

Zertifikat



Nr.: 968/FSP 3196.00/26

Prüfgegenstand	Ventile mit Antrieb	Zertifikatsinhaber	Uni-Geräte E. Mangelmann Elektrotechnische Fabrik GmbH Holtumsweg 13 47652 Weeze Germany
Typbezeichnung	Elektromagnetische Absperrventile (NC) EV, EVA, EV.W, EVA.W, EVF, EVC, EKVS, EVS, EVS.Ü, EVSA, VX / VXI, VS / DVS Elektropneumatische Absperrventile (NC) EPV, EPVA, AEPV, EPV.M.Z, EPVF, PX / PXI Elektromagnetische Abblaseventile (NO) EVO, EVSO, EVS.R, EV.R, EVF.R, EVC.R, EKVS.R Elektropneumatische Abblaseventile (NO) EPVO, EPV.R, EPVF.R, PSO, DPSO Elektromagnetische 3/2-Wege- Ventile EVD, EVDF, EVSDu, EVSADu, EVFDu		
Prüfgrundlagen	IEC 61508 parts 1-2:2010	ISO 13849-1:2023	
Bestimmungsgemäße Verwendung	Die Ventile sind zur Verwendung in einem sicherheitsgerichteten System bis SIL 2 (Low Demand Mode, HFT = 0) geeignet. Bei einer redundanten Architektur (HFT = 1) sind die Ventile zur Verwendung in einem sicherheitsgerichteten System bis SIL 3 (Low Demand Mode und High Demand Mode) geeignet. Die Ventile sind zur Verwendung in einem sicherheitsgerichteten System bis Kategorie 1, PL c geeignet. Unter Berücksichtigung der erforderlichen Kategorie können sie in redundanter Ausführung bis Kategorie 3, PL d eingesetzt werden.		
Besondere Bedingungen	Die Hinweise in der zugehörigen Installations- und Betriebsanleitung sowie des Sicherheitshandbuchs sind zu beachten.		
Zusammenfassung der Testergebnisse siehe Rückseite des Zertifikates.			
Gültig bis 29.06.2031			

Der Ausstellung dieses Zertifikates liegt eine Evaluierung entsprechend dem Zertifizierungsprogramm CERT FSP1 V3.0:2020 in der aktuellen Version zugrunde, deren Ergebnisse im Bericht Nr. 968/FSP 3196.00/26 vom 24.06.2026 dokumentiert sind. Dieses Zertifikat ist nur gültig für Erzeugnisse, die mit dem Prüfgegenstand übereinstimmen. Ausgestellt von der durch die DAkkS nach DIN EN ISO/IEC 17065 akkreditierte Zertifizierungsstelle. Die Akkreditierung gilt nur für den in der Urkundenanlage D-ZE-11052-02-00 aufgeführten Akkreditierungsumfang.

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

Köln, 29.06.2026

Zertifizierungsstelle Safety & Security for Automation & Grid

Dipl.-Ing. (FH) Wolf Rückwart

www.fs-products.com
www.tuv.com



TÜVRheinland®
Precisely Right.

Holder: Uni-Geräte E. Mangelmann Elektrotechnische
Fabrik GmbH
Holtumsweg 13
47652 Weeze
Deutschland

Product tested: Elektromagnetische Absperrventile (NC)
EV, EVA, EV.W, EVA.W, EVF, EVC, EKVS,
EVS, EVS.Ü, EVSA, VX / VXI, VS / DVS
Elektropneumatische Absperrventile (NC)
EPV, EPVA, AEPV, EPV.M.Z, EPVF, PX / PXI
Elektromagnetische Abblaseventile (NO)
EVO, EVSO, EVS.R, EV.R, EVF.R, EVC.R, EKVS.R
Elektropneumatische Abblaseventile (NO)
EPVO, EPV.R, EPVF.R, PSO, DPSO
Elektromagnetische 3/2-Wege- Ventile
EVD, EVDF, EVSDu, EVSADu, EVFDu

Results of Assessment

Route of Assessment	$2_H / 1_S$
Type of Sub-system	Type A
Mode of Operation	Low and High Demand Mode
Utilization Rate	Low and High Utilization Rate
Hardware Fault Tolerance	HFT = 0 (HFT = 1 for VX, DVS, PX)
Systematic Capability	SC 3

Low Demand Mode - Close / Open / Change State on Demand

Dangerous Failure Rate	λ_D	1,71 E-07 / h	171 FIT
Average Probability of Failure on Demand 1001	$PFD_{avg}(T_1)$	7,61 E-04	
Average Probability of Failure on Demand 1002	$PFD_{avg}(T_1)$	7,68 E-05	

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

High demand Mode ^(see note) - Close / Open / Change State

Average Frequency of a dangerous Failure per Hour	PFH	1,71 E-07
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Origin of failure rates

The stated failure rates are the result of an FMEDA acc. EN 17955, Annex C for all variants combined with the intention to achieve a conservative result.

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.

Certificate



No.: 968/FSP 3196.00/26

Product tested	Actuated Valves	Certificate holder	Uni-Geräte E. Mangelmann Elektrotechnische Fabrik GmbH Holtumsweg 13 47652 Weeze Germany
Type designation	Electromagnetic Shut-off Valves (NC) EV, EVA, EV.W, EVA.W, EVF, EVC, EKVS, EVS, EVS.Ü, EVSA, VX / VXI, VS / DVS Electropneumatic Shut-off Valves (NC) EPV, EPVA, AEPV, EPV.M.Z, EPVF, PX / PXI Electromagnetic Blow-Off Valves (NO) EVO, EVSO, EVS.R, EV.R, EVF.R, EVC.R, EKVS.R Electropneumatic Blow-Off Valves (NO) EPVO, EPV.R, EPVF.R, PSO, DPSO Electromagnetic 3/2-Way Valves EVD, EVDF, EVSDu, EVSADu, EVFDu		
Codes and standards	IEC 61508 parts 1-2:2010	ISO 13849-1:2023	
Intended application	The valves are suitable for use in a safety-related system up to SIL 2 (Low Demand Mode, HFT = 0). In a redundant architecture (HFT = 1), the valves are suitable for use in a safety-related system up to SIL 3 (Low Demand Mode and High Demand Mode). The valves are suitable for use in a safety-related system up to Category 1, PL c. Taking the required category into account, they can be used in a redundant configuration up to Category 3, PL d.		
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 2031-06-29			

The issue of this certificate is based upon an evaluation in accordance with the Certification Program CERT FSP1 V3.0:2020 in its actual version, whose results are documented in Report No. 968/FSP 3196.00/26 dated 2026-06-24. This certificate is valid only for products, which are identical with the product tested. Issued by the certification body accredited by DAkkS according to DIN EN ISO/IEC 17065. The accreditation is only valid for the scope listed in the annex to the accreditation certificate D-ZE-11052-02-00.

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

Köln, 2026-06-29

Certification Body Safety & Security for Automation & Grid

Dipl.-Ing. (FH) Wolf Rückwart

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Product tested: Elektromagnetische Absperrventile (NC)
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EVS, EVS.Ü, EVSA, VX / VXI, VS / DVS
Elektropneumatische Absperrventile (NC)
EPV, EPVA, AEPV, EPV.M.Z, EPVF, PX / PXI
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EVO, EVSO, EVS.R, EV.R, EVF.R, EVC.R, EKVS.R
Elektropneumatische Abblaseventile (NO)
EPVO, EPV.R, EPVF.R, PSO, DPSO
Elektromagnetische 3/2-Wege- Ventile
EVD, EVDF, EVSDu, EVSADu, EVFDu

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