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Certificate of Conformity to IEC 61508 Safety Integrity Level (SIL) 2

Functional Safety of Safety-Related Programmable Electronic Systems

Manufacturer: Tyco Fire & Security GmbH (TFSG), Victor Von Bruns-Strasse 21 ,8212 Neuhausen am Rheinfall, Schaffhausen, Switzerland

The **TFSG, FV300 Flame Detector range** has been assessed and the variants listed below are considered capable for use in a SIL 2 low demand Safety Function with regard to random failure rates.

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

- **Failure Mode, Effects, and Diagnostics Analysis for the FV300 Family of Flame Detectors Report: FV300 Family of Flame Detectors Issue 1.3;**
- **Failure Mode, Effects, and Diagnostics Analysis for the FV300 Family of Flame Detectors Analysis Spreadsheet: ToSira FV300 FMEDA For Report 1p2 - 16Dec10 1945 25C.xlsm;**
- **Renewal letter from TFSG, signed by T.A. James, Special Hazards Team Leader, dated: 19/10/2020.**

The assessment was carried out against failure modes where the detector was unable to detect and signal alarms to the control function. The assessment applies to the following variants:

- FV311S – Non-camera, screw-terminal back box (516.300.006);
- FV311SC – With PAL camera, screw-terminal back box (516.300.008);
- FV311SC-N – With NTSC camera, screw-terminal back box (516.300.007);
- FV312S – Non-camera, remote cable back box (516.300.055);
- FV312SC – With PAL camera, remote cable back box (516.300.057);
- FV312SC-N – With NTSC camera, remote cable back box (516.300.056).

The assessment was carried out to determine compliance with IEC 61508 with regards to:

- Random Hardware Failures (Predicted PFD <9E-03) based on a proof test carried out at least once a year and a Mean Time To Repair (MTTR) of 24 hours;
- Architectural Constraints (Low demand, Type B, SFF >90 <99%).

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.

Chairman: Kenneth G L Simpson
Member of the IEC 61508 committee
Assessment Date: November 2015
Renewal Date: October 2020, valid to October 2022
Certificate: D053_CT002 rev. 3

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