



# Certificate / Certificat Zertifikat / 合格証

EM 080138 C001

exida hereby confirms that the:

## Mobrey Horizontal Float Switch Rosemount Measurement Limited Slough, UK

The manufacturer  
may use the mark:



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 A Element**

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

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

Valid until June 1, 2018  
Revision 3.0 June 1, 2015

Safety Function:

The float switch will actuate a switched signal for either a high or low limit fluid level.

Application Restrictions:

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



ANSI Accredited Program  
PRODUCT CERTIFICATION  
#1004



Evaluating Assessor

Certifying Assessor

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**Systematic Capability: SC 2 (SIL 2 Capable)**

**Random Capability: Type A Element**

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

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

Mobrey Horizontal Float Switch

(See Assessment Report for configurations covered by this certificate.)

**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 Device meets *exida* criteria for Route 2<sub>H</sub>.

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

**Table 1: 4-contact versions - types D and P (FIT)**

Device	$\lambda_{SD}$	$\lambda_{SU}$	$\lambda_{DD}$	$\lambda_{DU}$
Level switch, MAX detection	0	88	0	243
Level switch, MIN detection	0	117	0	214

**Table 2: 6-contact versions - types D6, P6, H6 and B6**

Device	$\lambda_{SD}$	$\lambda_{SU}$	$\lambda_{DD}$	$\lambda_{DU}$
Level switch, MAX detection	0	168	0	327
Level switch, MIN detection	0	197	0	298

\* 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 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: EM 08/01-38 R002 V3 R1

Safety Manual: M310/FSM



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