



Certificate of Conformity to IEC 61508 Safety Integrity Level (SIL) 1/2 in Terms of Random Hardware Performance Requirements

Functional Safety of Safety-Related Programmable Electronic Systems

The **Hochiki Europe (UK) Ltd. SLR-E-IS Photoelectric Smoke Detector for use in fire detection and alarm systems** has been assessed and is considered capable for use in a low demand Safety Function up to SIL 1/2 with regard to random failure rates. The assessment was based on the assumptions, data provided and recommendations given in:

ESC Ltd report D004_SV004 rev.3.

The system was assessed against the following failure mode:

- Failure to detect smoke and annunciate alarm condition.

Subject to the following requirements for complying with **SIL 2**:

- Manual test considered a diagnostic function;
- Manual function tests are carried out frequently (i.e. weekly) and suitably documented, reviewed and audited.

The assessment was carried out to determine random hardware compliance with IEC 61508 with regards to **SIL 1**:

- Random Hardware Failures (Predicted PFD <5.0E-04 (assuming a 1 year proof test and average repair time of 168 hrs);
- Architectural Constraints (Type A, SFF <60%).

The assessment was carried out to determine random hardware compliance with IEC 61508 with regards to **SIL 2**:

- Random Hardware Failures (Predicted PFD <5.0E-04 (assuming a 1 year proof test and average repair time of 168 hrs);
- Architectural Constraints (Type A, SFF >60% <90%).

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Member of the IEC61508 committee

Assessment Date: August 2014

Renewal Date: September 2016, valid to September 2018

Certificate: D004_CT004 rev.3



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