



ENGINEERING SAFETY CONSULTANTS

The Global Provider of Functional Safety Expertise and Technical Consultancy

Certificate of Conformity to IEC 61508 Safety Integrity Level (SIL) 2 in Terms of Random Hardware Performance Requirements

Functional Safety of Safety-Related Programmable Electronic Systems

The **Talentum Intrinsically Safe (IS) Dual / Triple Infrared Flame Detector** **Manufactured by Fire Fighting Enterprises (FFE) Limited** has been assessed and is considered capable for use in a SIL 2 low demand Safety Function with regard to random failure rates. The assessment was based on the assumptions, data provided and recommendations given in:

- ESC Ltd report C127_SV001_(2.0).

The system was assessed against the following failure mode:

- Failure to annunciate flame condition via Fire relay;
- Failure to annunciate flame condition via 4-20mA output.

Subject to the following requirements detailed in report C127_SV001_(2.0).

- The fault relay is utilised by the logic solver sub-system to detect and alarm on a fault condition;
- The flame detectors will be configured with the automatic test option.

The system assessed comprises the following modules:

- Dual IR (IS, standard blue enclosure)- 016571;
- Triple IR (IS, standard blue enclosure) – 016579.

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

- Random Hardware Failures (Predicted PFD <3.0E-04 (assuming a 1 year proof test and average repair time of 168 hrs.).
- Architectural Constraints (Type B, SFF >90%).

Managing Director: Kenneth G L Simpson
Member of the IEC61508 committee
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Certificate: C127_CT002_(2.0)



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