

Certificate



No.: 968/V 1179.00/20

Product tested	Mechanical Partial Stroke Test device	Certificate holder	Integracion de Sistemas de Actuacion S.A. de C.V. Intesista Blvd. Popocatéptl 38 Hab los Pirules 54040 Tlalnepantla de Baz Mexico
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Type designation	Types: DPPL -4150 DPPR -36900
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Codes and standards	IEC 61508 Parts 1-2 and 4-7:2010
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Intended application	Safety Function: Transmission of torque from actuator to valve. Furthermore the closure of the valve is limited to 18° (20 % of a quarter turn) when the partial stroke mode is activated.
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The partial stroke test devices can only be used in safety instrumented systems in combination with the corresponding actuators. For more details regarding the actuators see certificates and reports: 968/V 1177.00/20 and 968/V 1178.00/20. The achievable safety integrity level depends on the corresponding valve and actuator.

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


Valid until 2025-10-27

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 1179.00/20 dated 2020-10-27. This certificate is valid only for products, which are identical with the product tested.

TÜV Rheinland Industrie Service GmbH
Bereich Automation
Funktionale Sicherheit

Köln, 2020-10-27

Certification Body Safety & Security for Automation & Grid


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54040 Tlalnepantla de Baz
Mexico

Product tested: Mechanical Partial Stroke Test device of type:
DPPL -4150
DPPR -36900

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
Safety Function	Transmission of torque from actuator to valve. Furthermore the closure of the valve is limited to 18° (20 % of a quarter turn) when the partial stroke mode is activated.	

DPPL -4150

Dangerous Failure Rate	λ_D	7.60 E-08 / h	76 FIT
Average Probability of Failure on Demand 1oo1	$PFD_{avg}(T_1)$	3.38 E-04	

DPPR -36900

Dangerous Failure Rate	λ_D	8.50 E-08 / h	85 FIT
Average Probability of Failure on Demand 1oo1	$PFD_{avg}(T_1)$	3.78 E-04	

Assumptions for the calculations above: DC = 0 %, $T_1 = 1$ year, MRT = 72 h

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.

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.

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.