



Certificate / Certificat Zertifikat / 合格証

ASC 1807059 C001

exida hereby confirms that the:

Series 141 Advanced Redundant Control System

**ASCO Numatics (India) Pvt Ltd.
Chengalpattu, Tamil Nadu, India**

Have 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 2_H Device

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

Safety Function:

The Series 141 Advanced Redundant Control System (ARCS) will vent the Outlet Pressure within the specified safety time when de-energized.

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 2.1 May 26, 2022
Surveillance Audit Due
January 1, 2025



Evaluating Assessor

Certifying Assessor

ASC 1807059 C001

Systematic Capability: SC 3 (SIL 3 Capable)

Random Capability: Type A, Route 2_H Device

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

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:

Description and Application	
Series 141 ARCS: 1002, 2002, & 2003 Systems with 327 or 307 Series Solenoid Valves, Isolation/Bypass Valve(s) with optional Visual Indicators or Pressure Gauges, and Pressure Switches	De-Energize to Trip

IEC 61508 Failure Rates in FIT¹

ARCS Components ²	λ_{SD}	λ_{SU}	λ_{DD}	λ_{DU}
1002 Assembly incl Bypass Valve	0	183	0	2
2002 or 2003 Assembly incl Bypass or Isolation Valve and Gauges or Indicators	0	20	0	2
327 or 307 Series Solenoid Valve (per SOV)	0	623	0	258
Pressure Switch ³ (per Switch)	0	0	0	0

¹ FIT = 1 failure / 10⁹ hours

² The Systems Total Failure Rate is calculated from the applicable Component Values

³ Annunciation Failures only

SIL Verification:

The Safety Integrity Level (SIL) of an entire Safety Instrumented Function (SIF) must be verified via a calculation of PFH/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: ASC 18/07-059 R002 V2R2 (or later)

Safety Manual: IM-IND-536661 Rev AC (or later)



80 N Main St
Sellersville, PA 18960

Series 141 Advanced
Redundant Control
System