

Certificate



SIL/PL
Capability

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ID 060000000

No.: 968/V 1242.00/21

Product tested	Pneumatic Poppet Valve for Inline-mounting	Certificate holder	Ross Pneumatrol West End Business Park, Blackburn Road Oswaldtwistle BB5 4WZ Accrington United Kingdom
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Type designation	HELIS-series
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Codes and standards	IEC 61508 Parts 1-2 and 4-7:2010 ISO 13849-1:2015
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Intended application	Safety function: Valve moves into safe position (initial position) within defined time by means of spring force
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The valves are suitable for use in a safety instrumented system up to SIL 2 acc. IEC 61508 and IEC 61511. Under consideration of the minimum required hardware fault tolerance HFT=1 they may be used in a redundant structure up to SIL 3.

They are suitable for use in safety instrumented systems according to ISO 13849-1 category 1 up to PL c. In a redundant architecture acc. category 3 they may be used up to PL d.

Specific requirements	The instructions of the associated Installation and Operating Manual shall be considered.
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Summary of test results see back side of this certificate.


Valid until 2025-01-14

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 1242.00/21 dated 2021-05-19. This certificate is valid only for products, which are identical with the product tested.

TÜV Rheinland Industrie Service GmbH
Bereich Automation
Funktionale Sicherheit

Köln, 2021-06-10

Certification Body Safety & Security for Automation & Grid


Dipl.-Ing. (FH) Wolf Rückwart

Holder: ROSS Pneumatrol
 Blackburn Road
 Accrington, BB5 4WZ
 UK

Product tested: Pneumatic Poppet Valve for inline-mounting
 Type HELIS incl. optional adapter
 (series "headline")

Results of Assessment

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

Valve moves into safe position (initial position) within defined time by means of spring force

Dangerous Failure Rate	λ_D	2.00 E-08 / h	20 FIT
Average Probability of Failure on Demand 1oo1	$PFD_{avg}(T_1)$	8.76 E-05	
Average Probability of Failure on Demand 1oo2	$PFD_{avg}(T_1)$	8.77 E-06	

Assumptions for the calculations above: DC = 0 %, $T_1 = 1$ year, $\beta_{1oo2} = 10$ %

Average Frequency of a dangerous Failure per Hour	PFH	2.03 E-08
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Assumptions for the calculations above: DC = 0 %, $n_{op} = 4 / h$

Origin of failure rates

The stated values are the results of a FMEDA for the design and manufacturing process.
 Random and systematic failures which are in the responsibility of the manufacturer were examined.

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.