



## ENGINEERING SAFETY CONSULTANTS

*The Global Provider of Functional Safety Expertise and Technical Consultancy*

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

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

The **Talentum 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 (standard blue enclosure) - 016581
- Dual IR (stainless steel enclosure) - 016501
- Dual IR (Exd & IECEx, standard red Exd enclosure) - 016511
- Dual IR (Exd & IECEx, stainless steel Exd enclosure) - 016541
- Triple IR (standard blue enclosure) - 016589
- Triple IR (stainless steel enclosure) - 016509
- Triple IR (Exd & IECEx, standard red Exd enclosure) - 016519
- Triple IR (Exd & IECEx, stainless steel Exd enclosure) – 016549

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, >90%).

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Member of the IEC61508 committee  
Assessment Date: December 2013  
Certificate: C127\_CT003\_(2.0)



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