



# Certificate / Certificat Zertifikat / 合格証

ASC 2210049 C001

*exida* hereby confirms that the:

## Series 327C Solenoid Valve

**ASCO, L.P.**

**Florham Park, NJ**

**USA**

Has been assessed per the relevant requirements of:

**IEC 61508 : 2010 Parts 1-2**

and meets requirements providing a level of integrity to:

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

**Random Capability: Type A, Route 2<sub>H</sub> Device**

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

### Safety Function:

The Valve will move to the designed safe position within the specified safety time.

### Application Restrictions:

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

The manufacturer may use the mark:



Revision 1.0 August 29, 2023

Surveillance Audit Due  
September 1, 2026



Evaluating Assessor

Certifying Assessor

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

**Random Capability: Type A, Route 2<sub>H</sub> Device**

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

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

**IEC 61508 Failure Rates in FIT<sup>1</sup>**

Model	Application, Safe State	$\lambda_{SD}$	$\lambda_{SU}$	$\lambda_{DD}$	$\lambda_{DU}$
<2W Coil	DTT, NC, Out P2 to Vent P1	0	140	0	48
	DTT, NO, Pressure P1 to Out P2	0	82	0	86
	ETT, NC, Pressure P3 to Out P2	0	9	0	143
	ETT, NO, Out P2 to Vent P3	0	48	0	105
2-9W Coil	DTT, NC, Out P2 to Vent P1	0	184	0	48
	DTT, NO, Pressure P1 to Out P2	0	126	0	86
	ETT, NC, Pressure P3 to Out P2	0	9	0	161
	ETT, NO, Out P2 to Vent P3	0	48	0	123
MO Option Adder	DTT, NC, Out P2 to Vent P1	0	15	0	22
	DTT, NO, Pressure P1 to Out P2	0	0	0	22
	ETT, NC, Pressure P3 to Out P2	0	0	0	36
	ETT, NO, Out P2 to Vent P3	0	0	0	36

<sup>1</sup> 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:** ASC 22/10-049 R002 V1R1 (or later)

**Safety Manual:** V9629 Rev JC (or later)



80 N Main St  
Sellersville, PA 18960

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Solenoid Valves