

Functional Safety

Certificate No. SHFS22120000409MD ISSUE 1

Certificate Holder: Schneider Electric Automation GmbH
Schneiderplatz 1, 97828 Marktheidenfeld, Germany

Trademarks: 

Certified Product: Lexium Cobot

Model (s) No. / Series: LXMR03S0000, LXMR05S0000, LXMR07S0000, LXMR12S0000, LXMR18S0000

Assessment Performed: ISO 13849-1: 2015

Conclusion: The safety architecture and performance level meet PL d with category 3 according to ISO 13849-1, detail information of safety function items is shown in APPENDIX.

As shown in the technical report number(s): SHFS2212000040971

This certificate confirms the achievement of the requirements of functional safety based on proof of the safety-related parameters (failure rate MTTFd / PFHd, DC, safety architecture etc), proofs that processes, and methods are established at the manufacturer guaranteeing that unexceptionable processes in terms of risk analysis, design, production, validation, modification and quality management comply with the standard.

Authorized by: Issued Date: Jan. 17, 2023

Andrew Zhai  Expired Date: Jan. 17, 2028
Certifier

This certificate is issued by the company under its General Conditions for Certification Services accessible at <https://www.sgs.com/en/terms-and-conditions>. Attention is drawn to the limitations of liability defined therein and in the Test Report here above mentioned which findings are reflected in this Certificate. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

Certification Body

SGS-CSTC Standards Technical Services Co., Ltd.
16/F, Century Yuhui Mansion, No.73 Fucheng Road, Beijing China 100036
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CERTIFICATE

APPENDIX

Supplementary of Functional Safety Certificate

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Summary of Assessment Result in ISO 13849-1 report:

SF	Item & Description	PL Achieved	Response Time	MTTFd (years)	PFHd	Safe State
SF1	ESTOP with the ESTOP Button on the control box	PL d with Category 3, DC > 60% according to ISO 13849-1	250ms	92.43	1.01x10 ⁻⁷	Cat. 1 stop
SF2	ESTOP with External Estop Button					
SF3	Safeguard (Protective) Stop		350ms	69.50	1.84x10 ⁻⁷	Cat. 2 stop
SF4	Joint Position Limit (Soft axis limiting)		250ms	75.46	1.57x10 ⁻⁷	Cat. 1 stop
SF5	Joint Speed Limit					
SF6	Joint Torque Limit					
SF7	Joint Power Limit					
SF8	Power Limit					
SF9	TCP Speed Limit					
SF10	Tool Orientation Limit					
SF11	TCP Position Limit (Safety Planes)		350ms	36.80	5.16x10 ⁻⁷	Cat. 2 stop
SF12	TCP Position Mismatch Limit					
SF13	Hand-Guide Mode TCP Speed Limit		250ms	92.43	1.01x10 ⁻⁷	Cat. 1 stop
SF14	Collision Protection		350ms	69.50	1.84x10 ⁻⁷	Cat. 2 stop
SF15	Additional Emergency Stop Input					
SF16	3-Position Enable Switch Input					
SF17	Safeguard Reset Input		100ms	41.83	4.53x10 ⁻⁷	Two-channel output signals with high impedance state
SF18	Reduced Mode Input					
SF19	Estop Button State Output					
SF20	ESTOP State Output					
SF21	System Safeguard State Output					
SF22	Robot Moving Output					
SF23	Robot Not Stopping Output					
SF24	Robot in Reduced Mode Output		350ms	34.14	5.94x10 ⁻⁷	Cat. 2 stop
SF25	Robot Not in Reduced Mode Output					
SF26	TCP Force Limit					