



ENGINEERING SAFETY CONSULTANTS

The Global Provider of Functional Safety Expertise and Technical Consultancy

Random Hardware Reliability and Systematic Assessment Certificate

Functional Safety of Safety-Related Programmable Electronic Systems

The **Imtex Controls Ltd, Matic Camtorc (Series) Valve Actuator** has been assessed and is considered capable for use in a low demand Safety Function up to (and including) SIL 3 capability with regards to systematic, random hardware failures and architectural constraints.

As this device only forms part of a final element, the random failure rate SIL integrity must be verified for each application configuration.

The assessment was based on the assumptions, data provided, and recommendations given in:

- **Technis Report: T452 Issue 3.0** – (SFF assessment);
- **Technis Report: T918 Issue 1.0** – (Current PFD assessment);
- **Engineering Safety Consultants Ltd Report: B134_FSA001 rev. 6** - (Systematic);
- **Renewal Letter from Imtex Controls Ltd, signed by John Rolton, Company Functional Safety Engineer, Dated 09th August 2022.**

The product was assessed against the following failure mode:

- **Single solenoid valve, fail to release.**

The assessment was carried out to determine compliance with IEC 61508 (2010 Edition) with regards to:

- Random Hardware Failures against IEC 61508:
 - Predicted failure rate $\leq 0.3E-06$ per hour;
 - PFD = $1.3E-03$ with no partial stroke testing and an annual proof test interval;
 - PFD = $5.1E-04$ with fortnightly partial stroke testing and an annual proof test interval.
- Architectural Constraints Type A:
 - No partial stroke test, SFF >60% to <90% (simplex configuration up to SIL 2);
 - With partial stroke test, SFF >90% to <99% (simplex configuration up to SIL 3 and assuming valve actuator is used in clean service).
- Systematic against IEC 61511, prior use, suitable up to SIL 3.

IMPORTANT: It should be noted that this assessment does not include confirmation of the response time of the device. For response times (along with any relevant assumptions) reference should be made to the Safety Manual of each device and the total SIF response time **MUST** be compared against the process safety time for the specific application.

Managing Director: Simon Burwood
Member of IEC 61508 (MT61808-1-2) & IEC 61511 (MT61511) Maintenance Committees
Assessment Date: February 2013
Renewal Date: September 2022, valid to September 2024
Certificate: B134_CT001 rev. 7

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