



Certificate / Certificat Zertifikat / 合格証

EAS 1911145 C001

exida hereby confirms that the:

DX PST with HRT 7

**Topworx Emerson Automation Solutions
Louisville, KY
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 1_H Device

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

Safety Function:

The Valve Controller will move the associated actuator and valve to the designed safe position per the final element design 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

The manufacturer may use the mark:



Revision 2.1 May 23, 2024
Surveillance Audit Due
April 1, 2027



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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.

Model Designation	Description
DXP/S-SH*	2 Switches
DXP/S-SS*	4 Switches

IEC 61508 Failure Rates in FIT*

Configuration	λ_{SD}	λ_{SU}	λ_{DD}	λ_{DU}
Single 302 Pilot Solenoid, w/521 Spool Valve	0	384	0	250
Dual 302 Pilot Solenoids, w/521 Spool Valve	0	180	0	323
3rd Party Solenoid, 1oo1 architecture	0	56	0	2
3rd Party Solenoid, 1oo2 architecture	0	192	0	2
3rd Party Solenoid, 2oo2 architecture	0	9	0	5

* 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: EAS 19/11-145 R002 V2R2 (or later)

Safety Manual: ES-08436-1

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80 N Main St
Sellersville, PA 18960