



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

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

The **NSC Ltd, Fire Alarm Control Panel** has been assessed and is considered capable for use in a low demand Safety Function for SIL 1 or SIL 2 capability with regards to systematic, random failure rates and architectural constraints.

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

- **ESC Ltd Report: F177\_FM001 rev. 4.**

The product was assessed against the following failure mode:

- Ability to provide an audible / visual annunciation locally (or to remote connected devices) upon a fire condition detected by the field fire detection devices.

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

- Random Hardware Failures (30% of SIL 2 range) (refer to Table below);
- Architectural Constraint (Type B, SFF >90%, <99%), HFT = 0 with the use of the Remote Unit;
- Architectural Constraint (Type B, SFF >60%, <90%), HFT = 0 without the use of the Remote Unit;
- Systematic SIL 2 capability against IEC 61511 Prior Use.

Device	$\lambda_s$ (/hr)	$\lambda_{DU}$ (/hr)	$\lambda_{DD}$ (/hr)	SFF	Achieved PFD	Achieved SIL
Solution F1 Fire Alarm Control Panel (Version A – Using Remote Unit)	1.9E-08	4.7E-07	5.2E-06	92%	2.9E-03	2
Solution F1 Fire Alarm Control Panel (Version B – Using Remote Unit)	1.9E-08	5.0E-07	5.5E-06	92%	2.8E-03	2
Solution F1 Fire Alarm Control Panel (Version A – Without Remote Unit)	1.9E-08	6.2E-07	5.1E-06	89%	3.6E-03	1
Solution F1 Fire Alarm Control Panel (Version B – Without Remote Unit)	1.9E-08	6.6E-07	5.3E-06	89%	3.4E-03	1

It should be noted that the SIL capability of any remote units used in conjunction with the Solution F1 Fire Alarm Control Panel are not covered within this certificate.

**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  
 Assessment Date: February 2020, valid to February 2022  
 Certificate: F177\_CT001 rev. 2

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 body  
 Reg: 12Q12086

**ENGINEERING SAFETY CONSULTANTS LTD**  
 Tuition House  
 27-37 St George's Road Wimbledon London SW19 4EU UK  
 Telephone/Fax: +44 (0)20 8542 2807  
 E-Mail: [info@esc.uk.net](mailto:info@esc.uk.net) Web: [www.esc.uk.net](http://www.esc.uk.net)  
 Registered in England and Wales: 7006868  
 Registered Office: 27-37 St George's Road Wimbledon London SW19 4EU