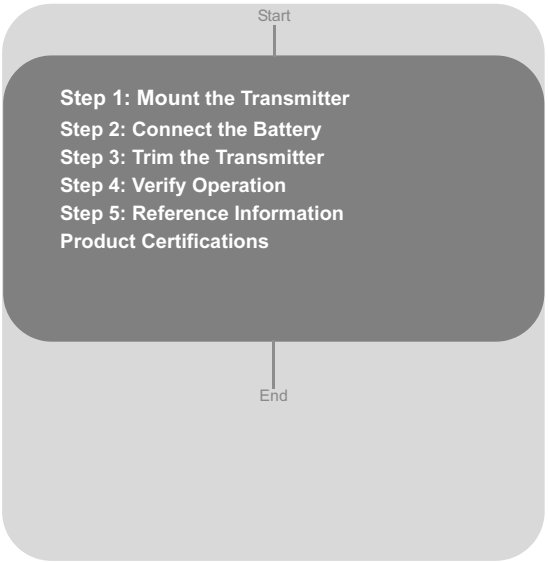
Quick Installation Guide
00825-0100-4802, Rev BA
June 2007

Rosemount 3051S Series Pressure Transmitter with Wireless Enabled HART® Solutions

Rosemount 3051SF Series Flowmeter Transmitter with Wireless Enabled HART® Solutions

Product Discontinued. Click here for the new WirelessHART document.



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EMERSON™
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Rosemount 3051S Wireless

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⚠ IMPORTANT NOTICE

This installation guide provides basic guidelines for Rosemount 3051S Wireless Transmitters (reference manual document number 00809-0100-4802). It does not provide instructions for diagnostics, maintenance, service, or troubleshooting. Refer to the Rosemount 3051S Wireless reference manual (document number 00809-0100-4802) for more instruction. The manual and this QIG are also available electronically on 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 product certifications section for any restrictions associated with a safe installation.

- Before connecting a 375 Field Communicator in an explosive atmosphere, ensure the instruments are installed in accordance with intrinsically safe or non-incendive field wiring practices.

Process leaks may cause harm or result in death.

- Install and tighten process connectors before applying pressure.

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.

⚠ IMPORTANT NOTICE

The Rosemount 3051S and all other wireless devices should be installed only after the 1420 Wireless Gateway has been installed and is functioning properly. Wireless devices should also be powered up in order of proximity from the 1420 Wireless Gateway, beginning with the closest. This will result in a simpler and faster network installation.

⚠ IMPORTANT NOTICE

Shipping considerations for wireless products (Lithium Batteries):

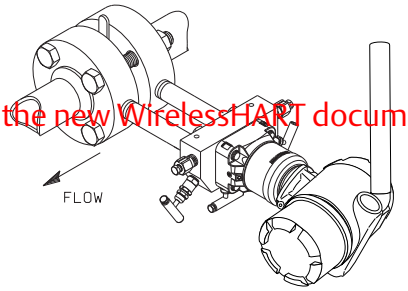
The unit was shipped to you without the battery installed. Please remove the battery pack prior to shipping the unit.

Primary lithium batteries are regulated in transportation by the U. S. Department of Transportation, and are also covered by IATA (International Air Transport Association), ICAO (International Civil Aviation Organization), and ARD (European Ground Transportation of Dangerous Goods). It is the responsibility of the shipper to ensure compliance with these or any other local requirements. Please consult current regulations and requirements before shipping.

STEP 1: MOUNT THE TRANSMITTER

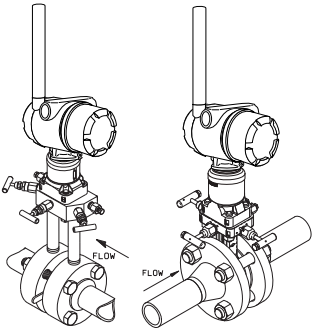
Liquid Flow Applications

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.



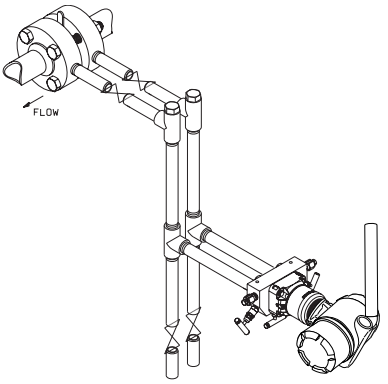
Gas Flow Applications

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



Steam Flow Applications

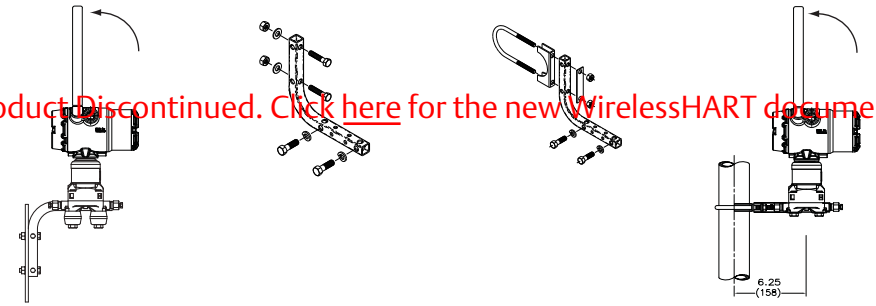
1. Place taps to the side of the line.
2. Mount beside or below the taps.
3. Fill impulse lines with water.



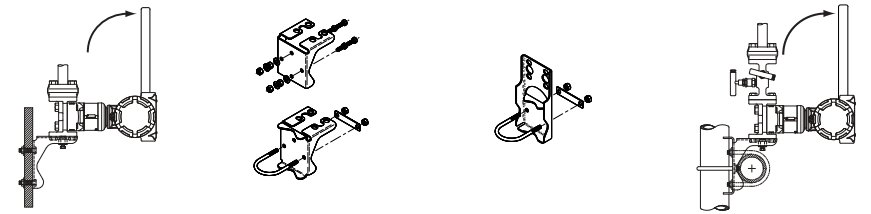
STEP 1 CONTINUED...

Panel Mount **Pipe Mount**

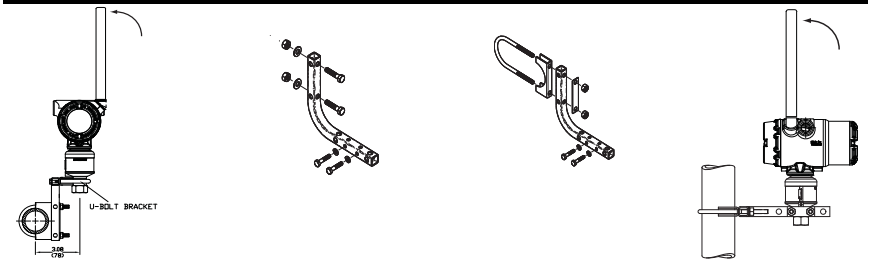
Coplanar™ Flange



Traditional Flange



In-line

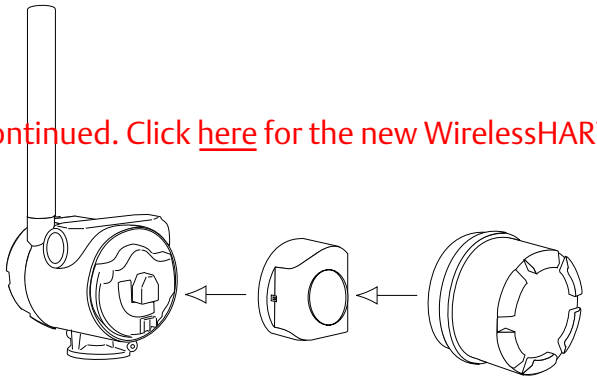


NOTE:

Position the antenna such that it is VERTICAL, either straight up or straight down.

STEP 2: CONNECT THE BATTERY

Connect the battery pack.



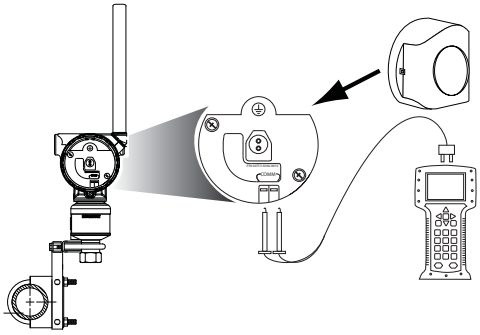
NOTE:
Wireless devices should be powered up in order of proximity from the 1420 Wireless Gateway, beginning with the closest device to the 1420. This will result in a simpler and faster network installation.

STEP 3: TRIM THE TRANSMITTER

For the Wireless enabled HART transmitter (option code X), use the “3051S WPT” DD.

NOTE:
This can also be completed using AMS™ Suite: Intelligent Device Manager once the device has joined the network.

NOTE:
In order for the 375 Field Communicator to interface with the 3051S, the battery must be connected.



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

STEP 3 CONTINUED...

Zero Trim

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.

If zero offset is less than 3% of true zero, follow the "Using the 375 Field Communicator" instructions below to perform a zero trim. If zero offset is greater than 3%, see the 3051S Reference Manual (document number 00809-0100-4801) to perform a rerange using the 375 Field Communicator.

Using the 375 Field Communicator

HART Fast Keys	Steps
1, 2, 2, 2, 1	1. Equalize or vent the transmitter and connect HART communicator. 2. At the menu, input the HART Fast Key sequence. 3. Follow the commands to perform a zero trim.

Close the Housing

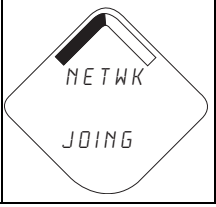
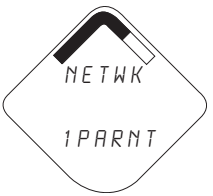
Close the housing cover and tighten to safety specification. Always ensure a proper seal by installing the electronics housing covers so that metal contacts metal, but do not over tighten.

STEP 4: VERIFY OPERATION

Operation can be verified in four locations: at the device via the LCD, by using the 375 Field Communicator, at the Gateway via the 1420 Wireless Gateway's integrated web server, or via AMS™ Suite: Intelligent Device Manager.

Local Display

The LCD will display the PV value at the same rate as the transmit rate, but no faster than once per minute. Refer to the Rosemount 3051S Wireless manual for error codes and other LCD messages. Press the **Diagnostic** button to display the **TAG, Device ID, Network ID, Network Join Status** and **Device Status** screens.

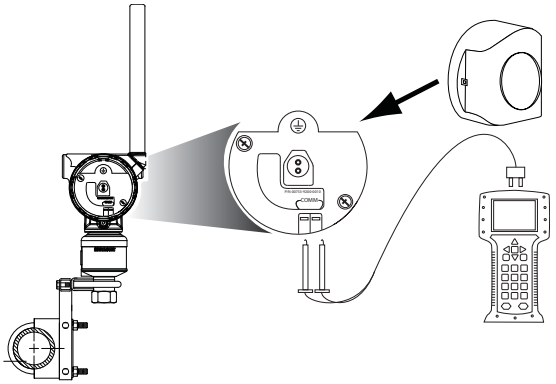
Searching for Network	Joining Network	Connected with 1 Parent	Connected with 2 Parents
			

375 Field Communicator

For the Wireless enabled HART transmitter (option code X), use the "3051S WPT" DD.

Function	Key Sequence	Menu Items
Network	1, 4, 3, 1	Smart Power, Network ID, Set Join Key, **Radio State**

Figure 1. 375 Field Communicator Connections

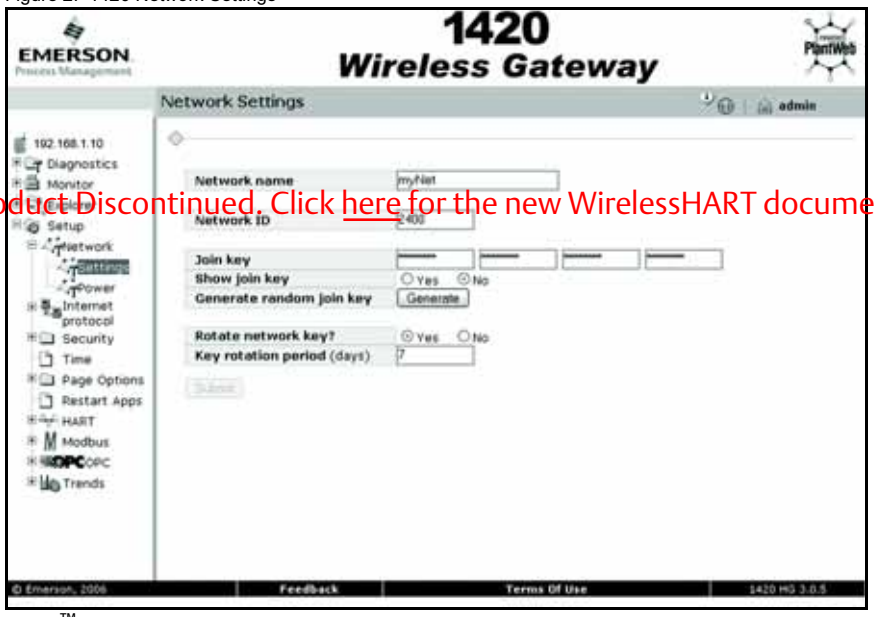


1420 Wireless Gateway

In the 1420's integrated web server, navigate to the **Explorer>Status** page. This page will show whether the device has joined the network and if it is communicating properly.

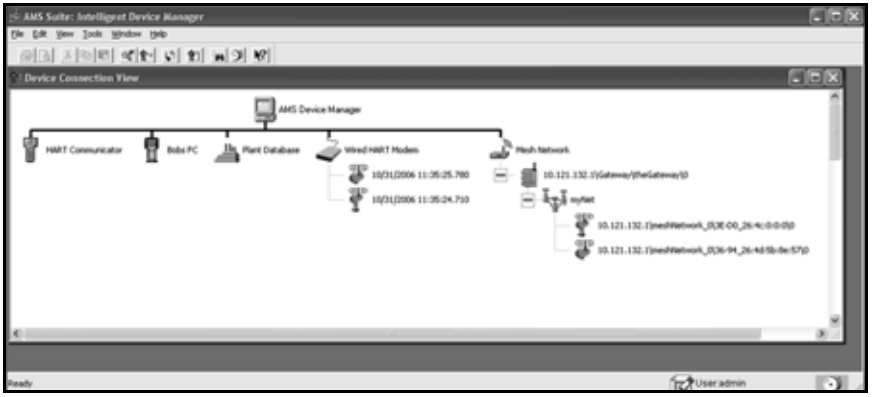
NOTE:
It may take several minutes for the device to join the network.

Figure 2. 1420 Network Settings



AMS™ Suite: Intelligent Device Manager

When the device has joined the network, it will appear in the Device Manager as illustrated below.



Troubleshooting

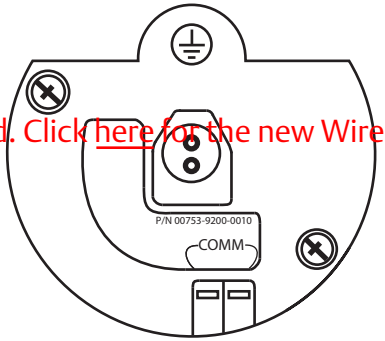
If the device is not operating properly, refer to the troubleshooting section of the manual. The most common cause of incorrect operation is the Network ID and Join Key. The Network ID and Join Key in the device must match that of the 1420 Wireless Gateway.

The Network ID and Join Key may be obtained from the 1420 Wireless Gateway on the **Setup>Network>Settings** page on the web server (see Figure 2: 1420 Network Settings on page 8). The Network ID and Join Key may be changed in the wireless device by using the following Fast Key sequence:

Function	Key Sequence	Menu Items
Network	1, 4, 3, 1	Smart Power, Network ID, Set Join Key, **Radio State**

STEP 5: REFERENCE INFORMATION

Figure 3. Terminal Diagram

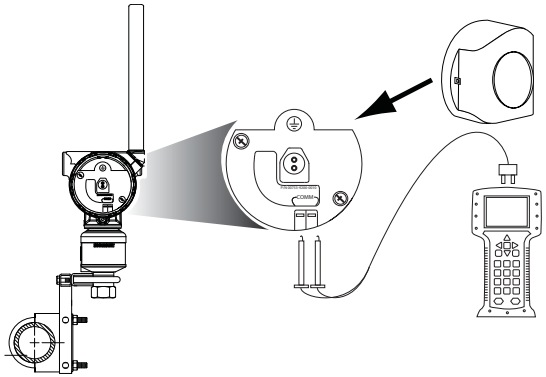


NOTE:
In order to communicate with a 375 Field Communicator, the device must be powered by connecting the battery pack.

Table 1. HART Fast Key Sequence

Function	Key Sequence	Menu Items
Device Info	1, 3, 4	Date, Descriptor, Message, Write Protect, Model, Model Number I, II, III
Process Variables	1, 1	Pressure, % Range, Snsr Temp, Supply Voltage, PV is
Sensor Trim	1, 2, 2, 2	Zero Trim, Lower Sensor Trim, Upper Sensor Trim, Calibration Type, Sensor Trim Points
Network	1, 4, 3, 1	Smart Power, Network ID, Set Join Key, Radio State

Figure 4. 375 Field Communicator Connections



PRODUCT CERTIFICATIONS

Approved Manufacturing Locations

Rosemount Inc. — Chanhassen, Minnesota USA

Telecommunication Compliance

All wireless devices require certification to ensure that they adhere to regulations regarding the use of the RF spectrum. Nearly every country requires this type of product certification. Emerson is working with governmental agencies around the world to supply fully compliant products and remove the risk of violating country directives or laws governing wireless device usage. To see which countries our devices have received certification for use in, see www.rosemount.com/smartwireless.

Ordinary Location Certification for FM

As standard, the transmitter has been examined and tested to determine that the design meets basic electrical, mechanical, and fire protection requirements by FM, a nationally recognized testing laboratory (NRTL) as accredited by the Federal Occupational Safety and Health Administration (OSHA).

North American Certifications

Factory Mutual (FM) Approvals

I5 FM Intrinsic Safety, Non-Incendive, and Dust Ignition-proof.
Intrinsically Safe for Class I/II/III, Division 1, Groups A, B, C, D, E, F, and G.
Zone Marking: Class I, Zone 0, AEx ia IIC
Temperature Codes T4 (T_{amb} = -50 to 70° C)
Non-Incendive for Class I, Division 2, Groups A, B, C, and D.
Dust Ignition-proof for Class II/III, Division 1, Groups E, F, and G.
Ambient temperature limits: -50 to 85° C
For use with Rosemount battery pack P/N 00753-9220-XXXX only.
Enclosure Type 4X / IP66

CSA - Canadian Standards Association

I6 CSA Intrinsic Safety
Intrinsically Safe for Class I, Division 1, Groups A, B, C, and D.
Temp Code T3C
Enclosure Type 4X / IP66
For use with Rosemount battery pack P/N 00753-9220-XXXX only.

European Directive Information

The EC declaration of conformity for all applicable European directives for this product can be found at www.rosemount.com. A hard copy may be obtained by contacting an Emerson Process Management representative.

ATEX Directive (94/9/EC)

Emerson Process Management complies with the ATEX Directive.

European Pressure Equipment Directive (PED) (97/23/EC)

Models 3051S_CA4, 3051S_CD2, 3, 4, 5, *(also with P9 option)*

Pressure Transmitters — QS Certificate of Assessment - EC No. PED-H-100, Module H Conformity Assessment

All other Model 3051S Pressure Transmitters — Sound Engineering Practice

Transmitter Attachments: Diaphragm Seal - Process Flange - Manifold — Sound Engineering Practice

Primary Elements, Flowmeter — See appropriate Primary Element QIG

Electro Magnetic Compatibility (EMC) (2004/108/EC)

All Models: EN 50081-1: 1992; EN 50082-2:1995; EN 61326-1:1997 + A1, A2, and A3 – Industrial

Radio and Telecommunications Terminal Equipment Directive (R&TTE)(1999/5/EC)

Emerson Process Management complies with the R&TTE Directive.

European Certifications

I1 ATEX Intrinsic Safety
Certificate No.: BAS01ATEX1303X ⟨Ex⟩ II 1G
Ex ia IIC T4 (T_a = -60 °C to 70 °C)
IP66
CE 1180

CE ⓘ

Table 2.

Country	Restriction
Bulgaria	General authorization required for outdoor use and public service
France	Outdoor use limited to 10mW e.i.r.p.
Italy	If used outside of own premises, general authorization is required.
Norway	May be restricted in the geographical area within a radius of 20 km from the center of Ny-Alesund.
Romania	Use on a secondary basis. Individual license required.

Radio Power Label (See Figure 5) indicates output power configuration of the radio. Devices with this label are configured for output power less than 10 mW e.i.r.p. At time of purchase the customer must specify ultimate country of installation and operation.

Figure 5.