exida®

The manufacturer may use the mark:

CERTIFIED · IEC 61508 · SIL 3 CAPABLE · exida

Revision 1.1 October 3, 2019
Surveillance Audit Due
November 1, 2022

IAF — MEMBER OF MULTILATERAL RECOGNITION ARRANGEMENT

ANSI ACCREDITED

ISO/IEC 17065
PRODUCT CERTIFICATION BODY
#1004

Certificate / Certificat

Zertifikat / 合格証

CIC 1908135 C001

exida hereby confirms that the:

PrevEx 670 Series Flammability Analyzer

Control Instruments Corp.
Fairfield, NJ - 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 3 (SIL 3 Capable)

Random Capability: Type B Element

SIL 2 @ HFT=0; SIL 3 @ HFT = 1; Route 2_H

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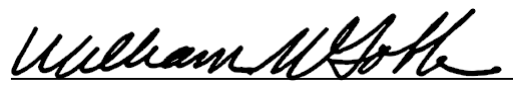
Safety Function:

The PrevEx 670 Series Flammability Analyzer signals when combustible gas or vapor exceeds a configured safe concentration value by de-energizing and opening a set of contacts on the "danger" relay.

Application Restrictions:

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

Evaluating Assessor

Certifying Assessor

Certificate / Certificat / Zertifikat / 合格証

CIC 1908135 C001

Systematic Capability: SC 3 (SIL 3 Capable)

Random Capability: Type A Element

SIL 2 @ HFT=0; SIL 3 @ HFT = 1; Route 2_H

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

**PrevEx 670 Series
Flammability Analyzer**

Systematic Capability:

The product has met manufacturer design process requirements of Safety Integrity Level (SIL) 3. 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*

Application/Device/Configuration	λ_{SD}	λ_{SU}	λ_{DD}	λ_{DU}
PREVEX 670 Series Flammability Analyzer (Relay Output)	351	202	523	273

* 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: CIC 19-08-135 R002 V1 R1

Safety Manual: H7FTA201_Rev0_PrevEx

exida®

80 N Main St
Sellersville, PA 18960

T-002, V5R3