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IEC 61508 Functional Safety Capability Certificate

Imtex Controls Ltd Position monitor for actuated valve systems

Manufacturer:	Imtex Controls Ltd Tenth Avenue, Deeside, Flintshire CH5 2UA, UK
Product:	Position monitor for actuated valve systems
Models:	IQ, AQ, DQ, SRX, SRA, SLR and Type-V
Application:	Low Demand Mode Safety Instrumented Function
Safety Function:	Limit switch: Change electrical state upon mechanical initiation. Potentiometer: ≤ ±10% resistive drift through FSD Inductive sensor: ≤ ±5% current drift through FSD
Applied standard:	IEC 61508 Ed2 2010 Parts 1-3 & IEC 61511 Ed1
Systematic Capability:	Suitable up to SIL 3
Applicable report:	Technis report T917 Issue 2.0
Assessment Route:	2_H
Hardware Fault Tolerance:	0
Type:	A
Application restrictions:	The equipment must be installed, maintained and operated in accordance with Imtex Functional Safety Manual FSM002 v2.21

Random hardware failure rates in FIT[1]				
Limit switch type	**λ_S**	**λ_D**	**λ_{DD}**	**λ_{DU}**
Micro	16	16	0	16
Reed	123	123	0	123
Inductive	22	22	0	22
Transmitter type	**λ_S**	**λ_D**	**λ_{DD}**	**λ_{Du}**
Potentiometer	0	353	0	353
Inductive	0	114	0	114

IMPORTANT: It should be noted that this assessment considers only the Imtex position monitoring sensing elements. A random hardware failures assessment must be conducted for the entire safety function for each application configuration as per the appropriate Safety Requirements Specification.

[1] FIT = 1 failure / 10^9 hours

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The stated Imtex Controls Ltd position transmitters have been assessed and are considered capable for use in a low demand mode safety function up to (and including) SIL 3 with regards to systematic capability, random hardware failures and architectural constraints.

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