

Rosemount™ 3051S Electronic Remote Sensor (ERS)™ System

with HART® Protocol



CE HART

Safety messages

This guide provides basic guidelines for the Rosemount™ 3051S ERS System. It does not provide instructions for diagnostics, maintenance, service, or troubleshooting. Refer to the Rosemount 3051S ERS Reference Manual for more instruction. This document is also available electronically on Emerson.com/Rosemount.

⚠ WARNING

Explosions could result in death or serious injury.

Installation of device in an explosive environment must be in accordance with appropriate local, national, and international standards, codes, and practices.

Review the Rosemount 3051S/3051SFx/3051S-ERS section of this guide for any restrictions associated with a safe installation.

- Before connecting a handheld communicator in an explosive atmosphere, ensure that 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 transmitter.

Process leaks could result in death or serious injury.

- Install and tighten process connectors before applying pressure.

Electrical shock could cause death or serious injury.

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

Conduit/cable entries

- Unless marked, the conduit/cable entries in the housing use a ½–14 NPT thread form. Entries marked M20 are M20 × 1.5 thread form. On devices with multiple conduit entries, all entries will have the same thread form. Only use plugs, adapters, glands, or conduit with a compatible thread form when closing these entries.

⚠ WARNING

Refer to the Product certifications section of this Quick Start Guide documentation when using the RFID tag (option code Y3) for required installation conditions.

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1 Identify system components

A complete Rosemount 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 if ordered.

Procedure

1. Look at the wire-on tag on the Rosemount 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 Rosemount 3051S ERS system.

Note

For new installations or applications, the second Rosemount 3051S ERS sensor may have been shipped in a separate box. If servicing or replacing part of an existing Rosemount 3051S ERS system, the other sensor may already be installed.

2 Sensor mounting

Mount the P_{HI} and P_{LO} sensors at the correct process connections for the application. This section shows some common installations.

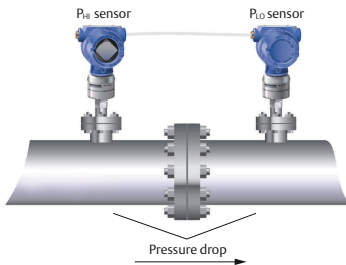
Vertical installation

In a vertical installation such as on a vessel or distillation column, install the P_{HI} sensor at the bottom process connection. Install the P_{LO} sensor at the top process connection.



Horizontal installation

In a horizontal installation, install the P_{HI} sensor at the upstream process connection. Install the P_{LO} downstream.



2.1 Mounting brackets

Figure 2-1: Mounting bracket – Coplanar™ flange

Panel mount

Pipe mount

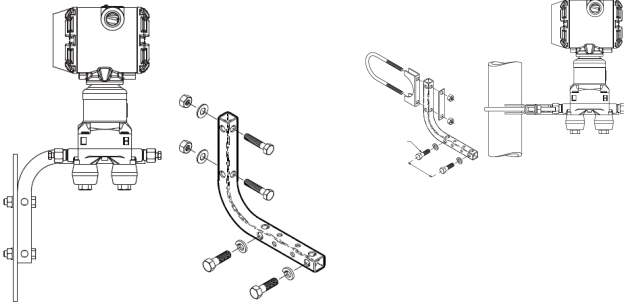


Figure 2-2: Mounting brackets – traditional flange

Panel mount

Pipe mount

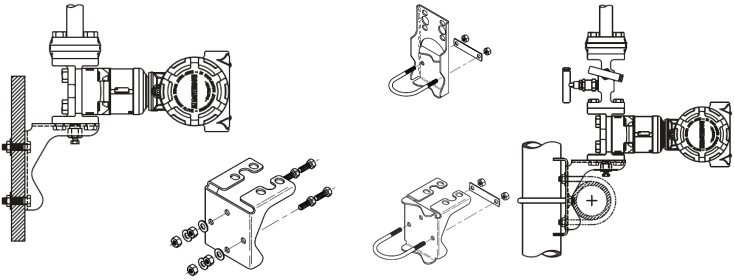
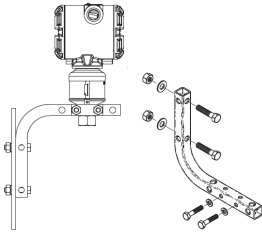
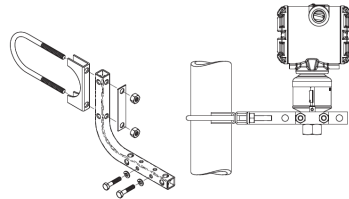


Figure 2-3: Mounting brackets - in-line

Panel mount



Pipe mount



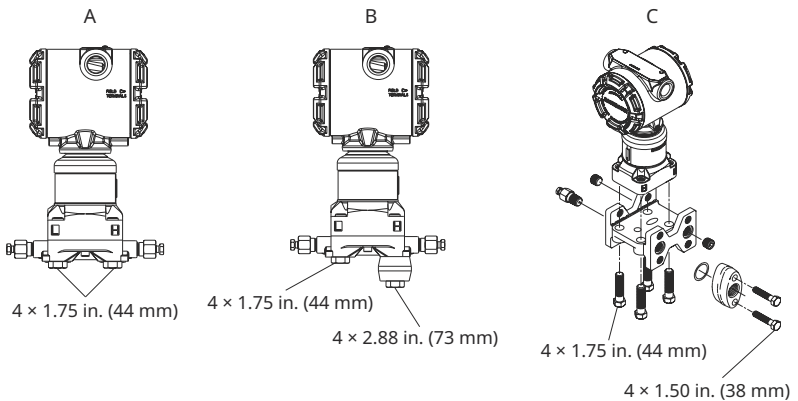
2.2 Bolt installation

If the installation requires assembly of a process flange, manifold, or flange adapters, follow these assembly guidelines to ensure a tight seal for optimal performance characteristics of the Rosemount™ 3051S ERS System.

NOTICE

Only use bolts supplied with the transmitter or sold by Emerson™ as spare parts.

[Figure 2-4](#) illustrates common transmitter assemblies with the bolt length required for proper transmitter assembly.

Figure 2-4: Common Transmitter Assemblies

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

Bolts are typically carbon steel or stainless steel. Confirm the material by viewing the marking on the head of the bolt and referencing [Table 2-1](#). If bolt material is not shown in [Table 2-1](#), contact your local Emerson representative for more information.

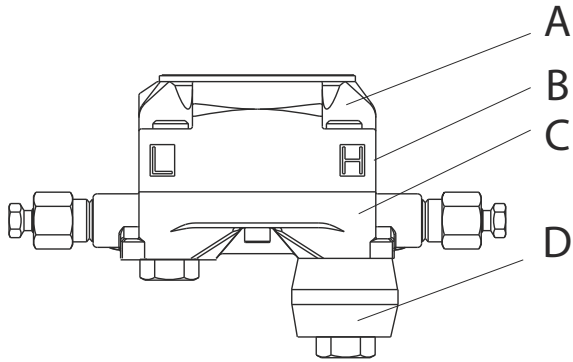
NOTICE

Carbon steel bolts do not require lubrication. Stainless steel bolts are coated with a lubricant to ease installation. Do not apply additional lubricant when installing either type of bolt.

Procedure

1. Finger-tighten the bolts.
2. Torque the bolts to the initial torque value using a crossing pattern. See [Table 2-1](#) for initial torque value.
3. Torque the bolts to the final torque value using the same crossing pattern. See [Table 2-1](#) for final torque value.
4. Verify that the flange bolts are protruding through the module isolator plate before applying pressure (See [Figure 2-5](#)).

Figure 2-5: Module Isolator Plate



- A. Bolt
- B. Sensor module isolator plate
- C. Coplanar flange
- D. Flange adapters

Table 2-1: Torque Values for the Flange and Flange Adapter Bolts

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

2.3 O-rings with flange adapters

⚠ WARNING

Use only the O-rings included with the flange adapter for this 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.

3 Consider housing rotation

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

Procedure

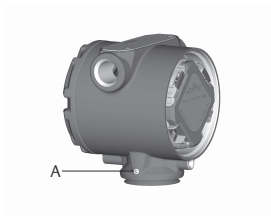
1. Loosen the housing rotation set screw.
2. Turn the housing up to 180° left or right of its original (as shipped) position.

Note

Do not rotate the housing on each transmitter more than 180° without first performing a disassembly procedure (see [Rosemount 3051S ERS Reference Manual](#) for more information). Over-rotation may sever the electrical connection between the sensor module and feature board electronics.

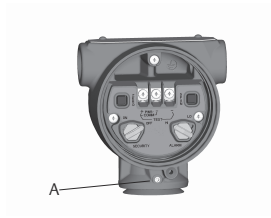
3. Retighten the housing rotation set screw.
-

Figure 3-1: Plantweb Housing



A. Housing rotation set screw (3/32 in.)

Figure 3-2: Junction Box Housing



A. Housing rotation set screw (3/32 in.)

5 Connect wiring and power up

The system can be wired in a variety of configurations, depending on the hardware that was ordered.

5 Standard system

Procedure

1. Remove the housing cover labeled **Field Terminals** on both sensors.
2. Using the communication cable (if ordered) or an equivalent 4-wire shielded assembly per the specifications detailed in [Wiring diagrams](#), connect the 1, 2, A, and B terminals between the two sensors per [Figure 5-1](#).
3. Connect the 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.

NOTICE

Arrange the drip loop so the bottom is lower than the conduit connections on the transmitter housings.

6. To meet explosion-proof requirements, reinstall and tighten the housing covers on both sensors so that metal contacts metal.

5.1 System with remote display and interface

Procedure

1. Remove the housing cover labeled **Field Terminals** on both sensors and the remote housing.
2. Using the communication cable (if ordered) or an equivalent 4-wire shielded assembly per the specifications detailed [Wiring diagrams](#), connect the 1, 2, A, and B terminals between the two sensors and remote housing in a “tree” ([Figure 5-2](#)) or “daisy-chain” ([Figure 5-3](#)) configuration.
3. Connect the 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.

NOTICE

Arrange the drip loop so that the bottom is lower than the conduit connections on the transmitter housings.

6. To meet explosion-proof requirements, reinstall and tighten the housing covers on both sensors so that metal contacts metal.

5.2 Wiring diagrams

[Figure 5-1](#), [Figure 5-2](#), and [Figure 5-3](#) show the wiring connections necessary to power a Rosemount 3051S ERS System and enable communications with a handheld communicator.

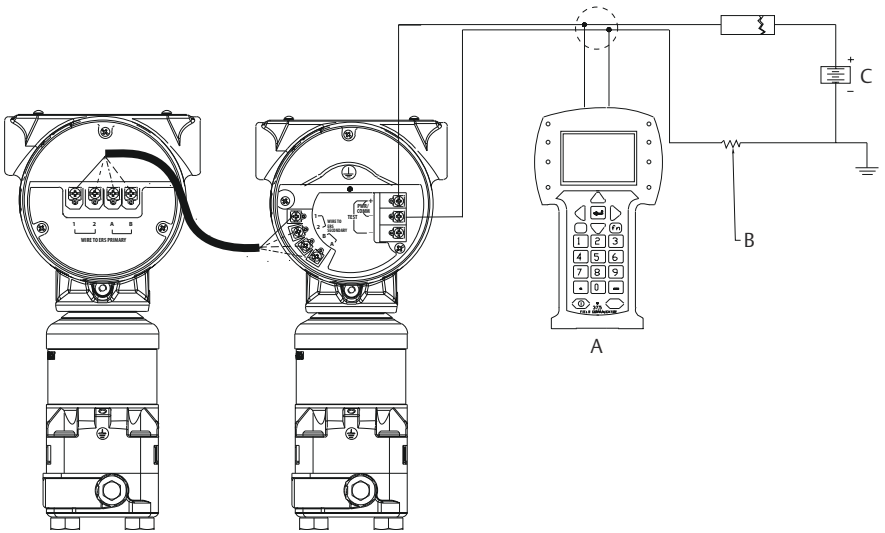
Note

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

Cable specifications

Cable type	Recommend Madison AWM Style 2549 cable. Other comparable cable may be used if it has independent dual twisted shielded pair wires with an outer shield. The power wires (pin terminals 1 and 2) must be 22 AWG minimum. The communication wires (pin terminals A and B) must be 24 AWG minimum.
Cable length	Up to 150 ft. (45.7 m) depending upon cable capacitance.
Cable capacitance	The capacitance between the communication terminals (pin terminals A and B) as wired must be less than 5000 picofarads total. This allows up to 50 picofarads per foot (0.3 m) for a 100 ft. (31 m) cable.
Cable outside diameter (O.D.)	0.270 in. (6.86 mm)

Figure 5-1: Wiring Diagram for Standard System

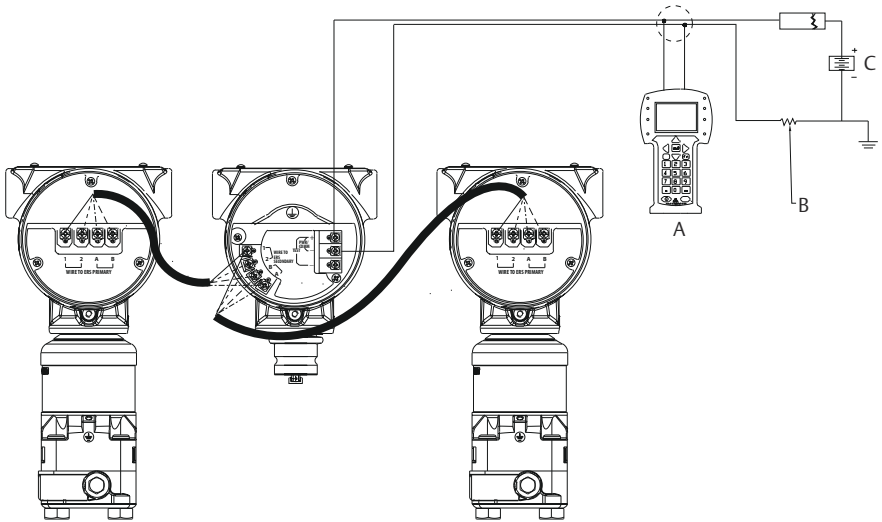


- A. Power supply
- B. 250Ω Resistor needed for HART® communications
- C. Handheld communicator

Table 5-1: Wiring Legend

Wire color	Drawing symbol	Terminal connection
Red	————	1
Black	-----	2
White	-----	A
Blue	-----	B

Figure 5-2: Wiring Diagram for System with Remote Display in "Tree" Configuration

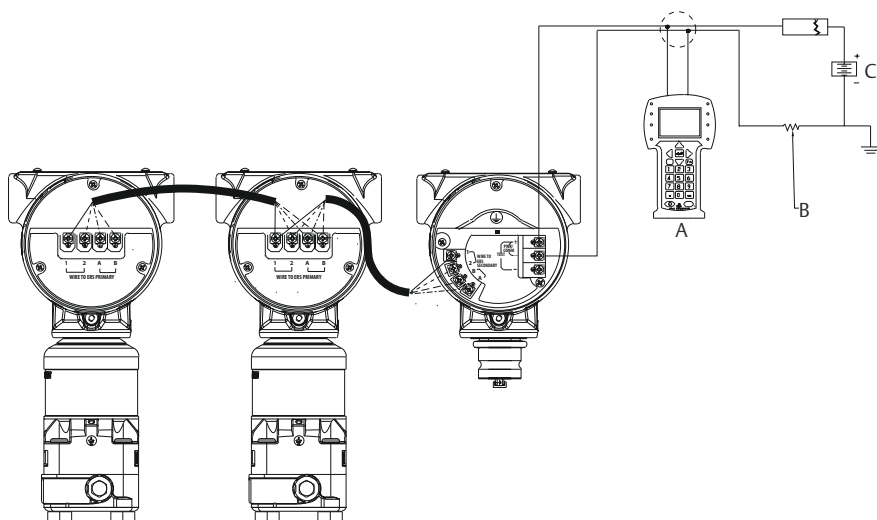


- A. Power supply
- B. 250Ω Resistor needed for HART communications
- C. Handheld communicator

Table 5-2: Wiring Legend

Wire color	Drawing symbol	Terminal connection
Red	_____	1
Black	-----	2
White	-----	A
Blue	-----	B

Figure 5-3: Wiring Diagram for System with Remote Display in “Daisy-Chain” Configuration



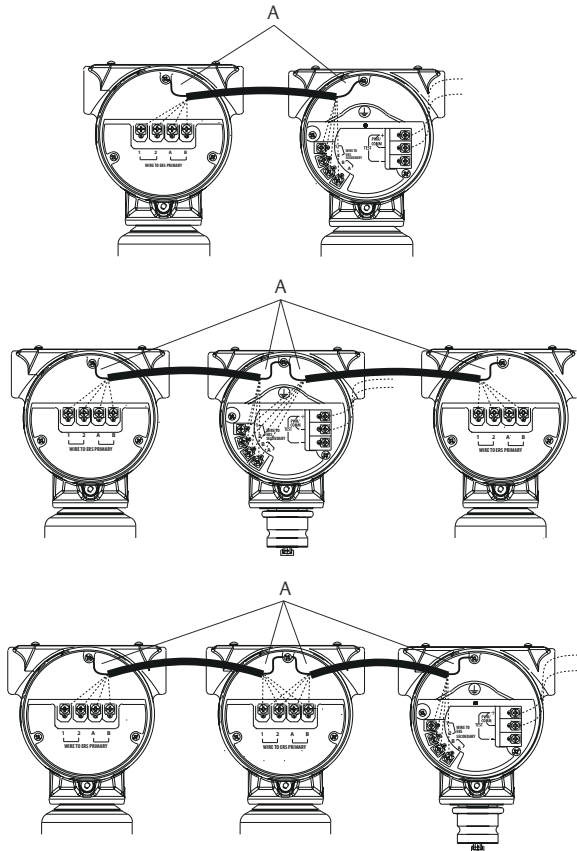
- A. Power supply
 B. 250Ω Resistor needed for HART communications
 C. Handheld communicator

Table 5-3: Wiring Legend

Wire color	Drawing symbol	Terminal connection
Red	_____	1
Black	-----	2
White	-----	A
Blue	-----	B

5.3 Shield grounding

Connect the shield from the communication cable assembly to each housing case as shown for the applicable wiring configuration in [Figure 5-4](#).

Figure 5-4: Shield Grounding

A. Cable shield

5.4 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.

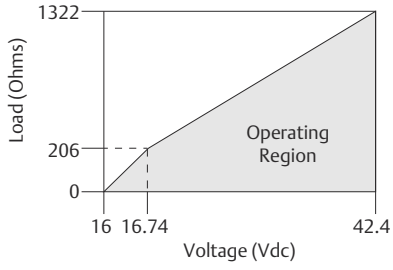
Load limitation

If supply voltage ≤ 16.74 Vdc,

Maximum loop resistance = $277.8 \times (\text{Power supply voltage} - 16.0)$

If supply voltage > 16.74 Vdc,

Maximum loop resistance = $43.5 \times (\text{Power supply voltage} - 12.0)$



6 Verify configuration

As part of the basic commissioning process of the system, the parameters in [Table 6-1](#) should be verified/configured with a HART®-compliant master (see [Figure 5-1](#), [Figure 5-2](#), and [Figure 5-3](#) for connecting a handheld communicator)

Table 6-1: Basic Configuration HART Fast Key Sequence

Function	Fast Key sequence
Device Tagging	
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
Units of Measure	
P _{LO} Pressure	2, 1, 1, 2, 1, 1
P _{LO} Module Temperature	2, 1, 1, 2, 1, 2
System DP	2, 1, 1, 2, 1, 3
P _{HI} Module Temperature	2, 1, 1, 2, 1, 4
P _{HI} Pressure	2, 1, 1, 2, 1, 5
Damping	
P _{LO} Pressure	2, 1, 1, 2, 2, 1
System DP	2, 1, 1, 2, 2, 2
P _{HI} Pressure	2, 1, 1, 2, 2, 3
Variable Mapping	
Primary Variable	2, 1, 1, 3, 1
2 nd Variable	2, 1, 1, 3, 2
3 rd Variable	2, 1, 1, 3, 3
4 th Variable	2, 1, 1, 3, 4
Analog Output	
Primary Variable	2, 1, 1, 4, 1
Upper Range Value	2, 1, 1, 4, 2
Lower Range Value	2, 1, 1, 4, 3
Alarm and Saturation Levels	2, 1, 1, 5

The items in [Table 6-2](#) are considered optional and can be configured as necessary:

Table 6-2: 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 (Multi-point) 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 _{HI} , Module 2 = P _{LO}	2, 1, 6, 3
Set Module 1 = P _{LO} , Module 2 = P _{HI}	2, 1, 6, 4
View Device Topology	2, 1, 6, 5

7 Calibrate the system

Each sensor is shipped fully calibrated per request or with the factory default of full scale. After the 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.

- Perform a zero sensor trim after installing a gage sensor.

Note

Do not perform a zero sensor trim on an absolute sensor or on a gage sensor that is at line pressure.

- Perform a lower sensor trim after installing an absolute sensor or a gage sensor that is at line pressure.

After completing a zero/lower trim on each sensor, perform a System DP Zero trim to establish a zero-based DP reading.

System calibration details the procedures for the:

- Zero sensor trim
- Lower sensor trim
- System DP Zero trim

sensor trims and the “System DP Zero” trim.

7.1 System calibration

Procedure

1. Equalize or vent both sensors and connect a handheld communicator as shown in [Figure 5-1](#), [Figure 5-2](#), and [Figure 5-3](#).
2. Input the following Fast Key sequence on the handheld communicator to trim each sensor and the DP reading. Follow the commands prompted by the handheld communicator.

Table 7-1: 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

Postrequisites

After completing the P-Hi and PLo sensor trims, perform the System DP Zero Trim. Refer to the [Rosemount 3051S ERS Reference Manual](#) for the recommended calibration procedure for performing a sensor trim at line pressure.

8 Rosemount 3051S/3051SFx/3051S-ERS

Rev 3.14

European Directive Information

A copy of the EU Declaration of Conformity can be found at the end of the Quick Start Guide. The most recent revision of the EU Declaration of Conformity can be found at emerson.com/rosemount.

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).

Installing Equipment in North America

The US National Electrical Code (NEC) and the Canadian Electrical Code (CEC) permit the use of Division marked equipment in Zones and Zone marked equipment in Divisions. The markings must be suitable for the area classification, gas, and temperature class. This information is clearly defined in the respective codes.

8.1 USA

8.1.1 E5 US Explosionproof (XP) and Dust-Ignitionproof (DIP)

Certificate FM16US0090

Standards FM Class 3600 – 2018, FM Class 3615 – 2018, FM Class 3616 – 2011, FM Class 3810 – 2018, 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_a ≤ +85 °C); Factory Sealed; Type 4X

8.1.2 I5 US Intrinsic Safety (IS) and Nonincendive (NI)

Certificate FM16US0089X

Standards FM Class 3600:2018, FM Class 3610:2010, FM Class 3611:2004, FM Class 3616:2011, FM Class 3810:2018, ANSI/ISA-60079-0:2013, ANSI/ISA-60079-11:2013, ANSI/ISA-61010-1:2004, NEMA 250:1991 (3051SFA only) or NEMA 250:2003

Markings IS CL I, DIV 1, GP A, B, C, D; CL II, DIV 1, GP E, F, G; Class III; Class 1, Zone 0 AEx ia IIC T4; NI CL 1, DIV 2, GP

A, B, C, D; T4(-50 °C ≤ T_a ≤ +70 °C) [HART]; T4(-50 °C ≤ T_a ≤ +60 °C) [Fieldbus]; when connected per Rosemount drawing 03151-1006; Type 4X

Special Condition for Safe Use (X):

The Model 3051S/3051S-ERS Pressure Transmitter contains aluminum and is considered to constitute a potential risk of ignition by impact or friction. Care must be taken into account during installation and use to prevent impact and friction.

Note

Transmitters marked with NI CL 1, DIV 2 can be installed in Division 2 locations using general Division 2 wiring methods or Nonincendive Field Wiring (NIFW). See Drawing 03151-1006.

US Intrinsic Safety (IS) and Nonincendive (NI)

Certificate 1143113

Standards FM Class 3600:2011, FM Class 3610:2010, FM Class 3611:2004, FM Class 3810:2005, UL50E (1st Ed.)

Markings IS Class I/II/III, Division 1, Groups A, B, C, D, T4/ E, F, and G T135 °C;
 Class I, Zone 0 AEx ia IIC T4 Ga;
 T4(-50 °C ≤ T_a ≤ +70 °C) [HART];
 T4(-50 °C ≤ T_a ≤ +60 °C) [Fieldbus];
 when connected per Rosemount drawing 03151-1016;
 Type 4X

8.1.3 IE US FISCO

Certificate FM16US0089X

Standards FM Class 3600 – 2011, FM Class 3610 – 2010, FM Class 3611 – 2004, FM Class 3810 – 2005, NEMA 250 – 2003

Markings IS CL I, DIV 1, GP A, B, C, D; T4(-50 °C ≤ T_a ≤ +60 °C); when connected per Rosemount drawing 03151-1006; Type 4X

Special Condition for Safe Use (X):

The Model 3051S/3051S-ERS Pressure Transmitter contains aluminum and is considered to constitute a potential risk of ignition by impact or friction. Care must be taken into account during installation and use to prevent impact and friction.

US FISCO

Certificate	1143113
Standards	FM Class 3600:2011, FM Class 3610:2010, FM Class 3611:2004, FM Class 3810:2005, UL50E (1st Ed.)
Markings	IS Class I/II/III, Division 1, Groups A, B, C, D, T4/ E, F, and G T135 °C; Class I, Zone 0 AEx ia IIC T4 Ga; T4(-50 °C ≤ T _a ≤ +70 °C) [HART]; T4(-50 °C ≤ T _a ≤ +60 °C) [Fieldbus]; when connected per Rosemount drawing 03151-1016; Type 4X

8.2 Canada

8.2.1 E6 Canada Explosionproof, Dust-Ignitionproof, and Division 2

Certificate	1143113
Standards	CAN/CSA C22.2 No. 0-10, CSA Std C22.2 No. 25-1966, CSA Std C22.2 No. 30-M1986, CAN/CSA C22.2 No. 94-M91, CSA Std C22.2 No. 142-M1987, CSA Std C22.2 No. 213-M1987, ANSI/ISA 12.27.01-2003, CSA Std C22.2 No. 60529:05
Markings	Explosionproof Class I, Division 1, Groups B, C, D; Dust-Ignitionproof Class II, Division 1, Groups E, F, G; Class III; suitable for Class I, Zone 1, Group IIB+H2, T5; suitable for Class I, Division 2, Groups A, B, C, D; suitable for Class I, Zone 2, Group IIC, T5; when connected per Rosemount drawing 03151-1013; Type 4X

8.2.2 I6 Canada Intrinsically Safe

Certificate	1143113
Standards	CAN/CSA C22.2 No. 0-10, CSA Std C22.2 No. 30-M1986, CAN/CSA C22.2 No. 94-M91, CSA Std C22.2 No. 142-M1987, CSA Std C22.2 No. 157-92, ANSI/ISA 12.27.01-2003, CSA Std C22.2 No. 60529:05
Markings	Intrinsically Safe Class I, Division 1; Groups A, B, C, D; suitable for Class 1, Zone 0, IIC, T3C; when connected per Rosemount drawing 03151-1016 [3051S] 03151-1313 [ERS]; Type 4X

8.2.3 IF Canada FISCO

Certificate	1143113
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Standards CAN/CSA C22.2 No. 0-10, CSA Std C22.2 No. 30-M1986, CAN/CSA C22.2 No. 94-M91, CSA Std C22.2 No. 142-M1987, CSA Std C22.2 No. 157-92, ANSI/ISA 12.27.01-2003, CSA Std C22.2 No. 60529:05


Markings FISCO Intrinsically Safe Class I, Division 1; Groups A, B, C, D; suitable for Class 1, Zone 0, IIC, T3C; when connected per Rosemount drawing 03151-1016 [3051S] 03151-1313 [ERS]; Type 4X

8.3 Europe

8.3.1 E1 ATEX Flameproof

Certificate KEMA 00ATEX2143X

Standards EN IEC 60079-0:2018, EN 60079-1:2014, EN 60079-26:2015

Markings  II 1/2 G Ex db IIC T6...T4 Ga/Gb, T6(-60 °C ≤ T_a ≤ +70 °C), T5/T4(-60 °C ≤ T_a ≤ +80 °C)

Temperature Class	Process Connection Temperature
T6	-60 °C to +70 °C
T5	-60 °C to +80 °C
T4	-60 °C to +120 °C

Special Conditions for Safe Use (X):

1. This device contains a thin wall diaphragm less than 1 mm thickness that forms a boundary between Category 1G (process connection) and Category 2G (all other parts of the equipment). The model code and datasheet are to be consulted for details of the diaphragm material. During Installation, maintenance and use the environmental conditions to which the diaphragm will be subjected shall be taken into account. The manufacturer's instructions for installation and maintenance shall be followed in detail to assure safety during its expected lifetime.
2. Flameproof joints are not intended for repair.
3. Non-standard paint options may cause risk from electrostatic discharge. Avoid installations that could cause electrostatic build-up on painted surfaces, and only clean the painted surfaces with a damp cloth. If paint is ordered through

a special option code, contact the manufacturer for more information.

- Appropriate cable, glands and plugs need to be suitable for a temperature of 5 °C greater than maximum specified temperature for location where installed.

8.3.2 I1 ATEX Intrinsic Safety

Certificate BAS01ATEX1303X

Standards EN IEC 60079-0: 2018, EN 60079-11: 2012

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

Table 8-1: Input Parameters

	Ui	Ii	Pi	Ci	Li
SuperModule	30 V	300 mA	1.0 W	30 nF	0
3051S...A; 3051SF...A; 3051SAL...C	30 V	300 mA	1.0 W	12 nF	0
3051S...F; 3051SF...F	30 V	300 mA	1.3 W	0	0
3051S ...A...M7, M8, or M9; 3051SF ...A...M7, M8, or M9; 3051SAL...C... M7, M8, or M9	30 V	300 mA	1.0 W	12 nF	60 μH
3051SAL or 3051SAM	30 V	300 mA	1.0 W	12 nF	33 μH
3051SAL...M7, M8, or M9 3051SAM...M7, M8, or M9	30 V	300 mA	1.0 W	12 nF	93 μH
RTD Option for 3051SF	5 V	500 mA	0.63 W	N/A	N/A

Special Conditions for Safe Use (X):

- The Model 3051S Transmitters fitted with transient protection are not capable of withstanding the 500V test as defined in Clause 6.3.13 of EN 60079-11:2012. This must be taken into account during installation.
- The terminal pins of the Model 3051S SuperModule must be provided with a degree of protection of at least IP20 in accordance with IEC/EN 60529.
- The Model 3051S 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 a zone 0 area.

8.3.3 IA ATEX FISCO


- Certificate** BAS01ATEX1303X
- Standards** EN IEC 60079-0: 2018, EN 60079-11: 2012
- Markings**  II 1 G Ex ia IIC T4 Ga, T4(-60 °C ≤ T_a ≤ +70 °C)


Table 8-2: Input Parameters

	FISCO
Voltage U _i	17.5 V
Current I _i	380 mA
Power P _i	5.32 W
Capacitance C _i	0
Inductance L _i	0

Special Conditions for Safe Use (X):

1. The Model 3051S Transmitters fitted with transient protection are not capable of withstanding the 500V test as defined in Clause 6.3.13 of EN 60079-11:2012. This must be taken into account during installation.
2. The terminal pins of the Model 3051S SuperModule must be provided with a degree of protection of at least IP20 in accordance with IEC/EN 60529.
3. The Model 3051S 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 a zone 0 area.

8.3.4 ND ATEX Dust

- Certificate** BAS01ATEX1374X
- Standards** EN 60079-0: 2012+A11:2013, EN 60079-31: 2009
- Markings**  II 1 D Ex ta IIIC T105 °C T₅₀₀95 °C Da, (-20 °C ≤ T_a ≤ +85 °C), V_{max} = 42.4 V

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 temperature range of the apparatus and capable of withstanding a 7J impact test.
4. The SuperModule(s) must be securely screwed in place to maintain the ingress protection of the enclosure(s).

8.3.5 N1 ATEX Type n

Certificate BAS01ATEX3304X

Standards EN IEC 60079-0: 2018, EN 60079-15: 2010

Markings  II 3 G Ex nA IIC T5 Gc, $(-40\text{ °C} \leq T_a \leq +85\text{ °C})$, $V_{\max} = 45\text{ V}$

Special Condition for Safe Use (X):

The equipment is not capable of withstanding the 500 V insulation test required by clause 6.5 of EN 60079-15:2010. This must be taken into account when installing the equipment.

Note

RTD Assembly is not included with the 3051SFx Type n Approval.

8.4 International

8.4.1 E7 IECEx Flameproof and Dust

Certificate IECEx KEM 08.0010X (Flameproof)

Standards IEC 60079-0:2017, IEC 60079-1:2014, IEC 60079-26:2014

Markings Ex db IIC T6...T4 Ga/Gb, T6 $(-60\text{ °C} \leq T_a \leq +70\text{ °C})$, T5/
T4 $(-60\text{ °C} \leq T_a \leq +80\text{ °C})$

Table 8-3: Process Temperature

Temperature class	Process Connection Temperature
T6	-60 °C to +70 °C
T5	-60 °C to +80 °C
T4	-60 °C to +120 °C

Special Conditions for Safe Use (X):

1. This device contains a thin wall diaphragm less than 1 mm thick that forms a boundary between EPL Ga (process connection) and EPL Gb (all other parts of the equipment). The model code and datasheet are to be consulted for details of the diaphragm material. During installation, maintenance and use the environmental conditions to which the diaphragm will be subjected shall be taken into account. The manufacturer's instructions for installation and maintenance shall be followed in detail to assure safety during its expected lifetime.
2. Flameproof joints are not intended for repair.
3. Non-standard paint options may cause risk from electrostatic discharge. Avoid installations that could cause electrostatic build-up on painted surfaces, and only clean the painted surfaces with a damp cloth. If paint is ordered through a special option code, contact the manufacturer for more information.
4. Appropriate cable, glands and plugs need to be suitable for a temperature of 5 °C greater than maximum specified temperature for location where installed.

Certificate IECEx BAS 09.0014X (Dust)

Standards IEC 60079-0:2011, IEC 60079-31:2008

Markings Ex ta IIIC T105 °C T₅₀₀ 95 °C Da, (-20 °C ≤ T_a ≤ +85 °C), V_{max} = 42.4 V

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 temperature range of the apparatus and capable of withstanding a 7J impact test.
4. The 3051S- SuperModule must be securely screwed in place to maintain the ingress protection of the enclosure.

8.4.2 I7 IECEx Intrinsic Safety

Certificate IECEx BAS 04.0017X

Standards	IEC 60079-0: 2017, IEC 60079-11: 2011
Markings	Ex ia IIC T4 Ga, T4(-60 °C ≤ T _a ≤ +70 °C)

Table 8-4: Input Parameters

	Ui	Ii	Pi	CI	Li
SuperModule	30 V	300 mA	1.0 W	30 nF	0
3051S...A; 3051SF...A; 3051SAL...C	30 V	300 mA	1.0 W	12 nF	0
3051S...F; 3051SF...F	30 V	300 mA	1.3 W	0	0
3051S ...A...M7, M8, or M9; 3051SF ...A... M7, M8, or M9; 3051SAL...C... M7, M8, or M9	30 V	300 mA	1.0 W	12 nF	60 μH
3051SAL or 3051SAM	30 V	300 mA	1.0 W	12 nF	33 μH
3051SAL...M7, M8, or M9 3051SAM...M7, M8, or M9	30 V	300 mA	1.0 W	12 nF	93 μH
RTD Option for 3051SF	5 V	500 mA	0.63 W	N/A	N/A

Special Conditions for Safe Use (X):

1. The Model 3051S Transmitters fitted with transient protection are not capable of withstanding the 500 V test as defined in Clause 6.3.13 of EN 60079-11:2012. This must be taken into account during installation.
2. The terminal pins of the Model 3051S SuperModule must be provided with a degree of protection of at least IP20 in accordance with IEC/EN 60529.
3. The Model 3051S 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 a zone 0 area.

8.4.3 I7 IECEx Intrinsic Safety – Group I - Mining (I7 with Special A0259)

Certificate	IECEx TSA 14.0019X
Standards	IEC 60079-0: 2011, IEC 60079-11: 2011
Markings	Ex ia I Ma (-60 °C ≤ T _a ≤ +70 °C)

Table 8-5: Input Parameters

	U_i	I_i	P_i	C_i	L_i
SuperModule	30 V	300 mA	1.0 W	30 nF	0
3051S...A; 3051SF...A; 3051SAL...C	30 V	300 mA	1.0 W	12 nF	0
3051S...F; 3051SF...F	30 V	300 mA	1.3 W	0	0
3051S ...A...M7, M8, or M9; 3051SF ...A... M7, M8, or M9; 3051SAL...C... M7, M8, or M9	30 V	300 mA	1.0 W	12 nF	60 μH
3051SAL or 3051SAM	30 V	300 mA	1.0 W	12 nF	33 μH
3051SAL...M7, M8, or M9 3051SAM...M7, M8, or M9	30 V	300 mA	1.0 W	12 nF	93 μH
RTD Option for 3051SF	5 V	500 mA	0.63 W	N/A	N/A

Special Conditions for Safe Use (X):

1. If the apparatus is fitted with optional 90V transient suppressor, it is not capable of withstanding the 500 V insulation test required by Clause 6.3.13 of 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.

8.4.4 IG IECEx FISCO

Certificate	IECEX BAS 04.0017X
Standards	IEC 60079-0: 2017, IEC 60079-11: 2011
Markings	Ex ia IIC T4 Ga, T4(-60 °C ≤ T _a ≤ +70 °C)

Table 8-6: Input Parameters

Parameter	FISCO
Voltage U _i	17.5 V
Current I _i	380 mA

Table 8-6: Input Parameters
(continued)

Parameter	FISCO
Power P_i	5.32 W
Capacitance C_i	0
Inductance L_i	0

Special Conditions for Safe Use (X):

1. The Model 3051S Transmitters fitted with transient protection are not capable of withstanding the 500 V test as defined in Clause 6.3.13 of EN 60079-11:2012. This must be taken into account during installation.
2. The terminal pins of the Model 3051S SuperModule must be provided with a degree of protection of at least IP20 in accordance with IEC/EN 60529.
3. The Model 3051S 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 a zone 0 area.

8.4.5 IG IECEx Intrinsic Safety – Group I – Mining (IG with Special A0259)

Certificate IECEx TSA 14.0019X

Standards IEC 60079-0: 2011, IEC 60079-11: 2011

Markings FISCO FIELD DEVICE Ex ia I Ma , (-60 °C ≤ T_a ≤ +70 °C)

Table 8-7: Input Parameters

Parameter	FISCO
Voltage U_i	17.5 V
Current I_i	380 mA
Power P_i	5.32 W
Capacitance C_i	0
Inductance L_i	0

Special Conditions for Safe Use (X):

1. If the apparatus is fitted with optional 90V transient suppressor, it is not capable of withstanding the 500 V

insulation test required by Clause 6.3.13 of 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.

8.4.6 N7 IECEx Type n

Certificate IECEx BAS 04.0018X
Standards IEC 60079-0: 2017, IEC 60079-15: 2010
Markings Ex nA IIC T5 Gc, (-40 °C ≤ T_a ≤ +85 °C)

Special Condition for Safe Use (X):

1. The equipment is not capable of withstanding the 500 V insulation test required by clause 6.5 of EN 60079-15:2010. This must be taken into account when installing the equipment.

8.5 Brazil

8.5.1 E2 Brazil Flameproof

Certificate UL-BR 15.0393X
Standards ABNT NBR IEC 60079-0:2013, ABNT NBR IEC 60079-1:2016, ABNT NBR IEC 60079-26:2016
Markings Ex db IIC T6...T4 Ga/Gb, T6 (-60 °C ≤ T_a ≤ +70 °C), T5/T4 (-60 °C ≤ T_a ≤ +80 °C), IP66

Temperature Class	Ambient Temperature	Process Connection Temperature
T6	-60 °C to +70 °C	-60 °C to +70 °C
T5	-60 °C to +80 °C	-60 °C to +80 °C
T4	-60 °C to +80 °C	-60 °C to +120 °C

Special Conditions for Safe Use (X):

1. The device contains a thin wall diaphragm less than 1mm thick that forms a boundary between EPL Ga (process connection) and EPL Gb (all other parts of the equipment). The model code and datasheet are to be consulted for details of the diaphragm material. 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.

2. Flameproof joints are not intended for repair.
3. Non-standard paint options may cause risk from electrostatic discharge. Avoid installations that could cause electrostatic build-up on painted surfaces, and only clean the painted surfaces with a damp cloth. If paint is ordered through a special option code, contact the manufacturer for more information.

8.5.2 I2/IB Brazil Intrinsic Safety/FISCO

Certificate UL-BR 15.0392X

Standards ABNT NBR IEC 60079-0:2013, ABNT NBR IEC 60079-11:2013

Markings Ex ia IIC T4 Ga ($-60\text{ °C} \leq T_a \leq +70\text{ °C}$), IP66

Special Conditions for Safe Use (X):

1. The surface resistivity of the antenna is greater than 1 GΩ. To avoid electrostatic charge build-up, it must not be rubbed or cleaned with solvents or a dry cloth.
2. The Model 701PBKFF Power Module may be replaced in a hazardous area. The Power Module has a surface resistivity greater than 1 GΩ and must be properly installed in the wireless device enclosure. Care must be taken during transportation to and from the point of installation to prevent electrostatic charge build-up.
3. The 3051S enclosure may be made of aluminium alloy and given a protective polyurethane paint finish; however, care must be taken to protect it from impact or abrasion if located in areas that requires EPL Ga.

Table 8-8: Input Parameters

	U_i	I_i	P_i	C_i	L_i
SuperModule	30 V	300 mA	1.0 W	30 nF	0
3051S...A; 3051SF...A; 3051SAL...C	30 V	300 mA	1.0 W	12 nF	0
3051S...F; 3051SF...F	30 V	300 mA	1.3 W	0	0
3051S...F...IB; 3051SF...F...IB	17.5 V	380 mA	5.32 W	0	0

Table 8-8: Input Parameters (continued)

	U_i	I_i	P_i	C_i	L_i
3051S ...A...M7, M8, or M9; 3051SF ...A...M7, M8, or M9; 3051SAL...C... M7, M8, or M9	30 V	300 mA	1.0 W	12 nF	60 μH
3051SAL or 3051SAM	30 V	300 mA	1.0 W	12 nF	33 μH
3051SAL... M7, M8, or M9 3051SAM... M7, M8, or M9	30 V	300 mA	1.0 W	12 nF	93 μH
RTD Option for 3051SF	5 V	500 mA	0.63 W	N/A	N/A

8.6 China

8.6.1 E3 China Flameproof and Dust Ignition-proof

Certificate 3051S: GYJ21.1120X
 3051SFx: GYJ21.3300X
 3051S-ERS: GYJ20.1489X

Standards 3051S: GB3836.1-2010, GB3836.2-2010, GB3836.20-2010, GB12476.1-2013, GB12476.5-2013
 3051SFx: GB3836.1-2010, GB3836.2-2010, GB12476.1-2013, GB 12476.5-2013
 3051S-ERS: GB3836.1-2010, GB3836.2-2010, GB3836.20-2010

Markings 3051S: Ex d IIC T6...T4; Ex tD A20 T105 °C T₅₀₀ 95 °C; IP66
 3051SFx: Ex d IIC T4~T6 Ga/Gb; Ex tD A20 IP66 T105 °C T₅₀₀ 95 °C; IP66
 3051S-ERS: Ex d IIC T4~T6 Ga/Gb

产品安全使用特殊条件

- 证书编号后缀“X”表明产品具有安全使用特殊条件: 涉及隔爆结合面的维修须联系产品制造商。
- 产品使用注意事项
 1. 用于爆炸性气体环境中, 产品使用环境温度与温度组别和介质温度的关系为:

温度组别	环境温度	过程温度
T6	$-60\text{ °C} \leq T_a \leq +70\text{ °C}$	$-60\text{ °C} \leq T_a \leq +70\text{ °C}$
T5	$-60\text{ °C} \leq T_a \leq +80\text{ °C}$	$-60\text{ °C} \leq T_a \leq +80\text{ °C}$
T4	$-60\text{ °C} \leq T_a \leq +80\text{ °C}$	$-60\text{ °C} \leq T_a \leq +120\text{ °C}$

- 用于爆炸性粉尘环境中, 产品使用环境温度为: $-20\text{ °C} \leq T_a \leq +85\text{ °C}$.
- 产品外壳设有接地端子, 用户在使用时应可靠接地.
- 安装现场应不存在对产品外壳有腐蚀作用的有害气体.
- 现场安装时, 电缆引入口须选用国家指定的防爆检验机构按检验认可, 具有 Ex dIIC, Ex tD A20 IP66 防爆等级的电缆引入装置或堵封件, 冗余电缆引入口须用堵封件有效密封.
- 用于爆炸性气体环境中, 现场安装, 使用和维护必须严格遵守“断电后开盖!”的警告语. 用于爆炸性粉尘环境中, 现场安装, 使用和维护必须严格遵守“爆炸性粉尘场所严禁开盖!”的警告语.
- 用于爆炸性粉尘环境中, 产品外壳表面需保持清洁, 以防粉尘堆积, 但严禁用压缩空气吹扫.
- 用户不得自行更换该产品的零部件, 应会同产品制造商共同解决运行中出现的故障, 以杜绝损坏现象的发生.
- 产品的安装, 使用和维护应同时遵守产品使用说明书, GB3836.13-2013“爆炸性环境 第 13 部分: 设备的修理, 检修, 修复和改造”, GB3836.15-2000“爆炸性气体环境用电气设备 第 15 部分: 危险场所电气安装(煤矿除外)”, GB3836.16-2006“爆炸性气体环境用电气设备 第 16 部分: 电气装置的检查和维护(煤矿除外)”, GB50257-2014“电气装置安装工程爆炸和火灾危险环境电力装置施工及验收规范”和 GB15577-2007“粉尘防爆安全规程”, GB12476.2-2010“可燃性粉尘环境用电气设备 第 2 部分: 选型和安装”的有关规定.

8.6.2 I3 China Intrinsic Safety

Certificate 3051S: GYJ21.1121X [Mfg USA, China, Singapore]
 3051SFx: GYJ21.3301X [Mfg USA, China, Singapore]
 3051S-ERS: GYJ21.1122X [Mfg USA, China, Singapore]

Standards 3051S: GB3836.1-2010, GB3836.4-2010, GB3836.20-2010
 3051SFx: GB3836.1-2010, GB3836.4-2010,
 GB3836.20-2010

3051S-ERS: GB3836.1-2010, GB3836.4-2010,
GB3836.20-2010

Markings 3051S : Ex ia IIC T4 Ga
3051SF: Ex ia IIC T4 Ga
3051S-ERS: Ex ia IIC T4 G

产品安全使用特殊条件:

- 证书编号后缀“X”表明产品具有安全使用特殊条件:
 1. 产品外壳含有轻金属, 用于 0 区时需注意防止由于冲击或摩擦产生的点燃危险.
 2. 当选择 T1 瞬态抑制端子时, 此设备不能承受 GB3836.4-2010 标准中第 6.3.12 条规定的 500 V 交流有效值试验电压的介电强度试验.
 3. Transmitter output 为 X 时, 天线表面电阻大于 1 GΩ, 为了避免静电积聚, 不允许用溶剂或者干布擦拭; 电源模块表面电阻大于 1 GΩ, 如果在危险区域更换, 则需要避免静电积聚; 只能使用由原制造厂提供的 P/N 753-9220-XXXX 电池.
- 产品使用注意事项:
 1. 产品使用环境温度为:

用于爆炸性气体环境中, 产品使用环境温度为: $-60\text{ }^{\circ}\text{C} \leq T_a \leq +70\text{ }^{\circ}\text{C}$

用于爆炸性粉尘环境中, 产品使用环境温度为: $-20\text{ }^{\circ}\text{C} \leq T_a \leq +85\text{ }^{\circ}\text{C}$
 2. 本安电气参数:

型号	端子	最高输入电压 U_i (V)	最大输入电流 I_i (mA)	最大输入功率 P_i (W)	最大内部等效参数	
					C_i (nF)	L_i (μH)
3051SA L_C	+, -, CAN	30	300	1	12	0
3051SA L_C... M7/M8 /M9	+, -	30	300	1	12	60
3051SA L, 3051SA M	+, -, CAN	30	300	1	12	33

型号	端子	最高输入电压 U_i (V)	最大输入电流 I_i (mA)	最大输入功率 P_i (W)	最大内部等效参数	
					C_i (nF)	L_i (μ H)
3051SA L... M7/M8 /M9 3051SA M... M7/M8 /M9	+, -	30	300	1	12	93

变送器输出	端子	最高输入电压 U_i (V)	最大输入电流 I_i (mA)	最大输入功率 P_i (W)	最大内部等效参数	
					C_i (nF)	L_i (μ H)
Super module	+, -, CAN	30	300	1	30	0
A	+, -, CAN	30	300	1	12	0
A 配 M7, M8 或 M9 显示	+, -	30	300	1	12	60
F	+, -	30	300	1.3	0	0
FISCO	+, -	17.5	380	5.32	0	0
RTD 选项	-	5	500	0.63	-	-

注: 本安电气参数符合 GB3836.19-2010 对 FISCO 现场仪表的参数要求。

- 选择 Remote Mount 选项 M7, M8, M9 时, 电缆分布电容小于 24nF, 分布电感小于 60 μ H。
- 该产品必须与已通过防爆认证的关联设备配套共同组成本安防爆系统方可使用于爆炸性气体环境。其系统接线必须同时遵守本产品 and 所配关联设备的使用说明书要求, 接线端子不得接错。
- 用户不得自行更换该产品的零部件, 应会同产品制造商共同解决运行中出现的故障, 以杜绝损坏现象的发生。
- 用于爆炸性粉尘环境中, 电缆引入口须选用国家指定的防爆检验机构按检验认可, 具有 Ex tD A20 IP66 防爆等级的电缆引入装置或堵封件, 冗余电缆引入口须用堵封件有效密封。

7. 产品的安装, 使用和维护应同时遵守产品使用说明书, GB3836.13-2013 “爆炸性环境 第 13 部分: 设备的修理, 检修, 修复和改造”, GB3836.15-2000 “爆炸性气体环境用电气设备 第 15 部分: 危险场所电气安装 (煤矿除外)”, GB3836.16-2006 “爆炸性气体环境用电气设备 第 16 部分: 电气装置的检查和维护 (煤矿除外)”, GB3836.18-2010 “爆炸性环境 第 18 部分: 本质安全系统” 和 GB50257-2014 “电气装置安装工程爆炸和火灾危险环境电力装置施工及验收规范” 和 GB15577-2007 “粉尘防爆安全规程”, GB12476.2-2010 “可燃性粉尘环境用电气设备第 2 部分”: 选型和安装的有关规定。

8.6.3 N3 China Type n

Certificate 3051S, 3051SHP: GYJ23.1241X
3051SFx: GYJ23.1245X

Markings Ex ec IIC T5 Gc

产品安全使用特殊条件

- 产品防爆合格证号后缀 “X” 代表产品安全使用有特殊条件: 产品选用瞬态保护端子板 (c 中包含 T1 选项) 时, 设备不能承受 500V 对地电压试验 1 分钟, 安装时需考虑在内。
- 产品使用注意事项
 1. 产品使用环境温度范围为: $-40\text{ }^{\circ}\text{C} \leq T_a \leq +85\text{ }^{\circ}\text{C}$ 。
 2. 最高输入电压: 45 V。
 3. 现场安装时, 电缆引入口须选用经国家指定的防爆检验机构检验认可的, 具有 Ex eIIC Gb 或 Ex nA IIC Gc 防爆等级的电缆引入装置或堵封件, 冗余电缆引入口须用堵封件有效密封。
 4. 安装现场确认无可燃性气体存在时方可维修。
 5. 用户不得自行更换该产品的零部件, 应会同产品制造商共同解决运行中出现的故障, 以杜绝损坏现象的发生。
 6. 产品的安装, 使用和维护应同时遵守产品使用说明书, GB3836.13-2013 “爆炸性环境 第 13 部分: 设备的修理, 检修, 修复和改造”, GB3836.15-2000 “爆炸性气体环境用电气设备 第 15 部分: 危险场所电气安装 (煤矿除外)”, GB3836.16-2006 “爆炸性气体环境用电气设备 第 16 部分: 电气装置的检查和维护 (煤矿除外)”, GB50257-2014 “电气装置安装工程爆炸和火灾危险环境电力装置施工及验收规范” 的有关规定。

8.7 Technical Regulation Custom Union (EAC)

8.7.1 EM EAC Flameproof and Dust Ignition-proof

Certificate EAЭC KZ 7500525.01.01.00672

Markings 0/1 Ex db IIC T6...T4 Ga/Gb X
Ex ta IIIC T105 °C T₅₀₀95 °C Da X

8.7.2 IM EAC Intrinsic Safety

Certificate EAЭC KZ 7500525.01.01.00672

Markings 0Ex ia IIC T4 Ga X

8.7.3 IN EAC Intrinsic Safety

Certificate: EAЭC KZ 7500525.01.01.00672

Markings: 0Ex ia IIC T4 Ga X

8.8 Japan

8.8.1 E4 Japan Flameproof

Certificate CML 17JPN1147X

Markings Ex db IIC T6...T4 Ga/Gb

Temperature class	Ambient temperature	Process temperature
T6	-60 to +70 °C	-60 to +70 °C
T5	-60 to +80 °C	-60 to +80 °C
T4	-60 to +80 °C	-60 to +120 °C

Special Conditions for Safe Use:

1. This device contains a thin wall diaphragm less than 1mm thickness that forms a boundary between EPL Ga (process connection) and EPL Gb (all other parts of the equipment). The model code and datasheet are to be consulted for details of the diaphragm material. Installation, maintenance, and use shall consider 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. Flameproof joints are not intended for repair.
3. Non-standard paint options may cause risk from electrostatic discharge. Avoid installations that could cause electrostatic build-up on painted surfaces, and only clean the painted surfaces with a damp cloth. If paint is ordered through a special option code, contact the manufacturer for more information.

8.9 Republic of Korea

8.9.1 EP Republic of Korea Flameproof

Certificate 19-KA4BO-0913X [Mfg USA], 12-KB4BO-0180X [Mfg USA], 11-KB4BO-0068X [Mfg Singapore]

Markings Ex d IIC T6...T4 Ga/Gb

8.9.2 IP Republic of Korea Intrinsic Safety

Certificate 12-KB4BO-0202X [HART® – Mfg USA], 12-KB4BO-0204X [Fieldbus – Mfg USA], 19-KA4BO-0844X [HART – Mfg USA], 19-KA4BO-0845X [Fieldbus – Mfg USA], 12-KB4BO-0203X [HART – Mfg Singapore], 13-KB4BO-0296X [Fieldbus – Mfg Singapore], 19-KA4BO-0845X [Fieldbus-Mfg USA], 19-KA4BO-0844X [HART- Mfg USA]

Markings Ex ia IIC T4

8.10 Combinations

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, I1, E6, and I6

KB Combination of E5, I5, E6, and I6

KC Combination of E1, I1, E5, and I5

KD Combination of E1, I1, E5, I5, E6, and I6

KG Combination of IA, IE, IF, and IG

KM Combination of EM and IM

KP Combination of EP and IP

8.11 Additional certifications

8.11.1 SBS American Bureau of Shipping (ABS) Type Approval

Certificate 17-RJ1679518-PDA

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

8.11.2 SBV Bureau Veritas (BV) Type Approval

Certificate 31910 BV

Requirements Bureau Veritas Rules for the Classification of Steel Ships

Application Class Notations: AUT-UMS, AUT-CCS, AUT-PORT and AUT-IMS.

8.11.3 SDN Det Norske Veritas (DNV) Type Approval

Certificate TAA00000K9

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

Application

Location classes	
Type	3051S
Temperature	D
Humidity	B
Vibration	A
EMC	A
Enclosure	D/IP66/IP68

8.11.4 SLL Lloyds Register (LR) Type Approval

Certificate LR21173788TA

Application Environmental categories ENV1, ENV2, ENV3, and ENV5

8.11.5 D3 Custody Transfer - Measurement Canada Accuracy Approval [3051S Only]

Certificate AG-0501, AV-2380C

8.12 Y3 ATEX/IECEX RFID tag approvals

Certificate	IECEX EPS 15.0042X, EPS 15 ATEX 1 1011 X
Markings	II 2G Ex ia IIC T6/T4 Gb, II 2D Ex ia IIC T80/T130C Db

Conditions of certification

Maximum operating temperature: -58 °F (-50 °C) to +158 °F (+70 °C)

The RFID tags shall never be exposed to high electromagnetic field strengths according to IEC 60079-14.

Electrostatic charges shall be avoided. The tags shall never be used next to strong charge generating processes.





⚠ WARNING



Additional warnings

The plastic enclosure may present a potential electrostatic ignition hazard.

RFID tag has limitations in ambient temperature and zone installation areas (Zones 1 & 21) as compared to the gauge.

9 Declaration of Conformity

 EMERSON. EU Declaration of Conformity 	
No: RMD 1044 Rev. AH	
<p>We,</p> <p>Rosemount Inc. 6021 Innovation Blvd. Shakopee, MN 55379 USA</p> <p>declare under our sole responsibility that the product,</p> <p style="text-align: center;">Rosemount 3051S Series Pressure Transmitters Rosemount 3051SFx Series Flowmeter Transmitters Rosemount 300S Housings</p> <p>manufactured by,</p> <p>Rosemount Inc. 6021 Innovation Blvd. Shakopee, MN 55379 USA</p> <p>to which this declaration relates, is in conformity with the provisions of the European Union Directives, including the latest amendments, as shown in the attached schedule.</p> <p>Assumption of conformity is based on the application of the harmonized standards and, when applicable or required, a European Union notified body certification, as shown in the attached schedule.</p>	
 _____ (signature)	Vice President of Global Quality (function name - printed)
Mark Lee (name - printed)	 _____ (date of issue)
Page 1 of 4	

 **EMERSON. EU Declaration of Conformity** 

No: RMD 1044 Rev. AH

EMC Directive (2014/30/EU)

Harmonized Standards:
EN 61326-1:2013, EN 61326-2-3:2013

PED Directive (2014/68/EU)

Rosemount 3051S Series Pressure Transmitters


Rosemount 3051S_CA4; 3051S_CD2, 3, 4, 5 (also with P0 & P9 option) Pressure Transmitters
QS Certificate of Assessment – Certificate No. 12698-2018-CE-USA-ACCREDIA
Module H Conformity Assessment

All other Rosemount 3051S Pressure Transmitters
Sound Engineering Practice

Transmitter Attachments: Diaphragm Seal, Process Flange, or Manifold
Sound Engineering Practice

Rosemount 3051SFx Series Flowmeter Pressure Transmitters
See DSI 1000 Declaration of Conformity

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 **EU Declaration of Conformity** 

No: RMD 1044 Rev. AH

ATEX Directive (2014/34/EU)

BAS01ATEX1303X – Intrinsic Safety Certificate
Equipment Group II, Category 1 G
Ex ia IIC T4 Ga
Harmonized Standards Used:
EN IEC 60079-0:2018, EN 60079-11:2012



BAS01ATEX3304X – Type n Certificate
Equipment Group II, Category 3 G
Ex nA IIC T5 Gc
Harmonized Standards Used:
EN IEC 60079-0:2018, EN 60079-15:2010

BAS01ATEX1374X – Dust Certificate
Equipment Group II, Category 1 D
Ex ta IIIC T105°C T₃₀₀95°C Da
Harmonized Standards Used:
EN 60079-0:2012+A11:2013
Other Standards Used:
EN 60079-31:2009 (a review against EN 60079-31:2014, which is harmonized, shows no significant changes relevant to this equipment so EN 60079-31:2009 continues to represent “State of the Art”)
(A review against EN IEC 60079-0:2018 which is harmonized, shows no significant changes relevant to this equipment so EN60079-0:2012 + A11:2013 continues to represent “State of the Art”.)

BAS04ATEX0181X – Mining Certificate
Equipment Group I, Category M1
Ex ia I Ma
Harmonized Standards Used:
EN IEC 60079-0:2018, EN 60079-11:2012

Basecefa05ATEX0193U – Mining Component Certificate
Equipment Group I, Category M1
Ex ia I Ma
Harmonized Standards Used:
EN IEC 60079-0:2018, EN 60079-11:2012

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 **EU Declaration of Conformity** 

No: RMD 1044 Rev. AH

ATEX Directive (2014/34/EU (Continued))

KEMA00ATEX2143X – Flameproof Certificate
Equipment Group II, Category 1/2 G
Ex db IIC T6...T4 Ga/Gb
Harmonized Standards:
EN IEC 60079-0:2018, EN 60079-1:2014, EN 60079-26:2015

PED Notified Body

DNV GL Business Assurance Italia S.r.l. [Notified Body Number: 0496]
Via Energy Park, 14, N-20871
Vimercate (MB), Italy

ATEX Notified Bodies for EU Type Examination Certificate

DEKRA Certification B.V. [Notified Body Number: 0344]
Utrechtseweg 310
Postbus 5185
6802 ED Arnhem
Netherlands

SGS FIMKO OY [Notified Body Number: 0598]
Takomotie 8
FI-00380 Helsinki,
Finland

ATEX Notified Body for Quality Assurance

SGS FIMKO OY [Notified Body Number: 0598]
Takomotie 8
FI-00380 Helsinki,
Finland

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