IEC 61508 Safety Integrity Level Capability Certificate

Functional Safety of Safety-Related Programmable Electronic Systems

The **Apollo Fire Detectors Ltd, Fire Detectors** have been assessed and are considered capable for use in a low demand Safety Function up to (and including) SIL 2, with regards to random hardware failures, architectural constraints and systematic capability.

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

- **Technis Report No. T618 Issue 3.0;**
- **Environmental Resources Management Ltd Report: E046_PU002 rev. 6;**
- **Renewal Letter from Apollo Fire Detection Ltd for products with no changes, signed by Billy Blakeman, Head of Conformance, Dated 23rd August 2022;**
- **Re-addition of 45681-393SIL to certificate Letter from Apollo Fire Detection Ltd, signed by signed by Billy Blakeman, Head of Product Legislation & Compliance, Dated 20th October 2023.**

The certified devices can only achieve SIL 2 if used in conjunction with a fire alarm control panel that supports all elements of the Apollo protocol, including full fault diagnostics.

The Safety Manual for each product covered by this certificate should provide a reference to the ERM assessment report: E046_PU002 rev. 6.

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

- SIL 2 with a HFT = 0 via Route 1_H;
- Architectural Constraints (SFF) for Type B equipment against IEC 61508 (2010 Edition);
- Systematic Capability of SIL 2 capability against IEC 61508 (2010 Edition) via Route 2_S.

Note 1: The SIL of a complete SIF (sensor, logic solver and final element subsystems) must be verified to calculate the required PFD / PFH, considering any redundancy, Proof Test Interval (PTI), Proof Test Coverage (PTC), Mission Time and Mean Time To Restoration (MTTR) for all elements included in the SIF. Each subsystem should be verified to ensure compliance with the minimum HFT requirements.

Products Assessed	λ_S (/hr)	λ_{DD} (/hr)	λ_{DU} (/hr)	SFF
45681-393SIL Discovery Sounder Beacon Base with Isolator	1.0E-09	4.7E-07	1.1E-08	97.65%
45681-394mar Discovery Marine Sounder Beacon Base	1.0E-09	4.7E-07	1.1E-08	97.65%

IMPORTANT: It should be noted that this assessment does not include confirmation of the response time of the devices. 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.

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Assessment Date: May 2016
Renewal Date: September 2022, valid to September 2024
Certificate: E046_CT004 rev. 11

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