



# 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.

The manufacturer  
may use the mark:



Revision 6.0 Dec 6, 2017  
Surveillance Audit Due  
January 1, 2021

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 Element**

**SIL 2 @ HFT=0; SIL 3 @ HFT = 1; Route 2<sub>H</sub>**

**PFH/PFD<sub>avg</sub> 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.



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



*Deymond Lee*  
Evaluating Assessor

*Stevan J. Chase*  
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<sub>H</sub>**

**PFH/PFD<sub>avg</sub> 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.

BODY SIZE NPS(DN)	END CONNECTION STYLE	MECHANISM BOX	MANOMETRIC SENSING DEVICE TYPE		
1(25)	NPS 1 and 2, NPT CL125B FF CL250B RF	BM1 BM2	BMS1 BMS2	162	Diaphragm
2(50)				71	
3(80)				27	Piston
4(100)				17	
6(150)	NPS 1 and 2, NPT CL150 RF CL300 RF CL600 RF			236	Bellows
1(DN25)				315	
2(DN50)					
3(DN80)					
4(DN100)					
6(DN150)					
8(DN200)					
10(DN250)					
Options:					
Explosion-proof switch					
Non-explosion-proof limit switch					
Solenoid - Must be exida certified to be used in a safety system					
Additional manometric device for extra pressure sensing					

**IEC 61508 Failure Rates in FIT\***

Component / Configuration	λ <sub>S</sub>	λ <sub>D</sub>
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	55
Piston 017 & 027 - UPSO	168	78
Piston 017 & 027 - OUPSO	168	79
Diaphragm 071 - OPSO	122	32
Diaphragm 071 - UPSO	97	55
Diaphragm 071 - OUPSO	97	57
Diaphragm D162 - OPSO	63	28
Diaphragm D162 - UPSO	38	51
Diaphragm D162 - OUPSO	38	52
Bellows 236 & 315 - OPSO	671	22
Bellows 236 & 315 - UPSO	646	45
Bellows 236 & 315 - OUPSO	646	47
Manual Operator	22	0

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

**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:** ERD 10/12-069 R003 V3,R1

**Safety Manual:** D103499X012 Type OSE Slam Shut Valve

Type OSE Slam Shut Valve

