



The manufacturer  
may use the mark:



Revision 2.0 March 2, 2015



ANSI Accredited Program  
PRODUCT CERTIFICATION  
#1004

# Certificate / Certificat Zertifikat / 合格証

PREI 070902 P0002 C01.5

*exida* hereby confirms that the:

**Pulse Isolator 9202**  
**Product Version 9202-002**

**PR electronics A/S**  
**Rønede - 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 2 (SIL 2 Capable)**

**Random Capability: Type B Device**

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

Safety Function:

The 9202 – Pulse Isolator provides EX-isolation of digital signals, on/off converter for NAMUR sensors or mechanical switches, between hazardous areas and safe areas.

Application Restrictions:

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



Evaluating Assessor

Certifying Assessor

PREI 070902 P0002 C01.5

**Systematic Capability: SC 2 (SIL 2 Capable)**

**Random Capability: Type B Device**

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

Pulse Isolator 9202

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.

Device	$\lambda_{Safe}$	$\lambda_{DD}$	$\lambda_{DU}$	SF $\lambda_{Total}$
9202 Relay Output	289.7	130.3	46.6	466
9202 Opto Output	275.5	135.6	36.2	447

All failure rates are given in FIT (failures / 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: 0709-02C R003 V1R5

Safety Manual: 9202 Safety Manual V4R0

