



The manufacturer
may use the mark:



Revision 2.0 February 26, 2015



ANSI Accredited Program
PRODUCT CERTIFICATION
#1004

Certificate / Certificat Zertifikat / 合格証

VEGA 100183C P0011 C003

exida hereby confirms that the:

VEGAMET 391 **Signal Conditioning Instrument**

VEGA Grieshaber KG
Schiltach - Germany

Has been assessed per the relevant requirements of:

IEC 61508 : 2000 Parts 1-7

and meets requirements providing a level of integrity to:

Systematic Capability: SC 2 (SIL 2 Capable)

Random Capability: Type B Device

SIL 2 @ HFT = 0

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

Safety Function:

The VEGAMET 391 will read the analog input and control its output(s) in accordance to the parameter settings within the stated safety accuracy.

Application Restrictions:

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



Evaluating Assessor

Certifying Assessor

VEGA 100183C P0011 C003

Systematic Capability: SC 2 (SIL 2 Capable)

Random Capability: Type B Device

SIL 2 @ HFT = 0

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**VEGAMET 391
Signal Conditioning
Instrument**

Systematic Capability:

The Product has met manufacturer design process requirements of Safety Integrity Level (SIL) 2. 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.

| Configuration | λ_S | λ_{DD} | λ_{DU} |
|---------------------------------|-------------|----------------|----------------|
| One relay output | 716 | 0 | 24 |
| Two relay outputs | 758 | 0 | 25 |
| Two relays in series connection | 758 | 0 | 24 |
| Current output | 0 | 860 | 23 |
| Current output and one relay | 291 | 620 | 24 |

All failure rates are given in FIT (failures / 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: VEGA 1001-83-R1-C R004 V1R2

Safety Manual: VEGAMET 391 40888



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