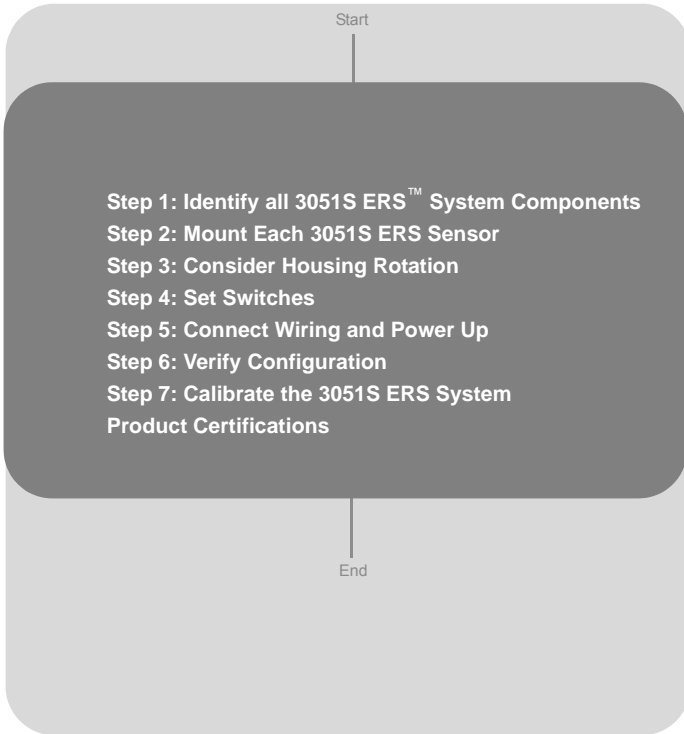


# Rosemount 3051S Electronic Remote Sensors with HART<sup>®</sup> Protocol



**ROSEMOUNT**

[www.rosemount.com](http://www.rosemount.com)



**EMERSON**  
Process Management

## Rosemount 3051S ERS System

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## IMPORTANT NOTICE

This installation guide provides basic guidelines for the Rosemount 3051S ERS System (reference manual document number 00809-0100-4804). It does not provide instructions for diagnostics, maintenance, service, or troubleshooting. This document 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 3051S ERS System reference manual for any restrictions associated with a safe installation.

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

**Process leaks may cause harm or result in death.**

- Install and tighten process connectors before applying pressure.

**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.

**Conduits/Cable Entries**

- Unless otherwise marked, the conduit / cable entries in the 3051S ERS housing enclosure use a  $\frac{1}{2}$ -14 NPT form. Only use plugs, adapters, glands, or conduit with a compatible thread form when closing these entries.

## **STEP 1: IDENTIFY ALL 3051S ERS SYSTEMS COMPONENTS**

A complete 3051S ERS system contains two sensors. One is mounted on the high-pressure ( $P_{HI}$ ) process connection, and the other is mounted on the low-pressure ( $P_{LO}$ ) process connection. An optional remote display and interface may also be included (not pictured) if ordered.

1. Look at the wire-on tag on the 3051S sensor to identify whether it is configured as the  $P_{HI}$  or  $P_{LO}$  sensor.
2. Locate the second sensor that will be used in the 3051S ERS system:
  - For new installations or applications, the second 3051S ERS sensor may have been shipped in a separate box.
  - If servicing or replacing part of an existing 3051S ERS system, the other sensor may already be installed.

## **STEP 2: MOUNT EACH 3051S ERS SENSOR**

Mount the  $P_{HI}$  and  $P_{LO}$  sensors at the correct process connections for the application. Common 3051S ERS installations are shown in Figure 1 and Figure 2.

### **Vertical Installation**

In a vertical installation such as on a vessel or distillation column, the  $P_{HI}$  sensor should be installed at the bottom process connection. The  $P_{LO}$  sensor should be installed at the top process connection.

Figure 1. Vertical 3051S ERS Installation



## Rosemount 3051S ERS System

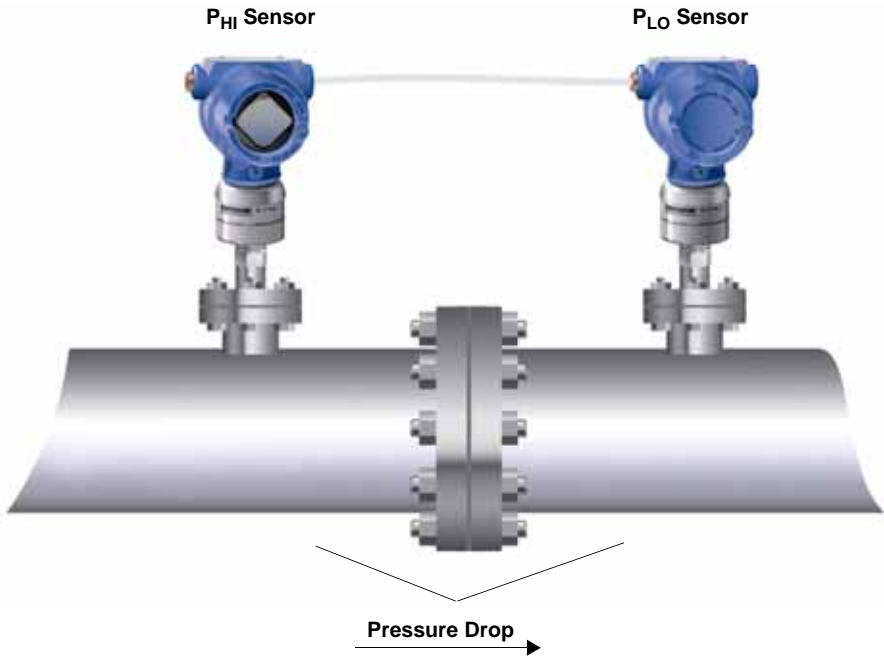
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### STEP 2 CONTINUED...

#### Horizontal Installation

In a horizontal installation, the  $P_{HI}$  sensor should be installed at the upstream process connection. The  $P_{LO}$  sensor should be installed downstream.

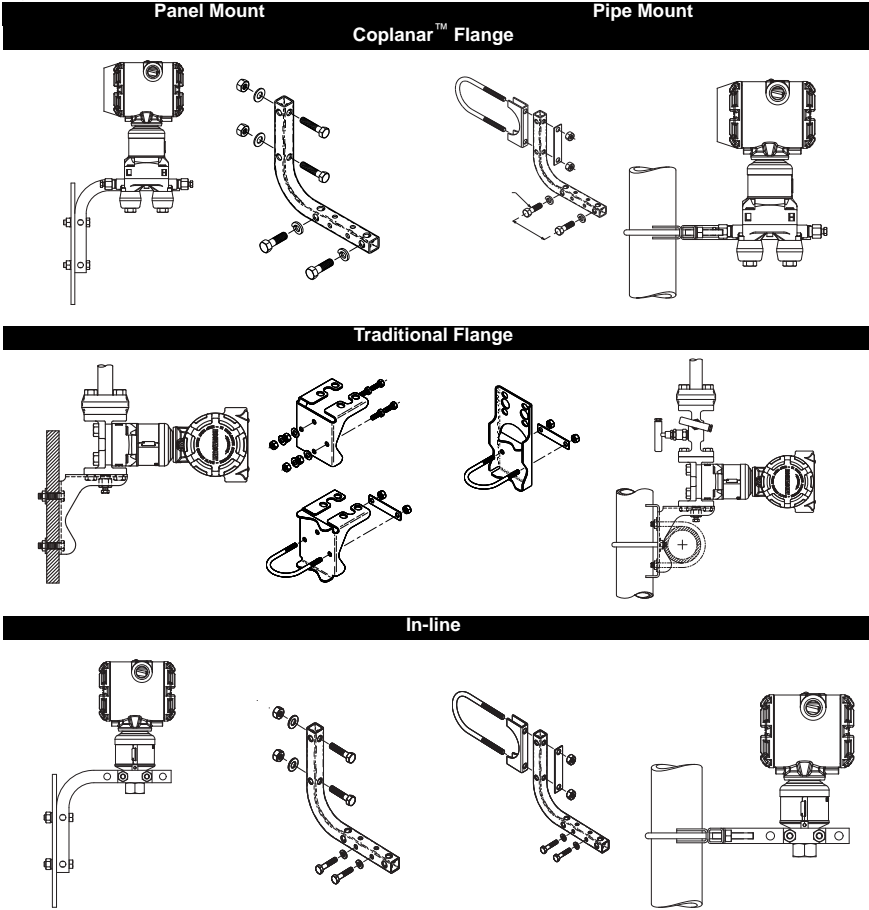
Figure 2. Horizontal 3051S ERS Installation



STEP 2 CONTINUED...

Mounting Bracket

Figure 3. Mounting bracket assemblies

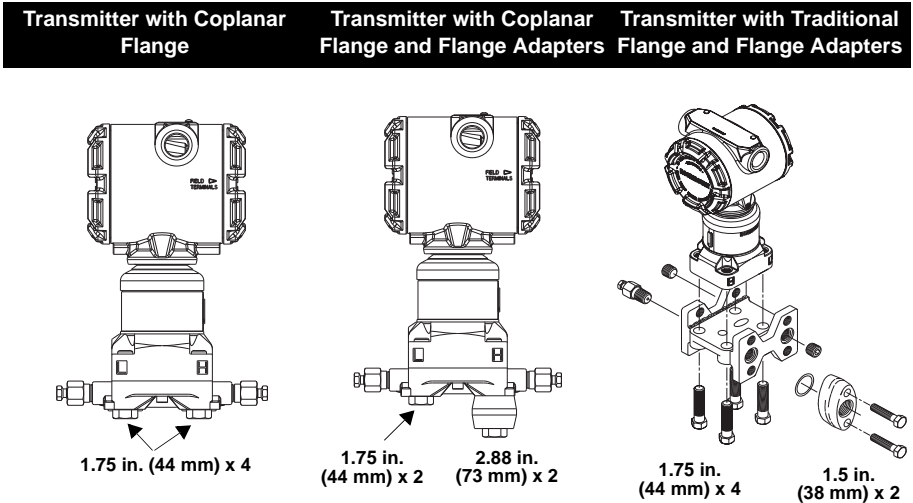


## Rosemount 3051S ERS System

**STEP 2 CONTINUED...****Bolting**

If the installation requires assembly of a process flange, manifold, or flange adaptors, follow these assembly guidelines to ensure a tight seal for optimal performance characteristics of the 3051S ERS System. Only use bolts supplied with the transmitter or sold by Emerson Process Management as spare parts. Figure 4 illustrates common transmitter assemblies with the bolt length required for proper transmitter assembly.

Figure 4. Common Transmitter Assemblies



Bolts are typically carbon steel or stainless steel. Confirm the material by viewing the marking on the head of the bolt and referencing Figure 6. If bolt material is not shown in Figure 6, contact your local Emerson Process Management representative for more information.

Use the following bolt installation procedure:

1. Carbon steel bolts do not require lubrication. Stainless steel bolts are coated with a lubricant to ease installation, however no additional lubricant should be applied when installing either type of bolt.
2. Finger-tighten the bolts.
3. Torque the bolts to the initial torque value using a crossing pattern. See Figure 6 for initial torque value.
4. Torque the bolts to the final torque value using the same crossing pattern. See Figure 6 for final torque value.
5. Verify that the flange bolts are protruding through the module isolator plate before applying pressure (See Figure 5).

**STEP 2 CONTINUED...**

Figure 5. Module Isolator Plate

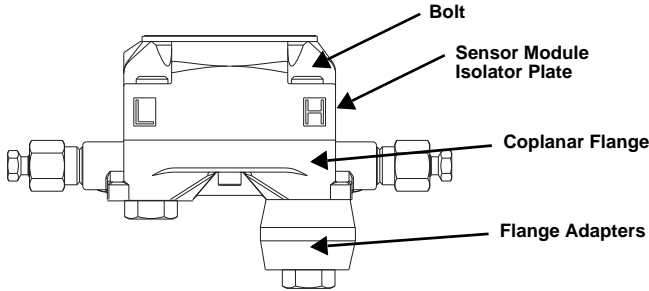










Figure 6. Torque Values for the Flange and Flange Adapters Bolts

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**

Use only the O-rings included with the flange adapter for the 3051S ERS sensor. Failure to install proper fitting flange adapter O-rings may cause process leaks, which can result in death or serious injury.

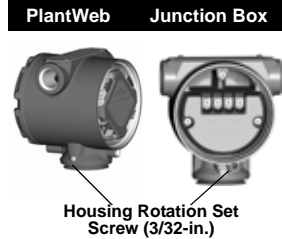
When removing flanges or adapters, visually inspect the PTFE O-rings. Replace them if there are any signs of damage such as nicks or cuts. If replacing O-rings, re-torque the flange bolts after installation to compensate for seating of the PTFE O-ring.

## Rosemount 3051S ERS System

**STEP 3: 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. Turn the housing up to 180° left or right of its original (as shipped) position.
3. Retighten the housing rotation set screw.

**NOTE**

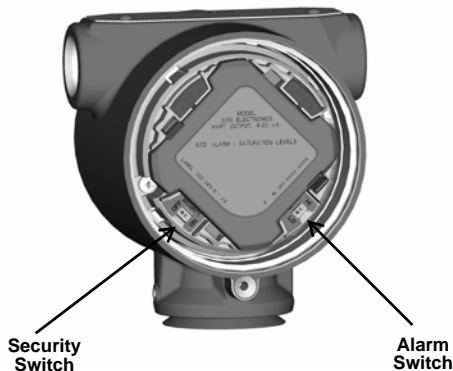
Do not rotate the housing on each transmitter more than 180 degrees without first performing a disassembly procedure (see Section 2 of the 3051S ERS System reference manual (00809-0100-4804) for more information). Over-rotation may sever the electrical connection between the sensor module and feature board electronics.

**STEP 4: SET SWITCHES**

If the 3051S ERS Sensor is equipped with alarm and security hardware switches, verify the desired configuration (default: alarm = HI, security = OFF).

1. If the sensor is installed, secure the loop and remove power.
2. Remove the housing cover opposite the field terminals side. Do not remove the housing cover in explosive environments.
3. Slide the security and alarm switches into the preferred positions by using a small screwdriver.
4. Reinstall the housing cover so that metal contacts metal to meet explosion-proof requirements.

Figure 7. Transmitter Switch Configuration



## **STEP 5: CONNECT WIRING AND POWER UP**

A 3051S ERS System can be wired in a variety of configurations, depending on the hardware that was ordered.

### **Standard 3051S ERS System (Figure 8)**

1. Remove the housing cover labeled “Field Terminals” on both 3051S ERS sensors.
2. Using the 3051S ERS communication cable (if ordered) or an equivalent 4-wire shielded assembly per the specifications detailed below, connect the 1, 2, A, and B terminals between the two sensors per Figure 8.
3. Connect the 3051S ERS system to the control loop by connecting the + and - PWR / COMM terminals to the positive and negative leads, respectively.
4. Plug and seal all unused conduit connections.
5. If applicable, install wiring with a drip loop. Arrange the drip loop so that the bottom is lower than the conduit connections on the transmitter housings.
6. Reinstall and tighten the housing covers on both sensors so that metal contacts metal to meet explosion-proof requirements.

### **3051S ERS System with Remote Display and Interface (Figure 9 and Figure 10)**

1. Remove the housing cover labeled “Field Terminals” on both 3051S ERS sensors and the remote housing.
2. Using the 3051S ERS communication cable (if ordered) or an equivalent 4-wire shielded assembly per the specifications detailed below, connect the 1, 2, A, and B terminals between the two sensors and remote housing in a “tree” (Figure 9) or “daisy-chain” (Figure 10) configuration.
3. Connect the 3051S ERS system to the control loop by connecting the + and - PWR / COMM terminals on the remote housing to the positive and negative leads, respectively.
4. Plug and seal all unused conduit connections.
5. If applicable, install wiring with a drip loop. Arrange the drip loop so that the bottom is lower than the conduit connections on the transmitter housings.
6. Reinstall and tighten all housing covers so that metal contacts metal to meet explosion-proof requirements.

## **Wiring Diagrams**

Figure 8 - Figure 10 show the wiring connections necessary to power a 3051S ERS System and enable communications with a hand-held Field Communicator.

### **NOTE**

The wiring connection between the sensors (and remote housing if applicable) must be made directly. An intrinsically safe barrier or other high-impedance device will cause the 3051S ERS system to malfunction if placed in between any of the 3051S ERS sensors.

### **3051S ERS Cable Specifications**

**Cable Type:** Recommend Madison AWM Style 2549 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 (pin terminals 1 & 2) must be 22 AWG minimum and the communication wires (pin terminals A & B) must be 24 AWG minimum.

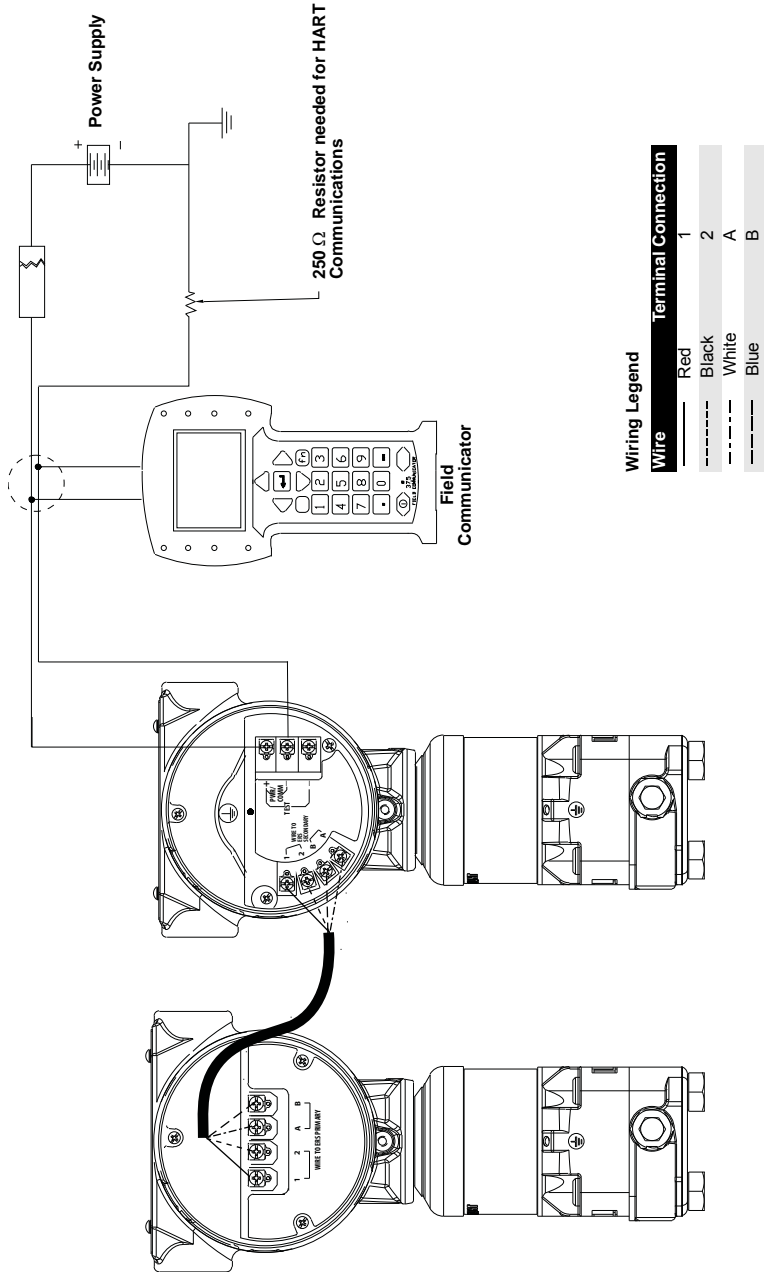
**Cable Length:** Up to 100 feet (31 m) depending upon cable capacitance.

**Cable Capacitance:** The capacitance between the communication terminals (pin terminals A & B) as wired must be less than 5000 picofarads total. This allows up to 50 picofarads per foot (0.3 m) for a 100 foot (31 m) cable.

**Cable Outside Diameter (O.D):** 0.270 inches (6.86 mm)

Rosemount 3051S ERS System

Figure 8. Wiring Diagram for Standard 3051S ERS System



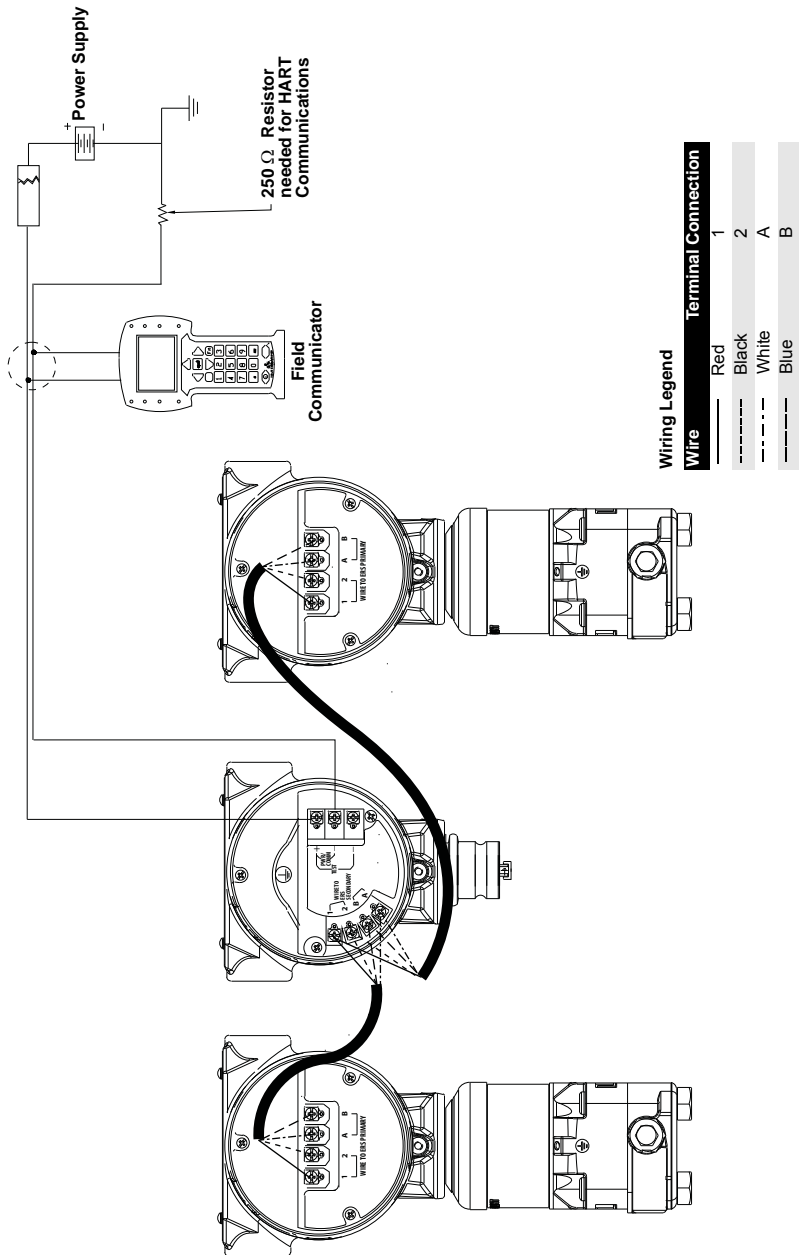
# Quick Installation Guide

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January 2011

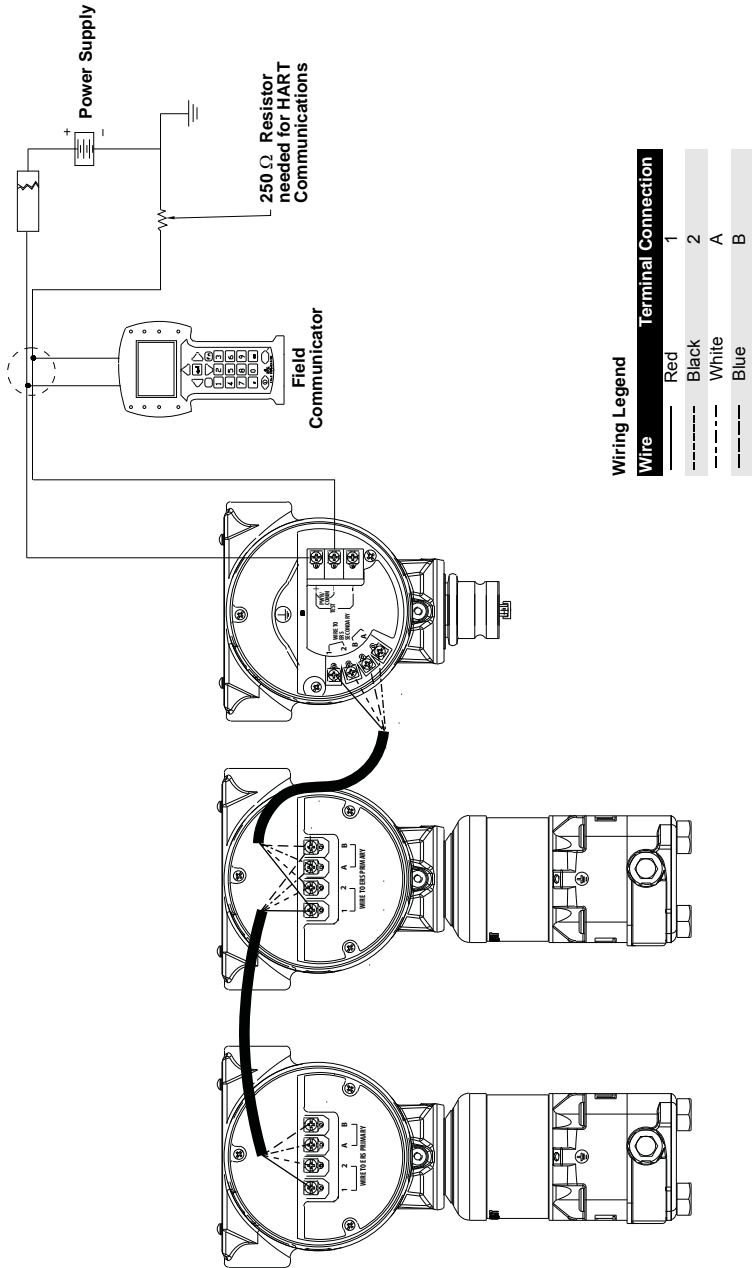
# Rosemount 3051S ERS System

Figure 9. Wiring Diagram for 3051S ERS System with Remote Display in "Tree" Configuration.



Rosemount 3051S ERS System

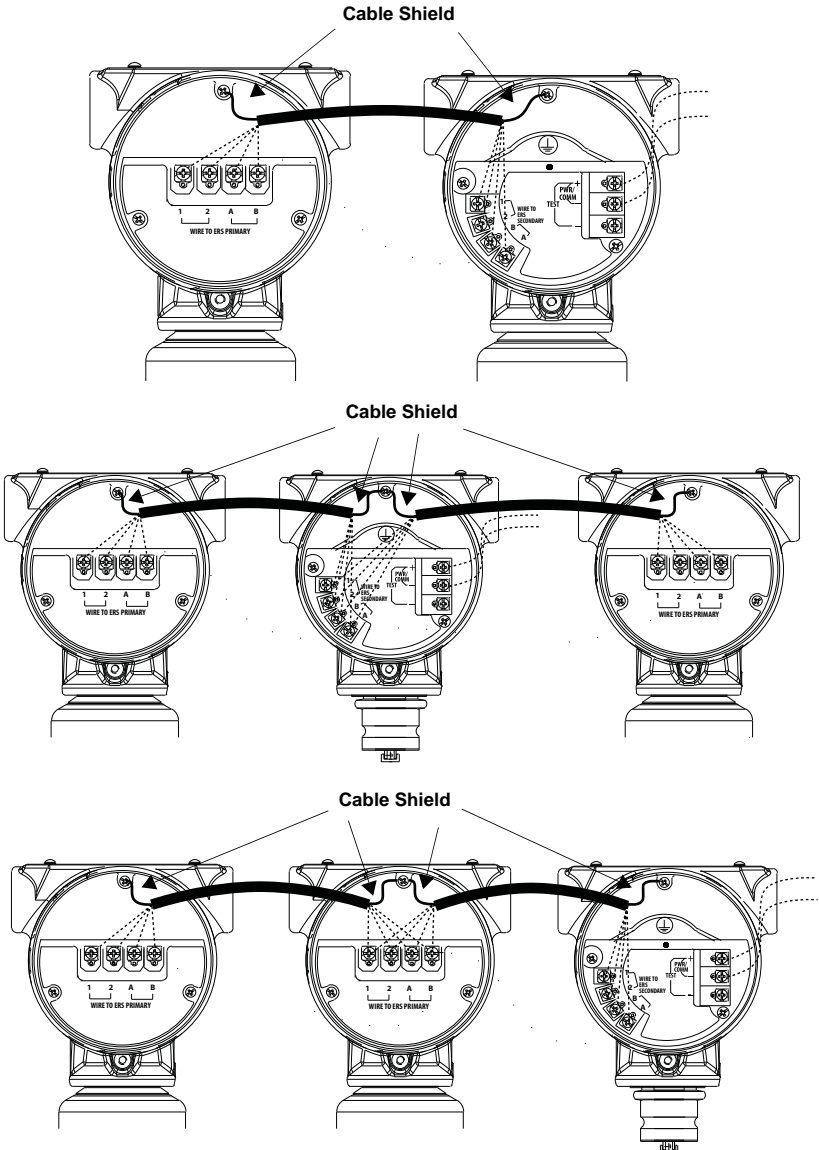
Figure 10. Wiring Diagram for 3051S ERS System with Remote Display in "Daisy-Chain" Configuration.



### Shield Grounding

Connect the shield from the 3051S ERS communication cable assembly to each housing case as shown for the applicable wiring configuration in Figure 11.

Figure 11. Shield Grounding



# Rosemount 3051S ERS System

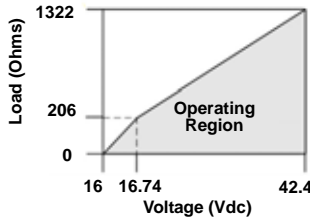
## Power Supply

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 two signal leads and the load resistance of the controller, indicator, intrinsic safety barriers, and related components.

Figure 12. Load Limitation

If Supply Voltage  $\leq$  16.74 Vdc  
 Maximum Loop Resistance =  $277.8 * (\text{Power Supply Voltage} - 16.0)$

If Supply Voltage  $>$  16.74 Vdc  
 Maximum Loop Resistance =  $43.5 * (\text{Power Supply Voltage} - 12.0)$



## STEP 6: VERIFY CONFIGURATION

As part of the basic commissioning process of the 3051S ERS System, the parameters in Table 1 should be verified / configured with a HART-compliant master (see Figure 8 – Figure 10 for connecting a hand-held Field Communicator):

Table 1. Basic Configuration HART Fast Key Sequence

Function	Fast Key Sequence
<b>Device Tagging</b>	
• Tag	2, 1, 1, 1, 1
• Long Tag	2, 1, 1, 1, 2
• Descriptor	2, 1, 1, 1, 3
• Message	2, 1, 1, 1, 4
<b>Units of Measure</b>	
• P <sub>LO</sub> Pressure	2, 1, 1, 2, 1, 1
• P <sub>LO</sub> Module Temperature	2, 1, 1, 2, 1, 2
• System DP	2, 1, 1, 2, 1, 3
• P <sub>HI</sub> Module Temperature	2, 1, 1, 2, 1, 4
• P <sub>HI</sub> Pressure	2, 1, 1, 2, 1, 5
<b>Damping</b>	
• P <sub>LO</sub> Pressure	2, 1, 1, 2, 2, 1
• System DP	2, 1, 1, 2, 2, 2
• P <sub>HI</sub> Pressure	2, 1, 1, 2, 2, 3
<b>Variable Mapping</b>	
• Primary Variable	2, 1, 1, 3, 1
• 2 <sup>nd</sup> Variable	2, 1, 1, 3, 2
• 3 <sup>rd</sup> Variable	2, 1, 1, 3, 3
• 4 <sup>th</sup> Variable	2, 1, 1, 3, 4
<b>Analog Output</b>	
• Primary Variable	2, 1, 1, 4, 1
• Upper Range Value	2, 1, 1, 4, 2
• Lower Range Value	2, 1, 1, 4, 3
<b>Alarm and Saturation Levels</b>	2, 1, 1, 5

The items in Table 2 are considered “optional” and can be configured as necessary:

Table 2. Optional Configuration HART Fast Key Sequence

Function	Fast Key Sequence
Device Display	2, 1, 3
Burst Mode	
• Burst Mode	2, 1, 4, 1
• Burst Option	2, 1, 4, 2
Scaled Variable	
• Linear (2-point) Scaled Variable	2, 1, 5, 1
• Non-Linear (Multipoint) Scaled Variable	2, 1, 5, 2
Change Module Assignments	
• View Module 1 Assignment	2, 1, 6, 1
• View Module 2 Assignment	2, 1, 6, 2
• Set Module 1 = P <sub>HI</sub> , Module 2 = P <sub>LO</sub>	2, 1, 6, 3
• Set Module 1 = P <sub>LO</sub> , Module 2 = P <sub>HI</sub>	2, 1, 6, 4
• View Device Topology	2, 1, 6, 5

## STEP 7: CALIBRATE THE 3051S ERS SYSTEM

Each 3051S ERS sensor is shipped fully calibrated per request or with the factory default of full scale. After the 3051S ERS system has been installed and wired, either a zero trim or a lower sensor trim should be performed on each sensor to compensate for installation effects.

- A zero sensor trim should be performed after installing a gage sensor on a vented tank. A zero sensor trim should not be performed on an absolute sensor or on a gage sensor that is at line pressure.
- A lower sensor trim should be performed after installing an absolute sensor or a gage sensor that is at line pressure.

Additionally, a “System DP Zero” trim should be performed to establish a zero-based DP reading. The System DP Zero trim should be performed after a zero/lower trim has been performed on each sensor.

The steps outlined below detail the procedures for the sensor trims and the System DP zero trim.

### 3051S ERS System Calibration

1. Equalize or vent both 3051S ERS sensors and connect a Field Communicator as shown in Figure 8 – Figure 10.
2. Input the following key sequence on the Field Communicator to trim each sensor and the DP reading. Follow the commands prompted by the Field Communicator.

Table 3. ERS Calibration HART Fast Key Sequence

Function	Fast Key Sequence
P-Hi Sensor Zero Trim	3, 4, 3, 1, 3
P-Hi Sensor Lower Trim	3, 4, 3, 1, 2
P-Lo Sensor Zero Trim	3, 4, 4, 1, 3
P-Lo Sensor Lower Trim	3, 4, 4, 1, 2
System DP Zero Trim	3, 4, 2, 1, 3

#### NOTES:

1. The “System DP Zero Trim” should be performed after the P-Hi and P-Lo sensor trims.
2. Refer to the 3051S ERS reference manual for the recommended calibration procedure for performing a sensor trim at line pressure.

## Rosemount 3051S ERS System

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### PRODUCT CERTIFICATIONS

#### Approved Manufacturing Locations

Rosemount Inc. – Chanhassen, Minnesota, USA

Emerson Process Management GmbH & Co. – Wessling, Germany

Emerson Process Management Asia Pacific Private Limited – Singapore

Beijing Rosemount Far East Instrument Co., LTD – Beijing, China

Emerson Process Management (India) Pvt. Ltd. — Daman, India

#### 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, a nationally recognized testing laboratory (NRTL) as accredited by the Federal Occupational Safety and Health Administration (OSHA).

#### European Directive Information

The EC declaration of conformity can be found on page 21. The most recent revision can be found at [www.rosemount.com](http://www.rosemount.com).

### 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.
- I5** Intrinsically Safe (Entity) for use in Class I, II and III, Division 1, Groups A, B, C, D, E, F and G; Temperature Class T<sub>4</sub> T<sub>a</sub> = -50 °C to +70 °C in accordance with Control Drawing No. 3151-1306; Intrinsically Safe (Entity) for use in Class I, Zone 0, AEx ia IIC T<sub>4</sub> T<sub>a</sub> = -50 °C to +70 °C; in accordance with Control Drawing No. 3151-1306; Non-incendive for use in Class I, Division 2, Groups A, B, C, and D; Temperature Class T<sub>4</sub> T<sub>a</sub> = -50 °C to +70 °C in accordance with Control Drawing No. 3151-1306; Dust Ignition-proof for use in Class II and III, Division 1, Groups E, F, and G; Temperature Class T<sub>5</sub> T<sub>a</sub> = -50 °C to +85 °C; indoor and outdoor, Type 4X Hazardous (Classified) Locations.  
For entity parameters see control drawing 03151-1306.

##### *Canadian Standards Association (CSA)*

All CSA hazardous approved transmitters are certified per ANSI/ISA 12.27.01-2003.

- 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, CSA Enclosure Type 4X; conduit seal not required; Dual Seal.
- I6** Intrinsically Safe for Class I, Division 1, Groups A, B, C, and D when connected in accordance with Rosemount Drawings 03151-1316; Dual Seal.  
For entity parameters see control drawing 03151-1316.

### European Certifications


- I1** ATEX Intrinsic Safety  
Certificate No. BAX01ATEX1303X  II 1G  
Ex ia IIC T4 ( $T_a = -60\text{ °C}$  to  $70\text{ °C}$ )  
CE 1180

Table 4. Input Parameters

#### Loop / Power

$U_i = 30\text{ V}$

$I_i = 300\text{ mA}$


$P_i = 1\text{ W}$

$C_i = 12\text{ nF}$

$L_i = 33\text{ }\mu\text{H}$


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

The apparatus is not capable of withstanding the 500 V test as defined in Clause 6.3.12 of EN 60079-11. This must be considered during installation.

- N1** ATEX Type n  
Certificate No. BAS01ATEX3304X  II 3 G  
Ex nL IIC T4 ( $T_a = -40\text{ °C}$  to  $70\text{ °C}$ )  
 $U_i = 45\text{ Vdc max}$   
IP66  
CE 1180

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


The apparatus is not capable of withstanding the 500 V insulation test required by Clause 6.8.1 of EN 60079-15. This must be taken into account when installing the apparatus.

- ND** ATEX Dust  
Certificate No.: BAS01ATEX1374X  II 1 D  
Ex tD A20 T105 °C ( $-20\text{ °C} \leq T_{amb} \leq 85\text{ °C}$ )  
 $V_{max} = 42.4\text{ V max}$   
 $A = 22\text{ mA}$   
IP66  
CE 1180

#### Special Conditions for safe use (X):

1. Cable entries must be used which maintain the ingress protection of the enclosure to at least IP66.
2. Unused cable entries must be filled suitable blanking plugs which maintain the ingress protection of the enclosure to at least IP66.
3. Cable entries and blanking plugs must be suitable for the ambient range of the apparatus and capable of withstanding a 7J impact test.
4. Each 3051S ERS transmitter must be securely screwed in place to maintain the ingress protection of the enclosure. (The 3051S Super Module must be properly assembled to the 3051S housing to maintain ingress protection.)

## Rosemount 3051S ERS System

- E1** ATEX Flameproof  
 Certificate No.: KEMA00ATEX2143X  II 1/2 G  
 Ex d IIC T6 (-50 °C ≤ T<sub>amb</sub> ≤ 65 °C)  
 Ex d IIC T5 (-50 °C ≤ T<sub>amb</sub> ≤ 80 °C)  
 V<sub>max</sub> = 42.4 V  
 CE 1180

### Special Conditions for safe use (X):

1. Appropriate ex d blanking plugs, cable glands, and wiring need to be suitable for a temperature of 90 °C.
2. 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 maintenance shall be followed in detail to assure safety during its expected lifetime.
3. The 3051S ERS System does not comply with the requirements of EN 60079-1 Clause 5.2, Table 2 for all joints. Contact Emerson Process Management for information on dimensions of flameproof joints.

### Japanese Certifications

- E4** TIIS Flameproof: Consult factory for availability

### INMETRO Certifications

- E2** INMETRO Flameproof: Consult factory for availability
- I2** INMETRO Intrinsic Safety: Consult factory for availability

### China Intrinsic Safety

- E3** China Flameproof: Consult factory for availability
- I3** China Intrinsically Safe: Consult factory for availability

### IECEx Certifications

- I7** IECEx Intrinsic Safety  
 Certificate No.: IECExBAS04.0017X  
 Ex ia IIC T4(T<sub>a</sub> = -60 °C ≤ T<sub>amb</sub> ≤ 70 °C)  
 IP66

Table 5. Input Parameters

#### Loop / Power

U<sub>i</sub> = 30 V

I<sub>i</sub> = 300 mA

P<sub>i</sub> = 1 W

C<sub>i</sub> = 12 nF

L<sub>i</sub> = 33 μH

### Special conditions for safe use (X)

The apparatus is not capable of withstanding the 500 V test as defined in clause 6.3.12 of IEC 60079-11. This must be taken into account during installation.

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## Rosemount 3051S ERS System

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- N7** IECEx Type n  
Certificate No.: IECExBAS04.0018X  
Ex nC IIC T4 ( $T_a = -40\text{ °C}$  to  $70\text{ °C}$ )  
 $U_i = 45\text{ Vdc Max}$   
IP66

### Special conditions for safe use (X)

The apparatus is not capable of withstanding the 500 V insulation test required by Clause 8 of IEC 60079-15.

- E7** IECEx Flameproof and Dust (each listed separately)  
IECEx Flameproof  
Certificate No.: IECExKEM08.0010X  
Ex d IIC T6 ( $-50\text{ °C} \leq T_{amb} \leq 65\text{ °C}$ )  
Ex d IIC T5 ( $-50\text{ °C} \leq T_{amb} \leq 80\text{ °C}$ )  
 $V_{max} = 42.4\text{ V}$

### Special conditions for safe use (X)

1. Appropriate ex d blanking plugs, cable glands, and wiring needs to be suitable for a temperature of  $90\text{ °C}$ .
2. 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 maintenance shall be followed in detail to assure safety during its expected lifetime.
3. The 3051S does not comply with the requirements of IEC 60079-1 Clause 5.2, Table 2 for all joints. Contact Emerson Process Management for information on the dimensions of flameproof joints.

IECEx Dust  
Certificate No. IECExBAS09.0014X  
Ex tD A20 T105°C ( $-20\text{ °C} \leq T_{amb} \leq 85\text{ °C}$ )  
 $V_{max} = 42.4\text{ V}$   
 $A = 22\text{ mA}$   
IP66

### Special conditions for safe use (x)

1. Cable entries must be used which maintain the ingress protection of the enclosure to at least IP66.
2. Unused cable entries must be filled with suitable blanking plugs which maintain the ingress protection of the enclosure to at least IP66.
3. Cable entries and blanking plugs must be suitable for the ambient range of the apparatus and capable of withstanding a 7J impact test.
4. Each 3051S ERS sensor must be securely screwed in place to maintain the ingress protection of the enclosure. (Each sensor module must be properly assembled to the housing to maintain ingress protection.)

## Rosemount 3051S ERS System

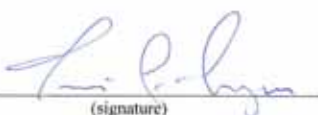
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### **Combinations of Certifications**

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**
- K2** Combination of **E2 and I2**
- K5** Combination of **E5 and I5**
- K6** Combination of **E6 and I6**
- K7** Combination of **E7, I7, and N7**
- KA** Combination of **E1, E6, I1, and I6**
- KB** Combination of **E5, E6, I1, and I6**
- KC** Combination of **E5, E1, I5, and I1**
- KD** Combination of **E5, E6, E1, I5, I6, and I1**

Figure 13. Rosemount 3051S ERS Declaration of Conformity

<b>ROSEMOUNT</b>		<b>CE</b>	
<b>EC Declaration of Conformity</b>			
No: RMD 1044 Rev. I			
We,			
<b>Rosemount Inc.</b> 8200 Market Boulevard Chanhassen, MN 55317-9685 USA			
declare under our sole responsibility that the product,			
<b>Model 3051S Series Pressure Transmitters</b> <b>Model 3051SF Series Flowmeter Transmitters</b> <b>Model 300S Housings</b>			
manufactured by,			
<b>Rosemount Inc.</b> 12001 Technology Drive Eden Prairie, MN 55344-3695 USA	<i>and</i>	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)		_____ Vice President, Quality (function- printed)	
_____ Timothy J. Laver (name- printed)		_____ 17 - DECEMBER - 2009 (date of issue)	

## Rosemount 3051S ERS System

**ROSEMOUNT****Schedule****EC Declaration of Conformity RMD 1044 Rev. 1****EMC Directive (2004/108/EC)****All Models**

Harmonized Standards: EN 61326-1:2006, EN 61326-2-3: 2006

**R&TTE Directive (1999/5/EC)****All Models with "Output Code X" and "Operating Frequency and Protocol Code 1"**Harmonized Standards: 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)

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.

**All Models with "Output Code X" and "Operating Frequency and Protocol Code 3"**Harmonized Standards: EN 301 489-1: V 1.2.1 2002, EN 301 489-17: V1.4.1 2002,  
EN 61010-1: 2001 Second Edition EN 300 328 V 1.6.1 (2004-11)**All Models with "Output Code X" and "Operating Frequency and Protocol Code 3"  
With the Extended Range Antenna option code "WM"**

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.





**Schedule**

**EC Declaration of Conformity RMD 1044 Rev. I**



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

**3051S series Pressure Transmitters**

**Model 3051S\_CA4; 3051S\_CD2, 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

Evaluation standards: ANSI / ISA 61010-1:2004, EC 60770-1 1999

**All other model 3051S Pressure Transmitters**

Sound Engineering Practice

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

Sound Engineering Practice

**3051SF Series Flowmeters Pressure Transmitters**

**Model 3051SF Flowmeter Transmitters (See Table)**



QS Certificate of Assessment - CE-41-PED-H1-RMT-001-04-USA

Module \_\_ Conformity Assessment

Evaluation standards:

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



<b>ROSEMOUNT</b>		<b>Schedule</b>		
<b>EC Declaration of Conformity RMD 1044 Rev. 1</b>				
3051SFP: 1-1/2" Threaded & Welded		II	I	
<b>All other model 3051SF Flowmeter Transmitters</b> Sound Engineering Practice				
<hr/>				
<b>ATEX Directive (94/9/EC)</b>				
<b>Model 3051S Pressure Transmitter</b>				
<b>BAS01ATEX1303X – Intrinsic Safety Certificate</b>				
Equipment Group II, Category 1 G (Ex ia IIC T4)				
Harmonized Standards: EN60079-0: 2006; EN60079-11: 2007				
<b>BAS01ATEX3304X – Type n Certificate</b>				
Equipment Group II, Category 3 G (Ex nL IIC T5)				
Harmonized Standards: EN60079-0: 2006; EN60079-15: 2005				
<b>BAS01ATEX1374X – Dust Certificate</b>				
Equipment Group II, Category 1 D (Ex tD A20 IP66 T105°C)				
Harmonized Standards: Standards used EN61241-0:2006; EN61241-1:2004				
<b>Baseefa04ATEX0181X – Mining Certificate</b>				
Equipment Group I, Category M 1 (Ex ia D)				
Harmonized Standards: EN60079-0: 2006; EN60079-11: 2007; EN50303: 2000				
<b>Baseefa05ATEX0193U – Mining Certificate: Component</b>				
Equipment Group I, Category M 1 (Ex ia D)				
Harmonized Standards: EN60079-0: 2006; EN60079-11: 2007; EN50303: 2000				
<b>KEMA00ATEX2143X – Flameproof Certificate</b>				
Equipment Group II, Category 1/2 G (Ex d IIC T5 or T6)				
Harmonized Standards: EN60079-0: 2006; EN60079-1: 2007; EN60079-26:2007				
				
<p>File ID: 3051S CE Marking  Files\Content Outlook\IM1\VA\ZCV\3051S_RMD1044(1).doc</p> <p style="text-align: center;">Page 4 of 5</p> <p style="text-align: right;">C:\Documents and Settings\mdaye\Local Settings\Temporary Internet</p>				

**ROSEMOUNT**

**Schedule**

**EC Declaration of Conformity RMD 1044 Rev. 1**



**PED Notified Body**

**3051S Series Pressure Transmitters**

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

**3051SF Series Flowmeter Transmitters**

**Plant Safety Limited**  
**Plant Safety Limited** [Notified Body Number: 0041]  
Parklands, Wilmslow Road, Didsbury  
Manchester M20 2RE  
United Kingdom

**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



