Certificate / Certificat

Zertifikat / 合格証

MPK 1710145 C001

exida hereby confirms that the:

FDS303 Multi Spectrum IR Flame Detector

Micropack (Engineering) Ltd.
Portlethen, Aberdeen
Scotland

Has been assessed per the relevant requirements of:

IEC 61508 : 2010 Parts 1-7

and meets requirements providing a level of integrity to:

Systematic Capability: SC 2 (SIL 2 Capable)

Random Capability: Type B Element

SIL 2 @ HFT=0; Route 2_H

PFD_{avg} and Architecture Constraints must be verified for each application

Safety Function:

The Flame Detector will sense the presence of flame via multi-spectrum IR measurements and signal the 0 – 20 mA or relay output to indicate a potentially dangerous condition.

Application Restrictions:

The unit must be properly designed into a Safety Instrumented Function per the Safety Manual requirements.

The manufacturer may use the mark:

Revision 1.0 August 22, 2018
Surveillance Audit Due
September 1, 2021

Evaluating Assessor

Certifying Assessor

ANSI Accredited Program
ISO/IEC 17065
PRODUCT CERTIFICATION BODY
#1004

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Systematic Capability: SC 2 (SIL 2 Capable)

Random Capability: Type B Element

SIL 2 @ HFT=0; Route 2_H

PFD_{avg} and Architecture Constraints must be verified for each application

FDS303 Multi Spectrum IR Flame Detector

Systematic Capability:

The Product has met manufacturer design process requirements of Safety Integrity Level (SIL) 2. These are intended to achieve sufficient integrity against systematic errors of design by the manufacturer.
A Safety Instrumented Function (SIF) designed with this product must not be used at a SIL level higher than stated.

Random Capability:

The SIL limit imposed by the Architectural Constraints must be met for each element. This Device meets *exida* criteria for Route 2_H.

IEC 61508 Failure Rates in FIT*

Product	λ_{SD}	λ_{SU}	λ_{DD}	λ_{DU}
FDS303	0	42	544	117

* FIT = 1 failure / 10^9 hours

SIL Verification:

The Safety Integrity Level (SIL) of an entire Safety Instrumented Function (SIF) must be verified via a calculation of PFH/PFD_{avg} considering redundant architectures, proof test interval, proof test effectiveness, any automatic diagnostics, average repair time and the specific failure rates of all products included in the SIF. Each element must be checked to assure compliance with minimum hardware fault tolerance (HFT) requirements.

The following documents are a mandatory part of certification:

Assessment Report:

MPK 17-10-145 R001 V1R0 IEC 61508 Assessment Report - FDS 303

Safety Manual:

3303.0001 FDS303 Safety and Technical Manual

80 N Main St
Sellersville, PA 18960