



The manufacturer
may use the mark:



Revision 1.0 February 25, 2022
Surveillance Audit Due
March 1, 2025



Certificate / Certificat Zertifikat / 合格証

UEC 2101054 C001

exida hereby confirms that the:

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

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_H

**PFH/PFD_{avg} and Architecture Constraints
must be verified for each application**

Safety Function:

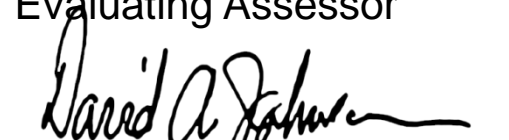
The One Series Smart Switch measures a process variable (pressure or temperature), compares it to a configured valid range, and de-energizes the output if the measured exceeds the range.

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_H****PFH/PFD_{avg} and Architecture Constraints
must be verified for each application****One Series
Smart 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_H.

IEC 61508 Failure Rates in FIT*

Application/Device/Configuration	λ_{SD}	λ_{SU}	λ_{DD}	λ_{DU}
Pressure DC IAW	305	41	266	33
Pressure AC IAW	333	110	290	44
Pressure AC IAW High Power	392	129	290	53
Temperature DC IAW	322	53	268	22
Temperature AC IAW	350	123	291	33
Temperature AC IAW High Power	418	142	291	42

* FIT = 1 failure / 10⁹ hours

SIL Verification:

The Safety Integrity Level (SIL) of an entire Safety Instrumented Function (SIF) must be verified via a calculation of PFH/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: UEC 21-01-054 R002 V1R0 IEC 61508

Safety Manual: 1XSW-SM-01 (2022 or later)



80 N Main St
Sellersville, PA 18960