



The manufacturer  
may use the mark:



Revision 2.4 July 2, 2018  
Surveillance Audit Due  
April 1, 2019



**ANSI**

ANSI Accredited Program  
ISO/IEC 17065  
PRODUCT CERTIFICATION BODY  
#1004

# Certificate / Certificat Zertifikat / 合格証

ASC 1301001 C004

*exida* hereby confirms that the:

**Series 327/8327G Solenoid Valves**

**ASCO**

**Ede, The Netherlands**

Have 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 A, Route 2<sub>H</sub> Device**

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

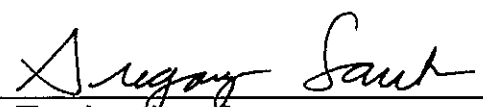
## **Safety Function:**

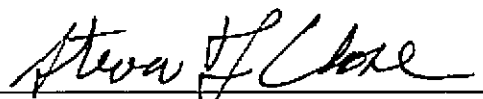
The Valve will move to the designed safe position when de-energized / energized within the specified safety time.

## **Application Restrictions:**

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



  
Evaluating Assessor

  
Certifying Assessor

## Series 327/8327 Solenoid Valves



80 N Main St  
Salesville, PA 15330

T-031, V3R1

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ASC 1301001 C004

**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:

These products have 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>.

### Applications

Series 327/8327G	De-energize To Trip / Energize To Trip, Normally Closed or Normally Open
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### IEC 61508 Failure Rates in FIT<sup>1</sup>

Model	Failure Category	$\lambda_{SD}$	$\lambda_{SU}$	$\lambda_{DD}$	$\lambda_{DU}$
327B0/8327G	De-energize To Trip	0	516	0	188
	Energize To Trip	0	86	0	268
	De-energize To Trip w/PVST <sup>2</sup>	511	5	183	5
	Energize To Trip w/PVST	85	1	263	5
327B1, B2, LP, & LP2	De-energize To Trip	0	248	0	188
	Energize To Trip	0	86	0	238
	De-energize To Trip w/PVST	246	2	183	5
	Energize To Trip w/PVST	85	1	233	5
327B3	De-energize To Trip	0	141	0	188
	Energize To Trip	0	86	0	188
	De-energize To Trip w/PVST	145	1	183	5
	Energize To Trip w/PVST	85	1	180	5
327B3(WS)IS	De-energize To Trip	0	174	0	193
	Energize To Trip	0	86	0	234
	De-energize To Trip w/PVST	172	2	188	5
	Energize To Trip w/PVST	85	1	229	5
327A6	De-energize To Trip	0	549	0	214
	Energize To Trip	0	121	0	340
	De-energize To Trip w/PVST	544	5	209	5
	Energize To Trip w/PVST	120	1	334	6

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

<sup>2</sup> PVST = Automated Partial Valve Stroke Test of a final element Device

### 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 13/01-001 R002 V1R3

**Safety Manual:** V9629R8 (or later)