



Certificate / Certificat Zertifikat / 合格証

PREI 070902 P0002 C006

exida hereby confirms that the:

9106 HART Transparent Repeater
Product Version 9106-002

PR electronics A/S
Rønne - Denmark

Has been assessed per the relevant requirements of:

IEC 61508 : 2000 Parts 1-7

and meets requirements providing a level of integrity to:

Systematic Capability: SC 3 (SIL 3 Capable)

Random Capability: Type A Device

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

Safety Function:

The 9106 HART transparent repeater isolates 4-20 mA process signals and realizes a ground loop elimination.

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 March 2, 2015



ANSI Accredited Program
PRODUCT CERTIFICATION
#1004



Evaluating Assessor

Certifying Assessor

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Systematic Capability: SC 3 (SIL 3 Capable)

Random Capability: Type A Device

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

9106 HART
Transparent Repeater

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.

9106 Configurations	SIL	λ_{Safe}	λ_{DD}	λ_{DU}
Single active input and active output	SIL2	177	173	41
Single active input and passive output	SIL2	177	174	41
Single passive input and active output	SIL2	164	160	40
Single passive input and passive output	SIL2	165	160	41
Dual active inputs and dual active outputs	SIL3	315	377	11
Dual active inputs and dual passive outputs	SIL3	316	376	11
One passive and one active input and dual active outputs	SIL3	304	363	11
One passive and one active input and dual passive outputs	SIL3	305	363	11

All failure rates are given in FIT (failures / 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: 0709-02C R016 V1R1

Safety Manual: 9106 Safety Manual V1R0



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