



Certificate / Certificat Zertifikat / 合格証

ASC 1002008 C001

exida hereby confirms that the:

Manual Reset Solenoid Valves

ASCO Numatics

Florham Park, NJ - USA

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 3 (SIL 3 Capable)

Random Capability: Type A, Route 2_H Device

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

Revision 5.1 November 30, 2020

Surveillance Audit Due
November 1, 2023

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.



Brad Rutzbark

Evaluating Assessor

Paul Jones

Certifying Assessor

ASC 1002008 C001

Systematic Capability: SC 3 (SIL 3 Capable)

Random Capability: Type A, Route 2_H Device

PFH/PFD_{avg} 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_H.

IEC 61508 Failure Rates in FIT*

Failure Category	λ_{sd}	λ_{su}	λ_{dd}	λ_{du}
3/2 Tamperproof MRVs, NVR, FT Coil	0	1019	0	302
3/2 Tamperproof MRVs, NVR, LP Coil	0	969	0	302
3/2 High Shock MRVs, NVR, FT Coil	0	914	0	432
3/2 High Shock MRVs, NVR, LP Coil	0	864	0	432
3/2 High Shock MRVs, TSO, FT Coil	0	800	0	487
3/2 High Shock MRVs, TSO, LP Coil	0	800	0	457
Other 3/2 MRVs, NVR, FT Coil	0	1019	0	302
Other 3/2 MRVs, NVR, LP Coil	0	969	0	302
Other 3/2 MRVs, NVR, WBIS Coil	0	1014	0	302

* 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: ASC 10-02-08 R003 V4R1 (or later)

Safety Manual: V9642



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Sellersville, PA 18960

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