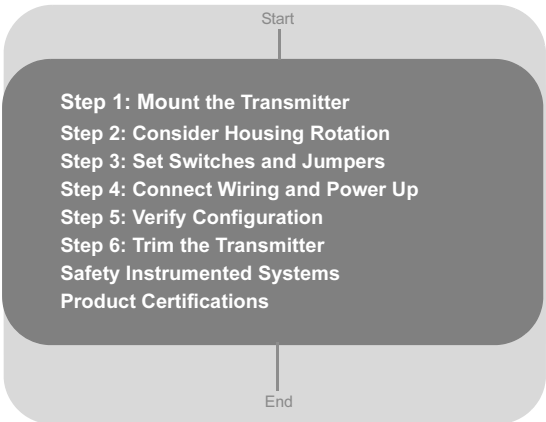
Quick Installation Guide
00825-0100-4801, Rev HA
February 2008

Rosemount 3051S Series Pressure Transmitter with HART® Protocol

Rosemount 3051SF Series Flowmeter Transmitter with HART® Protocol



HART® CE

ROSEMOUNT®

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⚠ IMPORTANT NOTICE

This installation guide provides basic guidelines for Rosemount 3051S transmitters (reference manual document number 00809-0100-4801). It also provides the basic electronics guidelines for the 3051SFA (reference manual document number 00809-0100-4809), 3051SFC (reference manual document number 00809-0100-4810), and 3051SFP (reference manual document number 00809-0100-4686). It does not provide instructions for diagnostics, maintenance, service, or troubleshooting. This document is 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 approvals section of the 3051S reference manual for any restrictions associated with a safe installation.

- Before connecting a HART 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/Flame-Proof 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.

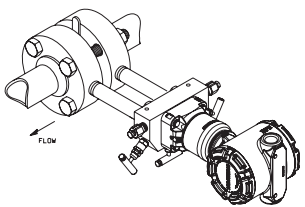
Electrical shock can result in death or serious injury.

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

STEP 1: MOUNT THE TRANSMITTER

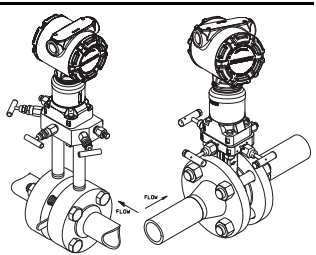
Liquid Flow Applications

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.



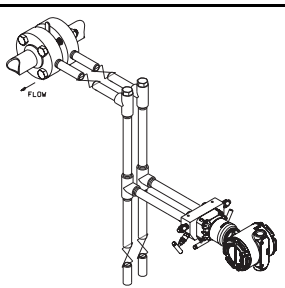
Gas Flow Applications

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



Steam Flow Applications

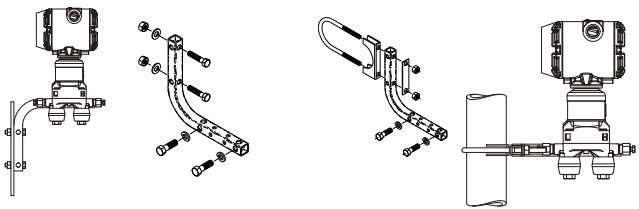
1. Place taps to the side of the line.
2. Mount beside or below the taps.
3. Fill impulse lines with water.



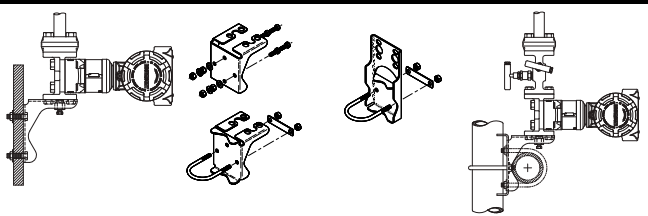
STEP 1 CONTINUED...

Panel Mount | **Pipe Mount**

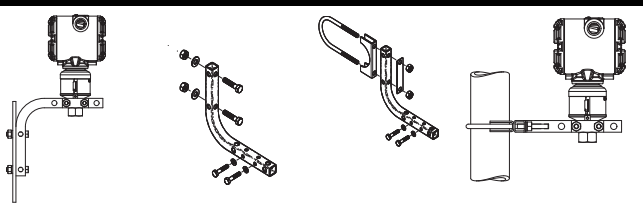
Coplanar™ Flange



Traditional Flange



In-line



Housings

PlantWeb™ | **Junction Box** | **Remote Mount Display**

STEP 2: CONSIDER HOUSING ROTATION

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

1. Loosen the housing rotation set screw.
2. First rotate the housing clockwise to the desired location. If the desired location cannot be achieved due to thread limit, rotate the housing counter clockwise to the desired location (up to 360° from thread limit).
3. Retighten the housing rotation set screw.

Figure 1. Transmitter Housing Set Screw

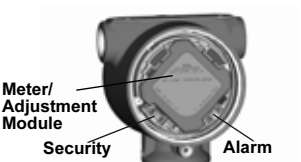
PlantWeb **Junction Box**

STEP 3: SET SWITCHES AND JUMPERS

If alarm and security adjustment option is not installed, the transmitter will operate normally with the default alarm condition alarm *high* and the security *off*.

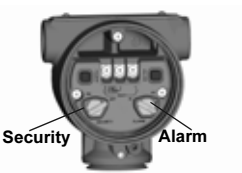
Figure 2. Transmitter Switch and Jumper Configuration

PlantWeb



Slide the security and alarm switches into the preferred position by using a small screwdriver. (A LCD display or an adjustment module must be in place to activate the switches.)

Junction Box



Pull the jumpers out and rotate 90° into desired position to set the security and alarm.

STEP 4: CONNECT WIRING AND POWER UP

Use the following steps to wire the transmitter:

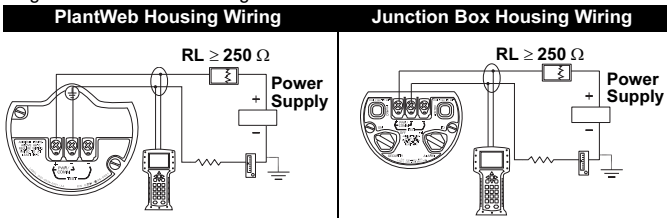
1. Remove the housing cover labeled “Field Terminals.”
2. Connect the positive lead to the “+” terminal, and the negative lead to the “–” terminal.

NOTE
Do not connect the power across the test terminals. Power could damage the test diode in the test connection. Twisted pairs yield best results. For single compartment housing (Junction Box housing), shielded signal wiring should be used in high EMI/RFI environments. Use 24 AWG to 14 AWG wire and do not exceed 5,000 feet (1500 meters).

3. Plug and seal the unused conduit connection.
4. If applicable, install wiring with a drip loop. Arrange the drip loop so the bottom is lower than the conduit connections and the transmitter housing.
5. Replace the housing cover.

The figures below show the wiring connections necessary to power a 3051S and enable communications with a hand-held HART communicator.

Figure 3. Transmitter Wiring



NOTE
Installation of the transient protection terminal block does not provide transient protection unless the 3051S case is properly grounded.

STEP 4 CONTINUED...

Remote Display Wiring and Power Up

The Remote Mount Display and Interface system consists of a local transmitter and a remote mount LCD display assembly. The local 3051S transmitter assembly includes a Junction Box housing with a three position terminal block integrally mounted to a SuperModule. The remote mount LCD display assembly consists of a dual compartment PlantWeb housing with a seven position terminal block. See Figure 4 on page 9 for complete wiring instructions. The following is a list of necessary information specific to the Remote Mount Display system:

- Each terminal block is unique for the remote display system.
- A 316 SST housing adapter is permanently secured to the remote mount LCD display PlantWeb housing providing an external ground and a means for field mounting with the provided mounting bracket.
- A cable is required for wiring between the transmitter and remote mount LCD display. The cable length is limited to 100 ft.
- 50 ft. (option M8) or 100 ft. (option M9) cable is provided for wiring between the transmitter and remote mount LCD display. Option M7 does not include cable; see recommended specifications below:

Cable type: Recommend Belden 3084A DeviceNet cable or Belden 123084A Armored DeviceNet cable. Other comparable cable may be used as long as it has independent dual twisted shielded pair wires with an outer shield. The Power wires must be 22 AWG minimum and the CAN communication wires must be 24 AWG minimum.

Cable length: Up to 100 feet depending upon cable capacitance.

Cable capacitance: The capacitance from the CAN communications line to the CAN return line as wired must be less than 5000 picofarads total. This allows up to 50 picofarads per foot for a 100 foot cable.

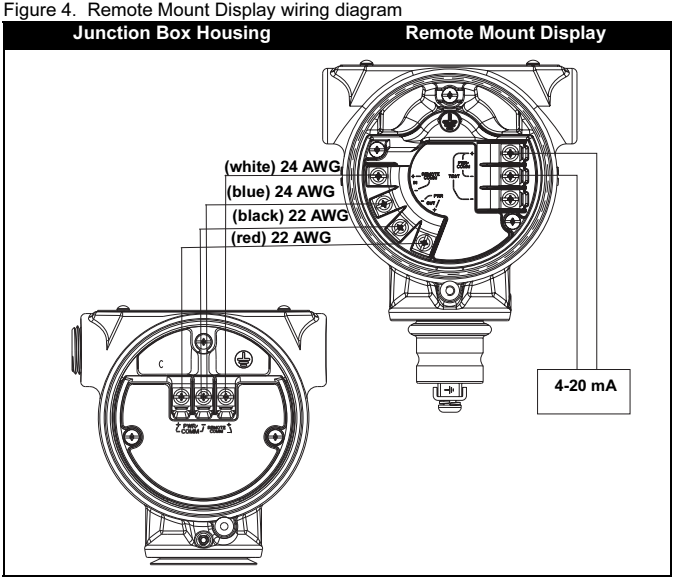
STEP 4 CONTINUED...

Intrinsic Safety Consideration: The transmitter assembly with remote display has been approved with Belden 3084A DeviceNet cable. Alternate cable may be used as long as the transmitter with remote display and cable is configured according to the installation control drawing or certificate. Refer to appropriate approval certificate or control drawing in Appendix B of the 3051S reference manual for remote cable IS requirements.

IMPORTANT

Do not apply power to the remote communications terminal. Follow wiring instructions carefully to prevent damage to system components.

Figure 4. Remote Mount Display wiring diagram



STEP 4 CONTINUED...

NOTE

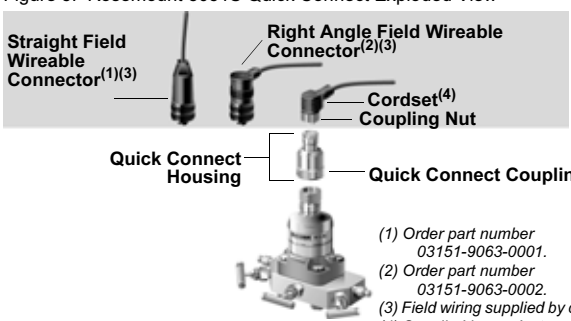
Wire colors provided on page 9 are per Belden 3084A DeviceNet cable. Wire color may vary depending on cable selected.

Belden 3084A DeviceNet cable includes a ground shield. This shield must be connected to earth ground at either the SuperModule or the Remote Display, but not both.

Quick Connect Wiring

As standard, the 3051S Quick Connect arrives properly assembled to the SuperModule and is ready for installation. Cordsets and Field Wireable Connectors (in shaded area) are sold separately.

Figure 5. Rosemount 3051S Quick Connect Exploded View



(1) Order part number 03151-9063-0001.
(2) Order part number 03151-9063-0002.
(3) Field wiring supplied by customer.
(4) Supplied by cordset vendor.

IMPORTANT

If Quick Connect is ordered as a 300S spare housing or is removed from the SuperModule, follow the instructions below for proper assembly prior to field wiring.

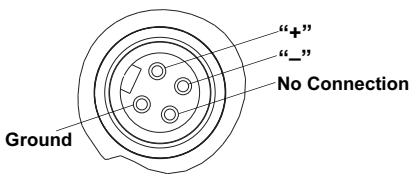
1. Place the Quick Connect onto the SuperModule. To ensure proper pin alignment, remove coupling nut prior to installing quick connect onto SuperModule.

STEP 4 CONTINUED...

2. Place coupling nut over quick connect and wrench tighten to a maximum of 300 in-lb. (34 N-m).
3. Tighten the set screw using a $^{3}/_{32}$-in hex wrench.
4. Install Cordset/ Field Wireable Connectors onto the Quick Connect. Do not over tighten.

Figure 6. Quick Connect Housing Pin-Out

For other wiring details, refer to pin-out drawing and the cordset manufacturer's installation instructions.



Conduit Electrical Connector Wiring (Option GE or GM)

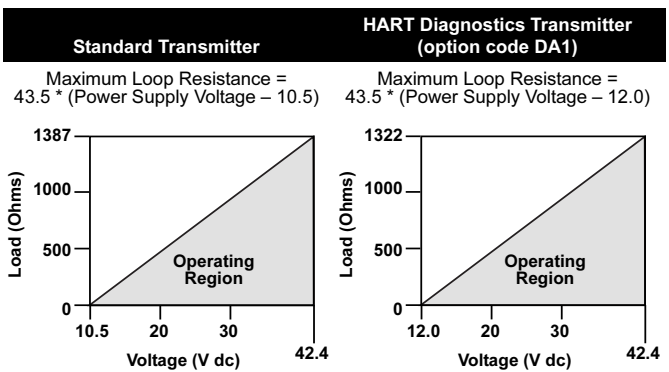
For 3051S transmitters with conduit electrical connectors GE or GM, refer to the cordset manufacturer's installation instructions for wiring details. For FM Intrinsically Safe, non-incendive or FM FISCO Intrinsically Safe hazardous locations, install in accordance with Rosemount drawing 03151-1009 to maintain outdoor rating (NEMA 4X and IP66.) See Appendix B of the 3051S reference manual.

STEP 4 CONTINUED...

Power Supply

The dc power supply should provide power with less than two percent ripple. The total resistance load is the sum of the resistance of the signal leads and the load resistance of the controller, indicator, and related pieces. Note that the resistance of intrinsic safety barriers, if used, must be included.

Figure 7. Load Limitation



The HART communicator requires a minimum loop resistance of 250Ω for communication.

STEP 5: VERIFY CONFIGURATION

Use any HART-compliant master to communicate with and verify configuration of the 3051S. For the HART Diagnostics transmitter (option code DA1), DD revision 3051S HDT Dev. 1 Rev. 1 is required.

A check (√) indicates the basic configuration parameters. At a minimum, these parameters should be verified as part of the configuration and startup procedure.

Table 1. HART Fast Key Sequence

	Function	Fast Key Sequence
	Alarm Level Configuration	1, 4, 2, 7, 7
	Alarm and Saturation Levels	1, 4, 2, 7
	Analog Output Alarm Direction	1, 4, 2, 7, 6
	Analog Output Trim	1, 2, 3, 2
	Burst Mode On/Off	1, 4, 3, 3, 3
	Burst Options	1, 4, 3, 3, 4
√	Damping	1, 3, 6
	Date	1, 3, 4, 1
	Descriptor	1, 3, 4, 2
	Digital To Analog Trim (4-20 mA Output)	1, 2, 3, 2, 1
	Field Device Information	1, 4, 4, 1
	LCD Display Configuration	1, 3, 7
	Loop Test	1, 2, 2
	Lower Sensor Trim	1, 2, 3, 3, 2
	Message	1, 3, 4, 3
	Number of Requested Preambles	1, 4, 3, 3, 2
	Pressure Alert Configuration	1, 4, 3, 5, 3
	Poll Address	1, 4, 3, 3, 1
	Poll a Multidropped Transmitter	Left Arrow, 3, 1, 1
	Remapping	1, 4, 3, 6
	Rerange- Keypad Input	1, 2, 3, 1, 1

Continued on Next Page

STEP 5 CONTINUED...

	Function	Fast Key Sequence
	Saturation Level Configuration	1, 4, 2, 7, 8
	Scaled D/A Trim (4–20 mA Output)	1, 2, 3, 2, 2
	Scaled Variable Configuration	1, 4, 3, 4, 7
	Self Test (Transmitter)	1, 2, 1, 1
	Sensor Information	1, 4, 4, 2
	Sensor Temperature	1, 1, 4
	Sensor Trim	1, 2, 3, 3
	Sensor Trim Points	1, 2, 3, 3, 5
	Status	1, 2, 1, 2
√	Tag	1, 3, 1
	Temperature Alert Configuration	1, 4, 3, 5, 4
√	Transfer Function (Setting Output Type)	1, 3, 5
	Transmitter Security (Write Protect)	1, 3, 4, 5
√	Units (Process Variable)	1, 3, 2
	Upper Sensor Trim	1, 2, 3, 3, 3
	Zero Trim	1, 2, 3, 3, 1

STEP 6: TRIM THE TRANSMITTER

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

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 HART Communicator” instructions below to perform a zero trim. If zero offset is greater than 3% of true zero, follow the “Using the Transmitter Zero Adjustment Button” instructions below to rerange. If hardware adjustments are not available, see the 3051S Reference Manual (document number 00809-0100-4801) to perform a rerange using the HART Communicator.

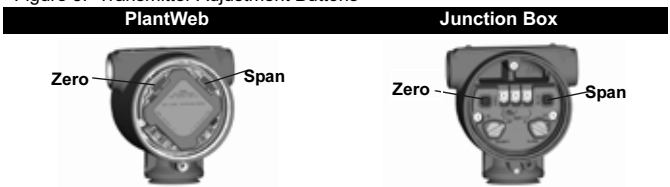
Using the HART Communicator

HART Fast Keys	Steps
1, 2, 3, 3, 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.

Using the Transmitter Zero Adjustment Button

Push and hold the zero adjustment button for at least two seconds but no longer than ten seconds.

Figure 8. Transmitter Adjustment Buttons



SAFETY INSTRUMENTED SYSTEMS

Additional Safety Instrumented Systems information is available in the Rosemount 3051S reference manual (document number 00809-0100-4801). The manual is available electronically on www.rosemount.com or by contacting an Emerson Process Management representative.

3051S Safety-Certified Identification

All 3051S transmitters must be identified as safety-certified before installing into SIS systems.

NOTE
There are two versions of safety-certified 3051S pressure transmitters. For transmitters with a yellow SIS circuit board installed and output code B in the model number, please refer to Manual Supplement 00809-0700-4801.

To identify a safety-certified 3051S:

1. Connect a HART host to the transmitter.
2. Check the software to verify that the software revision is 7 or higher.

Fast Key Sequence - 1, 5

Revision #'s	
Fld Dev Rev	7
Software Rev	7
Hardware Rev	16

3. Verify that option code QT is included in the transmitter model code.

Installation

No special installation is required in addition to the standard installation practices outlined in this document. Always ensure a proper seal by installing the electronics housing covers so that metal contacts metal.

The loop should be designed so the terminal voltage does not drop below 10.5 Vdc when the transmitter output is 23.0 mA.

If hardware security switches are installed, the security switch should be in the “ON” position during normal operation. See Figure 2 on page 6. If hardware security switches are not installed, security should be “ON” in the software to prevent accidental or deliberate change of configuration data during normal operation.

Configuration

Use any HART-compliant master to communicate with and verify configuration of the 3051S Safety-Certified Pressure Transmitter (see Table 1 on page 13 and 14 to verify configuration).

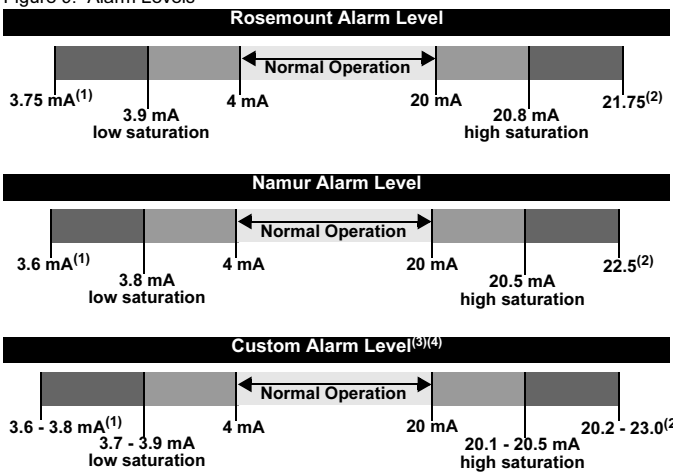
User-selected damping will affect the transmitters ability to respond to changes in the applied process. The *damping value + response time* should not exceed the loop requirements.

NOTES

1. Transmitter output is not safety-rated during the following: configuration changes, multidrop, loop test. Alternative means should be used to ensure process safety during transmitter configuration and maintenance activities.

2. DCS or safety logic solver should be configured to match transmitter configuration. Figure 9 identifies the three alarm levels available and their operation values.

Figure 9. Alarm Levels



(1) Transmitter Failure, hardware or software alarm in LO position.

(2) Transmitter Failure, hardware or software alarm in HI position.

(3) High alarm must be at least 0.1 mA higher than the high saturation value.

(4) Low alarm must be at least 0.1 mA lower than the low saturation value.

Setting the alarm values and direction is dependent on whether or not the hardware switch option is installed. You can use a HART master or communicator to set the Alarm and Saturation values.

Switches installed

1. If using a communicator, use the following fast key sequence to set the Alarm and Saturation values.
   Alarm Levels - Fast Key; 1, 4, 2, 7, 7
   Saturation Levels - Fast Key; 1, 4, 2, 7, 8
2. Manually set the direction for the Alarm to HI or LO using the ALARM switch as shown in Figure 2 on page 6.

Switches not installed

If using a communicator, use the following fast key sequence to set the Alarm and Saturation values and the Alarm Direction:
Alarm Levels - Fast Key; 1, 4, 2, 7, 7
Saturation Levels - Fast Key; 1, 4, 2, 7, 8
Alarm Direction Fast Key; 1, 4, 2, 7, 6

Operation and Maintenance

Proof Test and Inspection

The following proof tests are recommended. Proof test results and corrective actions taken must be documented at *www.emersonprocess.com/rosemount/safety/certtechdocumentation.htm* in the event that an error is found in the safety functionality.

Use "Table 1: HART Fast Key Sequence" to perform a Loop Test, Analog Output Trim, or Sensor Trim. See the 3051S reference manual for additional information.

Proof Test 1

Conducting an analog output Loop Test satisfies the proof test requirements and will detect more than 52% of DU failures not detected by the 3051S_C or 3051S_L automatic diagnostics, and more than 62% of DU failures not detected by the 3051S_T automatic diagnostics.

Required tools: HART host/communicator and mA meter.

1. On HART host/communicator enter the Fast Key Sequence 1, 2, 2.
2. Select “4 Other.”
3. Enter the milliampere value representing a high alarm state.
4. Check the reference meter to verify the mA output corresponds to the entered value.
5. Enter the milliampere value representing a low alarm state.
6. Check the reference meter to verify the mA output corresponds to the entered value.
7. Document the test results per your requirements.

Proof Test 2

This proof test, when combined with the Proof Test 1, will detect over 92% of DU failures not detected by the 3051S_C or 3051S_L automatic diagnostics, and over 95% of DU failures not detected by the 3051S_T automatic diagnostics.

Required tools: HART host/communicator and pressure calibration equipment.

1. Perform a minimum two point sensor calibration check using the 4-20mA range points as the calibration points.
2. Check the reference mA meter to verify the mA output corresponds to the pressure input value.
3. If necessary, use one of the “Trim” procedures available in the 3051S reference manual to calibrate.
4. Document the test results per your requirements.

NOTE
The user determines the proof-test requirements for impulse piping.

Visual Inspection

Not required.

Special Tools

Not required.

Product Repair

All failures detected by the transmitter diagnostics or by the proof-test must be reported. Feedback can be submitted electronically at *www.emersonprocess.com/rosemount/safety/certtechdocumentation.htm*.

The 3051S is repairable by major component replacement. Follow the instructions in the 3051S reference manual (document number 00809-0100-4801) for additional information.

Reference

Certification

The 3051S Safety-Certified Pressure Transmitter was designed, developed, and audited to be compliant to IEC 61508 safety-certified SIL 2 Claim Limit.

Specifications

The 3051S Safety-Certified Pressure Transmitter must be operated in accordance to the functional and performance specifications provided in the 3051S reference manual.

Failure Rate Data

The FMEDA report includes failure rates and common cause Beta factor estimates. This report is available at *www.emersonprocess.com/rosemount/safety/certtechdocumentation.htm*.

3051S Safety-Certified Pressure Transmitter Failure Values

Safety accuracy: 2.0%(1)

Safety response time: 1.5 seconds

Self-diagnostics Test Interval: At least once per hour

Product Life

50 years – based on worst case component wear-out mechanisms – not based on wear-out process wetted materials.

(1) A 2% variation of the transmitter mA output is allowed before a safety trip. Trip values in the DCS or safety logic solver should be derated by 2%.

PRODUCT CERTIFICATIONS

Approved Manufacturing Locations

Rosemount Inc. — Chanhassen, Minnesota USA
Fisher-Rosemount GmbH & Co. — Wessling, Germany
Emerson Process Management Asia Pacific Private Limited — Singapore
Beijing Rosemount Far East Instrument Co., LTD — Beijing, China
Emerson Process Management LTDA — Sorocaba, Brazil
Emerson Process Management (India) Pvt. Ltd. — Daman, India

European Directive Information

The EC declaration of conformity can be found on page 32. The most recent revision can be found at www.rosemount.com.

Ordinary Location Certification for FM Approvals

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

Hazardous Locations Certifications

North American Certifications

FM Approvals

E5 Explosion proof for Class I, Division 1, Groups B, C, and D; dust-ignition proof for Class II and Class III, Division 1, Groups E, F, and G; hazardous locations; enclosure Type 4X, conduit seal not required when installed according to Rosemount drawing 03151-1003.

I5 Intrinsically Safe for use in Class I, Division 1, Groups A, B, C, and D; Class II, Division 1, Groups E, F, and G; Class III, Division 1; Class I, Zone 0 AEx ia IIC when connected in accordance with Rosemount drawing 03151-1006; Non-incendive for Class I, Division 2, Groups A, B, C, and D, Enclosure Type 4X
For entity parameters see control drawing 03151-1006.

Canadian Standards Association (CSA)

E6 Explosion-Proof for Class I, Division 1, Groups B, C, and D; Dust-Ignition-Proof for Class II and Class III, Division 1, Groups E, F, and G; suitable for Class I, Division 2, Groups A, B, C, and D, when installed per Rosemount drawing 03151-1013, CSA Enclosure Type 4X; conduit seal not required.

I6 Intrinsically Safe for Class I, Division 1, Groups A, B, C, and D when connected in accordance with Rosemount drawings 03151-1016;
For entity parameters see control drawing 03151-1016.

European Certifications

I1 ATEX Intrinsic Safety
Certificate No.: BAS01ATEX1303X Ⓔx II 1 G
EEx ia IIC T4 (T_a = -60 °C to 70 °C)
-HART/Remote Display/Quick Connect/HART Diagnostics
CE 1180

Table 2. Input Parameters

Loop / Power	Groups
U_i = 30V	All
I_i = 300 mA	All
P_i = 1.0W	All
C_i = 30nF	SuperModule™/Quick Connect
C_i = 11.4nF	With PlantWeb or Junction Box Housing
C_i = 0	Remote Display
L_i = 0	All Except Remote Display
L_i = 60 µH	Remote Display

Special Conditions for Safe Use (X)

1. The apparatus, excluding the Types 3051 S-T and 3051 S-C (In-line and Coplanar SuperModule Platforms respectively), is not capable of withstanding the 500V test as defined in Clause 6.4.12 of EN 50020. This must be considered during installation.
2. The terminal pins of the Types 3051 S-T and 3051 S-C must be protected to IP20 minimum.

N1 ATEX Type n
Certificate No.: BAS01ATEX3304X Ⓔx II 3 G
EEx nL IIC T4 (T_a = -40 °C TO 70 °C)
Ui = 45 Vdc max
IP66
CE

Special Conditions for Safe Use (x)

The apparatus is not capable of withstanding the 500V insulation test required by Clause 9.1 of EN 50021: 1999. This must be taken into account when installing the apparatus.

ND ATEX Dust
Certificate No.: BAS01ATEX1374X ⟨Ex⟩ II 1 D
T105°C (-20 °C ≤ T_{amb} ≤ 85 °C)
V_{max} = 42.4 volts max
A = 24 mA
IP66
CE 1180

Special Conditions for safe use (x):

1. The user must ensure that the maximum rated voltage and current (42.4 volts, 22 milliampere, DC) are not exceeded. All connections to other apparatus or associated apparatus shall have control over this voltage and current equivalent to a category “ib” circuit according to EN 50020.
2. Cable entries must be used which maintain the ingress protection of the enclosure to at least IP66.
3. Unused cable entries must be filled with suitable blanking plugs which maintain the ingress protection of the enclosure to at least IP66.
4. Cable entries and blanking plugs must be suitable for the ambient range of the apparatus and capable of withstanding a 7J impact test.
5. The 3051S must be securely screwed in place to maintain the ingress protection of the enclosure. (The 3051S SuperModule must be properly assembled to the 3051S housing to maintain ingress protection.)

E1 ATEX Flame-Proof
Certificate No.: KEMA00ATEX2143X Ⓔx II 1/2 G
EEx d IIC T6 (-50 °C ≤ T_{amb} ≤ 65 °C)
EEx d IIC T5 (-50 °C ≤ T_{amb} ≤ 80 °C)
V_{max} = 42.4V
CE 1180

Special conditions for safe use (x)

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. The Model 3051S pressure transmitter must include a Series 300S housing integrally mounted to a Series Model 3051S Sensor module as per Rosemount drawing 03151-1023.

Japanese Certifications

E4 TIIS Flame-Proof
Ex d IIC T6

Table 3. TIIS Certificates

Certificate	Description
TC15682	Coplanar w/Junction Box Housing
TC15683	Coplanar w/PlantWeb Housing
TC15684	Coplanar w/PlantWeb Housing & LCD Display
TC15685	In-Line SST w/Junction Box Housing
TC15686	In-Line Hastelloy w/Junction Box Housing
TC15687	In-Line SST w/PlantWeb Housing
TC15688	In-Line Hastelloy w/Plantweb Housing
TC15689	In-Line SST w/Plantweb Housing & LCD Display
TC15690	In-Line Hastelloy w/PlantWeb Housing & LCD Display
TC17102	Remote Display
TC17099	3051SFA/C/P SST/Hastelloy w/ PlantWeb Housing & LCD Display
TC17100	3051SFA/C/P SST/Hastelloy w/ PlantWeb Housing & Remote Display
TC17101	3051SFA/C/P SST/Hastelloy w/ Junction Box Housing

Australian Certifications

E7 SAA Explosion-Proof and Dust Ignition-Proof
Certification No.: AUS Ex 3798X
Ex d IIC T6 (T_a = 60°C) IP66
DIP A21 TA T6 (T_a = 60°C) IP66

Conditions for safe use (X)

1. It is a condition of safe use that each housing shall be connected to external circuits via suitable conduit of Standards Australia certified cable glands. Where only one entry is used for connection to external circuits, the unused entry shall be closed by means of the blanking plug supplied by the equipment manufacturer or by a suitable Standards Australia certified blanking plug.
2. It is a condition of safe use that dielectric strength test shall be applied whenever the terminal block is changed or replaced in either the dual compartment or single compartment housings. The breakdown current shall be less than 5 mA, when 500 V, 47 to 62 Hz, is applied for one minute. Note: if tested with an optional T1 transient protector terminal block fitted, the protection will operate and hence there will be no current indicated.
3. It is a condition of safe use that each transmitter module shall be used with a Model 300S housing, in order to comply with Flame-Proof requirements.
4. It is a condition of safe use that each Model 300S housing fitted with a transmitter module shall be marked with the same certification marking code information. Should the housing be replaced after initial supply to another Model 300S housing, the replacement housing shall have the same certification marking code information as the housing it replaces.

I7 IECEx Intrinsic Safety
Certificate No.: IECExBAS04.0017X
Ex ia IIC T4 (T_a = -60 °C to 70 °C)
-HART/Remote Display/Quick Connect/HART Diagnostics
IP66

Table 4. Input Parameters

Loop / Power	Groups
U_i = 30V	All
I_i = 300 mA	All
P_i = 1.0W	All
C_i = 30nF	SuperModule™/Quick Connect
C_i = 11.4nF	With PlantWeb or Junction Box Housing
C_i = 0	Remote Display
L_i = 0	All Except Remote Display
L_i = 60 µH	Remote Display

Conditions for safe use (X)

1. The 3051S HART 4-20mA, 3051S FOUNDATION fieldbus, 3051S Profibus and 3051S FISCO are not capable of withstanding the 500V test as defined in clause 6.4.12 of IEC 60079-11. This must be taken into account during installation.
2. The terminal pins of the Types 3051S-T and 3051S-C must be protected to IP20 minimum.

N7 IECEx Type n
Certificate No.: IECExBAS04.0018X
Ex nC IIC T4 (Ta = -40 °C to 70 °C)
Ui = 45 Vdc MAX
IP66

Conditions for safe use (X)
The apparatus is not capable of withstanding the 500 V insulation test required by Clause 8 of IEC 79-15: 1987.

Combinations of Certifications

Stainless steel certification tag is provided when optional approval is specified. Once a device labeled with multiple approval types is installed, it should not be reinstalled using any other approval types. Permanently mark the approval label to distinguish it from unused approval types.

K1 Combination of **E1**, **I1**, **N1**, and **ND**
K5 Combination of **E5** and **I5**
K6 Combination of **E6** and **I6**
K7 Combination of **E7**, **I7**, and **N7**
KA Combination of **E1**, **I1**, **E6,** and **I6**
KB Combination of **E5**, **I5**, **I6** and **E6**
KC Combination of **E5**, **E1**, **I5** and **I1**
KD Combination of **E5, I5, E6, I6, E1,** and **I1**

ROSEMOUNT

CE

EC Declaration of Conformity

No: RMD 1044 Rev. E

We,

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

declare under our sole responsibility that the product,

Model 3051S Pressure Transmitters and Model 300S Housings

manufactured by,

Rosemount Inc.
12001 Technology Drive
Eden Prairie, MN 55344-3695
USA

and

8200 Market Boulevard
Chanhassen, MN 55317-9687
USA

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)

23 May 2007
(date of issue)

Robert J. Karschnia
(name - printed)

Vice President, Technology
(function name - printed)

EMERSON.
Process Management

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Schedule
EC Declaration of Conformity RMD 1044 Rev. E

EMC Directive (2004/108/EC)

All Models
EN 61326-1:1997 with amendments A1, A2, and A3

R&TTE Directive (1999/5/EC)

All Models with "Output Code X" and "Operating Frequency and Protocol Code 1"
EN 301 489-1: V 1.2.1 2002, EN 301 489-17: V1.4.1 2002
EN 60950-1: 2001
EN 300 328 V 1.6.1 (2004-11)

CE ①

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 20km from the center of Ny-Alesund
Romania	Use on a secondary basis. Individual license required.

PED Directive (97/23/EC)

Model 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

EMERSON.
Process Management

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ATEX Directive (94/9/EC)

Model 3051S Pressure Transmitter

BAS01ATEX1303X – Intrinsically Safe Certificate

Model 3051S Pressure Transmitter without Output Code 'X'
Equipment Group II, Category 1 G (Ex ia IIC T4/T5)
EN50014: 1997 + Amds 1&2; EN50020: 1994, EN50284: 1999

Model 3051S Pressure Transmitter with Output Code 'X'
Equipment Group II, Category 1 G (Ex ia IIC T4/T5)
EN60079-0: 2006; EN60079-11: 2007

BAS01ATEX3304X – Type n Certificate
Equipment Group II, Category 3 G (Ex nL IIC T5)
EN50021: 1999

BAS01ATEX1374X – Dust Certificate
Equipment Group II, Category 1 D (T105°C)
EN50281-1-1: 1998

Baseefa04ATEX0181X – Mining Certificate
Equipment Group I, Category M 1 (Ex ia I)
EN50014: 1997 + Amds 1&2; EN50020: 2002, EN50303: 2000

Baseefa05ATEX0193U – Mining Certificate: Component
Equipment Group I, Category M 1 (Ex ia I)
EN50014: 1997 + Amds 1&2; EN50020: 2002, EN50303: 2000

Model 3051S Pressure Transmitters

KEMA00ATEX2143X – Flameproof Certificate
Equipment Group II, Category 1/2 G (Ex d IIC T5/T6)
EN50014: 1997; EN50018:1994; EN50284: 1999

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Schedule

EC Declaration of Conformity RMD 1044 Rev. E

PED Notified Body

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

ATEX Notified Bodies for EC Type Examination Certificate

KEMA [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

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