


LICENCE CERTIFICATE

for TÜV Rheinland Test Mark

No. 968/V 1017.00/17

Licence Holder: Vastas Valf Armatur Sanayi Ticaret A.S. Organize Sanayi Bolgesi, 2. Cadde No: 22 Cerkezkoy 59500 Tekirdag Turkey		Manufacturer / Manufacturing Plant: same as licence holder	
Further Manufacturing Plants:			
Date of Application: 2017-10-03	File Ref.: 968/V 1017.00/17	Date of Issue: 2017-10-06	
Test Mark:  SIL/PL Capability www.tuv.com ID 0600000000		For products that are in conformity with the certified product described below, the holder of this Licence Certificate is authorized to use the TÜV Rheinland Test Mark shown on this page by affixing the same to the product and by using it in print and electronic media for information and advertising purposes for the certified product. All terms of the currently valid Regulation of Certification and Test Mark Regulation have to be considered. The validity for use of the Test Mark is bound to the existence of a valid certificate for the certified product.	
Link for download: http://fs-products.tuvasi.com/tm/3705			
Annual Fee Units for Use of the Test Mark:			Units of Fee: 4
Certified Product, Identification of the Device:			
Kind of Product:	Globe Valves		
Type Designation:	E300 Globe Valves 1/2" ... 56" E30C Control Type Globe Valves 1/2" ... 56"		
Technical Data:	Temperature Range	Standard HT	-29 ... +38 °C ... +425 °C
	Pressure Range of Power Supply	Standard Type Control Type	5.5 ... 19.6 bar 58 ... 102 bar
	Operating Medium	Compressed air	
Special Remarks:	Report-No. 968/V 1017.00/17 dated 2017-10-06 and Certificate No.: 968/V 1017.00/17 dated 2017-10-06		

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

2017-10-06

Date

Certification Body
Safety & Security for Automation & Grid



Dipl.-Ing. Thomas Steffens

Certificate



SIL/PL
Capability

www.tuv.com
ID 060000000

No.: 968/V 1017.00/17

Product tested	Globe Valves	Certificate holder	Vastas Valf Armatur Sanayi Ticaret A.S. Organize Sanayi Bolgesi, 2. Caddesi No: 22 Cerkezkoy 59500 Tekirdag Turkey
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Type designation	E300 Standard Type Globe Valves E30C Control Type Globe Valves 0,5" ... 56" PN 150 ... PN 2500
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Codes and standards	IEC 61508 Parts 1-2 and 4-7:2010
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Intended application	Safety Function: On demand, the complete valve assembly goes into its fail safe position.
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The valves are suitable for use in a safety instrumented system up to SIL 2 (low demand mode) acc. to IEC 61508.

Under consideration of the minimum required hardware fault tolerance HFT = 1 the valves may be used in a redundant structure up to SIL 3.

Specific requirements	The instructions of the associated Installation, Operating and Safety Manual shall be considered.
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Valid until 2022-10-06

The issue of this certificate is based upon an examination, whose results are documented in Report No. 968/V 1017.00/17 dated 2017-10-06.

This certificate is valid only for products which are identical with the product tested. It becomes invalid at any change of the codes and standards forming the basis of testing for the intended application.

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

Köln, 2017-10-06

Certification Body Safety & Security for Automation & Grid

Dipl.-Ing. Thomas Steffens

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TÜVRheinland®
Precisely Right.

Holder: Vastas Valf Armatür Sanayi Ticaret A.S.
 OSB, 2. Cadde No:22
 Cerkezköy 59500 Tekirdağ
 Turkey

Product tested: Globe Valves
 E300 1/2" ... 56"
 E30C (Control Type) 1/2" ... 56"

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	
Lambda Dangerous confidence level of calculation 1- α = 95 %	λ_D	3.01 E-07 / h	301 FIT
Lambda Dangerous Undetected assumed Diagnostic Coverage DC = 0 %	λ_{DU}	3.01 E-07 / h	301 FIT
Mean Time To Dangerous Failure	MTTF _D	3.32 E+06 h	379 a
Average Probability of Failure on Demand 1oo1 assumed Proof Test Interval T ₁ = 1 year	PFD _{avg} (T ₁)	1.32 E-03	
Average Probability of Failure on Demand 1oo2 assumed Proof Test Interval T ₁ = 1 year assumed β_{1oo2} = 10 %	PFD _{avg} (T ₁)	1.34 E-04	

Origin of values

The stated values are the results of extensive qualification tests on the reliability of the safety function under critical conditions. In addition, the failure rate was verified by the analysis of field feedback of the last seven years. Random and systematic failures which are the responsibility of the manufacturer were examined.

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.