



ENGINEERING SAFETY CONSULTANTS

The Global Provider of Functional Safety Expertise and Technical Consultancy

Random Hardware Reliability Certificate

Functional Safety of Safety-Related Programmable Electronic Systems

The **Apollo Fire Detectors Ltd, Sounder and Beacon** has been assessed and is considered capable for use in a low demand Safety Function up to (and including) SIL 1, with respect to random hardware failures and architectural constraints.

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

- **Technis Report No. T617 Issue 3.0;**
- **Renewal Letter from Apollo Fire Detection Ltd for products with no changes, signed by Billy Blakeman, Head of Conformance, Dated 23rd August 2022.**

The certified device can only achieve SIL 1 if used in conjunction with a fire alarm control panel that supports all elements of the Apollo protocol, including full fault diagnostic.

The product covered by this certificate should carry the applicable Technic report number.

The system assessed comprises the following module:

- 55000 – 847 CD SIL Relay Interface Unit with feedback function

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

- Random Hardware Failures (providing a minimum proof test interval of one year and a repair time of a detected failure of 24 hours has a PFD of $<1.5E-04$), and;
- Architectural Constraints (Type B, 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.

Managing Director: Simon Burwood

Assessment Date: February 2012

Renewal Date: September 2022, valid to September 2024

Certificate: A191_CT005 rev. 6

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