



Certificate / Certificat

Zertifikat / 合格証

ROS 061218 C001

exida hereby confirms that the:

3051S Pressure Transmitters

Software Revision 7.0 and Above

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_H (low/high demand) where SFF ≥ 90%

SIL 2@HFT=0 SIL 3@HFT=1, Route 2_H (low demand)

SIL 2@HFT=1 SIL 3@HFT=1, Route 2_H (high demand)

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

Safety Function:

Emerson's Rosemount 3051S Pressure Transmitters 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 options¹ (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

The manufacturer may use the mark:



Revision 4.1 August 1, 2024
Surveillance Audit Due
November 1, 2025



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SIL 2@HFT=0 SIL 3@HFT=1, Route 1_H (low/high demand) where SFF ≥ 90%

SIL 2@HFT=0 SIL 3@HFT=1, Route 2_H (low demand)

SIL 2@HFT=1 SIL 3@HFT=1, Route 2_H (high demand)

PFDAVG/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.

IEC 61508 Failure Rates in FIT²

Route 1_H Table

Device	λ_{SD}	λ_{SU}	λ_{DD}	λ_{DU}	SFF
3051S 4-20mA HART Pressure Transmitter: Coplanar Differential & Coplanar Gage	0	82	274	40	90%
3051S 4-20mA HART Pressure Transmitter: Coplanar Absolute, In-line Gage & In-line Absolute	0	80	260	37	90%

Route 2_H Table³

Device	λ_{SD}	λ_{SU}	λ_{DD}	λ_{DU}
3051S 4-20mA HART Pressure Transmitter: Coplanar Differential & Coplanar Gage	0	82	274	40
3051S 4-20mA HART Pressure Transmitter: Coplanar Absolute, In-line Gage & In-line Absolute	0	80	260	37
3051S Flowmeter based on 1195, 405, or 485 Primaries				
3051S 4-20mA HART Flowmeter Series ⁴	0	90	274	51
3051S Level Transmitter: (w/o additional Seal)				
3051S 4-20mA HART Pressure Transmitter: Coplanar Differential & Coplanar Gage	0	82	274	74
3051S Transmitter with Remote Seals ⁵				

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

²FIT = 1 failure / 10⁹ hours

³SFF not required for devices certified using Route 2_H data. For information detailing the Route 2_H approach as defined by IEC 61508-2, see Technical Document entitled "Route 2_H SIL Verification for Rosemount Type B Transmitters with Type A Components".

⁴Refer to ROS 13/04-008 R001 V2R1 "Primary Element FMEDA for Flowmeters" report for models that are excluded.

⁵Refer 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.

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.

The following documents are a mandatory part of this certification:

Assessment Report: ROS 06/12-18 R001 V4 R1 or later

Safety Manual: 00809-0100-4801

Emerson's
Rosemount® 3051S
Pressure Transmitters
with 4-20mA HART
Software Revision 7.0 and
above



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Sellersville, PA 18960