CERTIFICATE OF ACCREDITATION

The ANSI National Accreditation Board

Hereby attests that

UL LLC

333 Pfingsten Road, Northbrook, IL 60062, United States

ACCREDITATION ID# 0198

Fulfills the requirements of

ISO/IEC 17065:2012 Conformity assessment - Requirements for bodies certifying products, processes and services

LIST OF CERTIFICATION SCHEME(S)

UL Functional Safety and Autonomy Safety Schemes

This certificate is valid only when accompanied by a current scope of accreditation document. The current scope of accreditation can be verified at www.anab.org.

Lori Gillespie, Vice President, MVP SBU

Expiry Date: 01 December 2023

Cert ID # JLIGHALO

LIST OF STANDARDS

STANDARD	STANDARD TITLE	STANDARD	STANDARD TITLE
ANSI B11.26-2018	Functional Safety for Equipment: General Principles for the Design of Safety Control Systems Using ISO 13849-1	EN 50271	Electrical apparatus for the detection and measurement of combustible gases, toxic gases or oxygen - Requirements and tests for apparatus using software and/or digital technologies
EN 50126-1	Railway Applications – The Specification and Demonstration of Reliability, Availability, Maintainability and Safety (RAMS) – Part 1: Generic RAMS Process	EN 50402	Electrical apparatus for the detection and measurement of combustible or toxic gases or vapours or of oxygen - Requirements on the functional safety of gas detection systems
EN 50126-2	Railway Applications – The Specification and Demonstration of Reliability, Availability, Maintainability and Safety (RAMS) – Part 2: Systems Approach to Safety	EN 50495	Safety devices required for the safe functioning of equipment with respect to explosion risks
EN 50128	Railway applications – Communication, signalling and processing systems – Software for railway control and protection systems	EN 50657	Railways Applications – Rolling stock applications – Software on Board Rolling Stock
IEC 60079-29-3	Explosive atmospheres – Part 29-3: Gas detectors – Guidance on functional safety of fixed gas detection systems	IEC 61511-1	Functional safety – Safety instrumented systems for the process industry sector – Part 1: Framework, definitions, system, hardware and application programming requirements
IEC 61131-6	Programmable controllers – Part 6: Functional safety	IEC 61800-5-2	Adjustable speed electrical power drive systems – Part 5-2: Safety requirements – Functional
IEC 61508-1	Functional safety of electrical/electronic/programmable electronic safety-related	IEC 62061	Safety of machinery – Functional safety of safety-related control systems
IEC 61508-2	Functional safety of electrical/electronic/programmable electronic safety-related	IEC 61508-3	Functional safety of electrical/electronic/programmable electronic safety-related systems – Part 3: Software requirements
ISO 26262-2	Road vehicles – Functional safety – Part 2: Management of functional safety	IEC 62745	Safety of machinery – Requirements for cableless control systems of machinery
ISO 26262-3	Road vehicles – Functional safety – Part 3: Concept phase	EN ISO 10218-1	Robots and robotic devices – Safety requirements for industrial robots – Part 1: Robots (ISO 10218-1:2011)

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STANDARD	STANDARD TITLE	STANDARD	STANDARD TITLE
ISO 26262-4	Road vehicles – Functional safety – Part 4: Product development at the system level	EN ISO 10218-2	Robots and robotic devices – Safety requirements for industrial robots – Part 2: Robot systems and integration (ISO 10218- 2:2011)
ISO 26262-5	Road vehicles – Functional safety – Part 5: Product development at the hardware level	EN ISO 13849-1	Safety of machinery – Safety-related parts of control systems – Part 1: General principles for design (ISO 13849- 1:2015)
ISO 26262-6	Road vehicles — Functional safety — Part 6: Product development at the software level	ISO 21448	Road vehicles – Safety of the intended functionality
ISO 26262-7	Road vehicles — Functional safety — Part 7: Production, operation, service and decommissioning	CSA C22.2 No. 0.8	Safety Functions Incorporating Electronic Technology
ISO 26262-8	Road vehicles — Functional safety — Part 8: Supporting processes	UL 991	Tests for Safety-Related Controls Employing Solid-State Devices
ISO 26262-9	Road vehicles — Functional safety — Part 9: Automotive safety integrity level (ASIL)-oriented and safety-oriented analyses	UL 1998	Software in Programmable Components
ISO 26262-12	Road vehicles — Functional safety — Part 12: Adaptation of ISO 26262 for motorcycles	UL 4600	Evaluation of Autonomous Products
EN 50129	Railway applications - Communication, signalling and processing systems - Safety related electronic systems for signaling	UL 61800-5-2	Adjustable Speed Electrical Power Drive Systems – Part 5-2: Safety Requirements – Functional

for programs within the following

SCOPE OF ACCREDITATION

GRANTED 2023-05-15:	
13.110	Safety of machinery
13.230	Explosion Protection
13.320	Alarm and warning systems
25.040.01	Industrial automation systems in general
25.040.10	Machining centres
25.040.20	Numerically controlled machines
25.040.30	Industrial robots. Manipulators
25.040.40	Industrial process measurement and control
25.040.99	Other industrial automation systems
29.020	Electrical engineering in general

GRANTED 2023-05-15:	
29.260.20	Electrical apparatus for explosive atmospheres
29.280	Electric traction equipment
29.200	Rectifiers. Converters. Stabilized power supply
35.080	Software
35.100.01	Open systems interconnection in general
35.240.50	IT applications in industry
35.240.60	IT applications in transport
43.040.10	Electrical and electronic equipment
45.020	Railway engineering in general
93.100	Construction of railways

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