Certificate / Certificat
Zertifikat / 合格証

ERD 1012069 C001

exida hereby confirms that the:

Type OSE Slam Shut Valve

Emerson Process Management
Regulator Technologies, Inc.
China

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 Element

SIL 2 @ HFT=0; SIL 3 @ HFT = 1; Route 2_H

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

Safety Function:

The Slam Shut 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 8.1 April 25, 2024
Surveillance Audit Due
April 1, 2027

ANAB
ANSI National Accreditation Board
ACCREDITED
ISO/IEC 17065
PRODUCT CERTIFICATION BODY
#1004

exida Certification

Jack Gao
Evaluating Assessor

Desmond Lee
Certifying Assessor

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Systematic Capability: SC 3 (SIL 3 Capable)

Random Capability: Type A Element

SIL 2 @ HFT=0; SIL 3 @ HFT = 1; Route 2_H

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

Type OSE Slam Shut Valve

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 element meets *exida* criteria for Route 2_H.

BODY SIZE NPS(DN)	END CONNECTION STYLE	MECHANISM BOX	MANOMETRIC SENSING DEVICE TYPE		
1(25)	NPS 1 and 2, NPT ASME CL125 FF ASME CL250 RF	BM1 BM2	BMS1 BMS2	162	Diaphragm
2(50)				71	
3(80)					
4(100)				27	Piston
6(150)				17	
1(DN25)	NPS 1 and 2, NPT ASME CL150 RF ASME CL300 RF ASME CL600 RF			236	Bellows
2(DN50)				315	
3(DN80)					
4(DN100)					
6(DN150)					
8(DN200)					
10(DN250)					
Options:					
Explosion-proof switch					
Non-explosion-proof limit switch					
Electrovalve - Must meet the requirements of IEC 61511, Part 1, Para 11.5 to be used in a safety system					
Additional manometric device for extra pressure sensing					

IEC 61508 Failure Rates in FIT (FIT = 1 failure / 10^9 hours)

Component / Configuration	λ_S	λ_D
Type E Valve & OS2 Box, Full Stroke, Clean Service	166	441
Type E Valve & OS2 Box, TSO, Clean Service	65	1196
Type E Valve & OS2 Box, Full Stroke, Severe Service	123	746
Type E Valve & OS2 Box, TSO, Severe Service	96	2116
Piston 017 & 027 - OPSO	192	53
Piston 017 & 027 - UPSO	168	78
Piston 017 & 027 - OUPSO	168	79
Diaphragm 071 - OPSO	122	30
Diaphragm 071 - UPSO	97	55
Diaphragm 071 - OUPSO	97	57
Diaphragm D162 - OPSO	63	26
Diaphragm D162 - UPSO	38	50
Diaphragm D162 - OUPSO	38	52
Bellows 236 & 315 - OPSO	671	20
Bellows 236 & 315 - UPSO	646	45
Bellows 236 & 315 - OUPSO	646	47
Manual Operator	22	0

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: ERD 23/12-091 R001 V1 R1 (or later)

Safety Manual: D103499X012 Type OSE Slam Shut Valve

80 N Main St
Sellersville, PA 18960