



Certificate / Certificat Zertifikat / 合格証

DEZ 1406094 C003

exida hereby confirms that the:

KUL Urethane Lined 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_H Device

**PFH/PFD_{avg} 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

DEZ 1406094 C003

Systematic Capability: SC 3 (SIL 3 Capable)

Random Capability: Type A, Route 2_H Device

PFH/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*

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	40
Fail Safe Undetected	0	0	40	0	0	0
Fail Dangerous Detected	0	0	0	90	90	90
Fail Dangerous Undetected	209	729	169	120	640	80
No Effect	579	59	579	579	59	579

* FIT = 1 failure / 10⁹ 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_{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: DEZ Q14-06-094 R004 V1R1

Safety Manual: D11037



80 N Main St
Sellersville, PA 18960

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