



STATEMENT OF CONFORMITY

Certificate No.:
10000473956-PA-DNV-IND

Project Nr:
PRJN-268365-2021-PA-IND

Validity:
15, December 2021 to 14, December 2024

This certificate consists of 4 pages

This is to certify that the Functional Safety Capability of
Ball Valve

as per table shown in Page 2 of this certificate

Manufactured by:

Intervalve Poonawalla Ltd.

UNIT II, S.NO.32B, HADAPSAR INDUSTRIAL ESTATE PUNE - 411013

has on a voluntary basis been assessed and found to confirm to the Functional safety standards and sub- clauses:

IEC 61508:2010 Parts 1 to 7

The above products and its associated data contained herein can be considered for use in the design of safety functions up to and including

SIL 3

When used in accordance with the scope and conditions of this certificate.

The Safety Integrity Level (SIL) relates to the complete safety System, not the individual elements, therefore this certificate only demonstrates the capability of the product to be implemented into a safety system of a required integrity level as defined above.

Further details are given in the following pages

Place and date: Chennai
15.12.2021

Check Validity

For the issuing office:
DNV Business Assurance India Pvt Ltd

Hariharan Sundareswara Iyer
Manager- Product Assurance

Lack of fulfilment of conditions as set out in the Certification Agreement may render this Certificate invalid.

Issuing office: DNV Business Assurance India, G.S.T. Road "ROMA", No. 10, Chennai, India Tel: 0 4443980800., www.dnv.com

Certificate history:

Revision	Description	Issue Date
0.0	Original Certificate	2021-12-15

Products covered by this Statement:

Product Name	Ball Valve
Product types & size	1. Floating Ball Valve 2 way/ 3 way – ½”-12” 2. Trunnion Mounted Ball Valve – 2 way 2”-30” and 3 way 2”-12”

Applied Standards:

IEC 61508:2010 Parts 1 to 7

Product Details:

Safety function under consideration: As per SIL Safety Case Report SC268365-01

Architectural constraints: HFT: 1

Random Hardware Failure Rates (FIT): As per below Table 3 & 4

Table 3: Field Experience Data

Product	Working Hours from	Working Hours until	Cumulated Working hours	Total Failure Hours
Ball Valves	8.4.2014	31.8.2021	8142439440	1726

Table 4: PFD Calculation using Field Experience Data

Product	Cumulated working hours	Dangerous Failures considered	Dangerous undetected failure rate	PFD _{avg} (On Low Demand mode)
Ball Valves	8142439440	1726	2.12 E-07	9.3E-04 for HFT=0 9.4E-05 for HFT=1



DNV

Certificate No.: 10000473956-PA-DNV-IND
Place and date: Chennai, 15, December 2021
Revision No.: 0.0

Hardware Safety Integrity Compliance ^[1]	Route 2 _H
Systematic Safety Integrity Compliance Capability ^[2]	NA as per clause 7.4.2 of IEC 61508 Part 2 Systematic SC 3
Overall SIL Capability Achieved ^[3]	SIL 3 (for HFT=1)/SIL 2 (for HFT=0)

^[1] According to IEC 61508:2010 Part 2 Clause 7.4.2, 7.4.3 & 7.4.4

^[2] According to IEC 61508:2010 Part 4 Clause 3.5.9

^[3] Lowest SIL indicated

Information supporting the failure data

1. Product ID : As per Page 2
2. Functional specification : As per SIL Safety Case Report SC268365-01
3. Environmental Limits : NA
4. Lifetime / Replacement Limits : 20 Years
5. Maintenance Requirements : As detailed in Safety manual
6. Diagnostic Coverage : NA
7. Diagnostic Test interval : NA
8. Evidence of use in similar conditions : NA

Lack of fulfilment of conditions as set out in the Certification Agreement may render this Certificate invalid.

Issuing office: DNV Business Assurance India, G.S.T. Road "ROMA", No. 10, Chennai, India Tel: 0 4443980800., www.dnv.com



Certificate No.: 10000473956-PA-DNV-IND
Place and date: Chennai, 15, December 2021
Revision No.: 0.0

Conditions of Safe Use

1. User shall comply with the detail contained in the manufacturer user manual as well as the information provided above.
2. Selection of this equipment for use in a safety application shall only be made by a competent person.
3. The collection of any data associated with this type for equipment during operations shall be collected and reported to the manufacturer
4. The product should be tested at regular intervals to identify any malfunctions in accordance with the product safety manual.

Conditions of Certificate

1. This certificate is based on the assessment carried out by DNV as recorded in assessment reports; SIL Safety Case SC268365-01
2. Printed copies of the certificates are not a controlled version.
3. This certificate is based on the contract, (Project No. PRJN-268365-2021-PA-IND), agreed between DNV and Intervolve Poonawalla Ltd.
4. Intervolve Poonawalla Ltd. shall ensure the Management of Functional Safety is maintained.
5. DNV shall be notified of any changes to the product that may impact on this certificate during the period of validity.
6. The use of this certificate is subject to the 'certificate agreement' for Functional Safety Certification.
7. This certificate remains the property of DNV and shall be returned upon request.

The following may render this statement invalid:

- Changes in the quality system affecting production.
- Periodical audits not held within the allowed time window.

END OF STATEMENT

Lack of fulfilment of conditions as set out in the Certification Agreement may render this Certificate invalid.

Issuing office: DNV Business Assurance India, G.S.T. Road "ROMA", No. 10, Chennai, India Tel: 0 4443980800., www.dnv.com