



Certificate / Certificat Zertifikat / 合格証

EMM 0804067 C002

exida hereby confirms that the:

1700 / 2700 Coriolis Flowmeter Series with Enhanced 800 Core

**Micro Motion, Inc.
Emerson
Boulder, CO - USA**

Have 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_H

SIL 2 @ HFT=0; SIL 3 @ HFT = 1; Route 2_H

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

Safety Function:

The 1700 / 2700 Series Flowmeter will measure flow and / or density within the stated safety accuracy.

Application Restrictions:

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



Suey Saut
Evaluating Assessor

John C Yozallinas
Certifying Assessor

The manufacturer
may use the mark:



Revision 1.6 May 1, 2017
Surveillance Audit Due
June 1, 2020



ANSI Accredited Program
ISO/IEC 17065
PRODUCT CERTIFICATION BODY
#1004

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Random Capability: Type B Element

SIL 2 @ HFT=0; SIL 3 @ HFT = 1; Route 1_H

SIL 2 @ HFT=0; SIL 3 @ HFT = 1; Route 2_H

PFD_{AVG} 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 must be met for each element. This device meets *exida* criteria for Route 2_H.

IEC 61508 Failure Rates in FIT¹

Device	λ_{SD}	λ_{SU}	λ_{DD}	λ_{DU}	SFF
Sensor Models: Elite, T, HPC010P, F, H or R with 1700 output codes A or D, and 2700 output codes A, B, C or D	0	249	2497	233	92.2%

¹ 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 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 08/04-67 R005 V2 R1 (or later)

Safety Manual: 20004482, Rev BB (or later)

1700 / 2700 Coriolis
Flowmeter Series
with Enhanced 800
Core



80 N Main St
Sellersville, PA 18960