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IEC 61508 Functional Safety Capability Statement

$Base_2$, Communications Controller Unit 3 (CCU3) Profibus Interface Unit

Manufacturer:	$Base_2$
	Unit 3/28 Pritchard Road, Virginia QLD 4014, Australia
Product:	Interface Unit
Model:	Communications Controller Unit 3 (CCU3) Profibus Interface Unit

Application:	Low Demand Mode Safety Instrumented Function
Safety Function:	Upon failure to process data error free between host CCU and a remote Profibus unit / master, action is initiated (Sensing, Logic and additional final element subsystems not part of this analysis)
Applied standard:	IEC 61508 Ed2 2010 Parts 1-3
Systematic Capability:	Not Assessed
Applicable report:	ERM Report: D153_FM001 rev. 4
	ERM Report: F023_FM001 rev. 4
	ERM Report: J114_FM001 rev. 3

Assessment Route:	1_H
Hardware Fault Tolerance:	0
Type:	B
Application restrictions:	None

Model No.	λDU (/hr)	λDD (/hr)	λS (/hr)	SFF	SIL AC (HFT = 0)
CCU3 Profibus Interface Unit	3.7E-09	2.5E-07	0.0E+00	98.5%	SIL 2

SIL AC (Architectural Constraints): Represents the maximum allowable SIL of each hardware element, assuming Hardware Fault Tolerance (HFT) = 0.

It should be noted that for a device to meet a specified SIL, SIL AC and SIL SC of the device needs to both be met. In addition to this, the required Probability of Failure on Demand (PFD) value for the complete Safety Instrumented Function (SIF) needs to adhere to the SIL PFDavg ranges.

IMPORTANT: It should be noted that this assessment considers only the $Base_2$ Communications Controller Unit 3 (CCU3) Profibus Interface Unit and does not include confirmation of the response time of the device(s).

The Base2 Communications Controller Unit 3 (CCU3) Profibus Interface Unit has been assessed and is considered capable for use in a low demand mode safety function up to (and including) SIL 2 with regards to random hardware failures and architectural constraints.

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Note 1: The SIL of a complete SIF (sensor, logic solver and final element subsystems) must be verified to calculate the required PFD / Probability of Failure per Hour (PFH), considering any redundancy, Proof Test Interval (PTI), Proof Test Coverage (PTC), Mission Time and Mean Time To Restoration (MTTR) for all elements included in the SIF. Each subsystem should be verified to ensure compliance with the minimum HFT requirements.

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