



Certificate / Certificat Zertifikat / 合格証

DET 1607087 C001

exida hereby confirms that the:

FlexVu® Model UD10 with Model CGS

**Detector Electronics Corporation
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 2_H

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

Safety Function:

The UD10 will measure a 4-20mA input signal from the CGS and provide representative alarm status to its 4-20mA and relay outputs within the Safety Accuracy.

The UD10 display and magnetic switches, HART, Modbus, and Foundation Fieldbus options are interference-free.

Application Restrictions:

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



John C Yozallinas
Evaluating Assessor

[Signature]
Certifying Assessor

The manufacturer
may use the mark:



Revision 1.0 June 20, 2017
Surveillance Audit Due
July 1, 2020



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

Certificate / Certificat / Zertifikat / 合格証

DET 1607087 C001

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**

FlexVu® Model UD10
with Model CGS

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*

Device Options	λ_{SD}	λ_{SU}	λ_{DD}	λ_{DU}
UD10-CGS 4-20 output	0	69	2567	1356
UD10-CGS relay output	378	195	2316	1353

* FIT = 1 failure / 10⁹ 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 16-07-087 R003 V1R1

Safety Manual: 95-8668-3.1 or later



80 N Main St
Sellersville, PA 18960