



The manufacturer may use the mark:



Revision 3.2 March 25, 2020  
Surveillance Audit Due  
November 1, 2022



ISO/IEC 17065  
PRODUCT CERTIFICATION BODY  
#1004

# Certificate / Certificat

## Zertifikat / 合格証

ROS 1107062 C001

exida hereby confirms that the:

**3051 Pressure Transmitter  
with 4-20mA HART  
Device Label SW 1.0.0-1.4.x**

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

Has been assessed per the relevant requirements of:

**IEC 61508 : 2010 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, Route 1<sub>H</sub> (models SFF ≥ 90%)**

**SIL 2@HFT=0, SIL 3@HFT=1, Route 2<sub>H</sub> (low demand, SFF < 90%)**

**SIL 2@HFT=1, SIL 3@HFT=1, Route 2<sub>H</sub> (high demand, SFF < 90%)**

**PFD<sub>AVG</sub> / PFH and Architecture Constraints**

**must be verified for each application**

### Safety Function:

Emerson's Rosemount 3051 Pressure Transmitter will measure pressure/level/flow within stated performance specifications when operated within the environmental limits found in the product manual. Extended ambient operating temperature range options<sup>1</sup> (down to -60C) must be specified in the model code along with option code QT for this certificate to remain valid across the extended ambient temperature limits.

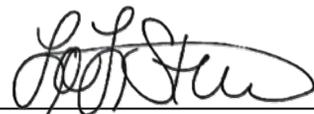
### Application Restrictions:

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





Evaluating Assessor



Certifying Assessor

# Certificate / Certificat / Zertifikat / 合格証

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

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**PFD<sub>AVG</sub> / PFH 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 for each element. This element meets *exida* criteria for Route 2<sub>H</sub>.

### IEC 61508 Failure Rates in FIT<sup>2</sup>

Device	$\lambda_{SD}$	$\lambda_{SU}$	$\lambda_{DD}$	$\lambda_{DU}$	SFF
Rosemount® 3051 Coplanar Differential & Coplanar Gage	0	84	258	32	91%
Rosemount® 3051 Coplanar Absolute, In-line Gage & Absolute	0	94	279	41	90%

Route 2<sub>H</sub> Table<sup>3</sup>

Device	$\lambda_{SD}$	$\lambda_{SU}$	$\lambda_{DD}$	$\lambda_{DU}$
Rosemount® 3051 Coplanar Differential & Coplanar Gage	0	84	258	32
Rosemount® 3051 Coplanar Absolute, In-line Gage & Absolute	0	94	279	41
Rosemount® 3051 Flowmeter Series based on 1195, 405, or 485 Primaries				
Flowmeter Series <sup>4</sup>	0	92	258	41
Rosemount® 3051 Level Transmitter: (w/o additional Seal)				
Coplanar Differential & Coplanar Gage	0	84	258	67
Coplanar Absolute, In-line Gage & Absolute	0	94	279	75
Rosemount® 3051 with Remote Seals <sup>5</sup>				

### 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> / PFH 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 13/01-010 R002 V3R1

**Safety Manual:** 00809-0100-4007

<sup>1</sup>BR5 or BR6 must be ordered with option code QT for this certificate to be valid below -40C

<sup>2</sup>FIT = 1 failure / 10<sup>9</sup> hours

<sup>3</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>4</sup>Refer to ROS 13/04-008 R001 V1R0 "Primary Element FMEDA for Flowmeters" report for models that are excluded.

<sup>5</sup>Refer to the Remote Seal (ROS 1105075 R001 V2R1) FMEDA report for the additional failure rates to use when using with attached Remote Seals, or use exSILentia.



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