Certificate / Certificat
Zertifikat / 合格証

CRO 2210133 C004

exida hereby confirms that the:

Fgard H2 Multi Spectrum IR Hydrogen Flame Detector

Crowcon

Abingdon, Oxfordshire - UK

Has been assessed per the relevant requirements of:

IEC 61508 : 2010 Parts 1-3

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 September 28, 2023
Surveillance Audit Due
October 1, 2026

ANSI National Accreditation Board
ACCREDITED
ISO/IEC 17065
PRODUCT CERTIFICATION BODY
#1004

exida Certification

Evaluating Assessor

Certifying Assessor

Certificate / Certificat / Zertifikat / 合格証

CRO 2210133 C004

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

FGard H2 Multi Spectrum IR Hydrogen 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 element meets *exida* criteria for Route 2_H.

IEC 61508 Failure Rates in FIT[1]

Application/Device/Configuration	λ_{SD}	λ_{SU}	λ_{DD}	λ_{DU}
FGard H2	0	42	544	117

[1] 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 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:

CRO 22-10-133 R004 V1R0 IEC 61508 Assessment Report

Safety Manual:

FD-AC-XX Safety and Technical Manual – Rev 1.0 or later

80 N Main St
Sellersville, PA 18960