Certificate / Certificat

Zertifikat / 合格証

MOB 1508012 C001

exida hereby confirms that the:

2140:SIS Level Detector

Rosemount Measurement Limited
Slough, Berkshire - UK

Has 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 2 (SIL 2 Capable)

Random Capability: Type B Element

SIL 2 @ HFT=0; Route 1_H

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

Safety Function:

The 2140:SIS Level Detector indicates, by means of an electronic analog output, whether the level of a process liquid is above or below the switching point.

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 2.0 March 30, 2020
Surveillance Audit Due
February 1, 2023

ISO/IEC 17065
PRODUCT CERTIFICATION BODY
#1004

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Systematic Capability: SC 2 (SIL 2 Capable)

Random Capability: Type B Element

SIL 2 @ HFT=0; Route 1_H

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

2140:SIS Level Detector

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. This element meets *exida* criteria for Route 2_H.

IEC 61508 Failure Rates in FIT*

Device	λ_{SD}	λ_{SU}	λ_{DD}	λ_{DU}	SFF
2140:SIS T0 Wet On	0	14	525	13	97.6%
2140:SIS T0 Dry On	0	12	522	18	96.7%
2140:SIS T1 Wet On	0	24	529	13	97.7%
2140:SIS T1 Dry On	0	23	526	18	96.8%

* 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 or 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: MOB 15-08-012 R003 V2R1

Safety Manual: 00809-200-4140, Rev BB and above

80 N Main St
Sellersville, PA 18960