



Certificate / Certificat

Zertifikat / 合格証

EMM 1612042 C001

exida hereby confirms that the:

Rosemount 8800D Vortex Flowmeter with HART (4-20 mA) and "SI" option Emerson

Eden Prairie, MN - USA

Has 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 (low demand);

SIL 2 @ HFT=1 (high demand);

SIL 3 @ HFT = 1; Route 2_H

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

Safety Function:

The 8800D Vortex Flowmeter will measure flow and output a 4-20 mA signal reporting the process variable when operated within the environmental limits and specifications stated within the product manual.

Application Restrictions:

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



Valerie Motto

Evaluating Assessor

Molly Lynn O'Brien

Certifying Assessor

The manufacturer
may use the mark:



Revision 2.3 December 18, 2023

Surveillance Audit Due
December 1, 2026



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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 must be met for each element. This element meets *exida* criteria for Route 2_H.

IEC 61508 Failure Rates* in FIT**

8800D Trip Option	λ_{SD}	λ_{SU}	λ_{DD}	λ_{DU}
High Trip	0	32	387	119
Low Trip	0	76	387	74

* Failure rates predicted for SSI=2 as this level of operation is common in the process industries. Failure rate predictions for other SSI levels are included in the exSILentia® tool from exida.

** 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/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 element must be checked to assure compliance with minimum hardware fault tolerance (HFT) requirements.

The following documents are a mandatory part of certification:

Assessment Report: EMM 16-12-042 R001 V3 R0(or later)

Safety Manual: 00809-0200-4004_12_15c, Rev AD or later



80 N Main St
Sellersville, PA 18960

Rosemount 8800D
Vortex Flowmeter
with HART (4-20 mA)
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