Certificate / Certificat

Zertifikat / 合格証

DET 090204 C001

exida hereby confirms that the:

Pointwatch Eclipse PIRECL
Infrared Hydrocarbon Gas Detector

Detector Electronics Corporation
Minneapolis, MN USA

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

PFH/PFD$_{avg}$ and Architecture Constraints
must be verified for each application

Safety Function:
The Pointwatch Eclipse IR gas detector will sense hydrocarbon gas and signal the 4 – 20 mA or relay output to indicate the potentially dangerous condition.

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

_____
Evaluating Assessor

_____
Certifying Assessor

The manufacturer may use the mark:

CERTIFIED · IEC 61508 · *exida* · SIL 2 CAPABLE

Revision 5.1 June 29, 2023
Surveillance Audit Due
July 1, 2026

ANAB
ANSI *National Accreditation Board*
A C C R E D I T E D
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

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

Pointwatch Eclipse Infrared Hydrocarbon Gas 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[1]

PIRECL Output Options (with or without FR Option)	λ_{SD}	λ_{SU}	λ_{DD}	λ_{DU}
Analog Output	0	46	1655	123
Relay Output	106	222	1335	130
Add-on FITs when PIRECL is used with UD20 Universal Display	0	54	36	19

[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 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: DET 09/02-04 R002 V4R2 (or later)

Safety Manual: 95-8630-5.2 (or later)

exida®

80 N Main St
Sellersville, PA 18960

T-013, V7R2