



ENGINEERING SAFETY CONSULTANTS

The Global Provider of Functional Safety Expertise and Technical Consultancy

Certificate of Conformity to IEC 61508 Safety Integrity Level (SIL) 2 in respect of Random Hardware Failure Rate and Architectural Constraints

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:

- **Engineering Safety Consultants (ESC) Ltd Report: F023_FM001 rev. 2;**
- **Renewal Letter stating no changes from Base₂, signed by Grant Hodson, General Manager, Dated: 15th July 2021.**

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 (2010 Edition) with regards to:

- Random Hardware Failure (Predicted PFD <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.

IMPORTANT: It should be noted that this assessment does not include confirmation of the response time of the devices. 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: April 2016

Renewal Date: July 2021, valid to July 2023

Certificate: F023_CT001 rev. 5

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