SIA Standards Committee
Security Control Panels Working Group
Committee Meeting
ISC West – Las Vegas, NV
Wednesday, April 1, 2009
1:00 – 3:30 p.m.
Room 507 (Venetian)

DRAFT AGENDA

1. Call to Order ..... T. Nesse
2. Roll Call ..... M. Rigano
3. SIA Antitrust Policy ..... T. Nesse
4. Approval of Draft Agenda ..... T. Nesse
5. Approval of the Draft Minutes of the 2008/10/29 Meeting ..... T. Nesse
6. Chairman's Remarks ..... T. Nesse
7. Security Industry Alarm Coalition (www.siacinc.org) Update ..... R. Walters
8. Requests for CP-01 Interpretations ..... All
9. Revision of CP-01-2007 Discussion Items ..... All
   a. Review comments from delta document included with Agenda
   b. Review status of changes for "lightning and thunder" (4.3.4)"
   c. Schedule final draft and review process
10. Brief Update on Glossary Project ..... T. Nesse
    (http://spreadsheets.google.com/ccc?key=pqqV5kSTN3Dzlj7LfdsdpCg&hl=en)
11. Next Meeting and Adjournment ..... T. Nesse

Agenda Item 9.a.

Control Panel Standard - Features for False Alarm Reduction

ANSI/SIA CP-01-2009 (Revision of ANSI SIA CP-01-2007)

Discussion Draft Document – 13 March 2009

Shows all proposed changes vs. current released standard.

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Contents

Page

Foreword

This standards document is published by the Security Industry Association (SIA) and was developed and adopted by a consensus of industry volunteers in accordance with SIA's standards development policies and procedures. It is intended to facilitate product compatibility and interchangeability, to reduce misunderstandings between manufacturers and purchasers, and to assist purchasers in obtaining the proper products to fulfil their particular needs.

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Requests to modify a standard, requests for interpretations of a standard, or any other comments are welcome and may be sent to:

The Security Industry Association / 635 Slaters Lane, Suite 110 / Alexandria, VA, 22314 / P (703) 683-2075 / F (703)683-2469 / email: standards@siaonline.org

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UL ..... Jim Lesniak
UL ..... Karen Fine
UL ..... Lou Chavez
UL ..... Wes Schroeppel

REVISION HISTORY

The following are changes made to this document, listed by revision.

FEBRUARY 1994 BASELINE

Original Publication

AUGUST 1997 REVISION

Added Appendix: Recommended Self-Validation Test Procedures

APRIL 1999 REVISION

Numerous and extensive changes, including:

- Conventions used in the document
- Ranges and default settings of time sensitive features
- Terms used to describe certain timing features
- Specific treatment of features that are allowed though not required
- Additional requirements for arming stations, especially for remote arming and manual alarms
- Additional requirements for power caused false alarms
- Minor clarifying language throughout
- Reference to programming at installation
- Reference to UL product listing to this standard

JANUARY 2000 REVISION

Substantive Change

- 4.2.5.1 Abort Window - Change the line in the programming range chart from *"Maximum 30-255 sec"* to *"Maximum 45 sec".*

Non-Substantive Change

- 3.2 Definition of Duress - Add the following phrase after “a facility”: or commit some other act or action “against the individual’s will.”
- 3.2 Definition of Zone Type - Change to: zone type - a zone or group of zones identified by common function or operating mode.
- 4.2.4.1 Description of Control Buttons - add after “Remote control device buttons, including Duress, Holdup and Panic, shall be mechanically designed … be minimized.
- 4.2.5.1.2 Abort Window - Add a note that an abort signal may be sent.

- 4.6.1. Add a note to Quick Reference that user manuals should contain the following statement, or one similar: "There is a communicator delay of 30 seconds in this control panel. It can be removed, or it can be increased up to 45 seconds, at the option of the end user by consulting with the installer."

- Appendix A – 4.2.5.1- Changed range from *"15 sec - 30 sec (255 sec max)"* to *"15 sec - 45 sec"*

- Appendix B – 4.2.5.1 – Changed from *"15 to between 30 and 255 seconds"* to *"15 to 45 seconds."*

- Appendix D – Test Procedures 4.2.5.1 –

- Changed maximum Abort Window delay from *'255 sec'* to *'45 sec'*

- Changed verification parameters from *"time between the trip and the local alarm"* to *"time between the local alarm and the alarm signal"*. (correction)

- Added Abort Window verification test for 46 seconds

MARCH 2007 REVISION

- 2.1 Added UL 1076 to listing of Related Documents

- 3.1.5 Binding language, added text clarification of requirements: "A requirement is a feature that the control panel must perform under all circumstances. A required option is a programmable feature that must be in the control panel. An allowed option is a programmable feature that is not required or prohibited by the standard. An allowed feature is a non-programmable feature that is not required or prohibited by the standard."

- 3.2 Terms and definitions added text "The terms and definitions listed below are for use within this standard in order to provide uniform use and understanding. For common industry nomenclature of terms used in describing alarm panels and events, please refer to Annex H."

- 3.2.xx, Credential definition added.

- 3.2.xx, Fire Alarm Verification definition refined

- 3.2.xx, Fire Zone – carbon monoxide added to the definition example.

- 3.2.xx, Remote Control Device definition refined.

- 4.1, Partitioned Systems refined further.

- 4.2.2 Arming and Exit, further clarification on automatic arming.

- 4.2.2.1 Exit Time, minimum time and Silent Exit feature further clarified.

- 4.2.2.2 Progress Annunciation, added "A control panel may meet this requirement by having two separate buttons for arming where one is arm normal (with progress annunciation) and one is arm silent (no annunciation)."

- 4.2.2.3 Exit Time Restart, added "Panels may have this feature disabled at the time of installation."

- 4.2.2.4 Exit Error , added "An Exit Error sequence shall be initiated if an exit entry zone is in a violated state or condition at the instant of exit time expiration. This section applies to entry/exit zones only. All non E/E type zones will adhere to the manufacturers specifications relative to Exit Error."

- 4.2.2.6 Recent Closing, added "A Recent Closing transmission is allowed, but not required, if an alarm condition occurs between Arming and the end of the Exit Time. The Recent Closing signal is separate from the closing signal.**"**

- 4.2.3.1 Entry Delay, added "The minimum time given is an absolute minimum, and panels are not to allow Entry Delay(s) of less than 30 seconds."

- 4.2.3.2 Progress Annunciation , added "The early progress annunciation of an entry delay needs to be audible at a minimum."

- 4.2.3.3 Disarm, changed "When the system is in an Entry Delay the system shall Disarm by a single step procedure. Procedures may include the entry of a user code (without additional keys) or the presentation of a credential. Systems may implement one or both of these procedures. Alternative disarming methods may co-exist." Also added "If multiple keypads are annunciating the entry delay, one or more keypads may be momentarily silenced."

- 4.2.4.1 Control Buttons, added "The requirements applied for all control buttons are not the same those as for manual alarms (see section 4.2.4.2) . Control buttons only need to implement the mechanical design features to prevent inadvertant activation, not the dual action requirements of section 4.2.4.2. For testing, the manufacturer may need to provide (in their product literature or otherwise) rationale on their mechanical design and how it minimizes inadvertent activation."

- 4.2.4.2 Manual Alarms, added "Testing to comply with Manufacturers specification."

- 4.2.4.3 System Acknowledgement, added "Acknowledgment of Arm and Disarm may or may not be unique. A manufacturer may use the same acknowledgement for both functions if separate buttons are used for Arming and Disarming."

- 4.2.4.4, refinements for Remote Control Device

- 4.2.4.5, Remote Disarming added

- 4.2.5.1 Abort Window, clarified to "The abort window may be disabled for each zone or zone type individually for the entire system. The default setting for the Abort Window shall be that it is enabled for all non-fire zones and zone types. It shall not be possible to globally disable the abort window using a single system-wide option."

- 4.2.5.1.1 Disarm, added "When the system is in an alarm condition, the system shall Disarm by a single step procedure. Procedures may include the entry of a user code (without additional keys) or the presentation of a credential. Systems may implement one or both of these procedures. Alternative disarming methods may co-exist." Also added "When systems require entry of a user code, alarm annunciation at the keypad shall be silenced upon entry of the first digit of the user code. Alarm annunciation shall resume upon entry of an invalid user code or after a manufacturer specified time during the Abort Window."

- 4.2.5.4.1 Cancel, added "Some panels may require a special function key after Disarm to send a Cancel signal.**"** Also added **"**An option may be provided to delay the Cancel signal and other non alarm signals until after termination of active two-way voice sessions, in the instance that the end user initiates a cancel sequence while a two-way voice session is already in progress."

- 4.3.1 Cross Zoning, last bullet added “An option may be provided to delay the Cancel signal and other non alarm signals until after termination of active two-way voice sessions, in the instance that the end user initiates a cancel sequence while a two-way voice session is already in progress.”

- 4.3.2 Swinger Shut Down, added Note “NOTE: Zones disabled by swinger shutdown shall not transmit restoral signals until they are returned to service .”

- 4.4.2 Labelling, refined to “In order to allow the installer to match the operating ranges of sensors to the operating range of the control panel, the panel shall specify, on the interconnect label, information that allows an installer to confirm compatibility between the panel zone inputs and the sensors selected for the installation. An example is provided in Annex Annex J.”

- 4.4.3 Restoration of Power, last sentence refined to “The panel arming state shall be retained no less than fourteen (14) days during a power loss.”

- 4.5 Call Waiting, DTMF test clarified.

- 4.6.1 Quick Reference Section expanded upon.

- 4.6.1.1 added section on System Configuration Identification

- 4.6.3 System Test added “A procedure outlined in the manuals is an acceptable alternative to a special mode of operation.”

- 4.6.7.1, Automatic Termination added “The test termination annunciation must be given whenever a test is terminated automatically regardless of the length of the test. This would require that an automatic test termination could not take place in less than 5 minutes, though the test can be terminated manually in less than 5 minutes. Since the person testing the system is probably not going to be at the arming station at all times, the annunciation should be audible.”

- 4.6.7.2 State at Termination, clarified “The standard does not prohibit the annunciation and/or the reporting of fire alarm trouble during a test mode.”

- VP 7 added “non-delayed” zone.

- VP 14 clarified for Remote Control Device

- VP 21 deleted “Attempt to program the duress code as a user code, but with the last digit incremented by 1. Verify that the UUT will not accept it (either in programming or in use).

- VP 25 Fire Alarms reworked

- VP 29 Call Waiting, added “Note: The dial sequence for call waiting cancel is typically <*70><pause> on a DTMF line, but may vary depending on the region of the country. To test this feature, a DTMF test set may be used to confirm that the control can dial <*> and all the digits on a standard DTMF phone.”

- VP 38 Default Settings added

- Annex A (Informative) Programmable Features, added 4.2.5.4

- Annex D (Informative) Recommended Self Validation Procedures – added text ,”These procedures are intended for use by the manufacturer to validate their design and for use by UL to confirm compliance.”

- Annex E (Informative) added text "**UL Listing -** Since the standard requires both a local alarm and off premise transmission, UL is requiring that products they test to it be UL listed for both a local and off premises reporting. Any hardware device added to a system to meet the requirements of this standard needs to be UL listed, or UL will test to verify that a failure of this device does not compromise the existing UL requirements of the system."

- Previous Annex F (Informative) Clarifications and Interpretations incorporated into the body of the document with the exception of 4.7 Default settings which was removed.
- New Annex G (Informative) added for New Central Station Signals
- New Annex H (Informative) added for Common Nomenclature
- New Annex F (Informative) added for Clarifications for Effectivity
- New Annex I (Informative) added for System Configuration Identification
- New Annex J (Informative) added for Labelling

2009 REVISION

- 3.2.2 add "or other types of life safety initiating devices"
- 3.2.9 add "manually"
- 3.2.19 add "authoritative", "only authorized", and "the ability"
- 3.2.24 shortened and clarified
- 3.2.30 added "helps"
- 3.2.31 shortened and revised the definition, removed "carbon monoxide"
- 3.2.44 shortened and revised the definition
- 3.2.58 add "or remote station"
- 3.2.63 add "of the security system"
- 3.2.66 new definition for zone type
- 4.1.1 added section regarding independent partitions
- 4.2.2.4 changed "E/E" to "entry/exit", added "message to the remote station"
- 4.2.4.1 add "helps"
- 4.2.7 excluded single buttons which must be held to initiate alarms

- 4.6.1 clarify documentation requirements throughout section, add specific user manual requirements
- 4.6.7.1 add “audible”
- Annex D add “or other nationally recognized testing laboratories”
- 4.2.2.5 indicate when option is required
- 4.3.2 1-6 trips for swinger shutdown

Control Panel Standard - Features for False Alarm Reduction

1 Scope

This standard details recommended design features for security system control panels and their associated arming and disarming devices to reduce the incidence of false alarms. These features are applicable to both residential and commercial properties protected by an electronic security system.

This standard is intended for use by manufacturers in the design of control panels and alarm signal receivers. It is also intended for reference by all affected parties, including security system installers, specifiers, and users; central station owners and operators; manufacturers of central station products, such as receivers and automation software; and local authorities.

This standard assumes that communications to the central station will be conducted by a robust contemporary communication protocol such as the SIA *Digital Communication Standard - "SIA Format" Protocol for Alarm System Communications*.

This standard is voluntary.

2 Normative references

2.1 Related Documents

Additional guidance on areas relating to this standard, as noted and otherwise, can be obtained from the sources below.

Features within this standard are, in part, based on data and recommendations from the following publications:

- Standards Committee Report (1994-1995), Central Station Alarm Association
- 1994 Study of False Alarms, Security Industry Association
- Model Cities Executive Summaries, Alarm Industry Research and Education Foundation (AIREF)

This standard is intended to allow compliance with the following standards:

National Fire Protection Association

- NFPA 72, National Fire Alarm Code

Underwriters Laboratories, Inc.

- UL 609, Local Burglar-Alarm Units and Systems
- UL 611, Central-Station Burglar-Alarm Systems
- UL 681, Installation and Classification of Mercantile and Bank Burglar-Alarm Systems
- UL 864, Control Units for Fire-Protective Signaling Systems

- UL 985, Household Fire Warning System Units
- UL 1023, Household Burglar-Alarm System Units
- UL 1076, Proprietary Burglar Alarm Units and Systems
- UL 1610, Central Station Burglar-Alarm Units
- UL 1635, Digital Burglar Alarm Communicator System Units
- UL 1641, Installation and Classification of Residential Burglar Alarm Systems

2.2 Supporting Documents

The digital communications features detailed in this standard are supported by the Security Industry Association *Digital Communication Standard - "SIA Format" Protocol for Alarm System Communications.*

2.3 Precedence

In the event of conflict between this standard and other reference documents mentioned herein, the order of precedence shall be:

1) National Fire Protection Association
2) Underwriters Laboratories, Inc.
3) this standard
4) other reference documents

3 Conventions and Definitions

3.1 Conventions

3.1.1 Units of Measurement

In accordance with SIA Policy, the units of measurements used throughout this publication are the units of the System International d' Unites (SI), commonly known as metric units. Equivalent English Units, enclosed in parenthesis, are also used in this publication. These equivalent English Units are approximate conversions and are provided for easy reference.

3.1.2 Tolerances

Unless otherwise specified, the tolerance for measurements specified within this standard shall be 10 percent (±10%).

3.1.3 Special Capitalization

Alarm sequence events, alarm system commands and states, and digital communication codes transmitted by the control panel to the central station are capitalized within the text of this standard.

3.1.4 Nomenclature and Identification of Clauses

Clauses and subclauses within this standard are identified and referenced by the number preceding each clause. Unless otherwise specified, references to a clause refer to only that clause and not to subsequent subclauses within the clause.

3.1.5 Binding Language

This standard uses the term “shall” to convey binding requirements.

The term “may” is used to convey features that are allowed but not required.

Terms such as “is”, “are”, “will”, and others are used to convey statements of fact for advisory purposes only.

The annotation “NOTE:” also precedes advisory information.

Where this standard is silent on a feature, the feature is permitted so long as it is not in conflict with the requirements contained herein.

A requirement is a feature that the control panel must perform under all circumstances. A required option is a programmable feature that must be in the control panel. An allowed option is a programmable feature that is not required or prohibited by the standard. An allowed feature is a non-programmable feature that is not required or prohibited by the standard.

Normative Annexes contain binding information.

3.2 Terms and definitions

The terms and definitions listed below are for use within this standard in order to provide uniform use and understanding. For common industry nomenclature of terms used in describing alarm panels and events, please refer to Annex H.

3.2.1
24-hour alarm
an alarm produced by a trip on a 24-hour zone.

3.2.2
24-hour zone
a zone that is always active, usually used for smoke detectors or other types of life safety initiating devices

3.2.3
abort
a manual intervention after a system trip that prevents an alarm from being sent.

3.2.4
abort window
a period of time after a sensor initiated alarm condition that allows the user additional time to Disarm the system before an alarm is transmitted.

3.2.5
alarm
a condition indicating a state of alert, duress, perimeter violation, or fire at the premises.

3.2.6
alarm signal
a transmission of an alarm condition or alarm report.

3.2.7
annunciator
a low level audio or visual device, such as a speaker or LED, whose purpose is to inform the system user the condition or status of the security system or designated part of the security system.

3.2.8
Arm
to turn on a security system.

3.2.9
arming station
the part(s) of a security system from which a human operator can manually Arm and Disarm the system, manipulate the system operation, or otherwise interact with the system.

3.2.10
Away
see *Full Arm*.

3.2.11
Bell
a specific type of sounder which produces a ringing or gong sound through the striking of its hammer to its metal part.

3.2.12
Cancel
a transmission indicating that the previous alarm signal, or alarm in process, is to be disregarded.

3.2.13
Close
the act of Arming a security system.

3.2.14
code
a parcel of electronic data, usually represented by a short series of letters or numbers corresponding to a specific event or status of the security system, which is generated by the control panel and sent as a report or part of a report.

3.2.15
communicator
the part of the security system that sends electronic data outside the premises, typically to a central station.

3.2.16
communicator delay
a period of time which elapses before the control panel sends a transmission to the central station. See *Abort Window*.

3.2.17
control
the part of the security system that determines the operation and interaction of the system based on programmed logic.

3.2.18
control panel
the part of a security system that handles control and communication, whether as combined or separate physical units.

3.2.19
credential
any piece of authoritative information that is related to a specific individual and can be used to identify them. A credential is normally used to allow only authorized individuals the ability to gain admission through a portal in a facility.

3.2.20
cross zoning
a configuring of logic within the control panel such that two or more zones of the security system are interdependent in causing an alarm condition.

3.2.21
delayed zone
a zone or circuit configured to provide a time delay, when tripped, before an alarm is generated.

3.2.22
Disarm
to turn off a security system.

3.2.23
double action trigger
a manual operation that requires two simultaneous or sequential actions.

3.2.24
Duress
a duress signal is activated by a user when they feel threatened due to one or more persons trying to force the user to enter or re-enter a premises

3.2.25
Entry Delay
the period of time allowed, after entry to the premises, to Disarm the security system before the panel initiates an Alarm Transmission Sequence.

3.2.26
entry/exit zone
a delayed zone on the perimeter of the protected premises.

3.2.27
Exit Error
a signal produced when an entry/exit zone is still violated at the expiration of the Exit Time.

3.2.28
Exit Time
the period of time allowed, after Arming a security system, to exit the premises without tripping an alarm.

3.2.29
false alarm
an alarm transmission sent by the security system indicating the presence of an alarm condition when none exists.

3.2.30
fire alarm verification
an operation that helps ensure that an alarm condition persists by resetting a tripped sensor in a fire zone and confirming that the sensor remained tripped or waiting for the sensor to re-trip within a set period of time. (e.g. if a low power RF smoke detector is self-resetting or auto-restoring, checking that the sensor trips more than once or remains tripped within a set period of time.) Fire alarm verification is meant to be a function of either the control panel or the sensor/detector. When "fire alarm verification" is a function of the control panel, delaying transmission of the fire alarm signal (after the initial sensor trip) until a second sensor trip occurs, within the confirmation period, meets the SIA CP-01 requirements.

3.2.31
fire zone
a zone or circuit equipped with sensors designed to detect a fire condition (e.g. smoke, heat, etc.)

3.2.32
follower zone
a non entry/exit zone, typically an interior zone located on an entry/exit path, that is treated as an entry/exit zone during an Entry Delay or Exit Time.

3.2.33
Full Arm
an armed state of a security system where all zones and sensors are activated.

3.2.34
Holdup
the presence of one or more criminals attempting to take goods or funds with implied or actual threat of force.

3.2.35
Home
see *Stay Arm*.

3.2.36
instant zone
a non-24 hour zone that causes an alarm immediately upon being tripped.

3.2.37
key fob
a type of *remote control device*.

3.2.38
keypad
see *arming station*.

3.2.39
local alarm
an alarm indication given at the protected premises by activation of a sounder.

3.2.40
manual reset
the act of clearing an alarm condition in a security system by human intervention, either at an arming station or by remote control.

3.2.41
Open
the act of Disarming a security system.

3.2.42
operating code
a numeric sequence used to control the alarm system, usually entered manually at a keypad.

3.2.43
option
a functional or performance feature that is required by this standard but may be implemented as a selectable part of a product's performance capability.

3.2.44
Panic
a general type of alarm initiated by a person in response to a threat

3.2.45
partition
a defined area within the security system that can be Armed and Disarmed independent of the other area(s), but operated under a single system control. (Dedicated or shared user interfaces may be used to operate a partition.)

3.2.46
point
an electronically addressable sensor, sometimes used interchangeably with the term *sensor.* The term is usually used in multiplex alarm systems or for RF (wireless) sensors.

3.2.47
premises
the facility being protected by a security system.

3.2.48
primary power
power provided by a commercial source that is normally available at the premises.

3.2.49
Recent Closing
a transmission indicating that the security system has recently been Armed.

3.2.50
report
an electronic transmission sent by the control panel to the central station containing detailed information about an event detected by or status of the security system.

3.2.51
remote control device
any device that can be used at a location remote from the control panel to control the functions of the control panel. This includes portable wireless devices, dead bolt sensors located in the entry door assembly, or any other device intended to arm or disarm the control panel when activated. One of the purposes of a remote control device is to eliminate the need for arming and disarming delays, by giving the user a means of arming or disarming before, or simultaneous with, entry or exit. Some remote control devices (i.e., key fobs) can also give the user a means of remotely initiating manual alarms.

3.2.52
secondary power
power provided from a secondary source, such as a battery or generator, upon the loss of primary power.

3.2.53
silent exit
a user initiated feature that silences the audible progress annunciation of the exit delay.

3.2.54
siren
a type of *sounder*.

3.2.55
sounder
a high level audio device whose purpose is to alert person(s) at the protected premises of an alarm condition.

3.2.56
Stay Arm
an armed state of a security system where some zones or sensors are active while other zones or sensors are made inactive, allowing occupants to be inside the protected premises without causing an alarm.

3.2.57
swinger shutdown
an operating mode in which the control panel, when a sensor or zone is repeatedly tripping, ignores the trips on that zone after a limited number of them.

3.2.58
transmission
an electronic message sent from the control panel to the central station or remote station.

3.2.59
trip
an alarm state (of the security system) produced as a result of detection by a sensor.

3.2.60
user code
the numeric sequence of digits that correlates to a valid user number.

3.2.61
user interface
see *arming station*.

3.2.62
user number
an identification number assigned to a person who operates or has access to the security system, or a default identification number assigned to a security system for quick Arming of the system.

3.2.63
violated
a condition at the premises detected by a sensor that causes a trip of the security system.

3.2.64
zone
a dedicated input to the control panel containing one or more sensor devices which will trip that input upon activation of any one sensor device.

3.2.65
Zone in Error
the zone that has produced an erroneous alarm condition.

3.2.66
zone type
an identifier for a set of attributes that define how a zone will respond to various changes in its inputs. An example of an attribute is the response to a short when the system is in a disarmed state. Examples of zone types are Fire, Interior Burglary, Perimeter Burglary, etc.

4 Requirements

4.1 Partitioned Systems

Partitioned systems shall provide the requirements of Clause 4.2 User Caused False Alarms, 4.3 Sensor Caused False Alarms, and 4.6 Installation and Test for each partition. Each partition needs to be able to support the requirements in Clause 4. In testing, it will be acceptable to test 2 partitions as indicative of the product's ability to meet the requirements in all partitions.

When silent exit is used in a partitioned system it shall meet the same requirements as for non-partitioned systems.

4.1.1 Independent Partitions – Option

If the system user operates a partitioned system, with each partition being operated independent of each other, there shall be a system option indicating this manner of behavior. When enabled each partition shall behave as if there were no other partitions, incorporating all of the features of this standard. If not enabled, then when a partition is armed and/or disarmed all partitions take on the state of said partition.

4.2 User Caused False Alarms

4.2.1 Annunciation

The control panel shall support an output to activate an auxiliary annunciation device for all sounds required by this standard.

The control panel shall support annunciation of exit and entry time in multiple locations within the premises.

4.2.2 Arming and Exit

To reduce the incidence of false alarms during Full Arming or automatic Arming, the following shall be required except as noted in clause 4.2.4.4 Remote Arming. An Auto-arming option may exist and when enabled must meet all of the requirements of clause 4.

4.2.2.1 Exit Time

A programmable Exit Time shall be included. The programmable range for all Exit Times shall be from forty-five (45) seconds to at least two (2) minutes, but shall not exceed two hundred and fifty-five (255) seconds. The control panel default setting for all Exit Times shall be sixty (60) seconds. The minimum time given is an absolute minimum, and panels are not to allow Exit Time(s) of less than 45 seconds.

If the control panel supports a silent exit feature and it has been invoked, the Exit Time shall be doubled for that exit period only but shall not exceed two hundred and fifty-five (255) seconds.

4.2.2.2 Progress Annunciation

The control panel shall annunciate a distinct pulsating audible sound throughout the duration of the Exit Time to warn person(s) still within the premises that the exit period is in process.

An audible annunciation, whose pulsating rate is distinctly different, shall sound during the last ten (10) seconds of the Exit Time to warn person(s) that the Exit Time is running out.

A control panel may meet this requirement by having two separate buttons for arming where one is arm normal (with progress annunciation) and one is arm silent (no annunciation).

If the control panel supports a silent exit feature and it has been invoked, the audible progress annunciation shall be silenced on one or more keypads for that exit period only.

The control panel shall not allow progress annunciation to be disabled for the entire system, but may allow annunciation to be disabled for individual keypads.

4.2.2.3 Exit Time Restart

An option shall be provided where violation, restoral, and then a second violation of an entry/exit zone prior to the end of the Exit Time shall restart the Exit Time. The panel shall not allow the Exit Time to be restarted more than once. The default setting for this option shall be that it is enabled.

Panels may have this feature disabled at the time of installation.

If the control panel supports a silent exit feature and it has been invoked, the audible progress annunciation shall remain silenced during the additional Exit Time, and the duration of the additional Exit Time shall be doubled for that additional exit period only but shall not exceed two hundred and fifty-five (255) seconds.

4.2.2.4 Exit Error

An Exit Error sequence shall be initiated if an exit entry zone is in a violated state or condition at the instant of exit time expiration. This section applies to entry/exit zones only. All non entry/exit type zones will adhere to the manufacturers specifications relative to Exit Error

An Exit Error shall be processed as follows:

- The local alarm shall immediately sound.
- The annunciator shall sound an Entry Delay or an alarm condition.
- An Entry Delay shall be initiated.

- If the alarm system is not Disarmed at the end of the Entry Delay, the Alarm Transmission Sequence shall be initiated.

- The Alarm Transmission shall include the alarm and an Exit Error message to the remote station.

4.2.2.5 Unvacated Premises

An option shall be provided which allows the security system to Arm in the Stay Arm mode if the Exit Time expires and no exit has been made. The default setting for this option shall be that it is enabled.

This option, if enabled, is required to be invoked when the system is Armed Away by the user from within the protected area and when areas of the system have “Stay” and “Away” arming states.

This option is not required when arming occurs by time schedule or is performed with a remote control device.

4.2.2.6 Recent Closing

A Recent Closing transmission shall be sent if an alarm occurs within two (2) minutes after the expiration of the Exit Time. If the user number is available, it shall be included in the Recent Closing transmission.

Recent Closing transmissions are not required for Fire alarms.

A Recent Closing transmission is allowed, but not required, if an alarm condition occurs between Arming and the end of the Exit Time. The Recent Closing signal is separate from the closing signal.

4.2.3 Entry and Disarming

To reduce the incidence of false alarms during Entry and Disarming, the following shall be required for all armed states.

4.2.3.1 Entry Delay

Programmable Entry Delays shall be included. The programmable range for all Entry Delays shall be from thirty (30) seconds to at least four (4) minutes. The control panel default setting for all Entry Delays shall be thirty (30) seconds. If the system is not disarmed during the Entry Delay, the Alarm Transmission Sequence shall begin when the Entry Delay expires.

The minimum time given is an absolute minimum, and panels are not to allow Entry Delay(s) of less than 30 seconds.

4.2.3.2 Progress Annunciation

A distinct annunciation shall be produced upon entry to warn person(s) entering the premises that the Entry Delay has begun. This annunciation shall be distinct from the annunciation produced when the system is in alarm. The progress annunciation of an entry delay needs to be audible at a minimum.

4.2.3.3 Disarm

When the system is in an Entry Delay the system shall Disarm by a single step procedure. Procedures may include the entry of a user code (without additional keys) or the presentation of a credential. Systems may implement one or both of these procedures. Alternative disarming methods may co-exist.

Progress annunciation shall be silenced upon entry of the first digit of the user code. Progress annunciation shall resume upon entry of an invalid user code or after a manufacturer specified time during the Entry Delay.

If multiple keypads are annunciating the entry delay, one or more keypads may be momentarily silenced.

4.2.4 Remote Control Devices

Devices that remotely control the functions of the alarm system, if used, shall have the following features.

4.2.4.1 Control Buttons

Remote control device buttons, including Duress, Holdup and Panic, shall be mechanically designed in such a way so that inadvertent activation of remote commands shall be minimized.

The requirements applied for system control buttons are not the same those as for buttons to initiate manual alarms (see section 4.2.4.2) . Control buttons (arm, disarm, etc.) only need to implement the mechanical design features to prevent inadvertent activation, not the dual action requirements of section 4.2.4.2. For testing, the manufacturer may need to provide (in their product literature or otherwise) rationale on their mechanical design and how it helps minimize inadvertent activation.

4.2.4.2 Manual Alarms

The requirements of clause 4.2.7 Initiation of Manual Alarms shall be met when activating manual alarms by remote control devices. Testing to comply with Manufacturers specification.

4.2.4.3 System Acknowledgment

The control panel shall provide acknowledgment of Arm and Disarm commands from the remote control device such that the acknowledgment can be discerned from the exterior of the premises. Acknowledgment of Arm and Disarm may or may not be unique. A manufacturer may use the same acknowledgement for both functions if separate buttons are used for Arming and Disarming.

4.2.4.4 Remote Arming

When the system is Armed using a remote control device, the control panel may be programmed to Arm the system without an Exit Time and the associated progress annunciation as described in clause 4.2.2.1 Exit Time through 4.2.2.6 Recent Closing. The default configuration for the control panel shall be to Arm the system using the Exit Time and progress annunciation.

4.2.4.5 Remote Disarming

When the system is Disarmed using a remote control device, such that an Entry Exit Zone is not violated prior to disarming the system, the progress annunciation described in clause 4.2.3.1 through 4.2.3.3 will not start.

4.2.5 Alarm Transmission Sequence

To reduce the incidence of false alarms during alarm transmissions, the following sequence of events shall be required.

4.2.5.1 Abort Window

A programmable Abort Window shall be included for all non-fire zones. During an Abort Window, the local alarm shall sound and the annunciator shall annunciate an alarm. The minimum time given is an absolute minimum, and panels shall not allow an Abort Window of less than 15 seconds. NFPA requirements shall be met when the Abort Window is applied to any fire zone.

The abort window may be disabled for each zone or zone type individually for the entire system. The default setting for the Abort Window shall be that it is enabled for all non-fire zones and zone types. It shall not be possible to globally disable the abort window using a single system-wide option.

The programming for the Abort Window for all non-fire zones shall be as follows:

Table 1 — Programming for the Abort Window for all Non-Fire Zones

Programming Range:	
Minimum	15 sec
Maximum	45 sec
Default Time	30 sec
May Disable	By Zone or Zone Type

NOTE In accordance with UL standards, this standard intends that the aggregate of the Entry Delay and Abort Window will not be programmed to exceed one minute.

4.2.5.1.1 Disarm

When the system is in an alarm condition, the system shall Disarm by a single step procedure. Procedures may include the entry of a user code (without additional keys) or the presentation of a credential. Systems may implement one or both of these procedures. Alternative disarming methods may co-exist.

When systems require entry of a user code, alarm annunciation at the keypad shall be silenced upon entry of the first digit of the user code. Alarm annunciation shall resume upon entry of an invalid user code or after a manufacturer specified time during the Abort Window.

4.2.5.1.2 Abort

If the alarm system is Disarmed within the Abort Window, no alarm transmission shall occur.

An option shall be provided that the alarm system will annunciate that no alarm signal was transmitted. The default setting for this option shall be that it is enabled.

NOTE: A transmission may be sent indicating that an alarm has been aborted.

4.2.5.2 Alarm Transmission

The Alarm Transmission shall occur at the end of the Abort Window.

4.2.5.3 Disarm

Upon disarming the system after any alarm has been reported (except for a Duress alarm), the panel shall indicate that an alarm had occurred and shall, at a minimum, indicate which zone(s) had been violated during the armed period.

4.2.5.4 Cancel Window

A period of time shall be provided, starting at the end of the Abort Window, during which a user can Cancel the alarm. The minimum duration of the window shall be five (5) minutes. The Cancel Window shall apply to all alarms that have been subjected to the Abort Window.

4.2.5.4.1 Cancel

If an alarm has previously been transmitted, a Cancel signal shall be transmitted if either the alarm system is Disarmed, or both a Disarm and function key are depressed during the Cancel Window. Some panels may require a special function key after Disarm to send a Cancel signal.

An option shall be provided that the alarm system will annunciate that a Cancel was transmitted. The default setting for this option shall be that it is enabled.

An option may be provided to delay the Cancel signal and other non alarm signals until after termination of active two-way voice sessions, in the instance that the end user initiates a cancel sequence while a two-way voice session is already in progress.

4.2.6 Inadvertent Duress

To reduce the incidence of inadvertent Duress signals, the following shall be required.

4.2.6.1 Use of Duress Feature

If a Duress feature is provided, its default setting shall be that it is disabled.

4.2.6.2 Duress Code

A Duress signal shall be sent by a unique Duress code only. The control panel shall not derive the Duress code from an existing operating code such as a "user code plus Duress digit" sequence. The panel shall not allow duplication of any operation code including Duress codes.

4.2.7 Initiation of Manual Alarms

Alarms that are manually initiated at an arming station shall require a double action trigger. A single button which must be held to initiate the manual alarm does not comply with this requirement.

NOTE: Implementation of this feature may include, but is not limited to, any of the following:

- Simultaneous depression of two buttons, where if either of the buttons have multiple functions, the two buttons are non-adjacent (i.e., can't be pressed with one finger).
- Depression of a single button after lifting the cover that normally protects it, if the cover protects only emergency function buttons.

4.3 Sensor Caused False Alarms

To reduce the incidence of false alarms caused by sensors, the following shall be required.

4.3.1 Cross Zoning

A cross zoning option shall be included with the following features:

- The cross zone option shall be programmable by zone.
- The cross zone option shall require a trip on two zones, within a given time period, to start an Alarm Transmission Sequence as described in Clause 4.2.5 Alarm Transmission Sequence and its subclauses.
- The time period shall be initiated by the trip of the first zone.
- The time period shall be programmable or specified by the manufacturer, and shall be consistent with the requirements of any UL standards for which the panel is listed.

The default setting for the cross zone option shall be that it is disabled.

NOTE: When the time period elapses without the trip of the second zone, it is recommended that an error transmission be sent that reports a trip in a cross zone was not verified.

4.3.2 Swinger Shutdown

A programmable swinger shutdown shall be required for each non-fire zone, such that a programmable one to six trip(s) shall shut down the zone. The zone shall be restored by a manual reset or may be reset automatically after eight (8) hours with no further trips on the zone. The default setting for this option shall be one trip for swinger shutdown.

NOTE: Zones disabled by swinger shutdown shall not transmit restoral signals until they are returned to service .

NOTE: A Swinger Trouble code may be transmitted upon the occurrence of additional trips on the zone.

NOTE: Swinger shutdown may be disabled on any non-fire zone that does not require police response.

4.3.3 Fire Alarms

Fire alarm verification shall be an available option on fire zones. When used, the system shall begin an Alarm Transmission Sequence once the conditions for fire alarm verification are met. The default setting for the fire alarm verification option shall be that it is disabled.

4.4 Power caused false alarms

To reduce the incidence of false alarms caused by power problems, the following shall be required.

4.4.1 Power Variations

The control panel shall prevent false alarms due to variations of primary and secondary power sources, or due to complete loss of primary or secondary power or both.

4.4.2 Labelling

In order to allow the installer to match the operating ranges of sensors to the operating range of the control panel, the panel shall specify, on the interconnect label, information that allows an installer to confirm compatibility between the panel zone inputs and the sensors selected for the installation. An example is provided in Annex Annex J.

4.4.3 Restoration of Power

Upon the restoration of power after a complete loss of primary and secondary power, the control panel shall resume operation in the same Arm state and with the same zones bypassed as when the panel lost primary and secondary power. The panel shall disregard input from all sensors for a minimum of sixty (60) seconds from the time of the primary power restoration. The panel arming state shall be retained no less than fourteen (14) days during a power loss.

4.5 Call Waiting

To help prevent a call waiting line from interfering with the alarm verification process (causing the indication of a continuous ring when the phone line is actually in use), a programmable option for call waiting cancel shall be

required on communicators that use media (e.g. PSTN) where call-waiting may be provisioned. The default setting for this option shall be that it is disabled.

Should a connection not be established on the initial attempt, an alternate dialing method that does not transmit the dialing sequence to disable call waiting shall be provided to assure that the connection failure was not due to the use of the call waiting cancel feature on a non- call waiting line.

A caution shall be included with the panel alerting the installer that a call waiting cancel on a non- call waiting line will prevent successful connection to the central station.

4.6 Installation and Test

To assist in both the installation and testing of panels to this standard, the following shall be required.

4.6.1 Product Documentation

4.6.1.1 Quick Reference

A quick reference chart or card for the installer detailing the programming locations and testing procedures associated with the features of this standard shall be included. Features that the control panel does not implement are not required to be included in the quick reference. The quick reference section may be contained in the installation manual so long as it is a separate section. Refer to table 2 for features to be included in the quick reference.

4.6.1.2 User Manual Requirements

The operation of CP-01 features that interact directly with the user shall be documented in the user manual. Features that the control panel does not implement are not required to be included in the user manual. Refer to table 2 for features to be included in the user manual.

Text similar to the following is required to describe the operation of the abort feature (4.2.5.1.2):

> "Consult with your installer to determine if your system is configured with a communicator delay. A communicator delay will prevent a report to the central station if the control panel is disarmed within 30-45 seconds after an intrusion alarm is triggered. Note that fire-type alarms are normally reported without a delay."

Table 2 – Quick Reference and User Manual Requirements

Section	Feature	Quick Reference Requirements	User Manual Requirements
4.2.2.1	Exit Time	must document	must document
4.2.2.2	Progress Annunciation	must document if programmable	must document
4.2.2.3	Exit Time Restart	must document	must document
4.2.2.4	Exit Error	must document if programmable	not required in user manual
4.2.2.5	Unvacated Premises	must document	must document

4.2.2.6	Recent Closing	must document if programmable	not required in user manual
4.2.3.1	Entry Delay	must document	must document
4.2.3.2	Progress Annunciation	must document if programmable	must document
4.2.3.3	Disarm	not required in quick reference	must document
4.2.4.1	Control Buttons	not required in quick reference	must document
4.2.4.2	Manual Alarms	not required in quick reference	must document
4.2.4.3	System Acknowledgment	must document if programmable	must document
4.2.4.4	Remote Arming	must document if programmable	must document
4.2.4.5	Remote Disarming	not required in quick reference	not required in user manual
4.2.5.1	Abort Window	must document	see 4.2.5.1.1, 4.2.5.1.2
4.2.5.1.1	Disarm (Abort)	must document if programmable	must document
4.2.5.1.2	Abort	must document if programmable	must document
4.2.5.2	Alarm Transmission	not required in quick reference	not required in user manual
4.2.5.3	Disarm	not required in quick reference	must document
4.2.5.4	Cancel Window	must document if programmable	must document
4.2.6.1	Use of Duress Feature	must document	see 4.2.6.2
4.2.6.2	Duress Code	must document	must document
4.2.7	Initiation of Manual Alarms	not required in quick reference	must document
4.3.1	Cross Zoning	must document	must document
4.3.2	Swinger Shutdown	must document	must document
4.3.3	Fire Alarms	must document	must document
4.5	Call Waiting	must document	must document
4.6.3	System Test	must document	must document
4.6.4	Initiation of Test	not required in quick reference	not required in user manual
4.6.5	Communications	must document	not required in user manual
4.6.6	Test in Progress	not required in quick reference	must document
4.6.7	Automatic Termination of Test	not required in quick reference	must document

4.6.1.1 System Configuration Identification

For system configurations comprised of interchangeable components (e.g. control equipment, arming station, annunciator, local alarm, communicator, sub assembly, etc.) a list of components that comprise of the CP-01 compliant system shall be provided. The list shall be prominently available as part of the equipment's installation manual and shall include applicable information such as model numbers of the system components, so that the complaint minimum system configuration is identified.

4.6.2 Partitioned Systems

For partitioned systems, the requirements of clause 4.6 Installation and Test and its subclauses shall be capable of being implemented independently for each partition.

4.6.3 System Test

A mode of operation that allows testing of all zones, the control, all sounders, and the communicator shall be included. A procedure outlined in the manuals is an acceptable alternative to a special mode of operation.

4.6.4 Initiation of Test

4.6.4.1 Panel Status

The panel shall ensure that a system test cannot be initiated from an armed state.

4.6.4.2 Initiation Report

At the initiation of a test, the control panel shall send a message to the central station that a test is in progress. The message shall include the user number if it is available.

4.6.5 Communications

Communication with the monitoring station regarding the partition(s), zones, or points and sensors under test shall be inhibited for the duration of the test except for the requirements of clause 4.6.4.2 Initiation Report.

A feature may be provided to transmit test signals. The default setting for this feature, if provided, shall be disabled.

4.6.6 Test in Progress

During a test, the control panel shall give a clear, prominent, and continuous indication that the system is being tested. This indication shall be made at all wired system arming stations.

4.6.7 Termination of Test

4.6.7.1 Automatic Termination

When a panel automatically terminates a test, the panel shall annunciate an audible warning, different from the annunciation specified in clause 4.6.6 Test in Progress, beginning five (5) minutes prior to the termination of the test.

4.6.7.2 State at Termination

Termination of a test shall leave the security system in a disarmed state. 24 hour alarm zones are exempt from this requirement. Should a point in a 24 hour alarm zone be in violation at the termination of a test, the panel shall suppress the alarm and treat the zone as a trouble condition. The standard does not prohibit the annunciation and/or the reporting of fire alarm trouble during a test mode.

4.6.7.3 Termination Report

When a test is terminated, the control panel shall send a message to the central station that the test is over.

4.7 Default Settings

All features of this standard implemented as selectable options shall be selected as the factory default except where otherwise indicated. Default settings are listed in Annex A.

Annex A
(informative)
Programmable Features

Table A.1 — Shipping Defaults and Recommended Programming

PARAGRAPH	FEATURE	REQUIREMENT	RANGE	SHIPPING DEFAULT	RECOMMENDED PROGRAMMING *
4.2.2.1	Exit Time	Required (programmable)	For full or auto arming: 45 sec. - 2 min. (255 sec. max.)	60 Seconds	60 Seconds
4.2.2.2	Progress Annunciation / Disable - for Silent Exit	Allowed	Individual keypads may be disabled	All annunciators enabled	All annunciators enabled
4.2.2.3	Exit Time Restart	Required Option	For re-entry during exit time	Enabled	Enabled
4.2.2.5	Auto Stay Arm on Unvacated Premises	Required Option (except for remote arm)	If no exit after full arm	Enabled	Enabled
4.2.4.4	Exit Time and Progress Annunciation / Disable - for Remote Arm	Allowed Option (for remote arm)	May be disabled - for remote arming	Enabled	Enabled
4.2.3.1	Entry Delay(s)	Required (programmable)	30 sec. - 4 min. **	30 Seconds	At least 30 Seconds **
4.2.5.1	Abort Window – for Non-Fire Zones	Required Option	May be disabled - by zone or zone type	Enabled	Enabled (all zones)
4.2.5.1	Abort Window Time – for Non-Fire Zones	Required (programmable)	15 sec. - 45 sec. **	30 Seconds	At least 15 seconds **
4.2.5.1.2	Abort annunciation	Required Option	Annunciate that no alarm was transmitted	Enabled	Enabled
4.2.5.4	Cancel Window	Required	Minimum duration of the window shall be five (5) minutes.		Not required to be programmable.
4.2.5.4.1	Cancel Annunciation	Required Option	Annunciate that a Cancel was transmitted	Enabled	Enabled
4.2.6.1 &	Duress Feature	Allowed Option	No 1+ derivative of another user code No duplicates with	Disabled	Disabled

PARAGRAPH	FEATURE	REQUIREMENT	RANGE	SHIPPING DEFAULT	RECOMMENDED PROGRAMMING *
4.2.6.2			other user codes		
4.3.1	Cross Zoning	Required Option	Programming needed	Disabled	Enabled and two (or more) zones programmed
4.3.1	Programmable Cross Zoning Time	Allowed	May Program	Per manufacturer	Per walk path in protected premises
4.3.2	Swinger Shutdown	Required (programmable)	For all non-fire zones, shut down at 1 or 2 trips	One trip	One trip
4.3.2	Swinger Shutdown Disable	Allowed	For non- police response zones	Enabled	Enabled (all zones)
4.3.3	Fire Alarm Verification	Required Option	Depends on panel and sensors	Disabled	Enabled unless sensors can self verify
4.5	Call Waiting Cancel	Required Option	Depends on user phone line	Disabled	Enabled if user has call waiting

* Programming at installation may be subordinate to other UL requirements for the intended application.

** Combined Entry Delay and Abort Window should not exceed 1 minute.

Annex B
(informative)
Arming, Disarming, and Transmission Sequences

Table B.1 — System Arming and Exit Sequence — Clause 4.2.2

Event	Time	Action	Comments
Exit Time Clause 4.2.2.1	45 to between 120 to 255 seconds. Default = 60 seconds	Initiates Progress Annunciation.	Time doubles if the silent exit feature is invoked.
Progress Annunciation Clause 4.2.2.2	During Exit Time. Last 10 seconds of Exit Time.	Audible Annunciation. Distinct Audible Annunciation.	Disabled if the silent exit feature is invoked. Default: Annunciate ON
2nd Violation of Entry/Exit Zone	During Exit Time. Clause 4.2.2.3	May Restart Exit Time One Time Only	2nd Violation = violation, restore, violation of entry/exit zone
Violated Entry/Exit Zone	End of Exit Time Clause 4.2.2.4	Initiates an Exit Error Sequence.	
Arm	End of Exit Time.	Arms the Alarm System.	Option: Shall Stay Arm if no exit was made during Exit Time. Clause 4.2.2.5
Alarm	Within 2 minutes of the end of the Exit Time. Clause 4.2.2.6	Transmit Recent Closing.	Include user number in transmission if available. Not required for Fire alarms.

Table B.2 — Entry and System Disarming Sequence — Clause 4.2.3

Event	Time	Action	Comments
Entry Delay Clause 4.2.3.1	30 seconds to ≥4 minutes. Default = 30 seconds	Initiates Progress Annunciation.	
Progress Annunciation Clause 4.2.3.2	During Entry Delay.	Audible Annunciation.	
Disarm Clause 4.2.3.3	Prior to Expiration of the Entry Delay.	Disarms the Alarm System.	System shall Disarm by, at a minimum, entry of the user code only.

Table B.3 — Alarm Transmission Sequence — Clause 4.2.5

Event	Time	Action	Comments
Abort Window Clause 4.2.5.1	Non-Fire: 15 to 45 seconds.	Sounds the Local Alarm. Annunciator Sounds Alarm Condition.	May disable by zone / zone type Default time: Non-Fire = 30 sec.
Disarm Clause 4.2.5.1.1 & 4.2.5.1.2	During Abort Window.	Aborts the Alarm Transmission Sequence.	System shall Disarm by entry of the user code only. Option - Annunciate that no Alarm Transmission was made.
Transmit Alarm Clause 4.2.5.2	End of the Abort Window.	Transmits Alarm Signal.	

Cancel Window Clause 4.2.5.4	Starts at the end of the Abort Window. ≥ 5 minutes		Applies to all alarms that have been subject to the Abort Window.
Disarm or Disarm + Function Key Clause 4.2.5.4.1	During the Cancel Window.	Transmit a Cancel Signal.	Cancel Signal is transmitted during the Cancel Window if an alarm was previously transmitted.

Disarm Clause 4.2.5.3	After an alarm report.	Disarms the Alarm System.	Panel will indicate an alarm occurred and which violated zone(s) caused the alarm.

Annex C
(informative)
Event Timing Diagrams

The following event timing diagrams use the default panel settings as prescribed in the text of the standard.

The diagrams also assume that no commands are made to the panel during the sequence unless otherwise indicated.

Areas shown in grey are not defined by the standard and may be used as the manufacturer requires.

System Arm without violations (Clause 4.2.2.1 and 4.2.2.2)

TIME (MIN/SEC) **:00** **:50** **1:00**

SYSTEM STATE	Unarmed	Exit Time		Armed
ANNUNCIATOR		Exit Annunciation	Unique	
LOCAL ALARM				
COMMUNICATION				

User Arms the Alarm System

System Arm with multiple trips of the entry/exit zone during Exit Time (Clause 4.2.2.1, 4.2.2.2 and 4.2.2.3)

TIME (MIN/SEC) **:00** **< 1:00** **:00** **:50** **1:00**

SYSTEM STATE	Unarmed	Exit Time	Restart Exit Time		Armed
ANNUNCIATOR		Exit Annunciation	Exit Annunciation	Unique	
LOCAL ALARM					
COMMUNICATION					

User Arms the Alarm System

Exit Delay Restart occurs 1 time only at the trip after the 1st restoral of an entry/exit zone

System Arm with premises unvacated (Clause 4.2.2.1, 4.2.2.2 and 4.2.2.5)
Entry/exit zone untripped during Exit Time

TIME (MIN/SEC) **:00** **:50** **1:00**

SYSTEM STATE	Unarmed	Exit Time		Armed in the Stay Arm mode
ANNUNCIATOR		Exit Annunciation	Unique	
LOCAL ALARM				
COMMUNICATION				

User Arms the Alarm System

Exit Error - System Arm with entry/exit zone in violation at the end of the Exit Time (Clause 4.2.2.1, 4.2.2.2, 4.2.2.4 and 4.2.5)

TIME (MIN/SEC) **:00** **:50** **1:00** **1:30** **2:00**

SYSTEM STATE	Unarmed	Exit Time		Entry Delay	Abort Window	Alarm Transmission
ANNUNCIATOR		Exit Annunciation	Unique	Entry or Alarm Annunciation	Alarm Annunciation	
LOCAL ALARM				Sounds	Sounds until alarm time-out	
COMMUNICATION						TX Alarm & Exit Error

User Arms the Alarm System ⇗ ⇖ Entry/exit zone violated between times :00 and 1:00 and remains violated at the end of the Exit Time

System Entry and Disarm (Clause 4.2.3)

TIME (MIN/SEC) **:00** **< :30**

SYSTEM STATE	Armed	Entry Delay	Disarmed
ANNUNCIATOR		Entry Annunciation	
LOCAL ALARM			
COMMUNICATION			

Violation of an entry/exit (delayed) zone ⇗ ⇖ Entry of Valid Disarm code

Trip of entry/exit zones (Clause 4.2.3 and 4.2.5)

TIME (MIN/SEC) **:00** **:30** **1:00**

SYSTEM STATE	Armed	Entry Delay	Abort Window	Alarm Transmission
ANNUNCIATOR		Entry Annunciation	Alarm Annunciation	
LOCAL ALARM			Sounds until alarm time-out	
COMMUNICATION				Transmit Alarm

Violation of a delayed zone ⇗

Trip of non-entry/exit and non-Fire zones (Clause 4.2.5)

TIME (MIN/SEC) **:00** **:30**

SYSTEM STATE	Armed	Abort Window	Alarm Transmission
ANNUNCIATOR		Alarm Annunciation	
LOCAL ALARM		Sounds until alarm time-out	
COMMUNICATION			Transmit Alarm

Violation of an instant zone ⇗

Annex D
(informative)
Recommended Self Validation Procedures

The following procedures are intended to ascertain compliance with the requirements of the Security Industry Association's *Control Panel Standard - Features for False Alarm Reduction*. These procedures are intended for use by the manufacturer to validate their design and for use by UL or other nationally recognized testing laboratories (NRTL) to confirm compliance.

Although a control panel can be validated as a stand alone unit, these procedures are written for a system test where various peripherals (sensors, annunciators, etc.) are used with a control panel. They refer to the control panel being tested (including its arming stations) as the Unit Under Test (UUT).

These procedures are organized by the clauses of their associated requirements in the standard to provide convenient reference, but they are not intended to suggest the sequence of testing. While all features should be tested, it is understood that individual product implementations will dictate optimum sequencing of tests.

These procedures assume that, unless otherwise specified:

- all programmable options are initially programmed to the default settings specified in the standard
- the UUT is Disarmed and returned to its default configuration after each test, noted as End of Test (EOT)

These procedures are generic and highlight various implementation details specific to an individual UUT in *italics print*, where the standard allows certain freedom of design.

These procedures are non-binding and are not intended to add to or supplant the requirements of the standard. When the requirements of the standard and these procedures appear to be in conflict, the requirements of the standard have precedence.

VALIDATION PROCEDURE	**REFERENCE**
Pre-test Verify that all selectable options of the UUT are defaulted as listed by the table in Appendix A of the standard. (Refer to the UUT's quick reference chart or card.)	4.7 & Appendix A (4.6.1)

SECTION 1 USER CAUSED FALSE ALARMS (to be performed on each partition of the UUT)

VALIDATION PROCEDURE	REFERENCE
VP 1 Panel Annunciation • Verify that the UUT has an output for an auxiliary annunciation device that will sound all annunciations required by the standard. • Verify that the UUT has an output for remote annunciation devices that will sound progress annunciation during Entry Delay and Exit Time. **EOT**	4.2.1
EXIT TIME	
VP 2 Exit Time • Verify that the UUT's Exit Time is defaulted *(for all entry/exit zones that have a unique default settings)* to 60 seconds. • Arm the UUT. • Verify that the time between the last arming keystroke and a Full Arm (Exit Time) is 60 seconds. • Disarm the UUT. • Program the Exit Time to 44 seconds, and verify that the Exit Time is 45 seconds or greater. *(Note: If the UUT did not accept programming to 44 seconds , proceed to the next test.)* • Program the Exit Time to 45 seconds, and verify that the Exit Time is 45 seconds. • Program the Exit Time to 120 seconds, and verify that the Exit Time is 120 seconds. • Program the Exit Time to 256 seconds, and verify that the Exit Time is 255 seconds or less. *(Note: If the UUT did not accept programming to 256 seconds, proceed to the next test.)* • Return the UUT to the default Exit Time setting. • Arm the UUT. • Trip an entry/exit zone. • Verify that the time between the last arming keystroke and the local alarm is 60 seconds. • Disarm the UUT. *If the UUT has a silent exit feature*: • Arm the UUT with the silent feature, and verify that the Exit Time is 120 seconds. • Arm the UUT normally, and verify that the Exit Time is 60 seconds. **EOT**	4.2.2.1

VALIDATION PROCEDURE	REFERENCE
VP 3 Progress Annunciation • Arm the UUT. • Verify that Exit Time is annunciated. • Verify that the annunciation changes during the last 10 seconds of the Exit Time (after 50 seconds of Exit Time.) • *If the UUT has a silent exit feature*: • Arm the UUT with the silent feature • Verify that there is no progress annunciation during the Exit Time. • Disarm and rearm the UUT. • Verify that Exit Time is annunciated. **EOT**	4.2.2.2
VP 4 Exit Time Restart • Arm the UUT. • During the Exit Time: - Trip an entry/exit zone, restore it, then trip it again. • Verify that the time between the second trip of the entry/exit zone and the start of the local alarm is 60 seconds. • Disarm the UUT. • Arm the UUT. • During the Exit Time: • Trip an entry/exit zone, restore it, then trip it again. • Then restore the entry/exit zone, and trip it again. • Verify that the time between the second trip of the entry/exit zone and the start of the local alarm is still 60 seconds. • Disarm the UUT. • *If the UUT has a silent exit feature*: • Arm the UUT with the silent feature • During the Exit Time: • Trip an entry/exit zone, restore it, then trip it again. • Verify that the time between the second trip of the entry/exit zone and the start of the local alarm is 120 seconds. **EOT**	4.2.2.3

VALIDATION PROCEDURE	REFERENCE
VP 5 Exit Error • Arm the UUT. • Violate an entry/exit zone, and leave it violated through the entire Exit Time. • Verify that an Exit Error sequence commences at the end of the Exit Time with the following features: - The local alarm sounds. - The annunciator sounds an entry annunciation or an alarm condition. - An Entry Delay begins. • Disarm the UUT prior to the expiration of the Entry Delay, and verify that no signal is sent. • Repeat **VP 5** without Disarming the UUT. • Verify that the alarm is transmitted 60 seconds after the local alarm sounds. • Verify that the transmission includes the appropriate alarm code and an Exit Error. **EOT**	4.2.2.4
VP 6 Unvacated Premises • Verify that the UUT is defaulted with automatic Stay Arm / unvacated premises enabled. • Arm the UUT. • Do not trip any entry/exit zones during the Exit Time. • Verify that the UUT Arms in the Stay Arm mode. **EOT**	4.2.2.6
VP 7 Recent Closing • Arm the UUT. • Wait 107 seconds after the expiration of the Exit Time, then trip any non-fire, non-delayed zone. • Verify that a Recent Closing is transmitted along with the appropriate alarm code. • *Verify that the transmission includes the appropriate user number when available.* • Disarm the UUT. • Arm the UUT. • Wait 133 seconds after the expiration of the Exit Time, then trip any non-fire, non-delayed zone. • Verify that the UUT does not send a Recent Closing transmission or a user number along with the alarm code. **EOT**	4.2.2.6
ENTRY DELAY	

VALIDATION PROCEDURE	REFERENCE
VP 8 Entry Delay • Verify that the UUT Entry Delay is defaulted *(for all entry/exit zones that have a unique default settings)* to 30 seconds. • Arm the UUT, and wait for the Exit Time to expire. • Trip an entry/exit zone. • Verify that the time between the trip and the local alarm (Entry Delay) is 30 seconds. • Disarm the UUT. • Reprogram the Entry Delay to 29 seconds, and verify that the time between the trip and the local alarm is 30 seconds or greater. *(Note: If the UUT did not accept programming to 29 seconds , proceed to the next test.)* • Reprogram the Entry Delay to 240 seconds, and verify that the time between the trip and the local alarm is 240 seconds. • Disarm the UUT. **EOT**	4.2.3.1
VP 9 Progress Annunciation • Arm the UUT, and wait for the Exit Time to expire. • Trip an entry/exit zone. • Verify that the UUT annunciates during the Entry Delay, and that the annunciation is different than an alarm. **EOT**	4.2.3.2
VP 10 Disarm • Arm the UUT, and wait for the Exit Time to expire. • Trip an entry/exit zone. • During the Entry Delay, enter a user code. • Verify that Progress Annunciation is silenced on the first keystroke of the user code. • Verify that the system Disarms. • Arm the UUT, and wait for the Exit Time to expire. • Trip an entry/exit zone. • During the Entry Delay, enter an invalid user code. • Verify that Progress Annunciation is silenced on the first keystroke of the invalid user code. • Verify that Progress Annunciation resumes after the last digit of the invalid user code *(or after the time specified by the manufacturer).* • Verify that the Entry Delay is still 30 seconds. **EOT**	4.2.3.3
REMOTE CONTROL DEVICES	

VALIDATION PROCEDURE	REFERENCE
VP 11 Control Buttons • Verify that the remote control device buttons are mechanically designed so that inadvertent activation is minimized. *(Reference the manufacturer's product literature if necessary.)* **EOT**	4.2.4.1
VP 12 Manual Alarms • Arm the UUT. • Activate a manual alarm. • Verify that a double action trigger was used to activate the alarm. (Acceptable double action trigger activation is typified by the examples given in clause 4.2.7 of the standard.) *(This test should be repeated for all types of manual alarm activations supported by the remote control device.)* **EOT**	4.2.4.2
VP 13 System Acknowledgment • Arm the UUT from the remote control device. • Verify that the UUT acknowledged the command in a manner that would normally be discernible from the exterior of the premises. • Disarm the UUT from the remote control device • Verify that the UUT acknowledged the command in a manner that would normally be discernible from the exterior of the premises. **EOT**	4.2.4.3
VP 14 Remote Arming • Arm the UUT from the remote control device. • Verify that the Exit Time is 60 seconds and that Progress Annunciation occurs. *If the remote control device has a silent exit feature*: • Arm the UUT from the remote control device with the silent feature invoked • Verify that the Exit Time is 120 seconds. • Arm the UUT normally from the remote control device • Verify that the Exit Time is 60 seconds. **EOT**	4.2.4.4 (4.2.2.1 and 4.2.2.2)
ALARM TRANSMISSION	

VALIDATION PROCEDURE	REFERENCE
VP 15 Abort Window • Verify that the UUT's Abort Window is defaulted *(for all non-fire zones that have a unique default settings)* to 30 seconds. • Arm the UUT, and wait till the Exit Time expires. • Trip a non-fire zone. • Verify that the time between the local alarm and the alarm signal (Abort Window) is 30 seconds. • Disarm the UUT. • Reprogram the Abort Window to 14 seconds *(Note: If the UUT did not accept programming to 14 seconds , proceed to the next test.)* • Verify that the time between the local alarm and the alarm signal is 15 seconds or greater. • Disarm the UUT. • Reprogram the Abort Window to 15 seconds • Verify that the time between the local alarm and the alarm signal is 15 seconds. • Disarm the UUT. • Reprogram the Abort Window to 45 seconds, and verify that the time between the local alarm and the alarm signal is 45 seconds. • Disarm the UUT. • Reprogram the Abort Window to 46 seconds • *(Note: If the UUT did not accept programming to 46 seconds , proceed to the next test.)* • Verify that the time between the local alarm and the alarm signal is 45 seconds or less. • Disarm the UUT. *Perform the above sequence for all non-fire zones on the UUT.* **EOT**	4.2.5.1

VALIDATION PROCEDURE	REFERENCE
VP 16 Disarm • Program the UUT with a User Code. • Arm the UUT and wait for the Exit Time to expire. • Trip a non-entry/exit, non-fire zone. • During the Abort Window, enter a user code. • Verify that Alarm Annunciation is silenced on the first keystroke of the user code. • Verify that the system Disarms. • Arm the UUT, and wait for the Exit Time to expire. • Trip an entry/exit zone. • During the Abort Window, enter an invalid user code. • Verify that Alarm Annunciation is silenced on the first keystroke of the invalid user code. • Verify that Alarm Annunciation resumes after the last digit of the invalid user code *(or after the time specified by the manufacturer).* • Verify that the Abort Window is still 30 seconds. **EOT**	4.2.5.1.1
VP 17 Abort • Verify that the UUT is defaulted to annunciate that no alarm has been transmitted when the alarm is Aborted. • Arm the UUT, and wait for the Exit Time to expire. • Trip a non-fire type zone. • Disarm the UUT. • Verify that the UUT does not transmit an alarm • Verify that the UUT annunciates that no alarm was transmitted. **EOT**	4.2.5.1.2
VP 18 Alarm Transmission • Arm the UUT. • Trip a non-fire type zone. • Verify that the UUT transmits the alarm 30 seconds after the local alarm sounds. **EOT**	4.2.5.2
VP 19 Disarm • Arm the UUT, and wait for the Exit Time to expire. • Trip a zone, and allow the system to report the alarm. • Disarm the UUT. • Verify that the UUT indicates an alarm has occurred and which zone was violated. **EOT**	4.2.5.3

VALIDATION PROCEDURE	REFERENCE
VP 20 Cancel Window • Arm the UUT, and wait for the Exit Time to expire. • Trip a zone, and allow the system to report the alarm. • Wait 4 minutes and 30 seconds after the transmission of the alarm. • *Disarm the UUT, or Disarm and depress the appropriate function key to cancel the alarm.* • Verify that the UUT annunciates that a Cancel has been transmitted. • Verify that the UUT transmits a Cancel signal and annunciates that a Cancel was transmitted. **EOT**	4.2.5.4 & 4.2.5.4.1
OTHER USER CAUSED FALSE ALARMS	
VP 21 Unique Duress Code *(If duress is supported)* • Verify that the UUT duress feature is disabled as a default. • Arm the UUT. • Attempt to initiate a Duress alarm. • Verify that no Duress alarm was initiated. • Disarm the UUT. • Reprogram the duress feature to enable it. • Arm the UUT. • Initiate a Duress alarm. • Verify that a duress alarm is transmitted. • Disarm the UUT. • Attempt to program the duress code to match each of the other codes accepted by the UUT. • Verify that the UUT will not accept it (either in programming or in use). • Program the UUT with a valid duress code. • Attempt to program a user code to match the duress code. • Verify that the UUT will not accept it (either in programming or in use). **EOT**	4.2.6.1 & 4.2.6.2
VP 22 Initiation of Manual Alarms • Arm the UUT. • Activate a manual alarm. • Verify that a double action trigger was used to activate the alarm. (Acceptable double action trigger activation is typified by the examples given in Clause 4.2.7 of the standard.) *(This should be done for all types of manual alarm activations supported by the remote control device.)* **EOT**	4.2.7

SECTION 2 SENSOR CAUSED FALSE ALARMS (to be performed on each partition of the UUT)

VALIDATION PROCEDURE	REFERENCE
VP 23 Cross Zoning • Verify that no zones are defaulted in a cross zoned arrangement. • Program two zones in a cross zoned arrangement. • Arm the UUT and wait until the Exit Time is expired. • Trip one of the zones that are programmed as a cross zone. • At the expiration of the cross zone time, verify that there is no local alarm and that no alarm has been transmitted. • *If the feature is available,* verify that an error is transmitted that reports that a trip in a cross zone was not verified. • Disarm and rearm the UUT. • Program two zones in a cross zoned arrangement. • Arm the UUT and wait until the Exit Time is expired. • Trip the other zone in the cross zoned pair. • At the expiration of the cross zone time, verify that there is no local alarm and that no alarm has been transmitted. • *If the feature is available,* verify that an error is transmitted that reports that a trip in a cross zone was not verified. • Disarm and rearm the UUT. • Program two zones in a cross zoned arrangement. • Arm the UUT, and wait until the Exit Time is expired. • Trip one of the zones that are programmed as a cross zone. • After the cross zone time has expired, trip the other zone in the cross zoned pair. • At the end of the second cross zone time, verify that there is no local alarm and that no alarm has been transmitted. • *If the feature is available,* verify that 2 error transmissions were made that report the unverified trips in a cross zone. • Disarm and rearm the UUT. • Program two zones in a cross zoned arrangement. • Arm the UUT and wait until the Exit Time is expired. • Trip one of the zones that are programmed as a cross zone. • During the cross zone time, trip the other zone in the cross zone pair. • Verify that the Alarm Transmission Sequence (local alarm) starts at the second trip. **EOT**	4.3.1

VALIDATION PROCEDURE	REFERENCE
VP 24 Swinger Shutdown (Not required for fire alarms.) • Arm the UUT, and allow the Exit Time to expire. • Trip a zone and allow the accompanying alarm to be reported. • Wait for the local alarm to reset, then trip the same zone again. • Verify that the system does not go into alarm. *If the UUT supports two-trip Swinger Shutdown:* • Arm the UUT, and allow the Exit Time to expire. • Trip a zone and allow the accompanying alarm to be reported. • Wait for the local alarm to reset, then trip the same zone again. • Wait for the local alarm to reset, then trip the same zone a third time. • Verify that the system does not go into alarm. **EOT**	4.3.2

VALIDATION PROCEDURE	REFERENCE
VP 25 Fire Alarms **Verify that Verification may be disabled** • Program the UUT to disable Fire Alarm Verification. • Trip a sensor on a fire zone. • Verify that the UUT transmits an alarm signal. **With Verification enabled, test that a single trip does not cause an alarm** • Program the UUT to enable fire alarm verification. • Trip a sensor on a fire zone that has been configured for alarm verification. • For UUTs with a means for determining that a zone has been reset, verify that the UUT resets the zone. For self-resetting sensors, remove the tripping means after 5 seconds. • Verify that no alarm is triggered *within the time frame designated by the manufacturer*. **Check that multiple trips on a sensor do trigger an alarm** • Wait for a period of 3 minutes to allow the confirmation period to time out. • Trip a sensor on a fire zone that has been configured for alarm verification. • For a UUT with a means for determining that a zone has been reset, verify that the UUT resets the zone. When the zone is reset, trip is again *within the time frame designated by the manufacturer*. For self-resetting sensors, remove the tripping means 5 seconds after the sensor trips. Wait 15 seconds, then re-apply the tripping means and hold it. • Verify that an alarm signal is transmitted after the second trip *within the time frame designated by the manufacturer*. **Check that a sustained trip on a sensor does trigger an alarm** • Reset the fire alarm system of the UUT. • Trip a sensor on a fire zone that has been configured for alarm verification. Hold the tripping means in place. • Verify that an alarm signal is transmitted *within the time frame designated by the manufacturer*. **EOT**	4.3.3

SECTION 3 POWER CAUSED FALSE ALARMS

VALIDATION PROCEDURE	REFERENCE
VP 26 Power Variations • Arm the UUT and wait until the Exit Time is expired. • Vary the primary and secondary power supplied to the UUT between the *maximum manufacturers specifications* and 0 (zero). • Verify that no alarms are transmitted. **EOT**	4.4.1
VP 27 Labelling • Verify that labelling is present on the UUT interconnect label that indicates the voltage under the full rated load at which the UUT ceases to process sensor trips. **EOT**	4.4.2
VP 28 Restoration of Power • Arm the UUT, and wait until the Exit Time is expired. • Reduce the primary and secondary power to 0 (zero). • Restore the primary power. • Verify that the UUT resumes the same state of arming and bypassed zones as when power was removed. • Trip any sensor within 60 seconds of restoral of primary power. • Verify that the UUT disregards input from the sensor. **EOT**	4.4.3

SECTION 4 CALL WAITING

VALIDATION PROCEDURE	REFERENCE

VALIDATION PROCEDURE	REFERENCE
VP 29 Call Waiting • Program a CALL WAITING CANCEL dialing sequence. Note: The dial sequence for call waiting cancel is typically <*70><pause> on a DTMF line, but may vary depending on the region of the country. To test this feature, a DTMF test set may be used to confirm that the control can dial <*> and all the digits on a standard DTMF phone. • Arm the UUT, and wait till the Exit Time has expired. • Trip any zone, and wait till an alarm transmission is started. • Verify, by use of a standard dial verifier, that the call waiting cancel sequence was sent before the dialed phone number. • When the UUT senses that a connection was not made, verify that an alternative dialing method was employed. • Verify that a warning to installers, not to use the call waiting cancel feature inappropriately, is provided with the UUT. **EOT**	4.5

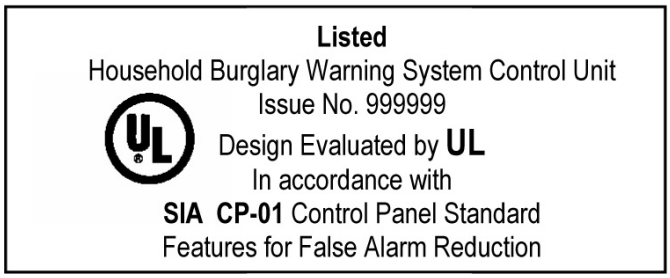
SECTION 5 INSTALLATION AND TEST (to be performed on each partition of the UUT)

VALIDATION PROCEDURE	REFERENCE
VP 30 Quick Reference • Verify that a quick reference chart or card is provided with the UUT, which details all programming locations for the features in the standard and their associated test procedures. **EOT**	4.6.1
VP 31 System Test • Verify that the UUT has a test feature which supports tests VP 32 through VP 37 below. • Verify that the test feature may be independently activated for each partition of the UUT. **EOT**	4.6.2 & 4.6.3
VP 32 Initiation of Test • Arm the UUT and wait until the Exit Time is expired. • Start a test sequence and verify that the UUT does not enter the test mode. • Disarm the UUT. • Start a test sequence, and verify that the UUT sends a transmission that a test is in progress. *(When the user number is available, verify that it is included in the message)* **EOT**	4.6.4.1 & 4.6.4.2
VP 33 Communications • *If the UUT can be programmed to transmit information regarding system tests, verify that the setting for this feature is defaulted to disable test communications.* • Start a test sequence. • Trip a zone, and verify that the UUT does not send any transmission. **EOT**	4.6.5
VP 34 Test in Progress • Start a test sequence. • Verify that indication of a test in progress is present at all wired system arming stations. **EOT**	4.6.6
TERMINATION OF TEST	
VP 35 Automatic Termination *If the UUT supports automatic termination of test:* • Start a test sequence. • Cause the UUT to automatically terminate the test. *(Refer to manufacturer's instructions.)* • Verify that the UUT provides annunciation of an impending test termination at all wired arming stations beginning 5 minutes prior to the termination of the test. • Verify that the annunciation is different than that given during the test in progress. **EOT**	4.6.7.1

VALIDATION PROCEDURE	REFERENCE
VP 36 State at Termination • Start a test sequence. • Terminate the test sequence, and verify that the UUT resumes operation in a Disarmed state. • Start a test sequence. • Trip a 24 hour zone. • Terminate the system test. • Verify that no alarm signal is transmitted, but that a trouble condition is indicated. **EOT**	4.6.7.2
VP 37 Termination Report • Start and terminate a test sequence. • Verify that an end of test message is transmitted. **EOT**	4.6.7.3
VP 38 Default Settings • Using the manufacturer's supplied installation manual, confirm that each relevant programmable feature has the default value as shown in Annex A • (alternative procedure) • Obtain a UUT configured for shipment • Using the UUT's built-in programming mode, confirm that each relevant programmable feature has the default value as shown in Annex A. **EOT**	4.7
END OF SELF VALIDATION PROCEDURE	

Annex E
(informative)
Product Marking & Listing

The following mark is available from Underwriters Laboratories, Inc. (UL) and is issued to compliant products tested and listed in accordance with UL procedures.



UL Listing

Since the standard requires both a local alarm and off premise transmission, UL is requiring that products they test to it be UL listed for both a local and off premises reporting. Any hardware device added to a system to meet the requirements of this standard needs to be UL listed, or UL will test to verify that a failure of this device does not compromise the existing UL requirements of the system.

Annex F
(informative)
Clarifications on Effectivity

The following is being provided as informative clarifications for the effectivity of changes made to ANSI/SIA CP-01.

F.1 "Revisions" of CP-01 will not contain changes that significantly affect the false alarm performance of the listed products

F.2 A new "edition" of CP-01 is required when changes will significantly affect the false alarm performance of the listed products

F.3 The Subcommmittee votes on whether or not any planned update of CP-01 would be defined as a "revision"

F.4 Effectivity for "revisions"

F.4.1 Effective on completion of the ANSI process

F.4.2 Review of listed products (to the latest revision) is triggered if a product with modifications potentially affecting CP-01 compliance are submitted for UL for review (an example would be introduction of a new style panic buttons) - otherwise CP-01 re-listing is not required

F.4.3 New product submittals will be evaluated under the latest, published, CP-01 standard

F.5 Effectivity for new "editions"

F.5.1 Effective one year after completion of the ANSI canvass process

F.5.2 To continue labeling, compliant products would have to be submitted for a file review, completed before the effective date of the edition

Annex G
(informative)
New Central Station Signals

This annex describes the new signals alarm panels will send in compliance with the SIA CP-01 false alarm reduction standard. It is divided into two categories; required and optional signals.

Note: The DC-03 and DC-05 references provided below are for information only. Please refer to the appropriate SIA Standard for the latest information.

I. New Signals Required by CP-01-2000

Exit Error – This signal is sent if an entry/exit zone is violated at the expiration of an exit delay.

In accordance with SIA-DC-03 this signal can be one of 2 signals:
1. EA + zone ID
2. EE + User Number

When SIA-DC-05 is used, this signal is sent as:
1 + 374 + Zone ID
In addition, the following signal may also be sent:
1 + 457 + User Number

Recent Closing – This signal is sent if an alarm occurs within two minutes of the expiration of an exit delay.

In accordance with SIA-DC-03 this signal is sent as:
CR + User Number

When SIA-DC-05 is used, this signal is sent as:
1 + 459 + User Number

Cancel – This signal is sent when an alarm is canceled. Cancel is not a new signal but it is mentioned for inclusion in the Central Station Standards.

In accordance with SIA-DC-03 this signal can be one of 2 signals:
1. BC + Zone ID
2. OC + User Number

When SIA-DC-05 is used, this signal is sent as:
1 + 406 + User Number

Start Test – This signal is sent when the system is put into the test mode.

In accordance with SIA-DC-03 this signal is sent as:

TS

When SIA-DC-05 is used, this signal is sent as:

1+ 607 + User Number

End Test – This signal is sent when the system is taken out of the test mode.

In accordance with SIA-DC-03 this signal is sent as:

TE

When SIA-DC-05 is used, this signal is sent as:

3 + 607 + User Number

II. New Signals Allowed or Recommended by CP-01-2000

Cross Zone Error (CP-01, Clause 4.3.1) – This optional signal is sent at the then end of a cross trip verification time if the trip was not verified by a second zone trip. The purpose is to alert the central station that a possible faulty zone exists.

In accordance with SIA-DC-03 this signal(s) may be sent as Unverified Events:

BG
FG
UG

When SIA-DC-05 is used, this signal is sent as:

1+ 378 + Zone ID

Swinger Trouble – A zone that is shut down because of a swinger has just activated again.

In accordance with SIA-DC-03 this signal is sent as:

BD + Zone ID

When SIA-DC-05 is used, this signal is sent as:

1+ 377 + Zone ID

Swinger Trouble Restore – A zone that is shut down because of a swinger has just restored. It is still shutdown but the state of the zone is now restored.

In accordance with SIA-DC-03 this signal is sent as:

BE + Zone ID

When SIA-DC-05 is used, this signal is sent as:

3+ 377 + Zone ID

Annex H
(informative)
Common Nomenclature

This annex describes the common nomenclature for Alarm Panels which manufacturers are encouraged to use. Because many operators, of alarm panels, are required to manage several panels located in multiple locations (Home, work, relatives, etc.) it is desirable that the most common functions be named alike. The following are the basic functions that may be named alike.

Disarm - That portion of the system that is designed to detect unauthorized entry into the protected premises is not in use. (Other forms of protection may or may not be in use).

Cancel - To transmit an additional alarm signal to a central station indicating that a prior signal is to be disregarded.

Arm - That portion of the system that is designed to detect unauthorized entry into the protected premises is in use. (Other forms of protection may or may not be in use).

Premises Arm - That portion of the system that is designed to detect unauthorized entry into the protected premises, when there are inhabitants within, and with the exception of the entry portal, is in use. (Other forms of protection may or may not be in use).

No Entry Arm - That portion of the system that is designed to detect unauthorized entry into the protected premises, when there are inhabitants within, is in use. (Other forms of protection may or may not be in use).

Bypass - A point of protection (window, door, etc.) is temporarily disabled from performing its intended function.

Quick Bypass - Upon exiting, and wishing to Arm the system, and a Point(s) is not in its intended position for Arming, the panel will allow Arming with the Point(s) disabled from performing its intended function.

Duress - When about to Disarm the system, the user is approached by a would-be perpetrator, and the user uses a unique function, which Disarms the system and transmits a “Duress” alarm to the monitoring center.

Police Emergency - A user of the alarm system has observed a situation that requires police response, and activates a unique function, which transmits a Police Emergency alarm to the monitoring center.

Fire Emergency - A user of the alarm system has observed a situation that requires fire department response, and activates a unique function, which transmits a Fire alarm to the monitoring center.

Medical Emergency - A user of the alarm system has observed a situation that requires emergency medial assistance, and activates a unique function, which transmits a Medical Emergency alarm to the monitoring center.

Quick Arming - An abbreviated or shorten function that Arms the system. (See Arm)

Monitor Mode - The system in not Armed, and any time a perimeter point of protection is activated, the alarm panel emits a sound.

Annex I
(informative)
System Configuration Identification (Ref. 4.6.1.1)

Section 4.6.1.1 requires the manufacturer to identify the minimum equipment requirements for a compliant installation. It does not imply that each component in the system be must be listed as CP-01 compliant. For example, consider a manufacturer that offers two types of keypads. First, they offer a "3100 series" of LED keypads that do not support all CP-01 requirements. Second, they offer a "4100 series" of keypads that has been listed and does meet support all CP-01 requirements. The manufacturer must identify that a "4100 series" keypad must be installed for CP-01 compliance, but this does not prevent the additional use of "3100 series" keypads in that same system.

Annex J
(informative)
Labelling (Ref. 4.4.2)

Sensor and wiring requirements must be described so that sensor compatibility with the zone input characteristics of the panel is assured over the full range of operating conditions. Different zone types may require different compatibility specifications, but here is a hypothetical example for a supervised input:

Zone Input Specifications:
- maximum loop current (shorted loop): 7.4 mA
- maximum loop voltage (open loop): 5.0 VDC
- loop shorted: 0V - 0.75V (0 - 120 ohms total loop resistance)
- loop normal: 1.1V - 4.1V (190 - 3000 ohms)
- loop open: 4.6V - 5.0V (7800 - infinite ohms)

When a panel has more than one type of zone input,, a specification may be required for each type.

Revision Items for CP-01 2009 Draft

(from meeting records since Septebmer 2007)

id	*date*	*document*	*paragraph*	*topic*	*source*	*status*	*details*
1	9/11/2007	minutes	4.3.4	lightning and thunder	ADT, Bill Moody	proposed	
1	4/2/2008	minutes	4.3.4	lightning and thunder	ADT, Bill Moody	discussed	Frank to draft
1	10/29/2008	minutes	4.3.4	lightning and thunder	Frank Clark	**discussing**	lightning and thunder, meeting results were inconclusive
2	9/11/2007	minutes	4.2.7	single button remote	ADT	discussed	
2	9/11/2007	minutes	4.2.7	single button remote	ADT	discussed	eliminate single button remote alarm devices
2	4/2/2008	minutes	4.2.7	single button remote		to add	finalized at this meeting
2	3/9/2009	editing	4.2.7	single button remote	TN	**added**	
3	9/11/2007	minutes	4.1.1	independent partitions	ADT	discussing	
3	4/2/2008	minutes	4.1.1	independent partitions		to revised	to working group
3	10/29/2008	minutes	4.1.1	independent partitions		to add	read to add
3	3/9/2009	editing	4.1.1	independent partitions		**added**	
3	2/17/2009	email	4.1.1	independent partitions	ADT	confirmed	email confirming the changes
4	9/11/2007	minutes	3.2.66	zone type	IDS	discussed	
4	4/2/2008	minutes	3.2.66	zone type	IDS	to clarify	Rich Hinkson to revise
4	10/29/2008	minutes	3.2.66	zone type	Honeywell	to add	ready to add
4	3/9/2009	editing	3.2.66	zone type	TN	**added**	
5	10/29/2008	minutes	4.2.2.5	unvacated premises	Honeywell	discussing	to Rich H. for more work
5	2/17/2009	email	4.2.2.5	unvacated premises	ADT	input	
5	3/13/2009	editing	4.2.2.5	unvacated premises	TN	**added**	
6	9/11/2007	minutes	4.6.1	quick reference	IDS	discussed	
6	4/2/2008	minutes	4.6.1	product doc. table	Sequel	discussing	Ted N to revise
6	10/29/2008	minutes	4.6.1	product documentation	Sequel	to add	ready to add
6	3/9/2009	editing	4.6.1	product documentation	TN	**added**	
8	9/11/2007	minutes	annex D	NLTL, self validation	ADT	discussed	
8	4/2/2008	minutes	annex D	NLTL, self validation	ADT	to add	
8	3/9/2009	editing	annex D	NLTL, self validation	TN	**added**	
9	9/11/2007	minutes	3.2.2	24 hour alarm	IDS	agreed	
9	4/2/2008	minutes	3.2.2	24 hour alarm	IDS	to add	
9	3/9/2009	editing	3.2.2	24 hour alarm	TN	**added**	slightly revised from committee-approved version
10	9/11/2007	minutes	3.2.9	arming station	IDS	agreed	
10	4/2/2008	minutes	3.2.9	arming station	IDS	to add	
10	3/9/2009	editing	3.2.9	arming station	TN	**added**	
11	9/11/2007	minutes	3.2.19	credential	IDS	agreed	
11	4/2/2008	minutes	3.2.19	credential	IDS	to add	
11	3/9/2009	editing	3.2.19	credential	TN	**added**	
12	9/11/2007	minutes	3.2.24	duress	IDS	discussed	
12	4/2/2008	minutes	3.2.24	duress	IDS	to add	
12	3/9/2009	editing	3.2.24	duress	TN	**added**	
13	9/11/2007	minutes	3.2.30	fire alarm verification	IDS	agreed	
13	4/2/2008	minutes	3.2.30	fire alarm verification	IDS	to add	
13	3/9/2009	editing	3.2.30	fire alarm verification	TN	**added**	
14	9/11/2007	minutes	3.2.31	fire zone	IDS	discussed	
14	4/2/2008	minutes	3.2.31	fire zone	IDS	to add	
14	3/9/2009	editing	3.2.31	fire zone	TN	**added**	applied additional edits beyond committee-reviewed issue
15	9/11/2007	minutes	3.2.44	panic	IDS	discussed	
15	4/2/2008	minutes	3.2.44	panic	IDS	to add	
15	3/9/2009	editing	3.2.44	panic	TN	**added**	
16	9/11/2007	minutes	3.2.58	transmission	IDS	agreed	
16	4/2/2008	minutes	3.2.58	transmission	IDS	to add	
16	3/9/2009	editing	3.2.58	transmission	TN	**added**	
17	9/11/2007	minutes	3.2.63	violated	IDS	agreed	
17	4/2/2008	minutes	3.2.63	violated	IDS	to add	
17	3/9/2009	editing	3.2.63	violated	TN	**added**	
18	4/2/2008	minutes	4.2.2.4	entry/exit	IDS	to add	
18	3/9/2009	editing	4.2.2.4	entry/exit	TN	**added**	

19	9/11/2007	minutes	4.2.4.1	activation	IDS	agreed	
19	4/2/2008	minutes	4.2.4.1	activation	IDS	to add	
19	3/9/2009	editing	4.2.4.1	activation	TN	**added**	
20	9/11/2007	minutes	4.6.7.1	audible	IDS	agreed	
20	4/2/2008	minutes	4.6.7.1	audible	IDS	to add	
20	3/9/2009	editing	4.6.7.1	audible	TN	**added**	
21	9/11/2007	minutes	4.2.2.4	remote station	IDS	to add	
21	3/9/2009	editing	4.2.2.4	remote station	TN	**added**	
22	2/12/2009	email	4.3.2	swinger shutdown	ADT	input	
22	2/12/2009	editing	4.3.2	swinger shutdown	TN	**added**	