



# Certificate / Certificat Zertifikat / 合格証

AUT 1607087 C002

*exida* hereby confirms that the:

**AutroVu Model AV10 with Model CGS**

**Autronica Fire and Security AS  
Trondheim, Norway**

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<sub>H</sub>**

**PFD<sub>AVG</sub> and Architecture Constraints  
must be verified for each application**

### Safety Function:

The AV10 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 AV10 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

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**Random Capability: Type B Element**

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AutroVu Model AV10  
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<sub>H</sub>.

## IEC 61508 Failure Rates in FIT\*

| Device Options        | $\lambda_{SD}$ | $\lambda_{SU}$ | $\lambda_{DD}$ | $\lambda_{DU}$ |
|-----------------------|----------------|----------------|----------------|----------------|
| AV10-CGS 4-20 output  | 0              | 69             | 2567           | 1356           |
| AV10-CGS relay output | 378            | 195            | 2316           | 1353           |

\* FIT = 1 failure / 10<sup>9</sup> hours

## SIL Verification:

The Safety Integrity Level (SIL) of an entire Safety Instrumented Function (SIF) must be verified via a calculation of PFD<sub>avg</sub> 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



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Sellersville, PA 18960