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

Functional Safety of Safety-Related Programmable Electronic Systems

The **SEFI, LEONIS / DC520 Fire Control Panel (FCP)** has been assessed and is considered capable for use in a low demand Safety Function with a SIL requirement of up to (and including) SIL 2 with regards to systematic, random hardware failures and architectural constraints.

The assessment was carried out to determine compliance with IEC 61508 route 1_H (2010 Edition) with regards to:

- Random Hardware Failure (Predicted PFD as shown in Table below) with a Mean Down Time (MDT) of 168 hours, a Proof Test Interval (PTI) of 1 year (8760 hours), a Proof Test Coverage (PTC) of 100% or 95% and an Overhaul Interval of 15 years (131400 hours);
- Random Hardware Failure with Achieved PFH = 9.8E-08;
- Random Hardware Failure with Achieved λ_{DD} = 2.1E-06;
- Random Hardware Failure with Achieved λ_{DU} = 9.8E-08;
- Architectural Constraint (Type B, Predicted SFF = 95.9%);
- Systematic Capability of SC 2.

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

- **Engineering Safety Consultants Ltd Report: H187_FM001 rev. 3;**
- **ESC Report: H187_SM001 rev. 2;**
- **ESC Report: H187_SM002 rev. 2;**
- **ESC Report: H187_SM003 rev. 2;**
- **Renewal Letter from SEFI, signed by Aymen Nahdi, Product Manager, Dated 16th June 2022.**

The product was assessed against the following failure mode:

- **Failure to transmit output signal (via relay output) on acquisition of input signal (alarm – fire detection or detection device offline).**

The system assessed comprises the following modules/sub-elements:

- M10R;
- MPE;
- ELOT;
- BPS;
- ELFP.



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The assessment results are as follows:

Device	PFD Target (20% of SIL 2 band)	Proof Test Coverage (PTC)	Predicted PFD	Predicted SFF	HFT	Type	Predicted Overall SIL
LEONIS / DC520 Fire Control Panel	2.00E-03	100%	6.1E-04	95.9%	0	B	2
		95%	9.1E-04	95.9%	0	B	2

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: August 2020

Renewal Date: June 2022, valid to June 2024

Certificate: H187_CT001 rev. 5

Page 2 of 2

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