



# UL 6420

## **STANDARD FOR SAFETY**

Equipment Used for System Isolation  
and Rated as a Single Unit



UL Standard for Safety for Equipment Used for System Isolation and Rated as a Single Unit, UL 6420

First Edition, Dated October 19, 2012

### ***Summary of Topics***

***This revision of ANSI/UL 6420 is being issued to update the title page to reflect the reaffirmation of ANSI approval.***

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**UL 6420**

**Standard for Equipment Used for System Isolation and Rated as a Single  
Unit**

**First Edition**

**October 19, 2012**

This ANSI/UL Standard for Safety consists of the First Edition including revisions through January 8, 2018.

The most recent designation of ANSI/UL 6420 as a Reaffirmed American National Standard (ANS) occurred on January 8, 2018. ANSI approval for a standard does not include the Cover Page, Transmittal Pages, and Title Page.

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### Intended Applications

#### (informative)

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## 1 Scope and Object

### 1.1 Scope

#### 1.1.1 General

1.1.1.1 This standard applies to isolating equipment incorporating electromechanical contactors remotely controlled and monitored to provide remote isolation status indication with a defined integrity level. This equipment is intended for use as an additional isolating means on the load side of the required supply-disconnecting device and over current protection. This standard applies to isolating equipment that is to be used in circuits of which the rated voltage does not exceed 1000 Vac or 1500 Vdc.

1.1.1.2 The system isolation equipment is expected to be used both as a means for removal of power for prevention of unexpected start-up of a stopped machine and as an isolator to provide protection from electric shock by ensuring the removal of electrical energy.

1.1.1.3 This equipment is intended for installation in accordance with the National Electrical Code, NFPA 70 and the Electrical Standard for Industrial Machinery, NFPA 79:2012.

Note – Reference to System Isolation Equipment is found in Article 430.109(A)(7) of the National Electrical Code NFPA 70; in Clause 5.5.4(3), Devices for Disconnecting (Isolating) Electrical Equipment, of the Electrical Standard for Industrial Machinery, NFPA 79:2012; and in Clause 5.3.2(d) of the Standard for Safety of Machinery – Electrical Equipment of Machines – Part 1: General Requirements, IEC 60204-1.

1.1.1.4 The System Isolation Equipment is not intended to fulfill the function of a motor starter or other motion control device.

#### 1.1.2 System isolation equipment

##### 1.1.2.1 Typical application

1.1.2.1.1 The system isolation equipment is principally intended for industrial machine applications where, isolation of power is so frequently required that the mechanical life of a typical disconnecting means is unacceptably short or where there are multiple entry points on the machine where disconnection is required, or both.

Note – Multiple entry points are a function of access needs and the layout of the machine.

## 1.2 Object

1.2.1 The object of this standard is to state:

- a) The characteristics of the system isolation equipment;
- b) The conditions of operation and behavior for the system isolation equipment, its dielectric properties, and the degree of protection provided by its enclosure where applicable;
- c) The information to be marked on or given with the system isolation equipment;
- d) The normal service, mounting and transport conditions of the system isolation equipment;
- e) The construction and performance of the system isolation equipment;
- f) The tests intended to verify that these conditions have been met, and the methods to be adopted for these tests.

## 2 Normative References

2.1 The following normative documents contain provisions, which, through reference in this text, constitute provisions of this standard. For dated references, subsequent amendments to, or revisions of, any of these publications do not apply. However, parties to agreements based on this standard are encouraged to investigate the possibility of applying the most recent editions of the normative documents indicated below. For undated references, the latest edition of the normative document referred to applies.

UL 60947-1

*Standard for Low-Voltage Switchgear and Controlgear – Part 1: General Rules*

UL 60947-4-1A

*Standard for Low-Voltage Switchgear and Controlgear – Part 4-1: Contactors and motor-starters – Electromechanical contactors and motor-starters*

NFPA 79:2012

*Electrical Standard for Industrial Machinery*

### 3 Definitions

3.1 For the purpose of this standard, the definitions of Clause 2 of the Standard for Low-Voltage Switchgear and Controlgear – Part 1: General Rules, UL 60947-1, and the definitions of Clause 3 of the Standard for Low-Voltage Switchgear and Controlgear – Part 4-1A: Contactors and Motor-Starters – Electromechanical Contactors and Motor-Starters, UL 60947-4-1A, together with the following definitions apply.

3.2 **CONNECTED EQUIPMENT** – All circuits that are isolated by the system isolation equipment.

3.3 **MIRROR CONTACT** – Normally closed auxiliary contact, which cannot be in closed position simultaneously with the normally open main contact.

Note – For more information see the Requirements for Auxiliary Contact Linked with Power Contact (Mirror Contact), in the Standard for Low-voltage switchgear and controlgear – Part 4-1: Contactors and motor-starters – Electromechanical contactors and motor-starters, IEC 60947-4-1, Annex F. One contactor may have more than one mirror contact.

3.4 **MONITORED CIRCUITS** – Control circuits that are designed so that their function(s) are checked for failure continuously or at suitable intervals by the control system.

3.5 **REDUNDANTLY MONITORED** – Control circuits that are monitored through the use of multiple path systems.

3.6 **STOP CATEGORY 1** – A controlled stop with power to the machine actuators available to achieve the stop then remove power when the stop is achieved. (Electrical Standard for Industrial Machinery, NFPA 79:2012, Clause 9.2.2, Stop functions.)

3.7 **SUPPLY DISCONNECT** – Disconnecting means to remove incoming power supplied to a machine.

3.8 **SYSTEM ISOLATION EQUIPMENT** – Equipment packaged to provide the disconnection/isolation function separate from the supply disconnect and capable of operation from multiple remote locations by means of lockout switches. Each lockout switch is capable of being padlocked in the OFF (open) position. Visual indication is provided to the operator at the respective lockout station that is in the OFF (open) position when the power bus is isolated.