

Certificate



SIL/PL
Capability

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ID 0600000000

No.: 968/V 1103.00/19

Product tested	Solenoid Valves	Certificate holder	ASCO SAS 53 rue de Beauce 28110 Lucé France
Type designation	126 00 and 126 60 series		
Codes and standards	IEC 61508 Parts 1-2 and 4-7:2010		
Intended application	Safety Function: Open lower port and close upper port when de-energized and to vent the equipment connected to the middle port The valves are suitable for use in a safety instrumented system up to SIL 2 in low demand mode. Under consideration of the minimum required hardware fault tolerance HFT = 1 the valves may be used in a redundant architecture 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.			
Valid until 2024-07-12			

The issue of this certificate is based upon an examination, whose results are documented in Report No. 968/V 1103.00/19 dated 2019-06-19.
This certificate is valid only for products which are identical with the product tested.

TÜV Rheinland Industrie Service GmbH
Bereich Automation
Funktionale Sicherheit
Am Grauen Stein, 51105 Köln

Köln, 2019-07-12

Certification Body Safety & Security for Automation & Grid

Dr.-Ing. Thorsten Gantevoort

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TÜVRheinland
Precisely Right.

Holder: ASCO SAS
53 rue de la Beauce
28110 Lucé
France

Product tested: Solenoid Valves
126 00 and 126 60 Series

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

Safety Function:

Open lower port and close upper port when de-energized and vent to middle port

Dangerous Failure Rate	λ_D	1.77 E-07 / h	177 FIT
Average Probability of Failure on Demand 1oo1 Assumptions: $T_1 = 1$ year, DC = 0 %	$PFD_{avg}(T_1)$	7.75 E-04	
Average Probability of Failure on Demand 1oo1 Assumptions: $T_1 = 7$ years, DC = 0 %	$PFD_{avg}(T_1)$	5.43 E-03	
Average Probability of Failure on Demand 1oo2 Assumptions: $T_1 = 1$ year, DC = 0 %, $\beta_{1oo2} = 10$ %	$PFD_{avg}(T_1)$	7.82 E-05	
Average Probability of Failure on Demand 1oo2 Assumptions: $T_1 = 7$ years, DC = 0 %, $\beta_{1oo2} = 10$ %	$PFD_{avg}(T_1)$	5.48 E-04	

Origin of values

The stated values are the results of a FMEDA for the design and manufacturing process. They are verified by field feedback from the last 10 years.

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.