



Public Input No. 1-NFPA 731-2023 [Section No. 2.3.3]

2.3.3 UL Publications.

Underwriters Laboratories Inc., 333 Pfingsten Road, Northbrook, IL 60062-2096.

UL 50, *Enclosures for Electrical Equipment, Non-Environmental Considerations*, 2015, revised 2020.

UL 50E, *Enclosures for Electrical Equipment, Environmental Considerations*, 2020.

UL 294, *Access Control System Units*, ~~2018~~ 2023.

UL 606, *Linings and Screens for Use with Burglar-Alarm Systems*, 1999, revised 2006.

UL 634, *Connectors and Switches for Use with Burglar-Alarm Systems*, 2007, revised ~~2020~~ 2022.

UL 636, *Holdup Alarm Units and Systems*, ~~2013~~ 2018.

UL 639, *Safety for Intrusion-Detection Units*, 2007, revised 2019.

UL 827, *Central-Station Alarm Services*, ~~2014~~ 2022, revised ~~2020~~ 2023.

UL 1076, *Proprietary Burglar Alarm Units and Systems*, 2018.

UL 2044, *Commercial Closed-Circuit Television Equipment*, ~~2008, revised 2019~~ 2019.

UL 2610, *Commercial Premises Security Alarm Units and Systems*, 2018, revised 2020.

UL 2802, *Performance Testing of Camera Image Quality*, ~~2013~~ 2021, revised ~~2019~~ 2023.

UL 2900-2-3, *Software Cybersecurity for Network-Connectable Products, Part 2-3: Particular Requirements for Security and Life Safety Signaling Systems*, ~~2020~~ 2023.

UL 60065, *Audio, Video and Similar Electronic Apparatus*, 2015, revised 2020.

UL 60950-1, *Information Technology Equipment*, 2007, revised 2019.

UL 60950-22, *Information Technology Equipment — Equipment to Be Installed Outdoors*, 2017.

UL 62368-1, *Audio/Video, Information and Communication Technology Equipment*, ~~2019~~ 2021.

Statement of Problem and Substantiation for Public Input

Update the standards to the most current publication dates.

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Submittal Date: Fri Dec 29 13:34:53 EST 2023

Committee: PMM-AAA

Committee Statement

Resolution: [FR-1-NFPA 731-2024](#)

Statement: Updates references in accordance with the Reference policy.



Public Input No. 4-NFPA 731-2023 [Section No. 4.4.1]

4.4.1 Power Supplies.

4.4.1.1

Power supplies shall be installed in conformity with the requirements of *NFPA 70*.

4.4.1.2

Power supplies shall be reliable and have the capacity to service the intended load.

4.4.1.3*

At least two independent power supplies shall be required, one primary and one secondary, for the following premises security systems:

- (1) Intrusion detection systems
- (2) Holdup, duress, and ambush systems
- (3) Power over Ethernet (PoE) power source equipment (PSE)

4.4.1.4

When installed, secondary power supplies that are not required by 4.4.1.3 shall conform to the requirements of this standard.

4.4.2 Storage Batteries.

4.4.2.1* Lithium-ion batteries. Lithium-ion batteries shall be listed or approved for their intended application.

4.4.2.1.1 Storage. Storage of replacement batteries shall be in compliance with NFPA 1 and the manufacturer's instructions.

A4.4.2.1 Lithium-ion batteries are a highly efficient electro-chemical battery technology being provided as replacement batteries for security equipment. These batteries present different hazards from lead-acid or nickel-cadmium batteries, such as the risk of thermal runaway. Ensuring these batteries are properly listed, used or stored in accordance with NFPA 1 Fire Code and the manufacturer's instructions is intended to reduce the risk of fire or deflagration resulting from thermal runaway.

Statement of Problem and Substantiation for Public Input

This Public Input and accompanying Annex Note provides reasonable technical requirements to address the potential hazards from lithium-ion batteries when they are stored or used as replacement batteries for security systems.

Renumber subsequent sections:

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Zip:**Submittal Date:** Fri Dec 29 13:47:53 EST 2023**Committee:** PMM-AAA

Committee Statement

Resolution: [FR-7-NFPA 731-2024](#)

Statement: This revision provides reasonable technical requirements to address the potential hazards from lithium-ion batteries when they are stored or used as replacement batteries for premises security systems.



Public Input No. 2-NFPA 731-2023 [Section No. 6.1.1]

6.1.1 Equipment.

Electronic access control equipment shall be in compliance with applicable standards, such as UL 294, *Access Control System ~~Units~~ - Units* and as applicable, UL, 1 034 Standard for Burglary-Resistant Electric Locking Mechanisms .

Add reference to UL 1034 in Chapter 2 as applicable.

Statement of Problem and Substantiation for Public Input

This Public Input will add an additional listing option for electronic access control equipment to UL 1034. Testing to UL 1034 will provide an additional safety and performance certification option for access control devices that typically is part of an electrical locking system. The addition of UL 1034 is also intended to provide clarity as to allow requirements to match the certified products in use and available in the market.

Related Public Inputs for This Document

<u>Related Input</u>	<u>Relationship</u>
<u>Public Input No. 3-NFPA 731-2023 [Section No. 6.1.1]</u>	

Submitter Information Verification

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Submittal Date: Fri Dec 29 13:40:56 EST 2023
Committee: PMM-AAA

Committee Statement

Resolution: FR-9-NFPA 731-2024

Statement: This revision provides clarification for the integration of electronic access control equipment with electromagnetic locking mechanisms. The annex material provides additional examples and guidance on the testing and certification standards for various access control and egress locking systems to guide AHJs in acceptance of products intended for use in these applications.



Public Input No. 3-NFPA 731-2023 [Section No. 6.1.1]

6.1.1 Equipment.

Electronic access control equipment shall be in compliance with applicable standards, such as UL 294, *Access Control System Units*.

A. 6.1.1 Equipment A critical part of an access or egress control system is the lock hardware that holds a door closed and opens or releases when initiated. Like many components of an integrated system, the locking mechanism can have various forms and functionalities, depending on the particular applications.

The NFPA 101 Life Safety Code includes requirements for a means of egress system to be provided that includes a continuous and unobstructed path of egress travel from any occupied point in a building, structure or facility to a public way. However, there are specific situations in which these model codes allow access control equipment that limit the immediate and unobstructed egress travel under strict provisions.

The factors that must also be considered for installation and in accordance with applicable fire and life safety codes include:

- Integration with fire detection and suppression or other life safety systems that release locked doors upon their activation, allowing immediate emergency egress
- Fail safe features to release locks in the event of a loss of power
- Fail secure features that intentionally maintain locked positions
- Emergency planning and preparedness with staff training and required drills
- Limitations on the delay time for delayed-egress doors
- Special signage requirements
- Security and resistance to unauthorized entry may also be considerations

Locks and locking systems can be tested for compliance with different end product standards. Each end product standard defines the scope of the application and includes construction and test compliance criteria for evaluation and certification.

Typical end uses for the locks and locking systems include integration into access control systems, fire rated door assemblies, special locking arrangements, panic hardware, controlled exit panic devices and burglary resistant electric locks. Locks and locking systems used in these applications can take different forms depending on the design of a product or system. Some of these devices are purely mechanical and others may include electronics to control or provide delayed release or audible alarm functions. Certified locks are investigated for safety from electric shock and mechanical hazards and depending on the product type may also be tested for burglary resistance and/or fire resistance.

An end user or AHJ can see various configurations of equipment incorporated into a system and the equipment may have different forms to suit a specific application. A very common scenario is the use of UL 294 certified access control systems units controlling locks certified to UL 1034.

Other prevalent applications include special locking arrangements that have dedicated system component equipment and certified locks connected to control a request to exit (REX) system. For this application, the REX system certification is specific to the system components submitted for investigation.

The various permutations of locking hardware and systems applications (see table) allows for the use of the devices in accordance with model building and life safety codes, with the common element of safety by design.

The table below summarizes the applicable standards for various locking devices and systems that are typically used on means of egress or controlled access areas.

<u>Standard</u>	<u>Category Title</u>	<u>Helpful Notes</u>	<u>Typical door hardware / lock form factor</u>
<u>UL 294, _ Standard for Access Control System Units</u>	<u>Access Control System Units*</u>	<u>Sec. 34.2 applies to Single point locking devices</u>	<u>Autonomous access control lock</u>
<u>UL 294</u>	<u>Special Locking Arrangements</u>	<u>UL 294, Sec. 68 applies to Controlled and Delayed Egress Equipment and Systems Operation</u>	<u>Require to Exit (REX) devices / systems and controlled or delayed egress locks</u>
<u>UL 1034, Standard for Burglary-Resistant Electric Locking Mechanisms</u>	<u>Burglary Resistant Electric Locking Mechanisms</u>	<u>Performance based for static force, dynamic force, and endurance test factors</u>	<u>Electromagnetic locks, Electric Dead bolts, Electric Door Strikes, Electrically operated door locking mechanisms,</u>
<u>UL 305, _ Standard for Panic Hardware</u>	<u>Panic or Fire Exit Hardware</u>	<u>Generally mechanical devices only (no electronics)</u>	<u>Panic Hardware, Fire Exit Hardware</u>
<u>UL 294 and UL 305,</u>	<u>Controlled Exit Panic Devices</u>	<u>UL 294, and UL 305 apply.</u>	<u>Electromechanical locking/latching mechanisms</u>
<u>UL 634, _ Standard for Panic Hardware</u>	<u>Connectors and Switches for use in Burglar Alarm Systems</u>	<u>Includes Electric Power Transfers, Door Loops, and Door Position Switches</u>	<u>Electric Hinge and flexible connectors intended for burglar alarm applications</u>
<u>UL 10C, Standard for Positive Pressure Fire Tests of Door Assemblies</u>	<u>Positive Pressure Fire Test of Door Assemblies</u>	<u>Also, UL 305 for Card readers and components for use with locks sold separately</u>	<u>Electric Cylindrical Locks and Mortise Locks; Electrically Controlled Single-Point Locks or Latches; Electromagnetic locks ; _ Fire Exit Hardware; Electrified Hinge; Electric strikes; Miscellaneous Fire Door Accessories, Positive Pressure Tested; Accessories for use with Single-point locks and latches and fire exit hardware</u>

Statement of Problem and Substantiation for Public Input

This Public Input adding an Annex Note will provide additional guidance on the testing and certification standards for various access control and egress locking systems to guide AHJs in acceptance of products intended for use in these applications.

Related Public Inputs for This Document

<u>Related Input</u>	<u>Relationship</u>
Public Input No. 2-NFPA 731-2023 [Section No. 6.1.1]	

Submitter Information Verification

Submitter Full Name: Kelly Nicolello
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Submittal Date: Fri Dec 29 13:45:09 EST 2023
Committee: PMM-AAA

Committee Statement

Resolution: FR-9-NFPA 731-2024
Statement: This revision provides clarification for the integration of electronic access control equipment with electromagnetic locking mechanisms. The annex material provides additional examples and guidance on the testing and certification standards for various access control and egress locking systems to guide AHJs in acceptance of products intended for use in these applications.



Public Input No. 5-NFPA 731-2023 [Section No. H.1.2.10]

H.1.2.10 UL Publications.

Underwriters Laboratories Inc., 333 Pfingsten Road, Northbrook, IL 60062-2096.

UL 294, *Access Control System Units*, ~~2013~~, revised ~~2018~~ 2023 .

UL 437, *Key Locks*, 2013.

UL 606, *Linings and Screens for Use with Burglar-Alarm Systems*, 1999, revised 2006.

UL 608, *Burglary Resistant Vault Doors and Modular Panels*, 2004, revised ~~2012~~ 2022 .

UL 634, *Connectors and Switches for Use with Burglar-Alarm Systems*, 2007, revised ~~2020~~ 2022 .

UL 636, *Holdup Alarm Units and Systems*, ~~1996~~, revised ~~2013~~ 2018 .

UL 639, *Intrusion-Detection Units*, 2007, revised 2019.

UL 681, *Installation and Classification of Burglar and Holdup Alarm Systems*, ~~2014~~ 2012, revised 2020 .

UL 687, *Burglary-Resistant Safes*, 2011, revised 2020 .

UL 752, *Bullet-Resisting Equipment*, 2005, revised ~~2013~~ 2021 .

UL 768, *Combination Locks*, 2006, revised ~~2018~~ 2023 .

UL 827, *Central-Station Alarm Services*, 2014, revised 2020.

UL 972, *Burglary Resisting Glazing Material*, ~~2006~~ 2022 , revised ~~2011~~ 2023 .

UL 1034, *Burglary-Resistant Electric Locking Mechanisms*, 2011, revised 2020.

UL 1037, *Antitheft Alarms and Devices*, ~~2016~~ 2011 , revised ~~2017~~ 2020 .

UL 2058, *Outline of Investigation for High Security Electronic Locks*, 2005.

UL 2610, *Commercial Premises Security Alarm Units and Systems*, ~~2018~~ 2021 , revised ~~2020~~ 2023 .

UL 2900-2-3, *Software Cybersecurity for Network-Connectable Products, Part 2-3: Particular Requirements for Security and Life Safety Signaling Systems*, 2020, revised 23 .

UL 60950-1, *Information Technology Equipment — Safety — Part 1: General Requirements*, 2007, revised 2019.

Statement of Problem and Substantiation for Public Input

Update the standards to the most current publication dates.

Related Public Inputs for This Document

<u>Related Input</u>	<u>Relationship</u>
Public Input No. 1-NFPA 731-2023 [Section No. 2.3.3]	

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Submittal Date: Fri Dec 29 13:54:46 EST 2023

Committee: PMM-AAA

Committee Statement

Resolution: [FR-4-NFPA 731-2024](#)

Statement: References are updated to comply with the Reference policy.