



ENGINEERING SAFETY CONSULTANTS

The Global Provider of Functional Safety Expertise and Technical Consultancy

Certificate of Conformity to IEC 61508 Safety Integrity Level (SIL) 1/2

Functional Safety of Safety-Related Programmable Electronic Systems

The **Hochiki Europe (UK) Ltd, DCD-1E-IS Heat Detector** for use in fire detection and alarm systems which can be used with the mounting base YBN-R/4 (IS), has been assessed and is considered capable for use in a low demand Safety Function up to SIL 1 or SIL 2, with regard to random failure rates and architectural constraints.

The following product variants are also covered under this certificate, with the product labels being the only difference:

- DCD-1E-IS(WHT);
- DCD-1E-IS/SIL.

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

- **ESC Ltd Report: D004_SV003 rev. 4;**
- **Renewal letter from Hochiki Europe (UK) Ltd, signed by Richard Anderson, Approvals & Certification Engineer, dated: 17/08/2020.**

The system was assessed against the following failure mode:

- Failure to detect heat 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 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 Constraint (Type A, SFF $<60\%$).

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

- Random Hardware Failures (Predicted PFD $<2.0E-04$ (assuming a 1-year proof test and average repair time of 168 hrs));
- Architectural Constraint (Type A, SFF $>60\%$, $<90\%$).

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: August 2014
Renewal Date: October 2020, valid to October 2022
Certificate: D004_CT003 rev. 7

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