Used:  
EN60079-0:2012



**ROSEMOUNT****EC Declaration of Conformity**

No: RMD 1017 Rev. T

**PED Notified Body****Model 3051 Pressure Transmitters**

**Det Norske Veritas (DNV)** [Notified Body Number: 0575]  
Veritasveien 1, N-1322  
Hovik, Norway

**3051CFx Series Flowmeter Transmitters**

**Bureau Veritas UK Limited** [Notified Body Number: 0041]  
Parklands 825A, Wilmslow Road, Didsbury  
Manchester M20 2RE  
United Kingdom

**ATEX Notified Bodies for EC Type Examination Certificate**

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

**Baseefa.** [Notified Body Number: 1180]  
Rockhead Business Park  
Staden Lane  
Buxton, Derbyshire  
SK17 9RZ United Kingdom

**ATEX Notified Body for Quality Assurance**

**Baseefa.** [Notified Body Number: 1180]  
Rockhead Business Park  
Staden Lane  
Buxton, Derbyshire  
SK17 9RZ United Kingdom

  
**EMERSON**  
Process Management

Device revision (1)	Host	Device driver (DD)(2)	Obtain at	Device driver (DTM)	Manual document number
8	All	DD4: DD Rev 1	www.fieldbus.org	www.emersonprocess.com	00809-0100-4774 Rev. CA or newer
	All	DD5: DD Rev 1	www.fieldbus.org		
	Emerson	AMS V 10.5 or higher: DD Rev 2	www.emersonprocess.com		
	Emerson	AMS V 8 to 10.5: DD Rev 1	www.emersonprocess.com		
	Emerson	375 / 475: 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.



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