



# Certificate / Certificat Zertifikat / 合格証

MOB 1311053 C001

*exida* hereby confirms that the:

## 2120 Vibrating Fork Liquid Level Switch Rosemount Measurement Limited Slough, Berkshire - UK

The manufacturer  
may use the mark:



Valid until February 1, 2018  
Revision 2.0 Jan 21, 2015

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 3 (SIL 3 Capable)**

**Random Capability: Type B Element**

**2120 H, K, G – DRY: SIL 2 @ HFT=0; SIL 3 @ HFT = 1; Route 1<sub>H</sub>**

**2120 V – DRY: SIL 1 @ HFT=0; SIL 2 @ HFT = 1; Route 1<sub>H</sub>**

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

Safety Function:


The 2120 Vibrating Fork Liquid Level Switch will output an energized “ON” signal, unless the process level reaches the setpoint, or a fault is detected, in which case the output is switched to the de-energized “OFF” state.

Application Restrictions:

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



  
Evaluating Assessor

  
Certifying Assessor



ANSI Accredited Program  
PRODUCT CERTIFICATION  
#1004

MOB 1311053 C001

**Systematic Capability: SC 3 (SIL 3 Capable)**

**Random Capability: Type B Element**

**2120 H, K, G – DRY: SIL 2 @ HFT=0; SIL 3 @ HFT = 1; Route 1<sub>H</sub>**

**2120 V – DRY: SIL 1 @ HFT=0; SIL 2 @ HFT = 1; Route 1<sub>H</sub>**

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

2120 Vibrating Fork  
Liquid Level Switch

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.

**IEC 61508 Failure Rates in FIT\***

Device	$\lambda_{SD}$	$\lambda_{SU}$	$\lambda_{DD}$	$\lambda_{DU}$	SFF
2120 Level Switch, NAMUR (K) - DRY = On	0 FIT	118 FIT	131 FIT	24 FIT	91.1%
2120 Level Switch, 8/16mA (H) - Dry=On	0 FIT	136 FIT	152FIT	29 FIT	90.9%
2120 Level Switch, PNP/PLC (G) - Dry=On	0 FIT	241 FIT	130 FIT	41 FIT	90.0%
2120 Level Switch, Relay (V) - Dry=On	0 FIT	131 FIT	130 FIT	102 FIT	72.0%

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

Note that this certificate is limited to only those variations of the product listed above, configured for Dry application.

SIL Verification:

The Safety Integrity Level (SIL) of an entire Safety Instrumented Function (SIF) must be verified via a calculation of 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 subsystem 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 13-11-053 R001 V2R0 61508 Assessment - 2120

Safety Manual: 00809-0500-4030, Rev AF 2120, Jan 2015 and later



64 N Main St  
Sellersville, PA 18960