



# ENGINEERING SAFETY CONSULTANTS

The Global Provider of Functional Safety Expertise and Technical Consultancy

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

### **Functional Safety of Safety-Related Programmable Electronic Systems**

The **Patol Ltd LDM-519-DIM Digital Linear Heat Detector Interface** has been assessed and is considered capable for use in a low demand Safety Function up to SIL 2 with regard to random failure rate and architectural constraint.

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

- **ESC Ltd Report: C074\_SV001\_(3.0);**
- **Renewal Letter from Patol Ltd, signed by Mark Lewis, Product Development Engineer, dated 16<sup>th</sup> July 2020.**

The system was assessed against the following failure mode:

- A fault causing a failure of the fire detection unit to identify a genuine high temperature alarm.

The system assessed comprises the following modules:

- LDM-519-DIM module (Part No. 700-441);
- Linear heat detecting cable:
  - 700-070 Digital LHDC. Alarm temperature 70°C, max ambient 45°C;
  - 700-090 Digital LHDC. Alarm temperature 90°C, max ambient 70°C;
  - 700-140 Digital LHDC. Alarm temperature 140°C, max ambient 110°C;
  - 700-180 Digital LHDC. Alarm temperature 180°C, max ambient 150°C;
  - 700-071 Digital LHDC. Alarm temperature 70°C, max ambient 45°C;
  - 700-091 Digital LHDC. Alarm temperature 90°C, max ambient 70°C;
  - 700-141 Digital LHDC. Alarm temperature 140°C, max ambient 110°C;
  - 700-181 Digital LHDC. Alarm temperature 180°C, max ambient 150°C.

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

- Random Hardware Failures (Predicted PFD <3.7E-04 (assuming a 1-year proof test and average repair time of 168 hrs);
- Architectural Constraints (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.

Managing Director: Kenneth G L Simpson  
Member of the IEC 61508 committee  
Original Assessment Date: June 2013  
Renewal Date: July 2020, valid to July 2022  
Certificate: C074\_CT001 rev. 6

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