

The manufacturer
may use the mark:



Reports:

RGS 09-10-45 R002 V1 R1
IEC 61508 Assessment
Report

RGS 09/10-45 R001 FMEDA
Report

Validity:

This assessment is valid for
RGS E*3A***0****,
E*38***0****, and
E*318**0**** 3/2 Pilot
Operated and Direct Acting
Solenoid Valves, spring
return.

This assessment is valid until
December 1, 2012.

Revision 1.0 October 12, 2009


exida[®]
Certification S.A.

Certificate / Certificat Zertifikat / 合格証

RGS 091045 C001

exida hereby confirms that the:

**E*3 series 3/2 pilot operated and direct
acting solenoid valves**

**RGS Electro-Pneumatics Ltd
Oswaldtwistle, Lancs UK**

Has been assessed per the relevant requirements of:

IEC 61508 Parts 1, 2

and meets requirements providing a level of integrity to:

Systematic Integrity: SIL 3 Capable

Random Integrity:

For a standalone Valve:

Type A Device: SIL 3 @ HFT=1 / SIL 2 @ HFT=0

**For a Valve used in a final element assembly: SIL
must be verified for the specific application**

Safety Function:

The Valve will move to the designed safe position when de-energized / energized within the specified safety time.

Application Restrictions:

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





Product Assessor



Auditor

RGS 091045 C001

Systematic Integrity: SIL 3 Capable

Random Integrity:

For a standalone Valve:

Type A Device: SIL 3 @ HFT=1 / SIL 2 @ HFT=0

For a Valve used in a final element assembly:

SIL must be verified for the specific application

RGS E*3A**0****, E*38**0****, and E*318**0**** 3/2 Pilot Operated and Direct Acting Solenoid Valves, spring return.

RGS Electro-Pneumatics Ltd. Oswaldtwistle, Lancs UK

SIL 3 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 without "prior use" justification by end user or diverse technology redundancy in the design.

IEC 61508 Failure Rates in FIT*

Device	λ_{SD}	λ_{SU}	λ_{DD}	λ_{DU}	SFF
E*318**00H Spool Valve	0	1843	0	538	77.4%
E*318**00H Spool Valve with automated PVST	504	1339	533	5	99.8%

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.

* FIT = 1 failure / 10^9 hours



Form	Version	Date
C61508	2.10	Nov 2009