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IEC 61508 Functional Safety Capability Statement

BEL Valves Ltd, 7, 1/16” Slab Gate Valve (T36122-V)

Manufacturer:	BEL Valves Ltd 11 Glasshouse St, St Peters, Newcastle upon Tyne, NE6 1BS
Product:	Slab Gate Valve
Model:	T36122-V
Application:	Low Demand Mode Safety Instrumented Function
Safety Function:	Ability to isolate process fluid by valve maintaining a closed position (Sensing, Logic and additional final element subsystems not part of this analysis)
Applied standard:	IEC 61508 Ed2 2010 Parts 1-3 & IEC 61511 Ed1
Systematic Capability:	Suitable up to SIL 2
Applicable report:	ERM Report: 0773680_FM001 rev. 1
Assessment Route:	Not Applicable (Refer to Note 1)
Hardware Fault Tolerance:	0
Type:	A
Application restrictions:	None

Model No.	λDU (/hr)	λDD (/hr)	λS (/hr)	SFF	SIL AC (HFT = 0)	SIL SC
7, 1/16” Slab Gate Valve (T36122-V)	9.2E-08	0.0E+00	0.0E+00	0%	Not Assessed (**Note 1**)	SC 2

Note 1: It should be noted that the reliability assessment was conducted on the valve only. Without an actuator, the valve has no motive fail position and hence the Safe Failure Fraction (SFF) for the valve is 0%. To determine the overall SIL for the valve assembly, the complete assembly, inclusive of actuator and valve will need to be assessed.

SIL AC (Architectural Constraints): Represents the maximum allowable SIL of each hardware element, assuming Hardware Fault Tolerance (HFT) = 0.

SIL SC (Systematic Capability): A measure of confidence (expressed on a scale of SC 1 to SC 4) of the confidence that the systematic safety integrity of a device meets the requirements of the specified SIL.

It should be noted that for a device to meet a specified SIL, SIL AC and SIL SC of the device needs to both be met. In addition to this, the required Probability of Failure on Demand (PFD) value for the complete Safety Instrumented Function (SIF) needs to adhere to the SIL PFDavg ranges.

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IMPORTANT: It should be noted that this assessment considers only the BEL Valves Ltd 7, 1/16" Slab Gate Valve (T36122-V) and does not include confirmation of the response time of the device(s).

Note 2: The SIL of a complete SIF (sensor, logic solver and final element subsystems) must be verified to calculate the required PFD / Probability of Failure per Hour (PFH), considering any redundancy, Proof Test Interval (PTI), Proof Test Coverage (PTC), Mission Time and Mean Time To Restoration (MTTR) for all elements included in the SIF. Each subsystem should be verified to ensure compliance with the minimum HFT requirements.

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