



## 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 **Base2, Communications Controller Unit 3 (CCU3) Profibus Interface Unit** has been assessed and is considered capable for use in a low demand Safety Function up to SIL 2, with regard to random failure rate and architectural constraint.

The function of the CCU3 Profibus Interface Unit is to provide the CCU3 with the Profibus communications functionality. The Profibus interface is implemented using the module detailed in this certificate.

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

- **ESC Ltd Report: F023\_FM001 rev.2;**
- **Renewal Letter from Base2, signed by Grant Hodson, General Manager, dated 7th August 2018.**

The product was assessed against the following failure mode:

- Failure to process data error free between host CCU and a remote Profibus unit / master.

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

- Random Hardware Failure (Predicted failure rate  $<6.0E-05$  per year, assuming a 1 year proof test and average repair time of 168 hrs);
- Architectural Constraint (Type B, SFF  $>90\%$ ,  $<99\%$ ).

It should be noted that the CCU3 Profibus Interface Unit was assessed against 10% of the SIL 2 band, therefore, a complete assessment covering the proof test and repair strategy and PFD contribution of other sub-systems must be carried out to justify any PFD claim for the complete safety function.

This assessment has been conducted assuming that the device will be used in a Low Demand System.

Managing Director: Kenneth G L Simpson

Member of the IEC 61508 committee

Original Assessment Date: April 2016

Assessment Date: August 2018, valid to August 2020

Certificate: F023\_CT001 rev. 4

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