



# Certificate / Certificat Zertifikat / 合格証

EMM 0804067 C002

*exida* hereby confirms that the:

## Micro Motion 1700/2700 Coriolis Flowmeter with Enhanced 800 Core Emerson Boulder, CO - 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; SIL 3 @ HFT = 1; Route 1<sub>H</sub>**

**SIL 2 @ HFT=0; SIL 3 @ HFT = 1; Route 2<sub>H</sub>**

**PFD<sub>avg</sub> and Architecture Constraints  
must be verified for each application**

### Safety Function:

The Micro Motion 1700 / 2700 Coriolis 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.



*Valerie Motto*

Evaluating Assessor

*JF Moore*

Certifying Assessor

The manufacturer  
may use the mark:



Revision 3.1 June 2, 2023  
Surveillance Audit Due  
August 1, 2025



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**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>**

**SIL 2 @ HFT=0; SIL 3 @ HFT = 1; Route 2<sub>H</sub>**

**PFD<sub>avg</sub> 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 must be met for each element. This element meets *exida* criteria for Route 2<sub>H</sub>.

**IEC 61508 Failure Rates in FIT <sup>1</sup>:**

Device	$\lambda_{SD}$	$\lambda_{SU}$	$\lambda_{DD}$	$\lambda_{DU}$	#	SFF
Sensor Models: Elite, T, TA, HPC, F, H or R with 1700 output codes A or D, and 2700 output codes A, B, C or D	0	249	2497	233	436	92.2%

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

**SIL Verification:**

The Safety Integrity Level (SIL) of an entire Safety Instrumented Function (SIF) must be verified via a calculation of PFH/PFD<sub>avg</sub> 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 V4R1 (or later)

**Safety Manual:** 20004482, Rev BB (or later)



80 N Main St  
Sellersville, PA 18960

1700/2700 Coriolis  
Flowmeter Series with  
Enhanced 800 Core