

exida[®]

The manufacturer
may use the mark:

Certificate / Certificat
Zertifikat / 認証

ROS 060933 C001

exida hereby confirms that the:

**3144P Safety Certified Temperature
Transmitter**

Device Revision 4.1 and Above

Rosemount, Inc.

Chanhassen, 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
(SIL 3 Capable Software)**

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

Reports:

- ROS 04-08-19 R003
FMEDA Report V2 R1
- ROS 06-09-33 R001
Assessment Report V1 R1

Validity:

This assessment is valid for
the 3144P Temperature
Transmitter.

This assessment is valid
until February 16, 2010.
Revision 1.2 September 10, 2007

Safety Function:

The 3144P 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.

Michael Medoff
Product Assessor

William M. Holt
Auditor

Form	Version	Date
C61508	1.9	June 2007



3144P Safety Certified Temperature Transmitter

Rosemount, Inc., 8200 Market Blvd., Chanhassen, MN. 55317 USA

Systematic Integrity: SIL 3 Capable (SIL 3 Software)

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 the statement without "prior use" justification by end user or diverse technology redundancy in the design.

Random Integrity, Type B: SIL3 @ HFT=1, SIL2@HFT=0

Table 1: 3144P Failure Rates (T/C Configuration)

Failure category	Failure rate (in FIT)			
	Single TC mode		Dual TC mode	
Fail High (detected by the logic solver)	28		28	
Fail Low (detected by the logic solver)	339		349	
Fail detected (int. diag.)	314		324	
Fail low (inherently)	25		25	
Fail Dangerous Undetected	41		41	
No Effect	103		107	
Annunciation Undetected	5		5	

Table 2: 3144P Failure Rates (RTD Configuration)

Failure category	Failure rate (in FIT)			
	Single RTD mode		Dual RTD mode (3-wire RTD)	
Fail High (detected by the logic solver)	28		28	
Fail Low (detected by the logic solver)	331		342	
Fail detected (int. diag.)	306		317	
Fail low (inherently)	25		25	
Fail Dangerous Undetected	39		38	
No Effect	107		111	
Annunciation Undetected	5		5	

The failure rates presented apply only to the transmitter. Temperature sensor (RTD or T/C) failure rates must be incrementally considered with the transmitter failure rates. Examples are included in the safety documentation provided by the manufacturer.

SIL Verification:

The Safety Integrity Level (SIL) of an entire Safety Instrumented Function (SIF) must be verified via a calculation of PFDavg 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 / 10⁹ hours