



The manufacturer
may use the mark:



Revision 2.3 March 8, 2024
Surveillance Audit Due
February 1, 2027



Certificate / Certificat Zertifikat / 合格証

PHO 1609035 C001

exida hereby confirms that the:

IOA Pluggable Modules

**Phoenix Contact Development and
Manufacturing Inc.
Harrisburg, PA - USA**

Has been assessed per the relevant requirements of:

IEC 61508 : 2010 Parts 1-2

and meets requirements providing a level of integrity to:

Systematic Capability: SC 3 (SIL 3 Capable)

**Random Capability: Type A, Route 1_H and
Route 2_H Device**

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

Safety Function:

Pass through a Sensor Element signal to, or a Final Element signal from, a Logic Solver Element.

Application Restrictions:

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



Evaluating Assessor

Certifying Assessor

PHO 1609035 C001

Systematic Capability: SC 3 (SIL 3 Capable)**Random Capability: Type A, Route 1_H and
Route 2_H Device****PFD_{avg} and Architecture Constraints
must be verified for each application****IOA Pluggable
Modules****Systematic Capability :**

These products have 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 device meets *exida* criteria for Route 2_H.

Versions:

- IOA PR-DAI/DAO/F/DS/2A/EX
- IOA PR-DAI/DAO/F/DS/0.25A/EX
- IOA FEED-THRU/EX
- IOA AI/AO/BFI/DS/0.5A/EX
- IOA DI/DO/BFI/DS/1.0A/EX

IEC 61508 Failure Rates in FIT¹, Static Applications

Configuration	λ_{SD}	λ_{SU}	λ_{DD}	λ_{DU}	SFF
DAIDAO AI	0	0	14	0	100%
DAIDAO AO DTT	0	14	0	0	100%
DAIDAO DI DTT	0	12	0	2	85.7%
DAIDAO DO DTT	0	14	0	0	100%

¹ 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: PHO 16-09-035 R002 V3 R2

Safety Manual: 01024412 Rev 2



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