



Certificate / Certificat Zertifikat / 合格証

ASH 1207077 C001

exida hereby confirms that the:

A-Series Pressure Switch

Ashcroft Inc.

Stratford, CT - USA

The manufacturer
may use the mark:



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 Element

SIL 1 @ HFT=0; SIL 2 @ HFT = 1; Route 1_H

SIL 2 @ HFT=0; SIL 3 @ HFT = 1; Route 2_H

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

Valid until April 1, 2016

Revision 1.0 April 1, 2013

Safety Function:

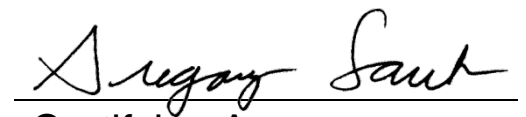
The A-Series Switch will de-energize the associated circuit when the trip pressure is reached. The de-energized switch position is with the NC switch contact open on a high pressure trip, or the NO switch contact open on a low pressure trip.

Application Restrictions:

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




Evaluating Assessor


Certifying Assessor



ANSI Accredited Program
PRODUCT CERTIFICATION
#1004

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A-Series Pressure Switch

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 for each element.

IEC 61508 Failure Rates in FIT*

Single Switch		λ_{SD}	λ_{su}	λ_{DD}	λ_{DU}	SFF
S-1	High Trip	0	26	0	91	22%
	Low Trip	0	88	0	55	62%
S-2	High Trip	0	24	0	70	26%
	Low Trip	0	70	0	51	58%
BV-1	High Trip	0	24	0	160	13%
	Low Trip	0	130	0	81	62%
BV-2	High Trip	0	24	0	173	12%
	Low Trip	0	131	0	93	58%
BV-3	High Trip	0	24	0	178	12%
	Low Trip	0	131	0	98	57%

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 subsystem must be checked to assure compliance with minimum hardware fault tolerance (HFT) requirements.

The following documents are a mandatory part of certification:

Assessment Report: ASH 12/07-077 R002 V1 R1

Safety Manual: I&M009-10210

* FIT = 1 failure / 10⁹ hours



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