



Certificate / Certificat

Zertifikat / 合格証

ROS 1312032 C005

exida hereby confirms that the:

5900 Radar Level Gauge and 2410 Tank Hub
(Rosemount Tank Gauging System)

SIL 2 2-in-1 (1oo1) Option

With 4-20mA or K1/K2 relay

Rosemount Tank Radar

(an Emerson company)

Sweden

Have been assessed per the relevant requirements of:

IEC 61508 : 2010 Parts 1-3

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; Route 1_H or 2_H

**PFH / PFD_{AVG} and Architecture Constraints
must be verified for each application**

Safety Function:

The level transmitter will de-energize a relay output(s) or set its 4-20 mA output to the safe state when exceeding any of the configured alarm limits. These functions occur within the stated accuracy and within the specified demand response time.

Application Restrictions:

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

The manufacturer may use the mark:



Revision 1.4 September 1, 2023

Surveillance Audit Due
September 1, 2026



Evaluating Assessor

Certifying Assessor

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5900 Radar Level
Gauge and 2410 Tank
Hub

SIL 2 2-in-1 (1oo1)
Option With 4-20mA or
K1/K2 relay

Systematic Capability:

The products have 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. This element meets *exida* criteria for Route 1_H or 2_H.

IEC 61508 Failure Rates in FIT*

5900 + 2410, SIL 2, 2-in-1	λ_S	λ_{DD}	λ_{DU}
4-20 mA	719	1761	218
K1/K2	582	1520	193
4-20 mA and K1/K2 combined	788	1761	254

* FIT = 1 failure / 10⁹ hours

SIL Verification:

The Safety Integrity Level (SIL) of an entire Safety Instrumented Function (SIF) must be verified via a calculation of PFH and 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.

The following documents are a mandatory part of certification:

Assessment Report: ROS 1312032 R001 V3R5 or later

Safety Manual: 00809-0400-5100, Rev AF or later



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