



Certificate / Certificat Zertifikat / 合格証

MAG 1512025 C001

exida hereby confirms that the:

Eclipse 706GWR Level Transmitter Magnetrol International, Inc. Aurora, IL - USA

The manufacturer
may use the mark:



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

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

Revision 3.1 November 6, 2020
Surveillance Audit Due
July 1, 2022

Safety Function:

The Eclipse 706GWR Level Transmitter will measure level and transmit a corresponding signal within the stated safety accuracy.

Application Restrictions:

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



ISO/IEC 17065
PRODUCT CERTIFICATION BODY
#1004



Evaluating Assessor

Certifying Assessor

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Systematic Capability: SC 3 (SIL 3 Capable)

Random Capability: Type B Element

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

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

Eclipse 706GWR Level Transmitter

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*

Device	λ_{SD}	λ_{SU}	λ_{DD}	λ_{DU}
Model 706-512*-***	0	78	748	61

* 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: MAG 15-12-025 R002 V3 R1 IEC 61508 Assessment

Safety Manual: 57-657.3 Eclipse Model 706 SIL3 Certified Manual or later

NOTE: This product has been tested and approved for use in temperatures down to -55C. See FMEDA report (MAG 15-12-025 R001 V2R1 or later) when using product with temperatures below -40C.



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