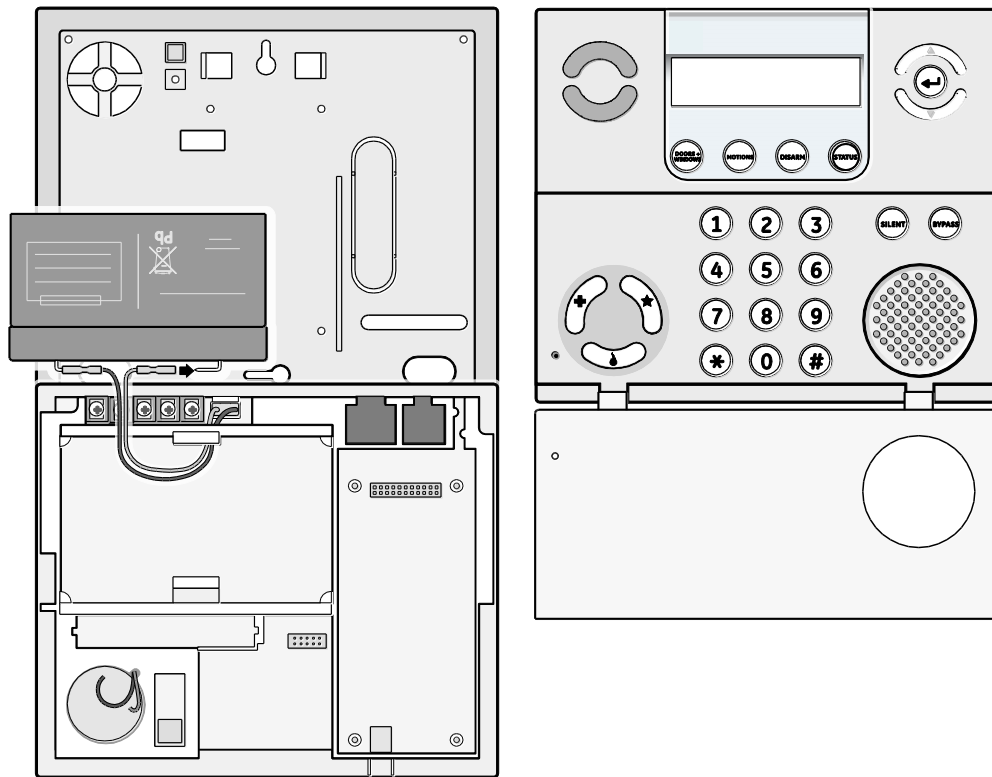


Simon XT Installation Manual



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Manufacturer

UTC Fire & Security Americas Corporation, Inc.
1275 Red Fox Rd., Arden Hills, MN 55112-6943, USA

Intended use

Use this product only for the purpose it was designed for; refer to the data sheet and user documentation. For the latest product information, contact your local supplier or visit us online at <http://www.utcfireandsecurity.com/>.

FCC compliance

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a residential environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications.

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

Reorient or relocate the receiving antenna.

Increase the separation between the equipment and receiver.

Connect the affected equipment and the panel receiver to separate outlets, on different branch circuits.

Consult the dealer or an experienced radio/TV technician for help.

FCC Part 15 registration number: B4Z-910C-SIMON.

Part 68. This equipment complies with Part 68 of the FCC rules and the requirements adopted by ACTA. A label on this equipment contains a product identifier in the format US:AAAEQ##TXXXX. You must provide this number to the telephone company upon request.

FCC Part 68 registration number: US:B4ZAL02B55910.

The plug and jack used to connect this equipment to the premises wiring and telephone network comply with the applicable FCC Part 68 rules and requirements adopted by ACTA. A compliant telephone cord and modular plug is provided with this product. It is designed to be connected to a compatible modular jack that is also compliant. See the installation instructions for details.

The REN is used to determine the maximum number of devices that may be connected to your telephone line. Excessive RENs on a telephone line may result in devices not ringing in response to an incoming call.

In most cases, the sum of all device RENs should not exceed five (5.0). To be certain of the number of devices that may be connected to a line, as determined by the total RENs, contact your local telephone company.

For products approved after July 23, 2001, the REN is part of the identifier with the format *US:AAAEQ##TXXXX*. The digits represented by *##* are the REN without a decimal point. (For example, 03 is a REN of 0.3). For earlier products, the REN is separately shown on the label.

Alarm dialing equipment must be able to seize the telephone line and place a call in an emergency situation. It must be able to do this even if other equipment (telephone, answering system, computer modem, etc.) already has the telephone line in use. To do so, alarm dialing equipment must be connected to a properly installed RJ31X jack that is electrically in series and ahead of all other equipment attached to the same telephone line. If you have any questions concerning these instructions, consult your local telephone company or a qualified installer about installing an RJ31X jack and alarm dialing equipment for you.

If this equipment causes harm to the telephone network, the telephone company may temporarily disconnect your service. The telephone company may notify you in advance, but when advance notice isn't practical, they will notify you as soon as possible and advise you of your right to file a complaint with the FCC.

The telephone company may make changes in their facilities, equipment, operations, or procedures that could affect the operation of the equipment. If they do, they will notify you in advance so you can make the modifications to maintain uninterrupted service.

This equipment may not be used on coin service provided by the telephone company. Connection to party line service is subject to state tariffs. Contact the state public utility commission, public service commission, or corporation commission for information.

If you experience trouble with this equipment, please contact the company that installed the equipment for service and repair information. If the equipment is causing harm to the telephone network, the telephone company may ask you to disconnect the equipment until the problem is resolved.

Contact information www.utcfireandsecurity.com or www.interlogix.com

Customer support www.interlogix.com/customer-support

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Introduction

This chapter provides an overview of the system and an outline of the steps you need to perform before you begin installing and configuring your security system.

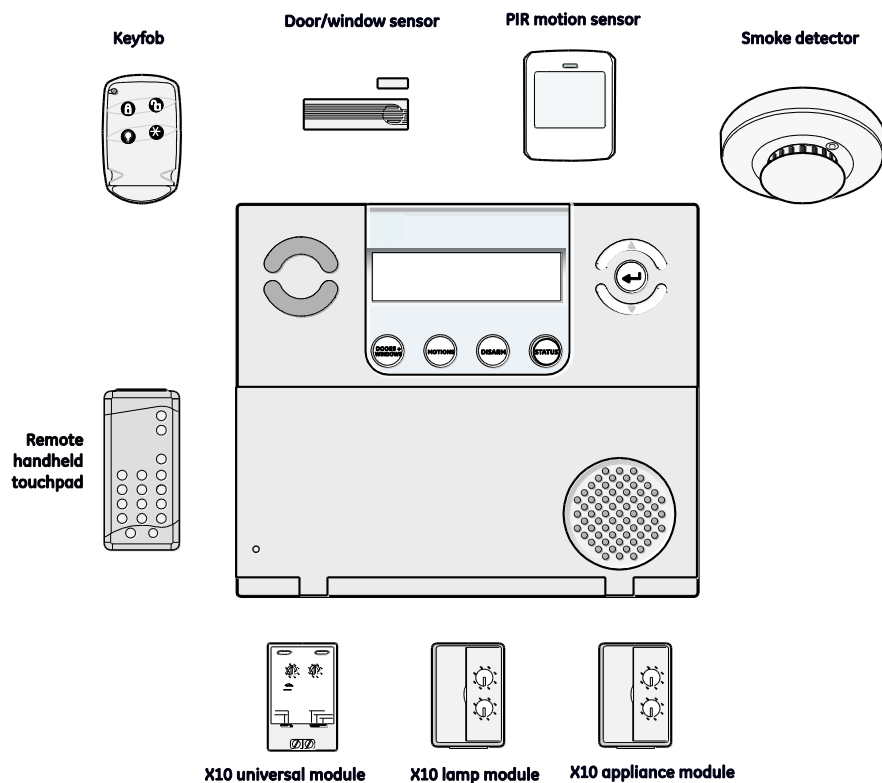
Product overview

This security system can be used as a fire warning system, an intrusion alarm system, an emergency notification system, or any combination of the three. The system (Figure 1 below) has three types of components:

- Self-contained control panel
- Devices that report to the panel
- Devices that respond to commands from the panel

Note: The keyfob and X10 modules have not been investigated by UL.

Figure 1: Simon XT system



Note: The universal, lamp, and appliance modules require a special transformer.

The self-contained panel provides the main processing unit for all system functions. It receives and responds to signals from wireless sensors and wireless touchpads throughout the premises. For monitored systems, the panel can be connected to the premises phone line for central monitoring station reporting.

You can program the panel onsite from the keypad or remotely using Enterprise Downloader software. See “Programming” on page 31 for complete onsite programming instructions.

System components

The system can monitor up to 40 sensors and may use any of the devices listed in Table 1.

Table 1: Supported devices

Device	Description
Door/window sensor (60-670)	For intrusion protection, install door/window sensors on all ground-floor doors and windows. At a minimum, install them in the following locations: <ul style="list-style-type: none"> • All easily accessible exterior doors and windows. • Interior doors leading into the garage. • Doors to areas containing valuables.
Indoor motion sensor (60-639)	Indoor motion sensors are ideal whenever it is not practical to install door/window sensors on every opening. Identify areas where an intruder is likely to walk through. Large areas in an open floor plan, downstairs family rooms, and hallways are typical locations for indoor motion sensors. For installations with pets, use the SAW Pet Immune PIR (60-807).
Outdoor motion sensor (60-639)	Use outdoor motion sensors to detect motion in a protected outdoor area. Detected motion in this protected area can sound chimes.
X10 module*	When the panel is powered using the line carrier power transformer, the system can work with any of the following modules: <ul style="list-style-type: none"> • X10 lamp module (13-403) • X10 appliance module (13-402) • X10 power horn/remote siren module (13-398)
Freeze sensor* (60-742)	Freeze sensors detect low temperature conditions, which may indicate a furnace failure. The sensor contains a bimetallic thermal switch connected to the built-in transmitter. The sensor transmits an alarm signal to the panel when the surrounding temperature drops to about 41°F (5°C). When the temperature rises to 50°F (10°C), the sensor transmits a restore signal.
Water sensor* (60-744)	Water sensors detect water leaks and rising water. The detector is connected to the sensor by an 8-foot cable. Water that reaches both detector contact points activates the sensor, causing it to transmit an alarm signal.

Device	Description
Smoke sensor (60-848-95)	Smoke sensors provide fire protection by causing an alarm to sound throughout the house. You can add smoke sensors near sleeping areas and on every floor of the house. Avoid areas that could have some smoke or exhaust such as attics, kitchens, above fireplaces, dusty locations, garages, and areas with temperature extremes. In these areas, you may want to install rate-of-rise sensors to detect extreme temperature changes. See the instructions packaged with the smoke sensor for complete placement information.
Carbon monoxide (CO) alarm* (60-652-95)	The learn mode CO alarm alerts you to hazardous levels of carbon monoxide gas. If dangerous concentrations of gas are present, the red indicator light comes on, the internal siren goes off, and an alarm is transmitted to the panel. The panel sounds its own alarm and reports to the central station.
Key fob* (60-659)	The key fob (keychain touchpad) lets you turn the system on and off from right outside the home or activate a panic alarm if there is an emergency. If you have the appropriate light control modules, you can use key fobs to turn all system controlled lights on and off.
ELM (encrypted learn mode) key fob* (60-832)	The ELM 2-button key fob is an alkaline battery-powered, wireless touchpad that allows you to arm and disarm the system and activate a police or auxiliary alarm. Random encrypted signal transmissions provide high security to help prevent signal copying.
Remote handheld touchpad (60-671)	The remote handheld touchpad lets you turn the system on and off while in the home, turn system-controlled lights on and off, or activate a panic alarm if there is a nonmedical emergency.
Water-resistant personal help button* (60-906-95)	The water-resistant personal help button is a wireless device used for activating police or auxiliary alarms through your system. When the help button is pressed, the light mounted under the cover will blink and an alarm signal is transmitted.

* Devices noted have not been investigated for use in UL installations.

Caution: Do not use outdoor motion sensors for intrusion protection.

Standard panel

Table 2 below describes the basic panel (out-of-box) hardware capabilities.

Table 2: Panel hardware capabilities

Hardware	Capability
Power	Input for an AC step-down, plug-in style transformer.
One siren output, up to two zone inputs	Terminals for connecting hardware sirens or normally closed (NC) loop switch circuits.

Hardware	Capability
Phone line connection	Allows the panel to communicate with the central monitoring station and/or remote phone.

Inspect the package and contents for visible damage. If any components are damaged or missing, do not use the unit; contact the supplier immediately. If you need to return the unit, you must ship it in the original box.

Planning

This chapter provides information to help you plan your installation to reduce time and costs.

Planning the installation

This section describes system capabilities to help you get familiar with your system. The planning sheets contain tables that let you record the hardware and programming configuration of your system. Complete all of the information ahead of time to help prepare for system installation. Refer to Table 35 on page 66 for sensor name segments listed alphabetically and by index number.

Control panel location

Locate the panel where alarm sounds can be heard and where the panel will be easily accessible for operation. Do not install the panel near a window or door where it can be reached easily by an intruder.

Planning sensor types and locations

The first step to an easy and successful installation is to decide what areas or items to protect, which lights or appliances to operate, and the best location for the panel, touchpad, sensors, and sirens.

Metal objects, mirrors, and metallic wallpaper can block signals sent by the wireless sensors. Make sure there are no metal objects in the way when installing the system.

Use Table 3 below and Table 4 on page 8 to determine the appropriate sensor type for the sensors you will be adding. Use Table 5 on page 10 to document the planned sensor information. You will need to understand the application for each sensor. For example, keyfobs are typically programmed as sensor group 01 (portable panic) and used to send an intrusion alarm to a central monitoring station. This sensor type is instant intrusion, it does not require restoral or supervisory communication with the panel and it is active in four arming levels:

1. Disarm.
2. Arm doors and windows.
3. Arm motion sensors.
4. Arm doors/windows and motion sensors.

Table 3: Recommended sensor groups

Device	Recommended sensor group
Indoor motion sensor	17 (intrusion), 25 (chime)

Device	Recommended sensor group
Outdoor motion sensor	25 (chime only)
Entry/exit door	10
Interior door	14
Window sensor	13
Smoke sensor	26
Key fob	01, 03, 06, 07
ELM key fob	01, 03, 06, 07
Remote Handheld touchpad	01, 03, 06, 07
CO alarm	34
Freeze sensor	29
Water sensor	38
Personal help button	01, 03, 06, 07

Table 4: Sensor group characteristics

Type	Name/application	Siren type	Delay	Restoral	Supervised	Active in arming levels
00	Fixed panic: 24-hour audible fixed emergency button.	Intrusion	I	N	Y	1234
01	Portable panic: 24-hour audible portable emergency button.	Intrusion	I	N	N	1234
02	Fixed panic: 24-hour silent fixed emergency button. Status light will not blink.	Silent	I	N	Y	01234
03	Portable panic: 24-hour silent portable emergency buttons. Status light will not blink.	Silent	I	N	N	01234
04	Fixed auxiliary: 24-hour auxiliary sensor.	Emergency	I	N	Y	01234
05	Fixed auxiliary: 24-hour emergency button. Siren shut off confirms CS report.	Emergency	I	N	Y	01234
06	Portable auxiliary: 24-hour portable auxiliary alert button.	Emergency	I	N	N	01234
07	Portable auxiliary 24-hour portable auxiliary button. Siren shut off confirms CS report.	Emergency	I	N	N	01234
08	Special intrusion: Such as gun cabinets and wall safes.	Intrusion	I	Y	Y	1234
09	Special intrusion: Such as gun cabinets and wall safes.	Intrusion	S	Y	Y	1234

Type	Name/application	Siren type	Delay	Restoral	Supervised	Active in arming levels
10	Entry/exit delay: A delay that requires a standard delay time. Chime.	Intrusion	S	Y	Y	24
13	Instant perimeter: Exterior doors and windows. Chime.	Intrusion	I	Y	Y	24
14	Instant interior: Interior door.	Intrusion	F	Y	Y	234
15	Instant interior: Interior PIR motion sensor.	Intrusion	F	Y	Y	234
16	Instant interior: Interior door.	Intrusion	F	Y	Y	34
17	Instant interior: PIR motion sensor and sound sensor.	Intrusion	F	N	Y	34
18	Instant interior: Cross-zone PIR motion sensor.	Intrusion	F	N	Y	34
19	Delayed interior: Interior doors that initiate a delay before going into alarm.	Intrusion	S	Y	Y	34
20	Delayed interior: PIR motion sensor that initiates a delay before going into alarm.	Intrusion	S	N	Y	34
21	Local instant interior: 24-hour local alarm zone protecting anything that opens and closes. No report.	Intrusion	I	Y	Y	1234
22	Local delayed interior: Same as group 21, plus activation initiates a delay before going into alarm. No report.	Intrusion	S	Y	Y	1234
23	Local instant auxiliary: 24-hour local alarm zone protecting anything that opens and closes. No report.	Emergency	I	Y	Y	01234
24	Local instant auxiliary: 24-hour local alarm zone protecting anything that opens and closes. Sirens shut off at restoral. No report.	Emergency	I	Y	Y	01234
25	Local special chime: Notify the user when a door is opened.	Three beeps	I	N	Y	01234
26	Fire: 24-hour fire, rate-of-rise heat, and smoke sensor.	Fire	I	Y	Y	01234
27	Lamp control or other customer feature. No report.	Silent	I	Y	Y	012345
28	PIR motion sensor, sound sensor, or pressure mat. RF thermostat. No report	Silent	I	N	Y	01234
29	Auxiliary: Freeze sensor.	Trouble beeps	I	Y	Y	01234
32	PIR motion sensor or sound sensor. No report.	Silent	I	N	N	01234
34	Carbon monoxide alarm.	Emergency	I	Y	Y	01234
35	Entry/exit delay interior PIR motion	Intrusion	S	N	Y	234

Type	Name/application	Siren type	Delay	Restoral	Supervised	Active in arming levels
36	Special intrusion: Such as gun cabinets and wall safes. Reports as tamper if tripped.	Intrusion	I	Y	Y	1234
37	Light switch control: X10 modules turn either on or off when a door is opened. b	Silent	I	N	Y	01234
38	Auxiliary: Water sensor.	Trouble beeps	I	Y	Y	01234
39	Local instant interior: 24-hour local alarm zone protecting anything that opens and closes. No report.	Intrusion	I	Y	Y	1234
40	Local special chime.	Three beeps	I	Y	Y	01234

Table 5: Sensor assignment locations

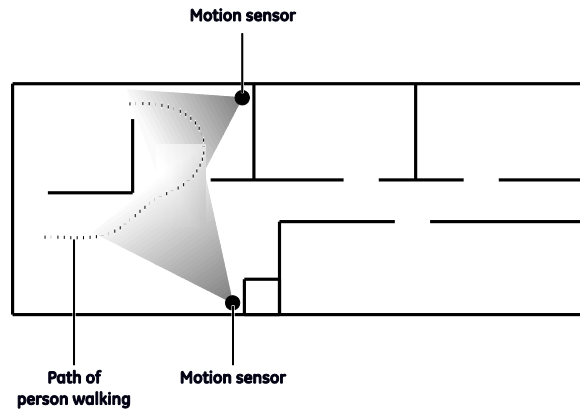
Sensor #	Device	Sensor group	Sensor name/location	Notes
01				
02				
03				
04				
05				
06				
07				
08				
09				
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				

Sensor #	Device	Sensor group	Sensor name/location	Notes
20				
21				
22				
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Cross-zoning

Cross zoning (two-trip) refers to two different group 18 sensors that must be tripped within two minutes of each other to report an alarm to the central station. Figure 2 on page 12 shows the path of a person walking from the kitchen to the living room. When the person is detected walking through the kitchen, the motion sensor in the kitchen is tripped, sounding a local alarm. If motion is detected by the living room motion sensor within two minutes, an alarm report will be sent to the central station.

Figure 2: Cross-zone diagram



Note: We do not recommend cross-zoning for exit/entry zones. Each zone can individually protect the intended area.

System configuration

Table 6 below is a worksheet for you to record the desired values for each programming option. For each option, the default value, effect of deletion (pressing DISARM while editing), range, and programming privilege are also listed.

Table 6: System programming menu options

Function	Default	Delete	Range	Access code	Installer settings
Access codes menu					
Dealer code	654321, 54321, 4321, or 321	None	3 to 6 digits	D	
Installer code	654321, 54321, 4321, or 321	None	3 to 6 digits	D, I	
Master code	123456, 12345, 1234, or 123	None	3 to 6 digits	D, I, M	
User code 1	None	None	3 to 6 digits	D, I, M	
User code 2	None	None	3 to 6 digits	D, I, M	
User code 3	None	None	3 to 6 digits	D, I, M	
User code 4	None	None	3 to 6 digits	D, I, M	
User code 5	None	None	3 to 6 digits	D, I, M	
User code 6	None	None	3 to 6 digits	D, I, M	

Function	Default	Delete	Range	Access code	Installer settings
User code 7	None	None	3 to 6 digits	D, I, M	
User code 8	None	None	3 to 6 digits	D, I, M	
Duress code	None	None	3 to 6 digits	D, I, M	
Code length	4	4	3 to 6	D	
Security menu					
Account number	00000	00000	0 to FFFFFFFF	D, I	
Downloader code	12345	12345	00000 to 99999	D	
Phone lock	Off	Off	On/Off	D	
Auto arm	On	Off	On/Off	D, I	
Exit extension	On	Off	On/Off	D, I	
Secure arming	Off	Off	On/Off	D, I	
No arm low battery	Off	Off	On/Off	D, I	
Quick exit	Off	Off	On/Off	D, I	
Downloader enable	On	Off	On/Off	D, I, M	
Supervisory protest	Off	Off	On/Off	D, I	
Phone # menu					
Phone #1	None	None	26 digits	D	
Phone #2	None	None	26 digits	D	
Phone #3	None	None	26 digits	D, I	
Phone #4	None	None	26 digits	D, I, M	
Downloader #	None	None	26 digits	D, I	
Phone options menu					
Manual phone test	On	Off	On/Off	D, I	
Fail to communicate	On	Off	On/Off	D, I	
DTMF	On (touchtone)	Off (pulse)	On/Off	D, I	
300 bps baud rate	On (300 bps)	Off (110 bps)	On/Off	D, I	
Ring/hang/ring	1	Off	1 to 7, Off	D, I	
Dial delay	30 seconds	15 seconds	15 to 45 seconds	D, I	
Call waiting code	None	None	26 digits	D, I	
Sensors menu					
Learn sensors				D, I	
Delete sensors				D, I	

Function	Default	Delete	Range	Access code	Installer settings
Edit sensors				D, I	
Reporting menu					
Report options					
Opening reports	Off	Off	On/Off	D, I	
Closing reports	Off	Off	On/Off	D, I	
Forced armed	Off	Off	On/Off	D, I	
AC power failure report	Off	Off	5 to 254 minutes, off	D, I	
Low CPU battery report	On	Off	On/Off	D, I	
Sensor alarm restoral report	Off	Off	1 to 3, Off	D, I	
24-hour sensor tamper report	Off	Off	On/Off	D, I	
Supervisory/ tamper report	Off	Off	On/Off	D, I	
No usage	Off	Off	2 to 254 days, Off	D, I	
Swinger shutdown	On	Off	On/Off	D, I	
Programming report	Off	Off	On/Off	D, I	
Fire alarm verification	Off	Off	On/Off	D, I	
Report communication modes					
Phone 1 report mode	Off	Off	All SIA, All CID,	D	
Phone 2 report mode	Off	Off	Alarms SIA, Alarms CID,	D	
Phone 3 report mode	Off	Off	Nonalarm SIA,	D, I	
Phone 4 report mode	Off	Off	Nonalarm CID, Backup SIA, Backup CID, Voice dialer, or Off	D, I	
Timers menu					
Latchkey time	None	None	12:00 midnight to 11:59 PM, None	D, I, M	
Entry delay	30 seconds	30 seconds	30 to 240 seconds	D, I	
Exit delay	60 seconds	45 seconds	45 to 254 seconds	D, I	
No activity timeout	Off	Off	2 to 24 hours, off	D, I	
Auto phone test	Off	Off	1 to 254 days, off	D, I	
Supervisory time	Midnight	None	12:00 midnight to 11:59 PM, None	D, I	

Function	Default	Delete	Range	Access code	Installer settings
Alarm cancel	6 minutes	Off	6 to 255 minutes, Off	D, I	
RF timeout	12 hours	12 hours	2 to 36 hours	D, I	
Fail to open time	Off	Off	12:00 midnight to 11:59 PM, Off	D, I	
Fail to close time	Off	Off	12:00 midnight to 11:59 PM, Off	D, I	
Siren timeout	5 minutes	Off	2 to 254 minutes, Off	D, I	
Arming LED shutdown	Off	Off	On/Off	D, I	
Unvacated premises	On	Off	On/Off	D, I	
Smoke supervision	Off	Off	On/Off	D, I	
Touchpad options menu					
Key fob no delay	Off	Off	On/Off	D, I	
Panic alarms	On	Off	On/Off	D, I	
Remote touchpad arming	Off	Off	On/Off	D, I	
System options menu					
RF jam detect	Off	Off	On/Off	D, I	
Demo mode	Off	Off	On/Off	D, I	
HW1 function	1	Off	1, 2, 3, 4, 5, or Off	D	
24-hour clock	Off	Off	On/Off	D, I	
Siren options menu					
Panel piezo beeps	On	Off	On/Off	D, I, M	
Panel voice	On	Off	On/Off	D, I, M	
Panel piezo alarms	On	Off	On/Off	D, I, M	
Trouble beeps	On	Off	On/Off	D, I	
Voice chime	Off	Off	1, 2, 3, or Off	D, I	
Status beeps volume	7	7	1 to 10	D, I, M	
Hardwired siren supervision	Off	Off	On/Off	D, I	
Speaker volume	8	8	1 to 8	D, I, M	
Panel silent police panic	Off	Off	On (silent), Off (audible)	D, I	
Panel tamper alarm	Off	Off	On/Off	D, I	

Function	Default	Delete	Range	Access code	Installer settings
Alarm report verification	Off	Off	On/Off	D, I	
Audio verify menu					
Audio mode	Off	Off	1, 2, or Off	D, I	
Fire shutdown	Off	Off	On/Off	D, I	
Panic talk	Off	Off	On/Off	D, I	
Vox receiver gain	6	6	1 to 32	D, I	
Vox mic gain	24	24	1 to 64	D, I	
Vox mic gain range	64	64	1 to 64	D, I	
Manual mic gain	64	64	1 to 64	D, I	
System test menu					
Sensor test				D, I, M	
Communication test				D, I, M	
System download				D, I, M	

Emergency planning

Use these guidelines when drawing an emergency floor plan for the homeowner:

- Show all building levels.
- Show exits from each room. (We recommend two exits per room.)
- Show the locations of all security system components.
- Show the locations of any fire extinguishers.

Installation

This section describes how to open the panel for mounting, mount the panel, connect sirens, connect hardwired contacts, and connect the AC power transformer.

UL listed installations

Some installations may require configurations dictated by city/state codes, insurance, or Underwriter's Laboratories (UL). This section describes the various component and configuration listings.

Basic system:

- Control panel: backup battery 6 V 1.2 Ah (34-025) (Portalac model # PE6V1.2)
- Standard class 2, 9 VAC, 3.34 A power transformer (UTC Fire & Security Part 22-153). Alternate transformer for US installations: MG Electronics Model MGT925, 9 VAC, 25 VA, (UTC Fire & Security Part 22-155).
- Hardwired siren (13-374)

Household burglary alarm system unit (UL 1023), basic system plus the following:

- Hardwired magnetic contact (13-068 or 13-071) or wireless learn mode door/window sensor (60-670)
- Panel piezo beeps set to on
- Entry delay set to 45 seconds or less
- Exit delay set to 60 seconds or less
- RF time-out set to 24 hours
- Control panel alarms turned on
- Autoarm set to on
- Siren timeout set to five minutes or more
- Trouble beeps set to on
- RF jam detect set to on
- Hardwired siren supervision set to on
- Exit extension set to off
- Quick exit set to off

Household fire warning system (UL 985), basic system plus the following:

- Wireless smoke sensor 60-848-95 learned into sensor group 26
- Panel piezo beeps turned on
- Control panel alarms set to on
- Siren timeout set to four minutes or more
- Trouble beeps set to on
- RF jam detect set to on

- Hardwired siren supervision set to on
- Smoke supervision must be set to on

UL 1023 & 985 24-hour backup:

- For 24-hour backup, the total current draw for all connected devices is limited to 250 mA (during normal standby conditions) using a 1.2 AH battery.

UL 1635 digital alarm communicator system:

- Same as UL 1023 & 985, plus:

The following settings are in addition to UL 1023 and 985 and are required only if the system is set up for central station reporting.

- Phone mod 1 set to zero or one.
- Automatic phone test set to 001.
- RF timeout set to four hours.
- AC power failure report set to on.
- CPU low battery report set to on.
- Fail to communicate set to on.
- Entry delay plus the dialer delay must not exceed 60 seconds.

SIA system requirements

SIA system requirements are the same as those described for a UL listed basic system on page 1, plus:

- If multiple annunciation is required, use hardwired siren part no.13-046.

Note: UL requirements take priority over SIA requirements. Entry delay must not exceed 60 seconds.

SIA setting requirements

Table 7 below describes programming requirements to meet ANSI-SIA CP-01 (“System programming” on page 36).

Note: Call waiting services should be disabled to prevent interrupting panel communication to the central monitoring station.

Table 7: SIA setting requirements

Function	Default setting	Required setting
Entry delay	30 seconds	30 to 254 seconds
Exit delay	60 seconds	45 to 154 seconds
Dialer delay	30 seconds	14 to 45 seconds
Autoarm	On	On
Unvacated premises	Off	On

Function	Default setting	Required setting
Call waiting	Off	On if reporting to central station and customer has call waiting service
Exit extension	On	On
Swinger shutdown	On (one trip)	On (one trip)
Fire alarm verify	Off	On
Duress/panic code	Disabled	Disabled
Cross zone	Disabled	Disabled for zones with high probability of false alarms.

Table 8 below describes nonprogrammable (hard-coded) system operation, as required to meet ANSI-SIA CP-01, and is provided only for your reference.

Table 8: Nonprogrammable (hard coded) system operation

Function	Operation
Silent exit	All annunciators disabled
Remote arming exit time and progress annunciation	All annunciators enabled
Abort annunciation	Enabled
Cancel report annunciation	Enabled
Recent closing	Enabled (two minute window)
Exit error	Enabled
Restoration of power	Panel resumes operation in same arming state and disregards alarm signals from sensors for the first 60 seconds after power restoration
Cancel alarm	Enter code only.

Central station reporting

The panel has been tested with the following central station receivers using SIA and Contact ID reporting formats:

Note: Before beginning installation, installers must verify compatibility with the following central station receivers.

- Radionics D6600 central station receiver
- Sur-Gard central station receiver with models SG-DRL2A and SG-CPM2
- CS5000 digital alarm communicator receiver

UL Canada listed installations

This section describes the requirements for CUL (UL Canada) listed installations.

Canadian standards CSA certified accessories

Standard Class 2, 9 VAC, 3.34 A power transformer (UTC Fire & Security model 22-153-CN).

Residential burglary alarm system unit (ORD-C1023-1974)

Basic system as described for UL 1023 listed installations plus:

- Hardwired magnetic contact (13-068 or 13-071) or wireless learn mode door/window sensor (60-670)
- Siren timeout set to six minutes or more

Residential fire warning system control unit (ULC-S545-M89)

Basic system as described for UL 985 listed installations plus:

- Wireless smoke sensor 60-848-95 learned into sensor group 26
- Siren timeout set to six minutes or more
- For 24-hour backup, the total current draw for all connected devices is limited to 250 mA (during normal standby conditions) using a 1.2 AH battery.

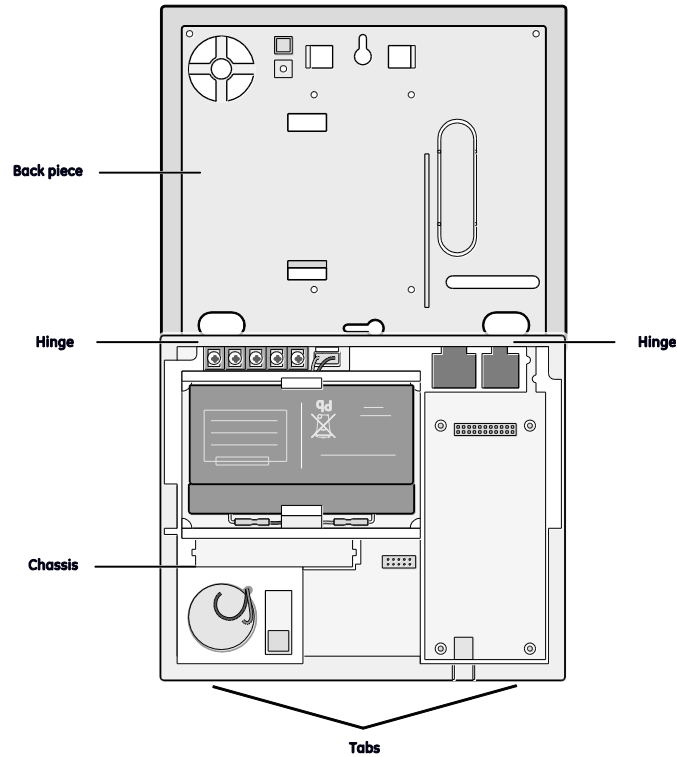
California state fire marshal listed installations

Applied for.

Opening panel cover and chassis

Tabs at the top of the panel secure and release the front cover and the chassis. The plastic hinges on the panel bottom allow the cover and chassis to swing down and out of the way (Figure 3 on page 21).

Figure 3: Opening the panel cover and chassis



Mounting the panel

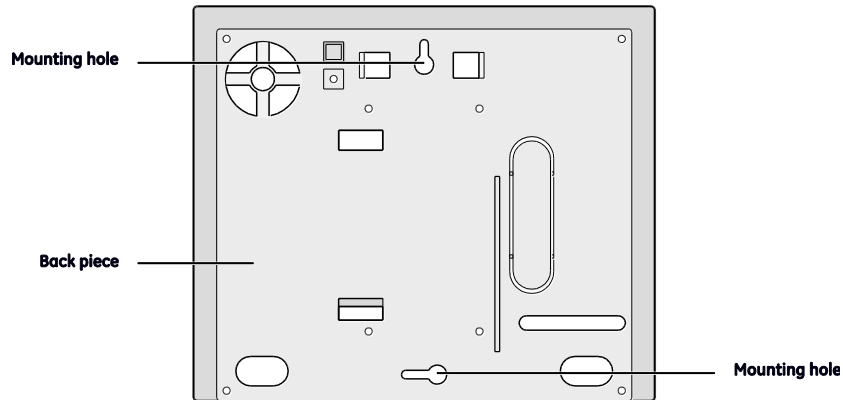
To mount the panel on a wall, do the following:

1. Choose a panel location.
2. Run all necessary power, phone, siren, and hardwired contact wires to the desired panel location.

Note: When choosing the AC outlet location for the AC power transformer, make sure the outlet is not controlled by a switch or that it is not part of a ground fault circuit interrupt (GFCI).

3. Hold the panel against the wall and mark the mounting hole locations with a pencil.
4. Mount the back piece to the wall through the two horizontally centered mounting holes near the top and bottom using the supplied mounting hardware. Use wall anchors if no studs are present (Figure 4 on page 22).

Figure 4: Panel mounting hole locations



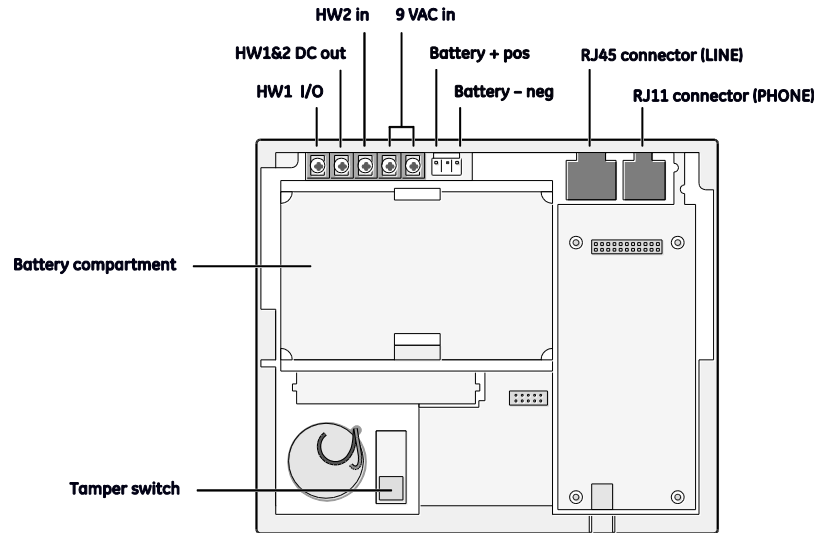
5. Connect the chassis assembly to the mounted back piece and let it hang down. This makes the terminal strip accessible for wiring various hardwired components to the panel.
6. Feed wires through openings in the back piece to be ready to attach them to the screw terminals or the phone connectors.
7. Install all screws and tighten gently.

Connecting hardwired devices

The panel has seven screw terminals and two telephone connections (Figure 5 on page 23). The screw terminals connect AC power, sirens, and/or hardwired detectors.

Program sensors and devices before you install them. Follow the instructions in to add the sensors to panel memory.

Figure 5: Simon XT terminal connections



HW1 I/O, HW2 in, and HW1&2 DC out terminals

The HW1 I/O terminal is dual purpose and can be used for either siren or hardwired contact connections. The HW2 in terminal is an input only.

Interior sirens

From the factory, the HW1 I/O input is set up for interior siren operation (status and alarm sounds). HW1&2 DC out provides the positive (+) voltage.

Note: The total current available from the HW1&2 DC out terminal is 250 mA at up to 120°F (49°C). A 24-hour battery standby for UL Requirements will be met with a maximum load of 250 mA.

With Hardwired Siren Supervision turned on, sirens connected to HW1 I/O are supervised and require a 4.7 kohm resistor in the circuit. If this terminal is not used, turn Hardwired Siren Supervision off.

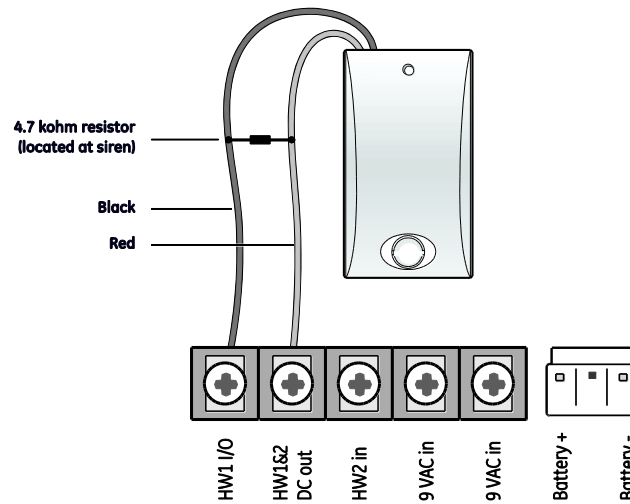
LD105 hardwired interior siren

Interior sirens must always be wired with a resistor in the circuit. For circuit supervision which allows the panel to detect if the siren wire is cut (open), Hardwired Siren Supervision must be turned on.

Note: Do not install the resistor at the panel terminals. This does not provide supervision of the wire.

Connect the LD105 hardwired interior siren (13-374) to the panel using a 4.7 kohm resistor (included with the siren) as shown in Figure 6 on page 24. The resistor must be connected across the siren wires as close to the siren as possible.

Figure 6: Hardwired interior siren with supervision



Hardwired contacts

To set up HW1 I/O and/or HW2 in for hardwired contacts, make the required connections as described under below, then proceed to the Programming on page 33 to add (learn) them into panel memory.

You can connect hardwired reed switches (normally closed loop only) to HW1 I/O (if not being used for a hardwired siren) and/or HW2 in.

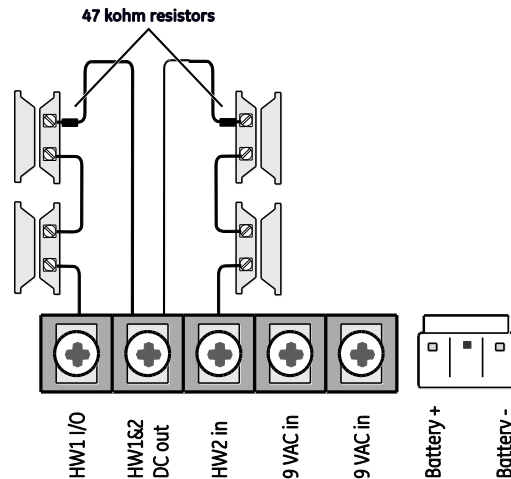
Note: Connect only normally closed (NC) reed switches to HW1 I/O and/or HW2 in. Other types of hardwired detectors should not be used.

The total resistance of the wire loop must not exceed 3 ohms. This allows you to use up to 200 ft. (61 m) of two-conductor, 22-gauge stranded wire.

Connect hardwired reed switches to the panel using a 47 kohm resistor (not a 4.7 kohm resistor) as shown in Figure 7 on page 25. The resistor must be connected at the last switch in the circuit.

Note: Do not install the resistor at the panel terminals. This does not provide supervision of the wire.

Figure 7: Connecting normally closed hardware reed switches



Wiring a phone line to the panel

You can connect a phone line to the panel for systems monitored by a central monitoring station or systems that notify users by a voice event notification.

DSL (digital subscriber line) allows the use of multiple devices on a single phone line simultaneously. For DSL environments, connect the panel line-in jack to an available phone jack on the premises. You might also need an inline filter to ensure panel reporting is successful.

Note: Avoid connecting the panel to a standard phone (voice) line in this manner. Other devices in use at the same time the panel is using the line can prevent reports from going through.

Full line seizure

Full line seizure allows the panel to take over (seize) the phone line, even if another device on the line is in use. This method requires that the panel be wired before all other phones, answering machines, computers, or other devices on the phone line. You may need to verify line seizure for UL installations.

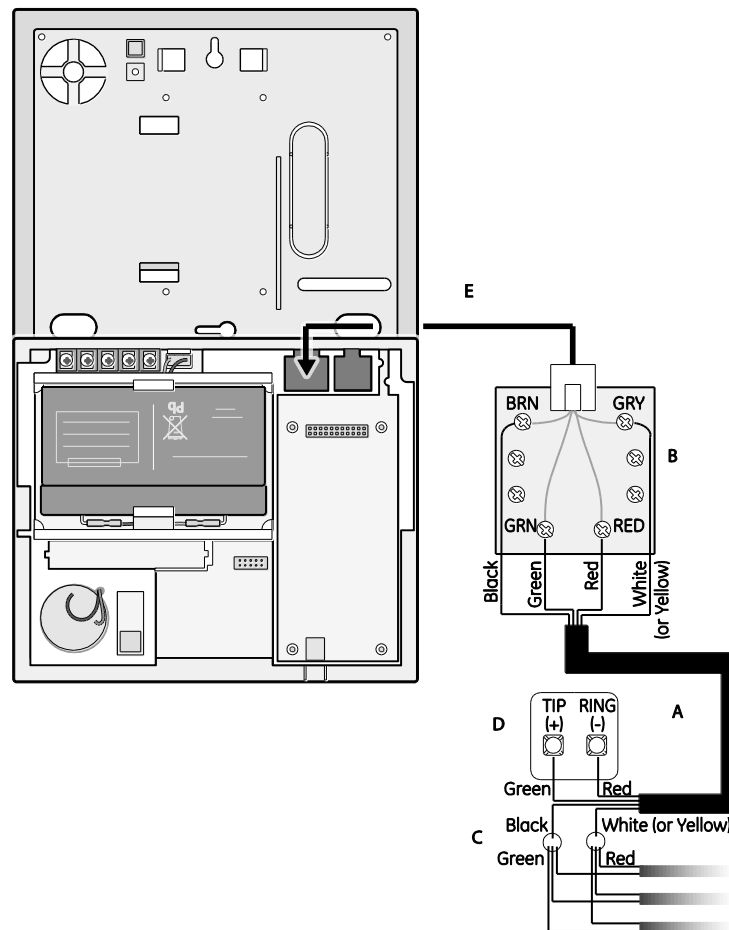
Use the RJ31X (CA-38A) jack (Figure 8 on page 26) when wiring for full line seizure. This lets the user quickly and easily disconnect the panel from the phone line in case the panel disables the phone line due to a malfunction.

Full line seizure wiring with an RJ31X

1. Run a four-conductor cable A from the premises Telco block D to the RJ31X B.
2. Connect the four-conductor cable A wires to the RJ31X B.

3. Disconnect the green and red premises phone jack wires from the Telco block D and splice them C to the four-conductor cable A black and white (or yellow) wires. Use weatherproof wire connectors for these splices.
4. Connect the four-conductor cable A green and red wires to the Telco block D TIP (+) and red to RING (-) posts.
5. Connect the phone cord E included with the panel to the RJ31X B and the panel LINE jack.

Figure 8: Full line seizure wiring with RJ-31X



Full line seizure wiring with one premises phone

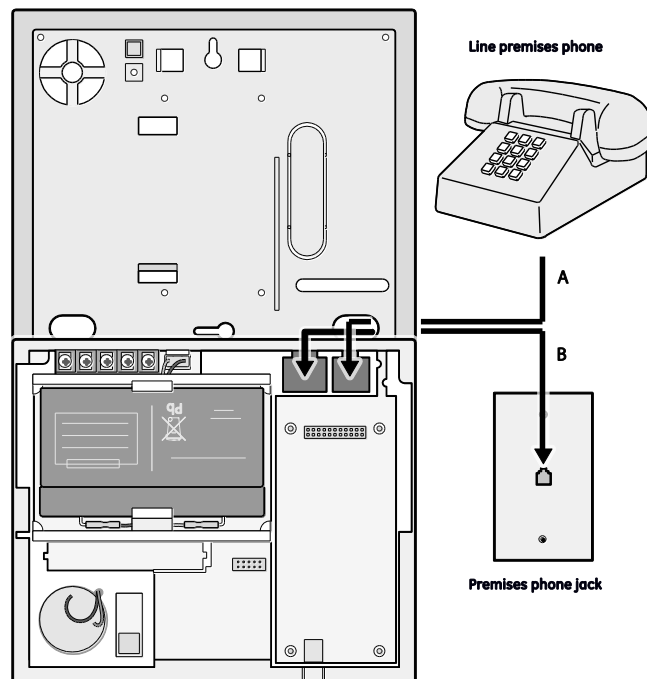
If a single phone is all that exists on the premises, full line seizure can be accomplished without an RJ31X (Figure 8 above).

1. Disconnect the phone from the premises phone jack and plug it into the panel PHONE jack A. This jack is disconnected automatically whenever the panel reports.

2. Connect the included phone cord to the panel LINE jack and the premises phone jack B.

Note: If customers add phones or other phone devices to another phone jack, full line seizure no longer exists. Inform them to contact you if they want to add a phone or other device so that you can rewire for full line seizure by adding an RJ31X

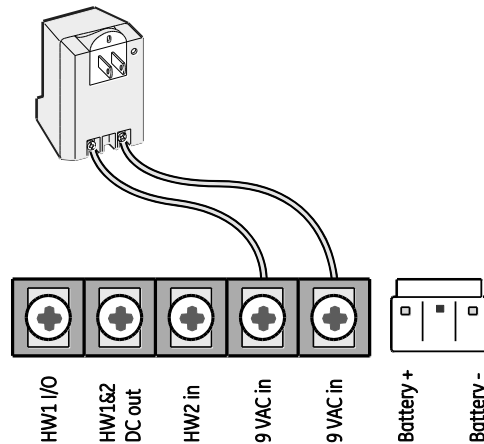
Figure 9: Full line seizure wiring with single landline phone



Wiring the power transformer

Connect the power transformer to the panel AC terminals as shown in Figure 10 on page 28.

Figure 10: Transformer connections



Note: Do not plug in the transformer at this time.

Powering up the panel

When applying power to the panel connect the battery first, then plug in the AC power transformer. This sequence prevents a battery fault condition.

Note: Maximum battery charge current is 60 mA. It may take up to 24 hours for a new battery to fully charge.

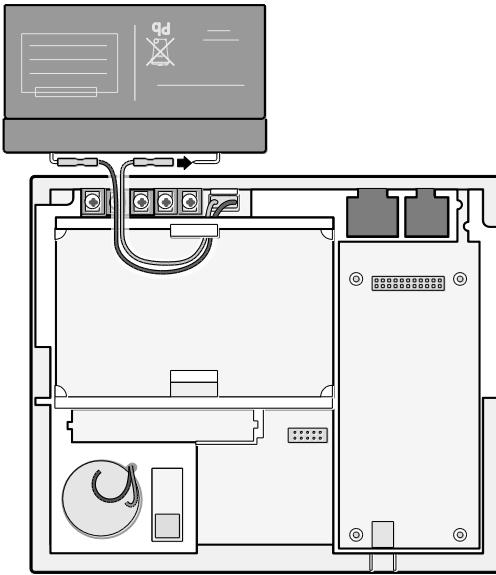
Installing the backup battery

To install the backup battery (6 VDC, 1.2 Ah), do the following:

1. Connect the lug end of the red battery lead to the red battery tab.
2. Connect the lug end of the black battery lead to the black battery tab.
3. Align the red (+) battery terminal with the right end of the terminal strip. The logo and specification information should be readable.
4. Insert the front end of the battery under the forward battery compartment latch.
5. Push forward and rotate the battery downward until it seats beneath the rear battery compartment latch.

Caution: Do not connect the battery until you are ready to power up the panel. See “Powering up the panel” above

Figure 11: Installing the panel backup battery



Applying AC power

Make sure the outlet is not controlled by a switch or that it is not part of a ground fault circuit interrupt (GFCI).

1. Remove the center screw from the outlet cover plate and hold the cover plate in place.

WARNING: Use extreme caution when securing the transformer to a metal outlet cover. You could receive a serious shock if a metal outlet cover drops down onto the prongs of the plug.

2. Plug the transformer into the lower receptacle of the outlet so that the hole in the transformer tab lines up with the outlet cover screw hole.
3. Insert the cover plate screw through the transformer tab and the outlet cover plate. Tighten the screw.

Installing X10 modules

To install lamp and appliance modules, do the following:

1. Set the unit code dial to a unit number between 1 and 8.
2. Set the housecode for the installation.
3. Plug the module into a wall outlet.
4. Plug the lamp/appliance into the module.

Caution: Do not plug appliances or lamps with 300-watt or larger bulbs into lamp modules.

To install universal modules, do the following:

1. Set the unit code dial to a unit number different from all other X10 modules (between 1 and 8).
2. Set the housecode for the installation.
3. Set the module switches to momentary and relay only.
4. Connect the module terminals to the desired device terminals.
5. Plug the universal module into a wall outlet.

Programming

This chapter provides steps on how to program your unit.

Programming overview

The control panel Figure 12 below provides the main processing unit for all system functions. The programming of system options and features is menu-driven. All installer options are set in the System Programming menu, except for setting the system time. Table 9 below explains the panel keys and features shown in Figure 12 below.

Figure 12: Simon XT self-contained panel

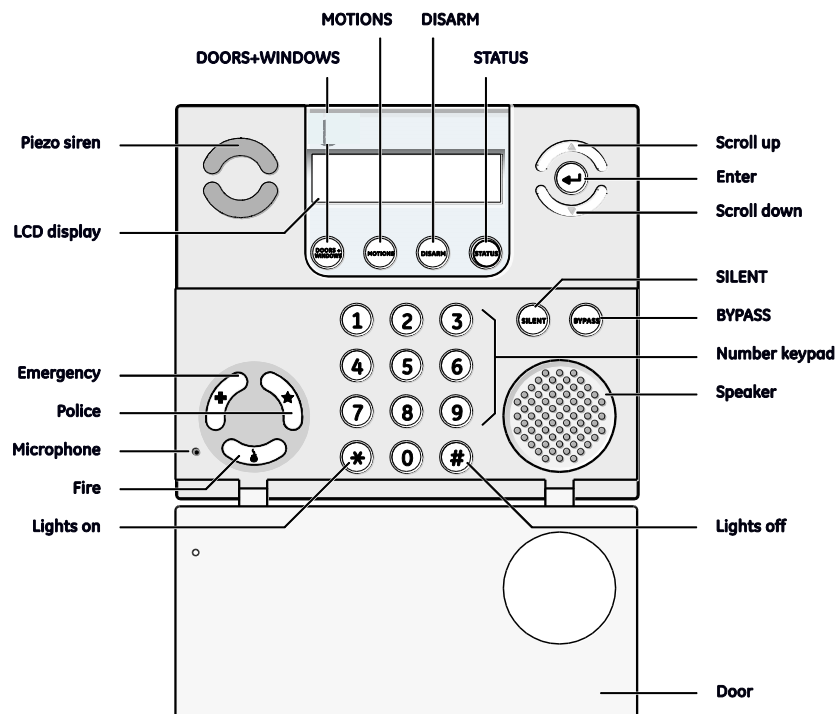


Table 9: Simon XT panel keys and features

Control	Description
Piezo siren	The piezo siren makes alarm beeps and status beeps. Fire and intrusion alarm beeps are always played at high volume, while the volume of status beeps is programmable.
LCD display	The LCD module has a 2 x 16 character array that displays a variety of phrases and icons.
Doors+Windows	Press to arm perimeter sensors.
Motions	Press to arm interior sensors.

Control	Description
Disarm	Press to turn off intrusion/burglary protection for your system. Only intrusion/burglary sensors such as doors, windows, and motion sensors are disarmed. Environmental sensors, such as smoke and carbon monoxide, stay active at all times.
Status	Press to determine system status.
Silent	Press to silence exit beeps when arming.
Bypass	Press to bypass a sensor.
Emergency (cross)	Press and hold the Emergency button for two seconds (or press twice quickly) to call the central monitoring station and notify them of a nonmedical call for help.
Police (shield)	Press and hold the Police button for two seconds (or press twice quickly) to call the central monitoring station and notify them of a nonmedical call for help.
Fire (flame)	Press and hold the Fire button for two seconds (or press twice quickly) to call the central monitoring station and notify them of a nonmedical call for help.
Microphone	Used to communicate with the central monitoring station after an alarm.
Scroll up/scroll down	Press to scroll through lists of similar items.
OK	Press to select a particular menu item or commit to memory a menu item that has just been programmed.
Numeric keypad	Twelve-key telephone-type keypad (0 through 9, *, #) for entering access codes or other numerical data.
* (light bulb)	Lights on. (Contact UTC Fire & Security for required equipment information.)
# (dark light bulb)	Lights off. (Contact UTC Fire & Security for required equipment information.)
Speaker #	Provides voice output and sounds key beeps. The panel speaks arming level change, system status, and voice chime sensor trips. The panel voice is also used for voice reporting and remote phone control.
Door	Covers the lower panel.

Entering and exiting the system menu

To enter the system menu, press either the scroll up/down or enter buttons in the upper right of the panel.

Press the STATUS button to exit a menu or option edit mode and navigate up one level. Pressing the STATUS button while in the top menu level exits the system menu level. The panel automatically exits the system menu after a few seconds of inactivity if no access code has been entered yet. After an access code has been entered to access a code-protected area of the system menu, the timeout is 4 minutes.

Menu navigation

Each menu contains a list of options and/or submenus. Press the scroll up/down buttons to navigate up and down the list of options and submenus in that menu. Pressing the Enter key after navigating to an option selects that option for editing and flashes the current value. Pressing the Enter key after navigating to a submenu enters that submenu, making a new list of options accessible. Pressing STATUS exits a menu and goes to the next higher level.

Programming options are arranged in a menu structure as outlined in Table 10 below. The top menu contains several features, as well as the System programming menu. When accessing the System programming or System tests menu, the panel prompts you to enter an access code. To continue, enter the dealer code or installer code, then press Enter.

To program an option, first navigate to that option until it is displayed, then press Enter. The option value will start flashing, indicating that it is ready to be changed. Use the scroll keys or enter a numerical value to change the option, then press the Enter key to save the change.

Table 10: Simon XT menu structure

Set Clock (system time)		
Set Date		
Chime		
Special Chime		
System Tests	Sensor Test	
	Communication Test	
	System Download	
System Programming	Access Codes	Dealer Code
		Master Code
		User Codes 1 to 8
		Duress Code
	Security	Downloader Enable
	Phone Numbers	Phone Number 4
	Timers	Latchkey Time
	Siren Options	Panel Piezo Beeps
		Panel Voice
		Panel Piezo Alarms
		Status Beep Volume
		Speaker Volume

Revision

Contrast

Set clock

If the panel loses both AC and battery power, then upon power restoral the system time will reset to midnight and blink, indicating it has not been set correctly. You can set the system time to display in either 12-hour or 24-hour format.

Time of day format is HH:MMx, where:

HH = 01 to 12 (12-hour format) or 00 to 23 (24-hour format)

MM = 00 to 59

X = a or p (12-hour format) or none (24-hour format)

To reset the clock:

1. Scroll until the display shows `Set Clock`, and then press OK.
The display shows `Enter Code`.
2. Enter your code with the numeric keys, and then press OK.
The display flashes the hours.
3. Scroll to set the hours, and then press OK to accept the setting.
The display flashes the minutes.
4. Scroll to set the minutes, and then press OK to accept the setting.
The display flashes `AM/PM`.
5. Scroll to set the AM/PM, and then press OK to accept the setting.
The display shows the current time and stops flashing.
6. Press Status twice to exit.

Set date

If the panel loses both AC and battery power, then upon power restoral the system date will reset.

Date format is YYYY-MM-DD, where:

YYYY = year

MM = month

DD = day

To set the date:

1. Scroll until the display shows `Set Date`, and then press OK.
The display shows `Enter Code`.
2. Enter your code with the numeric keys, and then press OK.
The display shows the date.
3. Press OK.
The display flashes the year.
4. Scroll to set the year, and then press OK to accept the setting.
The display flashes the month.
5. Scroll to set the month, and then press OK to accept the setting.
The display flashes the day.
6. Scroll to set the day, and then press OK to accept the setting.
The display shows the programmed date.
7. Press Status twice to exit.

Revision

To display the firmware revision of the system, scroll until the display shows `Revision`. This is a read-only menu. Press Status to exit.

Contrast

To adjust the contrast of the display:

1. Scroll until the display shows `Contrast`, and then press OK.
2. Scroll to increase or decrease the contrast setting,
3. Press Status to save the setting and exit.

Note: Changes in contrast are more noticeable when not looking at the display straight on.

System programming

To enter system programming:

1. Scroll until the display shows `System Programming`, and then press OK.

The system prompts for an access code.

2. Enter the access code from the codes listed in Table 11 below.

The system displays each entered access code digit as an asterisk.

3. Press OK.

The panel is now in program mode.

Note: Do not remove the panel power while in program mode.

Table 11: Simon XT programming codes

Code	Description
Dealer code	You can use the dealer code to program all system functions, including high-security options that are not accessible with the installer code if it is different from the dealer code. Depending on how the access code is set, the default dealer access code is 654321, 54321, 4321 (factory default), or 321. This code can be used for all programming.
Installer code	Depending on how the access code is set, the default installer code is 654321, 54321, 4321 (factory default), or 321. This code is limited to changing all but the following: Dealer code, code length, downloader code, phone lock, phone #1, phone #2, phone 1 report mode, phone 2 report mode, HW1 function.

Access codes

Function	Default	Description
Dealer code	4321	<p>You can use the dealer code to program all system options, including high-security options that are not accessible with the installer code if it is different from the dealer code. Changing the dealer code to differ from the installer code will prevent the installer from viewing certain fields.</p> <p>If you change the dealer code and enter program mode with the installer code, the installer should no longer be able to see the following: code length, downloader code, phone lock, phone #1, phone #2, phone 1 report mode, phone 2 report mode, HW1 function.</p>
Installer code	4321	You can use the installer code to program most installer options, except for high-security dealer options.
Master code	1234	You can use the master to arm/disarm, enter user programming, and bypass sensors.
User codes 1 to 8	Blank	You can use the user codes to arm/disarm the system.

Function	Default	Description
Duress code	Blank	Use the duress code in place of the master or user code to cause a silent alarm.
Code length	Four digits	Codes can be three to six digits long.

Security

Function	Default	Description
Account number	00000	Lets you program up to a 10-character alphanumeric account number or delete an existing account number by pressing Disarm. You can enter numerical digits sequentially. To enter letters (A to F only), use the scroll keys to select A to F, and then press OK. To select the next digit, press another number key. When finished, press OK. The CID format only supports account numbers with letters B through F, or numbers 0 through 9 (or a combination of those letters and numbers).
Downloader code	12345	Lets you set a unique five-digit code that is required for initiating Enterprise Downloader sessions. The code must be five digits long and can range from 00000 to 99999. The downloader code must match the downloader access code in the Enterprise account to perform Enterprise sessions.
Phone lock	Off	Prevents resetting of phone/reporting related options when a memory clear is preformed (on) or resets these options to their default values when a memory clear is performed (off). The following are not reset when on: account number, dealer code, code length, call wait cancel, phone numbers 1 and 2, phone report modes 1 to 4, phone lock, downloader phone number downloader code.
Auto arm	On	<p>Determines how long the system protests (announces open/failed sensors) when attempting to arm with open/failed sensors, before bypassing these sensors and automatically arming the rest of the system. The panel protests an arming attempt when it has not received a restore (close) signal from sensors learned into restore-specific sensor groups. Sensors learned into group 26 (fire) cannot be bypassed.</p> <p>When this option is on, the panel announces all open/failed sensors repeatedly for four minutes, then automatically bypasses the open sensors and arms the rest of the system. If a sensor is opened during the exit delay and then left open, the panel will go into alarm after the exit delay has expired. This option must be on for unvacated premises and exit extension to work correctly.</p> <p>When the option is off, the panel displays all open/failed sensors once, then automatically bypasses the open sensors and arms the rest of the system after the exit delay has expired. If other sensors are opened during the exit delay, they will also be bypassed if left open.</p> <p>If group 13 (instant perimeter) sensors are opened during the exit delay, the panel goes into immediate alarm.</p>

Function	Default	Description
Exit extend	On	Determines whether the panel restarts the exit delay time if you enter the armed premises during the initial exit delay period (on), or not (off). Turning on this feature allows you to reenter during the exit delay period, without disarming and then rearming the system. Turning off this feature requires you to disarm and rearm the system. Auto arm must be on for this option to work.
Secure arming	Off	Determines whether an access code is required when arming the system (on), or not (off). This option does not affect key fob arm/disarm operation.
No arm on low battery	Off	Determines whether the system protests arming if a low CPU battery condition exists (on), or not (off).
Quick exit	Off	Determines whether pressing Disarm when the system is armed activates the exit delay time to allow exit and reentry without disarming the system (on), or not (off). This feature is useful if you want to step outside briefly and return. If the system is armed and you press Disarm, the panel announces Exit Time is On, and sounds exit delay beeps. This allows a designated entry/exit door to open for up to two minutes without causing alarm. When the door is closed, the beeps stop and the door is armed again.
Downloader enable	On	Enables programming of system options with downloader software.
Sup protest	Off	Determines whether the panel protests arming if it has not received a supervisory signal from any sensor 15 minutes before arming (on), or not (off). This feature must be turned on for US installations.

Phone numbers

Table 12: Phone Numbers menu

Function	Default	Description
Phone #1	Blank	Lets you program up to a 26-digit central monitoring station receiver/voice event notification phone number for monitored systems.
Phone #2	Blank	Phone digits can be 0 to 9, *, #, or a pause (P).
Phone #3	Blank	To delete the phone number, press Disarm while editing a phone digit.
Phone #4	Blank	To add a pause to the phone number, press Bypass. Pressing OK is required if you enter fewer than 26 digits.
Downloader #	Blank	Lets you program up to a 26-digit phone number for the Enterprise Downloader.

Phone options

Table 13: Phone Options menu

Function	Default	Description
Man phone test	On	Determines whether you can perform a manual communication test to verify communication to a central station/voice dial (on), or not (off). If you have all four phone numbers programmed, it should send a test report to all four before showing that the test is okay.
FTC	On	Determines whether the panel and interior sirens sound trouble beeps if it is unable to successfully send a report to a central station (on), or not (off).
DTMF dial	On	Determines whether the panel uses DTMF (on) or pulse (off) for dialing programmed phone numbers.
300 bps enabled	On	Determines whether the baud rate used by the panel for central station communication is 300 bps (on), or 110 bps (off).
Ring hang ring	1	<p>Determines when the panel answers a remote phone access or Enterprise call. Depending on whether an answering machine exists at the panel location, offsite access to the panel can be done with a series of phone calls or just one. For offsite access where an answering machine does not exist, the user or Enterprise operator simply calls the panel location once and listens for 10 rings. The panel should answer after the tenth ring.</p> <p>For offsite access where an answering machine exists, the user or Enterprise operator must call the panel location, and then let the phone ring once and hang up. Wait at least 10 seconds but not more than 40, and then call the panel location again. The panel should answer on the first ring.</p> <p>Ring/hang/ring setting number and sequence of rings after which the panel answers:</p> <p>1 = Ring/hang/ring or ten rings 2 = Ring/hang/ring/hang/ring or ten rings 3 = Ring/hang/ring/hang/ring/hang/ring or ten rings 4 = Ten rings 5 = Ring/hang/ring 6 = Ring/hang/ring/hang/ring 7 = Ring/hang/ring/hang/ring/hang/ring Off = Disabled, no remote (offsite) access</p>

Function	Default	Description
Dial delay	30 seconds	<p>Determines whether the panel delays dialing programmed phone numbers before sending report (on).</p> <p>If opening (disarming) reports is on, the panel does not delay dialing if the system is disarmed before the delay time expires. The panel dials immediately for both the alarm and opening report.</p> <p>Regardless of this option setting, the panel always dials immediately for fire alarms, AC power failure, and low battery reports.</p>
Call wait code	Off	<p>The call waiting code is dialed by the panel before a phone number to disable call waiting. Verify that the end-user has call waiting with his phone service provider before changing this option from its default.</p> <p>CAUTION: Changing this option from its default without call waiting will prohibit the panel from calling the central station.</p> <p>The call waiting code is programmed the same way as a dialer number.</p>

Sensors

Table 14 below describes the Sensors menu.

Table 14: Sensors menu

Function	Description
Learn sensors	Adds (learns) sensors to panel memory.
Delete sensors	Deletes sensors from panel memory.
Edit sensors	Edits sensor information in panel memory.

The following instructions tell how to add (learn) sensors, touchpads, and other system devices into panel memory. The panel recognizes a sensor when you press a sensor program button, press and release a tamper switch, press a sensor test button, or put a sensor into alarm. Table 15 on page 42 below describes the programming method for each device.

When learning (programming) sensors, the panel uses an ascending sequence starting with 1. You can override this by entering the desired sensor number using the number keys.

To learn (program) a sensor:

1. Scroll until the display shows `System Programming`, and then press OK.

The system prompts for an access code.

2. Enter the dealer or installer code and then press OK.
The display shows `Access Codes`.
3. Scroll until the display shows `Sensors`, and then press OK.
The displays shows `Learn Sensor`.
4. Press OK.
The display shows `Trip Sensor ##`, with the number signs flashing.
If you wish to use a sensor number other than the next one available, use the number keys to enter a two-digit sensor number immediately.
5. Press the sensor program button or release the sensor tamper switch.
The display shows `SN ## Grp10 <Front Door>`, with `Grp 10` flashing.
6. Use the number or scroll buttons if you want to enter a new group number; press OK to accept the group number displayed.
The sensor text flashes.
7. Scroll through the text list, and then press OK to accept the first text segment.
8. You may enter more text or press OK again to finish adding the sensor.
The display shows `Trip Sensor ##` (with the next available sensor number).
9. Press Status repeatedly to exit.

To delete a sensor:

1. Scroll until the display shows `System Programming`, and then press OK.
The display shows `Enter Code`.
2. Enter your access code and then press OK.
The display shows `Access Codes`.
3. Scroll until the display shows `Sensors`, and then press OK.
The displays shows `Learn Sensor`.
4. Scroll until the display shows `Delete Sensor`, and then press OK.
The display shows `Sn ## Grp## <Text>`.
5. Scroll until the display shows the sensor you want to delete, and then press OK.
The display shows `Deleted`, and then shows `Delete Sensor`.
6. Press Status twice to exit.

Table 15: Device programming

Device	To program
Door/window sensor	Press the button on the top of the sensor (cover removed) or trip the tamper.
Motion sensor	Press the button on the back of the sensor (mounting plate removed) or trip the tamper.
Smoke detector	Trip the tamper, press the test button, remove the detector from its base, or put the smoke detector into alarm.
Hardwired sensor	Separate the sensor from its magnet.
CO alarm	Plug in the module, wait 5 to 7 seconds, and press and hold the test button for nine beeps.
Freeze and water sensor	Trip the tamper or press and hold the button on the top of the sensor (cover removed) until the control panel confirms programming. If you do not hold the button down long enough, the system will report the sensor as open.
Personal help button	Press the help button until the light blinks.
Remote handheld touchpad	Press the emergency buttons.
Key fob	Press the Lock and Unlock buttons at the same time.
ELM key fob	Do the following: <ol style="list-style-type: none"> 1. Press the Unlock button twice and hold it the third time. The light button flashes three times. 2. Press the Unlock button once and hold it the second time. The light button flashes twice. 3. Press and hold the Unlock button. The light button flashes once. Hold the button until the flashing stops.

Edit sensors

You can use this menu to change the group or name of a sensor that is already in panel memory. The procedure is very similar to the procedure to program sensor information after a sensor is learned in. Pressing Disarm while editing sensor text deletes all text for that sensor.

Note: If you are installing a sensor on a gun case, jewelry box, or a similar case, and the sensor is active in level one, you must subdisarm to avoid putting the panel into alarm when the sensor and the magnet are separated.

Reporting

Table 16 on page 43 and Table 17 on page 44 describe the Reporting menu.

Table 16: Reporting menu

Function	Default	Description
Opening reports	Off	<p>Determines whether the panel sends opening reports to a central station whenever the system is disarmed (on), or not (off). The User number will be reported as zone number. Key fobs learned into zones 1 to 40 will report as that zone.</p> <p>Dealer code = 44, Installer code = 45, Master code = 46, User code 1 = 47, User code 2 = 48, User code 3 = 49, User code 4 = 50, User code 5 = 51, User code 6 = 52, User code 7 = 53, User code 8 = 54, Duress code = 55</p>
Closing reports	Off	<p>Determines whether the panel sends closing reports to a central station whenever the system is armed (on), or not (off). The User number will be reported as the zone number. Key fobs learned into zones 1 to 40 will report as that zone.</p> <p>Dealer code = 44, Installer code = 45, Master code = 46, User code 1 = 47, User code 2 = 48, User code 3 = 49, User code 4 = 50, User code 5 = 51, User code 6 = 52, User code 7 = 53, User code 8 = 54, Duress code = 55</p>
Force armed	Off	<p>Determines whether the panel sends by force armed report to a central station if the user bypasses protesting sensors (indirect bypass) when arming the system (on), or not (off).</p>
AC power failure	Off	<p>Determines whether the panel sends AC power failure reports to a central station after the programmed time expires. The time can be set from 005 to 254 minutes.</p> <p>When the panel is without AC power for 30 seconds, the panel LEDs turn off.</p> <p>When the panel is without AC power for the programmed time, an AC power failure is reported.</p> <p>The panel reports an AC power restoral when AC power returns to the panel.</p>
Low CPU battery	On	<p>Determines whether the panel sends a low CPU battery report to the central station when the panel backup battery voltage drops.</p>
Sen alarm restore	Off	<p>Determines whether the panel reports sensor alarm restoral (on), or not (off). Setting when restoral is reported:</p> <ol style="list-style-type: none"> 1. Immediately after sensor is closed or restored after dial delay 2. After siren timeout expires if sensor is restored 3. When system is disarmed if sensor is restored.
24-hour sensor tamper	Off	<p>Determines whether the system (armed or disarmed) goes into and reports an alarm anytime a sensor tamper switch is tripped (on), or only when the system is armed and a tamper switch of an armed sensor is tripped (off).</p>

Function	Default	Description
Supervisory tamper	Off	Determines whether the panel sends supervisory reports to a central station as a tamper (on), or a supervisory (off). This option is typically used only in Europe where a supervisory condition is required to report as a tamper.
No usage	Off	Determines whether the panel sends a No Usage report to the central station if the user has not operated the system before the programmed time expires (on), or not (off). The timer starts each time the system is disarmed. This is a customer service feature that alerts the central station if a customer is not using their security system. The service provider can then contact the customer to find out why the system is not being used, and help correct any problems for the customer.
Swinger shutdown	On	Determines whether the panel prevents the same sensor from activating an alarm more than once in a single period (on), or not (off). Swinger shutdown does not affect smoke and fire sensors.
Program report	Off	Determines whether the panel sends a report to the central station anytime the programming mode is entered/exited (on), or not at all (off). The panel sends a report whenever the dealer (Utility 1) or installer (Utility 2) code is used to enter programming mode and another report is sent when the programming session ends.
Fire verify	Off	If this option is off, the panel immediately reports to the central station when a smoke detector goes into alarm. With this option on, if a single smoke detector goes into alarm, the panel will not report for 60 seconds unless another smoke detector goes into alarm. If the first smoke detector is cleared of alarm within the first 60 seconds, no report will be sent to the central station unless it or a second smoke detector goes into alarm within the panel siren timeout period (5 minutes).

Table 17: Communication modes

Function	Default	Description
Phone 1 report mode	Off	Determines how the panel sends a report to the central station for each of the phone numbers programmed.
Phone 2 report mode	Off	The options are: All SIA, All CID, Alarm SIA, Alarm CID, Nonalarm SIA, Nonalarm CID, backup SIA (phone failure backup), Backup CID (phone failure backup), Voice dialer, Off
Phone 3 report mode	Off	
Phone 4 report mode	Off	

Note: UL has only verified reporting compatibility with the CS5000 Digital Alarm Communicator Receiver. For UL listed systems, Phone 1 Report Mode must be set to All SIA or All CID.

Alarms include: Fire, Intrusion, Emergency, Silent, and Alarm Cancels.

Nonalarms include: Latchkey, No Activity, Openings, Closings, Fail-to-Open, Fail-to-Close, Force Armed, AC Power Failure, CPU Low Battery, and Trouble Restoral.

Timers

Table 18 below describes the Timers menu.

Table 18: Timers menu

Function	Default	Description
Latchkey time	Off	Determines whether the panel reports a latchkey alarm if the system is not disarmed at a preset time between midnight and 11:59 p.m. (on). If the latchkey feature is disabled (off), the panel will not report a latchkey alarm. The system clock must be set for the latchkey feature to work.
Entry delay	030 seconds	Determines how much time you have to disarm the system after entering the armed premises through a designated delay door, before an alarm occurs. Beeps sound during the entire delay time to remind you to disarm the system. When turned on, the entry delay can be set from 030 to 240 seconds.
Exit delay	060 seconds	Determines how much time you have to leave the premises through a designated delay door after arming the system. Beeps sound after arming the system to remind you to leave the armed premises. If a delay door is opened after the exit delay expires, the entry delay begins. If you arm the system with no delay and open a delay door after the exit delay expires, an alarm occurs.
No activity tm	Off	Determines whether the panel sends a no activity report to a central station when the programmed time elapses (on), or if the feature is disabled (off). No activity means the control panel, remote handheld, and key-chain touchpad buttons have not been pressed and sensors have not been tripped within a specified time (except sensors in group 25). The timeout can be set from 02 to 24 hours.
Auto phone test	Off	Determines whether the panel automatically performs a periodic phone test (on), or not (off). The test interval can be from 001 to 254 days. The time of day the panel performs the test is determined by the supervisory time, which must be turned on for this feature to work.
Supervisory time	12:00am	Determines when the panel reports supervisory conditions (sensor failures) and automatic phone tests to the central station. The panel clock must be set to the correct time for this option and the automatic phone test to work correctly.

Function	Default	Description
Alarm cancel	006 minutes	<p>Sets the time frame that determines whether the panel reports an alarm cancel message to the central station. If the system is disarmed from an alarm state within the programmed time, the panel sends an alarm cancel message to the central station. An alarm cancel message is not reported if the system is disarmed after the programmed time expires.</p> <p>The time can be set from 006 to 255 minutes. When set to 255, the panel always reports alarm cancel messages. Turning off this option disables alarm cancel reporting.</p>
RF time-out	12 hours	<p>Determines the period during which the panel must receive at least one supervisory signal from learned sensors before identifying a sensor failure and sounding trouble beeps. Any sensor failure is reported immediately and again at the supervisory time. The timeout can be set from 02 to 36 hours. Entries must be two digits.</p>
Fail-to-open time	Off	<p>Determines whether the panel sends a fail-to-open report to a central station if the system has not been disarmed by the programmed time (on), or not (off). System time must be set correctly for this feature to work.</p>
Fail-to-close time	Off	<p>Determines whether the panel sends a fail-to-close report to a central station if the system has not been armed by the programmed time (on), or not (off). System time must be set correctly for this feature to work.</p>
Siren time-out	005 minutes	<p>Determines how long sirens sound alarms if no one is present to disarm the system. The time can be set from 002 to 254 minutes. When this feature is turned off, sirens sound alarms until the alarm is canceled (system disarmed).</p>
Arm LED shutdown	Off	<p>Determines whether the panels LEDs (buttons) turn off 30 seconds after the last button press (on), or remain on for the entire arming period (off).</p>
Unvacated premises	On	<p>Determines whether the system automatically arms down to level 2 (doors and windows) if you arm the system to level 4 (doors, windows, and motion sensors) without leaving the premises (on), or remains at the armed level chosen (off). This feature does not work from a key fob. Autobypass must be on for this feature to work.</p>
Smoke supervision	Off	<p>Determines how often the panel must receive supervisory signals from the smoke sensors. If this option is on, the panel must receive at least one supervisory signal from smoke sensors every four hours or it will identify a sensor failure and sound trouble beeps. If this option is off, the time for receiving supervisory signals is determined by RF timeout.</p>

Touchpad options

Table 19 below describes the Touchpad Options menu.

Table 19: Touchpad Options menu

Function	Default	Description
Keyfob no delay	Off	Determines whether a key fob arms the system with no delay (on), or not (off). When this feature is on, you must disarm the system before entering the premises, since it is disabling the entry delay. If the remote touchpad arming option is on, key fobs cannot disarm the system and will cause an alarm upon entering.
Panic alarms	On	Determines whether the panel panic buttons (police, auxiliary, and fire) activate alarms when pressed (on), or not (off).
Remote TP arm	Off	Determines whether key fobs and remote touchpads can disarm the system only during exit and entry delays (on), or arm and disarm the system anytime (off). If this option and the key fob no delay option are on, you cannot enter and/or disarm using remote touchpads without causing an alarm.

System options

Table 20 below describes the System Options menu.

Table 20: System Options menu

Function	Default	Description
RF jam detect	Off	Determines whether the panel checks for and reports RF interference/jam to the central station (on), or not (off). If this option is on and the panel receives a constant 319.5 MHz signal, the panel reports the condition to the central station. If this option is off, the panel does not detect an RF jam.
Demo mode	Off	Determines whether the panel operates as a demonstration model (on) or a standard panel (off). Turning on this feature disables low battery supervision and allows the microphone to remain on continuously during an AVM session. With this option on, the panel is not testing battery supervision.

Function	Default	Description
HW1 function	1	Determines how the HW1 I/O output will function: Off = no output 1 = interior siren output 2 = output activated when armed 3 = output activated when disarmed 4 = fail to communicate output, activates when fail to communicate condition occurs (the fail to communicate option must be on) 5 = alarm output activated when panel is in alarm
24-hour clock	Off	Determines whether the panel uses a 24-hour clock (on), or a 12-hour clock (off).

Siren options

Table 21 below describes the Siren Options menu.

Table 21: Siren Options menu

Function	Default	Description
Piezo beeps	On	Determines whether the panel piezo produces beeps based on system activity (on), or is silent (off).
Panel voice	On	Determines whether the panel announces arming level changes (on), or not (off).
Panel piezo alarm	On	Determines whether the panel piezo emits alarm sounds (on), or not (off).
Trouble beeps	On	Determines whether the panel and hardwired interior sirens sound six beeps every minute when a trouble condition occurs (on), or not (off). The following conditions cause trouble beeps: AC power failure (when AC power failure report is on) low CPU battery, sensor failure (supervisory), sensor trouble (low battery, tamper, etc.), fail to communicate, restoration of power, no activity timer has timed out (trouble beeps continue for 5 minutes and if the panel does not see activity, trouble beeps stop and the panel reports no activity to the central station). You can silence trouble beeps by arming or disarming the system or by pressing the STATUS button. Trouble beeps resume later if the trouble condition is not cleared.

Function	Default	Description
Voice chime	Off	Determines whether the panel announces the sensor name. 1 = sensor name 2 = loud ding-dong bell 3 = soft ding-dong bell Off = no sound
Status beeps vol	7	Determines the panel piezo volume level for status sounds such as arming, trouble, and status beeps. Volume range is 1 (lowest) to 10 (highest).
HW siren sup	Off	Determines whether the panel monitors hardwired sirens for open conditions (on), or not (off). If this option is turned on, sirens connected to the panel terminals require an EOL resistor in the wire circuit. If this option is turned off, EOL resistors are not required whether sirens are connected or not.
Speaker volume	8	Determines the volume of voice messages from the panel speaker. Volume range is 1 (lowest) to 8 (highest).
Silent police panic	Off	Determines whether pressing the panel police button causes an audible (off) or silent (on) alarm.
Panel tamper alarm	Off	Determines whether the panel activates a tamper alarm anytime the cover is opened (On) or only when the system is armed (Off).
Alarm report verify	Off	Determines whether the panel verifies successful alarm reports to the central station by displaying "Phone comm OK" (on), or not (off).

Piezo beep options

Table 22 below describes piezo beep options.

Table 22: Piezo beep options

Activity	Piezo beep response
Arm doors and windows	Exit delay. Two beeps sound every 5 seconds and two times per second during the last 10 seconds. Silent exit. Two beeps sound at the beginning of the exit delay and two more sound just before the exit delay expires. Entry delay. Two beeps sound every 5 seconds and two times per second during the last 10 seconds.
Arm motion sensors	Exit delay. Three beeps sound every 5 seconds and three times per second during the last 10 seconds. Silent exit. Three beeps sound at the beginning of the exit delay and three more sound just before the exit delay expires. Entry delay. Three beeps sound every 5 seconds and three times per second during the last 10 seconds.

Activity	Piezo beep response
Arm doors/windows and motion sensors	Exit delay. Four beeps sound every 5 seconds and four times per second during the last 10 seconds. Silent exit. Four beeps sound at the beginning of the exit delay and four more sound just before the exit delay expires. Entry delay. Four beeps sound every 5 seconds and four times per second during the last 10 seconds.
Disarm	One beep.
Chime	Two beeps (when programmed).
Special chime	Three beeps (when programmed).
Trouble beeps	Six beeps every minute. Press Status to stop beeps for 4 hours.
No activity	Twenty beeps every minute for 5 minutes (when programmed).

Audio verification options

Table 23 below describes the Audio Verification Options menu.

Table 23: Audio Verification Options menu

Function	Default	Description
Audio mode	Off	Determines the audio mode. 1 (Instant) = Panel stays online with central station for an instant audio session. 2 (Callback) = Panel hangs up and waits for a callback from the central station operator before starting an audio session. Off = No audio verification.
Fire shutdown	Off	Determines whether system fire sirens are silenced during a two-way audio session (on), or not (off). Beeps sound every 10 seconds while sirens are silenced.
Panic talk	Off	Determines whether the central station operator can talk to the user during a silent alarm (off), or just listen in on the premises (on). Silent alarms occur when sensors learned into groups 02 or 03 are tripped, when the duress code is entered, or when the panel Police button is pressed and the silent panel police panic option is turned on.
VOX RX gain	06	Determines the receiver gain level during two-way audio sessions. If the VOX is switching the speaker on when the central station operator is not talking, lower both this setting and the VOX mic gain setting. If the VOX is not switching the speaker on when the central station operator is talking, raise this setting and lower the VOX mic gain setting. Changing this setting does not affect speaker volume.

Function	Default	Description
VOX mic gain	24	Determines the mic gain (sensitivity) that triggers the voice-activated switching (VOX). Room size, acoustics, and furnishings where the panel is located will influence the setting. Gain range is 01 (lowest) to 64 (highest).
VOX mic gain mg	64	Determines the gain range for voice-activated switching (VOX). Range is 01 (lowest) to 64 (highest). For best results, this option should be set equal to or greater than VOX mic gain. This option works in conjunction with VOX mic gain. It is important to follow the setting recommendations as described to achieve acceptable operation.
Manual mic gain	64	Determines the gain level (sensitivity) during two-way audio sessions when audio mode is set to 0 or 1 (speak). Room size, acoustics, and furnishings when the panel is located will influence the setting. Gain range is 01 (lowest) to 64 (highest).

Light control (optional)

If your system uses optional X10 modules, you can program them to control lights.

Note: This feature has not been investigated for use by UL.

X10 module operation

Use the following procedure to program X10 module operations into panel memory.

To program the housecode:

1. Press the scroll buttons until the panel displays System programming.
2. Press Enter. The panel displays Enter code.
3. Enter your access code and press Enter. The panel displays Access codes.
4. Press the scroll buttons until the panel displays Light control.
5. Press Enter. The panel displays Set entry lights.
6. Press the scroll buttons until the panel displays Housecode <A-O>.
7. Press Enter. The letter flashes.
8. Press the scroll buttons until the letter you want displays.
9. Press Enter to accept the new housecode. The panel displays Housecode <new housecode>.
10. Press STATUS twice to exit program mode.

To program an entry-activated light:

1. Press the scroll buttons until the panel displays System programming.
2. Press Enter. The panel displays Enter code.

3. Enter your access code and press Enter. The panel displays Access codes.
4. Press the scroll buttons until the panel displays Light control.
5. Press Enter. The panel displays Set entry lights.
6. Press Enter. The panel displays Entry light unit 1 on/off.
7. Press the scroll buttons until the unit number you want to program displays.
8. Press Enter. The panel displays Off, which will be flashing.
9. Press the scroll buttons until the panel displays On, then press Enter.
10. Press STATUS three times to exit program mode.

To program a sensor-activated light:

1. Press the scroll buttons until the panel displays System programming.
2. Press Enter. The panel displays Enter code.
3. Enter your access code and press Enter. The panel displays Access codes.
4. Press the scroll buttons until the panel displays Light control.
5. Press Enter. The panel displays Set entry lights.
6. Press the scroll buttons until the panel displays Sensor light.
7. Press Enter. The panel displays Sn ## <Text> X-10 unit = on/off.
8. Press the scroll buttons until the panel displays the sensor number you want to activate.
9. Press Enter. The panel displays On/off, which will be flashing.
10. Press the scroll buttons until the panel displays On.
11. Press Enter.
12. Press STATUS three times to exit.

Note: You can also program a keyfob button to control a light or appliance module.

To program a light schedule:

Press the scroll buttons until the panel displays System programming.

1. Press Enter. The panel displays Enter code.
2. Enter your access code and press Enter. The panel displays Access codes.
3. Press the scroll buttons until the panel displays Light control.
4. Press Enter. The panel displays Set entry lights.
5. Press the scroll buttons until the panel displays Set entry lights.
6. Press Enter.

7. Press the scroll buttons until the panel displays Light schedules.
8. Press Enter. The panel displays Light schedule 1 <--:-- - --:-->.
9. Press the scroll buttons until the panel displays the unit number you want to program.
10. Press Enter. The HH of the start time will flash.
11. Press the scroll buttons to set the hours.
12. Press Enter. The MM of the start time will flash.
13. Press the scroll buttons to set the minutes.
14. Press Enter. The AM/PM of the start time will flash.
15. Press the scroll buttons to set the AM/PM setting.
16. Press Enter. The end time starts to flash.
17. Follow the same instructions to set the hour, minute, and AM/PM settings for the end time.
18. Press STATUS repeatedly to exit.

Lock interval

Note: This feature has not been investigated for use by UL.

Sets the start and stop times that determine when the panel prevents the sensor-activated lights feature from turning on sensor-activated lights.

Note: System time must be set correctly for this feature to work.

When a time value is set (on) and the sensor-activated lights feature is on, the panel prevents sensor-activated lights from turning on between the programmed start time (this option) and the programmed stop time.

Both sensor-activated light lockout start time and sensor-activated light lockout stop time must have a time programmed for this feature to work correctly.

When both sensor-activated light lockout start time and sensor-activated light lockout stop time are turned off and the sensor-activated lights feature is on, sensor-activated lights turn on at all times.

Table 24: Light control

Function	Default	Description
Set entry lights: Entry light unit, 1 through 8	Off	This menu allows the user to set X-10 lights with unit numbers from 1 to 8 as entry lights (On).
Sensor light # 01 to 40		In this menu, each enrolled sensor can be associated with an X-10 light with unit number from 1 to 8 (or Off for no association).

Function		Default	Description
Light schedules	Light schedule, 1 through 8	Off	In this menu, a light schedule can be programmed for each X-10 module with unit number from 1 to 8.
Housecode		A	
Lock interval	(Light) lock interval	Blank	This option sets the daily lockout time during which sensor trips do not activate associated X-10 lights

System tests

Table 25: System Tests menu

Function	Default	Description
Comm test		The communication test is used to check the phone communication between the panel and the central station or voice report destination.
Sensor test		The sensor test is used to check proper sensor operation.
System download		This feature initiates a phone call from the panel to the Enterprise Downloader.

Resetting memory to factory defaults

To reset the panel to factory defaults:

1. Open the panel cover.
2. Unplug the transformer and disconnect the battery.
3. Press and hold the four arming/status buttons (Doors+Windows, Motions, Disarm, and Status) on the front of the panel and the tamper switch on the inside of the panel.
4. Restore power to the panel with the battery while holding the four buttons and tamper switch.
5. Release the buttons.
6. Plug in the transformer to the outlet.

Note: The procedure to reset memory to factory defaults is meant to be difficult. It is also possible to restore power to the panel by plugging in the transformer first, which allows the panel to be closed so that the tamper switch does not need to be pressed. If you do this, be sure to reconnect the battery.

Program the panel in this order:

1. Set the panel clock.
2. Add (learn) sensors.
3. Change options as needed.

Note: If phone lock is on, phone numbers 1 and 2, downloader phone number, account number, phone lock, downloader code, phone report modes 1 to 4, access code length, and call waiting and dealer code will not reset to their defaults.

Testing

This section describes how to perform various test procedures. You should test the system after installing, after servicing, and after adding or removing devices from the system.

Control panel

Test the panel by pressing the buttons as described in Table 26 below. Table 27 below provides a list of the arming levels.

Note: An access code is required when arming if the secure arming option is on.

Table 26: Control panel test sequence

Button	Function tested	Test	Correct result
Doors+Windows	The panel arms door and window sensors.	Press Doors+Windows a second time to eliminate the programmed entry delay.	The button will blink when the no entry delay option is on.
Motions	The panel will arm motion sensors.	Press Motions a second time to turn the latchkey option on.	The button blinks when latchkey is on.
Disarm	The panel will prompt you to enter an access code.	Enter the appropriate code.	The panel will disarm doors, windows, and motion sensors.
Status		Press Status for panel to display and speak the system status.	
Police		Press and hold or press the button twice quickly to activate a nonmedical	
Fire		police, fire, or auxiliary	
Emergency		emergency alarm.	

Note: Forty key presses for invalid codes (ten invalid 4-digit codes, for example) will cause a system access alarm. The alarm locks all touchpads, except key fobs, for 90 seconds.

Table 27: Arming levels

Arming level	Description	Indication
0	Subdisarms (master access and duress codes only), and bypasses 24-hour intrusion sensors (master access code only). Fire sensors (group 26) cannot be subdisarmed.	One beep indicates the system is subdisarmed. The panel displays and speaks "Subdisarmed". The Disarm button blinks.

Arming level	Description	Indication
1	Disarm the system.	One beep indicates the system is disarmed. The panel displays and speaks Disarmed. The Disarm button lights.
2	Arm doors and windows.	Two beeps verify that door/window sensors are armed. The panel displays DOORS+WINDOWS and speaks Doors and Windows On. The Doors+Windows button lights.
3	Arm motion sensors.	Three beeps verify that motion sensors are armed. The panel displays MOTIONS and speaks Motions On. The Motions button lights.
4	Arm doors, windows, and motion sensors.	Four beeps verify that door/window and motion sensors are armed. The panel displays DOORS+WINDOWS & MOTIONS and speaks Doors and Windows On, Motion On. The Doors+Windows and Motions buttons light.

Sensors

Test the sensors after all programming is completed and whenever a sensor-related problem occurs.

Note: While the sensor test is a valuable installation and service tool, it only tests sensor operation for the current conditions. You should perform a sensor test after any change in environment, equipment, or programming.

Notify the central station you will be performing a test prior to starting the test.

To test the sensors:

1. Place all sensors in their secured (no alarm) state.
2. Scroll to Sensor Test options under the System Tests menu, and then press OK.

The panel will prompt you to trip each sensor one at a time. You may follow the panel prompting or test the sensors in any order. See the Table 28 on page 58 for specific instructions on how to trip each sensor type.

Interior sirens sound transmission beeps, and the display identifies the tripped sensor and the number of RF packets received. The system will continue to prompt for sensors that have not yet been tested. When all sensors have been tested, the display shows `SN Test Complete Press Status`.

3. Press Status.

The display shows `Sensor Test OK`.

If you press **Status** and the panel has not heard from all sensors, the displays shows `SN Test Fail` or `Aborted`.

Table 28: Sensor tripping instructions

Sensor	Do this
Door/window	Open the secured door or window.
Freeze	Remove the sensor cover. Apply ice in a plastic bag to the sensor (for 10 to 15 minutes). Do not allow the sensor to get wet.
Water	Press a wet rag or wet finger over both of the round, gold-plated terminals on the underside of the sensor.
Carbon monoxide alarm	Unplug the CO alarm. Plug it back in, wait 5 seconds, then press the TEST/RESET button until the unit beeps eight times.
Glassbreak	Trip the glassbreak sensor with an appropriate glassbreak test tool.
Motion sensor	Avoid the motion sensor field of view for 5 minutes, and then enter its view.
Rate-of-rise heat detector	Rub your hand together until warm, and then place one hand on the detector for 30 seconds.
Shock	Tap the glass twice, away from the sensor. Wait at least 10 seconds before testing again.
Smoke	Press and hold the test button until the system sounds transmission beeps.
Personal help button	Press and hold the appropriate help button until the light blinks and the panel sounds for at least seven beeps.
Key fob	Press and hold the Lock and Unlock buttons simultaneously for 3 seconds.
Remote handheld touchpad	Press and hold the two Emergency buttons simultaneously for 3 seconds.

Table 29: Minimum beeps

Type of sensor	Number of beeps
Wireless intrusion sensors	7-8
Wireless smoke and heat sensors	7-8
Wireless environmental/panic buttons	7-8
Hardwired loops	1
Emergency buttons (remote handheld touchpads only)	7-8

4. Press **STATUS**. The panel displays *Sensor Test Ok*.
5. If you press **STATUS** and the panel has not heard from all sensors, the panel will display ***Sn test fail or aborted***.

Sensor test failure

If sirens do not beep when a sensor is tripped, use an RF Sniffer (60-401) test tool to verify that the sensor is transmitting. Constant beeps from the RF Sniffer indicate a faulty sensor. Replace the sensor.

If possible, locate sensors within 100 ft. (30 m) of the panel. While a sensor may have a range of 500 ft. (152 m) or more out in the open, the environment at the installation site can have a significant effect on transmitter range. A change in sensor location may help overcome adverse wireless conditions.

To reposition a sensor:

1. Rotate the sensor and test for improved sensor communications at 90 and 180 degrees from original position.
2. If poor communication persists, relocate the sensor.

To relocate a sensor:

1. Test the sensor a few inches from the original position.
2. Increase the distance from the original position and retest until an acceptable location is found.
3. Mount the sensor in the new location.
4. If no location is acceptable, replace the sensor.

To replace a sensor:

1. Test a known good sensor at the same location.
2. If the transmission beeps remain below the minimum level, avoid mounting a sensor at that location.
3. If the known-good sensor functions, contact UTC Fire & Security for repair or replacement of the problem sensor.

Phone communication

Perform a communication test to check the phone communication between the panel and the central station.

To perform a phone communication test:

1. Scroll to the Comm Test option under the System Test menu.
2. Press OK.

The panel confirms that a communication test has begun. When the communication test is complete, the panel displays `Comm Test is OK` within 3 minutes.

If the test is unsuccessful, the Status button lights and the display shows **Comm Failure** within 10 minutes.

If the test is unsuccessful:

1. Check that the panel is connected to the phone jack.
2. Check the phone number programmed into the panel.
3. Perform the communication test again.
4. If the communication test fails again, check the phone connection wiring.

Offsite phone operation

Test the system from a remote phone by calling the panel and using the commands in Table 30 below.

Table 30: Phone commands

System function	Phone command
Disarm	1
Arm doors/windows	2
Arm motion sensors	3
Arm doors/windows with no entry delay	2 2
Arm motion sensors with latchkey	3 3
Arm doors/windows and motion sensors	2 3
Arm doors/windows with no entry delay and motion sensors with latchkey	2 2 3 3
Specific light on	*, <unit number>
Specific light off	#, <unit number>
All lights on	* *
All lights off	# #
System status	0
Audio verification	5 plus X (X= a command from Audio Verification Set)
Terminate session	9

Central station communication

After performing sensor and communication tests, check that the system is reporting alarms successfully to the central station. Table 31 on page 61 provides a list of sensor/user report codes.

To test communication with the central station:

1. Call the central station and tell the operator that you will be testing the system.
2. Arm the system.
3. Test each of the wireless panic buttons and trip at least one sensor of each type (fire, intrusion, etc.) to verify that the appropriate alarms are working correctly.
4. When you finish testing the system, call the central station to verify that the alarms were received.

Table 31: Sensor/user report codes

Arm or disarm from	Reports as user
Panel or remote handheld touchpad	0
Key fob	1 to 40 (sensor number)
Panel auxiliary panic	41
Panel tamper	42
Panel police panic	43
Panel fire panic	44
Dealer access code	44
Installer access code	45
Master code	46
Access codes 1 to 8	47 to 54
Duress code	55

Two-way voice operation

For the central station operator to initiate an audio session:

1. After the panel has completed reporting the alarm, pick up the CS phone and press the * button to start the audio session.
2. Press 1 or 0 to speak, 2 for VOX operation, and 3 or 6 to listen.
3. Press 99 to terminate the session.

Note: Panel voice announcements are silenced during AVM sessions. If the operator does not terminate the session correctly, panel announcements may not occur for up to 90 seconds after the operator hangs up.

Table 32: Audio verification set

Phone button	Function
0 or 1	Speak
2	VOX operation
3 or 6	Listen
7	Extend session for 90 more seconds
88	Terminates session with call back (the panel answers on the first ring if called within 5 minutes)
99	Terminates session with no call back

Voice event notification

Testing this feature requires two people; one at the alarm site and the other at the location the panel is programmed to call.

To test voice event notification:

1. Contact the central monitoring station (if the system is monitored) to inform them you are testing the system and not to dispatch authorities.
2. At the system site, put the system into an alarm condition.
3. At the calling location, pick up the phone after it starts ringing. You should hear the panel voice announce Press Star for Alarm.
4. Press * and the panel voice identifies the alarm. If there is more than one alarm in progress, you must press * for the panel voice to identify them.

After all alarms have been identified, the panel announces Press # to Exit.

5. Press # to terminate the call.

You must terminate the call by pressing #. Otherwise, the panel may not disconnect from the phone line for up to 2 minutes.

X10 operation

The following sections describe how to test X10 lamp, siren, appliance, and universal module operation.

Manual lamp module control

- **Control panel:** Press the asterisk button (*) and the unit number of the lamp module using the numeric buttons to test individual lamp modules 1 through 8. The panel responds with *Light # on/off*. Press the asterisk button (*) twice to turn on all lamp modules. Press the pound button (#) twice to turn off all lamp modules.

- **Keyfob:** Press the Light button repeatedly to turn all lights on and off. The panel responds with *Lights on/off*.
- **Remote handheld touchpad:** Press the Lights on button and the unit number of the lamp module using the numeric buttons to test individual lamp modules 1 through 8. The panel responds with *Light # on/off*. Pressing the Lights on or Lights off button twice turns all the lights on or off.

X10 siren and lamp module functions

All sirens turn off when the system is disarmed or when the siren timeout expires. Siren priority is fire (highest priority), intrusion, and emergency. Table 33 **below** identifies the light information for each of these siren types.

Table 33: Alarm siren and X10 light information

	Fire	Intrusion	Emergency
X10 lights	Steady	Flashing	Steady
X10 siren	Steady	Steady	Alarm beeps
Interior and panel siren	Temporal 3	Steady	Fast on/off

If an alarm of greater priority occurs during an alarm of lower priority, the greater priority alarm sirens sound. Fire alarms sound a temporal 3 pattern (0.5 seconds on, 0.5 seconds off for three beeps then 1.5 seconds off).

Note: The X10 siren must be set to unit #9 to “hear” emergency alarms and status beeps. To hear emergency alarms only, set to unit #10.

Troubleshooting

This chapter provides information to help you troubleshoot problems, perform simple preventive maintenance procedures, and contact technical support in case you need assistance with your UTC Fire & Security equipment.

System status

To clear Status (alarm memory), from a disarmed state press Status, listen to the status message, and then press Disarm.

If the panel displays and announces Siren 1 Failure:

- Turn the hardwired siren supervision option off if a hardwired siren or sensor is not connected.
- Check for the correct end-of-line resistor in the HW1 I/O circuit.

If the panel displays and announces Low Battery:

- Check that the panel backup battery is connected.
- Check the panel backup battery voltage. If less than 5.4 volts, replace the battery and clear the system status message.
- Run a sensor test.

If the panel displays and announces RF Jam, the control panel has detected RF interference.

If the panel displays and announces that a sensor is open, see “Sensors” on page 40.

If the display shows `Set Time` and announces System Time is Not Set, set the system time.

Control panel

If the panel displays and announces Invalid, the sensor is already programmed. Delete the sensor if not programmed correctly.

If the panel does not beep, turn on the piezo beeps option.

If the latchkey does not function:

- The latchkey time may not be set. Set the latchkey time option.
- The latchkey may not be enabled. Enable the latchkey by pressing Motions twice.
- The phone number may not be programmed properly. Reprogram the phone number.
- The system time may not be set. Set the system time.

Sensors

If a sensor does not work:

- Make sure the battery is good and installed correctly.
- Check for interference from metal objects. Move or rotate the sensor.
- Move the sensor to a new location.

If a door or window is closed, but the panel announces it is open:

- Be certain the arrow on the magnet and the guide line on the transmitter are aligned and within ¼ inch of each other.
- The sensor tamper switch may be open (cover off).

If a motion sensor goes off continuously, be sure the sensor is mounted on a solid surface and the viewing field is free from sources of changing temperature.

If a motion sensor does not respond to motion:

- Make sure the sensor battery is good and installed correctly. Wait 2 minutes after installing a new battery to test the sensor.
- Adjust the sensor mounting.
- Leave the area for 3 minutes, then retest.
- The environment may be too hot or too cold. Outdoor sensors operate between 32 and 120°F (0 and 49°C).
- Dirt or dust may be causing the problem. Wipe the sensor with a clean, damp cloth.

Specifications

Power	9 VAC, 60 Hz, 25 VA transformer minimum Rechargeable battery: 6.0 VDC, 1.2 Ah lead-acid. The battery will last 24 hours with no AC and specified standby load of 250 mA. Maximum battery charging current is 45 mA. With loss of AC, panel will continue to operate normally to a minimum of 5.1 VDC.
Radio frequency	319.5 MHz
Storage temperature	-29 to 140°F (-34 to 60°C)
Operating temperature	32 to 120°F (0 to 49°C)
Maximum humidity	85% relative humidity, noncondensing
Auxiliary power	Unregulated 5.3 to 12.3 VDC, with a maximum of 250 mA
Size (LxWxD)	7 x 5.75 x 2.125 in. (178 x 146 x 54 mm)

Sensor names

The following tables provide alphabetical and numerically sequential lists of the sensor name segments.

Table 34: Alphabetical list of sensor name segments

039	Attic	137	Baby	004	Back door
005	Back window	030	Basement	031	Basement window
010	Bedroom	011	Bedroom window	140	Boy's
014	Child's room	015	Child's room window	038	Closet
026	Den	027	Den window	129	Dining room
136	Door	035	Downstairs window	130	Family room
142	Fire	002	Front door	003	Front window
028	Garage	006	Garage door	007	Garage window
141	Girl's	012	Guest room	013	Guest room window
036	Hallway	000	Keyfob (keychain)	019	Kitchen
020	Kitchen window	131	Laundry	017	Living room
018	Living room window	008	Master bedroom	009	Master bedroom window
037	Medicine cabinet	041	Module	024	Office
025	Office window	131	Patio	023	Patio door
042	Phone module	134	Pool	021	Porch
022	Porch window	139	Room	132	Sliding door
029	Special chime	143	Sun room	040	System panic
001	Touchpad	138	Toy room	032	Upstairs
033	Upstairs window	016	Utility room	135	Window

Table 35: Sensor name segments by index number

000	Keyfob (keychain)	001	Touchpad	002	Front door
003	Front window	004	Back door	005	Back window
006	Garage door	007	Garage window	008	Master bedroom
009	Master bedroom window	010	Bedroom	011	Bedroom window
012	Guest room	013	Guest room window	014	Child's room
015	Child's room window	016	Utility room	017	Living room
018	Living room window	019	Kitchen	020	Kitchen window
021	Porch	022	Porch window	023	Patio door
024	Office	025	Office window	026	Den

027	Den window	028	Garage	029	Special chime
030	Basement	031	Basement window	032	Upstairs
033	Upstairs window	034	Downstairs	035	Downstairs window
036	Hallway	037	Medicine cabinet	038	Closet
039	Attic	040	System panic	041	Module
042	Phone module	043	A	044	B
045	C	046	D	047	E
048	F	049	G	050	H
051	I	052	J	053	K
054	L	055	M	056	N
057	O	058	P	059	Q
060	R	061	S	062	T
063	U	064	V	065	W
066	X	067	Y	068	Z
069	0	070	1	071	2
072	3	073	4	074	5
075	6	077	8	078	9
079	/	080	'	081	!
082	@	083	#	084	\$
085	%	086	&	087	*
088	(089)	090	"
091	-	092	_	093	+
094	=	095	{	096	}
097		098	.	099	<
100	>	101	?	102	(space)
103	a	104	b	105	c
106	d	107	e	108	f
109	g	110	h	111	i
112	j	113	k	114	l
115	m	116	n	117	o
118	p	119	q	120	r
121	s	122	t	123	u
124	v	125	w	126	x
127	y	128	z		

	Control panel	Remote touchpad	Keyfob	Telephone
Level 0: Subdisarm the system	Enter the master code while the system is disarmed.			1
Level 1: Disarm the system	DISARM, <access_code>.	Disarm		1
Level 2: Arm doors and windows	DOORS+WINDOWS, <access_code> (if required).	ARM Doors & Windows		2
Level 3: Arm motion sensors	MOTIONS, <access_code> (if required).	ARM Motion Sensors		3
Level 4: Arm doors, windows, motions	DOORS+WINDOWS, <access_code> (if required), MOTIONS.	ARM Doors & Windows - ARM Motion Sensors	-	2 - 3
Activate no delay	DOORS+WINDOWS, DOORS+WINDOWS. Appends -No Delay to arming level text.	ARM Doors & Windows - ARM Doors & Windows		2 - 2
Activate latchkey	MOTIONS, <access_code> (if required), MOTIONS.	ARM Motion Sensors - ARM Motion Sensors	- -	3 - 3
Activate panic alarm	Press Fire, Emergency, or Police twice within 3 sec. or hold it for 2 sec.	+ Hold both for 3 sec.	+ Hold both for 3 sec.	
Check system status	STATUS	SYSTEM STATUS		0
Toggle chime or special chime mode	Scroll to <i>Chime</i> or <i>Special Chime</i> , Enter, toggle On/Off, Enter.			
Bypass a sensor	BYPASS, <master_code>, scroll to the sensor, BYPASS.			
Time-activated lights on/off	Scroll to <i>Light Schedules</i> , Enter, toggle On/Off, Enter.			
Sensor-activated lights on/off	Scroll to <i>Sensor Lights</i> , Enter, toggle On/Off, Enter.			
Specific light on	Press *, <unit_num>.	- <unit_num>.		* - <unit_num>.
Specific light off	Press #, <unit_num>.	- <unit_num>.		# - <unit_num>.
All lights on	To turn on all lights controlled by lamp modules, press * twice. The panel displays <i>All Lights On</i> .	-		* - *
All lights off	To turn off all lights controlled by lamp modules, press # twice. The panel displays <i>All Lights Off</i> .	-		# - #

a. A minus sign (-) between buttons means **press one then the next**; a plus sign (+) between buttons means **press both simultaneously**.