



Certificate / Certificat Zertifikat / 合格証

EAS 1606010 C002

exida hereby confirms that the:

G Series Scotch Yoke Actuators

Valve Automation Emerson Automation Solutions

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

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

Revision 4.1 January 19, 2024

Surveillance Audit Due
January 1, 2026

Safety Function:

The actuator will move the actuator/valve combination 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.



Evaluating Assessor

Certifying Assessor

EAS 1606010 C002

Systematic Capability: SC 3 (SIL 3 Capable)

Random Capability: Type A, Route 2_H Device

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*

Application (Pneumatic)	λ_{SD}	λ_{SU}	λ_{DD}	λ_{DU}
Spring Return	0	218	0	427
Double Acting / Single Piston	0	0	0	550
Double Acting / Double Piston	0	0	0	865
Adder for Damper	0	0	0	85
Application (Hydraulic)	λ_{SD}	λ_{SU}	λ_{DD}	λ_{DU}
Spring Return	0	121	0	415
Double Acting Single Piston	0	0	0	470
Double Acting – Single Piston, w/HO	0	0	0	580
Double Acting – Double Piston,	0	0	0	640
Adder for Damper	0	0	0	85

* 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 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 16/06-010 R003 V4R1

Safety Manual: ES 47 Rev D or later

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Sellersville, PA 18960