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Subjects 38, 217, 228, 268, 268A, 864, 2075

333 Pfingsten Road
 Northbrook, IL 60062
 August 4, 1995

TO: Casualty Council of Underwriters Laboratories Inc.,
 Electrical Council of Underwriters Laboratories Inc.,
 Fire Council of Underwriters Laboratories Inc.,
 Subscribers to UL's Standards Service for Manually Actuated Signaling Boxes For Use
 With Fire Protective Signaling Systems; Control Units For Fire Protective Signaling
 Systems; Single and Multiple Station Smoke Detectors; Door Closers-Holders, With or
 Without Integral Smoke Detectors; Smoke Detectors for Fire Protective Signaling
 Systems; Smoke Detectors for Duct Application; and Gas Detectors and Sensors

SUBJECT: Announcement of UL's Acceptance of Submittals For Emergency Alarm System
 Components and Gas and Vapor Detectors

SUMMARY OF TOPICS

UL announces that it is prepared to receive submittals of the following equipment:

Emergency Alarm Equipment (FSVW)

Emergency Alarm System Control Units (FSZI)

Emergency Alarm System Control Units Accessories (FSYE)

Emergency Alarm Manual Pull Stations (FSXA)

Gas and Vapor Detectors (FTAM)

The above equipment is intended to be interconnected with other detection, activation and notification devices to form emergency alarm systems. These systems are designed to sense the presence of hazardous vapors, liquids or materials, or other emergency conditions. Upon recognition of an alarm condition, the control unit activates suitable output devices and alarm annunciators. Unless specifically described in the Listing of individual units, this equipment has not been investigated for use as part of a fire alarm signaling system or a security system.

These systems are intended for installation in accordance with NFPA 70, and other model codes and standards which regulate the storage, use and handling of hazardous materials.

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August 4, 1995

Product categories have been established to cover each of the above referenced product categories. Listing of equipment will appear in the Fire Protection Equipment Directory. A description of these categories is included in Appendix A.

Manufacturers who wish to submit products for investigation should contact one of the individuals listed below.

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This Bulletin should be kept with your copy of the Standard.

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SR:AM

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Proposed Product Categories

Main Category

Emergency Alarm Equipment (FSVW)

This category includes equipment which is intended to operate during an emergency condition to (1) alert occupants in the area of emergencies involving unintended presence of gases or vapors in excess of specified concentrations, (2) transmit a signal to a remote location, and/or (3) activate other equipment for remedial action. Unless specifically described in the listing of individual units, this equipment has not been investigated for use as part of a fire alarm signaling system or a security system.

Listing of the following products appear in this section:

Emergency Alarm System Control Units (FSZI)

Emergency Alarm System Accessories (FSYE)

Emergency Alarm Manual Pull Stations (FSXA)

Gas and Vapor Detectors (FTAM)

In addition to evaluation for potential risks of fire and electric shock, the equipment is investigated for reliability of operation, resistance to unwanted operation, and accuracy of critical measurements, as appropriate. This investigation is conducted using the installation wiring diagrams and instruction manuals provided with the equipment as a guide.

This equipment has only been investigated for use in ordinary unclassified locations as defined in the National Electrical Code, NFPA 70. Equipment Listed for use in Classified (Hazardous) Locations is included in the Hazardous Locations Equipment Directory.

Unless otherwise noted, this equipment has only been investigated for use under normal atmospheric conditions. The gases and vapors to which the equipment is intended to respond are indicated on the equipment and the individual Listings.

The equipment is intended to be installed in accordance with the National Electrical Code, NFPA 70 and other nationally recognized codes which regulate the storage, handling and use of the materials present at the installation.

Subcategories

Emergency Alarm System Control Units (FSZI)

Units covered by this category are intended to be connected to suitable detection and/or initiating devices which are designed to sense the presence of hazardous vapors, liquids, or materials, or other emergency conditions. Upon recognition of an alarm condition, the control unit activates suitable output devices and alarm annunciators.

The installation wiring diagrams and instruction manuals provided with these control units, and referenced by drawing number and issue number or revision level in the marking of the particular unit, were used as a guide under which the units were investigated. These documents include information describing the proper installation, operation, maintenance and testing of the control unit, and identify the components, such as sensors and detectors, needed to make a complete system. The installation wiring diagram identifies the electrical supervision provided by the control unit, along with details on the standby power requirements.

A source of standby power is provided so that if primary power is interrupted, the system will continue to operate under normal standby condition for a minimum of 24 hours, followed by operation under full load alarm condition for a minimum of five minutes.

Unless otherwise noted, emergency alarm system wiring has means to be electrically supervised so that a single open or single ground on any field installed wiring which prevents required operation of the system will be indicated by an audible trouble signal.

For additional information see Emergency Alarm Equipment (FSVW).

The basic standard used to investigate these products is UL 864 "Control Units for Fire-Protective Signaling Systems."

Each control unit is identified by a model designation or equivalent, and this designation is marked on the product.

The Listing Mark of Underwriters Laboratories Inc. on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up service. The Listing Mark for these products includes the name and/or symbol of Underwriters Laboratories Inc. (as illustrated in the Introduction of this Directory) together with the word "LISTED", a control number, and the following product name as appropriate: "Emergency Signaling Control Unit," "Emergency Signaling Control Unit Subassembly," "Emergency Signaling Control Unit Enclosure," or "Emergency Signaling Control Unit Enclosure Part."

Emergency Alarm System Accessories (FSYE)

Products covered under this category are intended for connection to an Emergency Alarm System Control Unit to form an emergency alarm system. They may be required system products or provide supplementary annunciation of alarm and trouble conditions, activate remote equipment, or provide some other system function as indicated by the installation wiring diagram applying to its application.

For additional information see Emergency Alarm Equipment (FSVW).

The basic standard used to investigate these products is UL 864 "Control Units for Fire-Protective Signaling Systems."

Each accessory is identified by a model designation or equivalent, and this designation is marked on the product. The manufacturer is required to label 100% of all production for those model designations shown in the individual listings.

The Listing Mark of Underwriters Laboratories Inc. on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up service. The Listing Mark for these products includes the name and/or symbol of Underwriters Laboratories Inc. (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the following product name: "Emergency Signaling Equipment Accessory," "Emergency Signaling Equipment Accessory Subassembly," "Emergency Signaling Equipment Accessory Enclosure," or "Emergency Signaling Equipment Accessory Enclosure Part."

Emergency Alarm Manual Pull Stations (FSXA)

Products covered under this category are intended to be manually activated by trained personnel in the event of any emergency condition, other than a potential fire condition, to signal the existence of an emergency condition to an emergency alarm system control unit.

These units are marked "Emergency" or "Emergency Alarm" and do not include a "Fire" or "Fire Alarm" marking.

For additional information see Emergency Alarm Equipment (FSVW).

The basic standard used to investigate these devices is UL 38 "Manually Actuated Signaling Boxes for Use with Fire Protection Signaling Systems."

Each product is identified by a model designation or equivalent, and this designation is marked on the product.

The Listing Mark of Underwriters Laboratories Inc. on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up service. The Listing Mark for these products includes the name and/or symbol of Underwriters Laboratories Inc. (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the following product name: "Emergency Alarm Box."

Gas and Vapor Detectors (FTAM)

Units covered under this category are intended to be used to detect the presence of gases and vapors in the area in which they are installed. The gases and vapors that have been investigated for use with these detectors are described in the individual Listings, along with the extent of the areas protected by individual detectors.

This equipment has only been investigated for use in ordinary unclassified locations as defined in the National Electrical Code, NFPA 70. Detectors investigated for use in (1) atmospheres which might contain an ignitable mixture of flammable vapors, (2) atmospheres containing a vapor mixture which might be subject to detonation or explosive deflagration, and (3) Classified (Hazardous) Locations are included in the Hazardous Location Equipment Directory.

The installation wiring diagrams and instruction manuals provided with these detectors were used as a guide under which the units were investigated. These documents include information describing the proper installation, operation, maintenance and testing of the detector.

This category does not cover portable gas detectors intended for use in Classified (Hazardous) Locations. See the Hazardous Location Equipment Directory, category (JTPX), for details on these detectors. Single and multiple station carbon monoxide detectors are covered in the Electrical Appliance and Utilization Equipment Directory, category (CZHF). Gas detectors, residential and recreational vehicles are also covered in the Electrical Appliance and Utilization Equipment Directory, category (JKIS).

For additional information see Emergency Alarm Equipment (FSVW).

Markings – The detectors are marked where clearly visible after installation with the gases with which they were investigated, along with concentration levels at which the units generate an alarm signal. Markings also identify the gas detectors installation wiring diagram by document number, and version number or revision date.

Trip Levels – These detectors have been investigated to ensure that they consistently trip at levels with (+/-) 5% of the gas concentration levels indicated in the individual installation wiring diagrams.

Units used to detect ignitable air-vapor mixtures are capable of activating an alarm signal at 25% of the Lower Explosive Limit (LEL) for the vapors to be detected, or less. Units designed to detect toxic vapors or vapors which present a health hazard to the user are capable of alarm activation at 50% of the Immediately Dangerous for Life and Health (IDLH) level or less, as established in the following documents.

Permissible Exposure Limits (PEL'S) "Federal Register, Code of Federal Regulations 29. CFR, subpart Z". Published 7-1-94 (Annually; every July)

Threshold Limit Values (TLV'S) "Threshold Limit Values for Chemical Substances and Physical Agents and Biological Exposure Indices" Published Annually (1994-1995) by American Conference of Governmental Industrial Hygienist.

Indoor Air Values "Ventilation for Acceptable Indoor Air Quality" "Published 1989, by American Society of Heating and Refrigeration Engineers (A.S.H.R.E.).

Recommendation Exposure Limits (REL's) "Recommendations for Occupation and Safety Health Compendium of Policy Documents and Statements." Published 1-92, Publication No. 92-100 by National Institute of safety Health (N.I.O.S.H.)

System Gas Detectors and Sensors are intended to be connected to an emergency alarm system control unit, which is used to generate a system alarm signal upon sensing an alarm condition from the gas detector. The detectors (Gas Detector) may operate by activating a signal at a given concentration of vapor, or (Gas Sensor) may transmit information defining the concentration level to the control unit, which in turn determines when to generate a system alarm signal. Detectors which transmit concentration level information have only been investigated with compatible control units as shown in individual Listings.

The basic standard used to investigate these devices is the proposed UL 2075 "Gas Detectors and Sensors."

Each unit is identified by a model designation or equivalent, and this designation is marked on the product.

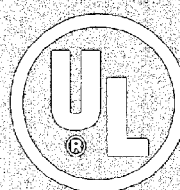
The Listing Mark of Underwriters Laboratories Inc. on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up service. The Listing Mark for these products includes the name and/or symbol of Underwriters Laboratories Inc. (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and one of the following product names: "Gas Detector," or "Gas Sensor."

Standard for Safety

UL 228

ISBN 1-55989-313-3

● Door Closers-Holders, With or Without Integral Smoke Detectors



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Standard



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UL Standards for Safety are developed under a procedure which provides for participation and comment from the affected public as well as industry. The procedure takes into consideration a survey of known existing standards and the needs and opinions of a wide variety of interests concerned with the subject matter of the standard. Thus manufacturers, consumers, individuals associated with consumer-oriented organizations, academicians, government officials, industrial and commercial users, inspection authorities, insurance interests and others provide input to UL in the formulating of UL Standards for Safety, to keep them consonant with social and technological advances.

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Underwriters Laboratories Inc.®

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

April 29, 1993

Standard for

Door Closers-Holders, With Or Without Integral Smoke Detectors

UL 228, Third Edition

Accompanying this transmittal notice is a copy of the Third edition of UL 228.

THIS EDITION OF THE STANDARD IS NOW IN EFFECT.

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

APRIL 29, 1993

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UL 228

Standard for

Door Closers-Holders, With Or Without Integral Smoke Detectors

First Edition – September, 1974

Second Edition – October, 1979

The first edition was titled "Electromagnetic and Electromechanical Door Holder-Releases and Combination Door Closer-Holders (With or Without Integral Smoke Detectors)".

Third Edition

April 29, 1993

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

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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Standards For Components	A1
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FOREWORD

A. This Standard contains basic requirements for products covered by Underwriters Laboratories Inc. (UL) under its Follow-Up Service for this category within the limitations given below and in the Scope section of this Standard. These requirements are based upon sound engineering principles, research, records of tests and field experience, and an appreciation of the problems of manufacture, installation, and use derived from consultation with and information obtained from manufacturers, users, inspection authorities, and others having specialized experience. They are subject to revision as further experience and investigation may show is necessary or desirable.

B. The observance of the requirements of this Standard by a manufacturer is one of the conditions of the continued coverage of the manufacturer's product.

C. A product which complies with the text of this Standard will not necessarily be judged to comply with the Standard if, when examined and tested, it is found to have other features which impair the level of safety contemplated by these requirements.

D. A product employing materials or having forms of construction differing from those detailed in the requirements of this Standard may be examined and tested according to the intent of the requirements and, if found to be substantially equivalent, may be judged to comply with the Standard.

E. UL, in performing its functions in accordance with its objectives, does not assume or undertake to discharge any responsibility of the manufacturer or any other party. The opinions and findings of UL represent its professional judgment given with due consideration to the necessary limitations of practical operation and state of the art at the time the Standard is processed. UL shall not be responsible to anyone for the use of or reliance upon this Standard by anyone. UL shall not incur any obligation or liability for damages, including consequential damages, arising out of or in connection with the use, interpretation of or reliance upon this Standard.

F. Many tests required by the Standards of UL are inherently hazardous and adequate safeguards for personnel and property shall be employed in conducting such tests.

INTRODUCTION

1 Scope

1.1 These requirements apply to swinging door closers equipped with integral electromechanical or electromagnetic holders and which may be provided with integral smoke detectors. These requirements also apply to electromagnetic door holder units which are for use with a separate door closer and separate automatic fire detector.

1.2 When integral smoke detectors are provided with the combination door closer-holder, the smoke detectors shall comply with requirements for smoke detectors of the photoelectric or combustion products type.

1.3 Requirements for the installation of these combination door closer-holders with or without smoke detector units are included in the Standards of the National Fire Protection Association for Installation of Fire Doors and Windows, NFPA 80, and Automatic Fire Detectors, NFPA 72E.

1.4 The combination door closer-holders (with or without integral smoke detectors) described in this Standard provide one of the following types of hold open functions:

- a) Single point hold open.
- b) Multiple point hold open. (Two, three, four, etc. discrete hold open points as set at the manufacturer's plant.)
- c) Infinite hold open points with one as set by the user.

1.5 A product that contains features, characteristics, components, materials, or systems new or different from those in use when the Standard was developed, and that involves a risk of fire, electric shock, or injury to persons, shall be evaluated using the appropriate additional component and end-product requirements as determined necessary to maintain the level of safety for the user of the product as originally anticipated by the intent of this Standard.

2 General

2.1 Components

2.1.1 Except as indicated in 2.1.2, a component of a product covered by this standard shall comply with the requirements for that component. See Appendix A for a list of standards covering components generally used in the products covered by this standard.

2.1.2 A component need not comply with a specific requirement that:

- a) Involves a feature or characteristic not needed in the application of the component in the product covered by this standard, or
- b) Is superseded by a requirement in this standard.

2.1.3 A component shall be used in accordance with its recognized rating established for the intended conditions of use.

2.1.4 Specific components are recognized as being incomplete in construction features or restricted in performance capabilities. Such components are intended for use only under limited conditions, such as certain temperatures not exceeding specified limits, and shall be used only under those specific conditions for which they have been recognized.

2.2 Units of measurement

2.2.1 If a value for measurement is followed by a value in other units in parentheses, the second value may be only approximate. The first stated value is the requirement.

2.3 Undated references

2.3.1 Any undated reference to a code or standard appearing in the requirements of this standard shall be interpreted as referring to the latest edition of that code or standard.

CONSTRUCTION

3 General

3.1 The combination door closer-holder shall be so designed that the held door may be released manually by some simple and readily obvious operation such as pulling on the door knob with a maximum force of 50 pounds (223 N), and upon release the door becomes self-closing and then latches closed.

3.2 The separate holder release device shall be so designed that the held door may be released manually by some simple and readily obvious operation such as pulling on the door knob or leading edge with a maximum force of 50 pounds (223 N).

3.3 Combination door closer-holders (with or without integral smoke detectors) designed for National Electrical Code Class 1 circuits shall be for door frame mounting only.

3.4 Combination door closer-holders (with or without integral smoke detectors), intended for mounting within or on a door, shall be limited in design to a National Electrical Code Class 2 circuit.

3.5 For the purposes of this standard, a Class 2 circuit is defined as one that has a maximum of 30 volts alternating-current RMS (42.4 volts peak or direct current) and 100 volt-amperes.

4 Frame And Enclosure

4.1 A unit shall resist the abuses to which it is likely to be subjected without adversely affecting its performance due to total or partial collapse with resulting reduction of spacings, loosening or displacement of parts, or other serious defects.

4.2 Electrical parts of a unit shall be so located or enclosed that protection against accidental contact with uninsulated hazardous live or dead metal parts will be provided.

4.3 Operating parts shall be protected against fouling by dust or by other material which may affect their normal operation.

4.4 An enclosure shall have means for mounting which shall be accessible without disassembling any operating part of the unit.