

IEC 61508 Functional Safety Capability Statement

Hochiki Europe (UK) Ltd Short Circuit Isolator

Manufacturer:	Hochiki Europe (UK) Ltd Gillingham Business Park, Grosvenor Rd, Gillingham ME8 0SA
Product:	Short Circuit Isolator
Model:	YBN-R/3 (SCI), YBN-R/3(WHT)-SCI, YBN-R/3(SCI)/SIL, YBN-R/3(WHT)-SCI/SIL, YBN-R/3(SCI)/RWY, YBN-R/3(WHT)-SCI/RWY
Application:	Low Demand Mode Safety Instrumented Function
Safety Function:	Upon detection of dangerous failure of sensor in loop, action is initiated via the Short Circuit Isolator (Additional sensor, Logic and final element subsystems not part of this analysis)
Applied standard:	IEC 61508 Ed2 2010 Parts 1-3
Systematic Capability:	Not Assessed
Applicable report:	Environmental Resources Management Ltd Report: C003_SV003 rev. 8
Assessment Route:	1 _H
Hardware Fault Tolerance:	0
Type:	A
Application restrictions:	Host system will be configured to detect and alarm on loss of communications to the detector (loss of response to polls)

Model No.	λ (/hr)	λ_{DU} (/hr)	λ_{DD} (/hr)	λ_S (/hr)	SFF
YBN-R/3 (SCI)	5.3E-08	5.3E-09	4.8E-08	0.0E+00	90%

IMPORTANT: It should be noted that this assessment considers only the Hochiki Europe (UK) Ltd, Short Circuit Isolator. It does not cover opening and closing time requirements and a random hardware failures assessment must be conducted for the entire safety function for each application as per the appropriate Safety Requirements Specification.

The Hochiki Europe (UK) Ltd, Short Circuit Isolator 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.

Note 1: The SIL of a complete SIF (sensor, logic solver and final element subsystems) must be verified to calculate the required Probability of Failure on Demand (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.



Document number: C003_CT005 rev. 8

Dated: 25-Nov-24

Expiry date: 25-Nov-26

Chantal Sealey FS Eng (TÜV Rheinland)
Assessor
chantal.sealey@erm.com

Simon Burwood FS Expert (TÜV Rheinland)
Assessment Authority
simon.burwood@erm.com