



# Certificate / Certificat Zertifikat / 合格証

MIT 1211024 C003

*exida* hereby confirms that the:

## Globe Control Valves

### PSV Mitech Control Valve (Pty) Ltd Johannesburg, Gauteng - RSA

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<sub>H</sub> Device**

**PFD<sub>AVG</sub> and Architecture Constraints  
must be verified for each application**

#### Safety Function:

The Globe Valve will move to the designed safe position per the actuator design 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:



Valid until February 1, 2018  
Revision 1.0 January 23, 2015



ANSI Accredited Program  
PRODUCT CERTIFICATION  
#1004



Evaluating Assessor

Certifying Assessor

MIT 1211024 C003

**Systematic Capability: SC 3 (SIL 3 Capable)**

**Random Capability: Type A, Route 2<sub>H</sub> Device**

**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. This device meets *exida* criteria for Route 2<sub>H</sub>.

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

Globe Control Valve – Clean Service	$\lambda_{SD}$	$\lambda_{SU}$	$\lambda_{DD}$	$\lambda_{DU}$
Full Stroke	0	0	0	521
Tight Shut-Off	0	0	0	1256
Open on Trip	0	168	0	353
Full Stroke with PVST†	0	0	168	353
Tight Shut-Off with PVST	0	0	168	1088
Open on Trip with PVST	166	2	168	185
Globe Control Valve – Severe Service	$\lambda_{SD}$	$\lambda_{SU}$	$\lambda_{DD}$	$\lambda_{DU}$
Full Stroke	0	0	0	943
Tight Shut-Off	0	0	0	2405
Open on Trip	0	329	0	614
Full Stroke with PVST	0	0	281	663
Tight Shut-Off with PVST	0	0	281	2124
Open on Trip with PVST	326	3	281	333

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

† PVST = Partial Valve Stroke Test of a final element Device

SIL Verification:

The Safety Integrity Level (SIL) of an entire Safety Instrumented Function (SIF) must be verified via a calculation of 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: MIT 12-11-024 R004 V1 R1  
 Safety Manual: MIT4.4.6.25.1



64 N Main St  
 Sellersville, PA 18960