

The manufacturer
may use the mark:



Reports:

BRA 07/12-19 R007 V1 R1
Assessment Report

BRA 07/12-19 R002 V1 R3
FMEDA Report

Validity:

This assessment is valid for
the Series 7/8000, Triad,
S85, F15/F30 & RF15/RF30
Ball Valves

This assessment is valid until
April 1, 2013.

Revision 1.0 March 31, 2010



Certificate / Certificat Zertifikat / 合格証

BRA 071219 C002

exida hereby confirms that the:

**Flow-Tek Series 7/8000, Triad, S85,
F15/F30 & RF15/RF30 Ball Valves**

**Flow-Tek
Houston, Texas - USA**

Has been assessed per the relevant requirements of:

IEC 61508 Parts 1, 2

and meets requirements providing a level of integrity to:

Systematic Integrity: SIL 3 Capable

Random Integrity: Type A Device

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

Safety Function:

The Ball 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.



Product Assessor

Auditor

BRA 071219 C002

Systematic Integrity: SIL 3 Capable

Random Integrity: Type A Device

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

Series 7/8000, Triad,
S85, F15/F30 &
RF15/RF30 Ball Valves

Flow-Tek
Houston, TX- USA

SIL 3 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 without "prior use" justification by end user or diverse technology redundancy in the design.

IEC 61508 Failure Rates in FIT*

Application	λ_{SD}	λ_{SU}	λ_{DD}	λ_{DU}
Full Stroke, Clean Service	0	884	0	483
Tight Shut-Off, Clean Service	0	18	0	1349
Open to Trip, Clean Service	0	1029	0	338
Full Stroke with PVST, Clean Service	0	884	204	279
Tight Shut-Off with PVST, Clean Service	0	18	204	1145
Open to Trip with PVST, Clean Service	0	1029	204	134

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 subsystem must be checked to assure compliance with minimum hardware fault tolerance (HFT) requirements.

* FIT = 1 failure / 10⁹ hours



Form	Version	Date
C61508	2.20	Feb 2010