

exida[®]

The manufacturer
may use the mark:

Certificate / Certificat
Zertifikat / 認証

FOX 061236 C003

exida hereby confirms that the:

SRD960 Positioner – Shutdown Mode
Hardware Revision 3.5

Foxboro Eckardt GmbH
Stuttgart, Germany

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
For positioner used in final element
assembly, SIL must be also verified
for the application.

Safety Function:

The SRD960 Positioner in Shutdown Mode will vent pressure on a single acting, fail-safe (spring return) pneumatic actuator when the input is below the threshold current level.

Application Restrictions:

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

Reports:

Foxboro 0408-16 R001

FMEDA Report V1 R1

Foxboro 0503-29 R004

FMEDA Report Booster V0
R4

Foxboro 0612-36 R006

Assessment Report V0 R4

Validity:

This assessment is valid for
the SRD960 Positioner used
in Shutdown Mode.

This assessment is valid
until May 30, 2010.

Revision 1.0 May 16, 2007



Stephan Luth

Product Assessor

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Auditor

Form	Version	Date
C61508	1.8	May 2007

SRD960 Positioner

Foxboro Eckardt GmbH, Stuttgart, Germany

Systematic Integrity: SIL 3 Capable

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

Random Integrity, Type A. For positioner used in final element assembly, SIL must be also verified for the application.

Summary for SRD960 as shutdown device, threshold 0,2mA – Type A device, IEC 61508 failure rates

	Failure category	Failure rates [FIT:=10 ⁻⁹ /h]
Pneumatic assembly – Type A	Fail Safe Detected	0
	Fail Safe Undetected	176
	Fail Dangerous Detected	0
	Fail Dangerous Undetected	20
	No Effect	151

Summary for Pneumatic Booster Relay LEXG-F as shutdown device – Type A device, IEC 61508 failure rates

	Failure category	Failure rates [FIT:=10 ⁻⁹ /h]
Pneumatic assembly – Type A	Fail Safe Detected	0
	Fail Safe Undetected	118
	Fail Dangerous Detected	0
	Fail Dangerous Undetected	22
	No Effect	304

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 / 10⁹ hours