



## ENGINEERING SAFETY CONSULTANTS

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

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### ***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 SIL 2 with regards to systematic and random hardware failure rate requirements.

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

- ESC Ltd Report: D128\_SV001 rev.1;
- ESC Ltd Report: D128\_SV002 rev.1;
- ESC Ltd Report: D128\_SV003 rev.2;
- Renewal letter from Starkstrom, stating that there have been no changes to design, operational intent or to any components, signed by Jeff Radford, Head of Special Projects, dated 11<sup>th</sup> May 2020.

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 with regards to:

- Random Hardware Failure (Predicted failure rate <8.0E-08 per hour);
- 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: Kenneth G L Simpson  
Member of the IEC 61508 committee  
Assessment Date: May 2017  
Renewal Date: May 2020, valid to May 2022  
Certificate: D128\_CT001 rev. 4

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