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Underwriters Laboratories Inc.®

Subjects 291 (294, 365, 603, 609,
 634, 639, 680, 752, 771, 983, 1023,
 1034, 1037, 1076, 1610, 1635)
 (In reply, refer to Subject 291)

1655 Scott Blvd.
 Santa Clara, CA 95050
 February 24, 1994

TO: Burglary Protection Council of Underwriters
 Laboratories Inc.
 Subscribers to UL's Standards Service for
 Access Control System Units,
 Antitheft Alarms and Devices,
 Automated Teller Systems,
 Bullet-Resisting Equipment,
 Burglary Resistant Electric Locking Mechanisms,
 Central-Station Burglar-Alarm Units,
 Connectors and Switches for Use With Burglar-Alarm
 Digital Alarm Communicator System Units,
 Emergency Vault Ventilators and Vault-Ventilating
 Ports,
 Household Burglar-Alarm System Units,
 Intrusion-Detection Units,
 Local Burglar Alarm Units and Systems,
 Night Depositories,
 Police Station Connected Burglar Alarm Units and
 Systems,
 Power Supplies for Use With Burglar-Alarm Systems,
 Systems,
 Proprietary Burglar Alarm Units and Systems, and
 Surveillance Camera Units

SUBJECT: Request for Comments on Proposed Requirements for UL
 291, UL 294, UL 365, UL 603, UL 609, UL 634, UL 639, UL
 680, UL 752, UL 771, UL 983, UL 1023, UL 1034, UL 1037,
 UL 1076, UL 1610, and UL 1635; PROPOSED EFFECTIVE DATE

SUMMARY OF TOPIC

The requirement for electrical wiring terminals in standards covering burglary protection equipment would be revised to reference four UL Standards (UL 310, UL 486A, UL 486E, and UL 1059), and to clarify that newer types of electrical connection terminals are acceptable.

COMMENTS ON THESE PROPOSALS DUE: APRIL 7, 1994

An independent,
 not-for-profit organization
 testing for public safety

Subjects 291 (294, 365, 603, -2-
 609, 634, 639, 680, 752,
 771, 983, 1023, 1034, 1037,
 1076, 1610, 1635)

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Attached for your review and comment are proposed requirements for the Standards for Automated Teller Systems, UL 291; Access Control System Units, UL 294; Police Station Connected Burglar Alarm Units and Systems, UL 365; Power Supplies for Use With Burglar-Alarm Systems, UL 603; Local Burglar Alarm Units and Systems, UL 609; Connectors and Switches for Use With Burglar-Alarm Systems, UL 634; Intrusion-Detection Units, UL 639; Emergency Vault Ventilators and Vault-Ventilating Ports, UL 680; Bullet-Resisting Equipment, UL 752; Night Depositories, UL 771; Surveillance Camera Units, UL 983; Household Burglar-Alarm System Units, UL 1023; Burglary Resistant Electric Locking Mechanisms, UL 1034; Antitheft Alarms and Devices, UL 1037; Proprietary Burglar Alarm Units and Systems, UL 1076; Central-Station Burglar-Alarm Units, UL 1610; and Digital Alarm Communicator System Units, UL 1635.

Please note that proposed requirements are of a tentative and early nature and are for review and comment only. Current requirements are to be used to judge a product until these requirements are published in final form.

PROPOSED EFFECTIVE DATE

Since the proposed requirements will not necessitate a review or additional testing of currently Listed products, UL proposes that these requirements become effective upon publication.

Request for Comments on Proposals

Please provide the following:

1. Your comments concerning the proposed requirements; and
2. Your comments concerning the proposed effective date, should the proposals be adopted.

Written comments should be sent to the attention of Karen Mikkawi at UL's Santa Clara office, 1655 Scott Blvd., Santa Clara, CA 95050. Please reference all correspondence to Subject 291.

All comments should be sent by April 7, 1994.

Questions regarding interpretation of requirements should be directed to the responsible UL Staff. Please see Appendix B of this bulletin regarding designated responsibility for the subject product category.

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Unless specifically requested to do otherwise, UL will not
acknowledge comments indicating concurrence with these proposals.

UNDERWRITERS LABORATORIES INC.

REVIEWED BY:

Karen Mikkawi

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771, 983, 1023, 1034, 1037,
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PROPOSED REQUIREMENTS ARE
OF A TENTATIVE AND EARLY
NATURE AND ARE FOR REVIEW
AND COMMENT ONLY. CURRENT
REQUIREMENTS ARE TO BE USED
TO JUDGE A PRODUCT UNTIL
THESE REQUIREMENTS ARE
PUBLISHED IN FINAL FORM.

A P P E N D I X A

PROPOSED REQUIREMENTS AND PROPOSED EFFECTIVE DATE FOR
UL 291, UL 294, UL 365, UL 603, UL 609, UL 634,
UL 639, UL 680, UL 752, UL 771, UL 983, UL 1023,
UL 1034, UL 1037, UL 1076, UL 1610, AND UL 1635

For your convenience in review, proposed additions to existing requirements are shown underlined. Proposed new requirements are identified by (NEW). In the case of extensively revised paragraphs, the original text is identified by (CURRENT) and is ~~lined out~~, followed by the proposed text identified by (PROPOSED).

FIELD WIRING TERMINALS

RATIONALE

The requirements for field wiring terminals specified in the standards covered by this bulletin refer to electrical connection terminals of the wire binding screw type. Such terminals have been largely replaced by newer types of electrical connection terminals, which UL has determined to be acceptable. To make it clear that such terminals may be provided, UL proposes to add a new paragraph to each standard, which refers to the four UL standards covering electrical wiring terminals (the Standards for Electrical Quick-Connect Terminals, UL 310; Wire Connectors and Soldering Lugs for Use With Copper Conductors, UL 486A; Equipment Wiring Terminals for Use With Aluminum and/or Copper Conductors, UL 486E; and Terminal Blocks, UL 1059). A field wiring terminal can be determined to comply with one of these standards based on the fact that it is either a UL Recognized Component or is UL Listed. UL Recognized Component or UL Listed electrical wiring terminals are widely used by the manufacturers of UL Listed equipment.

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In addition, UL proposes to revise the standards covered by this bulletin by adding an exception to the paragraphs covering qualified application to indicate that if an electrical connection terminal as specified in the paragraph complies with the requirements in UL 310, UL 486A, UL 486E, or UL 1059, the requirements for qualified application and the requirements in the section covering tests on special terminal assemblies are considered to be met and further testing is not required. A similar exception is proposed to be added to the section covering tests on special terminal assemblies. This proposal does not apply to UL 291, UL 680, and UL 771, which do not have requirements for qualified application.

IMPACT

No changes in the manufacture of presently Listed products will be required if the proposals are adopted.

PROPOSALS UL 291, Standard for Automated Teller Systems,
 Third Edition

Field Wiring Terminals

(NEW)

7.4A A field wiring terminal shall comply with the requirements in the Standard for Wire Connectors and Soldering Lugs for Use With Copper Conductors, UL 486A, or the Standard for Equipment Wiring Terminals for Use With Aluminum and/or Copper Conductors, UL 486E, or the field wiring requirements (Code 2) in the requirements for terminal blocks, UL 1059, or the field wiring requirements in the requirements for electrical quick-connect terminals, UL 310, or paragraphs 7.6 - 7.9. The current-carrying parts shall be silver, copper, a copper alloy, or a similar nonferrous conductive material. Securing screws and the like may be plated steel.

Exception: Quick-connect terminals complying with UL 310 that are intended for field termination of electrical conductors to equipment shall be provided with instructions that such equipment is to be provided with strain relief, and the instructions shall provide information for obtaining the strain relief. The instructions shall reference the specific mating part (tab or connector) to be used.

Paragraph 7.4A added date of publication

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High-Voltage Circuits

7.5 The terminals to which wiring connections are made are to consist of binding screws with terminal plates having upturned lugs or the equivalent to hold the wires in position. Other terminal connections may be provided if found to be equivalent. See paragraph 7.4A.

Paragraph 7.5 revised date of publication

(NEW)

7.5A A field-wiring terminal shall be secured against turning or shifting in position. This may be accomplished by such means as two screws or rivets; square shoulders or mortices; a dowel pin, lug, or offset; or a connecting strap or clip fitted into an adjacent part. Friction between surfaces shall not be provided as the sole means for preventing movement of the terminals.

Paragraph 7.5A added date of publication

(CURRENT)

~~7.6 If a wire binding screw is employed at a field wiring terminal, the screw shall be not smaller than No. 8 (4.2 mm diameter), except that a No. 6 (3.5 mm diameter) screw may be used for the connection of a No. 14 AWG (2.1 mm²) or smaller conductor.~~

(PROPOSED)

7.6 A wire binding screw intended for connection to the power supply (line voltage) source shall not be smaller than No. 10 (4.8 mm diameter). The screw may be of plated steel.

Exception: A No. 8 (4.2 mm diameter) screw may be used for the connection of one No. 14 AWG (2.1 mm²) or smaller conductor and a No. 6 (3.5 mm diameter) screw may be used for the connection of one No. 16 AWG (1.3 mm²) or smaller conductor.

Paragraph 7.6 revised date of publication

PROPOSALS UL 294, Standard for Access Control System Units, Third Edition

(NEW)

12.6A A field wiring terminal shall comply with the requirements in the Standard for Wire Connectors and Soldering Lugs for Use With Copper Conductors, UL 486A, or the Standard for Equipment Wiring Terminals for Use With Aluminum and/or Copper Conductors, UL 486E, or the field wiring requirements (Code 2) in the requirements for terminal blocks, UL 1059, or the field wiring requirements in the requirements for electrical quick-connect terminals, UL 310, or paragraphs 12.8 - 12.12. The current-

(paragraph 12.6A continued)

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carrying parts shall be silver, copper, a copper alloy, or a similar nonferrous conductive material. Securing screws and the like may be plated steel.

Exception: Quick-connect terminals complying with UL 310 that are intended for field termination of electrical conductors to equipment shall be provided with instructions that such equipment is to be provided with strain relief, and the instructions shall provide information for obtaining the strain relief. The instructions shall reference the specific mating part (tab or connector) to be used.

Paragraph 12.6A added date of publication

12.14 Any of the terminal configurations listed in paragraph 12.13 may be employed for connection of field wiring if they comply with all of the following:

A. If a special tool is required for connection, its use shall be indicated on the installation wiring diagram by name of manufacturer and model number or equivalent, along with information as to where the tool may be obtained.

B. The range of permissible wire sizes shall be indicated on the installation wiring diagram. The minimum permissible wire size to be employed shall be not less than No. 22 AWG (0.32 mm²).

C. The wire size to be employed shall have the current-carrying capacity appropriate to the circuit application.

D. The terminal configurations shall comply with the requirements of Special Terminal Assemblies Tests, Section 53.

Exception: Terminals complying with the requirements in any of the standards specified in paragraph 12.6A are not required to be subjected to Special Terminal Assemblies Tests, Section 53.

Paragraph 12.14 revised date of publication

53. Special Terminal Assemblies Tests

General

53.1 To determine compliance with the requirements of paragraphs 12.13 and 12.14, representative samples of the terminal assembly shall comply with the requirements specified in paragraphs 53.3 - 53.10.

(paragraph 53.1 continued)

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Exception: Terminals complying with the requirements in any of the standards specified in paragraph 12.6A are not required to be subjected to these tests.

Paragraph 53.1 revised date of publication

PROPOSALS UL 365, Standard for Police Station Connected Burglar Alarm Units and Systems, Third Edition

(NEW)

12.2.1.1.1 A field wiring terminal shall comply with the requirements in the Standard for Wire Connectors and Soldering Lugs for Use With Copper Conductors, UL 486A, or the Standard for Equipment Wiring Terminals for Use With Aluminum and/or Copper Conductors, UL 486E, or the field wiring requirements (Code 2) in the requirements for terminal blocks, UL 1059, or the field wiring requirements in the requirements for electrical quick-connect terminals, UL 310, or 12.2.2.1 - 12.2.2.5. The current-carrying parts shall be silver, copper, a copper alloy, or a similar nonferrous conductive material. Securing screws and the like may be plated steel.

Exception: Quick-connect terminals complying with UL 310 that are intended for field termination of electrical conductors to equipment shall be provided with instructions that such equipment is to be provided with strain relief, and the instructions shall provide information for obtaining the strain relief. The instructions shall reference the specific mating part (tab or connector) to be used.

12.2.1.1.1 added date of publication

12.2.3.2 Any of the terminal configurations listed in 12.2.3.1 may be employed for connection of field wiring provided there is compliance with all of the following:

- a) If a special tool is required for connection, its use shall be indicated on the installation wiring diagram and the name of its manufacturer and its model number or equivalent shall also be indicated, along with information as to where the tool may be obtained.
- b) The range of wire sizes shall be indicated on the installation wiring diagram. The minimum permissible wire size shall not be smaller than No. 22 AWG (0.32 mm²).
- c) The wire size to be employed shall have the current-carrying capacity for the circuit application.

(paragraph 12.2.3.2 continued)

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d) The terminal configuration shall comply with the requirements of Special Terminal Assemblies Tests, Section 51.

Exception: Terminals complying with the requirements in any of the standards specified in 12.2.1.1.1 are not required to be subjected to Special Terminal Assemblies Tests, Section 51.

12.2.3.2 revised date of publication

51 Special Terminal Assemblies Tests

51.1 General

51.1.1 To determine compliance with the requirements in 12.2.3.1 and 12.2.3.2, representative samples of the terminal assembly shall comply with the requirements in 51.2.1 - 51.5.2.

Exception: Terminals complying with the requirements in any of the standards specified in 12.2.1.1.1 are not required to be subjected to these tests.

51.1.1 revised date of publication

PROPOSALS UL 603, Standard for Power Supplies for Use With Burglar-Alarm Systems, Third Edition

(NEW)

10.3.1.1 A field wiring terminal shall comply with the requirements in the Standard for Wire Connectors and Soldering Lugs for Use With Copper Conductors, UL 486A, or the Standard for Equipment Wiring Terminals for Use With Aluminum and/or Copper Conductors, UL 486E, or the field wiring requirements (Code 2) in the requirements for terminal blocks, UL 1059, or the field wiring requirements in the requirements for electrical quick-connect terminals, UL 310, or 10.3.3 - 10.3.7. The current-carrying parts shall be silver, copper, a copper alloy, or a similar nonferrous conductive material. Securing screws and the like may be plated steel.

Exception: Quick-connect terminals complying with UL 310 that are intended for field termination of electrical conductors to equipment shall be provided with instructions that such equipment is to be provided with strain relief, and the instructions shall provide information for obtaining the strain relief. The instructions shall reference the specific mating part (tab or connector) to be used.

10.3.1.1 added date of publication

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10.3.9 Any of the terminal configurations listed in 10.3.8 may be employed for connection of field wiring provided all of the following conditions are met:

- a) If a special tool is required for connection its use shall be indicated on the installation wiring diagram by name of manufacturer, model number or equivalent, and information as to where the tool may be obtained.
- b) The range of wire sizes shall be indicated on the installation wiring diagram. The minimum permissible wire size to be employed shall not be less than No. 22 AWG (0.32 mm²).
- c) The wire size to be employed shall have the current-carrying capacity of the circuit application.
- d) The terminal configuration shall comply with the requirements of the Tests on Special Terminal Assemblies, Section 48.

Exception: Terminals complying with the requirements in any of the standards specified in 10.3.1.1 are not required to be subjected to Tests on Special Terminal Assemblies, Section 48.

10.3.9 revised date of publication

48 Tests on Special Terminal Assemblies

48.1 General

48.1.1 To determine its acceptability as a field wiring connection under 10.3.3 and 10.3.4, representative samples of the terminal assembly shall comply with the tests in 48.2.1 – 48.6.2.

Exception: Terminals complying with the requirements in any of the standards specified in 10.3.1.1 are not required to be subjected to these tests.

48.1.1 revised date of publication

PROPOSALS UL 609, Standard for Local Burglar Alarm Units and Systems, Tenth Edition

(NEW)

12.6A A field wiring terminal shall comply with the requirements in the Standard for Wire Connectors and Soldering Lugs for Use With Copper Conductors, UL 486A, or the Standard for Equipment

(paragraph 12.6A continued)

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Wiring Terminals for Use With Aluminum and/or Copper Conductors, UL 486E, or the field wiring requirements (Code 2) in the requirements for terminal blocks, UL 1059, or the field wiring requirements in the requirements for electrical quick-connect terminals, UL 310, or paragraphs 12.8 - 12.12. The current-carrying parts shall be silver, copper, a copper alloy, or a similar nonferrous conductive material. Securing screws and the like may be plated steel.

Exception: Quick-connect terminals complying with UL 310 that are intended for field termination of electrical conductors to equipment shall be provided with instructions that such equipment is to be provided with strain relief, and the instructions shall provide information for obtaining the strain relief. The instructions shall reference the specific mating part (tab or connector) to be used.

Paragraph 12.6A added date of publication

12.14 Any of the terminal configurations listed in paragraph 12.13 may be employed for connection of field wiring provided there is compliance with all of the following:

A. If a special tool is required for connection, its use shall be indicated on the installation wiring diagram and the name of its manufacturer and its model number or equivalent shall also be indicated, along with information as to where the tool may be obtained.

B. The range of wire sizes shall be indicated on the installation wiring diagram. The minimum permissible wire size shall be not smaller than No. 22 AWG (0.32 mm²).

C. The wire size to be employed shall have the current-carrying capacity for the circuit application.

D. The terminal configuration shall comply with the requirements of Special Terminal Assemblies Tests, Section 51.

Exception: Terminals complying with the requirements in any of the standards specified in paragraph 12.6A are not required to be subjected to Special Terminal Assemblies Tests, Section 51.

Paragraph 12.14 revised date of publication

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51. Special Terminal Assemblies Tests

General

51.1 To determine compliance with the requirements in paragraphs 12.13 and 12.14, representative samples of the terminal assembly shall comply with the requirements in paragraphs 51.2 - 51.10.

Exception: Terminals complying with the requirements in any of the standards specified in paragraph 12.6A are not required to be subjected to these tests.

Paragraph 51.1 revised date of publication

PROPOSALS UL 634, Standard for Connectors and Switches for Use With Burglar-Alarm Systems, Sixth Edition

(NEW)

7.1A A field wiring terminal shall comply with the requirements in the Standard for Wire Connectors and Soldering Lugs for Use With Copper Conductors, UL 486A, or the Standard for Equipment Wiring Terminals for Use With Aluminum and/or Copper Conductors, UL 486E, or the field wiring requirements (Code 2) in the requirements for terminal blocks, UL 1059, or the field wiring requirements in the requirements for electrical quick-connect terminals, UL 310, or paragraphs 7.3 - 7.7. The current-carrying parts shall be silver, copper, a copper alloy, or a similar nonferrous conductive material. Securing screws and the like may be plated steel.

Exception: Quick-connect terminals complying with UL 310 that are intended for field termination of electrical conductors to equipment shall be provided with instructions that such equipment is to be provided with strain relief, and the instructions shall provide information for obtaining the strain relief. The instructions shall reference the specific mating part (tab or connector) to be used.

Paragraph 7.1A added date of publication

Terminals - Qualified Application

7.8 Any of the following terminal configurations may be employed for connection of field wiring provided that they comply with all of the requirements of paragraph 7.9, and with the applicable requirements in Tests on Special Terminal Assemblies, Section 39.

A. Telephone Type Terminals - Nonferrous terminal plates using a narrow V-shaped slot for securing of a conductor in

(paragraph 7.8 continued)

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a special post design, and requiring a special tool for wire connection.

B. Solderless Wrapped Terminals - Nonferrous terminals requiring a special tool and terminal post design.

C. Quick-Connect Terminals - Nonferrous quick-connect (push-type) terminals consisting of male posts permanently secured to the device and provided with compatible female connectors for connection to field wiring. Requires special tool for crimping of field wires. Mating terminals shall be shipped with the product, with instructions for their installation.

D. Push-In Terminals - Nonferrous (screwless) push-in terminals of the type used on some switches and receptacles wherein solid conductors may be pushed into slots containing spring-type retaining contacts. The leads can be removed by means of a tool inserted to relieve the spring tension on the conductor. Push-in terminals are not acceptable for use with aluminum conductors. The marking adjacent to the terminal shall indicate that only copper conductors are to be used.

E. Solder Terminals - Conventional nonferrous solder terminals.

F. Other Terminals - Other terminal connections may be employed if found to be equivalent to those described in items A - E.

Exception: Terminals complying with the requirements in any of the standards specified in paragraph 7.1A are not required to be subjected to Tests on Special Terminal Assemblies, Section 39.

Paragraph 7.8 revised date of publication

39. Tests on Special Terminal Assemblies

General

39.1 For determination of its acceptability as a field wiring connection under paragraphs 7.8 and 7.9, representative samples of the terminal assembly shall comply with the requirements of paragraphs 39.2 - 39.10.

Exception: Terminals complying with the requirements in any of the standards specified in paragraph 7.1A are not required to be subjected to these tests.

Paragraph 39.1 revised date of publication

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771, 983, 1023, 1034, 1037,
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PROPOSALS UL 639, Standard for Intrusion-Detection Units,
Sixth Edition

10.3 Terminals (general application)

(NEW)

10.3.X A field wiring terminal shall comply with the requirements in the Standard for Wire Connectors and Soldering Lugs for Use With Copper Conductors, UL 486A, or the Standard for Equipment Wiring Terminals for Use With Aluminum and/or Copper Conductors, UL 486E, or the field wiring requirements (Code 2) in the requirements for terminal blocks, UL 1059, or the field wiring requirements in the requirements for electrical quick-connect terminals, UL 310, or 10.3.2 - 10.3.5. The current-carrying parts shall be silver, copper, a copper alloy, or a similar nonferrous conductive material. Securing screws and the like may be plated steel.

Exception: Quick-connect terminals complying with UL 310 that are intended for field termination of electrical conductors to equipment shall be provided with instructions that such equipment is to be provided with strain relief, and the instructions shall provide information for obtaining the strain relief. The instructions shall reference the specific mating part (tab or connector) to be used.

10.3.X added date of publication

10.4 Terminals (qualified application)

10.4.1 Any of the following terminal configurations may be used for connection of field wiring, provided that they comply with all of the conditions in 10.3.4. See Tests on Special Terminal Assemblies, Section 55.

- a) Telephone Type Terminals - Nonferrous terminal plates employing a narrow V-shaped slot for securing of a conductor in a special post design. Requires special tool for wire connection.
- b) Solderless Wrapped Terminals - Solderless wrapped nonferrous terminals that require a special tool and terminal post design.
- c) Quick-Connect Terminals - Nonferrous quick-connect (push type) terminals consisting of male posts permanently secured to the device and provided with compatible female connectors for connection to field wiring. Requires special tool for

(paragraph 10.4.1 continued)

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crimping of field wires. Mating terminals shall be shipped with the product with instructions for their installation.

d) Push-In Terminals - Nonferrous (screwless) push-in terminals of the type in which solid conductors are pushed into slots containing spring type contacts. The leads can be removed by means of a tool inserted to relieve the spring tension on the conductor. Push-in terminals may not be used with aluminum conductors. The marking adjacent to the terminal shall indicate that copper conductors only are to be used.

e) Solder Terminals - Conventional nonferrous solder terminals.

f) Other Terminals - Other terminal connections may be used if found to be equivalent to (a) - (e) and limited to the same restrictions.

Exception: Terminals complying with the requirements in any of the standards specified in 10.3.X are not required to be subjected to Tests on Special Terminal Assemblies, Section 55.

10.4.1 revised date of publication

55 Tests on Special Terminal Assemblies

55.1 General

55.1.1 To determine compliance with 10.3.3 and 10.3.4, representative samples of the terminal assembly shall comply with the tests specified in 55.2.1 - 55.6.2.

Exception: Terminals complying with the requirements in any of the standards specified in 10.3.X are not required to be subjected to these tests.

Paragraph 55.1.1 revised date of publication

PROPOSAL UL 680, Standard for Emergency Vault Ventilators and Vault-Ventilating Ports, Fifth Edition

Terminals

(NEW)

14.5A A field wiring terminal shall comply with the requirements in the Standard for Wire Connectors and Soldering Lugs for Use With Copper Conductors, UL 486A, or the Standard for Equipment Wiring Terminals for Use With Aluminum and/or Copper Conductors, UL 486E, or the field wiring requirements (Code 2) in the

(paragraph 14.5A continued)

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requirements for terminal blocks, UL 1059, or the field wiring requirements in the requirements for electrical quick-connect terminals, UL 310, or paragraphs 14.6 and 14.8 - 14.11. The current-carrying parts shall be silver, copper, a copper alloy, or a similar nonferrous conductive material. Securing screws and the like may be plated steel.

Exception: Quick-connect terminals complying with UL 310 that are intended for field termination of electrical conductors to equipment shall be provided with instructions that such equipment is to be provided with strain relief, and the instructions shall provide information for obtaining the strain relief. The instructions shall reference the specific mating part (tab or connector) to be used.

Paragraph 14.5A added date of publication

PROPOSALS UL 752, Standard for Bullet-Resisting Equipment,
Eighth Edition

(NEW)

21.5A A field wiring terminal shall comply with the requirements in the Standard for Wire Connectors and Soldering Lugs for Use With Copper Conductors, UL 486A, or the Standard for Equipment Wiring Terminals for Use With Aluminum and/or Copper Conductors, UL 486E, or the field wiring requirements (Code 2) in the requirements for terminal blocks, UL 1059, or the field wiring requirements in the requirements for electrical quick-connect terminals, UL 310, or paragraphs 21.7 - 21.11. The current-carrying parts shall be silver, copper, a copper alloy, or a similar nonferrous conductive material. Securing screws and the like may be plated steel.

Exception: Quick-connect terminals complying with UL 310 that are intended for field termination of electrical conductors to equipment shall be provided with instructions that such equipment is to be provided with strain relief, and the instructions shall provide information for obtaining the strain relief. The instructions shall reference the specific mating part (tab or connector) to be used.

Paragraph 21.5A added date of publication

Terminals (Qualified Application)

21.12 Any of the following terminal configurations may be employed for connection of field wiring provided all of the conditions in paragraph 21.13 are met. See Tests on Special Terminal Assemblies, Section 51.

(paragraph 21.12 continued)

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A. Telephone Type Terminals - Nonferrous terminal plates employing a narrow V-shaped slot for securing of a conductor in a special post design. Requires special tool for wire connection.

B. Solderless Wrapped Terminals - Solderless wrapped nonferrous terminals which require a special tool and terminal post design.

C. Quick-Connect Terminals - Nonferrous quick-connect (push type) terminals consisting of male posts permanently secured to the device and provided with compatible female connectors for connection to field wiring. Requires special tool for crimping of field wires. Mating terminals shall be shipped with the product with instructions for their installation.

D. Push-In Terminals - Nonferrous (screwless) push-in terminals of the type employed on some switches and receptacles. Solid conductors are pushed into slots containing spring-type contacts. The leads can be removed by means of a tool inserted to relieve the spring tension of the conductor. Push-in terminals shall not be used with aluminum conductors. The marking adjacent to the terminal shall indicate that copper conductors only are to be used.

E. Solder Terminals - Conventional nonferrous solder terminals.

F. Other Terminals - Other terminal connections may be employed if found to be equivalent to items A - E of this paragraph and limited to the same restrictions.

Exception: Terminals complying with the requirements in any of the standards specified in paragraph 21.5A are not required to be subjected to Tests on Special Terminal Assemblies, Section 51.

Paragraph 21.12 revised date of publication

51. Tests on Special Terminal Assemblies

General

51.1 For determination of its acceptability as a field wiring connection under paragraphs 21.12 and 21.13, representative samples of the terminal assembly shall comply with the tests in paragraphs 51.2 - 51.9.

Exception: Terminals complying with the requirements in any of the standards specified in paragraph 21.5A are not required to be subjected to these tests.

Paragraph 51.1 revised date of publication

Subjects 291 (294, 365, 603, -A15-
609, 634, 639, 680, 752,
771, 983, 1023, 1034, 1037,
1076, 1610, 1635)

February 24, 1994

PROPOSAL UL 771, Standard for Night Depositories, Fifth Edition

13. Field Wiring Terminals

(NEW)

13.1.X A field wiring terminal shall comply with the requirements in the Standard for Wire Connectors and Soldering Lugs for Use With Copper Conductors, UL 486A, or the Standard for Equipment Wiring Terminals for Use With Aluminum and/or Copper Conductors, UL 486E, or the field wiring requirements (Code 2) in the requirements for terminal blocks, UL 1059, or the field wiring requirements in the requirements for electrical quick-connect terminals, UL 310, or paragraphs 13.2 - 13.5, and 13.7 - 13.10. The current-carrying parts shall be silver, copper, a copper alloy, or a similar nonferrous conductive material. Securing screws and the like may be plated steel.

Exception: Quick-connect terminals complying with UL 310 that are intended for field termination of electrical conductors to equipment shall be provided with instructions that such equipment is to be provided with strain relief, and the instructions shall provide information for obtaining the strain relief. The instructions shall reference the specific mating part (tab or connector) to be used.

Paragraph 13.1.X added date of publication

PROPOSALS UL 983, Standard for Surveillance Camera Units, Fifth Edition

(NEW)

12.3.1.1 A field wiring terminal shall comply with the requirements in the Standard for Wire Connectors and Soldering Lugs for Use With Copper Conductors, UL 486A, or the Standard for Equipment Wiring Terminals for Use With Aluminum and/or Copper Conductors, UL 486E, or the field wiring requirements (Code 2) in the requirements for terminal blocks, UL 1059, or the field wiring requirements in the requirements for electrical quick-connect terminals, UL 310, or 12.3.2. The current-carrying parts shall be silver, copper, a copper alloy, or a similar nonferrous conductive material. Securing screws and the like may be plated steel.

Exception: Quick-connect terminals complying with UL 310 that are intended for field termination of electrical conductors to equipment shall be provided with instructions that such equipment is to be provided with strain relief, and the instructions shall

(paragraph 12.3.1.1 continued)

Subjects 291 (294, 365, 603, -A16-
609, 634, 639, 680, 752,
771, 983, 1023, 1034, 1037,
1076, 1610, 1635)

February 24, 1994

provide information for obtaining the strain relief. The instructions shall reference the specific mating part (tab or connector) to be used.

12.3.1.1 added date of publication

12.4 Terminals (qualified application)

12.4.1 Any of the following terminal configurations may be employed for connection of field wiring if complying with all of the conditions in 12.4.2. See also Tests on Special Terminal Assemblies, Section 45.

a) Telephone Type Terminals - Nonferrous terminal plates employing a narrow V-shaped slot for securing of a conductor in a special post design. Requires special tool for wire connection.

b) Solderless Wrapped Terminals - Solderless wrapped nonferrous terminals which require a special tool and terminal post design.

c) Quick-Connect Terminals - Nonferrous quick-connect (push type) terminals consisting of male posts permanently secured to the device and provided with compatible female connectors for connection to field wiring. Mating terminals shall be shipped with the product with instructions for their installation. Requires special tool for crimping of field wires.

d) Push-In Terminals - Nonferrous (screwless) push-in terminals of the type employed on some switches and receptacles. Solid conductors are pushed into slots containing spring type contacts. The leads can be removed by means of a tool inserted to relieve the spring tension on the conductor. Push-in terminals are not considered suitable for use with aluminum conductors. The marking adjacent to the terminal shall indicate that copper conductors only are to be used.

e) Solder Terminals - Conventional nonferrous solder terminals.

f) Other Terminals - Other terminal connections may be employed if found to be equivalent to (a) - (e) and limited to the same restrictions.

Exception: Terminals complying with the requirements in any of the standards specified in 12.3.1.1 are not required to be subjected to Tests on Special Terminal Assemblies, Section 45.

12.4.1 revised date of publication

Subjects 291 (294, 365, 603, -A17-
609, 634, 639, 680, 752,
771, 983, 1023, 1034, 1037,
1076, 1610, 1635)

February 24, 1994

45 Tests on Special Terminal Assemblies

45.1 General

45.1.1 To determine if a terminal assembly employed as a connection for field wiring complies with the requirements in 12.4.1 and 12.4.2, representative samples of the terminal assembly shall comply with the tests in 45.2.1 - 45.6.2.

Exception: Terminals complying with the requirements in any of the standards specified in 12.3.1.1 are not required to be subjected to these tests.

45.1.1 revised date of publication

PROPOSALS UL 1023, Standard for Household Burglar-Alarm System Units, Fifth Edition

(NEW)

12.1A A field wiring terminal shall comply with the requirements in the Standard for Wire Connectors and Soldering Lugs for Use With Copper Conductors, UL 486A, or the Standard for Equipment Wiring Terminals for Use With Aluminum and/or Copper Conductors, UL 486E, or the field wiring requirements (Code 2) in the requirements for terminal blocks, UL 1059, or the field wiring requirements in the requirements for electrical quick-connect terminals, UL 310, or paragraphs 12.3 and 12.5 - 12.9. The current-carrying parts shall be silver, copper, a copper alloy, or a similar nonferrous conductive material. Securing screws and the like may be plated steel.

Exception: Quick-connect terminals complying with UL 310 that are intended for field termination of electrical conductors to equipment shall be provided with instructions that such equipment is to be provided with strain relief, and the instructions shall provide information for obtaining the strain relief. The instructions shall reference the specific mating part (tab or connector) to be used.

Paragraph 12.1A added date of publication

13.2 Any of the following terminal configurations may be employed for connection of field wiring provided they comply with all of the requirements of paragraph 13.3. See Tests on Special Terminal Assemblies, Section 55.

A. Telephone Type Terminals - Nonferrous terminal plates employing a narrow V-shaped slot for securing of a conductor in a special post design, and requiring a special tool for wire connection.

(paragraph 13.2 continued)

Subjects 291 (294, 365, 603, -A18-
609, 634, 639, 680, 752,
771, 983, 1023, 1034, 1037,
1076, 1610, 1635)

February 24, 1994

B. Solderless Wrapped Terminals - Nonferrous terminals that require a special tool and terminal post design.

C. Quick-Connect Terminals - Nonferrous quick-connect (push-type) terminals consisting of male posts permanently secured to the device and provided with compatible female connectors for connection to field wiring. Requires special tool for crimping of field wires. Mating terminals shall be shipped with the product, with instructions for their installation.

D. Push-In Terminals - Nonferrous (screwless) push-in terminals of the type employed on some switches and receptacles wherein solid conductors may be pushed into slots containing spring-type contacts. The leads can be removed by means of a tool inserted to relieve the spring tension on the conductor. Push-in terminals are not acceptable for use with aluminum conductors. The marking adjacent to the terminal shall indicate that only copper conductors are to be used.

E. Solder Terminals - Conventional nonferrous solder terminals.

F. Other Terminals - Other terminal connections may be employed if found to be equivalent to those described in items A - E.

Exception: Terminals complying with the requirements in any of the standards specified in paragraph 12.1A are not required to be subjected to Tests on Special Terminal Assemblies, Section 55.

Paragraph 13.2 revised date of publication

55. Tests on Special Terminal Assemblies

General

55.1 To determine compliance with the requirements for field wiring connection specified for Special Terminal Assemblies, Section 13, representative samples of the terminal assembly shall comply with the requirements specified in paragraphs 55.2 - 55.10.

Exception: Terminals complying with the requirements in any of the standards specified in paragraph 12.1A are not required to be subjected to these tests.

Paragraph 55.1 revised date of publication

Subjects 291 (294, 365, 603, -A19-
609, 634, 639, 680, 752,
771, 983, 1023, 1034, 1037,
1076, 1610, 1635)

February 24, 1994

PROPOSALS UL 1034, Standard for Burglary Resistant Electric
Locking Mechanisms, Third Edition

(NEW)

12.6A A field wiring terminal shall comply with the requirements in the Standard for Wire Connectors and Soldering Lugs for Use With Copper Conductors, UL 486A, or the Standard for Equipment Wiring Terminals for Use With Aluminum and/or Copper Conductors, UL 486E, or the field wiring requirements (Code 2) in the requirements for terminal blocks, UL 1059, or the field wiring requirements in the requirements for electrical quick-connect terminals, UL 310, or paragraphs 12.8 - 12.12. The current-carrying parts shall be silver, copper, a copper alloy, or a similar nonferrous conductive material. Securing screws and the like may be plated steel.

Exception: Quick-connect terminals complying with UL 310 that are intended for field termination of electrical conductors to equipment shall be provided with instructions that such equipment is to be provided with strain relief, and the instructions shall provide information for obtaining the strain relief. The instructions shall reference the specific mating part (tab or connector) to be used.

Paragraph 12.6A added date of publication

12.14 Any of the terminal configurations listed in paragraph 12.13 may be used for connection of field wiring if they comply with all of the following conditions:

- A. If a special tool is required for connection, its use shall be indicated on the installation wiring diagram by name of manufacturer and model number or equivalent, along with information as to where the tool may be obtained.
- B. The range of wire sizes shall be indicated on the installation wiring diagram. The minimum permissible wire size to be used shall be not less than No. 22 AWG (0.32 mm²).
- C. The wire size to be used shall have the current-carrying capacity for the circuit application.
- D. The terminal configuration shall comply with the requirements of the Special Terminal Assemblies Tests, Section 48.

Exception: Terminals complying with the requirements in any of the standards specified in paragraph 12.6A are not required to be subjected to Special Terminal Assemblies Tests, Section 48.

Paragraph 12.14 revised date of publication

Subjects 291 (294, 365, 603, -A20-
609, 634, 639, 680, 752,
771, 983, 1023, 1034, 1037,
1076, 1610, 1635)

February 24, 1994

48. Special Terminal Assemblies Tests

General

48.1 To determine compliance with the requirements specified in paragraphs 12.13 and 12.14, representative samples of the terminal assembly shall comply with the requirements specified in paragraphs 48.2 - 48.10.

Exception: Terminals complying with the requirements in any of the standards specified in paragraph 12.6A are not required to be subjected to these tests.

Paragraph 48.1 revised date of publication

PROPOSALS UL 1037, Standard for Antitheft Alarms and
Devices, Third Edition

(NEW)

12.6A A field wiring terminal shall comply with the requirements in the Standard for Wire Connectors and Soldering Lugs for Use With Copper Conductors, UL 486A, or the Standard for Equipment Wiring Terminals for Use With Aluminum and/or Copper Conductors, UL 486E, or the field wiring requirements (Code 2) in the requirements for terminal blocks, UL 1059, or the field wiring requirements in the requirements for electrical quick-connect terminals, UL 310, or paragraphs 12.8 - 12.12. The current-carrying parts shall be silver, copper, a copper alloy, or a similar nonferrous conductive material. Securing screws and the like may be plated steel.

Exception: Quick-connect terminals complying with UL 310 that are intended for field termination of electrical conductors to equipment shall be provided with instructions that such equipment is to be provided with strain relief, and the instructions shall provide information for obtaining the strain relief. The instructions shall reference the specific mating part (tab or connector) to be used.

Paragraph 12.6A added date of publication

12.14 Any of the terminal configurations listed in paragraph 12.13 may be employed for connection of field wiring provided there is compliance with all of the following:

A. If a special tool is required for connection, its use shall be indicated on the installation wiring diagram and the name of its manufacturer and its model number or equivalent shall be indicated, along with information as to where the tool may be obtained.

(paragraph 12.14 continued)

Subjects 291 (294, 365, 603, -A21-
609, 634, 639, 680, 752,
771, 983, 1023, 1034, 1037,
1076, 1610, 1635)

February 24, 1994

B. The range of wire sizes shall be indicated on the installation wiring diagram. The minimum permissible wire size shall not be smaller than No. 22 AWG (0.32 mm²).

C. The wire size to be used shall have the current-carrying capacity for the circuit application.

D. The terminal configuration shall comply with the requirements of Special Terminal Assemblies Tests, Section 51.

Exception: Terminals complying with the requirements in any of the standards specified in paragraph 12.6A are not required to be subjected to Special Terminal Assemblies Tests, Section 51.

Paragraph 12.14 revised date of publication

51. Special Terminal Assemblies Tests

General

51.1 To determine compliance with the requirements in paragraphs 12.13 and 12.14, representative samples of the terminal assembly shall comply with the requirements specified in paragraphs 51.3 - 51.10.

Exception: Terminals complying with the requirements in any of the standards specified in paragraph 12.6A are not required to be subjected to these tests.

Paragraph 51.1 revised date of publication

PROPOSALS UL 1076, Standard for Proprietary Burglar Alarm Units and Systems, Fourth Edition

(NEW)

12.6A A field wiring terminal shall comply with the requirements in the Standard for Wire Connectors and Soldering Lugs for Use With Copper Conductors, UL 486A, or the Standard for Equipment Wiring Terminals for Use With Aluminum and/or Copper Conductors, UL 486E, or the field wiring requirements (Code 2) in the requirements for terminal blocks, UL 1059, or the field wiring requirements in the requirements for electrical quick-connect terminals, UL 310, or paragraphs 12.8 - 12.12. The current-carrying parts shall be silver, copper, a copper alloy, or a similar nonferrous conductive material. Securing screws and the like may be plated steel.

Exception: Quick-connect terminals complying with UL 310 that are intended for field termination of electrical conductors to

(paragraph 12.6A continued)

Subjects 291 (294, 365, 603, -A22-
609, 634, 639, 680, 752,
771, 983, 1023, 1034, 1037,
1076, 1610, 1635)

February 24, 1994

equipment shall be provided with instructions that such equipment is to be provided with strain relief, and the instructions shall provide information for obtaining the strain relief. The instructions shall reference the specific mating part (tab or connector) to be used.

Paragraph 12.6A added date of publication

12.14 Any of the terminal configurations listed in paragraph 12.13 may be employed for connection of field wiring provided all of the following indicated conditions are met:

- A. If a special tool is required for connection, its use shall be indicated on the installation wiring diagram by name of manufacturer and model number or equivalent, along with information as to where the tool may be obtained.
- B. The range of wire sizes shall be indicated on the installation wiring diagram. The minimum permissible wire size to be employed shall not be less than No. 22 AWG (0.32 mm²).
- C. The wire size to be employed shall have the current-carrying capacity for the circuit application.
- D. The terminal configuration shall comply with the requirements of the Special Terminal Assemblies Test, Section 51.

Exception: Terminals complying with the requirements in any of the standards specified in paragraph 12.6A are not required to be subjected to Special Terminal Assemblies Test, Section 51.

Paragraph 12.14 revised date of publication

51. Special Terminal Assemblies Test

General

51.1 To determine compliance with the requirements of paragraphs 12.13 and 12.14, representative samples of the terminal assembly shall comply with the requirements in paragraphs 51.3 – 51.10.

Exception: Terminals complying with the requirements in any of the standards specified in paragraph 12.6A are not required to be subjected to these tests.

Paragraph 51.1 revised date of publication

Subjects 291 (294, 365, 603, -A23-
609, 634, 639, 680, 752,
771, 983, 1023, 1034, 1037,
1076, 1610, 1635)

February 24, 1994

PROPOSALS

UL 1610, Standard for Central-Station Burglar-
Alarm Units, First Edition

(NEW)

12.6A A field wiring terminal shall comply with the requirements in the Standard for Wire Connectors and Soldering Lugs for Use With Copper Conductors, UL 486A, or the Standard for Equipment Wiring Terminals for Use With Aluminum and/or Copper Conductors, UL 486E, or the field wiring requirements (Code 2) in the requirements for terminal blocks, UL 1059, or the field wiring requirements in the requirements for electrical quick-connect terminals, UL 310, or paragraphs 12.8 - 12.12. The current-carrying parts shall be silver, copper, a copper alloy, or a similar nonferrous conductive material. Securing screws and the like may be plated steel.

Exception: Quick-connect terminals complying with UL 310 that are intended for field termination of electrical conductors to equipment shall be provided with instructions that such equipment is to be provided with strain relief, and the instructions shall provide information for obtaining the strain relief. The instructions shall reference the specific mating part (tab or connector) to be used.

Paragraph 12.6A added date of publication

12.14 Any of the terminal configurations listed in paragraph 12.13 may be employed for connection of field wiring if the construction complies with all of the following:

- A. If a special tool is required for connection, its use shall be indicated on the installation wiring diagram. See paragraph 78.4.
- B. The range of wire sizes shall be indicated on the installation wiring diagram. The minimum permissible wire size shall be not smaller than No. 22 AWG (0.32 mm²).
- C. The wire size to be employed shall have the current-carrying capacity of the circuit application.
- D. The terminal configuration shall comply with the requirements of the Special Terminal Assemblies Tests, Section 51.

Exception: Terminals complying with the requirements in any of the standards specified in paragraph 12.6A are not required to be subjected to Special Terminal Assemblies Tests, Section 51.

Paragraph 12.14 revised date of publication

Subjects 291 (294, 365, 603, -A24-
609, 634, 639, 680, 752,
771, 983, 1023, 1034, 1037,
1076, 1610, 1635)

February 24, 1994

51. Special Terminal Assemblies Tests

General

51.1 To determine compliance with the requirements in paragraphs 12.13 and 12.14, representative samples of the terminal assembly shall comply with the requirements in paragraphs 51.2 - 51.10.

Exception: Terminals complying with the requirements in any of the standards specified in paragraph 12.6A are not required to be subjected to these tests.

Paragraph 51.1 revised date of publication

PROPOSALS UL 1635, Standard for Digital Alarm Communicator System Units, Second Edition

(NEW)

12.6A A field wiring terminal shall comply with the requirements in the Standard for Wire Connectors and Soldering Lugs for Use With Copper Conductors, UL 486A, or the Standard for Equipment Wiring Terminals for Use With Aluminum and/or Copper Conductors, UL 486E, or the field wiring requirements (Code 2) in the requirements for terminal blocks, UL 1059, or the field wiring requirements in the requirements for electrical quick-connect terminals, UL 310, or paragraphs 12.8 - 12.12. The current-carrying parts shall be silver, copper, a copper alloy, or a similar nonferrous conductive material. Securing screws and the like may be plated steel.

Exception: Quick-connect terminals complying with UL 310 that are intended for field termination of electrical conductors to equipment shall be provided with instructions that such equipment is to be provided with strain relief, and the instructions shall provide information for obtaining the strain relief. The instructions shall reference the specific mating part (tab or connector) to be used.

Paragraph 12.6A added date of publication

12.14 Any of the terminal configurations listed in paragraph 12.13 may be employed for connection of field wiring if the construction complies with all of the following:

A. If a special tool is required for connection, its use shall be indicated on the installation wiring diagram. See paragraph 65.4.

(paragraph 12.14 continued)

Subjects 291 (294, 365, 603, -A25-
609, 634, 639, 680, 752,
771, 983, 1023, 1034, 1037,
1076, 1610, 1635)

February 24, 1994

B. The range of wire sizes shall be indicated on the installation wiring diagram. The minimum permissible wire size shall be not smaller than No. 22 AWG (0.32 mm²).

C. The wire size to be employed shall have the current-carrying capacity of the circuit application.

D. The terminal configuration shall comply with the requirements in Special Terminal Assemblies Tests, Section 54.

Exception: Terminals complying with the requirements in any of the standards specified in paragraph 12.6A are not required to be subjected to Special Terminal Assemblies Tests, Section 54.

Paragraph 12.14 revised date of publication

54. Special Terminal Assemblies Tests

General

54.1 To determine compliance with the requirements in paragraphs 12.13 and 12.14, representative samples of the terminal assembly shall comply with the requirements in paragraphs 54.2 - 54.10.

Exception: Terminals complying with the requirements in any of the standards specified in paragraph 12.6A are not required to be subjected to these tests.

Paragraph 54.1 revised date of publication

Subjects 291 (294, 365, 603, -B1-
609, 634, 639, 680, 752,
771, 983, 1023, 1034, 1037,
1076, 1610, 1635)

February 24, 1994

A P P E N D I X B

DESIGNATED RESPONSIBILITY FOR
UL 291, UL 294, UL 365, UL 603, UL 609,
UL 634, UL 639, UL 680, UL 752, UL 771,
UL 983, UL 1023, UL 1034, UL 1037,
UL 1076, UL 1610, AND UL 1635

The following individuals are involved with the investigation of products covered under the subject UL standards. The Primary Designated Engineer (**shown in UPPERCASE letters**) coordinates the establishment and uniform interpretation of UL requirements applicable to the standard. The Designated Engineers (**shown in lowercase letters**) at the UL offices indicated work with the Primary Designated Engineer to interpret requirements and maintain UL standards.

Should you have questions regarding the interpretation of the requirements proposed in this bulletin or any adopted requirements that affect your product, you are encouraged to contact the individual at the office to which you normally submit your products.

Kamran Mohajer - at UL's Santa Clara Office (Ext. 2863)

DALE McCLEARY - at UL's Northbrook Office (Ext. 42541)

Al Gengler - at UL's Melville Office (Ext. 22562)

The Industry Advisory Conference (IAC) Chairman for the subject category is Isaac Papier at UL's Northbrook office. The IAC Chairman oversees the significant interpretations made by the Primary Designated Engineer and arbitrates any differences regarding interpretation of UL requirements.

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August 17, 1993**Revision pages for****Standard for****Power Supplies for Use with Burglar-Alarm Systems****UL 603, Third Edition**

Attached to this transmittal notice is a revision of the third edition of UL 603.

A CHANGE ON A PAGE DATED AUGUST 17, 1993 IS INDICATED BY A SMALL PRINT NOTE FOLLOWING THE AFFECTED ITEM, PRECEDED AND FOLLOWED BY AN ASTERISK.

THESE NEW AND REVISED REQUIREMENTS ARE NOW IN EFFECT.

The new and revised requirements are substantially in accordance with UL's bulletin on Subjects 365 (603, 609, 611, 1076, 1610, 1635) dated October 12, 1992. The bulletin is now obsolete and may be discarded.

Attention is directed to the note on the title page of this standard outlining the procedure to be followed to retain the approved text of ANSI/UL 603-1992.

Revised and/or additional pages may be issued from time to time.

With the inclusion of the accompanying material, the standard consists of pages dated as shown in the following checklist:

Page	Date
1	March 31, 1993 (Reprinted August 17, 1993)
2, 3	August 17, 1993
4	March 31, 1993
5, 6, 6A	August 17, 1993
7 — 34	March 31, 1993
35, 36, 36A	August 17, 1993
37 — 61, A1	March 31, 1993

(10)

MARCH 31, 1993
(Title Page Reprinted: August 17, 1993)



1

UL 603

Standard for

**Power Supplies for Use with
Burglar-Alarm Systems**

First Edition — June, 1980
Second Edition — January, 1987

Third Edition

March 31, 1993

Approval as an American National Standard (ANSI) covers the numbered paragraphs on pages dated March 31, 1993. These pages should not be discarded when revised or additional pages are issued if it is desired to retain the ANSI approved text.

An effective date included as a note immediately following certain requirements is one established by Underwriters Laboratories Inc.

Approved as ANSI/UL 603-1981, May 22, 1981
Approved as ANSI/UL 603-1986, July 16, 1986
Approved as ANSI/UL 603-1992, April 20, 1992

Revisions of this standard will be made by issuing revised or additional pages bearing their date of issue. A UL Standard is current only if it incorporates the most recently adopted revisions, all of which are itemized on the transmittal notice that accompanies the latest published set of revision pages.

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