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IEC 61508 Functional Safety Capability Statement

Tyco Fire & Security GmbH (TFSG), Manual Call Points with Short Circuit Isolators

Manufacturer:	Tyco Fire & Security GmbH (TFSG) Victor Von Bruns-Strasse 21, 8212 Neuhausen am Rheinfall, Schaffhausen, Switzerland
Product:	Manual Call Point with Short Circuit Isolator
Model:	MCP820, MCP820M, MCP830 and MCP830M

Application:	Low Demand Mode Safety Instrumented Function
Safety Function:	Upon manual call points inability to detect and process alarms over the addressable system, action is initiated (Logic solver and final element subsystems not part of this analysis)
Applied standard:	IEC 61508 Ed2 2010 Parts 1-3
Systematic Capability:	Not Assessed
Applicable report:	MCP Range of Manual Call Points With Short Circuit Isolator, Review Report Iss1 by Thorn Security, FMEDA 514.800.609/610/611/612, Dated 21/11/2013 MCP Range of Manual Call Points With Short Circuit Isolator, FMEDA Iss1 by Thorn Security, Dated 21/11/2013

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)
MCP820 Indoor Addressable Manual Call Point with Short Circuit Isolator	1.7E-07	1.6E-06	4.4E-07	93%	SIL 2
MCP820M Indoor Addressable Manual Call Point with Short Circuit Isolator (Marine Version)	1.7E-07	1.6E-06	4.4E-07	93%	SIL 2
MCP830 Outdoor Addressable Manual Call Point	1.7E-07	1.6E-06	4.4E-07	93%	SIL 2

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Model No.	λDU (/hr)	λDD (/hr)	λS (/hr)	SFF	SIL AC (HFT = 0)
with Short Circuit Isolator					
MCP830M Outdoor Addressable Manual Call Point with Short Circuit Isolator (Marine Version)	1.7E-07	1.6E-06	4.4E-07	93%	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 required SIL that the 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 PFD ranges.

IMPORTANT: It should be noted that this assessment considers only the Tyco Fire & Security GmbH (TFSG), Manual Call Points with Short Circuit Isolators. 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 Tyco Fire & Security GmbH (TFSG), Manual Call Points with Short Circuit Isolators have been assessed and are 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 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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