Certificate / Certificat

Zertifikat / 合格証

EMM 1612042 C001

exida hereby confirms that the:

Rosemount 8800D and 8600D 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 and 8600D Vortex Flowmeters 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.

Evaluating Assessor

Certifying Assessor

The manufacturer may use the mark:

Revision 3.0 October 10, 2024
Surveillance Audit Due
December 1, 2026

ANSI National Accreditation Board
ACCREDITED
ISO/IEC 17065
PRODUCT CERTIFICATION BODY
#1004

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Random Capability: Type B Element

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Rosemount 8800D and 8600D Vortex Flowmeter with HART (4-20 mA) and "SI" option

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/8600D 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 / 10^9 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 V4 R0 (or later)

Safety Manual: 00809-0200-4004, Rev AD or later (8800D)

00809-0200-4860, Rev AA or later (8600D)

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Sellersville, PA 18960