# Certificate / Certificat
# Zertifikat / 合格証

CAM 1511061 C001

*exida* hereby confirms that the:

## Floating Ball Valve

## 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 4.0 February 28, 2025
Surveillance Audit Due
March 15, 2028

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

exida Certification

Evaluating Assessor

Certifying Assessor

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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**

**Floating Ball Valves Models BAFBF & BARBF**

### 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 |
|---|---|---|---|
| Floating Ball Valve, Full & Reduced Bore | BAFBF, BARBF | 2" – 6" | 150 – 300 CL |

**IEC 61508 Failure Rates in FIT***

| Application/Device/Configuration | $\lambda_{SD}$ | $\lambda_{SU}$ | $\lambda_{DD}$ | $\lambda_{DU}$ |
|---|---|---|---|---|
| Full Stroke, Clean Service | 0 | 0 | 0 | 409 |
| Tight Shut-Off, Clean Service | 0 | 0 | 0 | 1145 |
| Open on Trip, Clean Service | 0 | 146 | 0 | 263 |

* 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 V4R1 (or later)

**Safety Manual:** CAM-TS-0045 Rev 01 February 2025

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