Certificate / Certificat
Zertifikat / 合格証

CAM 1511061 C002

exida hereby confirms that the:

Trunnion Mounted Ball Valves

CAMTECH Manufacturing FZCO.
Jebel Ali Free Zone, Dubai - UAE

Has been assessed per the relevant requirements of:

IEC 61508 : 2010 Parts 1-2

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 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.

The manufacturer may use the mark:

Revision 4.1 July 18, 2025
Surveillance Audit Due
February 17, 2028

ANSI National Accreditation Board
ACCREDITED
ISO/IEC 17065
PRODUCT CERTIFICATION BODY
#1004

Evaluating Assessor

Certifying Assessor

Certificate / Certificat / Zertifikat / 合格証

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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

Trunnion Mounted Ball Valves Models BAFBT, BARBT, BTFBT & BTRBT

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.

Versions:

Valve Configuration	Models	Sizes	Pressure Class
Trunnion Mounted Ball Valve, Full & Reduced Bore	BTFBT, BTRBT, BAFBT, BARBT	2" – 56"	150 – 900 CL
		2" – 48"	1500 CL
		2" – 24"	2500 CL
		2 1/16" to 7 1/16"	2000 PSI to 15000 PSI

IEC 61508 Failure Rates in FIT*

Application/Device/Configuration	λ_{SD}	λ_{SU}	λ_{DD}	λ_{DU}
Full Stroke, Clean Service	0	0	0	554
Tight Shut-Off, Clean Service	0	0	0	1122
Open on Trip, Clean Service	0	134	0	419

* FIT = 1 failure / 10^9 hours

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: CAM15/11-061 R003 V4R2 (or later)

Safety Manual: CAM-TS-0046-17-07/25

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Sellersville, PA 18960