



Certificate / Certificat Zertifikat / 合格証

ITT 1907101 C001

exida hereby confirms that the:

ITT Valve with Advantage 2.1 Actuator

ITT

Lancaster, PA - USA

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

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

Revision 1.1 November 6, 2020

Surveillance Audit Due
October 1, 2023

Safety Function:

The Actuator will move the Valve 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.



ISO/IEC 17065
PRODUCT CERTIFICATION BODY
#1004



Brad Hitchcock

Evaluating Assessor

[Signature]

Certifying Assessor

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Systematic Capability: SC 3 (SIL 3 Capable)**Random Capability: Type A, Route 2_H Device****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*

Configuration	λ_{SD}	λ_{SU}	λ_{DD}	λ_{DU}
Close on Trip – Spring Return	0	494	0	327
Tight Shut-Off – Spring Return	0	494	0	610
Open on Trip – Spring Return	0	514	0	307
Close on Trip – Double Acting	0	0	0	679
Tight Shut-Off – Double Acting	0	0	0	962
Open on Trip – Double Acting	0	20	0	659

* FIT = 1 failure / 10⁹ hours

SIL Verification:

The Safety Integrity Level (SIL) of an entire Safety Instrumented Function (SIF) must be verified via a calculation of 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: ITT 19/07-101 R002 V1 R3 (or later)

Safety Manual: Safety Manual ADV 2_1

