



The manufacturer may use the mark:



Valid until December 1, 2018
Revision 1.0 December 18, 2015



ANSI Accredited Program
PRODUCT CERTIFICATION
#1004

Certificate / Certificat Zertifikat / 合格証

COW 1505085 C003

exida hereby confirms that the:

Series A2A Booster

Cowan Dynamics Inc.

Montreal, QC - Canada

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 A, Route 2_H Device

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

Safety Function:

The Booster will provide a 2:1, 3:1, or 4:1 pressure boost ratio.

Application Restrictions:

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



Evaluating Assessor

Certifying Assessor

Series A2A Booster

Certificate / Certificat / Zertifikat / 合格証

MVG 1505085 C003

Systematic Capability: SC 3 (SIL 3 Capable)

Random Capability: Type A, Route 2_H Device

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

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 device meets *exida* criteria for Route 2_H.

IEC 61508 Failure Rates in FIT*

Device	λ_{SD}	λ_{SU}	λ_{DD}	λ_{DU}
A2A Booster	0	0	0	1807

* 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: COW 15/05-085 R002 V1 R1

Safety Manual: : SIL Safety Guide-Series A2A



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T-061, V1R7