



# Certificate / Certificat

## Zertifikat / 合格証

ROS 1107062 C004

exida hereby confirms that the:

### 2051 Pressure Transmitters with 4-20mA HART

Device Label SW 1.0.0-1.4.x / HW 1.x.x

### Emerson Automation Solutions (Rosemount Inc.) Shakopee, MN - USA

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 SIL 3@HFT=1, Route 1<sub>H</sub> (low/high demand) where SFF ≥ 90%

SIL 2@HFT=0 SIL 3@HFT=1, Route 2<sub>H</sub> (low demand)

SIL 2@HFT=1 SIL 3@HFT=1, Route 2<sub>H</sub> (high demand)

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

#### Safety Function:

The 2051 Pressure Transmitters will measure pressure/level/flow within stated performance specifications when operated within the environmental limits found in the product manual.

#### Application Restrictions:

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



Evaluating Assessor

Certifying Assessor

The manufacturer may use the mark:



Revision 4.4 August 14, 2024  
Surveillance Audit Due  
November 1, 2025



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## ROS 1107062 C004

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

**Random Capability: Type B Element**

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**SIL 2@HFT=0 SIL 3@HFT=1, Route 2<sub>H</sub> (low demand)**

**SIL 2@HFT=1 SIL 3@HFT=1, Route 2<sub>H</sub> (high demand)**

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

### Systematic Capability:

These 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 for each element.

Route 1<sub>H</sub> Table

Device	$\lambda_{SD}$	$\lambda_{SU}$	$\lambda_{DD}$	$\lambda_{DU}$	SFF
Rosemount® 2051 Coplanar Differential & Coplanar Gage	0	84	259	32	91%
Rosemount® 2051 Coplanar Absolute, In-line Gage & Absolute	0	94	279	41	90%

Route 2<sub>H</sub> Table<sup>2</sup>

Device	$\lambda_{SD}$	$\lambda_{SU}$	$\lambda_{DD}$	$\lambda_{DU}$
Rosemount® 2051 Coplanar Differential & Coplanar Gage	0	84	259	32
Rosemount® 2051 Coplanar Absolute, In-line Gage & Absolute	0	94	279	41
Rosemount® 2051 Flowmeter Series based on 1195, 405, or 485 Primaries				
Flowmeter Series <sup>3</sup>	0	92	259	43
Rosemount® 2051 Level Transmitter: (w/o additional Seal)				
Coplanar Differential & Coplanar Gage	0	84	259	66
Coplanar Absolute, In-line Gage & Absolute	0	94	279	75
Rosemount® 2051 with Remote Seals <sup>4</sup>				

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 this certification:

**Assessment Report:** ROS 11/07-062 R007 V5R4 or later

**Safety Manual:** 00809-0100-4107

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

<sup>2</sup>SFF not required for devices certified using Route 2<sub>H</sub> data. For information detailing the Route 2<sub>H</sub> approach as defined by IEC 61508-2, see Technical Document entitled "Route 2<sub>H</sub> SIL Verification for Rosemount Type B Transmitters with Type A Components".

<sup>3</sup>Refer to ROS 13/04-008 R001 V2R1 "Primary Element FMEDA for Flowmeters" report for models that are excluded.

<sup>4</sup>Refer to the Remote Seal (ROS 1105075 R001 V3R1 or later) FMEDA report for the additional failure rates to use when using with attached Remote Seal(s), or use exSILentia.



80 N Main St  
Sellersville, PA 18960

Emerson's  
Rosemount® 2051  
Pressure Transmitters  
with 4-20mA HART  
Device Label SW 1.0.0-1.4.x /  
HW 1.x.x