

**IEC 61508 Functional Safety**

**Holder** : GUOCHENG VALVE GROUP CO., LTD  
Hesan Industry Zone, Dong Ou Street, Yongjia County, Zhejiang Province, China

**Manufacturer** : GUOCHENG VALVE GROUP CO., LTD  
Hesan Industry Zone, Dong Ou Street, Yongjia County, Zhejiang Province, China

**Requirements and Standard(s)** : IEC 61508 Parts 1-7:2010

**Product description** : Ball Valves

**Type/Model(s)** : Q867F Series

**Systematic Capability** : SIL 3 Capable @ HFT = 0

**Random Integrity** : Type A Element, Route 2<sub>H</sub>  
PFD<sub>AVG</sub> and architecture constraints must be verified for each application

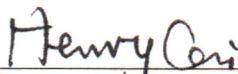
**Report No.** : 086-03-011-08542

**Date of Expiry** : 11/04/2029

**SWISS APPROVAL TECHNISCHE BEWERTUNG S.A.** as a Third Party Certification Body, hereby confirms that the above mentioned products meets the relevant requirements providing a level of integrity.

The product has met manufacturer design process requirements of Safety Integrity Level. 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.

- This Certificate is issued in conjunction with the above mentioned Report and reflects findings during assessment in time and place only for the product and configuration described hereby and does not release buyer and/or seller from their contractual responsibilities.
- All modifications to the Technical File should be first submitted to our Company to ensure further validity of this attestation.

  
Evaluating Assessor  
Simon Jiang



  
on behalf of Company  
Tzaferis Meletis

# CERTIFICATE of Compliance

## IEC 61508 Functional Safety

Cert. No. : 086-03-026-01247

Date of issue : 17/04/2024

### Annex I: Specification

#### Version overview

Ball Valves	Q867F Series; DN 15-1600, PN 6-420, working temp. -196°C~425°C; Connection type: welding, thread; Seal type: soft seal, metallic seal.
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Acceptable environmental constraints and design lifetime for the product are stated in the Safety Manual. These elements must be checked for each integration of the product.

The certified Safety Function(s) of the above product is the following:

- SIF: The ball valve will move to the designed safe position within the specified safety time.
- The mode of operation is 'Low Demand Mode'.

#### IEC 61508 Failure rate

Application	$\lambda_{SD}$	$\lambda_{SU}$	$\lambda_{DD}$	$\lambda_{DU}$
Ball Valve Q867F Series w/PVST*	0	1.43E-07	6.51E-08	1.63E-08
Ball Valve Q867F Series no PVST	0	1.43E-07	0	8.13E-08

\*PVST - Partial Valve Stroke Test

Note: The Safety Integrity Level of the safety function using the above product shall be calculated to take into account the characteristics of the complete system supporting the safety function.