

The manufacturer  
may use the mark:



# Certificate / Certificat

# Zertifikat / 合格証

ROS 091022 C001

*exida* hereby confirms that the:

## **Rosemount 3051S Pressure Transmitter with Advanced HART Diagnostics**

**Sensor Software Revision 5.0 and Above**

**Rosemount, Inc.**

**Chanhasen, MN**

Has been assessed per the relevant requirements of:

**IEC 61508 Parts 1, 2, 3**

and meets requirements providing a level of integrity to:

**Systematic Integrity: SIL 3 Capable**

**Random Integrity for Type B Device:**

**SIL 3 @ HFT=1 / SIL 2 @ HFT=0**

Safety Function:

The 3051S Pressure Transmitter with Advanced HART Diagnostics will measure pressure within the stated safety accuracy.

Application Restrictions:

The unit must be properly designed into a Safety Instrumented Function per the Safety Manual requirements.

### Reports:

ROS 09-10-22 R001 V1 R1  
Assessment Report

ROS 08/11-17 R002 V1 R2  
FMEDA Report

ROS 08/11-17 R003 V1 R3  
FMEDA Report

### Validity:

This assessment is valid for  
the Rosemount 3051S  
Pressure Transmitter with  
Advanced HART Diagnostics.

This assessment is valid until  
July 30, 2013.

Revision 1.2, December 20, 2010



*Michael Medoff*  
Product Assessor

*William M. Goble*  
Auditor

ROS 091022 C001

**Systematic Integrity: SIL 3 Capable**

**Random Integrity for Type B Device:  
SIL 3 @ HFT=1 / SIL 2 @ HFT=0**

Rosemount 3051S  
Pressure Transmitter  
with Advanced HART  
Diagnostics

Rosemount, Inc.  
Chanhasen, MN - USA

SIL 3 Capability:

The product has met manufacturer design process requirements of Safety Integrity Level (SIL) 3. These are intended to achieve sufficient integrity against systematic errors of design by the manufacturer.

A Safety Instrumented Function (SIF) designed with this product must not be used at a SIL level higher than stated without "prior use" justification by end user or diverse technology redundancy in the design.

**IEC 61508 Failure Rates in FIT\***

Device	$\lambda_{SD}$	$\lambda_{SU}$	$\lambda_{DD}$	$\lambda_{DU}$	SFF
Model 3051S_C Sensor software revision 7 or 8	0 FIT	240.2 FIT	685.2 FIT	31.2 FIT	96.7%
Model 3051S_T Sensor software revision 7 or 8	0 FIT	227.0 FIT	681.2 FIT	31.4 FIT	96.7%
Model 3051S_C Sensor software revision 5 or 6	0 FIT	240.2 FIT	681.6 FIT	34.8 FIT	96.4%
Model 3051S_T Sensor software revision 5 or 6	0 FIT	227.0 FIT	677.6 FIT	35.0 FIT	96.3%

SIL Verification:

The Safety Integrity Level (SIL) of an entire Safety Instrumented Function (SIF) must be verified via a calculation of  $PFD_{AVG}$  considering redundant architectures, proof test interval, proof test effectiveness, any automatic diagnostics, average repair time and the specific failure rates of all products included in the SIF. Each subsystem must be checked to assure compliance with minimum hardware fault tolerance (HFT) requirements.

\* FIT = 1 failure /  $10^9$  hours



Form	Version	Date
C61508	2.4-3	July 2010