



# Certificate / Certificat Zertifikat / 合格証

UEC 2101054 C001

*exida* hereby confirms that the:

## One Series Electronic Switch United Electric Controls Co. Watertown, MA - USA

The manufacturer  
may use the mark:



Revision 1.2 May 8, 2024  
Surveillance Audit Due  
March 1, 2027

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 2<sub>H</sub>**

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

### Safety Function:

The One Series Electronic Switch measures a process variable (pressure or temperature), compares it to a configured valid range, and de-energizes the output if the measured exceeds the range.

### Application Restrictions:

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



Evaluating Assessor

Certifying Assessor

UEC 2101054 C001

**Systematic Capability: SC 3 (SIL 3 Capable)****Random Capability: Type B Element****SIL 2 @ HFT=0; SIL 3 @ HFT = 1; Route 2<sub>H</sub>****PFH/PFD<sub>avg</sub> and Architecture Constraints  
must be verified for each application**One Series  
Electronic 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. This element meets *exida* criteria for Route 2<sub>H</sub>.

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

Application/Device/Configuration	$\lambda_{SD}$	$\lambda_{SU}^1$	$\lambda_{DD}$	$\lambda_{DU}$
1XSWLL Pressure IAW	305	41	266	33
1XSWHL Pressure IAW	333	110	290	44
1XSWHH Pressure IAW	402	129	290	53
1XSWLL Temperature IAW	322	53	268	22
1XSWHL Temperature IAW	350	123	291	33
1XSWHH Temperature IAW	418	142	291	42

\* 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:** UEC 21-01-054 R002 V2R1 (or later)**Safety Manual:** 1XSW-SM-01 (2022 or later)80 N Main St  
Sellersville, PA 18960