Certificate / Certificat

Zertifikat / 合格証

DET 12-01-022 C001

exida hereby confirms that the:

FlexSonic™ Acoustic Detector including AC100 Sensor and ATX10 Transmitter

Det-Tronics

Minneapolis, MN - USA

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 1_H

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

Safety Function:

The Acoustic Detector will sense acoustic levels present and signal the 4-20mA output to indicate the potentially dangerous condition. The Acoustic Detector magnetic switches, HART, RS485, and SD card interface options are interference free

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 2.0 December 5, 2022
Surveillance Audit Due
September 1, 2025

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

Evaluating Assessor

Certifying Assessor

Certificate / Certificat / Zertifikat / 合格証

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Systematic Capability: SC 2 (SIL 2 Capable)

Random Capability: Type B Element

SIL 2 @ HFT=0; Route 1_H

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FlexSonic™ Acoustic Detector including AC100 Sensor and ATX10 Transmitter

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.

IEC 61508 Failure Rates in FIT*

Model Number	λ_{SD}	λ_{SU}	λ_{DD}	λ_{DU}	SFF
Acoustic Detector Analog Output (consists of one Model AC100 Sensor and one Model ATX10 Transmitter)	0	125	1925	97	95.5%

* 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: DET 12-01-022 R001 V2R0

Safety Manual: 95-8658-1.2, June 2013 and later

80 N Main St
Sellersville, PA 18960