



# Certificate / Certificat Zertifikat / 合格証

DEZ 1406094 C001

*exida* hereby confirms that the:

## **KSV Severe Service Knife Gate Valve**

**DeZurik Canada, Inc.  
Cambridge, ON Canada**

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<sub>H</sub> Device**

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

### **Safety Function:**

The 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.

Revision 2.0 September 28, 2017

Surveillance Audit Due  
October 1, 2020



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



Evaluating Assessor

Certifying Assessor

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

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

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

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

Failure Category	Failure Rate (FIT)			Failure Rate w/PVST (FIT)		
	Close on Trip		Open on Trip	Close on Trip		Open on Trip
	Full Stroke	Tight-Shutoff		Full Stroke	Tight-Shutoff	
Fail Safe Detected	0	0	0	0	0	146
Fail Safe Undetected	0	0	146	0	0	0
Fail Dangerous Detected	0	0	0	141	141	141
Fail Dangerous Undetected	395	1498	249	254	1357	108
No Effect	1147	44	1147	1147	44	1147

\* 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 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** DEZ Q14-06-094 R004 V1R1

Safety Manual: D11035



80 N Main St  
Sellersville, PA 18960

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Knife Gate Valve**