



# Certificate / Certificat Zertifikat / 合格証

ROS 1102057 C001

*exida* hereby confirms that the:

**Rosemount 3144P 4-20mA HART  
Temperature Transmitter**  
Device Label SW 1.1.X

The manufacturer  
may use the mark:



**Rosemount Inc.**

(an Emerson Process Management company)

**Shakopee, MN - USA**

Has been assessed per the relevant requirements of:

**IEC 61508 : 2000 Parts 1-7**

and meets requirements providing a level of integrity to:

**Systematic Capability: SC 3 (SIL 3 Capable)**

**Random Capability: Type B Element**

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

**PFD<sub>AVG</sub> and Architecture Constraints  
must be verified for each application**

Safety Function:

The 3144P 4-20mA HART Temperature Transmitter will measure temperature within the stated safety accuracy.

Application Restrictions:

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

Valid until December 1, 2017  
Revision 1.5 February 6, 2015



ANSI Accredited Program  
PRODUCT CERTIFICATION  
#1004



*Michael Medloff*  
Evaluating Assessor

*Griff Francis*  
Certifying Assessor

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**Random Capability: Type B Element**

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

**PFD<sub>AVG</sub> and Architecture Constraints must be verified for each application**

Systematic 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.

Random Capability:

The SIL limit imposed by the Architectural Constraints must be met for each element.

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

Failure Categories	$\lambda^{SD}$	$\lambda^{SU}$	$\lambda^{DD}$	$\lambda^{DU}$	SFF
Low trip	265	112	20	40	90.8%
High trip	20	112	265	40	90.8%

\* FIT = 1 failure / 10<sup>9</sup> hours

NOTE: Failure rates are shown with typical close-coupled 4-wire RTD in low stress environment

SIL Verification:

The Safety Integrity Level (SIL) of an entire Safety Instrumented Function (SIF) must be verified via a calculation of PFD<sub>AVG</sub> 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.

The following documents are a mandatory part of certification:

Assessment Report: ROS 11/02-057 R002 V2 R2

Safety Manual: 00809-0100-4021

Rosemount 3144P  
4-20mA HART  
Temperature  
Transmitter



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