STANDARDS UPDATE NOTICE (SUN)
ISSUED: March 8, 2024

STANDARD INFORMATION

Standard: UL 1740
Standard ID: Industrial Robots and Robotic Equipment [UL 1740:2018 Ed.4+R:11Aug2023]
Previous Standard ID: Industrial Robots and Robotic Equipment [UL 1740:2018 Ed.4+R:17Nov2020]

EFFECTIVE DATE OF NEW/REVISED REQUIREMENTS

Effective Date: August 11, 2025

IMPACT, OVERVIEW, AND ACTION REQUIRED

Impact Statement: Per our accreditation, Intertek is required to review reports against the standard revisions to confirm compliance. Once compliance is confirmed, the standard reference in the report is updated to show continued compliance to the technical requirements of the standard. Reports not updated to this version by the effective date above will be withdrawn.

Overview of Changes:

- General requirements for integration of robots
- Requirements for end-effectors: Section
- Batteries and Battery Circuits
- Water exposure requirements

    Specific details of new/revised requirements are found in table below.

Current Listings Not Active? – Please immediately identify any current Listing Reports or products that are no longer active and should be removed from our records. We will do this at no charge as long as Intertek is notified in writing prior to the review of your reports.

STANDARD INFORMATION

CLAUSE	VERDICT	COMMENT
		Additions to existing requirements are <u>underlined</u> and deletions are shown ~~lined out~~ below.
	Info	**PROTECTION AGAINST INJURY TO PERSONS**
32	Info	**General**
32.3		*New clause added;* Robotic systems, robotic applications and robot cells shall comply with the applicable safety requirements of ISO 10218-2.
35A	Info	**End Effectors**
35A.1		*New clause added;* End-effectors and their integrations shall comply with the applicable requirements in ISO 10218-2, Robotics – Safety Design for Industrial Robot Systems. Further guidance is available in ISO TR 20218-1.
41	Info	**Batteries and Battery Circuits**
41.1	Info	**General**
41.1.1		A battery, batteries and battery packs, shall comply with the requirements in this section. <u>For batteries that are used for position memory and other functional parameters, the test in Energy Source Low Voltage – Program Memory Loss, Section 51, shall be performed.</u>
41.3	Info	**Lithium batteries (rechargeable/secondary)**
41.3.3		*New clause added;* A lithium ion and other rechargeable lithium batteries shall comply with: a) The Standard for Household and Commercial Batteries, UL 2054, for low voltage and low energy applications only; b) The Standard for Secondary Cells and Batteries Containing Alkaline or Other Non-Acid Electrolytes – Safety Requirements for Portable Sealed Secondary Cells, and for Batteries Made From Them, for Use in Portable Applications - Part 2: Lithium Systems, UL 62133-2; c) The Standard for Batteries for Use in Electric Vehicles, UL 2580, for all battery applications; d) The Standard for Batteries for Use in Stationary and Motive Auxiliary Power Applications, UL 1973, for all battery applications; or e) The Standard for Batteries for Use in Light Electric Vehicle (LEV) Applications, UL 2271, for all battery applications.

CLAUSE	VERDICT	COMMENT
41.3A		*New section added;* **Lithium Non-Rechargeable Batteries (primary)** Non-rechargeable lithium batteries shall comply with: See standard for details.
41.3B		*New section added;* **Lead acid batteries** Lead acid batteries shall comply with: See standard for details.
41.6	Info	**Electrochemical capacitors**
41.6.1		*New clause added;* Electrochemical capacitor cells and modules shall comply with the requirements for cells and modules in the Standard for Electrochemical Capacitors, UL 810A.
48	Info	**Robots Intended for Use in Water Environments**
48.1		Cord-and-plug connected equipment ~~rated for a nominal 120, 208, or 240 V supply~~ that is intended for use in an environment that involves the <u>exposure to water shall comply with its rated water exposure (Type or IP). If there is no Type or IP rating, it shall be exposed to 7 hours of water under the most severe intended mode of operation and conditions stated in the manufacturer's user manual. In either case, the robot or robot system shall additionally comply with the requirements for Leakage Current Test, Section 47,</u> following exposure to 7 hours of water under the most severe intended mode of operating conditions, as stated in the manufacturer's user manual. At the conclusion of the leakage current measurement, a visual inspection is to be performed if water entry may involve a risk of fire, electric shock, or injury to persons.
48.2		Permanently connected equipment <u>that is intended for use in an environment that involves exposure to water shall comply with its rated water exposure (Type or IP). If there is no Type or IP rating, it shall be exposed to a minimum of 7 hours of water under intended operating conditions as stated in the manufacturer's user manual.</u> ~~or its rated water exposure (TYPE or IP), whichever condition is more severe~~. At the conclusion, a visual inspection is to be performed if water entry may involve a risk of fire, electric shock, or injury to persons.

CLAUSE	VERDICT	COMMENT
49	Info	**Outdoor-Use Tests**
49.1		A robot or robotic system intended to be used outdoors shall be evaluated to determine the effects of anticipated environmental conditions to which they will be exposed. These include, but are not limited to: Ultraviolet Exposure and Rain Tests described in the Standard for Enclosures for Electrical Equipment, Environmental Consideration, UL 50E. <u>A robot or robotic system intended to be used outdoors shall be provided with either a Type rating in accordance with UL 50E, or an IP rating in accordance with the Standard for Degrees of Protection Provided by Enclosures (IP Code), IEC 60529. The Type or IP rating specified by the manufacturer shall comply with the specific requirements for that Type rating or IP rating as specified in the respective standards.</u>