



ENGINEERING SAFETY CONSULTANTS

The Global Provider of Functional Safety Expertise and Technical Consultancy

Certificate of Conformity to IEC 61508 / IEC 61511 Safety Integrity Level (SIL) 1/2

Functional Safety of Safety-Related Programmable Electronic Systems

The **Apollo Fire Detectors Ltd, Fire Detector** has been assessed and is considered capable for use in a low demand Safety Function up to SIL 1 or SIL 2, in terms of random failure rate, architectural constraints and systematic capabilities.

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

- **Technis Report No. T617 Issue 2.0;**
- **ESC Ltd Report: E046_PU001 rev. 5;**
- **Renewal Letter from Apollo Fire Detection Ltd, signed by Chris Ellis, Head of Compliance, dated 22nd September 2020.**

The certified device can only achieve SIL 1 if used in simplex or SIL 2 if two are used in a duplex configuration, the two interface units are configured so that any output command is sent to both interface units and either working will operate the required output device.

The certified device can only achieve SIL 1 or SIL 2 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 have the Technis and ESC reports referred to in the Safety Manual.

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

- Probability of Failure on Demand (PFD) with proof test interval of one year and a repair time of a detected failure of 24 hours against IEC 61508 (2010 Edition) and IEC 61511 (2016 Edition);
- Architectural Constraints (SFF) for Type B equipment against IEC 61508 (2010 Edition);
- Systematic Capability against IEC 61511 (2016 Edition), prior use, suitable up to SIL 2.

Product Assessed	PFD	SFF
55000-774mar Marine Din Rail Input / Output Unit	1.5E-04	60% to < 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: May 2016
Renewal Date: October 2020, valid to October 2022
Certificate: E046_CT005 rev. 4

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UKAS-accredited ISO9001 certification
body

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