



# Certificate / Certificat Zertifikat / 合格証

PREI 070902 P0002 C005

exida hereby confirms that the:

**9116 Universal Converter**  
**Product Version 9116-003**

**PR electronics A/S**  
**Rønede - Denmark**

Has been assessed per the relevant requirements of:

**IEC 61508 : 2010 Parts 1-3**

and meets requirements providing a level of integrity to:

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

**Random Capability: Type B Route 2<sub>H</sub> Device**  
**PFH/PFD<sub>avg</sub> and Architecture Constraints**  
**must be verified for each application**

**Safety Function:**

The 9116 Universal Converter converts various sensor input signals from hazardous areas to a 4..20 mA current output signal. An additional safety related output relay is available.

**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 3.0 August 01, 2024  
Surveillance Audit Due  
August 01, 2027



*J. Koellmann*  
Evaluating Assessor

*[Signature]*  
Certifying Assessor

# 9116 Universal Converter

Product Version 9116-003

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

**Random Capability: Type B Route 2<sub>H</sub> Device**

**PFH/PFD<sub>avg</sub> and Architecture Constraints  
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### 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.

9116 Configuration	$\lambda_S$	$\lambda_{DD}$	$\lambda_{DU}$
Resistance / RTD temperature / TC temperature inputs, Current Output	0	341	50
Resistance / RTD temperature / TC temperature inputs, Relay Output	77	235	70
Current Input, Current Output	0	487	51
Current input, Relay output	167	297	71
Voltage input, Current Output	0	440	64
Voltage input, Relay output	111	379	98

### IEC 61508 Failure Rates in FIT\*

\* 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 PFH/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:** PR 23/12-098 R035 V1R0

**Safety Manual:** 9116 Safety Manual V6R2

