



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 **Starkstrom, Advanced SATS System** has been assessed and is considered capable for use in a high demand Safety Function up to (and including) SIL 2 with regards to systematic, random hardware failures and architectural constraints.

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

- **Engineering Safety Consultants Ltd Report: D128_SV001 rev.1;**
- **Engineering Safety Consultants Ltd Report: D128_SV002 rev.1;**
- **Engineering Safety Consultants Ltd Report: D128_SV003 rev.2;**
- **Renewal Letter from Starkstrom, signed by Jeff Radford, Director of Regulatory Affairs, Dated 27th June 2022.**

The product was assessed against the following failure mode:

- **Ability to changeover to the backup power supply in 500ms when the primary power supply has dropped below by more than 10% from the nominal.**

The system assessed comprises the following modules:

- Socomec ATyS M Single and Three Phase Modular Automatic Transfer Switch;
- Starkstrom Automatic Transfer Switch Controller produced by Woka.

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

- Random Hardware Failure Achieved PFH <8.0E-08 per hour;
- Random Hardware Failure with Achieved $\lambda_{DD} = 1.4E-06$;
- Random Hardware Failure with Achieved $\lambda_{DU} = 7.4E-08$;
- Architectural Constraint (Type B, SFF >90%, <99%);
- SIL 2 systematic requirements.

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: Simon Burwood

Member of IEC 61508 (MT61808-1-2) & IEC 61511 (MT61511) Maintenance Committees

Assessment Date: May 2017

Renewal Date: June 2022, valid to June 2024

Certificate: D128_CT001 rev. 6

ENGINEERING SAFETY CONSULTANTS LTD
is ISO9001-certified by Global Group, itself a
UKAS-accredited ISO9001 certification
body

Reg: 12Q12086

ENGINEERING SAFETY CONSULTANTS LTD

2nd Floor, Exchequer Court, 33 St. Mary Axe,
London, EC3A 8AA UK

Telephone: +44 (0)20 8542 2807

E-Mail: info@esc.uk.net Web: www.esc.uk.net

Registered in England and Wales: 7006868

Registered Office: 33 St. Mary Axe, London, EC3A 8AA