

Certificate



SIL/PL
Capability

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ID 0600000000

No.: 968/V 1286.01/22

Product tested	Rack and Pinion Actuators	Certificate holder	Actreg, S.A.U. C/ De l'Energia 15-25, naves 1-2 P.I. Barnasud 08850 Gavá (Barcelona) Spain
Type designation	ADA (Double Acting) ASR (Spring Return)		
Codes and standards	IEC 61508 Parts 1-2 and 4-7:2010		
Intended application	Safety Function: Move an attached valve to its safe position (open or close) The actuators are suitable for use in a safety instrumented system up to SIL 2 (low demand mode). Under consideration of the minimum required hardware fault tolerance HFT = 1 for the complete final element the actuators may be used up to SIL 3.		
Specific requirements	The instructions of the associated Installation, Operating and Safety Manual shall be considered.		

Summary of test results see back side of this certificate.

The issue of this certificate is based upon an evaluation in accordance with the Certification Program CERT FSP1 V1.0:2017 in its actual version, whose results are documented in Report No. 968/V 1286.01/22 dated 2022-08-09. This certificate is valid only for products, which are identical with the product tested.

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Köln, 2022-08-12

Certification Body Safety & Security for Automation & Grid

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Holder: ACTREG S.A.U.
 C/ De l'energia 15-25, naves 1-2,
 P.I. Barnasud
 08850 Gavá (BARCELONA)
 Spain

Product tested: Rack and Pinion Actuators
ADA (Double Acting)
ASR (Actuators Spring Return)
Size: 10, 20, 40, 80, 130, 200, 300, 500, 850, 1200, 1750, 2100, 2500, 4000

Results of Assessment

Route of Assessment		$2_H / 1_S$
Type of Sub-system		Type A
Mode of Operation		Low Demand Mode
Hardware Fault Tolerance	HFT	0
Systematic Capability		SC 3

Move an attached valve to its safe position (open or close)

		ADA		ASR	
Dangerous Failure Rate	λ_D	3.33 E-07 / h	333 FIT	2.38 E-07 / h	238 FIT
Average Probability of Failure on Demand 1001	$PFD_{avg}(T_1)$	1.48 E-03		1.06 E-03	
Average Probability of Failure on Demand 1002	$PFD_{avg}(T_1)$	1.51 E-04		1.07 E-04	

Assumptions for the calculations above: DC = 0 %, $T_1 = 1$ year, MRT = 72 h, $\beta_{1002} = 10$ %

Origin of failure rates

The stated failure rates for low demand are the result of an FMEDA with tailored failure rates for the design and manufacturing process. Furthermore the results have been verified by field-feedback data. Failure rates include failures that occur at a random point in time and are due to degradation mechanisms such as ageing. The stated failure rates do not release the end-user from collecting and evaluating application-specific reliability data.

Systematic Capability

The development and manufacturing process and the functional safety management applied by the manufacturer in the relevant lifecycle phases of the product have been audited and assessed as suitable for the manufacturing of products for use in applications with a maximum Safety Integrity Level of 3 (SC 3).

Periodic Tests and Maintenance

The given values require periodic tests and maintenance as described in the Safety Manual. The operator is responsible for the consideration of specific external conditions (e.g. ensuring of required quality of media, max. temperature, time of impact), and adequate test cycles.