Mississippi Security Association

Technology Guide

Mississippi Security Association

Guide to Alarm Equipment

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Guide to Alarm Equipment Table of Contents

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Introduction

The purpose of this reference guide is to provide public safety and the alarm industry with recommendations regarding alarm system equipment and installation practices that have proven to be highly effective in reducing false alarms and which will make a significant impact on the false alarm problem when fully implemented. The reference guide contains major alarm system components, describes their function, provides recommended applications and lists either the false alarm potential or the false alarm prevention aspects of each component.

General Recommendations

- **Customer Service-** FARA & NESA encourage every alarm company to strive for excellence in customer service and equipment installation and design.
- **Training-** Installation personnel should be supervised by persons who are qualified and experienced in the installation, inspection, and testing of premises security systems. Sales, design and monitoring personnel should also be appropriately trained. Examples of qualified personnel shall include, but not be limited to, the following:
    - Personnel trained and certified by equipment manufacturers.
    - Personnel licensed or certified by federal, state or local authority.
    - Personnel certified or accredited by the Canadian Security Association (CANASA), Central Station Alarm Association (CSAA), Electronic Security Association (ESA), National Electronic Security Alliance (NESA), Security Industry Association (SIA) or the alarm association in their state or any equivalent training facility or program.
- **Follow-up**- One proven method of false alarm reduction is for alarm companies to call their customers the day after an alarm activation. This allows the customers some interaction with their company and gives a chance for additional customer training and/or service calls to deal with faulty equipment.
- **User Training-** Alarm company representatives could drastically reduce the number of false alarms by taking the time to teach the customer and all potential users at the alarm location how to properly use the alarm when it is installed. It is just as important to continue the training process at other valuable times also, such as when the alarm is inspected, after a false dispatch occurs, or if there have been changes to the customer's system or environment.
- **Verification**- Enhanced Call Verification (ECV) has proven to drastically reduce the number of requests for dispatch that are made to public safety. When ECV is utilized, the monitoring operator will first attempt to reach a responsible party at the alarm site. If that contact fails, the monitoring operator will call a different phone number, usually the cell phone of a responsible party, in an attempt to verify the validity of the alarm signal prior to requesting public safety dispatch. Contacting responsible parties may jog their memory about the balloons left over from the office party or a check of the time may show it is the typical time for one of the employees of the business to leave, and who needs more training on arming the system. Additionally, if the monitoring operator telephones the site and receives a busy signal, it may be because the system has seized the phone line or the alarm itself is attempting to call the monitoring center. Therefore, more than one attempt should be made to contact a responsible party prior to requesting public safety dispatch. Two-way voice communication and/or video verification may also be used as ECV methods.
- **Cross Zoning-** Two devices are installed. The alarm will not signal without both devices tripping. FARA & NESA also recommend that monitoring companies consider not dispatching public safety on single motion detector signals. The alarm owner or the responsible party should be notified.
- **Cancellation of Alarm Signals**- All jurisdictions should accept alarm dispatch cancellations from the monitoring company after verification, if the jurisdiction is notified prior to the arrival of the public safety responders at the alarm site.

Type of Signals and Response

Signal Name	Description	Proper Response
Burglar Alarm	Usually audible signal indicating a burglary or break in.	Attempt to verify, by calling the Alarm Site and/or Alarm User by telephone, to determine whether an Alarm Signal is valid before requesting dispatch. Telephone verification shall require, as a minimum that a second call be made to a different number, if the first attempt fails to reach an Alarm User who can properly identify themselves to attempt to determine whether an Alarm Signal is valid, EXCEPT in the case of a panic, duress or holdup or robbery, or in cases where a crime-in-progress has been verified by real-time audio/video surveillance of an Alarm by means of devices that permit either the direct, live listening in or viewing of an Alarm Site or portions thereof.
Fire Alarm	A signal that reports a fire, water flowing in a sprinkler system, or dangerous conditions such as smoke or overheated materials that may combust spontaneously.	Attempt to verify the alarm by placing one call to the premises to determine if the alarm is valid or not. This process shall not take longer than 90 seconds, unless local Authority Having Jurisdiction (AHJ) has another requirement. The AHJ is the individual who has ultimate authority in determining the standards to be used in fire alarm installations (Usually the fire marshal).
Hazardous Gas Alarms	A signal that reports that harmful or hazardous gas such as carbon monoxide is present	Call the alarm site: If someone answers the telephone: The occupants shall be instructed to leave the premises and move to fresh air. Ask are all the occupants accounted for and are they out of the premises and is anyone nauseous, ill, have a headache or dizzy? Instruct the occupants not to re-enter the premises until cleared by the responding fire service. Immediately call the appropriate emergency response agency to inform them of the alarm and that the occupants answered the telephone, were told to leave the premises and of any reported symptoms. If no one answers the telephone: Immediately call the appropriate emergency response agency and report that a CO alarm was received from a particular premises and you were unable to reach an occupant. After dispatch, contact the responsible party(s). If an answering machine or voicemail is encountered: Leave a message including the date, time and alarm event and instruct that all occupants evacuate the building. Immediately call the appropriate emergency response agency and report that a CO alarm was received from a particular premises and you were unable to reach an occupant. For more info see ANSI/CSAA CS-CO-01 – 2008
Silent Holdup/Robbery or Panic, Ambush/Duress Alarm	A silent alarm signal generated by the manual activation of a device or the entry of a designated code into an arming station intended to signal a robbery in progress or a life threatening or emergency situation requiring law enforcement response.	Call requesting public safety dispatch, then attempt to verify the validity of the signal.
Audible Panic	An audible alarm signal generated by the manual activation of a device or the entry of a designated code into an arming station intended to signal a life threatening or emergency situation requiring law enforcement response.	Attempt to verify the alarm by placing one call to the premises to determine if the alarm is valid or not. Call requesting public safety dispatch if appropriate.
Trouble	A signal indicative of a fault in a monitored circuit or component.	Responsible party should be contacted. Public Safety should not be dispatched.
Supervisory	A signal indicating the need for action in connection with the supervision of guard tours, the fire suppression systems or equipment, or the maintenance features of related systems.	Responsible party should be contacted. Public Safety should not be dispatched.
Late to Close	The alarm system has not been armed by the agreed upon time deadline.	Responsible party should be contacted. Public Safety should not be dispatched.

Late to Open	The alarm system has not been disarmed, and there is a time deadline beyond which the user wants to be sure that the premises are occupied.	Responsible party should be contacted. Public Safety should not be dispatched.
Unexpected Openings	The alarm system has been disarmed at a time outside the normal schedule.	Responsible party should be contacted. Public Safety should not be dispatched.
Low Battery	Indicates when battery is almost dead.	Responsible party should be contacted. Public Safety should not be dispatched.
AC Power Fail	Indicates that primary AC power has failed.	Responsible party should be contacted. Public Safety should not be dispatched.
Reset or Restoral	Indicates that a device is restored to its original or normal condition.	Signal should be logged for future reference. Public Safety should not be dispatched.
Cancel	A signal indicating that the previous alarm signal, or alarm in process, is to be disregarded.	Public Safety should not be dispatched.
Industrial Process Alarm	A signal that reports off-normal condition for a wide variety of commercial and industrial processes, including sump-pump operations, water levels, pressures and temperatures, chemical processes, and special furnace operations.	Responsible party should be contacted. Public Safety should not be dispatched.
Late to Test Signal	Failure to receive an anticipated test signal (sent in an effort to confirm proper operation of the equipment) at the scheduled time.	Responsible party should be contacted. Public Safety should not be dispatched.
Exit Error	A signal produced when an entry/exit zone is still violated at the expiration of the Exit Time.	Responsible party should be contacted. Public Safety should not be dispatched.
Closing or Recent Closing	A signal indicating that the security system has recently been armed.	Responsible party should be contacted. Public Safety should not be dispatched.
Test Initiation Report	At the initiation of a test, the control panel sends a message to the central station that a test is in progress.	Signal should be logged for future reference. Signals should be ignored until the termination of test signal is received. Public Safety should not be dispatched.
Test Termination Report	When a test is terminated, the control panel sends a message to the central station that the test is over.	Signal should be logged for future reference. Signals should be ignored until the termination of test signal is received. Public Safety should not be dispatched.

Do-It-Yourself Systems

Description:	Do-It-Yourself Systems are alarm systems and components purchased at a retail center by the alarm user and installed by the alarm user.	
Types:	All in one system in one box or control and wired components, control and wireless components.	
Major Causes for False Alarms:	Improper installation, poor quality, lack of operation or alarm design knowledge by the alarm user. In many cases the quality of the electronics is very poor to attract an end user to purchase a do-it-yourself-system.	

Self-Contained Systems

Description:	Self-contained systems are designed for users to take home and plug in. Usually involves a motion detector.	
Types:	All in one system in one box, control and wired components, control and wireless components.	
Major Causes for False Alarms:	Should be used as a notification device for the alarm user. User lacks expertise to properly aim the motion sensor or install the system, which will lead to false alarms. Police would be contacted only in the event of a verified point of entry.	

Control Panels

Description:	The control panel is the "brain" of the alarm system. When a detection device of any kind is activated, the signal is transmitted to the control panel, which in turn activates the audible sounding device, and the communicator, (if the system has one) to report the alarm. The control panel turns the system on and off via remote arming stations. It also includes the alarm system's power supply and standby battery. Digital Communicators are the most common method used in homes to transmit an alarm signal from the home over regular telephone wires to an alarm monitoring station. When the alarm is activated, the digital communicator seizes the telephone line and dials the central station computer, confirms contact and delivers a coded signal giving the location and type of alarm that has been activated. The central station operator then attempts verification when appropriate and notifies the proper authorities.	
Types:	Number of zones, capability to power devices, wired, wireless or hybrid inputs. Combination System - System where fire alarm system components may be used in whole or in part in common with a non-fire signaling system such as a paging system, burglar alarm system or a process monitoring supervisory system without degradation of or hazard to the fire alarm system.	

Applicable Standard:	UL 864: Standard for Control Units for Fire Protective Signaling Systems. (Fire Systems ONLY) SIA-ANSI CP-01 – Control Panel Standard. See SIAC's list of Cities and States that require CP-01 (http://www.siacinc.org)
Major Causes for False Alarms:	Setting entry and exit times at a time that is too fast for the alarm user. Changing programming away from SIA control panel standard defaults. Failure of battery backup power caused by prolonged electrical power failure and/or any other failure of the battery of the alarm control panel.

Arming Stations

Keypads

Description:	The digital keypad is similar to the keypad on a touch-tone telephone. A preset combination number is entered into the keypad to arm (turn on) and disarm (turn off) the system. The combination code can be changed.	
Types:	LCD display, LED display, wired or wireless, built in zones.	
Major Causes for False Alarms:	If the station has single action buttons to set off a fire or panic alarm, it can be accidentally triggered. Single action programming should be changed immediately. One plus duress feature (using one digit higher than the regular code for the duress code) should be prohibited on keypad due to high occurrence of false alarms.	

Keyswitch

Description:	Key operated arming stations use a high security key to arm (turn on) and disarm (turn off) the system. A red light is normally used to indicate if the system is armed.	
Types:	Ace (round) Lock or High Security. Inside or outside.	
Major Causes for False Alarms:	Tamper switch that is designed to activate if the switch is removed from the wall can cause alarms if loose or removed by contractors or others in error.	

Keyfobs& Pendants

Description:	Small radio transmitter, commonly located on a key chain that is used to arm and disarm the alarm system. May have a panic feature.	
Types:	Key chain, pendant, bracelet, watch, car visor mounted or wall mounted.	
Major Causes for False Alarms:	If the keyfob has single action buttons to set off a panic alarm it can be accidentally triggered. Deactivate or replace single action buttons immediately. Location of panic feature on remote not recommended	

Integration with Other Systems

Description:	Access control systems can be interconnected or integrated so that when credentials are presented, the alarm system is disarmed or a certain door is bypassed to prevent an alarm. Closed circuit television can be interconnected or integrated so that cameras are repositioned or certain cameras are recorded when the alarm system or a particular sensor is activated.	
Types:	Integrated systems. Interconnection between separate systems.	
Major Causes for False Alarms:	Lack of synchronization between the access control system or features and the alarm system or features can lead to false alarms when the alarm is bypassed too late or the bypass is removed too early.	

Tablet and Cell Phone Control

Description:	Apps for cell phones and tablets allow the users to arm or disarm the system, get alerts and watch video.	
Types:	Apps for iPhone, iPad, Android, Windows Phone and BlackBerry devices	
Major Causes for False Alarms:	Arming system when it is occupied, children playing with phone, unable to disarm the system because the battery died, there is no cell service or the user forgot their cell phone entirely.	

Programming & Features

Feature	Additional Description	False Alarm Potential	FARA – NESA Recommendation Regarding Application
Wired System	Alarm system that uses wires between sensors and the control panel.	Wires separating can cause false alarms. Rodent damage to wires in attic spaces or corrosion to wires exposed to uncontrolled environments such as wires run in basements and under pier and beam houses.	Wire splices should be twisted, hot soldered and covered with electrical tape or secured with solderless crimp connectors crimped with the appropriate tool.
Wireless System	System that uses Radio Frequencies for communicating status conditions between the alarm sensors and alarm control panel.	May abruptly stop working from battery failure and require higher maintenance for operability.	Batteries must be checked and replaced according to manufacturer's recommendations. A supervised system that monitors the condition of the transmitter as well as its battery should be used.
Abort Window	A period of time that allows the user additional time to disarm the system before an alarm is transmitted.	Too little time prevents the user from disarming the system after false alarms.	All panels should be set to at least the default of 30 seconds established by the SIA CP-01 Standard. Time should be extended depending on environment or user.
Swinger Shutdown	One trip will shut down a zone until it is restored by a manual reset or may be automatically reset after forty-eight hours with no additional trips on any zones.	If swinger shutdown is set above 1, faulty equipment or environment will continue to cause a false alarm from the same source.	All panels should be set to the default of 1 established by the SIA CP-01 Standard.
Exit delay	Time allowed for user to arm (activate) the system and exit.	Sufficient delay time will help reduce false alarms from the source.	All panels should be set to the default of 60 seconds established by the SIA CP-01 Standard. A test should be performed to ensure all users can easily walk the distance in the time allowed.
Exit Time Restart	If the alarm user reenters premise prior to the end of the exit delay time, the exit time shall restart.	Panels without this feature enabled will go into alarm if a person reenters at the end of the exit period.	All panels should use this feature to allow the user time to reenter and reduce exit alarms.
Device Identification	Various methods can be used to pinpoint the source of an alarm.	If too many devices activate the same signal, it can be difficult to locate the source on an alarm.	The number of devices wired to each zone should be limited to more accurately identify the source of a false alarm.
Entry Delay	Period of time allowed, after entry to the premises, to disarm (deactivate) the security system before it notifies the monitoring company.	If the user does not have enough time to disarm (deactivate) the security system, false alarms are likely.	All panels should be set for at least 60 seconds (SIA default is 30 seconds). A test should be performed to ensure all users can easily walk the distance in the time allowed.
Call Waiting	Call waiting feature allows customer to receive multiple calls on a single line.	When the central station operator calls to verify the alarm when the alarm panel is still communicating, the operator will hear ringing and assume the site is not occupied.	Codes to disable the call waiting feature should be added to the panel programming so that the operator hears a busy signal when the panel is using the line.
Communications Paths	Phone systems, radio frequency (RF) including cellular and dedicated radio frequencies, and Internet.	Power outages or delay in signal path.	All devices in the communications path, including modems, routers and switching equipment should have at least 4 hours of

Feature	Additional Description	False Alarm Potential	FARA – NESA Recommendation Regarding Application
			backup power or comply with applicable standards.
Broadband (VoIP & DSL)	Voice over Internet Protocol and digital subscriber line systems are replacing standard phone lines.	Some Broadband signals can distort or prevent communication signals sent by the alarm panel.	Alarm users should contact their alarm company to verify that the system will continue to operate correctly with these technologies.
Grounding	Providing a proper ground can reduce static interference and dissipate surges.	Lack of a proper ground can lead to a false alarm when power surges or lightning strikes.	All systems should be grounded according to NEC (National Electrical Code) and manufacturer's specifications.
Tamper Switches	Reports attempts to gain access to device or panel.	Remodeling, construction or wear and tear can cause tamper signals. Many tamper switches are not hermetically sealed and are subject to corrosion.	Tampering should be sent to monitoring company as a trouble signal. Responsible party should be contacted. Public Safety should not be dispatched.
Backup Battery	Power source when standard power is interrupted.	Systems without enough power to operate are prone to false alarms.	System should include standby power for a minimum of four hours. Replacement should be every three years or more frequently if a site experiences a high occurrence of power outages or other environmental conditions that drain the life of the battery. Battery should be inspected and tested every year. Battery calculations must be performed on each system to ensure adequate capacity.
AC Power Source	Primary power for alarm system.	Eliminates accidentally turning off a power source, which places a drain on the battery. Example: If a business turns off breakers to turn off lights each night the panel will not get a proper charge.	Use a dedicated circuit when possible. Avoid ground fault interrupted circuits. Avoid switched circuits.
Transformer	Source of electricity.	If not permanently screwed into the wall, consumer could inadvertently unplug. This would cause a drain on the battery that could lead to false alarms.	Should be appropriately fastened (according to code) so that it cannot be accidentally unplugged.
Hybrid System	Alarm system that uses both wired and wireless methods for alarm sensors	See wired systems and wireless systems	Utilize both wired and wireless recommendations

Audio Verification

Description:	Microphones at the alarm site are activated after an alarm to allow monitoring of the alarm site.	
Types:	One Way Audio- allows the operator to hear what is happening at the alarm site. Two Way Audio- allows the user to speak through an intercom directly to the monitoring station and vice versa.	
Standard Uses:	To record and verify activity.	
Uses To Avoid:	Where privacy is a concern.	
Range:	Depends on sensitivity and number of microphones.	
Activated By:	System activation.	
Advantages:	Permits the monitoring company to listen in.	
Disadvantages:	Added expense, privacy issue, requires microphones to cover full alarm site. Audible notification appliances may prevent operator analysis. Audio verification is not as reliable as video verification. Operator listening may not know the difference between customer, burglar, alarm user, or source of noise.	
Applicable Standard:	n/a	
False Alarm Reduction Recommendations:	Alarm site can be monitored by the operator to provide audio verification and better intelligence about the premise activity before dispatch. Can assist in canceling false alarms.	

Video Verification

Description:	When the alarm is activated, a camera is used to allow the monitoring center to see what is happening at the alarm site. Some systems record for a period of time immediately before the alarm is activated and allow the operator to view that as well.	
Types:	Integrated camera and motion detector or interconnection between separate camera and alarm system.	
Standard Uses:	To record and verify activity.	
Uses To Avoid:	Where privacy is a concern.	
Range:	Depends on camera and lens.	
Activated By:	Motion sensed by camera or when alarm system activates.	

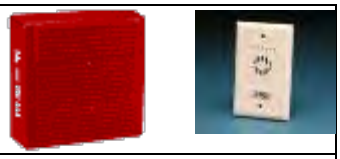
Advantages:	Video may be used to assist in identification and details of a crime.
Disadvantages:	Added expense, privacy issue, requires cameras to cover full alarm site. Operator analyzing the video may not know difference between customer and burglar. Many systems provide a relatively small amount of storage for archiving video, which may be problematic when needed as supporting evidence. Ability to verify subject to quality of camera and lighting.
Applicable Standard:	SIA/IACP CCTV for Public Safety and Community Policing Operational Guidelines.
False Alarm Reduction Recommendations:	Alarm site can be observed by the operator to provide visual verification and better intelligence about the premise activity before dispatch. Can assist in canceling false alarms.

Notification Appliances

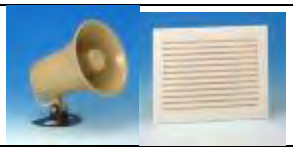
General Considerations

- Sound for each type of alarm (burglar, fire, etc) should be clear and distinctive to the user.

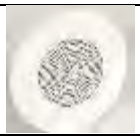
Horns

Description:	Noise-making device used to indicate an alarm or other event.	
Types:	Flush or surface mounting.	

Siren

Description:	An electronic device that produces a very loud, hard to ignore sound when activated.	
Types:	Flush or surface mount. Self contained or a continuous tone or multi-tone.	

Speaker or Voice Evacuation System

Description:	An electronic device that produces a very loud, hard to ignore sound when activated. In some systems known as voice evacuation systems the alert or alarm tone may be followed by a taped or live announcement.	
Types:	Combination of speaker and siren driver or speaker and amplifier for live or taped voice announcements. Flush or surface mount. Continuous tone or multi-tone.	

Chime

Description:	An electronic device that produces a loud sound when activated.	
Types:	Flush or surface mount.	

Bell

Description:	Electromechanical noise-making device. A clapper is moved electromechanically to strike the bell and produce a loud ringing sound.	
Types:	Indoor or outdoor use.	

Strobes

Description:	A visual indicator light with very rapid, bright flashes. Used to indicate an alarm or other event.	
Types:	Rated for Fire use, general notification. Lens colors may vary.	

Active Graphic Annunciator

Description:	Board or CRT screen with graphics to delineate alarm or sensor locations. A visual indicator showing the location of an alarm. Annunciators pinpoint the exact location of an alarm or problem. With their help, the alarm user can locate a faulted door or sensor at closing time. In addition, service personnel can quickly locate a system defect.	

Static Graphic Annunciator

Description:	LEDs illuminate areas of a map of the facility to show the location of an alarm or event. Annunciators pinpoint the exact location of an alarm or problem. With their help, the alarm subscriber can locate a faulted door or sensor at closing time. In addition, service personnel can quickly locate a system defect.	

Tabular Annunciator

Description:	LEDs illuminate a labeled area of a grid to show the location of an alarm. Annunciators pinpoint the exact location of an alarm or problem. With their help, the alarm subscriber can locate a faulted door or sensor at closing time. In addition, service personnel can quickly locate a system defect.	

Smoke Emitting Devices

Description:	When activated, a smoke emitting device rapidly produces a dense smoke, fog or vapor that reduces the visibility in a room to a minimum. Smoke Emitting Devices are intended to be integrated into the premises alarm system, but may be a self-contained stand-alone unit. The purpose of this device is to reduce property losses in unattended premises. They should be manufactured specifically for this use and not adapted from other uses, such as entertainment. Some models allow user programming, such as delays, resets and control of volume of emission.	
Comments:	Reputable and responsible manufacturers and installers have developed and initiated adequate safeguards and procedures to safely install and operate these devices. FARA & NESA are concerned that all manufacturers may not follow these procedures and therefore recommend that localities consider adopting a local version of the FARA Model Smoke Emitting Devices Ordinance.	

Tactile Notification Appliances

Description:	A notification appliance that alerts by the sense of touch or vibration. Used to alert when smoke detectors, or burglar alarm are activated.	
Types:	Bed shakers, vibrating belt pagers, wrist bands, and variable-speed ceiling fans.	

Communications

Digital Communicators

Description:	Also known as a digital dialer. Means of transmitting alarm signals and other information to a central station, using the customer's existing phone line. To transmit an alarm, the communicator seizes the customer's phone line and electronically dials the central station receiver. When the receiver answers, the communicator sends a message in the form of a sequence of tones. A mini-computer in the receiver accepts and acknowledges the message. It then prints out the information for display to the operator.	
Types:	Integrated with control or stand-alone.	
Comments:	Digital communicators need a loop start (POTS) telephone line to work reliably. VoIP lines, even when they appear to be compatible, lack the dependable power source to ensure that the signal can be consistently transmitted.	

Cellular

Description:	The use of stationary cellular telephone equipment to provide means of alarm signal communication between the alarm system and the monitoring facility.	
Types:	Digital	
Comments:	None	

Long Range Radio

Description:	A network of radio transmitters or transceivers capable of sending alarm status messages to one or more radio receivers or transceivers which are at, or in communication with, an alarm monitoring facility or other alarm signal receiving station.	
Comments:	None	

Internet

Description:	Uses the Internet to deliver alarm messages. Incorporates a very high level of encryption and two-way authentication. Internet transmitters at the alarm site send data to a compatible internet receiver at a central station over the internet.	
Comments:	The Internet may be primary with the standard phone lines or a wireless network as backup if the Internet is unavailable. Requires Customer Premise Equipment (may also be referred to as the alarm user's internet network) and is dependent on the security of that network. Relies on the premise and local network power.	

Voice AutoDialer

Description:	An electrical, electronic, mechanical, or other device capable of being programmed to send a prerecorded voice message, when activated, over a telephone line, radio or other communication system.	
Comments:	FARA and NESA do not recommend use of voice dialers for alarm systems. Ties up the PSAP phone lines by repeating information several times. Most local ordinances prohibit using these dialers to call police and fire departments. Much slower than digital communicators.	

Receiving Equipment

Description:	Alarm signals are received at a monitoring station and processed by operators who make calls to verify the validity of a signal, make requests for dispatch of public safety as required and notify responsible parties.	
Comments:	Signals can be received at a self contained device or may be received at one device and fed into a computer to be processed. Alarm signals received by an alarm receiver indicate the type of alarm and a unique identifier that is used to reference details of the location of the alarm and emergency contact phone numbers.	

Holdup or Panic Sensors

Holdup or Panic Switches

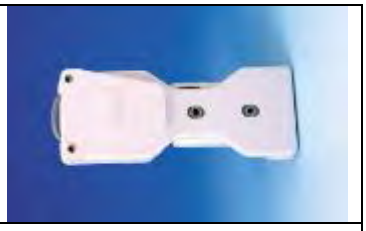
Description:	A holdup or panic button is designed to generate an alarm signal by the manual activation of a device intended to signal a robbery, holdup or emergency in progress. Depressing the button closes or opens the circuit to indicate an alarm.	
Types:	Single action buttons only require pressing the button to activate. Dual action buttons require pressing and holding the button for a specified length of time or pressing two buttons to activate. Locking buttons remain in position after they are pressed until they are reset. Magnetic lever switches use a magnet and reed switch encased in a hinged case. When the case is pulled or opened, the magnet is separated from the switch to change the status of the switch. Piezo pressure strips are concealed in an area that would not normally be subject to enough pressure to operate the switch. When sufficient pressure is applied, a processor activates to generate an alarm. Buttons can be installed in a fixed location or utilize a wireless frequency to allow them to be carried by a person or moved from place to place within a site. Devices can be surface or recessed.	
Standard Uses:	To allow an authorized user to activate an alarm to indicate duress or emergency. Cashier, bank teller, senior citizens, homeowners.	
Uses To Avoid:	Where activation would put the operator at personal risk that the operator is unprepared to accept. Hold-up alarms should not be installed in residential environments unless real, substantial need can be demonstrated.	
Range:	Requires direct contact to activate.	
Activated By:	Depressing one or more buttons.	
Associated Work:	Connection of wiring. Locating to properly conceal and avoid unintended operation. Wiring to control panel zone that is active 24 hours a day.	
Advantages:	Small, easy to operate	
Disadvantages:	Risk when used if detected by robber or assailant. Because signals are generally silent, users are unaware that they have activated the alarm. Law enforcement is not aware of the type of emergency that exists when responding to this type of an alarm and therefore does not know what type of response is required.	
Conditions for Unreliable Detection:	If switch is located in an area where the user cannot activate it without detection.	
Major Causes for False Alarms:	Single action switches can be activated accidentally by the user if user is unaware of proper operation.	
Typical Defeat Measures:	Detection of location.	
Applicable Standard:	UL 636.	
False Alarm Reduction Recommendations:	Use simultaneous two-button activation or a keyed manual reset after activation. Train all personnel on when the button should and should not be used. Do not use in residential applications.	

Foot Rail- Kick Bar

Description:	Foot rails are floor mounted arched enclosures containing a switching device that operates when a person's foot is slid along the floor under the arch to make contact with a pivoting bar.	
Types:	May vary in size but all operate the same.	
Standard Uses:	To allow an authorized user to activate an alarm to indicate duress or emergency. Cashier, bank teller, receptionist, guard desk.	
Uses To Avoid:	Where activation would put the operator at personal risk that the operator is unprepared to accept.	
Range:	Requires direct contact to activate.	

Activated By:	Person's foot is slid along the floor under the arch to make contact with a pivoting bar.
Associated Work:	Connection of wiring. Locating to properly conceal and avoid unintended operation. Wiring to control panel zone that is active 24 hours a day.
Advantages:	Hands free and covert operation.
Disadvantages:	Fixed position. Risk when used if detected by robber or assailant.
Conditions for Unreliable Detection:	If switch is located in an area where the user cannot activate it without detection.
Major Causes for False Alarms:	If user is unaware of proper operation. If located in an area where accidental activation is likely.
Typical Defeat Measures:	Detection of location.
Applicable Standard:	UL 636.
False Alarm Reduction Recommendations:	Train all personnel on when the button should and should not be used. Do not use in areas where items will be stored around or on top of the device.

Money Clips

Description:	Special type of switch placed in a cash drawer, with the bottom bill of a stack inserted in the switch. The alarm is activated by removing that bill.	
Types:	Wired or wireless. Stand-alone or with integrated coiled cord.	
Standard Uses:	To allow an authorized user to activate an alarm to indicate duress or emergency. Cashier or bank teller.	
Uses To Avoid:	Where activation would put the operator at personal risk that the operator is unprepared to accept.	
Range:	Requires direct contact to activate.	
Activated By:	Removal of last group of currency.	
Associated Work:	Connection of wiring. Locating to properly conceal and avoid unintended operation. Wiring to control panel zone that is active 24 hours a day. Allowance for frequent movement of cash drawer.	
Advantages:	Hands free and covert operation.	
Disadvantages:	Fixed position. Risk when used if detected by robber or assailant. Some law enforcement agencies do not recommend using this type of alarm device.	
Conditions for Unreliable Detection:	If switch is located in an area where the user cannot activate it without detection.	
Major Causes for False Alarms:	If user is unaware of proper operation. If wiring between money clip and counter or wall is not flexible enough to withstand frequent opening and closing of cash drawer.	
Typical Defeat Measures:	Detection of location.	
Applicable Standard:	UL 636.	
False Alarm Reduction Recommendations:	Train all personnel on when the money clip should and should not be used. Periodically check and replace wiring between money clip and counter or wall. Wire clips so that bills need to be removed from more than one clip to generate an alarm.	

Indoor Sensors

Magnetic Switch

Description:	Magnetic switches are contact switches used to detect the opening of a door or window and depend on the direct physical operation/disturbance of the sensor to generate an alarm. Magnetic switches are composed of two parts - a two-position magnetic switch mounted on the interior of a door, window or container frame, and a magnet. In most cases, when the door or window is closed, the magnet pulls the switch to its "normal" non-alarmed position. When the door or window is opened, the magnet releases the switch, breaking the contact and activating the alarm.	
Types:	Surface or flush; single, double or triple reed; balanced or coded (see separate description), normally open or normally closed; standard or wide gap.	
Standard Uses:	Magnetic switches are mounted on doors, windows, cabinets and containers to detect opening.	
Uses To Avoid:	On loose fitting doors or where connecting wiring is exposed to tampering.	
Range:	¾" to 2-3/4" depending on rating.	
Activated By:	Separation between switch and magnet.	
Associated Work:	Concealment of connecting wiring. To be effective, doors and windows should be properly and securely seated or mounted in their supporting frame.	
Advantages:	Widely used, easily understood, reliable. Not affected by heat or moving objects.	

Disadvantages:	Simplistic in design, the magnetic switch is limited to detecting normal opening of a barrier such as a door or window. Can be bridged. A magnetic contact on the average will only carry one amp at DC100 volts. On a rare occasion a surge or lightning strike will shoot current through the contacts many times the rated capacity. This will create an arcing and welding of the contact.
Conditions for Unreliable Detection:	Excessive movement of the door, window or access panel in its frame/setting can generate conditions for unreliable detection and should be corrected prior to installation of the security switches.
Major Causes for False Alarms:	Poor fitting doors or windows (caused by age and/or improper installation) and compounded by extreme weather conditions, which cause excessive movement of the door or window, are the major causes of false alarms. The constant vibration can contribute to a false alarm by causing the reed to flex and add fatigue even if the vibration is not sufficient to cause the reed switch to fully open or close. Mounting of magnet directly to metal that can drain the strength of the magnet. Cracks in case surrounding reed switch to expose the reed to the environment.
Typical Defeat Measures:	Penetration of the door or window without moving the magnet switch mechanism will bypass the alarm device. A second, free-moving and stronger magnet can be used to imitate the mounted magnet, allowing the door to be opened without generating an alarm. Switch location should not be observable to a potential intruder to reduce an intruder's ability to bypass or "jump" the terminals.
Applicable Standard:	UL 634.
False Alarm Reduction Recommendations:	Preferred mounting location is 12" or more from the frame toward the center of the door. Surface reed switches should be installed parallel to the magnet. "Wide gap" designation usually means a higher quality reed switch and a more powerful magnet. Installation of the reed in parallel to the magnet is preferred. Proper alignment and spacing from metallic materials is required. Requires specific training for alarm user to maintain doors and windows properly.

Balanced Magnetic Switch

Description:	Balanced Magnetic Switches consist of a switch assembly with an internal magnet that is usually mounted on the door/window frame and a balancing (or external) magnet mounted on the moveable door/window. Typically, the switch is balanced in the open position by the magnetic field produced by the two magnets. If the magnetic field is disturbed by the movement of the external magnet, the switch moves to a "closed" position. When the door is in the normal closed position, the magnetic field generated by the biasing magnet interacts with the field created by the switch magnet, so that the total net effect on the switch is stable. When the door is opened, the switch falls to one of the contacts, becoming unstable and generating an alarm.	
Types:	Surface or flush; single, double or triple reed. Balanced magnetic switches are available in casings designed to prevent the switch from electrically causing an explosion in a hazardous area. These switches are recommended for flammable or hazardous environments.	
Standard Uses:	Balanced Magnetic Switches provide a higher level of security for windows and doors than magnetic or mechanical switches. The balanced magnetic switch should be mounted on the door frame, and the balancing magnet on the door. The switch should be adjusted to initiate an alarm when the door is opened between a half and one inch.	
Uses To Avoid:	On loose fitting doors or where connecting wiring is exposed to tampering.	
Range:	¾" to 2-3/4" depending on rating.	
Activated By:	Separation between switch and magnet.	
Associated Work:	Concealment of connecting wiring. To be effective, doors and windows should be properly and securely seated or mounted in their supporting frame.	
Advantages:	Easily understood, reliable.	
Disadvantages:	Simplistic in design, the magnetic switch is limited to detecting normal opening of a barrier such as a door or window.	
Conditions for Unreliable Detection:	Excessive movement in the door or window will create conditions for unreliable detection and should be eliminated before security switches are installed.	
Major Causes for False Alarms:	Poorly fitting doors or windows and improper installation are the primary causes of false alarms. Extreme weather conditions which cause excessive movement of the door, window or access portal can cause a false alarm.	
Typical Defeat Measures:	A distinct advantage to using the balanced magnetic switch is its inherent ability to counter a common defeat measure used on straight magnetic sensors. This defeat measure involves placing an external magnet on the switch housing to hold the internal switch in place while the door or window is opened. The design of the Balance Magnetic Switch precludes this defeat mechanism from being effective. Switch location should not be observable to a potential intruder to reduce an intruder's ability to bypass or "jump" the terminals.	
Applicable Standard:	UL 634.	
False Alarm Reduction Recommendations:	Preferred mounting location is 12" or more from the frame toward the center of the door. Surface reed switches should be installed parallel to the magnet. "Wide gap" designation usually means a higher quality reed switch and a more powerful magnet. Installation of the reed in parallel to the magnet is preferred. Proper alignment and spacing from metallic materials is required. Requires specific training for alarm user to maintain doors and windows properly.	

Mechanical Switch

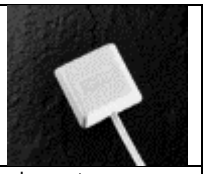
Description:	Mechanical switches are used to detect the opening of a door or window. These sensors depend on direct physical operation or disturbance of the sensor to generate an alarm. Mechanical switches are spring-loaded or plunger devices that trigger when a door or window is opened.	

Types:	Lever or push rod or ball action. Normally closed or open.
Standard Uses:	Mechanical switches can be mounted on doors, windows, drawers, cabinets to detect opening.
Uses To Avoid:	Where the switch will be exposed to dirt, moisture that could jam the switch.
Range:	Point of contact.
Activated By:	Removal of pressure from the plunger.
Associated Work:	Recessing the switch and connecting wiring. To be effective, doors and windows should be properly and securely seated or mounted in their supporting frame prior to the installation of any security (or locking) devices, including mechanical switches.
Advantages:	Simple, cheap, easy to install, can be hidden.
Disadvantages:	Simplistic in design, is limited to detecting normal opening of a barrier such as a door or window. Can be troublesome due to dirt or moisture jamming the switch. Cannot be used on new wood doors that might distort or warp.
Conditions for Unreliable Detection:	Poor or lose fitting doors or windows will allow random movement of a door or window to trigger an alarm and could assist a knowledgeable intruder in gaining surreptitious entry.
Major Causes for False Alarms:	Poor fitting doors or windows and improper installation of doors, windows, locks or alarm switches. Lose fitting or improperly mounted doors or windows can be aggravated by extreme weather conditions (wind and storms) as well as seasonal fluctuations in the external and/or internal environment (heating versus air conditioning). Dirt, moisture, expansion or contraction of frame.
Typical Defeat Measures:	Holding the switch in the "normal closed" position while opening the door or window will preclude the initiation of an alarm. Typically this is accomplished with a small piece of metal designed to prevent the switch from triggering. Also, taping the switch in the "closed" position during daytime operations allows an intruder to return after the alarm has been activated and open the door or window without generating an alarm.
Applicable Standard:	UL 634.
False Alarm Reduction Recommendations:	Only hermetically sealed, watertight and airtight switches should be used. Should not be used on poorly fitting doors and windows. Requires specific training for alarm user to maintain doors and windows properly.

Acoustic Glassbreak Sensor

Description:	Acoustic Glassbreak sensors, usually mounted on ceilings or walls, work by "listening" for an acoustic sound wave that matches the frequency of broken glass. Once impact is made, high frequencies caused by the glass breaking travel away from the point of impact toward the outer edges of the glass surface. These vibrations excite the acoustic sensor processor which passes the frequency through a filter, compares the frequency for a match and signals an alarm if appropriate.
Types:	Surface or flush mounted. Wired or wireless.
Standard Uses:	Depending on the manufacturer's specifications, acoustic sensors should be mounted on the window, window frame, wall or ceiling. If mounted on the glass, the sensor should be placed in the corner approximately two inches from the edge of the frame. If mounted on the wall or ceiling, the sensor should be installed opposite the window. NOTE: Although not recommended, the sensor may be mounted on the window. If so, the mounting adhesive should be specified to withstand long exposure to summer heat, winter cold and condensation that might collect on the window. It should be noted that a window glass can get as hot as150 degrees F in the summer and as cold as -30 degrees F in the winter, therefore, it is essential that the application adhesive meets these specifications.
Uses To Avoid:	Areas with excessive background noise.
Range:	Regardless of which sensor is used, coverage typically does not exceed 100 square feet of glass surface.
Activated By:	Sound.
Associated Work:	As a precaution all windows should be checked for cracks and replaced prior to installation of a Glassbreak sensor to ensure that a good frequency signature will be produced if the window is broken.
Advantages:	Can cover multiple panes of glass.
Disadvantages:	May not detect glass pane removal or some forms of cutting (thermal knife). Line of sight to window may be required.
Conditions for Unreliable Detection:	Inappropriate matching of sensor range capacity to the window size and poor location may cause the sensor to be out of effective detection range. The acoustical characteristics of the room in conflict with the sensor's performance specifications. "Soft" acoustic rooms (e.g. carpeted with window drapery) that absorb vibration or by altering the acoustic characteristics of the "hard" room (e.g., adding window shutters, blinds, draperies, rugs) after the sensor has been tuned can cause detection inadequacy of the sensor.
Major Causes for False Alarms:	Improper calibration or installation. Sharp impact noises. Improper application or placement. The simpler designs of acoustic detectors sense the high frequency tinkle of shattered glass. These simple designs tend to cause false alarms by confusing the breaking of glass such as tableware, or the sound of bells, with the sound of breaking windows. Thunderstorms or background noise, such as office, industrial and cleaning machinery, can create noise in the frequency detection range of the sensor. Many sounds are similar to the sound of breaking glass, such as jingling keys, a telephone ringing, clinking ice cubes, dishes or glasses being washed, dogs barking, air compressors and fans.
Typical Defeat Measures:	Detaching or cutting of an opening in the window or the removal of a window pane (with or without a sensor mounted on it) can bypass the sensor. The break frequency can be distorted by muffling the sound of the breaking glass reducing the potential for the "correct" frequency registered by the sensor.
Applicable Standard:	n/a
False Alarm Reduction Recommendations:	Proper placement calibration and testing are required to avoid false alarms. Recalibration will be required if carpeting in the room is changed to hardwood or tile flooring or vice versa. Dual technology sensors are preferable to reduce false alarms.

Shock Glassbreak Sensor

Description:	Glassbreak sensors monitor glass that is likely to be broken during intrusion. The sensors are housed in a single unit and mounted on a stable interior element (wall or ceiling) facing the main glass surface. Shock sensors feel/sense the typical 5 KHz frequency shock wave that is created when glass is broken. When the processor detects this shock it signals an alarm. 
Types:	Two types of "shock" sensors (transducers) are used: electric piezo and non-electric piezo. Most use piezo transducers to "feel/sense" the 5 KHz frequency. However, some use a non-electric piezo transducer, which does not have any electricity present until the piezo "bends" when it is "hit" by a 5 KHz signal. The non-electric piezo type reduces false alarms dramatically.
Standard Uses:	The sensor is mounted on the window plate or sheet glass.
Uses To Avoid:	Toughened, wired or laminated glass.
Range:	Regardless of which sensor is used, coverage typically does not exceed 100 square feet of glass surface.
Activated By:	Vibration- Frequency of glass break.
Associated Work:	As a precaution, all windows should be checked for cracks and replaced prior to installation of a Glassbreak sensor to ensure that a good frequency signature will be produced if the window is broken. The mounting adhesive should be specified to withstand long exposure to summer heat, winter cold and condensation that might collect on the window. It should be noted that a window glass can get as hot as150 degrees F in the summer and as cold as -30 degrees F in the winter, therefore, it is essential that the application adhesive meets these specifications. Wiring, adjusting and testing.
Advantages:	Small, unobtrusive, do not require line of sight. Piezo-electric type has no moving parts.
Disadvantages:	A sensor is required for each pane of glass. Cannot be used on all types of glass.
Conditions for Unreliable Detection:	Where windows have cracks or glass is not firmly sealed in place.
Major Causes for False Alarms:	Improper application or placement of the sensor. Improper seating of the window pane to allow excessive movement which may duplicate the activation frequency. Storms! Easily activated externally without actually breaking the glass.
Typical Defeat Measures:	The removal of a window pane (with or without a sensor mounted on it) can bypass the sensor. The break frequency can be distorted by muffling the sound of the breaking glass reducing the potential for the "correct" frequency registered by the sensor.
Applicable Standard:	n/a
False Alarm Reduction Recommendations:	Use manufacturer approved adhesive. Do not use on loose fitting glass or glass with any cracks. Dual technology sensors are preferable to reduce false alarms.

Dual Technology Acoustic/Shock Glassbreak Sensor

Description:	Glassbreak sensors monitor glass that is likely to be broken during intrusion. The sensors are housed in a single unit and mounted on a stable interior element (wall or ceiling) facing the main glass surface. In dual-tech sensors, an acoustic device is linked with a shock device. This combination utilizes the complementary capabilities of both devices and provides for a low false alarm rate sensor. The acoustic portion of the sensor uses a microphone to detect frequencies associated with breaking glass. A processor filters out all unwanted frequencies and only allows frequencies at certain ranges to be analyzed. Once the processor receives the frequency, it is compared to those associated with glass breakage. If the signal matches frequencies characteristic of breaking glass, then a signal is sent to the processor. The shock portion of the sensor "feels" for the 5 KHz frequency in the form of a shock wave created when glass is broken. When the processor detects this shock, it sends a signal to the processor. Once the processor has received both signals, an alarm is generated.
Types:	Wired or wireless.
Standard Uses:	Depending on the manufacturer's specifications, acoustic sensors should be mounted on the window, window frame, wall or ceiling. If mounted on the glass, the sensor should be placed in the corner approximately two inches from the edge of the frame. If mounted on the wall or ceiling, the sensor should be installed opposite the window. NOTE: Although not recommended, the sensor may be mounted on the window. If so, the mounting adhesive should be specified to withstand long exposure to summer heat, winter cold and condensation that might collect on the window. It should be noted that a window glass can get as hot as150 degrees F in the summer and as cold as -30 degrees F in the winter, therefore, it is essential that the application adhesive meets these specifications.
Uses To Avoid:	Areas with excessive background noise.
Range:	Regardless of which sensor is used, coverage typically does not exceed 100 square feet of glass surface.
Activated By:	Sound and vibration.
Associated Work:	As a precaution all windows should be checked for cracks and replaced prior to installation of a Glassbreak sensor to ensure that a good frequency signature will be produced if the window is broken.
Advantages:	The incorporation of two Glassbreak technologies into one sensor significantly reduces false alarms from background noise such as RFI and frequency noise created by office machines.
Disadvantages:	Requirement that two technologies activate can reduce sensitivity. May not detect glass pane removal or some forms of cutting (thermal knife). Line of sight to window may be required.
Conditions for Unreliable Detection:	Inappropriate matching of sensor range capacity to the window size and poor location may cause the sensor to be out of effective detection range. Acoustical characteristics of the room that conflict with the sensor's performance specifications. "Soft" acoustic

	rooms (e.g. carpeted with window drapery) that absorb vibration or by altering the acoustic characteristics of the "hard" room (e.g., adding window shutters, blinds, draperies, rugs) after the sensor has been tuned can cause detection inadequacy of the sensor.
Major Causes for False Alarms:	Improper calibration or installation may cause false alarms.
Typical Defeat Measures:	Detaching or cutting of an opening in the window or the removal of a window pane (with or without a sensor mounted on it) can bypass the sensor. The break frequency can be distorted by muffling the sound of the breaking glass reducing the potential for the "correct" frequency registered by the sensor.
Applicable Standard:	n/a
False Alarm Reduction Recommendations:	Premises with loud music, clanging pots and pans, gym weights, and ceiling fans or sites with high levels of radio interference are not recommended for this device.

Foil

Description:	Foil, or tape, is a ribbon of metallic material that is attached to various surfaces such as glass, door panels, walls, etc. The foil is designed to break when an attempt is made to gain entry through the surface to which it is attached, thus causing the alarm to sound.	
Types:	Regular or self adhesive.	
Standard Uses:	Applied to glass with protective coating of varnish or walls or doors between protective panels.	
Uses To Avoid:	Laminated glass.	
Range:	Requires direct contact to break foil.	
Activated By:	Break in foil.	
Associated Work:	Glass cleaning, varnishing connection of wiring between panes of glass and to panel.	
Advantages:	Simple, inexpensive, reliable, visible deterrent.	
Disadvantages:	No protection against glass cutting if foil is not cut. Labor intensive and requires high degree of maintenance.	
Conditions for Unreliable Detection:	Where sections of foil can be bypassed.	
Major Causes for False Alarms:	Condensation, temperature changes can cause breaks as foil flexes. Breaks easily. Hairline cracks are difficult to see, but have the potential to cause false alarms.	
Typical Defeat Measures:	Bypass of sections.	
Applicable Standard:	UL 681.	
False Alarm Reduction Recommendations:	Older technology, should not be used unless installed and frequently inspected and repaired by qualified personnel.	

Pressure Mat or Pad

Description:	A pressure mat or pad is a simple switch that is activated by pressure. The pressure mat or pad is a simple switch that consists of two metal plates or strips that are separated by a compressible insulating medium, such as foam rubber or nylon springs. When pressure is applied to the top layer it compresses the insulating material to make contact with the lower layer. The plates or strips and the insulating material are enclosed in sealed, insulated, watertight and airtight plastic. The Piezo Mat contains a very thin layer of piezo crystal film placed inside a semi-rigid mat. Any person standing on the mat compresses the crystal to produce a small voltage. This voltage is read by an amplifier and fed to a processor. The amount of voltage and number of pulses is considered by a processor to decide whether to generate an alarm.	
Types:	Pressure mat (open loop), Pressure pad (open or closed loop), Piezo Mat (open or closed loop). Versions are available with sensitivity adjusted to accommodate small pets.	
Standard Uses:	Generally used under rugs or carpets in an area where intruder is likely to pass. Placed in doorways, hallways, windowed areas and staircases, they can be used to isolate desired areas in lieu of protecting one or more perimeter opening. Should be placed under the carpet and the padding on top of a smooth flat floor.	
Uses To Avoid:	Can wear out if used in high traffic areas or where heavy objects may be temporarily placed or carts or vehicles will drive over them. Where pets and small children might wander through the home while the interior system is armed. It should be possible to turn off the interior system to permit free movement through the home while the perimeter system is armed.	
Range:	Requires direct contact. Varied lengths and sizes available.	
Activated By:	Direct Pressure.	
Associated Work:	Concealment, reconstruction of carpet.	
Advantages:	Inexpensive, simple, reliable.	
Disadvantages:	Easy to circumvent. Will only activate after intrusion is made. Labor intensive.	
Conditions for Unreliable Detection:	Because most mats are open circuit they can be bypassed. Can be avoided if not concealed.	

Major Causes for False Alarms:	Pets, movement of furniture, wear and tear on moving parts.
Typical Defeat Measures:	Bypass of open circuit types. Avoidance.
Applicable Standard:	UL 634.
False Alarm Reduction Recommendations:	Use only in low traffic areas where the alarm user has no plans for pets or to change layout of furniture around where the mat will be located.

Wire Sensors or Screens

Description:	Wire can be laced across a wall or area to provide detection when the wire is broken. Specially designed window screens are also available to cover windows and other openings.
Types:	Trip wire – A wire is strung across the opening. Wire in tube- Wire is enclosed in dowels or tubes. Wired Glass- Wire is embedded inside the glass. Screen- These screens contain inconspicuous, built-in alarm wire which protects against cutting or tearing the screen, and also contain a magnetic contact to guard against removal of the screen. Lace Wiring- wire is stapled to the surface of a wall or door and covered with a protective panel.
Standard Uses:	Detection of entry through door, window, vent or wall.
Uses To Avoid:	Where excessive moisture is present.
Range:	Requires direct contact to break wiring.
Activated By:	The alarm is indicated when the wire breaks.
Associated Work:	Wiring, installation of protective panel. Measurement of screens to ensure proper size.
Advantages:	Stable and reliable.
Disadvantages:	Labor intensive. Cuts or nicks in wire can be difficult to find and repair. Trip wire must be reset after the door is opened.
Conditions for Unreliable Detection:	If wiring can be moved to allow entry between wires.
Major Causes for False Alarms:	Nicks or cuts in wiring. Alarm screens are often removed and reseated by the alarm user, window cleaners, and non-alarm repair/maintenance people. Improperly re-seating and reconnecting the window screen to the alarm system will result in false alarms.
Typical Defeat Measures:	Bypass of circuit.
Applicable Standard:	UL 681.
False Alarm Reduction Recommendations:	Window screens can offer a reliable means of detection where other types of wire sensors are too prone to false alarms to be effectively used.

Wall Vibration

Description:	Vibration sensors are designed to be mounted on walls, ceilings and floors and intended to detect mechanical vibrations caused by chopping, sawing, drilling, ramming or any type of physical intrusion attempt that would penetrate the structure on which it is mounted. Two basic types of transducers are used to detect changes: piezo-electric transducers and mechanical transducers. Both types convert the seismic vibrations detected to electrical signals proportional to the vibrations. The signals are then sent through a screening filter which determines if the signal corresponds to the signal spectrum typical of an intrusion attempt. If the frequency is characteristic of an intrusion attempt, an alarm signal is generated.
Types:	Piezo-electric- vibrations hitting a crystal produce small amounts of electricity that can be analyzed by a processor to generate an alarm. Inertia- vibrations cause a ball or cylinder to move to a piece of metal to break contact with another piece of metal. This simple break in circuit may generate an alarm or be fed to a processor that decides when to generate an alarm.
Standard Uses:	Wall, doors, ceilings, floors, safes, ATMS, vaults.
Uses To Avoid:	Walls of limited structural integrity such as sheet rock, plywood or thin metal, unless they are positioned on a main support. These types of walls are very prone to vibrations caused by sources other than intrusion actions.
Range:	Depends on structure to be monitored and upon sensor and processor. For example, a sensor will be more sensitive on a wall made of drywall than a wall made of cinderblocks or brick.
Activated By:	Vibration.

Associated Work:	Wiring, sensitivity adjustment and testing.
Advantages:	Small, reliable, sensitivity adjustments allow variety of surfaces to be sensed.
Disadvantages:	Piezo-electric type requires amplification to ensure reliable detection. Reliability is dependent on matching the sensor and processor to the structure to be monitored.
Conditions for Unreliable Detection:	Unstable or improper installation or spacing of units, and mounting of the sensors to materials (rugs, fabric, heavy wall coverings) that are not conducive to detecting vibrations will create unreliable detection conditions.
Major Causes for False Alarms:	Poor placement. Mounting on walls that are exposed to external vibrations (e.g., trains, planes), or if the walls are subject to vibrating machinery.
Typical Defeat Measures:	By avoiding entry through the protected area, or by selecting a point and method of entry in a segment of a wall, roof or floor that will permit the suppression/diffusion of the intrusion vibrations. Generation of a persistent but random number of false alarms over a long period of time, causing the alarm to be ignored or the response time greatly diminished.
Applicable Standard:	n/a
False Alarm Reduction Recommendations:	Use only on a solid wall or solid structure that is not subject to vibration. Ask questions to verify that sources of vibration will not occur during hours that the sensor will be active.

Fiber Optic Wall

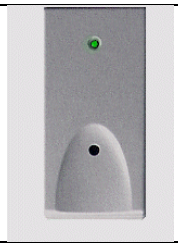
Description:	A fiber optic wire sensor is in an open mesh network, that can be applied directly to an existing wall or roof, or installed in a wall (or roof) as it is being constructed. The fiber optic network is designed to detect the low frequency energy (vibrations) caused by chopping, sawing, drilling, ramming or physical attempt to penetrate the structure on which it was mounted. Light travels through the fiber optic cable and is picked up by a detector, which is very sensitive to slight alterations in the transmission. When an adequate alteration in the light pattern takes place, the signal processor generates an alarm.
Types:	n/a
Standard Uses:	To cover a wall or roof.
Uses To Avoid:	These sensors are very sensitive, and special consideration must be given to determine if this type of sensor is suitable for a particular wall/roof. A vibration sensor may generate false alarms if mounted on walls that are exposed to external vibrations (vehicle, train or heavy foot movement) or if the walls are subject to vibrating machinery.
Range:	Dependent on the processor.
Activated By:	Vibrations cause changes in the light pattern sent through the fiber optics to generate an alarm.
Associated Work:	Application to wall, floor or ceiling.
Advantages:	Can be calibrated easily and gauged to detect various forms of intrusion.
Disadvantages:	Relatively expensive.
Conditions for Unreliable Detection:	Improper installation or calibration. Caution should be exercised before using vibration sensors to protect walls of lesser structural integrity, such as sheet rock, plywood or thin metal. These walls are prone to vibrations from sources other than intrusion attempts.
Major Causes for False Alarms:	Machinery that causes vibrations can generate false alarms and should be located away from the wall on which the fiber optic cable is mounted. Also, vibrations caused by exterior aircraft and train traffic can cause the wall/roof/building fabric to vibrate, thereby causing the vibration sensor to generate an alarm signal.
Typical Defeat Measures:	Avoiding entry through a protected area or targeting an insensitive location as the point of entry.
Applicable Standard:	n/a
False Alarm Reduction Recommendations:	Use only on a solid wall or solid structure that is not subject to vibration. Ask questions to verify that sources of vibration will not occur during hours that the sensor will be active.

Microwave Sensors

Description:	Microwave sensors are motion detection devices that flood a designated exterior or interior area with an electronic field. A movement in the area disturbs the field and sets off an alarm. Signals generated are within pre-set limits that do not affect humans or the operation of pacemakers. Although very little power is used, the system provides enough energy for a detector to project a signal up to 400 feet in an uninterrupted line of sight. Most sensors are tuned to measure the Doppler shift between 20 Hz and 120 Hz. Objects that fail to produce a signal or produce a signal outside the tuned frequencies are ignored. Objects that fall within the range cause the sensor to generate an alarm signal.
Types:	There are two basic types of microwave sensors: monostatic sensors and bistatic sensors. A bistatic system can cover a larger area and would typically be used if more than one sensor is required. Monostatic Units: The transmitter and receiver are contained in a single dual function unit. The antenna is mounted within the sensor and can be shaped to cover a specific area (a long, slender beam or a short oval one). Monostatic microwave sensors transmit signals at two different transmitting frequencies. The frequencies are rapidly turned on and off, first at one frequency and then at the other. The receiver is then shut off for a short period of time after transmission. Because microwaves travel at a constant

	speed and the receiver is looking for reflected energy, the receiver can be programmed to receive only signals that are able to go out and return within a specific time period. This enables the user to protect a well defined detection zone. The receiver is programmed to ignore signals from stationary objects and only receive signals from disturbances/movement in the designated field of coverage. Bistatic Units: The transmitter and receiver for bistatic microwave sensors are separate units. The detection zone is created between the two units. The antenna can be configured to alter the signal field (width, height), creating different detection zones. The receiver is programmed to receive signals from the transmitter and detect a change in the frequencies caused by a movement in the field of coverage. Bistatic microwave transceivers are somewhat limited by poorly defined detection patterns, and nuisance alarms may be a problem if large metal objects are nearby or if windy conditions exist.
Standard Uses:	Microwave sensors can be used to monitor both exterior areas and interior confined spaces, such as vaults, special storage areas, hallways and service passageways. In the exterior setting they can be used to monitor an area or a definitive perimeter line, as well as to serve as an early warning alert of intruders approaching a door or wall. In situations where a well-defined area of coverage is needed, monostatic microwave sensors should be used.
Uses To Avoid:	When it might be aimed at windows, light partition walls or metal objects that might vibrate.
Range:	Monostatic microwave sensors are limited to 400 feet coverage. Bistatic sensors can extend up to 1,500 feet.
Activated By:	Movement toward and away from the sensor.
Associated Work:	Stable mount is critical. Walk testing to ensure coverage does not extend outside intended area of detection.
Advantages:	Very sensitive, very controllable.
Disadvantages:	Can penetrate most walls to cause false alarms.
Conditions for Unreliable Detection:	Since microwave sensors operate in the high frequency spectrum (Xband), close association or proximity to other high frequency signals can adversely affect the detection reliability of these sensors. Areas that contain strong emitters of electric fields (radio transmitters) or magnetic fields (large electric motors or generators) can affect the ability of microwave sensors to function properly, and should be avoided or compensated for by distinct signal separation. Zones that contain fluorescent lights can also pose a problem. The ionization cycle created by fluorescent bulbs can be interpreted by the detector as motion and thus provide false alarms. Self generated signal reflection is a common problem caused by improper placement/mounting. Positioning the sensor externally and parallel to the wall rather than imbedding it in the wall will avoid this problem. Also, large metal objects which can reflect the signal and/or provide “dead pockets" should be kept out of the detection zone, as should equipment whose operation involves external movement or rotating functions.
Major Causes for False Alarms:	Because of the high frequencies at which microwaves travel, the signal/sensor is not affected by moving air, changes in temperature or humidity. However, the high frequency allows the signal to easily pass through standard walls, glass, sheet rock, and wood. This can cause false alarms to be generated by movement adjacent to, but outside the protected area. Conversely, it is essential to test for, note, and compensate for any dead spots (areas of no detection) created by metal objects such as dumpsters, shipping crates, trash cans, and electrical boxes. These dead spots create ideal areas for intrusion attempts. In addition, signals reflected off these type objects/materials can "extend" sensor coverage to areas not intended to be covered, thus creating the potential for false alarms.
Typical Defeat Measures:	An intruder with some degree of periodic access to the denied area may be in a position to conduct "walk tests" or otherwise cause/observe the alarm activation pattern, and determine nominal detection coverage patterns, thereby identifying a possible low detection approach path. In addition, an intruder advancing at a deliberately slow rate of movement, who takes maximum advantage of any obscuring, blocking or signal absorbing characteristics associated with the surveillance environment, can reduce the probability of detection. However, regular calibration of the sensor(s), sanitation of the area, and the use of another type of sensor can substantially increase the probability of detection.
Applicable Standard:	n/a
False Alarm Reduction Recommendations:	Because the microwave signal can easily pass through standard walls, glass, sheet rock, and wood, extensive walk testing is required to verify that movement in spaces above, below or adjacent to the covered area will not generate an alarm. Because signals can be reflected by metal to extend coverage to unwanted areas, microwaves should not be used in spaces where furniture or accessories may be moved. Avoid unless extensive testing is done to verify that the room conditions will not lead to false alarms.

Audio Sensors

Description:	Audio detectors listen for noises generated by an intruder's entry into a protected area. The sensor is made up of two devices: Pick-up units mounted on the walls or ceilings of the monitored area, and an Amplifier unit which includes processing circuitry. The Pick-up units are basically microphones that listen for noise. These microphones collect sound for analysis by the processor circuit, which can be calibrated to a noise threshold that is characteristic for an intrusion attempt. If a certain amount of noise is detected from a monitored area within a selected time period, an alarm signal is generated.	
Types:	Wired or wireless.	
Standard Uses:	Audio sensors should be mounted in areas where the predicted intrusion noise is expected to exceed that of the normal environmental noise.	
Uses To Avoid:	Any surface that excessively vibrates. If background noise does exist, and if calibration is not accomplished to compensate for it, the microphone may be unable to detect/differentiate an intrusion noise. If excessive background noise is present, the audio sensor should not be considered.	
Range:	Depends on device and type of glass.	
Activated By:	Sound and/or vibration.	
Associated Work:	Wiring, sensitivity adjustment, testing.	

Advantages:	Reliable. Can monitor several panes of glass. Unaffected by changes in the thermal environment and fluorescent lights.
Disadvantages:	Only detects breaking glass.
Conditions for Unreliable Detection:	Ineffective sensitivity settings caused by extraneous background noise, such as clocks, office equipment, boilers and heating or air conditioning units.
Major Causes for False Alarms:	Excessive background noise, such as airplanes, trains or loud weather (thunderstorms) may cause significant noise levels thereby generating an alarm.
Typical Defeat Measures:	An intruder who makes a slow, deliberate entry, and takes measures to muffle the normal sounds of movement and intentionally allows sufficient lag time to occur between any noise generated by his movement may avoid detection.
Applicable Standard:	n/a
False Alarm Reduction Recommendations:	Areas with excessive background noise, such as airplanes, trains or loud weather (thunderstorms) should be avoided.

Passive Ultrasonic or Infrasonic

Description:	The passive Ultrasonic or Infrasonic sensor is a motion detection device that "listens" for ultrasonic sound energy in an area, and reacts to high frequencies associated with intrusion attempts. The passive ultrasonic sensor "listens" for frequencies that have a range between 20 - 30 KHz. Frequencies in this range are associated with metal striking metal, hissing of an acetylene torch, and shattering of concrete or brick. The sound generated is transmitted through the surrounding air and travels in a wave type motion. When the sound wave reaches the detection sensor, it determines if the frequency is characteristic of an intrusion. If the criteria are met, an alarm signal is generated.	
Types:	Also known as Infrasonic.	
Standard Uses:	Not widely used for security. More common for controlling lights or HVAC systems.	
Uses To Avoid:	Areas with air turbulence.	
Range:	Varies.	
Activated By:	Sounds, changes in air pressure.	
Associated Work:	Extensive testing.	
Advantages:	Unaffected by heat, thus thermal changes in the environment does not hinder its detection ability. It is also easy to contain its energy within a selected area, since ultrasonic energy does not normally pass through walls, roofs or partitions.	
Disadvantages:	Does not pass through furniture or other obstructions either (boxes, crates), thus creating “dead zones" of non-surveillance.	
Conditions for Unreliable Detection:	Extreme changes in temperature or humidity from those prevalent during the initial installation and calibration may cause a change in detection reliability. As with most sensors, infrasonic sensors should be recalibrated periodically, at least on a seasonal basis.	
Major Causes for False Alarms:	Some of the most common stimuli that cause infrasonic sensors to alarm are air movement from heating and air conditioning systems, drafts from doors and windows, hissing from pipes, and the ringing of a telephone. All these stimuli can create noise near or in the ultrasonic range, thereby triggering an alarm.	
Typical Defeat Measures:	Passive ultrasonic sensors have a limited frequency spectrum, and intrusion sounds other than those that fall into the unit's spectrum (such as drilling), will not generate an alarm signal.	
Applicable Standard:	n/a	
False Alarm Reduction Recommendations:	The wiring or mounting holes should be sealed to prevent bugs, air, or dirt from entering. Avoid unless extensive testing is done to verify that the room conditions will not lead to false alarms.	

Active Ultrasonic

Description:	The Active Ultrasonic sensor is a motion detecting device that emits ultrasonic sound energy into a monitored area and reacts to a change in the reflected energy pattern. Ultrasonic sound is transmitted from the device in the form of energy. The sound uses air as its medium and travels in a wave type motion. The wave is reflected back from the surroundings in the room/hallway and the device "hears" a pitch characteristic of the protected environment. When an intruder enters the room, the wave pattern is disturbed and reflected back more quickly, thus increasing the pitch and signaling an alarm.	
Types:	Wall and ceiling mounted. Transceivers or separate transmitters and receivers.	
Standard Uses:	Typically, ultrasonic sensors are mounted on the wall or ceiling.	
Uses To Avoid:	In areas with moving or swinging objects. Areas where automated HVAC equipment will change air flow.	
Range:	Ceiling Mounted- 16 to 32 feet. Wall mount 33 to 50 ft. Longer range with separate units.	
Activated By:	Doppler shift. Movement toward or away from the device.	
Associated Work:	Walk testing. Stable mounting critical.	
Advantages:	Ultrasonic sensors are not affected by heat, thus changes in the thermal environment do not hinder its detection ability. Ultrasonic energy is easily contained within a selected area avoiding the problem of the energy passing through walls and detecting activity outside the protected zone. Less prone to false alarms than microwave.	
Disadvantages:	Alignment and testing required. Large sensor size.	
Conditions for Unreliable Detection:	Ultrasonic energy will not pass through most substantive objects and material, (e.g. storage, shelving), thus creating dead zones within the coverage area where the sensor is ineffective. The sensor must be positioned so dead zones are minimal. Also, extreme changes in temperature or humidity from the initial calibration may cause a hindrance in detection reliability.	

Major Causes for False Alarms:	Air movement from heating, air conditioning systems, drafts from doors and windows, hissing from pipes, and telephone rings. All of these stimuli can create noise near or in the ultrasonic range, thus triggering an alarm. Anything that causes movement, such as animals, has the potential to cause an alarm.
Typical Defeat Measures:	Slow horizontal movement by an intruder across the area of coverage is often difficult for ultrasonic sensors to detect. Proper calibration is needed to ensure that slow moving intruders will be detected. In addition, a knowledgeable and properly equipped intruder can use special "test lights" to detect coverage patterns and circumvent these areas.
Applicable Standard:	n/a
False Alarm Reduction Recommendations:	The wiring or mounting holes should be sealed to prevent bugs, air, or dirt from entering. Avoid unless extensive testing is done to verify that the room conditions will not lead to false alarms.

Passive Infrared

Description:	Passive infrared sensors do not transmit a signal, they detect changes in radiated thermal energy. PIRs "see/detect" infrared "hot" images by sensing the contrast between the "hot" image and the "cooler" background. The sensor head is typically divided into several sectors/zones, each defined with specific boundaries. Detection occurs when an emitting heat (thermal energy) source crosses a sector boundary. The PIR wavelength is subdivided into two major range detection categories: one covers Near Infrared Energy (e.g. thermal energy emitted by TV remote control devices), and the other covers the Far Infrared Energy (e.g. thermal energy emitted by people). It is this latter category which is employed in security applications. Infrared energy is measured in microns, with the human body producing energy in the region of 7-14 microns. Most PIR sensors are focused on this narrow band width. When the radiation change captured by the PIR exceeds a certain pre-set value (commonly a 3 degree change), the thermal sensor produces an electrical signal which is sent to a built-in processor for evaluation and possible alarm.
Types:	Reflective Focusing- the energy waves are reflected off a concave mirror and directed into the sensing element. Fresnel Lens method- the lens allows the radiated energy to travel directly to the sensor. Signal Processing- examples of signal processing include pet alleys and pet immune detectors. In order to avoid capturing environmental thermal deviations, Rate of Change measurement circuitry or bi-directional pulse counting circuitry is employed. In Rate of Change measurement, the processor evaluates the speed at which the energy in the field of view changes. Movement by an intruder in the field of view produces a very fast rate of change, while gradual temperature fluctuations produce a slow rate of change. In the bi-directional pulse counting technique, signals from separate thermal sensors produce opposite polarity. An unprotected/unshielded human entering a field of view moving at a typical speed (walk or above) will normally emit/produce several signals which allow detection to occur. Detection patterns- the interchanging of different lens and reflectors/mirrors permits the field(s) of view and zones of surveillance to be changed and/or segmented. This can vary the range, density and size of the sensor's coverage. Each detection or surveillance zone can be pictured as a "searchlight" beam that gradually widens as the zone extends farther from the sensor with different segments being illuminated while others are "dark". This design characteristic allows the user to focus the "beam" on areas where protection is needed while ignoring other areas, such as known sources of false alarms. Tower/ceiling mounted PIRs theoretically provide a 360 degree detection pattern.
Standard Uses:	Installed on walls or ceilings, with the detection pattern covering the possible areas of intrusion.
Uses To Avoid:	Areas with heating devices that will cause rapid temperature increase. Areas with storage heaters. Applications where the sensor pattern cannot terminate on a flat surface.
Range:	Varies according to lens.
Activated By:	Detection occurs when an emitting heat (thermal energy) source crosses one or more sector boundaries.
Associated Work:	Walk testing.
Advantages:	Stable and reliable in right locations.
Disadvantages:	Less sensitive than ultrasonic or microwave.
Conditions for Unreliable Detection:	Because the PIR looks for thermal radiation projected against a cooler background, detection is based on temperature. As the environment approaches the same temperature as the intruder, the detectors become less sensitive. This is especially true for environments ranging between 80 - 100 degrees. Theoretically, if a person was radiating the same temperature as the environment, he would be invisible to the sensor. Where the detector patterns terminate in midair.
Major Causes for False Alarms:	Heat radiating from small animals and /or rodents. Time activated space heaters, ovens and hot water pipes if they are in the field of view. PIR sensors that are not designed with the capacity to filter (ignore) visible light can be affected by car headlights or other sources of focused light. Although infrared energy from sunlight is filtered by ordinary window glass, objects in a room can become heated over time and subsequently begin emitting/reflecting infrared energy. If this energy is "turned off/on", (such as by the movement of clouds), it can create a random "on/off" situation, thereby generating false alarms.
Typical Defeat Measures:	Shadowing, cloaking or masking the intruding heat source (person/machine) from the field of view decreases the probability of detection as it reduces the possibility of sufficient radiated/emitted heat being focused on the thermal sensor. In addition, knowing the dead spots of the detection pattern can permit an intruder to bypass active regions. Walking into the sensor rather than across the sensor's field of view can also reduce the detection capability by not allowing the boundaries of the detection beams to be broken.
Applicable Standard:	n/a
False Alarm Reduction Recommendations:	The wiring or mounting holes should be sealed to prevent bugs, air, or dirt from entering. Avoid areas that will frequently be occupied by people or animals while system is armed. Avoid directing at a window, heat source or reflected heat source. Mount on a stable wall or ceiling to avoid alarms caused by vibration. Incorrect installation of pet immune detectors will still detect animals. Animals

	jumping on furniture will create problems. Thorough testing of each sensor is required to verify that the environment of the sensed area will not cause a false alarm. Use of a masking kit provided by the manufacturer (other tapes may not stick properly) to mask off a problem area such as a large plant with blowing leaves during heating and cooling could prevent false alarms.

Interior Active Infrared

Description:	Interior active infrared sensors generate a curtain pattern of modulated infrared energy and react to a change in the modulation of the frequency or an interruption in the received energy. Both of these occurrences happen when an intruder passes through the protection zone. Interior active infrared sensors are made up of a transmitter and receiver encased within a single housing unit. The transmitter uses a laser to project onto a special retro-reflective tape. Energy is reflected off the tape back to the receiver, which is located in the same housing unit as the transmitter. Upon reaching the receiver, the energy passes through a collecting lens that focuses the energy onto a collecting cell, which converts the infrared energy to an electrical signal. The receiver monitors the electrical signal and generates an alarm when the signal drops below a preset level for a specific period of time. An intruder passing through the field of detection will interrupt the signal and temporarily cause the signal to fall below the threshold value.	
Types:	Surface mount sensor with reflectors.	
Standard Uses:	Depending upon which type of tape is used as the reflective medium, coverage patterns can be between 15-25 feet wide by 17-30 feet long. In addition, the laser plane angle can be adjusted from 37 to 180 degrees. This system has a high probability of detecting intruders. Speed or direction of the intruder, and the temperature of the environment, have no effect on detection characteristics.	
Uses To Avoid:	Areas where equipment or items are frequently moved and may block the beam.	
Range:	Varies.	
Activated By:	Interruption of the beam.	
Associated Work:	Alignment.	
Advantages:	No power required at reflector location.	
Disadvantages:	Difficult to keep in alignment.	
Conditions for Unreliable Detection:	Dust or other particles collecting on the surface of the reflective tape will hinder the detection capabilities. The reflective tape must have no gaps and be continuous to ensure reliable detection, and the angle from the sensor to the ends or corners of the tape must not exceed 45 degrees.	
Major Causes for False Alarms:	Activation of an incandescent light which shines directly into the sensor itself. Incandescent lights greater than 100 Watts (or sunlight) falling directly in line with the tape will be reflected back to the receiver with a magnitude significant for alarm signaling.	
Typical Defeat Measures:	Avoidance of the projected laser plane. A knowledgeable intruder can deduce the field of the potential detection pattern from the location of reflective tape, and plan his movements to avoid detection.	
Applicable Standard:	n/a	
False Alarm Reduction Recommendations:	Avoid using in areas where merchandise is frequently moved around the sensor, where a stable mounting surface cannot be guaranteed or where grease, dust or dirt may accumulate on the sensor.	

Dual-Technology Passive Infrared / Microwave or Ultrasonic

Description:	Dual-Technology sensors use a combination of different technologies to detect motion. This category of sensors is typically referred to as Dual-Tech. Dual-Technology sensors combine a passive sensing elements (PIR) and an active sensing elements (Microwave or Ultrasonic) into a single casing, and are connected electronically. The most common configuration is a Dual-Technology Passive Infrared/Microwave sensor. The areas of coverage for each sensor are similar in shape so the detection zone is uniform. In order for motion to be detected, both sensors must trip within a pre-selected time interval. Since the two sensors will not "sense" an intrusion precisely at the same instant, the system is designed to provide a lower false alarm rate than either of the sensors independently.	
Types:	Passive Infrared/Microwave and Passive Infrared/Ultrasonic.	
Standard Uses:	The sensors can be installed along a perimeter line, a fence or a delineated buffer zone, or as a defense against intruders approaching a door or wall.	
Uses To Avoid:	Areas where either technology will be constantly or frequently activated by causes not associated with an intruder.	
Range:	Varies according to unit.	
Activated By:	Movement.	
Associated Work:	Wiring, adjustment and testing.	
Advantages:	Reduction of false alarms.	
Disadvantages:	Although a dual-technology sensor does reduce the false alarm rate (FAR), it also reduces the probability of detection, since both sensors must have a positive detection before initiating an alarm. The mathematical probability of detection for the dual-tech unit is the product of the probability of detection for both individual units. For example, given a theoretical individual detection of rate 99 percent and 98 percent, the detection percentage for the Dual-Technology drops to 97.02 percent.	
Conditions for Unreliable Detection:	Since passive sensors have the greatest probability of detection when the intruder is moving transversely, and active sensors have the greatest probability of detection when the intruder is moving radially, the position of the sensor will dictate a positional trade-off that diminishes the sensor's detecting ability. Any condition that causes unreliable detection for the microwave sensor or the PIR sensor can	

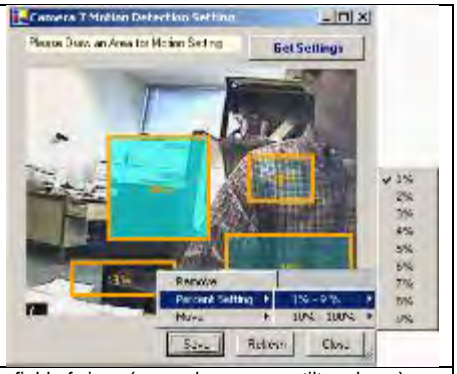
	cause problems for the dual-tech sensor because it needs signals from both sensors to generate an alarm. Likewise, any environmental conditions that affect the performance of either sensor will reduce the effectiveness of the dual-tech. However, dual-technology sensors can be both cost effective (cheaper than purchasing two individual sensors) and help reduce false alarms if employed in a predictable and/or controlled environment.
Major Causes for False Alarms:	False alarm rate for the dual technology sensor is very low; however, a combination of environmental conditions (e.g. fluorescent lights, heater exhaust) may cause false detection. Environmental conditions that affect each sensor individually should be considered (compensated for) to keep from reducing effectiveness of the dual technology unit.
Typical Defeat Measures:	Knowledge of the dead spots in the detection pattern will permit an intruder to bypass all active regions. Short of this knowledge, extreme slow motion movement is difficult for microwave sensors to detect, and blocking or masking the infrared sensor's field of view can further decrease its sensitivity and reduce the probability of sufficient "heat" being detected by/focused on the PIR portion of the sensor. In addition, walking into the PIR sensor, rather than across its field of view, can reduce the detection capability of the sensor by not "breaking" the boundaries of the PIR detection beams.
Applicable Standard:	n/a
False Alarm Reduction Recommendations:	Avoid areas where environment will keep one of the technologies activated a significant amount of the time. The wiring or mounting holes should be sealed to prevent bugs, air, or dirt from entering. Avoid areas that will frequently be occupied by people or animals while system is armed. Avoid directing at a window, heat source or reflected heat source. Mount on a stable wall or ceiling to avoid alarms caused by vibration.

Indoor or Outdoor Sensors

Photo Electric Beam

Description:	Photo electric beam sensors transmit a beam of infrared light to a remote receiver creating an "electronic fence". These sensors are often used to "cover" openings such as doorways or hallways, acting essentially as a trip wire. Once the beam is broken/ interrupted, an alarm signal is generated. Photoelectric beam sensors consist of two components: a transmitter and a receiver. The transmitter uses a Light Emitting Diode (LED) as a light source and transmits a consistent infrared beam of light to a receiver. The receiver consists of a photoelectric cell that detects when the beam is present. If the photoelectric cell fails to receive at least 90% of the transmitted signal for as brief as 75 milliseconds (time of an intruder crossing the beam), an alarm signal is generated. The beam is modulated at a very high frequency which changes up to 1,000 times per second in a pattern that correlates with the receiver's expectation to guard against a bypass attempt by using a substitute light source. In order to bypass the sensor, the angle of the beam and modulation frequency would have to be matched perfectly.	
Types:	Indoor and Outdoor. Surface and flush mount. Varied ranges.	
Standard Uses:	To protect a hallway, doorway or long wall surface.	
Uses To Avoid:	Areas with heavy dust, grime or dirt accumulation that could block lenses.	
Range:	The transmitter and receiver can be distanced up to 1,000 feet and still provide adequate coverage.	
Activated By:	Interruption of beam.	
Associated Work:	Secure mounting surface is critical. Alignment of receiver and transmitter.	
Advantages:	A photo electric beam sensor is unaffected by changes in thermal radiation, fluorescent lights or Electronic Frequency Interference/Radio Frequency Interference (EFI/RFI). The photo electric sensor also has a high probability of detection and low false alarm rate.	
Disadvantages:	Requires line of sight between the receiver and the transmitter.	
Conditions for Unreliable Detection:	Anything that disturbs the transmission of light can affect the detection reliability of the sensor. Factors such as fog, smoke, mist or dust and reflective particles cause the light particles to be refracted or scattered. If these conditions create a 10% or more reduction in the signal received, an alarm signal is generated. Extreme variations in background lighting or sunlight may also reduce sensitivity.	
Major Causes for False Alarms:	Any objects that may break the beam such as birds, animals, blowing leaves, snow or paper will interrupt the signal, therefore generating an alarm. In addition, improper alignment of the transmitter, receiver or mirrors may generate an alarm. Mirrors can also collect dust, causing refraction/diffusion of the reflected beam. Susceptibility to being knocked out of alignment when surface-mounted on wall brackets. In a warehouse application, fork lifts or other equipment may shift them. In warehouse applications, machinery or other objects may partially obstruct the beam greatly increasing the sensitivity and foreign susceptibility to false alarms.	
Typical Defeat Measures:	Stepping over or passing under the signal path will defeat the intent of the sensor. However, mirrors can be used to counter this vulnerability by creating a "Zig-Zag" multiple beam barrier pattern. The path of the beam can be altered using mirrors to create a less predictable detection barrier; however, the use of mirrors reduces the signal strength of the beam and diminishes the effective distance of the beam. A common problem with mirrors is that they are often accidentally knocked out of alignment, generating a need to calibrate and realign the mirrors periodically.	
Applicable Standard:	n/a	
False Alarm Reduction Recommendations:	Avoid areas with vegetation, large animals or frequent vibration from wind, trains or trucks. Sensor alignment will need to be checked and lenses will need to be cleaned frequently. Responsible parties should be dispatched before public safety for all outdoor sensors.	

Video Motion Detection

Description:	Video Motion Detection sensors detect changes in the monitored area by comparing the "current" scene with a pre-recorded "stable" scene of the area. Video Motion Detectors monitor the video signal being transmitted from the camera. When a change in the signal is received, indicating a change in the image composition caused by some sort of movement in the field of surveillance, an alarm signal is generated, and the intrusion scene is displayed at the monitoring station. 
Types:	Once activated, most systems allow the security monitor to manipulate the camera's field of view, (e.g. enlarge, scan, tilt and pan). Some systems also have a "listening", as well as a voice communication capability. Can be used with visible or concealed cameras.
Standard Uses:	Examples of monitoring capabilities include: dead zones between two fences, outside storage lots, interiors of warehouses (particularly at night), approaches to "rear doors", and vehicle/pedestrian entry points, loading docks and at guard posts where the CCTV system can be tied to a Duress Alarm.
Uses To Avoid:	Care must be given to securely mount the cameras, deny easy access to them, and keep the field of view as open and uncluttered as possible. In all applications, vegetation and obstacles to visual observation must be eliminated or reduced to a point where they do not detract from the utility of the system.
Range:	Varies depending on the camera and lens.
Activated By:	Change in signal from camera.
Associated Work:	Correct positioning, lighting conditions, and stability of cameras are all factors to be considered.
Advantages:	CCTV systems provide the added benefit of documenting the events of an intrusion and the characteristics of the intruder. Visible cameras have deterrent value. Concealed cameras have greater security/monitoring value.
Disadvantages:	Requires camera, expense.
Conditions for Unreliable Detection:	Areas that have poor lighting or extended periods of darkness may provide conditions for unreliable detection. Under these conditions either Infrared or Low Level Light camera configurations are recommended. Low light levels, even if the only source is ambient light, can be compensated for by the use of LLLTV cameras, whereas an infrared system is useful for detecting the "heat differential" generated by an intruder.
Major Causes for False Alarms:	(1) natural light sources such as changes in the sun angle (sun rise/sun set) or scene brightness alterations from cloud motion, wind blown objects passing through the scene or camera vibrations, or (2) man-made light sources such as vehicle headlights, traffic lights, changes in parking lot or security lights patterns. Any of the above can generate an alarm signal, as each reflects a change in the image view. Insects flying close to the lens of the camera can also initiate an alarm signal and have been interpreted as larger objects moving in the field of coverage; however, a trained operator can detect this on the monitor.
Typical Defeat Measures:	Moving around the field of view. For this reason it is recommended that some of the cameras be placed as covertly as possible, and networked to one or more other sensors which can also act as a triggering or focusing mechanism.
Applicable Standard:	n/a
False Alarm Reduction Recommendations:	Avoid in areas with frequent traffic or changes in the monitored area. Best used to alert a person to view a video monitor to verify if additional action is needed. Responsible parties should be dispatched before public safety for all outdoor sensors.

Outdoor Sensors

Exterior Active Infrared

Description:	Active infrared sensors generate a multiple beam pattern of modulated infrared energy and react to a change in the modulation of the frequency, or an interruption in the received energy. Both of these occurrences happen when an intruder passes through the area covered by the beams. An active infrared sensor system is made up of two basic units, a transmitter and a receiver. One of the units is located at one end of the protection zone and the other at the opposite end of the zone. The transmitter generates a multiple frequency straight line beam to the remote receiving unit, creating an infrared "fence" between the transmitter and the receiver. Energy reaching the receiver passes through a collecting lens that focuses the energy into a collecting cell, which converts the infrared energy to an electrical signal. The receiving unit monitors the electrical signal and generates an alarm when the signal drops below a preset threshold for a specific period of time. An intruder passing through the field of detection will interrupt the signal and temporarily cause the signal to fall below the threshold value.
Types:	Exterior and Interior.
Standard Uses:	Typically, exterior active infrared sensors are used in conjunction with a single or double fence barrier which defines the perimeter to be covered.
Uses To Avoid:	Areas with animals or vegetation that cannot be controlled.

Range:	A sensor zone length can extend up to 1,000 feet.
Activated By:	Interruption of beam.
Associated Work:	Precise alignment of the transmitter to the receiver is critical for reliable detection. The detection beam is relatively narrow and requires regular calibration/realignment. In areas where freezing ground or extreme winds are expected, the transmitter and receiver foundations should be installed deep enough to restrict movement or misalignment of the two units. In areas where the units are susceptible to being hit or jarred, protective barriers should be installed around them. Snow and grass around the transmitter and receiver should be removed by hand or blower to prevent damage or misalignment of the units.
Advantages:	Reliable with proper alignment and control of animals.
Disadvantages:	Active infrared sensors are line of sight devices that require the area between the two units to be uniformly level and clear of all obstacles/obstructions that could interfere with the IR signal. Low spots in the terrain will create "holes" in the surveillance pattern while obstacles/obstructions will disrupt the "coverage" pattern. Detector misalignment can be caused by movements in the ground (e.g., earth tremors), objects hitting the unit (e.g., falling rocks, vehicles, falling trees) or even freezing and thawing of the ground.
Conditions for Unreliable Detection:	Weather conditions such as fog, heavy rain or severe sand/dust will attenuate the infrared energy and can affect the reliable detecting range. In areas where conditions like these are routine, another type of device should be considered, or the detection zone should be decreased to compensate for energy reduction.
Major Causes for False Alarms:	Major causes of nuisance alarms are those that involve animal interaction with the protected area. Vegetation also can pose a problem if allowed to grow to a size where its movement (caused by windy conditions) will generate an alarm.
Typical Defeat Measures:	Since active infrared detectors are line of sight devices, the most common method of defeat is bridging or tunneling under the detection beams. For this reason it is recommended that any dips or gullies between the transmitter and receiver units/columns be filled in to make the area uniformly level. Another typical defeat measure is to use the transmitter and receiver columns for support to vault over the detection beams. This can be prevented by overlapping the beam detection zones.
Applicable Standard:	n/a
False Alarm Reduction Recommendations:	Avoid areas with vegetation, large animals or frequent vibration from wind, trains or trucks. Sensor alignment will need to be checked and lenses will need to be cleaned frequently. Responsible parties should be dispatched before public safety for all outdoor sensors.

External Microwave

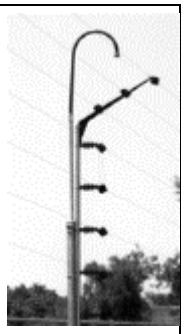
Description:	A microwave beam is generated by a transmitter and sent to a receiver. Blocking the beam generates an alarm.	
Types:	Wide depth pattern or high pattern.	
Standard Uses:	Perimeter detection by beam fence.	
Uses To Avoid:	Areas with moving objects, trees, etc.	
Range:	Varies.	
Activated By:	Blocking beam.	
Associated Work:	Clearing path of all moving objects.	
Advantages:	Less susceptible to environment than many external sensors, long range.	
Disadvantages:	Very sensitive, requires alignment, expense.	
Conditions for Unreliable Detection:	Moving objects.	
Major Causes for False Alarms:	Moving objects.	
Typical Defeat Measures:	n/a	
Applicable Standard:	n/a	
False Alarm Reduction Recommendations:	Avoid areas with vegetation, large animals or frequent vibration from wind, trains or trucks. Sensor alignment will need to be checked frequently. Responsible parties should be dispatched before public safety for all outdoor sensors.	

Fence Vibration

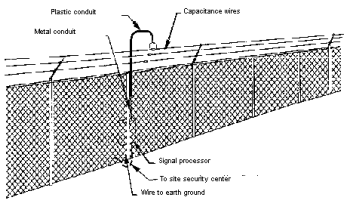
Description:	Fence vibration sensors mounted on fence fabric detect frequency disturbances associated with sawing, cutting, climbing or lifting of the fence fabric. All of these type actions generate mechanical vibrations and/or stress in the fence fabric that are different from the vibrations associated with normal or natural occurring environmental activity, and typically have higher frequencies and larger amplitudes. Fence vibration sensors detect these vibrations by using either electro-mechanical or piezo-electric transducers. Signals from the transducers are sent to the signal processor to be analyzed. Upon arriving at the processor, frequencies uncharacteristic of intrusion are filtered out.	

	Frequencies characteristic of intrusion are passed through the screening filter, thus triggering an alarm.	
Types:	Electro-Mechanical Sensors- use either mechanical inertia switches or mercury switches to detect fence vibration or stress. The signal processor for the electro-mechanical sensors has a pulse accumulation circuit that recognizes a momentary contact opening of the electro-mechanical switch. Mechanical-inertia switches- consist of a vibration sensitive mass that rests on two or three electric contacts thus creating a closed circuit. The mass is movable and reacts to minute changes in the vibrations (frequencies) generated in the fence during a penetration attempt. The vibration disturbs the mass and is moved or separated from one or more of the contact points momentarily opening the circuit and creating an alarm. In some sensors the mass is intentionally constrained or restricted by some internal guides to ensure that only a significant vibration will cause movement, break the circuit and activate the alarm. Mercury switches- consist of a glass vial containing a small amount of mercury with a set of normally "open" electrical contacts located in close proximity, but not touching or immersed in the mercury. An impact-disturbance of the fence fabric causes the mercury to be displaced from its normal resting position, making momentary contact with one of the electrical contacts and creating an alarm. Piezo-electric Sensors- convert the mechanical impact forces generated during an intrusion attempt into electrical signals. Unlike the open/close signal generated by electro-mechanical sensors, piezo-electric sensors generate an analog signal that varies proportionally in amplitude and frequency to the vibration activity on the fence fabric. These signals are sent to the signal processor for evaluation, where they first pass through a filter that screens out signals uncharacteristic of intrusions. The signal processor then interprets the remaining signals to determine if sufficient activity has occurred to warrant an alarm.	
Standard Uses:	Fence vibration sensors perform best when mounted directly to the fence fabric. Each sensor is connected in series along the fence with a common cable to form a single zone of protection.	
Uses To Avoid:	On loose fences, in areas with excessive vibration.	
Range:	The sensor zone lengths have a recommended range of 300 feet.	
Activated By:	Vibration.	
Associated Work:	Securing fence and fence fabric.	
Advantages:	Vibration sensors are the most economical fence sensor and the easiest to install. The sensors have a high probability of detecting intrusion and work well protecting properly installed and maintained fence lines.	
Disadvantages:	Because vibration sensors are prone to activation from all types of vibrations, additional sensing equipment is frequently added to the processor capability to reduce false activations. One type of enhancement is the pulse count accumulator circuit. With this device, sensitivity is determined by a number of "pulses" required to create an alarm. A pulse is a specific amplitude of activity occurring due to fence stress or vibration associated with cutting chain links or climbing the fence fabric. A minimum number of pulses is required during a preset period of time before an alarm is generated.	
Conditions for Unreliable Detection:	Proper installation and spacing of sensors is critical to reliable detection. Poor quality fences with loose fabric can create too much background activity (flexing, sagging, swaying), initially generating false alarms and eventually transmitting little reliable intrusion activity. Likewise, adverse weather conditions can cause sensitivity settings above/below what is required for reliable detection to occur. Fence corners pose particular challenges for readily detecting intrusion vibrations, because of the increased bracing of the fence posts and more solid foundations typically used at a corner or turn-point.	
Major Causes for False Alarms:	Shrubbery and tree branches as well as animals and severe weather that come in contact with the fence can cause the fence to vibrate triggering the sensors to react. In areas with high wind or numerous animal interactions with the fence line, vibration sensors should not be used. Vibration sensors should only be used in areas or circumstances where natural or man-made environmental vibrations are minimal or non-existent. Vibration sensors are not satisfactory nor are they reliable in areas or situations where high vibrations are likely to be encountered, such as in close proximity to construction sites, railroad tracks/yards or highway and roadway activity.	
Typical Defeat Measures:	The most common defeat method is to avoid contact with the fence by bridging it. Overhanging trees and structures can assist the intruder in this regard. Similarly, cars, buses, trucks, equipment or storage containers positioned/parked next to the fence can serve as platforms for jumping/bridging the fence. Although less common, deep tunneling, if accomplished without contacting the fence supports, will allow an intruder to bypass a fence mounted vibration sensor system.	
Applicable Standard:	n/a	
False Alarm Reduction Recommendations:	Proper maintenance of the fence and clearing of vegetation and trees is critical. Avoid areas with vegetation, large animals or frequent vibration from wind, trains or trucks. Adding information about the prevailing weather conditions to increase or decrease the sensitivity of the processor. A weather sensor station can be mounted on the fence line to feed information to a field processor. The field processor then adjusts vibration alarm sensitivity based on inputs from the weather station to ensure an effective sensitivity range is maintained. Responsible parties should be dispatched before public safety for all outdoor sensors. Consider an external fence without sensors to protect the internal fence that would be sensed to avoid false alarms.	

Electric Field

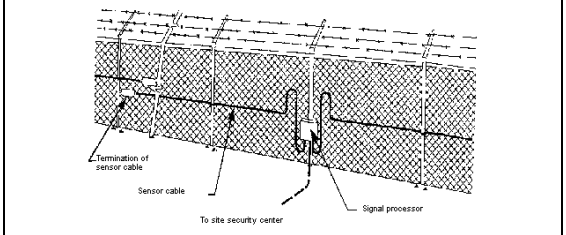
Description:	Electric field sensors generate an electrostatic field between/around an array of wire conductors and an electrical ground. Sensors in the system detect changes or distortion in the field. This can be caused by anyone approaching or touching the fence. The E-field sensor consists of an alternating current field generator which excites a field wire (two or more sensing wires), around which an electrostatic field is created and an amplifier signal processor, which detects changes in the signal amplitude of the sensing wires. The alternating current on the field wire creates an electrostatic field in the air between the field wire to ground. When an intruder enters the "field", large amounts of the electric charge flow through the intruder due to the human body disrupting the field. The processor detects this change and generates an alarm. To reduce false alarms, the signal goes through a filter which rejects high frequencies caused by wind vibration and low frequencies caused by objects striking the fence wires. However, the filter allows frequencies associated with intrusion characteristics to continue to the processor. At the processor, three conditions must be met to signal an alarm: the signal amplitude must exceed a preset value that discriminates small animals, the frequency must be in a range that is associated with humans, and the signal must persist for a set period of time. Once these conditions are met, the processor signals an alarm. 
Types:	Single or multiple zone units.
Standard Uses:	E-field wire configurations are mounted on free-standing posts or chain link fences. All the wires are mounted parallel to each other and to the ground, thereby achieving uniform sensitivity along the fence length. Springs are used at the connectors to reduce vibrations caused by wind.
Uses To Avoid:	Areas with adverse weather conditions such as rain, snow or lightning storms. Vegetation and animal movement along the fence line can cause the sensors to react.
Range:	Varies by unit.
Activated By:	Changes or distortion in the field.
Associated Work:	Clearing vegetation. Wiring, adjustment and testing.
Advantages:	An advantage that an E-field sensor has over other fence sensors is the self-adjusting circuit, located in the processor, which rejects wind and ambient noise. This circuit not only requires the amplitude of an intrusion attempt to exceed a preset level, but also for a preset period of time. The E-field sensor has an extremely low nuisance alarm rate. In some cases bridging and tunneling can be detected, depending on how close the disturbance activity is to the sensor. Sensor zone length can extend up to 1500 feet. The E-field sensor should be considered if bridging or tunneling are expected intrusion tactics.
Disadvantages:	Expense.
Conditions for Unreliable Detection:	Adverse weather conditions such as rain and snow can create problems, as can lightning storms. In addition, vegetation and animal movement along the fence line can cause the sensors to react. Large spacing between wires should be avoided, as it is possible to move between the wires without causing an alarm if sufficient space exists. NOTE: Although Electronic Magnetic Interference (EMI) is not normally a major factor, interference difficulties can arise in situations where multiple systems are deployed in a congested area, unless different frequencies are used by each sensor.
Major Causes for False Alarms:	Anything causing excessive fence vibration such as weather, birds, and animals will contribute to nuisance alarms. Overgrown vegetation coming in contact with the fence line can also be a problem and should be avoided by keeping grass and shrubbery clear of the fence.
Typical Defeat Measures:	Although electric field sensors provide some means of detecting underground intrusion activity because of disturbances in the electric field, the sensor field can be bypassed by deep tunneling (6 feet or more) or bridging over the fence.
Applicable Standard:	n/a
False Alarm Reduction Recommendations:	Proper maintenance of the fence and clearing of vegetation and trees is critical. Avoid areas with vegetation, large animals or frequent vibration from wind, trains or trucks. Other fence sensors (vibration, taut wire) can be added to provide a higher level of detection probability and reduce false alarms. Responsible parties should be dispatched before public safety for all outdoor sensors. Consider an external fence without sensors to protect the internal fence that would be sensed to avoid false alarms.

Capacitance

Description:	Capacitance sensors detect changes in an electrostatic field created by an array of wires. A signal is generated when an intruder changes the capacitance of the field by approaching or contacting the wires. Capacitance sensors consisting of three closely spaced 16 gauge wires are arrayed and installed on the top of a fence. A low voltage signal is induced in the wire array creating an electrical field with the fence serving as the electrical ground. A sensor processor continually measures the differential capacitance between the sensing wires and ground. Once a change in the signal is detected at the processor, a filter screens the signal and allows signals which meet the parameters deemed characteristic of an intruder to be forwarded. When this occurs, an alarm signal is generated. Normally physical contact is required to activate the alarm. However, by increasing the sensitivity level, a presence in close proximity can be detected without direct physical contact with the array. 
Types:	n/a
Standard Uses:	Wires are secured to a fence top or wall by using high dielectric brackets. The brackets can be adapted to any barrier but are most commonly used on outriggers atop chain link fences.

Uses To Avoid:	Where vibrations will be caused by weather, vegetation or animals.
Range:	The sensor segment can extend 1,000 ft.
Activated By:	Changes in an electrostatic field.
Associated Work:	Proper landscaping maintenance of the fence line. Wiring, adjustment and testing.
Advantages:	Due to the system's operating principle, weather and EMI/RFI have no effect on the sensor's detection ability.
Disadvantages:	High level of maintenance required to assure the capacitance characteristics of the fence are always adjusted.
Conditions for Unreliable Detection:	Unreliable detection may occur from vibrations caused by weather and animals, interpreted as intrusion attempts. Vegetation coming in contact with the fence will change the capacitance, thereby affecting the detection characteristics. To avoid this, proper landscaping maintenance of the fence line must be done (grass cut, trees removed, shrubs removed).
Major Causes for False Alarms:	Animals, such as birds and squirrels, contacting the fence will generate an alarm. This can be reduced by removing possible food sources (shrubs, grass). In addition, blowing debris, or anything making physical contact that changes the characteristics of the fence, may generate an alarm condition. Inducing tension with springs at the termination points can reduce this possibility.
Typical Defeat Measures:	Bypassing the sensors by tunneling or bridging is a method of defeat. Because of the high mounting location, it is recommended that other sensors be used in conjunction with this configuration to detect lower level intrusion actions (e.g. cutting of the vertical fence fabric).
Applicable Standard:	n/a
False Alarm Reduction Recommendations:	Proper maintenance of the fence and clearing of vegetation and trees is critical. Avoid areas with vegetation, large animals or frequent vibration from wind, trains or trucks. Responsible parties should be dispatched before public safety for all outdoor sensors. Consider an external fence without sensors to protect the internal fence that would be sensed to avoid false alarms.

Strain Sensitive Cable

Description:	Strain sensitive cables are line sensors that use electric energy as a transmission and detection medium. The line sensors maintain uniform sensitivity over the entire length of the protection zone. The cable runs from the signal processor to an end-of-line resistor, which guards against cutting, shorting or removal of the cable from the processor. When mounted on the fence, the cable is subjected to mechanical vibrations caused by attempts to cut, climb or raise the fence fabric. These stresses induce electrical signals in the cable proportional to the force exerted. The signals are then sent to a processor for filtration of signals characteristic of intrusion. "Listening" features can be incorporated into the sensor capabilities, enabling the user to "hear" what caused the alarm. 
Types:	Coaxial Cable: The strain sensitive "coaxial" cable conducts a permanent electric charge along the center of the cable. The center is covered with a non-conductive material which is encased in braided wire. The cable is then coated with an ultraviolet resistant coating, allowing it to be mounted directly on the fence fabric. An electrical signal is constantly maintained on the coaxial cable while attached to the fence. When intrusion is attempted by cutting, climbing or raising of the fence fabric, stress and vibrations occur. These stresses produce an electrical signal proportional to the force of the stress on the fence itself. The signals are then passed through a filter, allowing only signals characteristic of an intrusion to pass. When a signal received at the processor is significant enough to register detection, an alarm signal is generated. At that time, if incorporated, the user can use the listening feature to "hear" the vibration noise to which the sensor is reacting. The sound is similar to what a person would hear if they could press their ear to the fence post. Magnetic Polymer: Strain sensitive "magnetic polymer" cable sensors function as poles of a linear magnet. This is done by pairing two semicircular, magnetic, polymer conductors and separating them by an air gap. Two insulated wires run between the polymers. Parallel to these wires are two uninsulated wires free to move in the air gap between the magnetic field created by the polymer conductors. Vibration and stress on the fence fabric cause the active conductors (uninsulated wire) to move within the air gap. When this movement takes place, slight electric signals are generated and sent to the signal processor. The processor compares the signal and generates an alarm if it's outside the pre-calibrated parameters. Processors are available that "learn" from normal fence fluctuations and revise the data, thus enhancing the performance of the system. The "magnetic polymers" multiple conductors form a symmetrical and balanced pair configuration which makes the cable essentially unsusceptible to both Electro-Magnetic Interference and Radio Frequency Interference. Its low impedance creates higher signal-to-noise ratios, which provide more finite signal processing. The magnetic polymer cable also functions as a transducer microphone, and can have a "listening" operation implemented in the system, allowing the user to audibly interpret the activity taking place at the fence line.
Standard Uses:	The cable is mounted directly to the fence fabric.
Uses To Avoid:	Areas subject to bridging over or tunneling or severe weather.
Range:	Sensor zone lengths can extend up to 1,000 feet.
Activated By:	Mechanical vibrations caused by attempts to cut, climb or raise the fence fabric.
Associated Work:	Quality fence and stable installation are necessary for reliable detection. Strain-sensitive cables should be installed using ties halfway between the bottom and the top of the fence. Also, stainless steel wire ties (vs. plastic ties) should be used to prevent silent removal by burning (e.g. Cigarette butane lighter).
Advantages:	Adjustments can be made to avoid many sources of false alarms.
Disadvantages:	Strain sensitive coaxial sensors are very sensitive to high Electro-Magnetic Interference (e.g., power substations) and Radio Frequency Interference (RFI).
Conditions for Unreliable Detection:	Poor fence construction and/or unstable installation and lack of proper maintenance will decrease detection potential.

Major Causes for False Alarms:	Severe weather can present nuisance alarms; however, with proper calibration and installation most normal weather problems can be avoided.
Typical Defeat Measures:	As with other fence-based sensors, bridging over or tunneling under the fence will bypass the detection system. Also, an intruder conscious of the system installation and configuration may be able to climb the fence without detection.
Applicable Standard:	n/a
False Alarm Reduction Recommendations:	Proper maintenance of the fence and clearing of vegetation and trees is critical. Avoid areas with vegetation, large animals or frequent vibration from wind, trains or trucks. Routine animal-caused alarms can be filtered out by employing the listening device to determine legitimate intrusion signals from false ones. Responsible parties should be dispatched before public safety for all outdoor sensors. Consider an external fence without sensors to protect the internal fence that would be sensed to avoid false alarms.

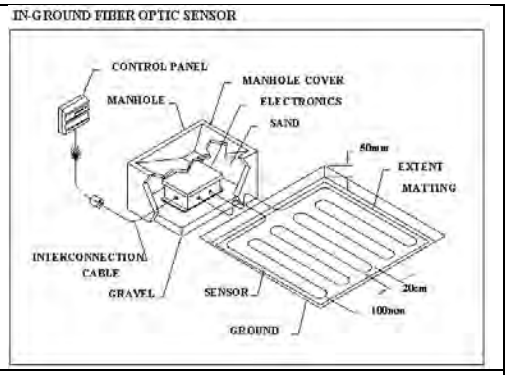
Fiber Optic Fence

Description:	Fiber optic sensors use light rather than electricity for transmission and detection. Fiber optic cable is ideal for incorporation into existing fences, or it can be used as stand alone fencing. Optical fiber is a fine, strong strand of glass or other optical medium. In operation, light is pulsed through the fiber in a manner similar to an electric signal through a wire. Fiber optics, however, offer several distinct advantages over other conductive materials. The power of light passing though a fiber optic is measured in decibels (dB) of light energy, with the fiber optic absorbing approximately 3 dB of light per kilometer, allowing use of the system over great distances.
Types:	Fiber Optic Continuity: The fiber optic continuity sensor is similar to any closed loop device. As long as the sensor cable remains intact, with light passing from the transmitter to the receiver, no alarm is transmitted. If the cable is broken, the signal transmission ceases and an alarm is generated. In one form a composite strand sensor is combined with a fiber optic continuity sensor within a barbed steel tape. An installed system appears similar to a taut wire installation; however, it does not require the mechanical activation of switches, making preventive maintenance and repair of the system more affordable. The fiber optic barbed tape can be used as a free standing fence or it can be applied to an existing fence. It can also be attached to walls and buildings. Fiber Optic Microbending / Disturbance: As the name implies, the fiber optic cable must be bent or disturbed in some way, to affect the wave guide of the light being transmitted and thereby signaling a disturbance. Detection is a function of stress on the fence fabric. The fiber optic cable acts as a line sensor when installed on the fence fabric itself. The system contains an electro-optics unit, which transmits light using an LED for the light source. The light travels through the fiber optic and is picked up by the detector, which is very sensitive to slight alterations in the transmission caused by vibration or strain on the fence. When an adequate alteration in the light pattern takes place, an alarm signal is generated.
Standard Uses:	Fiber optic fence sensors should be mounted directly on, or woven into, the fence fabric. A quality and stable installation of the fence is necessary for reliable detection.
Uses To Avoid:	Freedom from rattles, clanks, knocking sounds, and vibration/stress activity maximizes line sensor quality. Areas of high activity can make reliable detection difficult.
Range:	Varies.
Activated By:	Disturbance of light.
Associated Work:	Strengthening fence installation.
Advantages:	Optical fiber is more immune to electrical interference and electrical magnetic interference disruption than other sensors. It is intrinsically safe and uses very stable equipment, making it highly reliable overall.
Disadvantages:	Cost.
Conditions for Unreliable Detection:	Poor fence quality (stability) is the most common condition for unreliable detection. Loose fence fabric and poor stability cause the sensitivity setting for the fence to be calibrated lower than preferred. This makes the system less likely to detect an intruder. When properly installed on a good quality, stable fence or installed in a taut wire-like configuration, the system is very stable.
Major Causes for False Alarms:	Although the system is impervious to transient voltage/lightning strikes, system problems can still be created by Radio Frequency Interference (RFI), Electro-Magnetic Interference (EMI), extreme changes in temperatures and blowing debris. Although most normal weather conditions can be screened out by the alarm processor, extreme weather turbulence that disturbs or damages the optical fiber cable can create nuisance alarms. In addition, animal activity coming in contact with the fence can be interpreted as human activity, falsely signaling an intrusion attack.
Typical Defeat Measures:	Bridging or tunneling will bypass the fence and, therefore, bypass the sensor. Careful or assisted climbing, particularly at the more rigid turn points, may not produce the activity level required for alarm activation.
Applicable Standard:	n/a
False Alarm Reduction Recommendations:	To enhance the potential for intrusion detection, in-ground sensors can be installed within the protected fence area providing another level of detection. Video motion detection cameras mounted outside or inside the protected fence area can increase the intrusion detection potential, and allow security personnel to assess the intrusion zone visually. An additional way to enhance the security of a fiber optic fence is to mount a volumetric motion detection device (e.g. microwave, active infrared) along the perimeter of the fence. Responsible parties should be dispatched before public safety for all outdoor sensors. Consider an external fence without sensors to protect the internal fence that would be sensed to avoid false alarms.

Taut Wire

Description:	Taut wire sensors combine barbed wire fencing with micro-switches to detect changes in tension on the fence fabric, rather than the vibration or stress associated with fence disturbance sensors. The taut wire sensor is actually a series of microswitches connected to tensioned barbed wire installed on the top of a chain link fence or installed as the fence itself. The switch consists of a movable center rod "suspended" inside a cylindrical conductor. In the normal "open" position, the center rod is in the middle of the cylinder, and does not touch the outer cylinder. Switches are installed approximately 6 inches apart in a vertical line on the inside of a tamper-proof case/enclosure that is mounted on a fence post near the middle of the sensor zone. The enclosure stands the full height of the fence and can be designed to project outward to include outriggers, if desired. Individual strands of barbed wire are tensioned and attached to the switch so that the switch remains in the normal "open" position. Increasing or relaxing the tension of the wire, which would happen if an intruder attempted to climb, spread or cut the wire, causes the inner center rod to come in contact with the outer cylinder, "closing" the contact and initiating the alarm sequence. A unique, critical feature of the switch is a pliable, plastic support for the switch housing. This material exhibits cold-flow properties that allow the switch to always assume a neutral position when acted upon by gradual external forces such as fence settling or freezing/thawing temperatures. This feature prevents the switch from becoming pre-stressed thereby altering the intended sensitivity of the sensor.
Types:	Taut wire sensors can be mounted in two different configurations: (a) on top of an existing fence in conjunction with barbed wire outriggers to provide protection from climbing, or (b) as the fence fabric itself. Outriggers: In situations where the taut wire sensors are mounted on the top of an existing fence using barbed wire outriggers, they are targeted to deter/detect intrusion attempts by climbing. In this configuration, the sensors will have little effect on the cutting of the lower fence fabric, potentially allowing undetected access. Because of this vulnerability, it is recommended that another type of sensor (e.g. vibration), which can be mounted on the fence fabric, be used in conjunction with the taut wire system to detect cutting or raising of the fence fabric in the lower section of the fence. Fence Fabric: If mounted as the fence fabric, strands of barbed wire in a single zone are supported at each fence post, except the switch assembly post, by a supporting bar. The supporting bars loosely support the strands of barbed wire, allowing them to move freely to activate the taut wire switches. NOTE: The combination of these two techniques provides an integrated barrier that detects cutting, climbing, and raising the fence fabric. An advantage to this method is its high reliability, low false alarm rate and low nuisance alarm rate.
Standard Uses:	Taut wire sensors are used to protect perimeter fence lines.
Uses To Avoid:	Where tunneling or bridging is probable.
Range:	Varies.
Activated By:	The Taut Wire design is intended to activate an alarm on the first switch contact, as this may be all that is indicative of an intrusion attempt or penetration action.
Associated Work:	Tedious, regular tensioning of the system is required to ensure the system performs as intended. To enhance the system, in-ground sensors can be installed inside the protected fence area, providing protection in the event the taut wire sensors are bypassed by tunneling or bridging.
Advantages:	Taut wire sensors are very reliable, and provide a high probability of detection and an extremely low false alarm rate. Exertion needed on the wire for activation is substantial; therefore, weather is not a factor in consideration for this sensor. Typically, small animals do not pose a threat for false alarms either, because of the magnitude of a 35 pound force needed for activation of the sensor.
Disadvantages:	Regular tensioning (maintenance) of the system is critical to ensure the system performs as intended. They are one of the most expensive fence sensor systems, because of the laborious installation and maintenance time required.
Conditions for Unreliable Detection:	The system is one of the more reliable fence-based detectors, as it is less susceptible to environmental conditions and small animals. However, improper maintenance (tensioning) of the sensors can cause conditions for unreliable detection.
Major Causes for False Alarms:	Medium to large animals that "push" the fence while grazing or nesting can generate an alarm.
Typical Defeat Measures:	Tunneling or bridging the fence itself. Tunneling is most likely to occur at a mid-point between fence posts in relatively soft ground. Bridging can occur anywhere along the fence line, with the most likely locations being those that are not under regular observation or provide the greater degree of concealment during the approach.
Applicable Standard:	n/a
False Alarm Reduction Recommendations:	Proper maintenance of the fence and clearing of vegetation and trees is critical. Avoid areas with vegetation, large animals or frequent vibration from wind, trains or trucks. Responsible parties should be dispatched before public safety for all outdoor sensors. Consider an external fence without sensors to protect the internal fence that would be sensed to avoid false alarms.

In-Ground Fiber Optic

Description:	Fiber optic sensors are also used as an in-ground, pressure-sensitive, detection system. In operation, light is pulsed through the fiber optic in a manner similar to an electric signal through a wire. Light, when introduced into the core of the fiber optic, is retained by a process of total internal reflection until it exits onto a receiving device, however, external pressures on the cable create changes in the signal flow. The fiber optic cable acts as a line sensor installed in the burial medium itself. The system contains an electro optics unit which transmits light using an LED for the light source. The light travels through the fiber optic and is picked up by the detector, which is very sensitive to slight alterations in the transmission caused by vibration or strain in the burial medium caused by walking, running, jumping or crawling. When an adequate alteration in the light pattern takes place, an alarm signal is generated.	
Types:	n/a	
Standard Uses:	Prevention of tunneling.	
Uses To Avoid:	The sensors should not be installed in or under concrete or asphalt. The installation area should have proper drainage to prevent water from collecting over the detection zone.	
Range:	Varies.	
Activated By:	Disruption of light.	
Associated Work:	In-ground fiber optic fence sensors should be installed away from poles or trees. If installed near poles, the detection zone should be at a distance equal to the height of the pole.	
Advantages:	Sensitivity.	
Disadvantages:	Cost.	
Conditions for Unreliable Detection:	Areas with erosion problems, because of extensive rains and/or a lack of vegetation can cause the fiber optic cable to become either exposed or buried deeper in the soil. This will cause the sensitivity settings for the fiber optic cable to be ineffective.	
Major Causes for False Alarms:	Tree roots can be a cause for nuisance alarms. This is because windy conditions above ground which can cause movement in the roots and in turn bend the fiber optic and trigger an alarm. Large animals passing over the detection zone can also generate alarms.	
Typical Defeat Measures:	Bridging over the sensors will bypass the system.	
Applicable Standard:	n/a	
False Alarm Reduction Recommendations:	Proper maintenance of the area around the cable and clearing of vegetation and trees is critical. Avoid areas with vegetation, large animals or frequent vibration from wind, trains or trucks. Responsible parties should be dispatched before public safety for all outdoor sensors.	

Electromagnetic Cable or Ported Coax Buried Line

Description:	Ported Coax Buried Line Sensors are coaxial cables that have small, closely spaced holes in the outer shield. These openings allow electromagnetic energy to escape and radiate a short distance. Emissions from these cables create an electric field that is disturbed when an intruder enters the field. Ported coaxial cables are installed in pairs, approximately 5 feet apart. Processors emit a pulse of RF energy through one of the cables and receive it through the other. The speed at which the pulse travels is constant, creating a standard amplitude signature that is picked up by the signal processor. This signature is stored and continually updated to account for minor/gradual changes in the burial medium and environment. When an intrusion is attempted, the pulse signature changes radically, and is picked up by the signal processor. If the variation falls outside of allowable parameters, an alarm signal is generated.	
Types:	Continuous Wave: With Continuous Wave sensors the RF energy is transmitted simultaneously by both cables and received by the opposite number. The energy emission is constant, thus creating a detection zone above ground with a continuous surface. When an intruder enters the detection zone, the electric field is disturbed, signaling the processor to generate an alarm. Pulse: Pulse sensors emit a pulse of RF energy through one cable and receive it through the other. The speed at which the pulse travels is constant, creating a standard amplitude signature that is picked up by the signal processor. This signature is stored and continually updated to account for slow/small changes in the burial medium and environment. When an intrusion is attempted, the pulse signature changes and is picked up by the signal processor. If the variation falls outside of allowable parameters, an alarm signal is generated.	
Standard Uses:	Perimeter coverage.	
Uses To Avoid:	Routing the cables underneath chain link fences should be avoided.	
Range:	The cables are buried approximately 9 inches below the surface of the ground, depending on the soil density, creating an electric field approximately 3-4 feet above the ground that extends 9-12 feet wide. The variation in zone size depends on cable separation and the characteristics of the burial medium. With this sensor cable, zone length can extend up to 500 feet.	
Activated By:	Disruption of signal.	
Associated Work:	If metallic pipes or cables must be routed through the sensor cable field, they should be buried at least 3 feet below the ported coaxial cable. When installing the cables along or near fence lines, the cables must be installed between 6 and 10 feet from the fence to avoid distortions and to reduce potential false alarms caused by the motion of the fence fabric disrupting the detection field.	
Advantages:	Sensitivity.	

Disadvantages:	Cost, adjustment and testing time.
Conditions for Unreliable Detection:	Because of the limited height of the detection zone, sites that experience heavy snowfall are prone to unreliable detection. Also, burial mediums that have drain ducts located beneath the buried cables will pose a problem if ducts are not constructed of metal. Wind disturbance of standing water over the cables also causes erroneous signals; therefore, the burial zone should be graded to provide immediate runoff and good drainage. NOTE: Ported Coax sensors are affected by high EMI from sources such as large electrical equipment or electrical sub stations and should not be used in close proximity to these type installations.
Major Causes for False Alarms:	Movement of nearby metallic fence fabric, vehicles and signs, as well as organic objects (e.g., people, medium to large animals, medium to large vegetation), can cause alarms. Individual small animals typically do not have the magnitude to affect the system; however, a congregation of small animals can generate an alarm.
Typical Defeat Measures:	Bypassing the area by bridging over the detection zone is the principle method employed.
Applicable Standard:	n/a
False Alarm Reduction Recommendations:	Proper maintenance of the area around the buried line and clearing of vegetation and trees is critical. Avoid areas with vegetation, large animals or frequent vibration from wind, trains or trucks. Responsible parties should be dispatched before public safety for all outdoor sensors.

Balanced Buried Pressure or Fluid Pressure Sensor

Description:	A Balanced Buried Pressure line sensor is an in-ground system that detects vibrations and seismic energy. These energy waves are typically caused by personnel, animal or vehicular movement across the surface of the ground in which the sensors are installed. Pressure line sensors consist of pressurized, closed end, pliable tubes or hose segments filled with water or an antifreeze-like solution. Usually two sensors tubes are used per zone. The zone size will vary depending on soil density and composition, and the nature of any surface material. The tubes are very sensitive to changes in pressure and react to pressure exerted on the medium in which they are implanted/buried. A processor monitors/regulates the pressure inside the tubes and generates a signal if the pressure deviates from a determined norm. When an intruder/vehicle approaches the detection zone, the ground starts to compress in direct relation to the extent of the pressure waves exerted by the weight and movement impact. The impact caused by a runner will create a greater pressure than a walker; a heavy person walking upright will create a greater pressure than a smaller person moving on hands and knees. The buried tube sensor nearest the point of pressure reacts to the energy (pressure) carried through the soil (buried medium) and in turn changes the pressure in the farthest tube proportionally. The pressure sensing unit detects the change in pressure in both tubes and generates an electrical signal proportional to the pressure exerted. The signals from both tubes are compared and transmitted to the analyzer. When the pressure between the two tubes exceeds a pre-set value, the analyzer generates an alarm signal. NOTE: A self-compensating valve is used to maintain pressure within the tubes, adjusting to gradual/moderate changes associated with the burial medium such as those caused by moisture content (rain) or temperature changes (frost/drought). However, this valve does not adjust to rapid changes in pressure typical of personnel and vehicle movement, and other man-made or sudden natural movements such as earthquakes or explosions.
Types:	n/a
Standard Uses:	Perimeter coverage.
Uses To Avoid:	Concrete is not a good conductor for the relative "light" pressure waves created by personnel, and in fact it serves as a good "insulator", thereby reducing the probability of human movement being detected. Therefore, it is essential to employ additional surveillance/detection means when dealing with expanses of concrete and possible human movement.
Range:	The detection zone is created by burying the tubes approximately 4 feet apart, with the pressure-sensing unit linked and placed between the sensor tubes. Depending on the nature of the soil, this type of system can create a detection zone with up to a 350 foot radius.
Activated By:	Changes in pressure.
Associated Work:	The depth at which the tubes are placed depends on the composition of the medium in which the tubes are placed. Normally, 10 inches is sufficient for earth and sand. Soil with an asphalt covering requires tubes to be placed at a more shallow depth of 4 - 8 inches. When working with a concrete surface/area, the sensor tubes should be buried just beneath the under surface of the concrete.
Advantages:	Wide coverage.
Disadvantages:	Cost, impact of weather, test and implementation time.
Conditions for Unreliable Detection:	Because of the differential pressure principle employed and the nature of the self-compensating valve, the system has a high degree of immunity to typical environmental noise and weather conditions. However, tree roots closer than 10 feet to the sensor set can pose a problem due to the potential for windy conditions above ground that can transfer pressure waves into the ground via the root system generating an alarm. Also, areas with heavy snowfall (and/or shifting sand) may have trouble with the system properly sensing seismic vibrations, depending on the depth and composition of the snow/sand.

Major Causes for False Alarms:	Improper installation or calibration can cause normal activity to be interpreted as intrusion. Also, proximity to heavy road/rail traffic or seismic activity from pulsating or shock machinery can cause false alarms.
Typical Defeat Measures:	Avoiding the potential zone(s) of detection; cushioning movement vibrations, dispersing/lowering impact energy, and/or bridging/planking over or through the detection zone are all, in varying degrees, viable defeat measures.
Applicable Standard:	n/a
False Alarm Reduction Recommendations:	Proper maintenance of the area around the sensor and clearing of vegetation and trees is critical. Avoid areas with vegetation, large animals or frequent vibration from wind, trains or trucks. Responsible parties should be dispatched before public safety for all outdoor sensors.

Buried Geophone

Description:	Buried geophone transducers detect the low frequency seismic energy created in the ground by someone or something crossing through the detection screen above the sensors. The system consists of two elements, a processor and a series of geophone sensors. The geophone sensors detect seismic energy vibrations created by running, crawling or walking on the ground above its location. The seismic energy is converted by the sensors to electrical signals which are sent to the processor for evaluation. Upon reaching the processor, the signal is sent through an electronic filter. The filter screens out (ignores) all signals that are not characteristic of an intrusion attempt. When the characteristics of the signal satisfy the processor's alarm criteria, an intrusion alarm is generated.
Types:	An audio "listen-in" feature can be incorporated into the sensor field to aid in differentiating between nuisance alarms and valid intrusion attempts. The listen-in feature allows the operator at a monitoring station to listen to the audible seismic signals from the geophones. A trained operator can usually differentiate between normal stimuli and stimuli associated with intrusion attempts.
Standard Uses:	Geophone sensors are typically fielded with 20 to 50 geophones per line.
Uses To Avoid:	Areas where time to monitor and filter signals is not available.
Range:	Geophone sensor zone lengths can extend up to 300 feet.
Activated By:	Disruption of seismic energy.
Associated Work:	The geophones should be buried, depending on manufacture's directions 6 - 12 feet apart, with a recommended burial depth between 6 to 14 inches in soft to compact soil and 6 inches in asphalt. It is recommended that burial field soil be stable and relatively compact, and the geophones should be installed between layers of sand, as compact sand is very conductive of seismic vibrations.
Advantages:	Wide coverage.
Disadvantages:	Cost, time to adjust.
Conditions for Unreliable Detection:	The main cause for unreliable detection is the burial medium in which the sensors are located. Loose or inconsistent soil causes the seismic energy waves to have little effect on the geophones.
Major Causes for False Alarms:	Geophones can detect very low levels of seismic activity, and because of this sensitivity, trees, fences, light poles, and telephone poles can pose major nuisance problems. All of these items are anchored in the ground and transfer seismic energy to the ground when subjected to high wind. Also, large animals passing over/through the detection zone can generate an alarm signal.
Typical Defeat Measures:	Bridging over the sensors will bypass the system.
Applicable Standard:	n/a
False Alarm Reduction Recommendations:	Geophones should be installed at least 30 feet from trees, 10 feet from fences, and at a distance equal to the height of any nearby poles. Proper maintenance of the area around the sensor and clearing of vegetation and trees is critical. Avoid areas with vegetation, large animals or frequent vibration from wind, trains or trucks. Responsible parties should be dispatched before public safety for all outdoor sensors.

Radar

Description:	Radar is an active sensor that uses ultrahigh frequency radio waves to detect intrusion of a monitored area. Radar sensors transmit a signal from an energy source in the ultrahigh frequency range of 100 MHz to 1 GHz. The Radar signal "bounces" off objects in the detection zone, and the reflected signal is then analyzed by a processor to determine the relative size, azimuth and distance of the object. The information is then converted to symbology and displayed on a local monitor screen.
Types:	Monostatic Units: In monostatic devices the transmitter and receiver are contained within one unit, referred to as a transceiver. Typically, detection for intrusion is achieved by the radar transceiver rotating in a pre-set "sweep" pattern. During rotation the transceiver transmits high frequency energy pulses, forming/scanning a detection zone. A signal processor, located within the transceiver, is programmed to recognize reflected energy from the normal environmental surroundings, thus not signaling an alarm. However, when a moving or foreign / new object is detected within the zone, a Doppler shift in the reflected energy is created. When the magnitude of the reflected energy surpasses the processor's criteria, an alarm signal is generated.

	Bistatic Units: The transmitter and receiver(s) for bistatic models are separate units. The detection zone is created between the units. The transmitter is typically transmitting in a designated "sweep" pattern, with receivers at several locations designed to maximize the potential for detection. The transmitter generates a field of high frequency energy, which "bounces/reflects" off "foreign" objects and is detected by one or more receivers. When the resulting signals satisfy the detection criteria, an alarm signal is generated.
Standard Uses:	Radar sensors are used primarily to monitor exterior areas, although in some situations Radar sensors can be used to monitor large interior open areas. In both situations, the ground should be reasonably level and the perimeter boundaries straight. If portions of the perimeter are hilly or have crooked boundaries, the radar unit may be elevated to provide a better line of sight/view, or radar sensors can be used to monitor the straight and level sections of the perimeter, while other types of detectors (e.g. in-ground sensors, video motion detection) can be used to monitor the remaining sections.
Uses To Avoid:	Areas with foreign objects in path.
Range:	Varies.
Activated By:	Disruption of energy pattern.
Associated Work:	Clearing area.
Advantages:	Wide coverage.
Disadvantages:	Cost, adjustment time.
Conditions for Unreliable Detection:	"Dead zones" created by large objects, buildings or hill masses/depressions can provide safe havens for intruders, allowing them to avoid the radar field. In addition, extreme weather conditions, such as rain/snow storms can decrease detection potential.
Major Causes for False Alarms:	Nuisance alarms can be generated by detection of foreign objects outside the protected area or by the random reflection of radar energy.
Typical Defeat Measures:	Uneven terrain may create enough "hidden pockets", allowing the intruder to be undetected by using a slow/low approach pattern through the protected volume.
Applicable Standard:	n/a
False Alarm Reduction Recommendations:	Avoid without extensive testing of the environment to be monitored. Responsible parties should be dispatched before public safety for all outdoor sensors.

Acoustic Detection (Air Turbulence)

Description:	Acoustic air turbulence sensors "listen" for basic sound pressure waves generated by helicopter rotor blades. The approaching helicopter will produce frequencies within a range of 20 - 40 Hz, depending on the model. Once frequencies are detected, the acoustic air turbulence sensor sends the signal to a processor that filters out frequencies not associated with helicopter flight. If the signal passes through the narrow acoustic band filter of 20 - 40 Hz, an alarm signal is generated.	
Types:	n/a	
Standard Uses:	This sensor can be very useful in detecting helicopter-borne intrusion attempts, which would otherwise bypass normal perimeter sensors (fence and in-ground).	
Uses To Avoid:	The sensors should be located away from any vehicular/road traffic and/or railroad right of ways to minimize potential interference from any pressure/wind turbulence generated by high speed truck or train movement.	
Range:	Under test conditions some helicopters, including some of the quietest, have been detected at distances up to 500 feet. However, for increased probability and reliability of detection, detector sensitivity is typically set for a range of 300 feet. Detection zones should overlap to insure all approach/segments of the protected area are covered by at least one sensor. There is no restriction on the distance of sensors from the main control unit, as long as system communication is properly designed. Therefore, the protected area can literally extend for miles.	
Activated By:	Air turbulence.	
Associated Work:	Adjustment and testing.	
Advantages:	Sensitivity.	
Disadvantages:	Cost, adjustment time.	
Conditions for Unreliable Detection:	Sensitivity settings set too low to compensate for vehicular traffic. Also, improper spacing of the sensors, allowing some areas not to be covered by the detection pattern.	
Major Causes for False Alarms:	Wind generating a broad band noise causes the most difficulty for the acoustic air turbulence sensor. Also turbulence generated at a distance and conveyed via pressure wave propagation can be interpreted as broad band rumbling if they impact the pressure sensitive transducer of the sensor. Turbulence created by wind viscosity and the roughness of the terrain can also generate conditions for nuisance alarms.	
Typical Defeat Measures:	The system will not detect airborne assault or other methods, such as glider, parachute, or ultralight.	
Applicable Standard:	n/a	
False Alarm Reduction Recommendations:	Avoid without extensive testing of the environment to be monitored. Responsible parties should be dispatched before public safety for all outdoor sensors.	

Fire Initiating Devices

Manual Pull Stations

Description:	Manually activated device generally used to activate the fire alarm.	
Types:	Single or dual action. Conventional, analog or addressable, break-glass or non break-glass. Non coded or coded.	
Standard Uses:	Manual pull stations are located according to specific standards in each of the paths that people normally use to exit a building.	
Uses To Avoid:	Where likely to be activated by vandals.	
Range:	n/a- See NFPA 72 and Building code for spacing requirements.	
Activated By:	People.	
Associated Work:	Mounting.	
Advantages:	Relatively immune from false alarms from external sources.	
Disadvantages:	Subject to nuisance alarms from people pulling the pull station.	
Major Causes for False Alarms:	People.	
Applicable Standard:	NFPA 70, NFPA 72, NFPA 101.	
False Alarm Reduction Recommendations:	Locate in areas that are visible to others to avoid prank alarms. Install guards that generate a preliminary siren in areas prone to prank alarms. Install in classrooms instead of at exit doors in schools.	

Fixed Heat Detector

Description:	Detector that will trigger an alarm when the temperature at the device reaches a preset limit.	
Types:	Wired or Wireless. Conventional, analog or addressable. AC powered, battery powered, system powered. Self-restoring or single use. Fixed or analog, available in variety of temperature settings.	
Standard Uses:	Valuable additional protection in areas such as kitchens and attics, where smoke detectors are not recommended.	
Uses To Avoid:	They are not recommended for the use in bedrooms or sleeping areas.	
Range:	Typical center distance spacing guideline is 30 to 50 feet. See NFPA 72 and Building code for spacing requirements.	
Activated By:	Heat above a preset limit.	
Associated Work:	Mounting.	
Advantages:	Can be used in areas not compatible with smoke detectors. Relatively false alarm free.	
Disadvantages:	Heat detectors may not provide early enough warning to aid escape from a life-threatening fire.	
Major Causes for False Alarms:	Relatively false alarm free. Wiring problems or remodeling.	
Applicable Standard:	NFPA 70, NFPA 72, NFPA 101.	
False Alarm Reduction Recommendations:	Verify highest possible temperature in area where sensor is mounted to select the detector with the proper temperature rating.	

Rate of Rise Heat Detector

Description:	Detector that will trigger an alarm if the temperature at the detector increases at a preset rate.	
Types:	Wired or Wireless. Conventional, analog or addressable. AC powered, battery powered, system powered. Self-restoring or single use. Analog available in variety of temperature settings.	
Standard Uses:	Valuable additional protection in areas such as kitchens and attics, where smoke detectors are not recommended.	
Uses To Avoid:	They are not recommended for the use in bedrooms or sleeping areas.	
Range:	Typical center distance spacing guideline is 30 feet. See NFPA 72 and Building code for spacing requirements.	
Activated By:	Heat increase exceeding preset level.	
Associated Work:	Mounting.	
Advantages:	Can be used in areas not compatible with smoke detectors. Relatively false alarm free.	
Disadvantages:	Heat detectors may not provide early enough warning to aid escape from a life-threatening fire.	

Major Causes for False Alarms:	Relatively false alarm free. Wiring problems or remodeling.
Applicable Standard:	NFPA 70, NFPA 72, NFPA 101.
False Alarm Reduction Recommendations:	Verify highest possible temperature in area where sensor is mounted to select the detector with the proper temperature rating. Do not use in areas where rapid rise of temperature may occur normally. Seal all holes in mounting box.

Combined Rate-Of-Rise/Fixed-Temperature Heat Detectors

Description:	Detector that will trigger an alarm if the temperature at the detector increases at a preset rate or exceed a preset level.	
Types:	Wired or Wireless. Conventional, analog or addressable. AC powered, battery powered, system powered. Self-restoring or single use. Analog available in variety of temperature settings.	
Standard Uses:	Valuable additional protection in areas such as kitchens and attics, where smoke detectors are not recommended.	
Uses To Avoid:	They are not recommended for the use in bedrooms or sleeping areas.	
Range:	Typical center distance spacing guideline is 30 feet. See NFPA 72 and Building code for spacing requirements.	
Activated By:	Heat increase exceeding preset level or heat above preset level.	
Associated Work:	Mounting.	
Advantages:	Can be used in areas not compatible with smoke detectors. Relatively false alarm free.	
Disadvantages:	Heat detectors may not provide early enough warning to aid escape from a life-threatening fire.	
Major Causes for False Alarms:	Relatively false alarm free. Wiring problems or remodeling.	
Applicable Standard:	NFPA 70, NFPA 72, NFPA 101.	
False Alarm Reduction Recommendations:	Verify highest possible temperature in area where sensor is mounted to select the detector with the proper temperature rating. Do not use in areas where rapid rise of temperature may occur normally. Seal all holes in mounting box.	

Photoelectric Smoke Detector

Description:	Detector in which a beam of light is projected across a sensing area onto a photocell. Smoke particles reduce the amount of light reaching the photocell, triggering an alarm.	
Types:	Wired or Wireless. Conventional, analog or addressable. AC powered, battery powered or system powered. Combination with heat detector. Photoelectric Light Scattering Smoke Detector - Most photoelectric smoke detectors are of the spot type and operate on the light scattering principle. A light-emitting diode (LED) is beamed into an area not normally "seen" by a photosensitive element, generally a photodiode. When smoke particles enter the light path, light strikes the particles and is reflected onto the photosensitive device causing the detector to respond. Photoelectric Light Obscuration Smoke Detector- The light obscuration detector employs a light source and a photosensitive receiving device, such as a photodiode. When smoke particles partially block the light beam, the reduction in light reaching the photosensitive device alters its output. The change in output is sensed by the detector's circuitry, and when the threshold is crossed, an alarm is initiated. Obscuration type detectors are usually of the projected beam type where the light source spans the area to be protected.	
Standard Uses:	Photoelectric detectors are better at sensing slow smoldering or smoky fires, such as a smoldering mattress.	
Uses To Avoid:	Excessively dusty or dirty areas, outdoors, wet or excessively humid areas, over ashtrays or where people will smoke, extreme cold or hot environments, manufacturing areas, near fluorescent light fixtures, areas where particles of combustion are normally present, such as in kitchens or other areas with ovens and burners; in garages, where particles of combustion are present in vehicle exhausts.	
Range:	Typical center distance spacing guideline is 30 feet. See NFPA 72 and Building code for spacing requirements.	
Activated By:	Smoke particles.	
Associated Work:	Mounting.	
Advantages:	Sensitivity to slow smoldering or smoky fires.	
Disadvantages:	Slightly higher cost compared to Ionization detectors.	

Major Causes for False Alarms:	Insects, dirt, drywall dust, light and other forms of contamination into the sensing chamber can also reflect light from the light source onto the photosensitive device. Electrical transients and some kinds of radiated energy can affect the circuitry. Burnt food, steam, people that forget to open their flue, smoke machines, smokers, and gas are other sources of false alarms.
Applicable Standard:	NFPA 70, NFPA 72, NFPA 90A, NFPA 92A, NFPA 101, UL 217, UL 268.
False Alarm Reduction Recommendations:	The wiring or mounting holes should be sealed to prevent bugs, air, or dirt from entering. Areas with: high humidity, temperatures higher or lower that the range specified by the detector, frequent smoke, excessive amounts of insects or dust should be avoided.

Ionization Smoke Detector

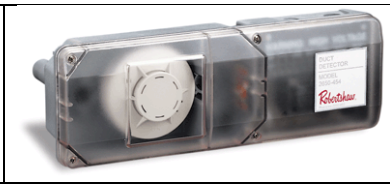
Description:	Smoke alarm in which the air in a sensing chamber is ionized, permitting an electric current to flow across the sensing chamber. Smoke particles reduce the level of ionization, disrupting the electric current flow and producing an alarm.	
Types:	Wired or Wireless. Conventional, analog or addressable. AC powered, battery powered or system powered.	
Standard Uses:	The characteristics of an ionization detector make it more suitable for detection of fast flaming fires that are characterized by combustion particles in the 0.01 to 0.4 micron size range.	
Uses To Avoid:	Excessively dusty or dirty areas, outdoors, wet or excessively humid areas, over ashtrays or where people will smoke, extreme cold or hot environments, manufacturing areas, near fluorescent light fixtures, areas where particles of combustion are normally present, such as in kitchens or other areas with ovens and burners; in garages, where particles of combustion are present in vehicle exhausts.	
Range:	Typical center distance spacing guideline is 30 feet. See NFPA 72 and Building code for spacing requirements.	
Activated By:	Smoke particles.	
Associated Work:	Mounting.	
Advantages:	Detection of fast flaming fires.	
Disadvantages:	Sensitivity to chemicals.	
Major Causes for False Alarms:	Dust and dirt can accumulate on the radioactive source and cause it to become more sensitive. Electrical transients and some kinds of radiated energy can affect the circuitry. Use of Some chemicals can activate the detector.	
Applicable Standard:	NFPA 70, NFPA 72, NFPA 90A, NFPA 92A, NFPA 101, UL 217, UL 268	
False Alarm Reduction Recommendations:	The wiring or mounting holes should be sealed to prevent bugs, air, or dirt from entering. Areas with: chemicals, high humidity, temperatures higher or lower than the range specified by the detector, frequent smoke, excessive amounts of insects or dust should be avoided.	

Video-based Smoke Detection

Description:	Systems consist of video-based analytical smoke recognition algorithms that integrate cameras into fire detection systems. The video image from a camera is processed by software to determine if smoke from a fire can be identified in the image. The detection algorithms use different techniques to identify the smoke characteristics and can be based on spectral, spatial or temporal properties. These include assessing changes in brightness, contrast, shape, edge content, motion, and color matching.	
Types:	Networked - multiple cameras connected to a central processing unit that executes all video capture, image processing and alarm decision algorithms. The processing unit typically has relay contact outputs and the ability to send various alarm signals to standard fire alarm control units. Depending on the manufacturer, systems can also record still shots or video clips associated with alarm events and can provide instantaneous video display to a monitor. Self-Contained - video capture, image processing and alarm decision algorithms are performed at the camera in a single device. These fire detectors can have onboard storage of video and can be integrated on a closed-circuit system with an additional central processing unit, or it can be integrated as a point detector on a standard fire alarm system. These devices can also be monitored remotely via network or internet connections. Video events of alarm conditions can be archived for each device and can be displayed automatically to video monitors for instantaneous viewing.	
Standard Uses:	Video smoke detection is a good option when smoke does not propagate in a "normal" manner, e.g., in tunnels, mines, and other areas with forced ventilation, and in areas with air stratification, e.g, hangars, warehouses, etc. Video is also a good option for large, open areas where there may be no heat or smoke propagation to a fixed point, e.g., saw mills, petrochemical refineries, forest fires, etc.	
Uses To Avoid:	Systems require a minimum amount of light for effective detection performance. Where there are significant obstructions in the camera line-of-sight. Where certain processes are likely to produce smoke-like images. Examples include processes generating large amounts of steam and/or other gas plumes (exhaust fumes from forklift trucks) and/or environmental pollutants (vapor, dust, sprays). In outdoor or semi-outdoor situations this may also include insect swarms. Where likely environmental conditions present may have an adverse effect on the ability of the system to properly operate. For example this would include fog, mist, snow and rain.	
Range:	Varies	
Activated By:	The video image from a camera is processed by software to determine if smoke from a fire can be identified in the image.	

Associated Work:	Mounting, Calibration and Operator Training
Advantages:	Has much higher probability of successful early detection of smoke or flame.
Disadvantages:	Current performance is inferior to those of traditional particle-sampling based detectors in terms of detection rate and false alarm rate, due to: 1) Variability in smoke density, lighting, diverse background, interfering non-rigid objects etc. 2) None of the primitive image features such as intensity, motion, edge, and obscuration characterizes smoke well. 3) Visual pattern of smoke is difficult to model.
Major Causes for False Alarms:	Light variations, lighting changes, diverse backgrounds, steam, gas plumes, insect swarms, fog, mist, snow and rain
Applicable Standard:	NFPA 70, NFPA 72, NFPA 101. UL 268
False Alarm Reduction Recommendations:	Use a traditional particle-sampling based detector and or human observation to confirm the alarm.

Duct Detectors

Description:	An HVAC system supplies conditioned air to virtually every area of a building. Smoke introduced into this air duct system will be distributed to the entire building. Smoke detectors designed for use in air duct systems are used to sense the presence of smoke in the duct.	
Types:	In duct or sampling tube. Ionization or photoelectric. Standard duty or explosion proof.	
Standard Uses:	Control of air handler units.	
Uses To Avoid:	Duct smoke detection is not a substitute for an area smoke detector, is not a substitute for early warning detection and is not a replacement for a building's regular fire detection system.	
Range:	Consult NFPA 90A.	
Activated By:	Smoke.	
Associated Work:	Cutting appropriate holes in the duct.	
Advantages:	Best way to automatically initiate action to minimize the spread of smoke through the air handling system.	
Disadvantages:	Access to detector can be difficult at times, frequent cleaning required.	
Conditions for Unreliable Detection:	Dirt contaminated air filters can restrict air flow causing a reduction in the operating effectiveness of the duct smoke detectors.	
Major Causes for False Alarms:	Lack of cleaning and maintenance. Sometimes duct detectors are powered outside of the fire alarm system. Simple power failures can cause excessive trouble signals.	
Applicable Standard:	UL 268A, NFPA 72, NFPA 90A, NFPA 92A, NFPA 101, ASHRAE Handbook and Product Directory, "Fire and Smoke Control"	
False Alarm Reduction Recommendations:	Maintenance and cleaning at the interval specified by the manufacturer is critical to avoiding false alarms.	

Flame Detectors

Description:	Sensor that detects the infrared, ultraviolet, or visible radiation or light output from a flame.	
Types:	IR- The Infrared Flame Detector detects hydrocarbon flames from burning wood, paper, gas, natural gas, etc. These kinds of fires burn with a typical yellow/red color due to the radiated hot Carbon Dioxide (CO_2). The hot CO_2 gasses emit energy in the infrared at 4.4μ resonance frequency. The cold CO_2 gasses in the air filter the sunlight in that same frequency and therefore makes the detector solar blind (at sea level). Blue flames as from burning Hydrogen or other non-Hydrocarbon fires do not emit CO_2 and are almost invisible to the IR detector. Some IR detectors also analyze the flicker frequency of a fire. An uncontrolled flame flickers at 0 to 20 Hz due to the cycle of burning fuel and Oxygen and sucking new fuel and Oxygen to the fire. UV- UV detectors utilize a high speed, maximum sensitivity tube to sense the radiation emitted by the fire in the Ultraviolet band. Quality detectors will be blind to ultraviolet radiation emitted from the sun. UV-IR- the technologies may be combined to detect a wider range of fires.	
Standard Uses:	IR detectors are used in aircraft hangars, automotive, compressors, offshore platforms, solvent/chemical storage and at tank farms or in areas with electrostatic painting, gas cabinets, hydrogen, metal fabrication, semiconductor production or solvent/chemical storage. UV detectors are suited for applications with high background radiation levels, such as turbine packages or off-shore facilities or aircraft hangars that could have UV radiation sources present. UV-IR detectors are particularly suited for applications where hydrocarbon fires are likely and UV radiation sources may be present (Aircraft hangars, Loading Racks, Powder coating). The detectors maintain constant fire protection while arc welding takes place.	

Uses To Avoid:	Areas with bright sunlight or sunlight reflections, close proximity to artificial lights such as tube fluorescence or (glass protected) halogen lamps, near arcs from electrical discharges (static or electric motors), near radiation caused by arc welding, where oil or grease will accumulate on the detector lens.
Range:	100 feet or more depending on the detector and fire source.
Activated By:	Flame.
Associated Work:	Mounting and testing.
Advantages:	Early detection of specific fire types.
Disadvantages:	Cost.
Major Causes for False Alarms:	Bright sunlight or sunlight reflections, artificial lights such as tube fluorescence or (glass protected) halogen lamps, arcs from electrical discharges (static or electric motors), radiation caused by arc welding.
Applicable Standard:	NFPA 70, NFPA 72, NFPA 90A, NFPA 92A, NFPA 101, UL 217, UL 268.
False Alarm Reduction Recommendations:	Maintenance and calibration at the interval specified by the manufacturer is critical to avoiding false alarms.

Audio-based Smoke Alarm Detector

Description:	A wireless device listens for the alarm sounder of any smoke alarm. When the detector hears the alarm sound from a smoke alarm, it will transmit a signal to the alarm control panel. This is not to be mistaken for a smoke detector or alarm. It does not sense smoke or heat, rather, the device only listens for the smoke alarm's siren
Types:	Battery operated sensor with wireless transmitter
Standard Uses:	Designed to monitor existing smoke alarms. Since the smoke alarms are required to be interconnected so that all sound the alarm whenever any detector is activated, one sensor can be used to monitor all the smoke alarms.
Uses To Avoid:	Where listed or approved monitoring is required or where likely environmental conditions present may have an adverse effect on the ability of the system to properly operate. For example an area of the home where the humidity is so high that from time to time there is condensation on walls and components.
Range:	No more than 6 inches from the UL Listed smoke detector to be monitored on installed so that the microphone faces the smoke alarm.
Activated By:	The sound from a smoke alarm and/or similar sounds.
Associated Work:	Mounting, Calibration and Operator Training
Advantages:	Cost effective. Provides electronic monitoring of smoke alarms without having to replace the smoke alarms.
Disadvantages:	Need to verify compatibility with control panel. Is not UL Listed. Does not monitor the condition or battery level of the smoke alarms. Product has not been independently tested for operation.
Major Causes for False Alarms:	New product and not much history. Possible activation from a component other than a smoke detector if the frequency is in the same range and the noise is emitted within 6 inches of the audio detector. Particularly if the device is near a wall that sound can bounce off of.
Applicable Standard:	A non-emergency, general purpose signaling unit, as those terms are defined by UL 2017
False Alarm Reduction Recommendations:	Install and program to manufacturer's specifications and do not use in an area where other devices operating in the 345MHz frequency could possibly activate the device.

Carbon Monoxide Detectors

Description:	Detects a toxic colorless and odorless gas and common combustion by-product. Combustion appliances including: furnaces, fireplaces, grills, generators, gas water heaters, etc., require proper installation and service in order to prevent CO exposure.
Types:	Wired or Wireless. Conventional, analog or addressable. AC powered, battery powered or system powered.
Standard Uses:	Households containing a fuel-burning appliance, fireplace, or in those having an attached garage.
Uses To Avoid:	Do not place the detector right next to or over a fireplace or flame-producing appliance. Keep the detector out of the way of pets and children. CO alarms are not substitutes for smoke alarms.
Range:	Check with Manufacturer.
Activated By:	A toxic colorless and odorless gas and common combustion by-product.
Associated Work:	Mounting.
Advantages:	Provide early warning of accumulating CO.
Disadvantages:	Average life span of many carbon monoxide detectors is about 2 years.
Major Causes for False Alarms:	Barbecue grills or kerosene or gas heater, using fireplace without adequate ventilation, running vehicle or generator inside an attached garage.

Applicable Standard:	NFPA 720, ANSI/UL 2075, *ANSI/UL 2034, ANSI/CSAA CS-CO-01 – 2008*
False Alarm Reduction Recommendations:	Mount the detector between the sleeping and living areas and possible sources of carbon monoxide, yet as far as possible away from frequent sources of lower levels of carbon monoxide. Avoid the following locations: • Within 5 feet (1.5 meters) of any cooking appliance • Near an open window or door, because the fresh air entering the opening may delay CO from reaching the alarm • In damp or very humid areas or next to bathrooms with showers. Install detectors at least 5 feet (1.5 meters) away from bathrooms • Locations where normal ambient temperatures are not met. Normal ambient temperature limits are 40°F to 100°F (4.4°C to 37.8°C) Accommodation spaces should be well ventilated when household cleaning supplies or similar contaminants are stored or used.

For More Information Contact:

For more information on this topic or other matters related to alarm systems, please contact:

False Alarm Reduction Association (FARA) 10024 Vanderbilt Circle, Unit 4 Rockville, MD 20850 301-519-9237 Fax 301-519-9508 Email: info@faraonline.org Web site: http://www.faraonline.org	National Electronic Security Alliance (NESA) 10024 Vanderbilt Circle, Unit 4 Rockville, MD 20850 301-519-9237 Fax 301-519-9508 Email: bradshipp@4yoursolution.com Web site: http://www.nesaus.org

Mississippi Security Association

Glossary

100BaseT - IEEE 802.3 Ethernet LAN standard, with data on Cat 5 twisted pair wiring, with a data rate of 100 Mbps.

10BaseT - IEEE 802.3 Ethernet LAN standard, with data on Cat 3 or Cat 5 twisted pair (TP) wiring, with a data rate of 10 Mbps.

1900 Box - Common term for any two gang (4 -inch square) outlet box.

24 Hour Zone - Device that remains armed constantly. Examples of 24 hour devices are Fire and Panic.

555 timer IC - Popular, easy -to -use device that is very well suited to the various timing and delay functions throughout a full -featured home alarm system.

A – Abbreviation for "ampere" a unit of electrical current.

A/C - Abbreviation for air conditioner or air conditioning.

A/C Condenser - Outside fan unit of the Air Conditioning system. It removes the heat from the Freon gas and "turns" the gas back into a liquid and pumps the liquid back to the coil in the furnace.

A/C Disconnect - Main electrical ON -OFF switch near the A/C Condenser.

AA Alarm System - See Certificated UL Line Security.

Abort – (1) To discontinue the transmission of an alarm signal if the alarm system is disarmed (turned off). (2) A telephoned voice call or an electronically transmitted message, with appropriate safeguards as to authenticity, that indicates a just-transmitted alarm event is not to be reacted to as an emergency. An abort is also a procedure to prevent an alarm signal from being sent to the monitoring facility.

Abrasion - Process of rubbing, grinding or wearing away by friction.

ABS - Type of black plastic pipe commonly used for waste water lines.

Absolute Phase - Correct polarity (direction of energy) over two stereo channels.

Absorption - Loss or dissipation of energy as it travels through a medium, Example - radio waves lose some of their energy as they travel through the atmosphere.

Absorption Trap - Parallel -tuned circuit made of either capacitors or coils used to absorb and reduce interfering signals.

Abstract - (1) Summary of a document. (2) Itemized list of building materials.

AC (Alternating Current) - Electrical current that periodically reverses direction. The rate of change is known as frequency and is measured in Hertz (cycles per second). Standard wall outlets supply alternating current.

AC Coupling - Circuit that passes an AC signal while blocking a DC voltage.

AC Generator - Device used to transform mechanical energy into AC electrical power.

AC Line - Power line delivering alternating current.

AC Line Carrier – Transmission of signals over an AC power line to a device that receives and/or responds to the signals.

AC Power Supply - Power supply that delivers an AC voltage.

AC Voltage - Voltage in which the polarity alternates.

AC/DC - Equipment that will operate on either an AC or DC power source.

Academy Filter - High frequency filter used in some advanced home theater controllers to compensate for the overly bright soundtrack of many earlier films.

Accelerant – Highly flammable substance used to start a fire.

Accent Lighting - Lighting used to emphasize an object or specific area.

Acceptance Test - Made to demonstrate the degree of compliance with specified requirements.

Accepted - Approval for a specific installation or arrangement of equipment or materials.

Access - Ability or opportunity to enter an area, connect to a system or to obtain knowledge of certain information.

Access Card - Coded employee card, usually the size of a credit card, recognizable to the access control system and read by a reader to allow access. It can be used for photo identification of the cardholder and for other data collection purposes.

Access Code - Number and or letters which must be entered to permit entry to an area or file, or allow the operation of a secured circuit or function.

Access Control - Means of limiting entry to authorized personnel or vehicles.

Access Control Card - Card containing coded information.

Access Group - Group of individuals that share common access privileges.

Access Level – (1) Level of authorization for use of a program or system. (2) The door or combination of doors and/or barriers an individual is authorized to pass through.

Access Mask - Electronic alarm masking suppresses the annunciation of an alarm condition that would have been reported in the “secure” mode of operation.

Access Matrix – Use of rows to represent subjects and columns to represent objects with privileges listed in each cell.

Access Panel- Removable panel in a wall or ceiling that permits repair or replacement of concealed items such as faucet bodies.

Access Point - Each means of entry into a controlled security area, consisting of a card reader, monitor switches and/or latches. Access points are wired to an access control panel.

Access Privileges - When and where a person may gain access or be allowed egress from a controlled area.

Access Relay - Electrically operated switch that is activated when access is granted to unlock a door.

Access Time - Period of time during which an access point is unlocked. (Also see shunt time).

Accessible - Capable of being removed or exposed without damaging the building structure or finish, or not permanently closed in by the structure or finish of the building.

Accessible Area of Refuge- An area of refuge that complies with the accessible route requirements of ICC/ANSI A117.1, American National Standard for Accessible and Usable Buildings and Facilities.

Accessible Means of Egress- A means of egress that provides an accessible route to an area of refuge, a horizontal exit, or a public way.

Account - Subscriber to an alarm company's services.

Accumulator – (Counter or Integrator) A circuit that initiates a signal as a function of accumulated information (Length of time or number of events).

Accuracy - (1) Freedom from mistake or error. (2) Conformity to the accepted standard or rule.

Ace Lock - Pin tumbler lock where pins are installed in a circle around the axis of a cylinder

ACK - Short for acknowledgement.

Acknowledge- (1) Recognize as genuine or valid. (2) Control signal to complete a handshaking sequence in telecommunications. (3) To confirm that a message or signal has been received, such as by the pressing of a button or the selection of a software command.

Acknowledgement - Type of message sent to indicate that a block of data arrived at its destination without error. A negative acknowledgement (NACK) indicates that the block of data was not correctly received.

Acoustic Baffle - Padding designed to absorb sound and diminish the reflection of sound waves, often used in the side walls near the front of a home theater.

Glossary - 2

Acoustic Glass Break Detector- A glass break detector that senses unique acoustic frequencies or frequency profiles that are present when glass breaks.

Acoustic Sensor - Device that produces an electrical response when it detects vibrations corresponding to sounds. It might respond to any sound of sufficient intensity, or it might be tuned to respond only to sounds containing specific frequency components.

Acoustic Suspension - (a.k.a. Air Suspension) Type of loudspeaker system that utilizes a sealed enclosure.

Acoustical Tile - Special tile for walls and ceilings made of mineral, wood, vegetable fibers, cork, or metal. Its purpose is to control sound volume, while providing cover.

Acoustics - Science of sound.

Acronym - Word (as NATO, radar, or snafu) formed from the initial letter or letters of each of the successive parts or major parts of a compound term.

Act of God - Extraordinary interruption by a natural cause (as a flood or earthquake) of the usual course of events that experience, prescience, or care cannot reasonably foresee or prevent.

Activate - To turn on or engage a function. To cause a device or circuit to go to its non -normal state. For example, a normally open switch is closed when activated, and a normally closed switch is open when activated.

Active Content - Program code embedded in the contents of a web page. When the page is accessed by a web browser, the embedded code is automatically downloaded and executed on the user's workstation. Ex. Java, ActiveX (MS)

Addressable Device - (1) System component with discrete individual identification that may be individually controlled. (2) A fire alarm system component with discrete identification that can have its status individually identified or that is used to individually control other functions.

Addressable System Smoke Detector **-** System smoke detectors, which, in addition to providing alarm and trouble indications to a control unit, are capable of communicating a unique identification (address).

Adjustable - Ability to change or alter a parameter by means of an adjustment.

Admittance - (symbol "Y") Measure of how easily AC will flow through a circuit. Admittance is the reciprocal of impedance and is measured in siemens.

Adverse Condition - (1) Occurrence that interferes with the proper operation of a process or device. (2) Any condition occurring in a communications or transmission channel that interferes with the proper transmission or interpretation, or both, of status change signals at the supervising station. (See also, Trouble Signal.)

Advertisement for Bids - Published notice asking for bids.

AE - Audio Erase. Related circuit or the magnetic head that is placed ahead of the audio/control head. It functions to erase the audio track in preparation for a new sound recording.

Aerator - Round screened screw on the tip of a sink spout. It mixes water and air for a smooth flow.

AF - Abbreviation for "audio frequency".

AFC - Automatic Frequency Control. Circuit in a tuner that maintains a constant frequency regardless of changes in power supply or other conditions.

AGC - Automatic Gain Control. Circuit that maintains a constant luminance level regardless of input. In television, minimizes picture differences with changes in strength of incoming signals.

Agent - One who is authorized to act for or in the place of another.

Agent Response, Private- Response by non-public agency personnel to alarm, restore, and trouble signals.

Agent Response, Public.-Follow-up to an RFR to a dispatchable event by one or more persons trained to investigate alarm events.

Active Detector - Detector that functions by transmitting or sending out energy. Examples - microwave, ultrasonic, photoelectric beam.

Active Multiplex System- A multiplexing system in which signaling devices such as transponders are employed to transmit status signals of each initiating device or initiating device circuit within a prescribed time interval so that the lack of receipt of such a signal can be interpreted as a trouble signal.

Active Sensor - Sensor that creates a field and detects a disturbance in that field

Activity Detection - Feature used in multiplexers that uses video motion detection techniques to improve the camera update times. It can also give a relay closure.

Activity Report - Record of openings, closings and alarms for a protected premises maintained by the central station.

Actual dimension- True size of a piece of lumber, after milling and drying. See Nominal dimension.

ADA - See Americans with Disabilities Act.

Adapter- Fitting that makes it possible to go from male endings to female endings or vice-versa. Transition adapters allow for joining different kinds of pipe together in the same run.

ADC - Analog -to -Digital Converter. Circuit that converts analog (varying amplitude) signal to a digital (pulse type) signal.

Add- To combine numbers.

Addendum- An addition to a contract or work order.

Addition- An increase in the building area, aggregate floor area, height or number of stories of a structure.

Aggregate - Mixture of sand and stone and a major component of concrete.

Aging - Irreversible change of material properties after exposure to an environment for an interval of time.

Agreement - Understanding between two or more parties.

AHJ - See Authority having jurisdiction.

Air Cleaner - Device used for removal of airborne impurities.

Air Duct - Pipes that carry warm air and cold air to rooms and back to furnace or air conditioning system.

Air Flow - Distribution or movement of air.

Air Handling Unit - Type of heating and/or cooling distribution equipment.

Air Sampling–Type Detector- A detector that consists of a piping or tubing distribution network that runs from the detector to the area(s) to be protected. An aspiration fan in the detector housing draws air from the protected area back to the detector through air sampling ports, piping, or tubing. At the detector, the air is analyzed for fire products.

Air Space - Area between insulation facing and interior of exterior wall coverings. Normally a 1" air gap.

Air Turbulence - Air disturbance caused by a breeze or draft from sources such as fans, air conditioners, or furnace vents.

Air-Inflated Structure- A structure whose shape is maintained by air pressure in cells or tubes forming all or part of the enclosure of the usable area and in which the occupants are not within the pressurized area used to support the structure.

Airport Loading Walkway- An aboveground device through which passengers move between a point in an airport terminal building and an aircraft. Included in this category are walkways that are essentially fixed and permanently placed, or walkways that are essentially mobile in nature and that fold, telescope, or pivot from a fixed point at the airport terminal building.

Airport Terminal Building- A structure used primarily for air passenger enplaning or deplaning, including ticket sales, flight information, baggage handling, and other necessary functions in connection with air transport operation. This term includes any extensions and satellite buildings used for passenger handling or aircraft service functions. Aircraft loading walkways and "mobile lounges" are excluded.

Air-Supported Structure- A structure whose shape is maintained by air pressure and in which occupants are within the elevated pressure area.

Aisle- (1) Passage (as in a theater or railroad passenger car) separating sections of seats (2) Passage (as in a store or warehouse) for inside traffic.

Aisle Accessway- The initial portion of an exit access that leads to an aisle.

Alarm - (1) An electronic signal, transmitted to the monitoring facility. Indicates that an emergency requiring follow-up has been detected. When an alarm system is not monitored, the alarm condition activates one or more sounding or visual indicating devices. (2) A warning of fire danger.

Alarm - (1) Warning sound or other automatically initiated indication of some detected emergency situation (typically an intrusion or a fire). (2) Electronic or electromechanical device that generates such a warning sound, such a bell, buzzer, or siren. (3) Alarm - Either a self -contained security system or an audible warning device such as a siren.

Alarm Abort- See Abort.

Alarm Activated VCR - Ready to start recording when an alarm is received.

Alarm Administrator - Person or persons designated by the governing authority to administer, control and review false alarm reduction efforts and administer the provisions an alarm ordinance.

Alarm Agent- A person trained to provide alarm agent response. See Alarm Agent Service.

Alarm Agent Service- Another term widely used to describe alarm investigator, runner, and private guard services.

Alarm Cancellation- See Cancellation.

Alarm Circuit - Wiring arrangement of a security system that detects a signal from a sensor and activates a warning device.

Alarm Condition - Occurrence such as an intrusion, fire, or hold - up that is detected and signaled by an alarm system.

Alarm Control - Device that permits the alarm system to be turned on and off and provides electrical power to operate the system. Every alarm system must have an alarm control.

Alarm Device – See Warning Device.

Alarm Dispatch Request - Notification to a public safety agency that an alarm, either manual or automatic, has been activated at a particular alarm site.

Alarm Indicating Appliance - Appliance that produces an audible or visual alarm signal, or both, in response to a fire emergency.

Alarm Indicator - Audible or visible device used to indicate an alarm condition.

Alarm Initiating Device - Device which, when actuated, initiates an alarm.

Alarm Input - A device that is monitored by the access control panel. An alarm signal will be generated if the device is activated.

Alarm Installation Company - Person in the business of selling, providing, maintaining, servicing, repairing, altering, replacing, moving or installing an alarm system in an alarm site.

Alarm Investigation Company - An organization that provides response by trained alarm investigators. Monitoring facilities and servicing alarm companies may provide their own alarm investigators.

Alarm Investigator – (1) Alarm company employee dispatched to a premise from which an alarm has been received. (2) A person trained to provide runner or alarm investigation services. See Alarm Investigator Service.

Alarm Investigator Service - A response service provided by a representative of the monitoring facility or the serving alarm company. Such representative does not always act as an emergency response person to apprehend criminals, to fight fires, or to pro-vide medical services, but acts as a representative of the user. Also offers assistance and follow-up help to emergency service providers.

Alarm Investigators' Room- A room, or area, either within the monitoring facility building or at a remote location in which alarm investigators are on duty when they are not at, or responding to, alarm users locations.

Alarm Line - Wire or telephone line used to report an alarm condition to a remote location.

Alarm Output - Voltage or other signal given to another device when an alarm circuit is activated.

Alarm Point - Every detection device or sensor is uniquely identified and displayed by its alarm system.

Alarm Premises- See Protected Premises.

Alarm Receiver - Device that receives alarm signals from a digital communicator or other device.

Alarm Registration (or Permits) - Authorization granted by the alarm administrator to an alarm user to operate an alarm system.

Alarm Request For Response (RFR) Cancellation- Cancellation of RFR.

Alarm Reset - See Reset.

Alarm Response Records- Alarm monitoring facility records of alarm response activity, as appropriate, including, but not necessarily limited to, the following to the extent that alarm response services are provided by employees of the monitoring facility:
(1) Date and time of the original alarm signal
(2) Date and time the public response agency was notified
(3) Date and time the alarm agent was dispatched
(4) Date and time the alarm agent arrived at the alarmed premises
(5) Date and time the alarm agent departed the scene after the agent's report was completed
(6) Report of event disposition reported by the public response agency
(7) All details included in the alarm agent's report.

Alarm Response Time - Elapsed time from the moment an alarm is activated until the responders arrive.

Alarm Retransmission- See request For Response (RFR).

Alarm Review Board - Board appointed by a governing authority to oversee an alarm ordinance.

Alarm Screen - Window screen with fine wires woven into the fabric and connected to the protective loop so that cutting or removing the screen will trip the alarm.

Alarm Service - The service required following the receipt of an alarm signal.

Alarm Signal - Signal indicating an emergency requiring immediate attention, an intrusion, fire, or hold -up. See Signal.

Alarm Signal Communication- Signal transmission between alarm system and monitoring equipment, usually to an off-premises location.

Alarm Signal Transmission - See Alarm Signal Communication.

Alarm Site - A single fixed premises or location served by an alarm system or systems. Each unit, if served by a separate alarm system in a multi -unit building or complex, shall be considered a separate alarm site. See Protected Premises.

Alarm System - (1) A combination of compatible initiating devices, control panels and indicating appliances designed and installed to produce an alarm signal in the event of fire, intrusion or other similar action. (2) A system that detects and reacts to an abnormal condition. (3) A device or series of devices which emit or transmit a remote or local audible, visual or electronic signal indicating an alarm condition and intended to summon law enforcement response, including local alarm systems. (4) A network of wires and devices for detecting an abnormal condition and reacting to it. (5) See Security system.

Alarm User - Any individual, corporation, partnership, association, organization or similar entity that has contracted for monitoring, repair, installation or maintenance service from an alarm installation or monitoring company for an alarm system.

Alarm User Awareness Class - A class conducted for the purpose of educating alarm users about the responsible use, operation, and maintenance of alarm systems and the problems created by false alarms.

Alarm Verification - Generic name given to many techniques used to confirm or deny the validity of alarm signals received at the monitoring facility.

Alarm Verification Feature - A feature of automatic fire detection and alarm systems to reduce unwanted alarms wherein smoke detectors report alarm conditions for a minimum period of time, or confirm alarm conditions within a given time period after being reset, in order to be accepted as a valid alarm initiation signal.

Alarming - The ability of CCTV equipment to respond to an input signal, normally a simple contact closure. The response varies depending on equipment type.

Alarms per System per Year - ASY represents an average for the number of times per year that public emergency response agencies are requested to respond to received alarms on a "per alarm system" basis. An ASY of 1.0 means that a numerically known group of alarm systems generated one alarm (RFR) per system during the year. The ASY figure is a far more meaningful number or index of the performance of alarm systems in the community, state, or country, than is a "false alarm percentage" number. The ASY includes only alarm signals that were passed on to the PSAP as RFRs. It does not include alarms received by monitoring facilities that were not relayed to the PSAP.

ALC - Automatic Level Control. Circuit that functions similar to AGC. As applied to audio, ALC action varies the gain to maintain relatively constant output signal over the normal range of sound levels.

Alcove (1) A small recessed section of a room. (2) Nook (3) An arched opening (as in a wall).

Alert Tone - Attention getting signal to alert occupants of the pending transmission of a voice message.

Algorithm - A finite set of step -by -step instructions for a problem -solving or computation procedure, especially one that can be implemented by a computer.

Align- (1) To bring into line or alignment. (2) To be in or come into precise adjustment or correct relative position.

Alignment - The physical aiming of photoelectric beams or motion detectors; or the electronic tuning of radio frequency circuits.

Alive - Energized; having voltage applied.

Alkaline Battery - Battery composed of alkaline cells

Alkaline Cell - A primary cell that delivers more current than a carbon -zinc cell. Also known as an "alkaline manganese cell".

Allen Screw - Screw having a hexagonal hole or socket in its head.

Allen Wrench - Straight or bent hexagonal rod used to turn an Allen screw.

Alley- A narrow street or thoroughfare through the middle of a block giving access to the rear of lots or buildings.

Alligator Clip - Spring clip on the end of a test lead used to make a temporary connection.

Alligator Wrench - Wrench with toothed V -shaped jaws fixed in position.

Allowance(s) - Sum of money set aside in the construction contract for items which have not been selected and specified in the construction contract.

Alpha Display - Keypad that displays the condition of the system in text rather than with LED's.

Alphanumeric- (1) Consisting of both letters and numbers and often other symbols (as punctuation marks and mathematical symbols). (2) Capable of using or displaying alphanumeric characters.

Alteration - To make different without changing into something else.

Alternating Current - Electric current that continuously reverses direction.

Alternative Calculation Procedure - A calculation procedure that differs from the procedure originally employed by the design team but that provides predictions for the same variables of interest.

Alternator - Name for an AC generator.

AM - Amplitude Modulation. Type of transmission used in the standard radio broadcast band from 530 to1705 kHz.

Ambience - Acoustical qualities of a room and its contents.

Ambient - Surrounding on all sides such as air or noise.

Ambient Temperature - Temperature of air or fluid that surrounds an object on all sides.

Ambulance Dispatch. See Emergency Medical Service Dispatch.

Ambulance. See Emergency Medical Services.

Ambulatory Health Care Occupancy - A building or portion thereof used to provide services or treatment simultaneously to four or more patients that provides, on an outpatient basis, one or more of the following: (1) Treatment for patients that renders the patients incapable of taking action for self-preservation under emergency conditions without the assistance of others; (2) Anesthesia that renders the patients incapable of taking action for self preservation under emergency conditions without the assistance of others; (3) Emergency or urgent care for patients who, due to the nature of their injury or illness, are incapable of taking action for self-preservation under emergency conditions without the assistance of others.

Ambush - Trap in which concealed persons lie in wait to attack by surprise

Ambush Device. See Anti-Ambush Device and Early Morning Switch.

Americans with Disabilities Act (ADA) - Federal act requiring individuals with disabilities to be reasonably accommodated.

Ammeter - Meter used to measure current, calibrated in amperes.

Ampacity - Current carrying capacity of conductors or equipment, expressed in amperages.

Amperage or AMPS - Unit of electrical current or volume

Ampere - AMP. Unit of measurement of electrical current. The rate of electrical flow.

Ampere Hour - Capacity of a battery.

Ampere Rating - Current carrying capacity of a device.

Amphenol Type - 50 pin connectors (25 pairs) typically used in the past for telephone set connections to central PBXs or phone company based switching.

Amplifier - (1) Active electronic device to increase the amplitude of a signal. (2) Circuit that increases the voltage, current, or power of a signal.

Amplitude - Magnitude or size of a signal voltage or current. Magnitude or strength of a signal or wave.

Analog - Waved shaped signal that represents information in a continuously variable and directly measurable physical quantity, such as voltage. The standard telephone signal is an analog signal.

Analog Initiating Device (Sensor) - An initiating device that transmits a signal indicating varying degrees of condition as contrasted with a conventional initiating device, which can only indicate an on–off condition. See Initiating Device.

Anchor - Device that holds something secure.

Anchor Bolts – Bolts to secure a wooden sill plate to concrete, or masonry floor or wall.

Anchor Building - An exterior perimeter building of low or ordinary combustible contents having direct access to a mall building, but having all required means of egress independent of the mall.

And Gate - Circuit or device, usually digital that deals with just two input and output levels -HIGH and LOW.

Angle Bracket - Form of support having two faces generally at right angles to each other.

Angle Of View - Angular range that can be focused within the image size. Small focal lengths give a wide angle of view, and large focal lengths give a narrow field of view.

Annunciator – (1) Visible and/or audible indication, such as a siren, light, or bell, of a type of alarm or other special condition and/or its location. (2) A unit containing one or more indicator lamps, alphanumeric displays, or other equivalent means in which each indication provides status information about a circuit, condition, or location.

Anode - Positive electrode or terminal of a device. The "P" material of a diode.

ANSI - (American National Standards Institute) A professional measurements and standards group.

Antenna - (1) Device used to send or receive electromagnetic waves through the air. (2) Thin metal dish, rod, wire, or array used to transmit and/or receive electromagnetic signal waves, such as TV or radio broadcasts.

Antenna Gain - Measure of antenna efficiency compared to a reference antenna, typically a 1/4 wave type.

Anti-Ambush Device - A device or procedure established to let the alarm user send a silent message requesting assistance to the monitoring facility without alerting anyone on site at the protected premises. See also Hold-Up Alarm, Panic Alarm, and Early Morning Switch.

Anti-jam - Feature that helps prevent incoming telephone calls from interfering with outgoing calls.

Anti-Passback - Feature that will not allow any card to enter again unless it has been used to exit.

Apartment Building - A building or portion thereof containing three or more dwelling units with independent cooking and bathroom facilities.

Aperture - Light gathering area of a lens, controlled by the iris. By increasing the f stop number less light is permitted to pass to the pickup device.

Apparent Power - Power attained in an AC circuit as a product of effective voltage and current which reach their peak at different times.

Applet - Java programs; an application program that uses the client's web browser to provide a user interface.

Application Program - Software program that processes data on a computer in a useable form.

Apprentice- One who is learning a trade, art, or calling by practical experience under skilled workers.

Approvals - Factory Mutual (FM), Industrial Risk Insurers and Underwriters Laboratories (UL) are groups organized and supported by insurance companies for establishing and enforcing specifications on burglary and fire protection. The standards these agencies set are a guide for insurance carriers writing risk insurance.

Approved - (1) Acceptable to the authority having jurisdiction. (2) A product that has been tested to standards and found acceptable for application, subject to the limitations outlined in the testing lab's listing.

Approved Existing - That which is already in existence on the date this edition of the Code goes into effect and is acceptable to the authority having jurisdiction.

Apron - (1) Trim board that is installed beneath a window sill. (2) Apron- Paved area, such as the juncture of a driveway with the street or with a garage entrance.

Arc - Discharge of electricity through a gas such as lightning discharging through the atmosphere.

Arc Fault Current Interrupters AFIs or AFCIs - AFIs are designed to prevent electrical fires and should not be confused with GFIs. AFIs are recommended for bedroom areas.

Architect – (1) One who has completed a course of study in building and design, and is licensed by the state as an architect. (2) One who draws up plans.

Archive- To file or collect (as records or documents) in or as if in an archive.

Area - The square measurement of any plane or surface.

Area Code - In the North American telephone system, an area code is a three-digit code delineating a "toll" area in the United States, Canada, and Mexico.

Area of Refuge - An area that is either (1) a story in a building where the building is protected throughout by an approved, supervised automatic sprinkler system and has not less than two accessible rooms or spaces separated from each other by smoke-resisting partitions; or (2) a space located in a path of travel leading to a public way that is protected from the effects of fire, either by means of separation from other spaces in the same building or by virtue of location, thereby permitting a delay in egress travel from any level.

Area Protection - (1) Security of an inner space or volume of a secured area by means of a volumetric sensor. (2) The protection of space rather than building perimeters or objects. Photoelectric, infrared, ultrasonic and microwave detectors are devices for area protection. (3) See Volumetric protection.

Area Sensor - Sensor that applies to an area such as a window that is enclosed by substantial walls.

Area Wells - Corrugated metal or concrete barrier walls installed around a basement window to hold back the earth

Areaway - Open space below the ground level immediately outside a building.

Arm - To activate an alarm system so it will monitor and respond to any disturbances of its sensor devices.

Arm, Away - The condition of a burglar alarm system in an armed state when no one remains on site within the protected premises. In this condition, all interior and perimeter sensors are active.

Arm, Home - Arming a residential burglar alarm system while remaining at home. In this condition, interior protection is removed from being active to permit those who are inside to have free movement within the protected premises without causing an alarm.

Arm, Occupied - Same as Arm, Home status, but for non-residential premises. Permits persons to remain within the protected premises while perimeter security remains active.

Arm, Set, Turn On - A procedure followed by a system user or the monitoring facility to turn on an alarm system so the system is able to detect the conditions it is designed to protect against. A system may be partially armed even before the arming sequence is followed. For example, permanently wired and connected sensors, and glass break detectors, may report the conditions they are designed to detect even while the rest of the system is disarmed.

Armature - Rotating or moving component of a magnetic circuit.

Armed - Condition of an alarm system when it is turned on, ready to trip when a detector is activated.

Armed Light - Light or LED that indicates the alarm system is armed.

Armed Robbery Alarm - See Hold-Up Alarm.

Arming - Process of "Turning On" the alarm system.

Arming Station – (1) Device that allows control of an alarm system. (2) The device used to arm, turn on or activate, and to disarm, turn off or deactivate a burglar alarm system. An arming station may also display the current status of the burglar alarm system, or report and display problems. Arming or disarming the burglar alarm system should not have any effect on the status of fire, hold-up or other protection.

Arming Station Button - A button or key on an arming station that can be used to trigger a panic alarm.

Armor - Mechanical protection for cables. Usually a helical winding of metal tape formed so that each convolution interlocks with the last.

Arrester - A circuit device designed to limit voltage surges caused by lightning.

Arson- The intentional damaging or destruction or attempted damaging or destruction of property by means of fire or explosion without the consent of the owner, or of one's own property or that of another by fire or explosion with or without the intent to defraud.

As Built Drawings - Drawings reflecting all final changes. Record drawings.

Asbestos - Common form of magnesium silicate which was used in various construction products due to its stability and resistance to fire. Asbestos exposure, by inhaling loose asbestos fibers, is associated with various forms of lung disease.

Aspect Ratio - Width and height of a screen. The shape of the image projected onto the screen, as denoted by units of width in relation to units of height. A 16 -9 aspect ratio denotes a widescreen format, while a 4 -3 aspect ratio denotes the TV - standard pan -and -scan format.

Aspherical Lens – Lens designed with a non spherical shape so that it refracts the light passing through it to either lower the lens aperture so that it passes more light or decrease barrel distortion on wide angle lenses.

Assembling - Bringing parts together to form a new whole.

Assembly Occupancy - An occupancy (1) used for a gathering of 50 or more persons for deliberation, worship, entertainment, eating, drinking, amusement, awaiting transportation, or similar uses; or (2) used as a special amusement building, regardless of occupant load.

Associated System Down - The equipment or system to which the alarm installation is attached is shut down, is inoperative, or is disconnected. Example: A sprinkler system that has been shut off by a sprinkler contractor for repairs or sprinkler system modifications, or an industrial operation that has been shut down. The alarm system itself is not shut down and continues to perform its functions during the shut-down.

Associated System Up - The reverse of the Associated System Down indication. The equipment or system to which the alarm installation is attached has returned to normal operation, and the alarm system is once again serving its intended function.

Astragal - Molding, attached to one of a pair of swinging double doors, against which the other door strikes.

ASY - See Alarms per System per Year.

Atmospheres - Background sounds, such as wind or traffic noises, which add to the reality of a scene.

Atom - Smallest particle that an element can be broken down into and still maintain its unique identity.

Atomic Number - Number of positive charges or protons in the nucleus of an atom.

Atrium - A large-volume space created by a floor opening or series of floor openings connecting two or more stories that is covered at the top of the series of openings and is used for purposes other than an enclosed stairway; an elevator hoistway; an escalator opening; or as a utility shaft used for plumbing, electrical, air-conditioning, or communications facilities.

Attack - An attempt to burglarize or vandalize; or an attempt to defeat an alarm system.

Attenuate - To reduce the amplitude of an action or signal. The opposite of amplification.

Attenuation – Decrease or loss in a signal.

Attenuator - Passive device to reduce the amplitude of a signal.

Attic- (1) Low story or wall above the main order of a facade in the classical styles. (2) Room or a space immediately below the roof of a building.

Attic Access - Opening that is placed in the dry walled ceiling of a home providing access to the attic.

Attic Ventilators - Screened openings provided to ventilate an attic space.

Audibility – Ability to be heard by the human ear.

Audible – (1) Capable of being heard. (2) See audible alarm

Audible Alarm – See audible alarm device.

Audible Alarm Device - (1) A noise making device such as a siren, bell, or horn used to indicate an alarm condition or a change in the status or operating mode of an alarm system. (2) Also known as a local alarm

Audible Notification Appliance - A notification appliance that alerts by the sense of hearing. See Notification Appliance.

Audible Signal - See audible alarm device.

Audio - Relating to frequencies that can be heard by the human ear. Approximately 20 Hz. to 20 kHz.

Audio Alarm Verification - The transfer of sounds from the protected premises to the monitoring facility as a result of activation of one or more non-audio sensors, to confirm or deny the validity of the alarm signal. The audio link may be one-way or two-way.

Audio Detection System - System which detects the sound caused by attempted forceful entry into a protected structure.

Audio Detector - A sensor that detects specific sound patterns normally present during attempts to penetrate windows, doors, walls, ceilings and floors. This sensor differs from a microphone that listens to all sounds and can be used to remotely "listen in" to events within its area of sensitivity. See audio discriminator.

Audio Discriminator - A device that detects noise. Some models trigger an alarm only on certain sound frequencies, on sounds above a certain level, on sounds lasting a certain length of time, or a combination of these.

Audio Listen-in - Device used to listen to sounds in a site from a remote location.

Audio Mixer - Unit that combines or blends several sound inputs.

Audit Trail - Listing created and used to monitor the progress of a person through monitored areas.

Auditing - Auditing is the information gathering and analysis of assets to ensure such things as policy compliance and security from vulnerabilities.

Auger - A wood boring tool of large size with handle attached at right angles to the tool line.

Authentication - Authentication is the process of confirming the correctness of the claimed identity.

Authenticity - Authenticity is the validity and conformance of the original information.

Authority Having Jurisdiction - (AHJ). An organization, government appointee or other individual having authority to enforce and/or interpret laws, rules, specifications, etc, "approve equipment" and/or procedures. Examples: building inspector, electrical inspector, Fire Marshall, insurance company representative, owner's representative.

Authority Levels - Some alarm systems electronically restrict the use of various features designated by the customer. This usually is accomplished by assigning unique operating codes to every individual. The alarm control recognizes the code, allows the user to perform certain alarm actions and communicates the identity of that individual.

Authorization - Approval, permission, or empowerment for someone or something to do something.

Authorized Access Switch - Switch used to make a security system, or some portion or zone of a security system, inoperative in order to permit authorized access.

Authorized User Agent - A person who is authorized by the user to cancel alarm signals and to ask the monitoring facility to try to cancel follow-up activities by a PSAP if it has already been notified of the alarm. Also a representative of a user who is to be notified of alarm or trouble conditions instead of or in addition to the PSAP.

Auto Dial Alarm - Type of alarm system that automatically dials a preprogrammed emergency number when triggered and plays a prerecorded tape to summon help.

Auto Restore - Feature to automatically reset (after a preset period of time) alarm system circuitry and sensors to prepare for an additional alarm.

Auto Terminating - Feature where the equipment (ex. Monitor) automatically selects the correct termination depending on whether the video output BNC is connected.

Auto White Balance - Feature on color camera that constantly monitors the light and adjusts its color to maintain white areas.

Automated Lighting - Indoor or outdoor lighting that is turned on electronically in response to; Preset time intervals, Monitored ambient light levels or Tripped sensor(s) indicating a possible intrusion into a protected area.

Automatic - Operating by own mechanism. Self acting.

Automatic - That which provides a function without the necessity of human intervention.

Automatic Cameras - See Continuous Still Cameras.

Automatic Extinguishing System Supervisory Device - A device that responds to abnormal conditions that could affect Automatic Extinguishing System Initiating Device.

Automatic Fire Alarm - Fire alarm systems that electronically detect smoke or abrupt temperature changes associated with a developing fire. Early detection and reporting to a central station allow fire authorities to respond quickly and contain damage.

Automatic Fire Detector - A device designed to detect the presence of a fire signature and to initiate action. For the purpose of this Code, automatic fire detectors are classified as follows: Automatic Fire Extinguishing or Suppression System Operation Detector, Fire–Gas Detector, Heat Detector, Other Fire Detectors, Radiant Energy–Sensing Fire Detector, Smoke Detector.

Automatic Fire Extinguishing or Suppression System Operation Detector - A device that automatically detects the operation of a fire extinguishing or suppression system by means appropriate to the system employed.

Automatic Frequency Control (AFC) - Electronic circuit used whereby the frequency of an oscillator is automatically maintained within specified limits.

Automatic Gain Control (AGC) - Electronic circuit used to automatically adjust the gain of a signal as a function of its input or other specified parameter.

Automatic Iris Lens - Lens in which the aperture automatically opens or closes to maintain proper light level son the faceplate of the camera pickup device.

Automatic Level Control (A.L.C.) - Allows the auto iris circuitry to either take bright spots more into consideration (peak),bringing out detail in bright areas, or less into consideration (average) bringing out detail in shadows.

Automatic Reset - Sub circuit that determines if the area is secure (no sensors tripped) after a shut -down timer silences the alarm. If all is secure, the system is reactivated to monitor for any additional intrusions.

Automatic Shutoff - Feature of some alarm systems to automatically silence the annunciator after a certain length of time.

Automatic Voice Dialer - Device programmed to send a prerecorded voice message, when activated, over a telephone line, radio or other communication system.

Autotransformer - Single winding transformer where the output is taken from taps on the winding.

Auxiliary - Device or equipment that aids the main device or equipment.

Auxiliary Box - A fire alarm box that can be operated from one or more remote actuating devices.

Auxiliary Fire Alarm System - A system connected to a municipal fire alarm system for transmitting an alarm of fire to the public fire service communications center. Fire alarms from an auxiliary fire alarm system are received at the public fire service communications center on the same equipment and by the same methods as alarms transmitted manually from municipal fire alarm boxes located on streets.

AVC - Abbreviation for "automatic volume control"

Average Ambient Sound Level - The root mean square, A-weighted, sound pressure level measured over the period of time that any person is present, or a 24-hour period, whichever time period is the lesser.

Average Value - Value of voltage or current where the area of the wave above the value equals the area of the wave below the value.

AWG - (American Wire Gauge) Scale for conducting wire, such as phone cord and speaker wire. The lower the number, the thicker the wire. Standard thickness for audio installations is 16 -gauge, though 12 -18 is not uncommon. Lower gauge numbers are more appropriate for longer cable runs, such as those to rear -surround speakers.

Awl - Small pointed tool for making holes for nails or screws. When used to mark metal objects it is sometimes called a “scratch awl”.

Azimuth - Angular distance from true north, along the horizon, to the target of interest (e.g., the DBS satellite).

BA - Burglar alarm.

Back Charge - Billings for work performed or costs incurred by one party that, in accordance with the agreement, should have been performed or incurred by the party that is billed.

Back Focal Distance - Distance from the rear most portion of the lens to the image plane.

Back Focus - Mechanical adjustment in a camera that moves the imaging device relative to the lens to compensate for different back focal lengths of lenses. This is important when a zoom lens is fitted.

Back Light Compensation (B.L.C.) - Feature on newer CCD cameras which electronically compensates for high background lighting to give detail which would normally be silhouetted.

Backdoor - Tool installed to give easier access to a system around any security mechanisms that are in place.

Backfill - The gravel or earth replaced in the space around a building wall after foundations are in place.

Backing - Frame lumber installed between the wall studs to give additional support for drywall or an interior trim related item, such as handrail brackets, cabinets, and towel bars. In this way, items are screwed and mounted into solid wood rather than weak drywall that may allow the item to break loose from the wall.

Backout - Work the framing contractor does after the mechanical subcontractors (Heating -Plumbing -Electrical) finish their phase of work at the Rough (before insulation) stage to get the home ready for a municipal frame inspection.

Backup - (1) Item kept available to replace another item. (2) Process of copying stored data onto removable media, such as floppy disks or magnetic tape, as a standby in case the original is damaged or lost.

Backup Battery Power - Secondary source of operating power.

Backup Monitoring Facility - A support monitoring facility in addition to the primary monitoring facility, which can take over monitoring operations in the event the primary monitoring facility is disabled. A backup monitoring facility may double as a satellite station, and may be staffed and regularly used as a monitoring facility during certain periods.

Backward Compatible - Device that will work with a less -advanced device—for instance, a receiver that will accept both your old VCR and a new DVD player.

Badge - (1) To use a card key in a reader to gain access to protected areas.(2) Card key itself

Baffle - Acoustic seal which prevents the air from the front of the speaker from mixing with the air from the back of the speaker. This prevents a loss of bass response.

Balance – (1) Uniformity of frequencies. (2) In home audio, a control that changes the relative volume of the left and right channels.

Balanced Bridge - Condition that occurs when a bridge circuit is adjusted to produce a zero output.

Balanced Signal - Video signal is converted to a balanced signal to enable it to be transmitted along a 'twisted pair' cable. Used in situations where the cabling distance is too great

Ballast - Transformer that steps up the voltage in a florescent lamp.

Balloon Framed Wall - Framed walls (generally over 10' tall) that run the entire vertical length from the floor sill plate to the roof.

Balusters - Vertical members in a railing used between a top rail and bottom rail or the stair treads. Sometimes referred to as 'pickets' or 'spindles'.

Balustrade - Rail, posts and vertical balusters along the edge of a stairway, balcony or elevated walkway.

Band - Range of frequencies between two definite limits.

Bandwidth - Capacity of a communication channel to pass data through the channel in a given amount of time. Usually expressed in bits per second.

Banner - Information that is displayed to a remote user trying to connect to a service. This may include version information, system information, or a warning about authorized use.

Bar Codes - Pattern of bars and spaces of varying widths to represent information.

Barge - Horizontal beam rafter that supports shorter rafters.

Barge Board - Decorative board covering the projecting rafter (fly rafter) of the gable end. At the cornice, this member is a fascia board.

Barium Ferrite Cards- Cards for use in card reader systems with magnetic spots embedded in plastic to produce individual codes.

Barrel Key - Key with a bit projecting from a round, hollow key shank which fits on a post in the lock.

Barrier Strip - Terminal strip with insulated barriers between terminals.

Base - Region between the emitter and collector of a bipolar junction transistor (BJT).

Base or Baseboard - Trim board placed against the wall around the room next to the floor.

Base Shoe - Molding used next to the floor on interior base board. Sometimes called a carpet strip.

Baseband Video - Raw video signal from a single video source (e.g. camera or VCR). Typically appears at a yellow phone jack labeled "Video".

Baseboard Heating - Electric resistance coils or tubes carrying steam or hot water mounted in behind shallow panels along baseboards to produce heat.

Basement- Part of a building that is wholly or partly below ground level.

Basement Window Inserts - Window frame and glass unit that is installed in the window buck.

Basket - Conical part of a speaker that holds together the magnetic structure, voice coil, cone and spider.

Bass- Low -frequency sounds of around 160 Hz and below.

Bass Reflex - Type of loudspeaker system that uses a port in its enclosure. The port admits external air to ensure that the back wave is in phase with the front wave.

Bat - A half-brick.

Batt - Insulation in the form of a blanket, rather than loose filling.

Batten- Small thin strips covering joints between wider boards on exterior building surfaces.

Battery - (1) DC voltage source containing two or more cells that convert chemical energy to electrical energy. (2) Power source generally used for standby power in alarm systems.

Baud - Unit of signaling speed equal to the number of signal events per second. Not necessarily the same as bits per second.

Bay Window - Window space projecting outward from the walls of a building, either square or polygonal in plan.

BB Alarm System - See Certificated UL Line Security.

Beam – (1) Horizontal framing member designed to carry a load from a set of joists or a roof and spanning an open space. Usually 6" x 6" or 4" x 10" or larger. Examples are girders, steel beams, rafters, joists, and purlins. (2) See Photoelectric Sensor.

Beam Construction - Ceilings that have solid structural or solid nonstructural members projecting down from the ceiling surface more than 100 mm (4 in.) and spaced more than 0.9 m (3 ft), center to center.

Beam Emitter - Device in an active alarm system that generates the test signal (usually ultrasonic or infrared beams). A dedicated sensor recovers this transmitted signal at another location and checks it for disturbances, interruptions, or distortions indicating a possible intrusion.

Beam Interruption Alarm - See Photoelectric Sensor.

Bearing Header - (a) Beam placed perpendicular to joists and to which joists are nailed in framing for a chimney, stairway, or other opening. (b) Wood lintel. (c) Horizontal structural member over an opening (for example over a door or window).

Bearing Partition - Partition that supports any vertical load in addition to its own weight.

Bearing Point - Point where a bearing or structural weight is concentrated and transferred to the foundation

Bearing Wall - Wall that supports any vertical load in addition to its own weight.

Bedrock - Subsurface layer of earth that is suitable to support a structure.

Bell - Electromechanical device noise-making device. A clapper is moved electromechanically to strike the bell and produce a loud ringing sound.

Bell Wire- Thin wire used for doorbells. Typically 18-guage.

Bi Wiring - Connecting an amplifier to speakers using separate cables for woofers and tweeters.

Bias - DC voltage applied to a device to control its operation

Bias Voltage - Fixed DC voltage which establishes the operating characteristic of a circuit element such as a transistor.

Bib or Bibcock - Water faucet, to which a hose may be attached, also called a hose bib or sill cock.

Bid – (1) Offer to buy or do something. (2) Written offer to perform work. (3) Formal offer by a contractor, in accordance with specifications for a project, to do all or a phase of the work at a certain price in accordance with the terms and conditions stated in the offer.

Bid Bond - Bond issued by a surety on behalf of a contractor that provides assurance to the recipient of the contractor's bid that, if the bid is accepted, the contractor will execute a contract and provide a performance bond.

Bidding Documents - Documents that relate to the bid: invitation or advertisement to bid, bid instructions, bid form, contract documents, and any addenda prior to bid acceptance.

Bidding Requirements - Procedures and conditions for the submission of bids. The requirements are included in documents, such as the notice to bidders, advertisements for bids, instructions to bidders, invitations to bid, and sample bid forms.

Bifold Door - Doors that are hinged in the middle for opening in a smaller area than standard swing doors. Often used for closet doors.

Bill Trap - A sensor that detects the removal of a specific bill in a cash drawer.

Bimetallic Strip - Temperature regulating or indicating device that works on the principle that two dissimilar metals with unequal expansion rates, welded together, will bend as temperature changes.

Binary - Numbers based on the power of 2, represented by zeros and ones. Commonly used for digital circuits.

Biometric Access Control - Method of access verification in which the person seeking entry is identified by a biometric characteristic.

Biometric Identification - A method using a person's physical or chemical attributes for identification to the alarm system or the monitoring facility.

Biometrics - Biometrics use physical characteristics of the users (such as hand geometry, retina pattern, or voice pattern) to determine access.

Bipass Doors - Doors that slide by each other and commonly used as closet doors.

Bipolar Transistor - Three -part semiconductor "sandwich" with sections of oppositely polarization. This device is often used as an electronic switch, via saturation biasing.

Bipole - Speaker that radiates from front and back in phase.

Birth Center - A facility in which low-risk births are expected following normal, uncomplicated pregnancies, and in which professional midwifery care is provided to women during pregnancy, birth, and postpartum.

Bit - (1) Tool for drilling holes (2) Smallest unit of information storage; a contraction of the term "binary digit;" one of two symbols—"0" (zero) and "1" (one) - that are used to represent binary numbers.

Bitstream Converter - One-bit or low-bit A/D and D/A over sampling conversion method in which the audio signal is represented through PDM (pulse density modulation) or time averaging at a frequency of 11.3Mhz.

Black Box - Concept of convenience -a circuit or system with unknown or unspecified details that accepts certain input signals and produces specific, predictable output signals.

Black Level - The level of the video signal that corresponds to the maximum limits of the black areas of the picture.

Blankets - Fiberglass or rock-wool insulation that comes in long rolls 15 or 23 inches wide.

Blanking - Process of cutting off the electron beam in a camera pickup device or picture tube during the retrace period. It is intended primarily to make the retrace on a pickup device or picture tube invisible.

Bleachers - A grandstand in which the seats are not provided with backrests.

Bleeding -Seeping of resin or gum from lumber. This term is also used in referring to the process of drawing air from water pipes.

Block Diagram - Design or diagnostic tool in which a complex circuit or system is drawn as a series of functional blocks or units without bothering with specific details of the actual circuitry.

Block Out - To install a box or barrier within a foundation wall to prevent the concrete from entering an area.

Blocked (rafters) - Short "2 by 4's" used to keep rafters from twisting, and installed at the ends and at mid -span.

Blocking - Small wood pieces to brace framing members or to provide a nailing base for gypsum board or paneling.

Blooming - Halation and defocusing effect that occurs around the bright areas of the picture (highlight) whenever there is an increase in the brightness intensity.

Blow insulation - Fiber insulation in loose form and used to insulate attics and existing walls where framing members are not exposed.

Blower - Electric fan used to blow air for cooling purposes.

Blue Print(s) - Architectural drawings. The drawing of a structure.

Blue Stake - When a utility company (telephone, gas, electric, cable TV, sewer and water, etc) comes to the job site and locates and spray paints the ground and/or installs little flags to show where their service is located underground.

BNC Connector - Connector commonly used with coaxial cable.

Board Foot - Unit of measure for lumber equal to 1 inch thick by 12 inches wide by 12 inches long. Examples - 1" x 12" x 16' = 16 board feet, 2" x 12" x 16' = 32 board feet

Board- Piece of lumber that is less than 2 inches thick and more than 3 inches wide.

Boiler - Type of space heating equipment consisting of a vessel or tank in which heat produced from combustion of such fuels as natural gas, fuel oil, or coal is used to generate hot water or steam.

Bolt - (1) Part of a lock which is projected from the lock into a retaining member, such as a strike plate, to prevent a door or window from moving or opening. (2) Fastening device provided with a head on one end and threaded at the other end for a nut.

Bolt Position Switch - Miniature switch used on or in a locking device to monitor whether the locking bolt is in the locked (projected) or unlocked (retracted) position.

Bond or Bonding – (1) Amount of money used to pay for the unpaid bills or disputed work of the contractor. They are an insurance policy which guarantees proper completion of a project. (2) Act of connecting together the metallic sheaths of all cables.

Boom - A truck used to hoist heavy material up and into place. To put trusses on a home or to set a heavy beam into place.

Boot - Method of starting a device by following instructions contained in a device.

Boot Record Infector - Boot record infector is a piece of malware that inserts malicious code into the boot sector of a disk.

Bottom Chord - Lower or bottom horizontal member of a truss.

Bottom Plate - The "2 by 4's or 6's" that lay on the sub floor upon which the vertical studs are installed. Also called the 'sole plate'.

Brace - Piece of wood or other material used to form a triangle and stiffen some part of a structure.

Braced Framing - Construction technique using posts and cross-bracing for greater rigidity.

Branch Circuit – (1) Portion of a wiring system extending beyond the final overcurrent device protecting a circuit. (2) The portion of total current flowing in one path of a parallel circuit.

Breach of Contract - Violation of the terms or failure to meet the requirements of a contract.

Break - To interrupt or open an electrical circuit.

Breakdown Voltage - Voltage at which the breakdown of a dielectric or insulator occurs.

Breaker Panel - Electrical box that distributes electric power entering the site to each branch circuit (each plug and switch) and composed of circuit breakers.

Brick Ledge - Part of the foundation wall where brick (veneer) will rest.

Brick Lintel - Metal angle iron that brick rests on, especially above a window, door, or other opening.

Brick Mold -Trim used around an exterior door jamb that siding butts to.

Brick Tie - Small, corrugated metal strip @ 1" X 6" - 8" long nailed to wall sheeting or studs. They are inserted into the grout mortar joint of the veneer brick, and hold the veneer wall to the sheeted wall behind it.

Brick Veneer - Brick used as the outer surface of a framed wall.

Bridge - Component that connects a local area network (LAN) to another local area network that uses the same protocol (for example, Ethernet or token ring).

Bridge Rectifier - Circuit using four diodes to provide full wave rectification. Converts an AC voltage to a pulsating DC voltage.

Bridging - (1) Small wood or metal members placed diagonally between the floor joists or rafters at mid -span for the purpose of bracing the joists/rafters & spreading the load. (2) Paralleling (usually through a switch) a high impedance video line paralleled to a source of video.

Broadband - Transmission medium where multiple digital channels of voice, data, and/or video are frequency multiplexed onto a single cable. Cable television systems are examples of broadband networks.

Broadband Video - Modulated video signal.

Broadcast - To simultaneously send the same message to multiple recipients. One host to all hosts on network.

Brownout - Low line voltage, which can cause improper operation of and possible damage to equipment.

Browser - Client computer program that can retrieve and display information from servers on the World Wide Web.

Buck - Rough frame opening members

Budget- Quantity (as of labor or material) involved in, available for, or assignable to a particular situation.

Buffer - (1) Simple sub circuit used to match up input and output signals correctly, and/or to prevent an output from being excessively loaded by an input or vice versa. (2) An amplifier used to isolate a load from a source.

Buffer Capacity - Amount of information the system can store, this may include the users, time of day and specific door.

Bug - (1) A defect. (2) Detection device (3) To install a detection device.

Builder's Risk Insurance - Insurance coverage on a construction project during construction, including extended coverage that may be added for the contract for the customer's protections.

Building- Any structure used or intended for supporting or sheltering any use or occupancy.

Building Codes – State and or local ordinances governing the manner in which a building may be constructed or modified.

Building Insurance - Insurance covering the structure of the building.

Building Paper - General term for papers, felts, and similar sheet materials used in buildings without reference to their properties or uses. Generally comes in long rolls.

Building Permit - Authorization to build or modify a structure.

Built Up Roof - Roofing composed of three to five layers of asphalt felt laminated with coal tar, pitch, or asphalt. The top is finished with crushed slag or gravel. Generally used on flat or low -pitched roofs.

Bulk Merchandising Retail Building - A building in which the sales area includes the storage of combustible materials on pallets, in solid piles, or in racks in excess of 3660 mm (144 in.) in storage height.

Bull Nose - Rounded drywall corners.

Bundle - Package of shingles. Normally, there are 3 bundles per square and 27 shingles per bundle.

Burglar Alarm – (1) An alarm system that, while armed, is designed to detect and report (1) the presence of one or more unauthorized persons on the protected premises, or (2) an illegal attempt made to enter or to move within the protected premises at one or more points equipped with a sensor. (2) Alarm system for detecting a burglary. See Intrusion alarm.

Burglary - (1) Forcible entry into a building to commit theft while the building is unoccupied or while the building's occupant is busy elsewhere. (2) Entering a building with the intent to commit a crime

Burn In – (1) To connect and power up equipment to ensure that it operates correctly. (2) In television or older computer monitors, an image or pattern appearing so regularly on the screen that it ages the phosphors and remains as a ghost image. (3) In audio, to warm up and break in equipment for several hours after initial purchase to improve sound reproduction.

Burnishing Tool - Very fine tool used to clean relay contacts.

Business Burglar Alarm, Audible - A system in a business, institution, or government facility with one or more exterior or interior sounding devices.

Business Burglar Alarm, Silent - A system in a business, institution, or government facility that has no sounding devices. A distinctive signaling device intended to provide an early warning signal to the system operator is not considered a sounding device for the purpose of this definition, and the presence of one or more of these signaling devices does not make the system an audible alarm system.

Business Continuity Plan - Plan for emergency response, backup operations, and post -disaster recovery steps that will ensure the availability of critical resources and facilitate the continuity of operations in an emergency situation.

Business Occupancy - An occupancy used for account and record keeping or the transaction of business other than mercantile.

Butt Edge - Lower edge of the shingle tabs.

Butt Hinge – Hinge where one leaf attaches to the door's edge, the other to its jamb.

Butt Joint – (1) Junction where the ends of two timbers meet, and also where sheets of drywall meet on the 4 foot edge. (2) To place materials end -to -end or end -to -edge without overlapping.

Buzzer - Electromagnetic device often used as a low to moderate volume alarm output device. Usually the buzzing sound is generated by forcing a piece of piezoelectric material into vibration.

BW - Abbreviation for bandwidth.

BX - Nickname for armored cable (wires with a spiral wound flexible steel outer jacket. Although used generically BX is a registered trademark of the General Electric Company

By Fold Door - Doors that are hinged in the middle for opening in a smaller area than standard swing doors. Often used for closet doors.

By Pass Doors - Doors that slide by each other and commonly used as closet doors.

Bypass - (1) The act of temporally disconnecting a part of the system. (2) A means of removing one or more devices or zones from an alarm system to enable the remainder of the system to be used and to provide protection. Many alarm control units send a special signal to the monitoring facility when any portion of the protection is by-passed to advise that less-than-complete protection is in effect. When the by-passed devices or zones are back to normal and included in the system again, a follow-up advisory signal is transmitted to the monitoring facility.

Byte - Group of eight binary digits or bits. A fundamental unit of computer storage; the smallest addressable unit in a computer's architecture. Usually holds one character of information and usually means eight bits.

C Mount - Standard screw mounting for 2/3" and 1" camera lenses. The distance from the flange surface to the focal point is 17.526mm. A c -mount lens can be used on a camera with a CS - mount by adding an adapter ring to reduce this distance to 12.5mm.

Cable - (1) Group of two or more insulated wires. (2) Bundle of wires covered by a common jacket. There can be thousands of conductors in a cable.

Cable Clamp - Device used to clamp around a cable.

Cable Modem - Modem that connects a computer to a cable TV service that delivers Internet access.

Cable Run - Path where a cable is installed.

Cable Tie - Belt like plastic strip that loops around bundles of cables or insulated wires to hold them together.

Cable Tray - A rigid structure to support cables. Normally looks similar to a ladder.

Cache - Pronounced cash, a special high -speed storage mechanism. It can be either a reserved section of main memory or an independent high -speed storage device. Two types of caching are commonly used in personal computers: memory caching and disk caching.

CAD - (1) Computer aided design (2) Computer aided dispatch

Caisson - Structural support for a type of foundation wall, porch, patio, monopost, or other structure.

Calibrate or Calibration - To adjust the correct value of a reading by comparison to a standard.

Call - (1) Action performed by the calling party. (2) Operation necessary in making a call. (3) Use of a connection between two stations.

Call Forwarding - Service whereby a subscriber can have calls forwarded to another phone by dialing the forwarding number. All calls are then forwarded automatically until discontinued by command from the base telephone.

Call List - List of user-authorized agents and their telephone numbers, in the order in which the monitoring facility is to follow in attempting to reach someone for notification purposes. Unless otherwise instructed, the notification process stops when one person has been notified.

Call Waiting - A telephone company feature that provides a signal during a call to indicate to a customer that another party is trying to call.

Call Waiting Defeat - Dialing a code to cancel call waiting and enable a busy signal.

Callback - Repeat service call, usually to correct a problem or oversight from a prior installation or service call. The technician is called back to a job that was thought to be completed.

Calling Party Control - Telephone signaling system that notifies the terminating office and any line connected auxiliary equipment when the calling party has disconnected.

Cam - Part of a lock or cylinder which rotates to actuate the bolt or latch as the key is turned.

Can - Metal enclosure or container.

Cancellation – (1) To terminate response when a monitoring company notifies the responding agency that there is not an existing situation at the alarm site requiring agency response. (2) An action, or series of actions, taken by an appropriately authorized system operator in order (1) to prevent the monitoring facility from sending an RFR to the PSAP, or (2) to ask the monitoring facility to cancel PSAP follow-up if the RFR has already been sent to the PSAP.

Cancellation of Request For Response - see cancellation.

Candlepower - Unit measure of an incident light.

Cantilever - Projecting beam or joist, not supported at one end, used to support an extension of a structure.

Cantilevered Void - Foundation void material used in unusually expansive soils conditions. This void is "trapezoid" shaped and has vertical sides of 6" and 4" respectively.

Cap - Upper member of a column, pilaster, door cornice, molding, or fireplace.

Cap Flashing - Portion of the flashing attached to a vertical surface to prevent water from migrating behind the base flashing.

Capacitance - Ability of a capacitor to store an electrical charge. Basic unit of capacitance is the Farad.

Capacitance Detector - Device that detects an intruder touching or closely approaching a protected metal object, usually a safe or file cabinet.

Capacitive Reactance - Opposition to current flow provided by a capacitor. Measured in ohms and varies inversely with frequency.

Capacitor - Electronic component having capacitive reactance. An apparatus consisting of two conducting surfaces separated by an insulating material. It stores energy, blocks the flow of direct current and permits the flow of alternating current to a degree depending on capacitance and frequency.

Capacity Sensor - A sensor that detects a change in capacitance when a person touches or comes in close proximity to an object, such as a safe or file cabinet, insulated from electrical ground potential.

Capstan - Rotating shaft that pulls tape at a constant speed during record and playback.

Capture - When an intruder has been.

Capture Ratio - Ability of a tuner or receiver to select the stronger of two signals at or near the same frequency. Expressed in decibels, the lower the figure, the better.

Car/Truck/Trailer/Boat/RV/Vehicle Burglar Alarm - A burglar alarm system that protects a movable facility.

Carbon Film Resistor - Device made by depositing a thin carbon film on a ceramic form.

Carbon Monoxide (CO) - Toxic colorless and odorless gas and common combustion by-product. Combustion appliances including: furnaces, fireplaces, grills, generators, gas water heaters etc. require proper installation and service in order to prevent CO exposure.

Carbon Resistor - Resistor of fixed value made by mixing carbon granules with a binder which is molded and then baked.

Card - Type of credential used to carry electronic information.

Card Access - Type of access control that uses access readers and cards to control exit and entry.

Card Cage - Enclosure to hold printed circuit boards.

Card Encoder - Device that places a unique access code on or within a card.

Card Key – See Card.

Card Mastering - Coding of access control cards to allow universal access to specific groups of readers.

Card Reader - Device that reads the information programmed into or on a card or key.

Carpet Backing - Holds the pile fabric in place.

Carriage - Member that supports the steps or treads of a stair.

Carrier – (1) High-frequency energy that can be modulated by voice or signaling impulses. (2) The basic or unmodulated radio wave.

Carrier System - A means of conveying a number of channels over a single path by modulating each channel on a different carrier frequency and demodulating at the receiving point to restore the signals to their original form.

Cartridge - Device to translate (transduce) styles motion to electrical energy in a phonograph, in three basic types - moving magnet, moving coil, induced magnet. A phono cartridge is sometimes called a pickup.

Case - Housing for a component.

Casement - Frames of wood or metal enclosing part (or all) of a window sash.

Casement Window - Window with hinges on one of the vertical sides and swings open like a normal door, usually operated with a crank.

Casing - Wood trim molding installed around a door or window opening.

Cassette - Audio or video magnetic tape container having two reels. Consumers can insert it for recording or playback without handling the tape itself.

Cassette Deck - Component for recording and/or playing back audio signals using a tape cassette as the recording medium.

Cat 5, 5e & 6 - Category 5, 5e & 6 is a performance class for cables, jumper cables, jacks, connectors and interconnection components.

Cathode - Negative terminal electrode of a device.

Cathode Ray Tube - (CRT) Vacuum tube used to display data in a visual form. Picture tube of a television or computer terminal.

CATV - Community Antenna Television.

Caulking - (1) Flexible material used to seal a gap between two surfaces e.g. between pieces of siding or the corners in tub walls. (2) To fill a joint with mastic or asphalt plastic cement to prevent leaks.

Cavity Wall - Wall built of solid masonry units arranged to provide air space with in the wall.

CC Alarm System - See Certificated UL Line Security.

CCD - Charged Coupled Device. A C.C.D. chip that is the pick up devise on a camera, performing a similar function as a camera tube.

CCTV - Closed Circuit Television, such as a security or safety camera.

CD (Compact Disc) - A 4.5 -inch plastic disc containing a digital audio recording that is played optically on a laser equipped player.

CD Changer - CD player that can store and play more than one CD.

CD Player - A component designed to play compact disc (CD) recordings using a laser optical pickup. The signal from a CD player usually requires amplification.

CD-G - Music CD plus graphics. In addition to audio, the disc has sub codes that carry text (such as liner notes, lyrics) and pixilated, computer -like graphics.

CD-I (Compact Disc Interactive) - Sound and video are combined on a CD, the program of which depends on choices made by the consumer. Requires special playback units.

CD-ROM - Compact Disc, Read Only Memory - A prerecorded disc containing data. A single disc may contain up to 600 MB of data that can be viewed or read but not altered.

CEBus - Consumer Electronics Bus, a residential consumer product communications standard developed by the Electronics Industry Association (EIA).

CEDIA - (Custom Electronics Design and Installation Association) Industry association for installers of home theater, multi -zone audio, phone, security, lighting, and other home systems.

Ceiling - The upper surface of a space, regardless of height. Areas with a suspended ceiling have two ceilings, one visible from the floor and one above the suspended ceiling.

Ceiling Height - Height from the continuous floor of a room to the continuous ceiling of a room or space.

Ceiling Joist - One of a series of parallel framing members used to support ceiling loads and supported in turn by larger beams, girders or bearing walls. Also called roof joists.

Ceiling Surfaces - See Beam Construction, Girder, Smooth Ceiling and Solid Joist Construction

Cell– (1) Single unit used to convert chemical energy into a DC electrical voltage. (2) A cell is a unit of data transmitted over an ATM network.

Cellular or Foamed Plastic - A heterogeneous system comprised of not less than two phases, one of which is a continuous polymeric organic material, and the second of which is deliberately introduced for the purpose of distributing gas in voids throughout the material.

Cellular System - Form of wireless telephone that uses FM radio waves to transmit conversations. Cellular calls are transmitted using either digital or analog technology.

Cellular Telephone - The use of stationary cellular telephone equipment to replace or supplement other means of alarm signal communication between the alarm system and the monitoring facility.

Celotex ™ - Black fibrous board that is used as exterior sheathing.

Cement – (1) Any adhesive. (2) Gray powder that is the "glue" in concrete.

Center Frequency - Frequency to which an amplifier is tuned. The frequency half way between the cut -off frequencies of a tuned circuit.

Center Hung Door - Door hung on center pivots.

Center Tap - Midway connection between the two ends of a winding.

Center Tapped Transformer - Transformer with a connection at the electrical center of a winding.

Central Control Box - "Brains" of a home alarm system. This is the main switching circuitry that decides when and how the output alarm device(s) will respond to the various sensors.

Central Office - In telephone communication in the United States, a central office (CO) is an office in a locality to which subscriber home and business lines are connected on what is called a local loop. The central office has switching equipment that can switch calls locally or to long-distance carrier phone offices.

Central or On Line Processing - System where all systems information is stored in a central location and all go or no -go decisions are made by this unit.

Central Processing Unit - Computer hardware that handles all calculating and routing of input and output as well as executing programs.

Central Station – (1) Remote location that is designed to monitor signals from alarm systems. (2) A generic name for a monitoring facility. However this term, as broadly and traditionally used in the alarm and insurance industry, refers to a monitoring facility that is physically remote from the building or building complex in which the alarm system it monitors is located. (3) A supervising station that is listed for central station service. See Supervising Station.

Central Station Alarm - Alarm system that transmits an alarm signal to a specially constructed building, called a central station. The signal is retransmitted to the police or fire department.

Central Station Alarm Association- CSAA- A trade association representing providers, users, bureaus, and other agencies of UL-Listed and/or FMRC-Approved Central Station protection services.

Central Station Fire Alarm System - A system or group of systems in which the operations of circuits and devices are transmitted automatically to, recorded in, maintained by, and supervised from a listed central station that has competent and experienced servers and operators who, upon receipt of a signal, take such action as required by this Code. Such service is to be controlled and operated by a person, firm, or corporation whose business is the furnishing, maintaining, or monitoring of supervised fire alarm systems.

Central Station Service - The use of a system or a group of systems in which the operations of circuits and devices at a protected property are signaled to, recorded in, and supervised from a listed central station that has competent and experienced operators who, upon receipt of a signal, take such action as required by this Code. Related activities at the protected property, such as equipment installation, inspection, testing, maintenance, and runner service, are the responsibility of the central station or a listed fire alarm service local company. Central station service is controlled and operated by a person, firm, or corporation whose business is the furnishing of such contracted services or whose properties are the protected premises.

Central Station, Contract, UL/FM-Listed - A monitoring facility that is listed by, and operating according to, standards established UL and or FMRC, but only for monitoring central station alarm systems. Contract central stations may provide their services under direct contract with the end-user, or only under contract to an intermediary organization such as an independent alarm installation and maintenance company. Central Station, Non-Listed. See Monitoring Facility, Non-UL/FM-listed.

Central Station, Proprietary - See Proprietary Monitoring Facility.

Central Station, UL/FM-Listed, Full Service - A monitoring facility that is listed by, and operating according to, standards established by UL and or FMRC, and providing installation, maintenance, and support services required for central station alarm systems by UL or FMRC, under the management and responsibility of the monitoring facility.

Central Station, Unlisted - See Monitoring Facility, Non-UL/FM-Listed.

Ceramic Capacitor - Capacitor in which the dielectric is ceramic.

Ceramic Tile - Clay tile used to finish a floor or wall. Generally used in bathtub and shower enclosures and on counter tops.

Certificate of Completion - Document that acknowledges the completion of installation, operation (performance) of a service and or system.

Certificated UL Line Security - A line security alarm that is listed by UL. These systems were formerly referred to as grade "AA", "BB" and "CC" systems in early UL standards documents. See Line Security Alarm.

Certification – (1) acknowledgement that a person or component, service or system has met requirements set by another person or group. (2) A systematic program that uses randomly selected follow-up inspections of the certificated systems installed under the program that allows the listing organization to verify that a fire alarm system complies with all the requirements of this Code. A system installed under such a program is identified by the issuance of a certificate and is designated as a certificated system.

Certification of Personnel - A formal program of related instruction and testing as provided by a recognized organization or the authority having jurisdiction.

Certified - Person or process that has fulfilled the requirement set by another person or group.

CFM (cubic feet per minute) - Rating that expresses the amount of air a blower or fan can move. The volume of air (measured in cubic feet) that can pass through an opening in one minute.

Chain Bolt - Vertical spring loaded bolt mounted at the top of a door. It is manually actuated by a chain.

Chain Link Fence Fabric - Fencing material made from wire helically wound and interwoven so as to provide continuous mesh.

Chair Rail - Interior trim material installed about 3 -4 feet up the wall, horizontally.

Chalk Line - Line made by snapping a taut string or cord dusted with chalk. Used for alignment purposes.

Chamfered Edge - Molding with pared-off corners.

Change Order - Written document which modifies the plans, specifications and/or the price of a contract.

Channel - (1) Path along which information (as data or music) in the form of an electrical signal passes. (2) Band of frequencies of sufficient width for a single radio or television communication. (3) Tubular enclosed passage. (4) Long gutter, groove, or furrow. (5) Metal bar of flattened U -shaped section.

Character - Letter, figure, number, punctuation or other symbol.

Characteristic - Inherent and measurable property of a device.

Charge - (1) To electrify a space, particle, or body, that is, to give an electrical charge. (2) Quantity of electrical energy. (3) To store electricity, as in a storage battery or capacitor.

Charge Current - Current that flows to charge a capacitor or battery when voltage is applied.

Charging - Process of storing electrical energy in a battery or a capacitor.

Charging Current - Current flowing into a battery or capacitor.

Charging Rate - (1) Rate at which charging current flows into a battery or capacitor.

Chase - Framed enclosed space around a flue pipe or a channel in a wall, or through a ceiling for something to lie in or pass through.

Chase Wall - Double or cavity wall that contains piping or ductwork.

Chassis - Metal box or frame into which components are mounted.

Chassis Ground - Connection to a chassis.

Checksum - Value that is computed by a function that is dependent on the contents of a data object and is stored or transmitted together with the object, for the purpose of detecting changes in the data.

Chime - Single stroke audible signal with a soft tone.

Chimney Breast - Horizontal projection-usually inside a building-of a chimney from the wall in which it is built.

Chimney Cap - Concrete capping around the top of chimney bricks and around the floors to protect the masonry from the elements.

Chink - To install fiberglass insulation around all exterior door and window frames, wall corners, and small gaps in the exterior wall.

Chip - Micro miniature circuit on a tiny silicon wafer or other conductive material.

Chip Board - Manufactured wood panel made out of 1" - 2" wood chips and glue. Often used as a substitute for plywood in the exterior wall and roof sheathing. Also called OSB (Oriented Strand Board) or wafer board.

Choke - Inductor used to oppose the flow of alternating current.

Cipher - Cryptographic algorithm for encryption and decryption.

Circuit– (1) Interconnection of components to provide an electrical path between two or more components. (2) Arrangement of electrical components connected by wire.

Circuit Breaker - Safety device which opens (breaks) an electric circuit automatically when it becomes overloaded.

Circuit Interface - A circuit component that interfaces initiating devices or control circuits, or both; notification appliances or circuits, or both; system control outputs; and other signaling line circuits to a signaling line circuit.

Circular Mil - Area of a circle having a diameter of 0.0001 inch. The term is used to specify the cross-sectional area of a wire.

Circumvention - Defeating a security system by the avoidance of its sensors and switches.

Cistern - Tank to catch and store rain water.

Clamper - Diode circuit used to change the DC level of a waveform without distorting the waveform.

Clapboard - Long thin board, thicker on one edge, overlapped and nailed on for exterior siding.

Class II - Low -voltage, limited -energy electrical systems.

Class II Transformer – A transformer that limits energy. Such transformers are almost always used in supplying power for alarm systems.

Clean Out - Opening providing access to a drain line. Closed with a threaded plug.

Clear - To return a circuit, group of circuits or a device to some initial condition.

Clearance - Distance by which one object clears another or the clear space between them

Client - (1) The customer (2) A system entity that requests and uses a service provided by another system entity, called a "server." In some cases, the server may itself be a client of some other server.

Clip - Connector whose jaws are normally held closed by a spring.

Clip Ties - Sharp, cut metal wires that protrude out of a concrete foundation wall (that at one time held the foundation form panels in place).

Clipping - Distortion caused by overdriving an amplifier. Cutting off the signal peaks when too little amplitude is provided. This strains and can damage tweeters.

Clock - Square waveform used for synchronizing and timing of several circuits.

Closed Circuit - (1) Circuit having a complete path for current flow. (2) Complete current path.

Closed Circuit Loop - See Single closed loop.

Closed Circuit System - System where the switches and sensors of each zone or loop are connected in series, usually all normally closed, so that current flows through each switch or sensor. When an activated switch or sensor breaks the circuit, or the connecting wire is cut, an alarm is transmitted for that zone.

Closed Circuit Television - On premises television system used as a monitor. System consists of a television camera, video monitor, and a transmission medium (Cable, fiber or wireless) connecting the two.

Closed Loop Gain - Gain of an amplifier when a feedback path is present.

Closed Shop - Requirements that a prospective employee be a member of a union before he can be hired by an employer.

Closing report/signal - Signal generated from an alarm site to the central station indicating that the alarm system has been armed.

Closure - Point at where two contacts meet to complete a circuit.

Cloud Chamber Smoke Detection - The principle of using an air sample drawn from the protected area into a high-humidity chamber combined with a lowering of chamber pressure to create an environment in which the resultant moisture in the air condenses on any smoke particles present, forming a cloud. The cloud density is measured by a photoelectric principle. The density signal is processed and used to convey an alarm condition when it meets preset criteria.

Clutch Head Screw - Screw with a uniquely designed head for which the installation and removal tool is not commonly available.

CLV (Constant Linear Velocity) - Operating format for Compact Discs.

CMOS - Complementary metal -oxide semiconductor.

CMP – NEC designation for general -purpose plenum communication cables.

CO - Abbreviation for "Certificate of Occupancy". Issued by the local municipality after the local municipality has made all inspections and all monies and fees have been paid and is required before anyone can occupy a building.

Coatings - Light is lost by reflection from optical surfaces that are intended to be refractors only. This loss is effectively reduced by very thin coatings on the lens surfaces. This can be seen as a blue or violet hue on the lens surface.

Coax - See Coaxial cable.

Coaxial Cable - (1) Transmission line in which the signal carrying conductor is covered by a dielectric and another conductor. A type of cable capable of passing a range of frequencies with low loss. It consists of a hollow metallic shield in which one or more center conductors are put in place and isolated from one another and from the shield. (2) Cable used to connect equipment and transmit high -frequency signals. (3) Special type of insulated, shielded cable, used in CCTV systems.

Code - (1) A standard that is an extensive compilation of provisions covering broad subject matter or that is suitable for adoption into law independently of other codes and standards. (2) Meaningful pattern without corresponding surface meaning. (3) A specific pattern of letters or numbers required for a user to gain access to critical system functions, such as arming and disarming the alarm. (3) A set of instructions for a computer. (4) A system of principles or rules.

Code Wheel - Component that actuates a relay to produce coded signals on a McCulloh circuit transmitter.

Code+1 Trigger - A procedure involving the entry of a special data-entry code in which the normal code used to arm or disarm an alarm system is modified slightly to trigger a panic alarm. Due to the relative ease with which false alarms can be generated when this procedure is used, the "Code+1" feature is being used less and less.

Coded - An audible or visible signal that conveys several discrete bits or units of information. Notification signal examples are numbered strokes of an impact-type appliance and numbered flashes of a visible appliance.

Coercive Force - (H) Magnetizing force needed to reduce residual magnetism in a material to zero.

Coercivity - Property of a magnetic material, as on a magnetic stripe keys, which is a measure of the coercive force. It is used when describing the strength of magnetic saturation when discussing magnetic stripe card keys.

Cold Air Return - Ductwork (and related grills) that carries room air back to the furnace for re-heating.

Cold Solder Joint - Solder joint in which insufficient heat has been applied, resulting in a poor connection. Cold solder joints usually have a grayish dull appearance, while good (hot) joints are shiny.

Cold Water Pipe Ground - Connection to a cold water pipe to insure a good earth ground.

Cold Weather Pack - Heating unit that keeps electronic devices within proper operating temperatures in a cold environment.

Collar - Preformed flange placed over a vent pipe to seal the roofing above the vent pipe opening. Also called a vent sleeve.

Collar Beam – Horizontal beam fastened above the lower ends of rafters to add rigidity.

Collector - Semiconductor region in a bipolar junction transistor through which a flow of charge carriers leaves the base region.

Collision - Collision occurs when multiple systems transmit simultaneously on the same wire.

Color Code - (1) Set of colors used to indicate value of a component. (2) System of assigning functional meaning to specific colors of wire insulation to aid in troubleshooting and circuit tracing.

Column - A vertical structural compression member which supports loads.

Combination Detector – (1) Device that responds to more than one indication (smoke, heat, flame or gas) (2) Device that employs more than one operating principle (infrared and microwave or glass breaking and vibration).

Combination Fire Alarm and Guard's Tour Box. A manually operated box for separately transmitting a fire alarm signal and a distinctive guard patrol tour supervisory signal. See Fire Alarm Box.

Combination System - A fire alarm system in which components are used, in whole or in part, in common with a non-fire signaling system.

Combustible - Capable of undergoing combustion; apt to catch fire.

Combustible (Material) - A material that, in the form in which it is used and under the conditions anticipated, will ignite and burn; a material that does not meet the definition of noncombustible or limited-combustible.

Combustion - A chemical process that involves oxidation sufficient to produce light or heat.

Combustion Air - The duct work installed to bring fresh, outside air to the furnace and/or hot water heater. Normally 2 separate supplies of air are brought in: One high and one low.

Combustion Chamber - The part of a boiler, furnace or woodstove where the burn occurs; normally lined with firebrick or molded or sprayed insulation.

Come Along - A cable grip, usually of tubular basket weave construction that tightens its grip on the cable as it is pulled).

Command - Instruction typed by the user or included in a command procedure that requests the system or software to perform some well defined activity such as transfer, copy, delete or print.

Commercial - Occupied with or engaged in Business or commerce or work intended for commerce

Commercial Alarm - Alarm system installed in a business.

Commercially Monitored Alarm System - Alarm system that contacts a contracted company when a potential emergency situation is detected.

Common - Shared by two or more things. See common wire.

Common Anode Display - Multi -segment light emitting diode (LED) with a single positive voltage input connection. Separate cathode connections are provided for each individual segment.

Common Atmosphere - The atmosphere that exists between rooms, spaces, or areas within a building that are not separated by an approved smoke barrier.

Common Carrier - Business or agency that is available to the public for transportation of persons, goods, or messages.

Common Cathode Display - Multi segment light emitting diode (LED) with a single negative voltage input connection. Separate anode connections are provided for each individual segment.

Common Mode Rejection - When both inputs to a device are raised by the same amount the output is unaffected.

Common Path of Travel - The portion of exit access that must be traversed before two separate and distinct paths of travel to two exits are available.

Common Wire - Wire or line in common with two or more circuits or sub circuits. Usually, but not always, the common wire is at ground potential.

Communication - Exchange of information through transmission and reception from one location, point, person or piece of equipment to another.

Communications Channel - A circuit or path connecting a subsidiary station(s) to a supervising station(s) over which signals are carried.

Communicator - See Digital Communicator.

Compact Stereo - Stereo system with tuner, amplifier, and often turntable, tape deck and CD player in the same housing, usually compact in size. Designed for non -portable use.

Comparator - Circuit that compares two or more electrical signals and produces an output indicating which of the inputs has the higher value at that moment.

Compatibility - Ability of one component or device to be used with another without detrimental effect on either.

Compatibility Listed - A specific listing process that applies only to two-wire devices, such as smoke detectors, that are designed to operate with certain control equipment.

Complete Protection - Protection that will detect both the opening of a door and forcible entry through a door, window, ceiling, floor or wall.

Component - Device or part employed to obtain some desired action.

Component Stereo - Stereo system composed of separate elements, such as a tuner and amplifier or CD player.

Composite Door -Door constructed of a solid core material with facing and edges of different materials.

Composite Video - Combined video signal that includes the picture signal, the vertical and horizontal blanking and synchronizing pulses.

Comprehensive Test - A test of a system that includes (1) an inspection of the installation, (2) tests to verify that all devices, including sensors, controls, communication equipment, and associated devices function properly, (3) one or more signal transmissions to the monitoring facility, if the system is designed to send such signals, (4) confirmation that the system can operate under designed-for fault conditions, and (5) that the batteries are charged and capable of holding their charge.

Compression - To compact information for more efficient transmission or storage.

Compression Web - Member of a truss system which connects the bottom and top chords and which provides downward support.

Compressor - Mechanical device that pressurizes a gas in order to turn it into a liquid, thereby allowing heat to be removed or added. A compressor is the main component of conventional heat pumps and air conditioners. In an air conditioning system, the compressor normally sits outside and has a large fan (to remove heat).

Compromise - To defeat an alarm system.

Computer – (1) One that computes. (2) Machine that automatically follows preprogrammed directions to store, retrieve, and process data.

Computer Based Security System - Alarm system that uses a computer as a "smart" central control box to permit programmability and automated record –keeping.

Computer Emergency Response Team (CERT) - Organization that studies computers and networks to provide incident response services to victims of attacks, publish alerts concerning vulnerabilities and threats, and offer other information to help improve computer and network security.

Computer Network - Collection of computers which can exchange data.

Computer Program - Instructions or statements to a computer system.

Concealed - Rendered inaccessible by the structure of finish of the building.

Concrete - Construction material often used for foundations, ground level floors, and sidewalks.

Concrete Block - Hollow concrete 'brick' often 8" x 8" x 16" in size. Often used in low rise commercial and some residential construction.

Concrete Board or Wonderboard (tm) - Panel made out of concrete and fiberglass usually used as a tile backing material.

Condensate Line - Copper pipe that runs from the outside air conditioning condenser to the inside furnace (where the a/c coil is located).

Condensation - Beads or drops of water (and frequently frost in extremely cold weather) that accumulate on the inside of the exterior covering of a building.

Condensing Unit - Outdoor component of a cooling system. It includes a compressor and condensing coil designed to give off heat.

Conditional Refresh - Technique used in slow and fast scan transmission equipment, where only small screen changes are transmitted. Up to a certain percentage of the on -screen picture can be updated before a full picture is required.

Conditions, Covenants, and Restrictions - Standards that define how a property may be used and the protections the developer makes for the benefit of all owners in a subdivision.

Conductance - Ability of material to carry electrical current.

Conduction - Direct transfer of heat energy through a material.

Conductivity - Rate at which heat is transmitted through a material.

Conductor - Substance that allows energy flow through it.

Conduit - (1) Tubular raceway. (2) Hollow, semi flattened tube housing used for running lengths of wire without risks of being pulled out of place or causing accidents. (3) Type of pipe used to contain wires.

Conduit Bender - Tool used to bend conduit.

Cone - Surface that radiates sound in a direct -radiator speaker. Usually conical.

Confidentiality - Need to ensure that information is disclosed only to those who are authorized to view it.

Configuration - Arrangement of parts, software, hardware or components in a system.

Confirmed Alarm - See Verified Alarm.

Connect - To join or fasten together.

Connection - Point where two or more items are joined.

Connector - A device used to physically and or electrically connect two or more items.

Console – (1) Upright case which houses a combination of readouts or displays and an input device (as a keyboard or switches) by which an operator can monitor and interact with a system (2) Cabinet (as for a radio or television set) designed to rest directly on the floor.

Constant - Unvarying or fixed value.

Construction Contract - Legal document which specifies the what - when -where -how -how much and by whom in a construction project.

Construction Master Keying - Keying system used to allow the use of a single key during construction. When construction is completed an insert is removed causing the keyset to accept its permanent key and no longer accept the construction key.

Contact - (1) Current carrying part of a switch, relay or connector. (2) Type of switch, either magnetic or mechanical, used in alarm systems. Usually used to protect doors or other openings. (3) Each one of the pair of metallic parts of a switch or relay which, by touching or separating, make or break the electrical current path.

Contact Block - Small unit that makes contact with one end of a strip of foil tape and permitting a wire to be attached for connection with the alarm system.

Contact Chatter or Bounce) - Condition when mechanical contacts make and break several times before a stable closed condition is established. Bounce or chatter can also be caused by external vibration or shock in a closed contact.

Contention - Condition that occurs on a communications channel when two or more locations attempt to transmit simultaneously.

Contents and Furnishings - Objects, goods, or products placed inside a structure for functional, operational, or decorative reasons, excluding parts of the building structure, building service equipment, and items meeting the definition of interior finish.

Contiguous Property - A single-owner or single user protected premises on a continuous plot of ground, including any buildings thereon, that is not separated by a public thoroughfare, transportation right-of-way, property owned or used by others, or body of water not under the same ownership.

Continuity– (1) State of being whole or unbroken. (2) Occurs when a complete path for current exists. (3) A continuous, uninterrupted electrical circuit.

Continuity Tester - Device that tells whether a circuit is capable of carrying electricity.

Continuous Duty - Service requirement that demands operation at substantially constant load for an indefinite time.

Continuous Load – As stipulated by the NEC – in operation for 3 hours or more.

Continuous Range Sensor - Sensor with an output that can vary over an analog range.

Continuous Still Cameras - Also known as automatic cameras Take pictures at preset intervals and may be turned on and off by a timing mechanism during certain hours. They usually use film cartridges which are removed to be developed after the camera is activated.

Continuous Tone Siren - An electronic circuit used as an alarm output device, which produces a loud, unvarying tone when activated.

Contract - Oral or written agreement between two or more parties.

Contract Repair Service - Service provided under contractual arrangements with the user.

Contractor - Company or individual who agrees to supply materials and perform work for a specified sum of money.

Contrast - Range of difference between light and dark values in a picture.

Control - Automatic or manual device used to stop, start and or regulate flow of gas, liquid or electricity.

Control Circuitry - Circuitry that routes and processes signals, converting the input signal(s) to the appropriate output signal(s).

Control Joint - Tooled, straight grooves made on concrete floors to "control" where the concrete should crack

Control Key - Key used with an authorized access switch or remote key switch.

Control Key Switch - A key -operated switch on an alarm control unit used to turn the system on and off.

Control Panel - See control unit.

Control Unit – (1) Device that provides the interface between the system and the human operator and produces a signal when its programmed response indicates it should. A control unit may also provide power for various sensors, sensitivity adjustments, means to select and indicate access mode, monitoring for line supervision and tamper switches, and timing of the signal. (2) Control Unit. A system component that monitors inputs and controls outputs through various types of circuits.

Controlled Zones - Zones that can be turned on or off by an authorized user of the system. Examples of Controlled zones are door contacts and motion detectors.

Convection - Currents created by heating air, which then rises and pulls cooler air behind it. Also see radiation.

Conventional Current Flow - Concept of current produced by the movement of positive charges towards the negative terminal of a source.

Conversion - (1) To change from one form or function to another. (2) To exchange for an equivalent (3) The transaction or process by which one alarm installation or monitoring company begins the servicing and/or monitoring of an alarm system that was previously serviced and/or monitored by another alarm company or previously unmonitored.

Cookie - Data exchanged between an HTTP server and a browser (a client of the server) to store state information on the client side and retrieve it later for server use.

Cooling Load - Amount of cooling required to keep a building at a specified temperature during the summer, usually 78° F, regardless of outside temperature.

Coped - Removing the top and bottom flange of the end(s) of a metal I -beam. This is done to permit it to fit within, and bolted to, the web of another I -beam in a "T" arrangement

Coped Joint - Cutting and fitting woodwork to an irregular surface.

Coping - Tile or brick used to cap or cover the top of a masonry wall.

Copper - Word used by itself to refer to copper conductors.

Corbel - Triangular, decorative and supporting member that holds a mantel or horizontal shelf.

Cord - Small flexible insulated electrical cable usually jacketed.

Cord Trap - Cord stretched across a doorway or behind bars, counters and the like. The subscriber sets it up nightly by inserting the end of the cord into a socket. The alarm is activated by hitting the cord and forcing it out of the socket.

Core – (1) Mass of iron serving to concentrate and intensify the magnetic field resulting from a current in a surrounding coil. (2) Tiny doughnut-shaped piece of magnetic material (as ferrite) used in computer memories. (3) Central and often foundational part usually distinct from the enveloping part by a difference in nature.

Core Key - Special key that removes the entire core from a removable core lock and replaces it with another core.

Corner Bead - Strip of wood or metal for protecting the external corners of plastered walls.

Corner Boards - Used as trim for the external corners of a house or other frame structure against which the ends of the siding are finished.

Corner Braces - Diagonal braces at the corners of the framed structure designed to stiffen and strengthen the wall.

Cornice - Horizontal projection at the top of a wall or under the overhanging part of the roof.

Corrosion - Chemical action which causes gradual destruction of the surface of metal by oxidation or chemical contamination.

Corruption - Action that undesirably alters system operation by adversely modifying system functions or data.

Cost Benefit Analysis - Compares the cost of implementing countermeasures with the value of the reduced risk.

Cost Plus Contract - Same as "Time and Materials Contract."

Coulomb - Unit of electric charge. Negative coulomb charge consists of 6.24 × 1018 electrons.

Counter Electromotive Force - (counter EMF) Voltage induced into an inductor due to an alternating or pulsating current. Counter EMF is always in polarity opposite to that of the applied voltage. Opposing a change of current.

Counter Flashing - Metal flashing usually used on chimneys at the roofline to cover shingle flashing and used to prevent moisture entry.

Counterfort - Foundation wall section that strengthens (and generally perpendicular to) a long section of foundation wall

Countersink- To drive in a head of a nail or screw so its top is flush with the surface of the surrounding wood.

Coupling– (1) To electronically connect two circuits so that signal will pass from one to the other. (2) Fastener used to join two pieces of conduit.

Course – (1) Row of shingles or roll roofing running the length of the roof. (2) Parallel layers of building materials such as bricks, or siding laid up horizontally.

Court - An open, uncovered, unoccupied space, unobstructed to the sky, bounded on three or more sides by exterior building walls.

Cove Lighting - Concealed light sources behind a cornice or horizontal recess which directs the light upon a reflecting ceiling.

Cove Molding - Molding with a concave face used as trim or to finish interior corners.

Covert – Hidden, not openly shown, engaged in, or avowed.

Crawl Space - Shallow, unfinished space beneath the first floor of a house which has no basement, used for visual inspection and access to pipes and ducts. Also, a shallow space in the attic, immediately under the roof.

Cricket – (1) Second roof built on top of the primary roof to increase the slope of the roof or valley. (2) Saddle -shaped, peaked construction connecting a sloping roof with a chimney.

Crime - Act or the commission of an act that is forbidden or the omission of a duty that is commanded by a public law and that makes the offender liable to punishment by that law.

Crimp – (1) To press or squeeze together. (2) To reduce in size or volume by squeezing.

Crimping Tool - Device used to apply solderless terminals to a conductor.

Cripple - Short vertical "2 by 4's or 6's" frame lumber installed above a window or door.

Cripples - Pipe for conducting rainwater from the roof to a cistern or to the ground by way of a downspout.

Critical Radiant Flux - The level of incident radiant heat energy on a floor-covering system at the most distant flameout point.

Cross Bridging - Diagonal bracing between adjacent floor joists, placed near the center of the joist span to prevent joists from twisting.

Cross Tee - Short metal "T" beam used in suspended ceiling systems to bridge the spaces between the main beams.

Cross Zoning - Suppressing an alarm signal until two or more detectors in separate zones register alarm conditions.

Crosshatch - Pattern of beams that covers a large two- or three - dimensional area (as opposed to a simple straight line). Multiple sensors monitor the various beams of the crosshatch pattern. If an object (or person) breaks any element of the crosshatch, the motion is sensed and the alarm is activated.

Crossover Cable - Reverses the pairs of cables at the other end and can be used to connect devices directly together.

Crossover Foil - Thin, tinned brass foil or Mylar tape used to connect foil tape over crossbars on windows.

Crossover Network - Component that separates the frequency band and rotates each frequency range to the correct driver or amplifier.

Crosstalk - Undesired signal that interferes with the desired signal.

Crown Molding - Molding used on cornice or wherever an interior angle is to be covered, especially at the roof and wall corner.

CRT - (cathode ray tube) Picture tubes used in more than one type of video display.

Cryptography - Cryptography garbles a message in such a way that anyone who intercepts the message cannot understand it.

Crystal - Natural or synthetic piezoelectric or semiconductor material with atoms arranged with some degree of geometric regularity.

Crystal -Controlled Oscillator - Oscillator that uses a quartz crystal in its feedback path to maintain a stable output frequency.

CS Mount – Camera lens with a flange back distance of 12.5mm.

CSAA- see Central Station Alarm Association

Culvert - Round, corrugated drain pipe (normally 15" or 18" in diameter) that is installed beneath a driveway and parallel to and near the street.

Cupping - Type of warping that causes boards to curl up at their edges.

Curb - Short elevation of an exterior wall above the deck of a roof. Normally a 2 by 6 box (on the roof) on which a skylight is attached.

Curb Stop - Normally a cast iron pipe with a lid (@ 5" in diameter) that is placed vertically into the ground, situated near the water tap in the yard, and where a water cut -off valve to the home is located (underground). A long pole with a special end is inserted into the curb stop to turn off/on the water.

Current - Measured in amperes, it is the flow of electrons through a conductor. Also know as electron flow.

Current Drain Rate - Measure of how rapidly a battery is discharged by its load. On the shelf, the surrounding air creates a very high -resistance load for the slowest possible current drain rate for that particular battery

Current Limiting Resistor - Resistor in the path of current flow to control the amount of current drawn by a device.

Cursor - Blinking spot showing the active position of the trace on a computer CRT screen or video display. Place where the next character will be inserted or deleted.

Curtain Drain - Ditch sometimes filled with gravel and a drain tile which diverts storm and drain water away from a structure.

Customer – Company or person who buys the companies goods or services.

Customer Code - Code, usually in the form of an account number, used to identify a customer.

Customer Files - Detailed (and confidential) information on each individual system installed or serviced by a company kept in secured files at the company's office.

Cut In - Connection of electrical service to a building from the power company line.

Cut-in Brace - Nominal 2 -inch -thick members, usually 2 by 4's, cut in between each stud diagonally.

Cutoff - Condition when an active device is biased such that output current is near zero or beyond zero.

Cycle - When a repeating wave rises from zero to a positive maximum then back to zero and on to a negative maximum and back to zero it is said to have completed one cycle.

Cyclic Redundancy Check (CRC) - Sometimes called "cyclic redundancy code." Type of checksum algorithm that is not a cryptographic hash but is used to implement data integrity service where accidental changes to data are expected.

Cylinder - Housing that contains a tumbler mechanism and a keyway plug that can only be turned by the correct key. It includes a cam or spindle to transmit rotary action to a lock or latch mechanism.

Cypher Lock - Push-button combination type lock.

D -VHS - Digital VHS. Videotape format offering superb recording and playback of digital programming from digital broadcasts.

DAB (Digital Audio Broadcasting) - Various digital systems designed to augment AM and FM analog broadcasting services.

DAC - (Digital -to -Analog Converter) - Circuit that converts digital signals to analog (varying amplitude) signals.

DACR - Digital alarm communicator receiver – See digital receiver.

DACS - Digital alarm communicator system -System in which signals are transmitted from a digital communicator to a digital receiver.

Dado - Groove cut into a board or panel intended to receive the edge of a connecting board or panel.

Damper - Metal "door" placed within the fireplace chimney. Normally closed when the fireplace is not in use.

Damping - Physical or electrical control of resonance.

Dampproofing - Black, tar like waterproofing material applied to the exterior of a foundation wall.

DAT (Digital Audio Tape) - High performance digital recording/playback format. The cassettes are about half the size of standard audio cassettes and usually hold up to two hours of recording time.

Data Conversion - The process of developing the input data set for the assessment method of choice.

Data Entry - Data entered by an operator from a single device, such as a card or badge reader, numeric or alphanumeric keypad or keyboard or rotary switch.

Data– Information. Records

Data Transmission Notification - Computer-to-computer or computer-to-printer transmission of an RFR between a monitoring facility and a terminal at the PSAP. The receiving terminal may be connected into a PSAP's computer aided dispatch system.

Database - Collection of data used and produced by a computer program.

Day Night Control - Control unit that can be wired with two protective circuits. The day circuit is on twenty -four hours a day, while the night circuit is only on when the control is turned on.

Day-Care Home - A building or portion of a building in which more than three but not more than 12 clients receive care, maintenance, and supervision, by other than their relative(s) or legal guardians(s), for less than 24 hours per day.

Day-Care Occupancy - An occupancy in which four or more clients receive care, maintenance, and supervision, by other than their relatives or legal guardians, for less than 24 hours per day.

Daylight - End of a pipe (the terminal end) that is not attached to anything.

dB - Decibel. Measure of the power ratio of two signals. It is equal to ten times the logarithm of the ratio of the two signals.

DBS - See Direct Broadcasting Satellite.

DC -Direct Current. Electrical current that flows in one direction, including battery power.

DC Power Supply - Source of DC power.

DC Type Lens - Auto -iris lens with internal circuit which receives voltage and a video signal from the camera to adjust the iris.

DD and DTS - Dolby Digital and Digital Theater Systems, the two audio formats for movies on DVD.

Deactivate - Opposite of activate. To turn off or disable a circuit or system.

Dead - (1) Not having electrical charge (2) No voltage applied

Dead Bolt - Mechanical lock in which a solid bolt passes directly into the door frame that can be activated only with a key or thumb -turn, preventing the door from being opened by force. Unlike a latch, which has a beveled tongue, dead bolts have square ends.

Dead Light - Fixed, non-operable section of a window unit.

Dead Short - Short circuit having extremely low resistance.

Deadbolt - Type of bolt that is moved in and out of the strike mechanically without spring action, as by a thumb latch knob.

Deadline - Date or time before which something must be done.

Dealer - One who sells and/or leases systems.

Debug - (1) To eliminate errors in or malfunctions of. (2) To detect, prevent or expose the use of electronic visual or audio surveillance devices. (3) To correct the syntax and logic of a computer system.

Decade - Factor of ten.

Decibel (dB) - Unit of measure for sound. Logarithmic ratio used to indicate signal strength (loudness of sound). Gains and losses expressed in dB should be added and subtracted (not multiplied). One tenth of a Bel.

Deck, Decked - To install the plywood or wafer board sheeting on the floor joists, rafters, or trusses.

Decoding Circuit - Circuit that examines a security code entered by a potential user and determines if that code is correct or not, providing or blocking access to the protected function as appropriate.

Decryption - Process of transforming an encrypted message into its original plaintext.

Dedicated Circuit - (1) A circuit or channel, typically leased from the telephone company, used to transmit signals between the alarm system and the monitoring facility. Circuit may be point-to-point or multi-point. (2) Electrical circuit that serves only one appliance (ie, dishwasher) or a series of electric heaters or smoke detectors. (3) A direct and permanent link, which does not depend on the public switched network, between the monitoring facility and the PSAP.

Dedicated Line - Telecommunications path between two points that is available 24 hours a day for use by a designated user (individual or company).

Dedicated Tie Line - See Dedicated Circuit.

Deenergize - To remove power.

Defeat - To avoid being detected by an alarm system, or to render the system inoperable.

Definition - Fidelity of a television system with respect to the original scene.

Degauss - To erase or rearrange the recorded bits on a magnetic tape so as to render the information unintelligible.

Degraded Mode - Feature of an access control system which allows a card reader to operate independently of the system's central control unit.

Degree - (1) Unit of circular measurement equal to 1/360 the circumference of a circle; also called geometric degree. (2) A unit of temperature measurement as in degrees Celsius and degrees Fahrenheit.

De-humidistat - Control mechanism used to operate a mechanical ventilation system based upon the relative humidity in the home.

Delaminating - Separation of the plies in a panel due to failure of the adhesive. Usually caused by excessive moisture.

Delay Time – (1) See entry exit delay. (2) Time for collector current to reach 10% of its maximum value in a BJT switching circuit.

Delay Zone - One or more sensors in an alarm circuit that are wired so that, when triggered, a specific time delay results before an alarm condition is generated. Delay zones are often created for the most frequently used exit and entry doors to allow for sufficient time for normal entry and exit without causing alarm conditions.

Delayed Loop - Loop that does not indicate a violation until a specified interval after it happens.

Delinquency Signal - A signal indicating the need for action in connection with the supervision of guards or system attendants.

Deluge System - Pipes leading to spray nozzles normally are filled with air. All or a portion of the spray nozzles are open. During a fire, an independent fire -detection system opens a valve, letting water flow into pipes and out the open nozzles.

Demagnetizer - Device that removes magnetism generated in tape heads as a consequence of playback and recording activities. Also called "Degausser."

Demodulation - Recovery of the original modulating information from a radio signal.

Denial of Service - Prevention of authorized access to a system resource or the delaying of system operations and functions.

Denominator - Term below or to the right of the division of a fraction. The denominator is the divisor in a fraction representing division; the numerator is the number being divided.

Depth of Field - Area in front of the camera which remains in focus. The larger the f -number the greater is the depth of field.

Derived Channel - Signaling line circuit that uses the local leg of the public switched network as an active multiplex channel, while simultaneously allowing that leg's use for normal telephone communications. See Channel.

Design Fire Scenario - A fire scenario used for evaluation of a proposed design.

Design Specification - A building characteristic and other conditions that are under the control of the design team.

Design Team - A group of stakeholders including, but not limited to, representatives of the architect, client, and any pertinent engineers and other designers.

Designer - One who designs houses, interiors, landscaping or other objects.

Desolder - To unsolder joints, especially with a special tool which protects delicate parts and removes the melted solder by suction.

Detection - To sense an event.

Detection Pattern -Area of coverage in which detection devices will detect an intruder.

Detection Range - The greatest distance at which a sensor will consistently detect an intruder under a standard set of conditions.

Detector - (1) Device that senses a change (2) The circuitry that performs demodulation. (3) Sensor used to detect intrusion, equipment malfunctions or failure, rate of temperature rise, smoke, or fire. (4) Device that senses the presence of a dangerous, undesirable, or abnormal condition.
(5) A device suitable for connection to a circuit that has a sensor that responds to a physical stimulus such as heat or smoke.

Detention and Correctional Occupancy - An occupancy used to house four or more persons under varied degrees of restraint or security where such occupants are mostly incapable of self-preservation because of security measures not under the occupants' control.

Detention and Correctional Residential Housing Area - Sleeping areas and any contiguous day room, group activity space, or other common space for customary access of residents.

Deterrent - Anything that discourages.

Developer – (1) One who prepares land for construction. (2) One who builds.

Device - Component or part.

Device Address - Value set on an access control device to determine its unique identity.

Diac - Bidirectional trigger diode often used to control a triad in a switching circuit.

Diagnostic - Detection and isolation of a malfunction.

Diagonal Cutting Pliers - Pliers with side cutters used for cutting wires or other thin metal pieces.

Diagram - Schematics, prints, charts or any other graphic representation, the purpose of which is to explain rather than to represent.

Dial - Rotating disk or push-button assembly used for entering digits and accessing features.

Dial Tone - Constant high pitched tone (a mixture of 350 and 440 Hz) indicating that the system is ready to process a call.

Dialer - See Digital communicator and Tape dialer.

Dial-up Line - Telephone connection in a system of many lines shared by many users. A dial-up connection is established and maintained for a limited time duration. Dial-up lines are sometimes called switched lines and dedicated lines are called nonswitched lines.

Dial-Up Network - (1) The public dial-up telephone network used to establish a temporary link between the alarm system and the monitoring facility. (2) The public dial-up telephone network used to establish a temporary link between the monitoring facility and the PSAP. Serves voice and data communication needs.

Dielectric - (1) Insulating material between two plates where an electrostatic field exists. (2) A nonconductor of direct electric current.

Dielectric Strength - Maximum voltage an insulating material can withstand without breaking down.

Diffraction - Bending or partial reflection of radio waves by metal objects.

Diffuser Panels - Wooden panels with recessed areas designed to diffuse sound throughout a room, often used on the rear wall of a home theater.

Digital – (1) Signal where levels are represented by binary numbers. Information that is encoded in a series of 1s and 0s. (2) Relating to devices or circuits that have outputs of only two discrete levels. Examples: 0 or 1, high or low, on or off, true or false etc.

Digital Alarm Communicator Receiver (DACR) - A system component that accepts and displays signals from digital alarm communicator transmitters (DACTs) sent over the public switched telephone network.

Digital Alarm Communicator System (DACS) - A system in which signals are transmitted from a digital alarm communicator transmitter (DACT) located at the protected premises through the public switched telephone network to a digital alarm communicator receiver (DACR).

Digital Alarm Communicator Transmitter (DACT) - A system component at the protected premises to which initiating devices or groups of devices are connected. The DACT seizes the connected telephone line, dials a preselected number to connect to a DACR, and transmits signals indicating a status change of the initiating device.

Digital Alarm Radio Receiver (DARR) - A system component composed of two subcomponents: one that receives and decodes radio signals, the other that annunciates the decoded data. These two subcomponents can be coresident at the central station or separated by means of a data transmission channel.

Digital alarm radio system - DARS - System in which signals are transmitted from a digital alarm radio transmitter (DART) located at the protected premises through a radio channel to a digital alarm radio receiver (DARR).

Digital Alarm Radio Transmitter (DART) - A system component that is connected to or an integral part of a digital alarm communicator transmitter (DACT) that is used to provide an alternate radio transmission channel.

Digital Certificate - Electronic "credit card" that establishes your credentials when doing business or other transactions on the Web.

Digital Coaxial Output - Electrical output connection for the raw digital data stream.

Digital Communications - Transmission of information by the use of encoded numbers, usually based on the binary number system.

Digital Communicator - Also known as a digital dialer. Means of transmitting alarm signals and other information to a central station, using the customer's existing phone line. To transmit an alarm, the communicator seizes the customer's phone line and electronically dials the central -station receiver. When the receiver answers the communicator sends a message in the form of a sequence of tones. A mini -computer in the receiver accepts and acknowledges the message. It then prints out the information for display to the operator.

Digital Light Processing (DLP) - Emerging video projection technology using thousands of tiny micro mirrors that reflect light to create images on a screen.

Digital Receiver - Device that receives, identifies, and processes the signals sent by a digital communicator.

Digital Recording - System of recording in which musical information is converted into a series of pulses that are translated into a binary code intelligible to computer circuits and stored on magnetic discs. Also called “PCM” (pulse code modulation).

Digital Signal - Analog signal that has been converted to a digital form so that it can be processed by a micro processor.

Digital Signal Processing (DSP) - Manipulation of signals for equalization, compression/expansion and reverberation in the digital domain. Resulting sound may replicate the acoustics of a club, hall, church, stadium, theater, etc.

Digital Signature - Digital signature is a hash of a message that uniquely identifies the sender of the message and proves the message hasn't changed since transmission.

Dimmer - Device in the electric circuit for varying the light from lamps.

Diode - Two terminal electronic device that conducts in only one direction.

DIP - Abbreviation for "dual in line package."

Dip switch - Dual in –line package. Small rectangular housing containing one or more miniature switches used for setting operating channels.

Dipole - Antenna which is made up of two active elements.

Direct Broadcast Satellite - DBS. High -powered satellite that uses a new Ku -band frequency (12.2 to 12.7GHz) to deliver programming signals directly to small (18") dishes installed at viewers' homes.

Direct Connect - An alarm system that transmits signals directly to alarm receiving equipment at a Public Safety Answering Point (PSAP). This term generally refers to burglar and hold-up alarm systems. See also Remote Station.

Direct Current - Electric current that flows only in one direction. Batteries supply direct current.

Direct Hold - Magnetic lock mounted on the outside of a door frame with a metal plate mounted on an adjoining place on a door.

Direct Line - See Dedicated Circuit or Direct Connect.

Direct Wire - Alarm system with a single dedicated circuit to send an alarm signal from the protected premises directly to the central station, where the signal is processed by a separate receiver.

Directional Antenna – TV or FM antenna that picks up signals better from one direction than another.

Disable – To place a device or system out of service.

Disarm - (1) To disable an alarm system and reset it if necessary. (2) To turn off a sounding alarm. (3) Process of turning the security system off. (3) A procedure followed by a system user to turn off an alarm system so that no alarm signals will be transmitted to the monitoring facility, nor will any audible or visual signal be generated at the alarm system location. If a system is disarmed within a pre-determined time period after a sensor has been triggered (typically referred to as a delay period), it may be possible to abort the alarm and prevent it from being transmitted to the monitoring facility.

Disaster Recovery Plan - Process of recovery of systems in the event of a disruption or disaster.

Discharge - Release of energy stored in either a battery or a capacitor.

Disconnect Switch. A large (generally 20 Amp) electrical ON -OFF switch for disconnecting electric current.

Discrete Component - Package containing only a single component as opposed to an integrated circuit containing many components in a single package.

Disk - Small, relatively hard, plastic or metal disk upon which computer data is stored magnetically.

Diskette - Thin plastic disk upon which data is stored.

Dispatch Agency, Private - A private dispatch agency sends and directs alarm investigators or private guards which may be part of the dispatch agency organization. Private dispatch agencies may be notified by a monitoring facility when municipal emergency personnel do not respond to alarm calls, or when municipal response is deemed to be too slow or unreliable by the alarm user.

Dispatch Agency, Public - A public dispatch agency that sends and directs municipal police, fire, and emergency medical service (EMS) personnel. The dispatch agency is notified by the monitoring facility when a received alarm signal has been determined to warrant investigation. Public dispatch agencies are known by a variety of names, including 9-1-1, Public Safety Answering Point (PSAP), Emergency Communication Center (ECC), and police, fire, and EMS dispatch.

Dispatchable Event - An unexpected alarm that triggers an event. An alarm does not become a dispatchable event until the monitoring facility has followed its established procedures such as verification or other confirmation that the alarm requires further action. Subsequent signals from the same type of alarm system are part of the original dispatchable event until the event is resolved and the system has been reset. When an alarm is determined to be a dispatchable event, a request for response (RFR) is made to the appropriate response agency or agencies.

Display – (1) Electronic device that temporarily presents information in visual form. (2) The visual representation of output data, other than printed copy.

Disruption - Circumstance or event that interrupts or prevents the correct operation of system services and functions.

Dissipation - Release of electrical energy in the form of heat.

Distortion - An undesired change in a waveform or signal. Inexact reproduction of an audio signal.

Distributed Capacitance - Capacitance other than that within a capacitor.

Distributed Inductance - Inductance other than that within an inductor.

Distributed Intelligent Devices - Devices that make their own decisions uploading event messages periodically to the central processing unit for storage.

Distributed Processing - Access control system where some of the system information is stored at the individual readers or controllers. This allows the system to operate when the host is down or not communicating.

Distribution Amplifier - Device that accepts a (video) signal and sends it out to a number of independent outputs.

Distributor - Person or company who sells many types of equipment to dealers.

DLP - Digital light processing. Video technology that uses thousands of small mirrors to create the picture. Considered the leading edge in television -screen and projection technology.

DMM - Digital multimeter. Device for measuring voltage, resistance, or current, with its output in the form of directly displayed numbers rather than an analog meter and pointer.

DNS - Domain Name System. The domain name system (DNS) is the way that Internet domain names are located and translated into Internet Protocol addresses. A domain name is a meaningful and easy -to -remember "handle" for an Internet address.

Documentation - Printed materials describing a hardware or software product. Written record of activities and processes.

Dolby Digital (a.k.a. AC -3) - Dolby Laboratories' film sound format, which provides five full -range digital sound channels plus a bass effects channel on35mm prints, in addition to, an analog track providing compatibility in all theaters.

Domain - (1) Sphere of knowledge, or a collection of facts about some program entities or a number of network points or addresses, identified by a name. (2) On the Internet, a domain consists of a set of network addresses. (3) In Windows NT and Windows 2000, a domain is a set of network resources (applications, printers, and so forth) for a group of users. (4) A moveable magnetized area in a magnetized material. Also known as magnetic domain.

Domain Name - Locates an entity on the Internet.

Doohickey - Often small article whose common name is unknown or forgotten. Also often referred to as a gadget.

Door Blocking - Wood shims used between the door frame and the vertical structural wall framing members.

Door Buck - Rough frame of a door.

Door Closer - Mechanical device that uses a spring to close an opened door.

Door Contact - See door status switch. See contact.

Door Cord - A sturdy, flexible cord with a terminal on either end used to carry an alarm circuit to and from contacts on doors and movable windows.

Door Forced Open - Signal indicating that the door was opened without a valid card or request to exit device. This requires a status switch and some type of REX device.

Door Held Open - Signal that indicates that the door was held open longer than it should have been. This is used to prevent someone from using a card to enter and then leave the door open for others. This requires a status switch on the door.

Door Hold Open Device - Electrical magnetic device that holds a door open until released. Commonly used on smoke control doors

Door Open Time - Time allowed for a controlled door to remain open after a valid entry. At the expiration of this time, the system records a transaction which may be defined as an alarm.

Door Operator - Automatic garage door opener.

Door Status Switch - Switch used to monitor whether a door is in the opened or closed position.

Door Stop - The wooden style that the door slab will rest upon when it's in a closed position.

Door Strike - Electromechanical locking device typically installed in a door frame to enable locking and unlocking of the door by applying or removing electricity.

Door Switch - A sensor that detects the open or closed condition of a door or gate.

Door Switches - See Contact.

Doorjamb Interior - Surrounding case into which and out of which a door closes and opens. It consists of two upright pieces, called side jambs, and a horizontal head jamb. These 3 jambs have the "door stop" installed on them.

Doppler Effect - Shift in the frequency with which waves from a given source reach an observer. Microwave and ultrasonic devices use this principle to detect movement.

Dormer - Roof gable which is usually located at right angles to the main roof structure.

Dormitory - A building or a space in a building in which group sleeping accommodations are provided for more than 16 persons who are not members of the same family in one room or a series of closely associated rooms under joint occupancy and single management, with or without meals, but without individual cooking facilities.

Double Acting Door - Swinging door equipped with hardware which permits it to open in either direction.

Double Circuit System - Alarm circuit in which two wires enter and two wires leave each sensor.

Double Doorway - A single opening that has no intervening wall space or door trim separating the two doors.

Double Glass - Window or door in which two panes of glass are used with a sealed air space between. Also known as Insulating Glass.

Double Glazing - Insulating window pane formed of two thicknesses of glass with a sealed air space between them.

Double Hung Window - Window with two vertically sliding sashes, both of which can move up and down.

Double Locking - Two separate locks on a single door. Often one is automatically latching, engaging whenever the door is closed (unless mechanically disabled beforehand), while the other must be manually locked when desired.

Double Action Trigger - A sensor that requires separate simultaneous actions, or closely-spaced sequential actions before an alarm is transmitted to the monitoring facility. If only one action is taken, a trouble signal may be transmitted or logged and annunciated.

Down Payment - Part of the full price paid at the time of purchase or delivery with the balance to be paid later.

Download - To transfer information stored in a remote computer to the user's system.

Downspout - Pipe, usually of metal, for carrying rainwater down from the roof's horizontal gutters.

Downspout Strap - Piece of metal which secures the downspout to the eaves or wall of a building.

Downtime - Total time a signal is out of service due to equipment failure.

DPDT - Double -Pole -Double -Throw switch. Basic switching pattern. Two separate circuits are simultaneously switched, each with a common contact that can be switched to either of two possible contact points.

DPST - Double -Pole -Single -Throw switch. Basic (but relatively uncommon) switching pattern. Two separate circuits are simultaneously switched, with each circuit being opened or closed in unison.

Draft Stop - A continuous membrane used to subdivide a concealed space to resist the passage of smoke and heat.

Drain Tile - Perforated, corrugated plastic pipe laid at the bottom of the foundation wall and used to drain excess water away from the foundation. It prevents ground water from seeping through the foundation wall.

Draw - Progress billings on a contract that is currently available to a contractor under a contract with a fixed payment schedule.

Drift - Problem that can develop in tuned amplifiers when the frequency of the tuned circuit changes due to temperature or component aging.

Drill - Circular toll used for machining a hole.

Drip - (a) Projecting part of a cornice which sheds rain water.(b) Groove in the underside of a sill or drip cap to cause water to drop off on the outer edge instead of drawing back and running down the face of the building.

Drip cap - Molding or metal flashing placed on the exterior topside of a door or window frame to cause water to drip beyond the outside of the frame.

Drip Loop - Length of electrical cable arranged in a looped configuration so that moisture collecting on the cable will run to the bottom and drip off.

Drive – Unit used for mass storage of applications and data.

Driver - (1) Any sound -producing device; an individual speaker. (2) Piece of computer software that controls input and output operations.

Drop - (1) See Annunciator. (2) Light indicator on an annunciator.

Dry Battery - Battery composed of dry cells.

Dry Cell - Non rechargeable type of battery. DC voltage generating chemical cell using a non liquid (paste) electrolyte.

Dry- Contacts which do not carry current.

Dry in - To install the black roofing felt (tar paper) on the roof.

Dry Pipe Sprinkler System – System used in colder climates and unheated buildings that contains air under pressure. When heat causes a sprinkler head to open, air bleeds out of the system allowing water to flow into the system and out the head or heads that are open.

Dry Rot – See, "Fungal wood rot."

Dry Pipe Flow Sensor - A sensor that detects the flow of water in a dry-pipe sprinkler system.

Drywall (or Gypsum Wallboard (GWB), Sheet rock or Plasterboard) - Wall board or gypsum - A manufactured panel made out of gypsum plaster and encased in a thin cardboard. Usually 1/2" thick and 4' x 8' or 4' x 12' in size. The panels are nailed or screwed onto the framing and the joints are taped and covered with a 'joint compound'.

DSL - Digital Subscriber Line. Technology that greatly increases the capacity of ordinary telephone wires to carry digital information.

DTS (Digital Theater Systems) Surround - Six channel surround sound playback format being used for some movie soundtracks and music recordings.

Dual Control - The use of two primary trunk facilities over separate routes or different methods to control one communications channel.

Dual Detector - Device that uses two different sensing technologies to detect an intrusion. Dual detectors are thought to be less susceptible to false alarms.

Dual In-line package - Integrated circuit package having two rows of connecting pins.

Dual Technology Sensor - Combine two different technologies to enhance sensor reliability and/or avoid false alarms. Examples: Dual microwave - PIR motion sensors, Combination smoke and heat sensors.

Dual Tone Multi -Frequency (DTMF) - Using two simultaneous voice -band tones for dialing. Also called tone dialing.

Dual-Technology Trigger - A sensor that uses two or more separate technologies, at least two of which must sense the designated condition before the device triggers an alarm signal. If only one technology senses the condition, a trouble signal may be transmitted or logged and annunciated.

Duct Pipe – A large duct pipe (used for heating and cooling).

Ducts – (1) Round or rectangular metal pipes installed for distributing warm (or cold) air from the furnace to rooms in the home. (2) Tunnel made of galvanized metal or rigid fiberglass, which carries air from the heater or ventilation opening to the rooms in a building.

Due Care – To ensure that a minimal level of service is provided in accordance with the best practice in the industry.

Due Diligence - Requirement that organizations must develop and deploy a protection plan to prevent fraud, abuse, and additional deploy a means to detect them if they occur.

Dumb Terminal - Computer terminal that has no processing power but depends on the CPU to which it is connected for these functions.

Dummy Camera – Camera that appears genuine but does not function.

Duplex - Simultaneous, independent, two -way transmission in both directions.

Duplex Multiplexer - Multiplexer that allows the user to look at multi -screen images while performing time multiplex recording.

Duplex Receptacle- Device that includes two plug outlets. Most receptacles in homes are duplexes.

Dura board, Dura rock - Panel made out of concrete and fiberglass usually used as a ceramic tile backing material. Sometimes called Wonder board

Duress - (1) Forcible restraint or restriction. (2) Compulsion by threat; specifically: unlawful constraint.

Duress Alarm - (1) Device that produces a silent alarm which is designed to allow a person to call for help without arousing suspicion. (2) Signal produced by a duress alarm device. (3) Manual activation of a silent alarm by entering at a keypad a code different from the normal arm/disarm code. (4) A system that reports the presence of one or more persons trying to force an individual to enter, or re-enter, a facility against the individual's will. Note: Although the triggering devices for hold-up, duress, and panic alarms are often the same or similar, police response may differ. A duress alarm, for example, may be designed to detect and silently report an employee being forced back into a protected facility to provide access to a safe, vault, drug storage area, or area containing confidential records. The intent is generally not to make the criminal aware that a call for help is being triggered to the monitoring facility. In a residential environment, a duress alarm could signal an abduction or rape attempt.

Duty cycle - Percentage of on time or operating time of a device.

DVD - Digital Versatile Disc. 5 -inch CD -like format used for storing movies with digital audio and video and interactive features.

Dwell Time - Length of time a switcher holds on a camera before moving on to the next in sequence.

Dwelling Unit - One or more rooms arranged for the use of one or more individuals living together, providing complete, independent living facilities, including permanent provisions for living, sleeping, eating, cooking, and sanitation.

DWV (drain -waste -vent) - Section of a plumbing system that carries water and sewer gases out of a home.

Dynamic - Relating to conditions that are changing or in motion.

Dynamic Link Library - Collection of small programs, any of which can be called when needed by a larger program that is running in the computer.

Dynamic Range - Range between the loudest and softest sounds a sound format or system can reproduce properly.

E - Symbol for voltage electromotive force, energy

E -core - Laminated form in the shape of the letter "E", onto which inductors and transformers are wound.

E.I.A. (Electronic Industry Association) -US TV standard 525 lines 60 fields.

Early Morning Switch - A device, or a combination of devices, arranged to permit an alarm user, during a normal opening and alarm system disarming process, to send an emergency signal to a monitoring facility, indicating that the person is in a duress situation. The procedures involved in activating the Early Morning Switch are designed to conceal from the criminal that any procedure other than the normal and valid one is being followed.

Early Opening - The burglar alarm system has been disarmed earlier than the established opening time for that alarm system. Early opening is an access control and recording function.

Earth Ground – Connection a device to the earth.

Earthquake Strap - Metal strap used to secure gas hot water heaters to the framing or foundation of a house. Intended to reduce the chances of having the water heater fall over in an earthquake and thus causing a gas leak.

Easement - Formal contract which allows a party to use another party's property for a specific purpose. e.g. A sewer easement might allow one party to run a sewer line through a neighbors property.

Easy Egress - Means of exiting where the person wishing to leave simply turns the doorknob to exit.

Eaves - Extension of roof beyond house walls.

Eavesdropping - Eavesdropping is simply listening to a private conversation which may reveal information which can provide access to a facility or network.

Eddy Currents - Currents induced into a conducting core due to the changing magnetic field. Eddy currents produce heat which is a loss of power and lowers the efficiency of an inductor.

Educational Occupancy - An occupancy used for educational purposes through the twelfth grade by six or more persons for 4 or more hours per day or more than 12 hours per week.

EEPROM - Electrically erasable programmable read -only memory. PROM that can be erased by electrical signal rather than by exposure to ultraviolet light.

Effective Masked Threshold - The minimum sound level at which the tone signal is audible in ambient noise.

Effects - Sound effects, i.e., the non -musical elements on a soundtrack other than dialogue.

Efficiency - (1) Ratio of output to input. (2) Measure of the percentage of electrical input that a loudspeaker converts into acoustic output.

Efflorescence - White powder that forms on the surface of brick.

Effluent - Treated sewage from a septic tank or sewage treatment plant.

Egress - Exit, depart or leave (opposite of ingress). A means of exiting.

Egress Button - Switch used near a controlled door that, when pushed, sends a signal to the controller to release the door locking device.

Elbow - (ell) Plumbing or electrical fitting that lets you change directions in runs of pipe or conduit.

Electric Charge - Electric energy stored on the surface of a material. Also known as a static charge.

Electric Door Strike - An electric door locking device, usually solenoid operated, that will unlock a door when electric power is either applied, or removed, depending upon the configuration.

Electric Eye - Light -sensitive device used in photoelectric systems. (2) Popular name for a photoelectric system.

Electric Field - Field or force that exists in the space between two different potentials or voltages. Also known as an electrostatic field.

Electric Hinge - Hinge that contains electrical conductors.

Electric Knob - Door knob with an internal solenoid that allows electricity to control when the door is locked and unlocked.

Electric Lateral - Trench or area in the yard where the electric service line (from a transformer or pedestal) is located, or the work of installing the electric service to a home.

Electric Lock - See electric knob. Also see electric door strike.

Electric Resistance Coils - Metal wires that heat up when electric current passes through them and are used in baseboard heaters and electric water heaters.

Electric Strike - Electrically operated device that replaces a conventional strike plate and allows a door to be unlocked by electric current.

Electrical - Related to, pertaining to, or associated with electricity.

Electrical Conductivity Heat Detector - A line-type or spot-type sensing element in which resistance varies as a function of temperature.

Electrical Entrance Package - Entry point of the electrical power including: (1) Location where the overhead electrical lines connect to the house, (2) Meter which measures how much power is used and (3) 'Panel', 'circuit breaker box 'or 'fuse box' where the power can be shut off, and overload devices such as fuses or circuit breakers are located.

Electrical Permit - Separate permit required for most electrical work.

Electrical Rough - Work performed by the electrical contractor after the plumber and heating contractor are complete with their phase of work. Normally all electrical wires and outlet, switch, and fixture boxes are installed (before insulation).

Electrical Trim - Work performed by the electrical contractor when the house is nearing completion. The electrician installs all plugs, switches, light fixtures, smoke detectors, appliance "pig tails", bath ventilation fans, wires the furnace, and "makes up" the electric house panel.

Electrician - Professional tradesman engaged in designing, making, servicing or repairing electrical services, branch wiring, instruments, equipment and/or machinery including supports and similar work.

Electricity - (1) Basic property of all matter, which consists of negative and positive charges (electron and protons) which attract each other. (2) Potential energy of electrons at rest.

Electroluminescence - Conversion of electrical energy into light energy.

Electroluminescent - Refers to a light-emitting capacitor in which alternating current excites phosphor atoms placed between electrically conductive surfaces and produces light.

Electrolyte - Electrically conducting liquid (wet) or paste (dry)

Electrolytic Capacitor - Capacitor having an electrolyte between the two plates. Thin layer of oxide is deposited on only the positive plate. Oxide acts as the dielectric for the capacitor. Electrolytic capacitors are polarized and so must be connected in correct polarity to prevent breakdown.

Electromagnet - Coil of wire usually wound on a soft iron or steel core. When current is passed through the coil a magnetic field is generated. Core provides an easy path for the magnetic lines of force. This concentrates the field in the core.

Electromagnetic - Pertaining to combined electric & magnetic fields associated with movements of electrons through conductors.

Electromagnetic Induction - Voltage produced in a coil due to relative motion between the coil and magnetic lines of force.

Electromagnetic Interference (EMI) - Impairment of the reception of a desired signal by an electromagnetic disturbance. This can be caused by lightning, radio transmitters, power line noise, and other electrical devices.

Electromagnetic Wave - Wave that consists of both electric and magnetic variation.

Electromagnetism - Relates to the magnetic field generated around a conductor when current is passed through it.

Electromotive Force - (EMF) Pressure or voltage. Force that causes the motion of electrons due to potential difference between two points. (voltage)

Electron - Smallest sub atomic particle of negative charge that orbits the nucleus of an atom.

Electron Flow - Electrical current produced by the movement of free electrons towards a positive terminal.

Electronic - Related to devices which utilize moving electrons, and to circuits and systems containing such devices.

Electronic Access Control - See access control.

Electronic Article Surveillance - Sensors attached to items and receivers strategically located to sense their movement.

Electronic Iris - Automatically changes a CCD camera's shutter to mimic Auto Iris control, allowing fixed or manual iris lenses to be used in a range of areas that used to require an auto iris lens.

Electronic Key Switch - Switch operated by pushing buttons in a certain sequence or combination.

Electronic Mail - System for delivering messages over networks.

Electronic Shuttering - Electronic shuttering is the ability of the camera to compensate for moderate light changes in indoor applications without the use of auto iris lenses.

Electronic Siren - Speaker with a built -in electronic siren driver.

Electronic Switch - Circuit that electronically the action of a mechanical switch in response to an appropriate electrical input signal.

Electronic Warbler - Speaker with a built -in electronic siren driver that produces a much different sound than that of an electronic siren.

Electronics - (1) Branch of physics that deals with the emission, behavior, and effects of electrons (as in electron tubes and transistors) and with electronic devices. (2) Electronic devices or equipment.

Electrostatic - Related to static electric charge.

Electrostatic Field - Force field produced by static electrical charges.

Electrostatic Speaker - A type of loudspeaker that creates sound via a vibrating surface that is electrically charged.

Elevation Sheet - The page on the blue prints that depicts the house or room as if a vertical plane were passed through the structure.

Elevator Evacuation System - A system, including a vertical series of elevator lobbies and associated elevator lobby doors, an elevator shaft(s), and a machine room(s), that provides protection from fire effects for elevator passengers, people waiting to use elevators, and elevator equipment so that elevators can be used safely for egress.

Elevator Lobby Door - A door between an elevator lobby and another building space other than the elevator shaft.

Elevator Lobby - A space from which people directly enter an elevator car(s) and into which people directly enter upon leaving an elevator car(s).

Ember - A particle of solid material that emits radiant energy due either to its temperature or the process of combustion on its surface. (See also Spark.)

Embossing - To place a raised pattern on an item.

Emergency Button - See a panic alarm.

Emergency Communication Center (ECC) - See Public Safety Answering Point.

Emergency Medical Service (EMS) Dispatch - An agency that dispatches emergency medical or ambulance personnel.

Emergency Medical Services (EMS) - Emergency medical service personnel who respond to an RFR.

Emergency Notification List - See Call List.

Emergency Response Personnel - Employees of public agencies or private organizations which train their employees to respond to alarms. These include police, fire, EMS, and ambulance personnel, private security agency employees, and alarm company or monitoring facility alarm investigators.

Emergency Response Support Personnel - Persons who provide support or assistance to the first person to arrive at the location from which an alarm signal has been received. Such personnel are employees of public agencies or private organizations which train their employees to respond to alarms. These include police, fire, EMS, and ambulance personnel, private security agency employees, and alarm company or monitoring facility alarm investigators.

Emergency Service - Repair service provided on a non-scheduled basis for the user, as needed.

Emergency Voice/Alarm Communications - Dedicated manual or automatic facilities for originating and distributing voice instructions, as well as alert and evacuation signals pertaining to a fire emergency, to the occupants of a building.

EMF – Electromotive force.

EMI - Electromagnetic interference.

Emissivity - Percentage of infrared energy emitted from a surface for a given temperature compared to the total energy it should emit for that temperature.

Emitter - The semiconductor region from which charge carriers are injected into the base of a bipolar junction transistor.

EMT - Electrical Metallic Tubing

Enclosed Court - A court bounded on all sides by the exterior walls of a building or by the exterior walls and lot lines on which walls are permitted.

Enclosure - A box or cabinet usually constructed of metal, that house system components, such as circuit boards and other electronic and electrochemical controls and circuitry.

Encoder - Device that codes a signal on an item through mechanical, electronic, magnetic, electromagnetic or other means.

Encryption - Cryptographic transformation of data (called "plaintext") into a form (called "cipher text") that conceals the data's original meaning to prevent it from being known or used.

End of Line Device - Device used to terminate a supervised circuit.

End of Line Diode - Used on signal circuits in the same manner as the EOLR. Allows current to flow in one direction for supervision and blocks current in the other direction to allow the signals to operate.

End of Line Module - Electronic module used as the last element in a loop of smoke or thermal sensors.

End of Line Relay - Device used to monitor power to system in four wire smoke detectors. Placed after the last powered device. When power to the relay is interrupted the signaling circuit is broken causing a trouble circuit.

End of Line Resistor - Resistor used to terminate an electrically supervised line.

End of Line Supervision - Use of a resistor, capacitor or diode within a sensor circuit to control the amount or direction of supervisory current flow. Allows the system to detect the difference between a break and a short on the circuit.

Energized - Being electrically connected to a voltage source so the device is activated.

Energy - Capacity to do work.

Energy Dissipation Basin - Pit or ditch sometimes filled with gravel which is used to collect storm water. Water in the ditch soaks into the ground slowly, thus preventing soil eroding runoff and flooding.

Engineering Notation - Floating point system in which numbers are expressed as products consisting of a number greater than one multiplied by an appropriate power of ten that is some multiple of three.

Enroll - Act of signing an individuals ID into a system.

Enrollment Reader - Reader that can be used to enroll cards into an access control system.

Entrance Delay - Predefined period of time between activating a sensor on an entrance door or gate and the sounding of a local alarm or transmission of an alarm signal upon activation of a sensor on an exit door. This delay is used if the authorized access switch is located within the protected area. It permits a person with the control key to turn on the security system and leave through a protected door or gate without causing an alarm. The delay is provided by a timer within the control unit.

Entrance/exit Delay - A short -duration timer (usually with a time period less than one minute) that gives legitimate occupants time to go out and shut the door after arming the alarm system, or to come in and disarm the system before the alarm sounds upon returning.

Entry Delay - See Entrance Delay.

Entry Exit Delay - See Entrance/exit Delay

Entry Warning - See Pre -Alarm.

Envelopment - The characteristic of a listening space where the listener is surrounded by sound. Proper surround -channel envelopment of the audience is considered a very important characteristic of high -quality home and commercial theaters.

Environment - (1) The universe in which a system must operate. (2) All the elements over which the designer has no control and that affect a system or its inputs and outputs.

EOL - End of Line

EOL Resistor - See End of Line Resistor.

EPROM - (electrically programmable read -only memory) Solid -state, chip -based device that stores data electronically rather than magnetically.

Equalization - The process of correcting losses of certain components in a signal. The action or circuitry which selectively adjusts the level of certain audio frequencies to compensate for deficiencies in the system. Also called “compensation.”

Equalizer - a device that changes the relative volume of individual frequency bands to suit personal tastes of the listener.

Equipment - General term including material, fittings, devices, appliances, components and fixtures.

Equivalent - Equal to or approved equal.

Equivalent Resistance - Total resistance of all the individual resistances in a circuit.

Erasable Programmable Read -Only Memory (EPROM) - A programmed memory (often in a chip) that can not only be read, but can be repeatedly erased under high -intensity ultraviolet light and reprogrammed.

Erase - Clear or remove stored data.

Ergonomics - Designing for human comfort, safety and ease of use.

Error - Deviation of a computed, measured, or observed value or procedure from the correct value or procedure.

Escape Lighting - Lighting provided to ensure that an escape route can be easily identified and used in case of failure of normal lighting systems.

Escrow - Handling of funds or documents by a third party on behalf of the buyer and/or seller.

Escrow Passwords - Escrow Passwords are passwords that are written down and stored in a secure location (like a safe) that are used by emergency personnel when privileged personnel are unavailable.

Escutcheon - Ornamental plate that fits around a pipe extending through a wall or floor to hide the cut out hole

Estimate - Amount of labor, materials, and other costs that a contractor anticipates for a project as summarized in the contractor's bid proposal for the project.

Estimating - Process of calculating the cost of a project.

Ethernet - A 10-megabit/second standard for local area networks (LANs).

EVAC - Emergency Voice Alarm Communications System

Evacuation - The withdrawal of occupants from a building.

Evacuation - Withdrawal of occupants from a building.

Evacuation Capability - The ability of occupants, residents, and staff as a group either to evacuate a building or to relocate from the point of occupancy to a point of safety.

Evacuation Signal - A distinctive signal intended to be recognized by the occupants as requiring evacuation of the building.

Evacuation Signal - Distinctive signal intended to be recognized by the occupants as requiring evacuation of the building.

Evacuation Signaling Zone - A discrete area of a building, bounded by smoke or fire barriers, from which occupants are intended to relocate or evacuate.

Evaporator coil - Part of a cooling system that absorbs heat from air in your home. Also see condensing unit.

Event – (1) Observable occurrence in a system or network. (2) One or more related alarm or trouble signals.

Event Code - Signal received at a monitoring station that identifies the nature of an event. (ie burglary, fire, hold -up, etc.)

Event Log - History of events which indicate the actions performed by and within a system. Each event log entry contains the time, date, and any other attributes that specifically define the event.

Exchange - Geographical area established for the administration of communication service and could consist of one or more central offices together with associated facilities used in providing exchange services.

Executive Privilege - Option which allows a cardholder unlimited access to all operational access points. Access may be without the system referring to any other access parameters, or there may be a PIN -code requirement has been enabled.

Exhibit - A space or portable structure used for the display of products or services.

Exhibitor - An individual or entity engaged in the display of the products or services offered.

Existing - That which is already in existence on the date this edition of the Code goes into effect.

Existing Building - A building erected or officially authorized prior to the effective date of the adoption of this edition of the Code by the agency or jurisdiction.

Exit - That portion of a means of egress that is separated from all other spaces of a building or structure by construction or equipment as required to provide a protected way of travel to the exit discharge.

Exit Access - That portion of a means of egress that leads to an exit.

Exit Alarm - Alarm activated upon exiting a premise (usually accidentally).

Exit Delay - Predefined period of time that the user has to leave the premises after arming the system.

Exit Discharge - That portion of a means of egress between the termination of an exit and a public way.

Exit Plan - Plan for the emergency evacuation of the premises.

Exit Switch - Push button, switch mat, proximity detector, or other device which starts a timer in the reader interface electronics when someone is leaving through a controlled entry or exit.

Expansion Joint - Fibrous material (@1/2" thick) installed in and around a concrete slab to permit it to move up and down (seasonally) along the non -moving foundation wall.

Expansive Soils - Earth that swells and contracts depending on the amount of water that is present. ("Betonite" is an expansive soil).

Exposed Aggregate Finish - Method of finishing concrete which washes the cement/sand mixture off the top layer of the aggregate - usually gravel. Often used in driveways, patios and other exterior surfaces.

Exposition - An event in which the display of products or services is organized to bring together the provider and user of the products or services.

Exposition Facility - A convention center, hotel, or other building at which exposition events are held.

Exposure – (1) Condition of being unprotected especially from severe weather (2) Disclosure of something secret. (3) To submit or make accessible to a particular action or influence.

Exposure Fire - A fire that starts at a location that is remote from the area being protected and grows to expose that which is being protected.

Extension - Additional telephone connected on the same line with the main phone.

Extension Tube - Kit consisting of various size spacers that are used between the lens and the camera to reduce the lens M.O.D. Generally used for very close -up applications. Not recommended for zoom lenses due to loss of tracking.

Exterior Envelope - Consists of all of the elements protecting the building from the elements: roofing, siding, windows, exterior doors, porches, flashing, trim, caulking, waterproof decks, venting systems, chimneys and other elements which relate to the exterior surfaces of the structure.

Externally Illuminated - Refers to an illumination source that is contained outside of the device or sign legend area that is to be illuminated.

Extras - Additional work requested, not included in the original plan or cost, which will be billed separately.

F -Number - The f -number indicates the brightness of the image formed by the lens, controlled by the iris. A smaller f -number means a brighter image.

F -Stop - Term used to indicate the speed of a lens. The smaller the f -number, the greater is the amount of light passing through the lens.

Face Nail - To install nails into the vertical face of a bearing header or beam.

Face Plate - Part of a mortise lock through which the bolt protrudes and by which the lock is fastened to the door.

Faced Concrete - To finish the front and all vertical sides of a concrete porch, step(s), or patio. Normally the "face" is broom finished.

Facility code - Code used in systems to identify a customer or location.

Facing Brick - The brick used and exposed on the outside of a wall. Usually these have a finished texture.

Factory Calibration - Tuning or altering of a control circuit by the manufacturer to bring the circuit into specification.

Fail Safe - Locking device that is unlocked when no power is applied. On loss of power, access points will automatically unlock allowing free access, and signal the card access system of a device malfunction or loss of power.

Fail Secure - Electric lock that requires power to unlock. Also called fail -locked. A locking device that is locked when no power is applied. These are not normally used for exit doors since they cannot be unlocked during a power outage.

Fail Unlocked - Electric lock that automatically unlocks with any power interruption. Also called fail -safe.

Failure - Inability of a system, subsystem, component or part to function in the required or specified manner.

False Alarm - (1) An alarm signal transmitted in the absence of an alarm condition. These may be caused by environmental factors (such as rain, wind, temperature, or lightning), family pets, man -made electromagnetic interference, or insects. Other false alarms may be caused by operator error, inadequate grounding of the control unit, or faulty components. A certain percentage will ultimately be unknown in origin. (2) (Burglary) - An alarm dispatch request to a law enforcement agency, when the responding officer finds no evidence of a criminal offense or attempted criminal offense after having completed a timely investigation of the alarm site. (3) (Fire) - A false or “Nuisance” alarm” is any alarm caused by mechanical failure, malfunction, improper installation, or lack of proper maintenance; or any alarm activated by a cause that cannot be determined. (3) An alarm event indicating the presence of an emergency condition when none exists.

False Alarm Percentage - A number that represents false alarms as a percentage of all requests for response received by a PSAP. This number takes into consideration only the systems that have careless users or system problems. It ignores the alarm systems that never generate a false alarm. A far more significant index of alarm performance is the False Alarm Ratio.

False Alarm Rate, Monthly - Number of false alarms per installation per month.

False Alarm Ratio - Ratio of false alarms to total alarms; may be expressed as a percentage or as a simple ratio.

False Alarm Reduction Association (FARA) - An association primarily of persons employed by government and public safety agencies in charge of, or working in, False Alarm Reduction Units.

False Negative - When an authorized individual is excluded.

False Positive - When an unqualified or unauthorized individual is accepted.

False Rejects - False Rejects are when an authentication system fails to recognize a valid user.

Family Dwelling Unit - See Household.

Family Living Unit - Structure area, room, or combination of rooms in which a family (or individual) lives. See Household.

Farad - Basic unit of capacitance.

Fascia - Horizontal boards attached to rafter/truss ends at the eaves and along gables. Roof drain gutters are attached to the fascia.

Fastener - Device used to secure an object to a structure.

Fatigue - Tendency of a material to break under repeated stress.

Fault - (1) Defective point or section in a circuit or device. (2) Failure in a circuit or device. (3) Open, short or ground condition on any line(s) extending from a control unit, which could prevent normal operation.

Fault Line Attacks - Fault Line Attacks use weaknesses between interfaces of systems to exploit gaps in coverage.

Feedback - Portion of the output signal of an amplifier which is connected back to the input of the same amplifier.

Feeder - Heavy wire conductor supplying electricity at some point of an electric distribution system (as from a substation)

Felt - Tar paper. Installed under the roof shingles. Normally 15 lb. or 30 lb.

Female - Any part, such as a nut or fitting, into which another (male) part can be inserted. Internal threads are female.

Fence Ribbon - Barbed metal tape, similar to barbed wire, used to make it more difficult to climb over a fence.

Fence Sensor – (1) Sensor to detect cutting, climbing, or jacking of the fence fabric. (2) A seismic, vibration, shock, taut-wire, or other sensor that detects attempts to penetrate or climb over a fence.

Ferrite Bead - Ferrite composition in the form of a bead. Running a wire through the bead increases the inductance of the wire.

Ferrite Core Inductor - Inductor wound on a ferrite core.

Ferrites - Compound composed of iron oxide, a metallic oxide and ceramic. The metal oxides include zinc, nickel, cobalt or iron.

Ferrous - Composed of and or containing iron. A ferrous metal exhibits magnetic characteristics as opposed to non -ferrous material.

Ferrule - Metal tubes used to keep roof gutters "open". Long nails (ferrule spikes) are driven through these tubes and hold the gutters in place along the fascia of the home.

Festival Seating - A form of audience/spectator accommodation in which no seating, other than a floor or ground surface, is provided for the audience/spectators gathered to observe a performance.

FET Field -effect Transistor - Semiconductor device that more or less simulates the operational characteristics of a vacuum tube. It is often used in high speed switching circuits.

FHA Strap - Metal straps that are used to repair a bearing wall "cut -out", and to "tie together" wall corners, splices, and bearing headers. Also, they are used to hang stairs and landings to bearing headers.

Fiber Optics - Flexible glass fibers used to conduct energy. Laser's light output carries information that is conveyed between two points by thin flexible glass optical fibers.

Fidelity - Degree to which an electronic product accurately reproduces sound.

Field - (1) Distribution of energy in space (i.e. Electric, magnetic, sound). (2) In Video - One half of a frame, consisting of either the odd or the even numbered lines, 60 fields are transmitted every second.

Field Effect Transistor - (FET) Voltage controlled transistor in which the source to drain conduction is controlled by gate to source voltage.

Field Measure - To take measurements (cabinets, countertops, stairs, shower doors, etc.) in the home itself instead of using the blueprints.

Field of View - The solid cone that extends out from the detector within which the effective sensitivity of the detector is at least 50 percent of its on-axis, listed, or approved sensitivity.

Field Strength - Amplitude of a field at a given point, measured in volts per meter for electrical energy.

Field test - Test of equipment under actual operating conditions, outside the laboratory or factory.

Filament - Thin thread of carbon or tungsten which produces heat or light with the passage of current.

File - Collection of related records.

File Transfer Protocol (FTP) - A TCP/IP protocol specifying the transfer of text or binary files across the network.

Fill-Type Insulation - Loose insulating material which is applied by hand or blown into wall spaces mechanically.

Filter - Device that allows certain parts of signals to pass.

Finger Joint - Manufacturing process of interlocking two shorter pieces of wood end to end to create a longer piece of dimensional lumber or molding. Often used in jambs and casings and are normally painted (instead of stained).

FIP - (Function Indicator Panel) - front display device. Also called FDP for fluorescent display panel.

Fire Alarm - (1) Alarm system that detects and reacts to fire. (2) Circuit that detects the possible presence of a fire and sounds an alarm to alert any occupants who might be endangered. (3) A system that detects and reports a fire in the protected premises, detects and reports water flowing in a sprinkler system, or detects and reports dangerous conditions such as smoke or overheated materials that may combust spontaneously.

Fire Alarm Control Unit (Panel) - System component that receives inputs from automatic and manual fire alarm devices and may supply power to detection devices and transponders or off premises transmitters. The control unit may also provide transfer of power to the notification appliances and transfer condition of relays or devices connected to the control unit. The fire alarm control unit can be a local fire alarm control unit or a master control unit.
See Control Unit.

Fire Alarm Retransmission - See Request For Response (RFR).

Fire Alarm Signal - Signal initiated by a fire alarm initiating device such as a manual fire alarm box, automatic fire detector, waterflow switch, or other device whose activation is indicative of the presence of a fire or fire signature. See Signal.

Fire Alarm System - System or portion of a combination system consisting of components and circuits arranged to monitor and annunciate the status of fire alarm or supervisory signal initiating devices and to initiate appropriate response to those signals.

Fire Alarm Verification - Fire zone feature that attempts to minimize false alarms by not signaling an alarm when a smoke detector trips the first time.

Fire Alarm/Evacuation Signal Tone Generator - A device that produces a fire alarm/evacuation tone upon command.

Fire Barrier - A continuous membrane or a membrane with discontinuities created by protected openings with a specified fire protection rating, where such membrane is designed and constructed with a specified fire resistance rating to limit the spread of fire, that also restricts the movement of smoke.

Fire Barrier Wall - A wall, other than a fire wall, that has a fire resistance rating.

Fire Block - Short horizontal members sometimes nailed between studs, usually about halfway up a wall. See also 'Fire stop'.

Fire Brick - Brick made of refractory ceramic material which will resist high temperatures. Used in a fireplace and boiler.

Fire Command Center - The principal attended or unattended location where the status of the detection, alarm communications, and control systems is displayed and from which the system(s) can be manually controlled.

Fire Compartment - A space within a building that is enclosed by fire barriers on all sides, including the top and bottom.

Fire Department - Fire department personnel who respond to an RFR.

Fire Dispatch - An agency that dispatches fire department personnel. Frequently the same group that also dispatches emergency medical service (EMS) personnel.

Fire Door - Door tested and rated for resistance to various degrees of fire exposure and utilized to prevent the spread of fire through horizontal or vertical openings.

Fire Door Assembly - Any combination of a fire door, a frame, hardware, and other accessories that together provide a specific degree of fire protection to the opening.

Fire Exit Hardware - A door-latching assembly incorporating a device that releases the latch upon the application of a force in the direction of egress travel and provides fire protection where used as part of a fire door assembly.

Fire Model - A structured approach to predicting one or more effects of a fire.

Fire Protection Rating - The designation indicating the duration of the fire test exposure to which a fire door assembly or fire window assembly was exposed and for which it met all the acceptance criteria as determined in accordance with NFPA 252, Standard Methods of Fire Tests of Door Assemblies, or NFPA 257, Standard on Fire Test for Window and Glass Block Assemblies, respectively.

Fire Rating - The classification indicating in time (hours) the ability of a structure or component to withstand a standardized fire test.

Fire Resistance Rating - The time, in minutes or hours, that materials or assemblies have withstood a fire exposure as determined by the tests or methods based on tests, prescribed by this Code.

Fire Resistive or Fire Rated – Applies to materials that are not combustible in the temperatures of ordinary fires and will withstand such fires for at least 1 hour. Drywall used in the garage and party walls are to be fire rated, 5/8", Type X.

Fire Retardant Chemical - Chemical or preparation of chemicals used to reduce the flammability of a material or to retard the spread of flame.

Fire Safety Function Control Device - The fire alarm system component that directly interfaces with the control system that controls the fire safety function.

Fire Safety Functions - Building and fire control functions that are intended to increase the level of life safety for occupants or to control the spread of the harmful effects of fire.

Fire Scenario - A set of conditions that defines the development of fire, the spread of combustion products throughout a building or portion of a building, the reactions of people to fire, and the effects of combustion products.

Fire Stair - Enclosed stairway that is part of a fire resistant exit way.

Fire Stop - A solid, tight closure of a concealed space, placed to prevent the spread of fire and smoke through such a space. In a frame wall, this will usually consist of 2 by 4 cross blocking between studs. Work performed to slow the spread of fire and smoke in the walls and ceiling (behind the drywall). Includes stuffing wire holes in the top and bottom plates with insulation, and installing blocks of wood between the wall studs at the drop soffit line.

Fire Stopping Seal - Listed method of sealing holes in walls, floors, and ceilings that stop or delay the movement of smoke, fire, and air drafts.

Fire Wall - Fire resistant wall designed to prevent the horizontal spread of fire into adjacent areas.

Fire Warden - A building staff member or a tenant trained to perform assigned duties in the event of a fire emergency.

Fire Warning Equipment - Any detector, alarm, device, or material related to single- and multiple-station alarms or household fire alarm systems.

Fire Watch - A person or persons assigned to an area for the purpose of protecting the occupants from fire or similar emergencies.

Fire Window Assembly - A window or glass block assembly having a fire protection rating.

Fire–Gas Detector - A device that detects gases produced by a fire.

Fireplace Chase Flashing Pan - Large sheet of metal that is installed around and perpendicular to the fireplace flue pipe. It's purpose is to confine and limit the spread of fire and smoke to a small area.

Fire-Pump Running Switch - A sensor that detects the operation of a fire pump in a sprinkler system.
Note: When a fire pump is running there is often an assumption of a fire because the fire pump moves large volumes of water through a limited pipe capacity.

Firewall - Logical or physical discontinuity in a network to prevent unauthorized access to data or resources.

Firmware - Proprietary operating software for equipment typically held in a PROM or EPROM.

Fish - To push a stiff steel wire or tape through a conduit or interior wall; pull -through wire, cable or a heavier pulling -in is then attached to one end of the steel wire and the other end is pulled until the wire or cable appears.

Fish Tape - Long strip of flexible spring steel used for fishing cables and for pulling wires through conduit.

Fishing- Getting cables through finished walls and ceilings.

Fishplate (gusset) - Wood or plywood piece used to fasten the ends of two members together at a butt joint with nails or bolts. Sometimes used at the junction of opposite rafters near the ridge line. Sometimes called a gang nail plate.

Fitting - Accessory such as a locknut, bushing, or other part of a wiring system that is intended primarily to perform a mechanical rather than electrical function.

Fixed Price Contract - Contract with a set price for the work. See, "Time and Materials Contract."

Fixed Seating - Seating that is secured to the building structure.

Fixed Temperature Sensor - A heat sensor that is triggered when a pre-determined temperature has been reached at the sensor.

Fixed-Temperature Detector - A device that responds when its operating element becomes heated to a predetermined level.

Flagstone (flagging or flags) - Flat stones (1 to 4 inches thick) used for walks, steps, floors, and vertical veneer (in lieu of brick).

Flakeboard – Manufactured wood panel made out of 1" - 2" wood chips and glue. Often used as a substitute for plywood in the exterior wall and roof sheathing. Also called OSB or wafer board.

Flame - A body or stream of gaseous material involved in the combustion process and emitting radiant energy at specific wavelength bands determined by the combustion chemistry of the fuel. In most cases, some portion of the emitted radiant energy is visible to the human eye.

Flame Detector - (1) A radiant energy–sensing fire detector that detects the radiant energy emitted by a flame. (2) A sensor that "sees" the flicker of light emanating from a fire.
(3) Sensor that detects the infrared, ultraviolet, or visible radiation or light output from a flame. See Detector.

Flame Detector Sensitivity - The distance along the optical axis of the detector at which the detector can detect a fire of specified size and fuel within a given time frame.

Flame Proof - Insulated wire which has been chemically treated so it will not aid the spread of flames.

Flame Retardant - Constructed or treated so as not to be able to convey flame.

Flame Retention Burner - An oil burner, designed to hold the flame near the nozzle surface. Generally the most efficient type for residential use.

Flame Spread - The propagation of flame over a surface.

Flange Back - The distance from the flange of the lens (beginning of the lens mount) to the focal plane. C -mount lenses have a flange back distance of 17.526mm vs. 12.5mmfor CS –mount

Flashing - Noncorrosive metal used around angles or junctions in roofs and exterior walls to prevent leaks.

Flashover - A stage in the development of a contained fire in which all exposed surfaces reach ignition temperatures more or less simultaneously and fire spreads rapidly throughout the space.

Flat Mold - Thin wood strips installed over the butt seam of cabinet skins.

Flat nose pliers - Long -nose pliers with flat, square -end jaws. Used for wiring, bending, and handling sheet metal.

Flat Paint - An interior paint that contains a high proportion of pigment and dries to a flat or lusterless finish.

Flatwork - Common word for concrete floors, driveways, basements, and sidewalks.

Flaw - A defect.

Flex - Common term used to refer to flexible metallic conduit.

Flexible Plan and Open Plan Educational or Day- Care Building - A building or portion of a building designed for multiple teaching stations.

Flip Flop - Bistable multivibrator. A circuit which has two output states and is switched from one to the other by means of an external signal (trigger).

Floating - Next -to -last stage in concrete work, when you smooth off the job and bring water to the surface by using a hand float or bull float.

Floating Ground - Common connection in a circuit that provides a return path for current but is not connected to an earth ground.

Floating Wall - Non-bearing wall built on a concrete floor. It is constructed so that the bottom two horizontal plates can compress or pull apart if the concrete floor moves up or down. Normally built on basements and garage slabs.

Flooding - An attack that attempts to cause a failure in (especially, in the security of) a computer system or other data processing entity by providing more input than the entity can process properly.

Flooding Alarm - Circuit or device that responds when the level of some liquid is detected above some specific point, usually by creating a short circuit current path between a pair of simple probes.

Floor – (1) Bottom surface of a room (2) Level in a building, as basement, first floor, second floor, and so on.

Floor contact - Floor mounted contact used to detect the opening of an overhead door.

Fire Door Assembly - A combination of a fire door, a frame, hardware, and other accessories installed in a horizontal plane, which together provide a specific degree of fire protection to a through-opening in a fire-rated floor.

Floor Joists - Framing pieces which rest on outer foundation walls and interior beams or girders.

Floor Mats - Thin mats with pressure switches designed to be placed under rugs to detect someone walking in the area.

Floor Plan - Plan view (view looking straight down) of a floor. An imaginary cut is made across the building 2 or 3 feet off the floor to expose the floor. Walls, partitions, door, windows, fixtures, stairs and dimensions are shown. Floor plans are identified by their location in a structure: a first floor plan. basement plan, foundation plan, etc.

Floor Trap - Trap installed so as to detect the movement of a person across a floor space. See Pressure Pad

Floppy Disk - Soft diskette used to store data.

Flow - Passage of electrons through a conductor or through the space between electrodes.

Flow Soldering - Flow or wave soldering technique in large scale electronic assembly to solder all the connections on a printed circuit board by moving the board over a wave of molten solder.

Flow Time - A component of total evacuation time that is the time during which there is crowd flow past a point in the means of egress system.

Flowchart - (1) A diagram depicting the logic steps in a digital computer program. (2) A diagram showing the flow of material through a sequence of processes or stages in a system or process.

Flue - Passageway in a chimney for conveying smoke, gases or fumes to the outside air.

Flue Collar - Round metal ring which fits around the heat flue pipe after the pipe passes out of the roof.

Flue Damper - Automatic door located in the flue that closes it off when the burner turns off; purpose is to reduce heat loss up the flue from the still –warm furnace or boiler.

Flue Lining – Two foot lengths, fire clay or terra -cotta pipe (round or square) and usually made n all ordinary flue sizes.

Fluorescent Lighting - A fluorescent lamp is a gas -filled glass tube with a phosphur coating on the inside. Gas inside the tube is ionized by electricity which causes the phosphur coating to glow. Normally with two pins that extend from each end.

Flush- On the same plane as, or level with, a surrounding surface.

Flutter - Sound distortion resulting from fairly rapid irregularities in the speed of a phonograph record or tape recording.

Flux– (1) Material used to remove oxide films from the surface of metals in preparation for soldering. (2) In magnetism, the magnetic field consisting of lines of force.

Flux Density - Concentration of magnetic lines of force. Determines strength of the magnetic field.

Fly Gallery - A raised floor area above a stage from which the movement of scenery and operation of other stage effects are controlled.

Fly Rafters - End rafters of the gable overhang supported by roof sheathing and lookouts.

FM - (frequency modulation) Form of modulation used for radio and television sound transmission in most of the world, for satellite video transmission, and for videotape recording.

Focal Length - Focal length determines the size of the image and the angle of the field of view seen by the camera through the lens. The distance between the secondary principal point in the lens and the plane of the imaging device. The longer the focal length, the narrower is the angle of view.

Focus - Point that produces the sharpest image.

Foil - (1) Metallic tape placed on glass or walls to detect the breaking of the material. (2) A ribbon of lead foil that conducts electricity and acts as a wire when attached to glass in a pattern around the perimeter of a window. Breaking the window will also break the foil tape, opening up the current path through it, functioning like a normally closed sensor.

Foil Connector - Used to connect foil to alarm circuit wire. Also called foil block or takeoff block.

Foil Tape - See Foil.

Folding and Telescopic Seating - A structure that is used for tiered seating of persons and whose overall shape and size can be reduced, without being dismantled, for purposes of moving or storing.

Folding Door - Door with sections that fold back together when open.

Follow-Up Call - See Follow-Up Notification.

Follow-up Notification - Monitoring facility provides information to the PSAP, after an initial RFR, about (1) additional sensors at the protected premises reporting emergency conditions, (2) when a key holder is expected to arrive, (3) cancellation of an RFR, (4) the arrival of an alarm investigator or guard company representative, or (5) the confirmed alarm emergency reported by an alarm investigator or guard company representative from the user's premises.

Food Court - A public seating area located in a mall that serves adjacent food preparation tenant spaces.

Foot Rail - A sensor that can be activated by a person's foot to trigger a hold-up alarm signal.

Foot Switch - See Foot Rail.

Footcandle - Light intensity (illumination) of a surface one foot distant from a source of one candela. Equal to one lumen per square foot. (1FC = 1 lm ft2). Unit used to measure incident light.

Footer, footing - Continuous 8" or 10" thick concrete pad installed before and supports the foundation wall or monopost.

Force Arming - Act of arming a security system with one or more devices in trouble. When armed in this manner the faulted devices will not detect any intrusion.

Forced Air Heating - Common form of heating with natural gas, propane, oil or electricity as a fuel. Air is heated in the furnace and distributed through a set of metal plastic ducts to various areas of the house.

Forced Entry - Unauthorized entry accompanied by the use of force upon the physical components of the premises. Breach of an area usually through a door or window using tools or muscle power.

Foreman - Experienced tradesman in charge of work on the job; a superintendent.

Form - Temporary structure erected to contain concrete during placing and initial hardening.

Form A Contact - Single -pole -single -throw, normally open relay or momentary switch contact.

Form B Contact - Single -pole -single -throw, normally closed relay or momentary switch contact.

Form C Contact - Single -pole -double -throw relay or switch contact.

Formula - Mathematical instructions for calculating given items.

Foundation – Lower parts of walls on which the structure is built. Foundation walls of masonry or concrete are mainly below ground level.

Foundation Ties - Metal wires that hold the foundation wall panels and rebar in place during the concrete pour.

Foundation Waterproofing - High -quality below -grade moisture protection. Used for below -grade exterior concrete and masonry wall damp -proofing to seal out moisture and prevent corrosion. Normally looks like black tar.

Frame - The total area of the picture which is scanned while the picture signal is not blanked. The combination of two interlaced fields, 25 frames are created every second.

Frame Inspection - The act of inspecting the home's structural integrity and it's compliance to local municipal codes.

Frame Store - an electronic method of capturing and storing a single frame of video.

Framer -The carpenter contractor that installs the lumber and erects the frame, flooring system, interior walls, backing, trusses, rafters, decking, installs all beams, stairs, soffits and all work related to the wood structure of the home.

Framing - Lumber used for the structural members of a building, such as studs, joists, and rafters. The structural wood and/or metal elements of most homes. The floor and ceiling framing is called the joist work. Wall framing is usually made out of 2" x 4" or 2" x 6" studs.

Free Electrons - Electrons that are not in any orbit around a nucleus.

French Door - Pair of swinging doors with a large top to bottom glass area.

Frequency– (1) Rate of recurrence of a periodic wave. Measured in Hertz (cycles per second). (2) The number of complete oscillations per second of an electromagnetic wave. (3) The pitch of radio signals that distinguishes one from another.

Frequency -division Multiplex - (FDM) Transmission of two or more signals over a common path by using a different frequency band for each signal.

Frequency Meter - Meter used to measure frequency of periodic waves.

Frequency Range - measured in hertz (Hz), the frequency range of an audio component is the range of frequencies it reproduces with a flat (linear) frequency response.

Frequency response - a specification indicating how evenly a range of frequencies is reproduced by a component or sound system. The audible range is considered to be 20 -20,000 hertz.

Frequency Shift Keying (FSK) - Form of frequency modulation commonly used in low speed modems in which the two states of the signal are transmitted as two separate frequencies.

Fresnel Lens - Thin lens with one side flat and with narrow rings cut into the other side used in passive infrared detectors to focus the infrared energy on a sensing element.

Friction Tape - Insulating tape made of asphalt impregnated cloth.

Frieze - Horizontal member connecting the top of the siding with the soffit of the cornice.

Front Channels - Path along which the sound travels to the front speakers. Home theater surround -sound systems generally have three front channels for left, right and center speakers.

Front Projection - Type of video display device used to project an image onto a facing screen, found in most very high -end home theaters.

Frost Lid - Round metal lid that is installed on a water meter pit.

Frost Line - Depth of frost penetration in soil and/or the depth at which the earth will freeze and swell. Depth varies in different parts of the country.

FSK - Frequency shift keying.

Fuel Load - The total quantity of combustible contents of a building, space, or fire area.

Full Duplex - Type of duplex communications channel which carries data in both directions at once. Refers to the transmission of data in two directions simultaneously. Communications in which both sender and receiver can send at the same time.

Full Wave Rectifier - Rectifier that makes use of the full AC wave in both the positive and negative half cycles.

Fungal Wood Rot - Common wood destroying organism which develops when wood containing material is exposed to moisture and poor air circulation for a longer (6 month +) period of time. Often and incorrectly referred to as "dry rot."

Furnace Problem Sensor - A device used to monitor various operations of a heating plant.

Furring - Thin wood, or metal applied to a wall to level the surface for lathing, boarding, or plastering, to create an insulating air space, and to damp proof the wall.

Furring Strips - Strips of wood, often 1 X 2 and used to shim out and provide a level fastening surface for a wall or ceiling.

Fuse– (1) Protective device in the current path that melts or breaks when current exceeds a predetermined maximum value. (2) Electrical safety device designed to open the circuit when dangerously high current could damage other equipment.

Gable - End, upper, triangular area of a home, beneath the roof.

Gadget- Often small mechanical or electronic device with a practical use but often thought of as a novelty.

Gain - (1) Increase in voltage, current and/or power. (2) Ratio of amplifier output value to the corresponding amplifier input value. (3) Degree of signal amplification, expressed in decibels.

Gambrel Roof - Roof with two pitches, designed to provide more space on upper floors. The roof is steeper on its lower slope and flatter toward the ridge.

Gang Box - Electrical outlet box made by joining two or more boxes together.

Gang Nail Plate - Steel plate attached to both sides at each joint of a truss. Sometimes called a fishplate or gussett.

Ganged - Mechanical coupling of two or more capacitors, switches, potentiometers, or any other adjustable components so that adjusting one control will operate all.

Ganging- Assembling two or more electrical components into a single unit. Boxes, switches, and receptacles often are ganged.

Gap - Distance between two magnetic elements in a magnetic device, such as the space between the magnetic poles of a switch assembly.

Gas Detector - Sensor that detects the presence of specific dangerous chemicals in the air, usually in the form deoxidizing gases.

Gas Lateral - Trench or area in the yard where the gas line service is located, or the work of installing the gas service to a home.

Gasket - Material placed between two surfaces to create a leak proof joint.

Gate (exterior) Switch - A door switch designed for the rugged conditions encountered in the exterior environment of rough use, temperature and moisture extremes, and the loose nature of many gates operating outside.

Gate Valve - (See also 0, S and Y Valve and PIV Valve.) Valve for shutting off water to a sprinkler system.

Gateway - (1) Network point that acts as an entrance to another network. (2) A device that is used in the transmission of serial data (digital or analog) from the fire alarm control unit to other building system control units, equipment, or networks and/or from other building system control units to the fire alarm control unit.

Gauge - (1) Measure of the size of electrical wire. The higher the gauge number, the thinner the wire. (2) Dimension expressed in terms of a system of arbitrary reference numbers. (3) To measure. (4) Instrument with a graduated scale or dial for measuring or indicating quantity.

Gel Battery - Source of direct current, usually in multiples of 2 volts (typically 6 or 12 volts total), which has the ability to provide high current over a short duration or moderate current over a long duration. A gel battery is easily recharged and maintained at a given power capacity through recharging

Gel Cell - Trade name of a lead acid battery. Also used for any battery that has a gelled electrolyte rather than a liquid electrolyte.

General Contractor - Contractor who enters into a contract with the owner of a project for the construction of the project and who takes full responsibility for the execution, supervision and overall coordination of the project, although the contractor may enter into subcontracts with others for the performance of specific parts or phases of the project.

General Industrial Occupancy - An industrial occupancy in which ordinary and low hazard industrial operations are conducted in buildings of conventional design suitable for various types of industrial processes.

Generator - Device used to convert mechanical energy to electrical energy.

Gen-Lock - Method used to synchronize one or more cameras by external means such as - composite video, composite sync, horizontal or vertical sync.

Geophone - See seismic sensor.

GFI or GFCI or Ground Fault Current Interrupter - A electrical device used to prevent injury from contact with faulty electrical appliances and faulty wiring. GFIs should not be confused with AFIs, the later are designed to prevent electrical fires. GFIs are required in new home bathrooms, kitchen, garage, out of doors and in other locations where one might be in contact with a grounded surface and an electrical appliance. Most GFI's are located in the receptacle itself and can be identified by the presence of a 'test' and a 'reset' button.

Ghost - A shadowy or weak image in the received picture, offset either to the right or to the left of the primary image. It is the result of transmission conditions where secondary signals are created and received earlier or later than the primary signal.

GHz - Gigahertz.

Giga - Metric prefix for 1 billion (109).

Giga - Prefix meaning billion, 10^9.

Gigahertz - One billion cycles per second abbreviated GHz.

Girder - (1) Main member in a framed floor supporting the joists which carry the flooring boards. It carries the weight of a floor or partition. (2) A support for beams or joists that runs at right angles to the beams or joists. If the top of the girder is within 100mm (4 in.) of the ceiling, the girder is a factor in determining the number of detectors and is to be considered a beam. If the top of the girder is more than 100 mm (4 in.) from the ceiling, the girder is not a factor in detector location.

Girder - Large or principal beam of wood or steel used to support concentrated loads at isolated points along its length.

Glass - Manufactured clear silicate used for glazing. Various types are used: quartz (very pure glass, transmits ultraviolet rays), Obscure (translucent), shatterproof, stained (pigmented: different pieces are held together with lead strips, structural (thick glass used as tiling), and wire glass (wire mesh is embedded).

Glass Break Detector - A special sensor designed to be tripped specifically by the breaking of glass. Most glass -break detectors are specialized acoustic sensors or vibration sensors.

Glass Break Station - A device mounted near the exit door that can be used to release the door in the event of an emergency.

Glassbreak Vibration Detector - Vibration detection system which employs a sensor attached to a glass window to detect cutting or breakage of the glass.

Glazing - Process of installing glass, which commonly is secured with glazier's points and glazing compound.

Glitch – (1) Usually minor malfunction. (2) Minor problem that causes a temporary setback.
(3) False or spurious electronic signal.

Global Linking - Input at one Access Control panel affecting the output at another.

Globe Valve - Valve that lets you adjust the flow of water to any rate between fully on and fully off. Also see gate valve.

Gloss Enamel - Finishing paint material. Forms a hard coating with maximum smoothness of surface and dries to a sheen or luster (gloss)

Glued Laminated Beam (Glulam) - Structural beam composed of wood laminations or lams. The lams are pressure bonded with adhesives to attain a typical thickness of 1 ½". (It looks like 5 or more 2 X 4's are glued together).

Gnd - Abbreviation for ground.

Gnutella - An Internet file sharing utility. Gnutella acts as a server for sharing files while simultaneously acting as a client that searches for and downloads files from other users.

Goal - A nonspecific overall outcome to be achieved that is measured on a qualitative basis.

Goggles - Eye protection worn when working in hazardous areas.

Grade - (1) Ground level. (2) Elevation or slope or rise. (3) Work of leveling dirt. (4) Designated quality of a manufactured piece of wood.

Grade Beam - Foundation wall that is poured @ level with or just below the grade of the earth. An example is the area where the 8' or 16' overhead garage door "block out" is located, or a lower (walk out basement) foundation wall is poured

Grade Line - Point at which the ground rests against the foundation wall.

Grading Permit - authorization to change the contour of the land.

Grain - Direction, size, arrangement, appearance, or quality of the fibers in wood.

Grand Master - Key designed to operate all locks under several master key systems.

Grandstand - A structure that provides tiered or stepped seating.

Graphic annunciator - Board or CRT screen that has graphics to delineate alarm or sensor locations.

Graphic Equalizer - Device that permits altering the tonal balance of an audio component/system at several frequency levels, usually offering from 5 to 12 adjustments.

Green Lumber - Lumber which has been inadequately dried and which tends to warp or "bleed" resin.

Greenfield- Flexible metal conduit through which wires are pulled.

Greenwich Mean Time (GMT) - World wide reference time. Equivalent to eastern standard time plus 4 hours.

Grid – (1) Assembly of main and cross tees in a suspended ceiling system before the ceiling panels are installed. (2) Decorative slats (munton) installed between glass panels.

Gridiron - The structural framing over a stage supporting equipment for hanging or flying scenery and other stage effects.

Grinder - Power operated abrasive wheel used for sharpening or abrading away of metal.

Grommet - Elastic washer inserted through a hole in a chassis or equipment enclosure to prevent accidental grounding of a conductor or to reduce wear on the cord or cable exiting the chassis.

Gross Floor Area - The floor area within the inside perimeter of the outside walls of the building under consideration with no deduction for hallways, stairs, closets, thickness of interior walls, columns, or other features.

Gross Leasable Area - The total floor area designed for tenant occupancy and exclusive use. The area of tenant occupancy is measured from the centerlines of joint partitions to the outside of the tenant walls.

Ground– (1) An electrical connection point that is common to a metal chassis, a terminal, or a ground bus. (2) An intentional or accidental conducting path between an electrical circuit (or equipment) and the earth (or some conducting body serving in place of the earth).

Ground Clamp - Metal clamp used to connect a ground wire to a ground rod, a cold water pipe, or power ground.

Ground Fault - Ground Fault Circuit Interrupter (GFCI, GFI) - an ultra sensitive plug designed to shut off all electric current. Used in bathrooms, kitchens, exterior waterproof outlets, garage outlets, and "wet areas". Has a small reset button on the plug.

Ground Fault - Short circuit to ground.

Ground Fault Circuit Interrupter - See GFCI.

Ground Floor - Lowest floor of a structure that opens to the ground.

Ground Iron - Plumbing drain and waste lines that are installed beneath the basement floor.

Ground Loop - Caused by different earth potentials in a system. Effects video pictures in the form of a black shadow bar across the screen or as a tearing in the top corner of a picture.

Ground Rod - Strong metal rod driven deep into the earth at a point of ground connection.

Ground Wire - Conductor between an electrical or electronic device and a ground connection, either for circuit completion or for safety.

Grounds - Pieces of wood embedded in plaster of walls to which skirtings are attached. Also wood pieces used to stop the plaster work around doors and windows.

Groundwater - Water from an aquifer or subsurface water source.

Grout - Wet mixture of cement, sand and water that flows into masonry or ceramic crevices to seal the cracks between the different pieces. Mortar made of such consistency (by adding water) that it will flow into the joints and cavities of the masonry work and fill them solid.

Guard - (1) Conductor situated so as to conduct interference to its source and prevent the interference form having an influence on a desired signal. (2) Mechanical barrier against physical contact. (3) One assigned to protect or oversee another. (4) A person trained, and appropriately licensed if necessary, to provide guard service. (5) A vertical protective barrier erected along exposed edges of stairways, balconies, and similar areas.

Guard Service - See Private Guard Service.

Guard Tour - Defined route of a security guard.

Guard's Tour Reporting Station - A device that is manually or automatically initiated to indicate the route being followed and the timing of a guard's tour.

Guard's Tour Supervisory Signal - A supervisory signal monitoring the performance of guard patrols.

Guest Room - An accommodation combining living, sleeping, sanitary, and storage facilities within a compartment.

Guest Suite - An accommodation with two or more contiguous rooms comprising a compartment, with or without doors between such rooms, that provides living, sleeping, sanitary, and storage facilities.

Gunn Diode -Semiconductor diode that utilizes the Gunn effect to produce microwave frequency oscillation or to amplify a microwave frequency signal.

Gusset - Brace or bracket used to strengthen a structure.

Gutter - Channel at the eaves for conveying away rain water.

Gyp Board - Drywall. Wall board or gypsum - A panel (normally 4' X 8', 10', 12', or 16') made with a core of Gypsum (chalk -like) rock, which covers interior walls and ceilings.

Gypsum Plaster - Gypsum formulated to be used with the addition of sand and water for base -coat plaster.

H Beam - Steel beam with an H shape.

H Clip - Small metal clips formed like an "H" that fits at the joints of two plywood (or wafer board) sheets to stiffen the joint. Normally used on the roof sheeting.

Hacksaw - Fine toothed saw used for cutting metal.

Half Round - Molding that is semicircular in cross section.

Half Round File - File with one flat and one curved face, used for filing wood or metal.

Half Wave Rectifier - A diode rectifier that converts AC to pulsating DC by eliminating either the negative or the positive alternation of each input AC cycle.

Hammer - Hand tool for driving nails or for shaping metal.

Hand – See hand of door.

Hand Drill - Crank turned tool used for driving a drill for boring holes.

Hand File - Flat abrading tool for smoothing metal surfaces.

Hand Geometry - Access control technique which analyses relative variations in finger lengths

Hand of Door – Opening direction of a door. A right handed door is hinged on the right and swings inward when viewed from the inside. A left handed door is hinged on the left and swings inward when viewed from the outside. If either of these doors swings outward, it is referred to as a right hand reverse or a left hand reverse door, respectively.

Handrail - A bar, pipe, or similar member designed to furnish persons with a handhold.

Handset - The portion of the telephone containing the transmitter and receiver which is hand held when the telephone is in use.

Handshake - Process in which predetermined arrangements of characters are exchanged by the receiving and transmitting equipment to establish synchronization.

Handy Box - Also known as a Utility Box. The single gang outlet box which is used for surface mounting to enclose switches or devices.

Hang Up Signal - Signal programmed into a tape dialer that causes the dialer to "hang up" (disconnect from the phone line) at the end of the voice message.

Hanging Ceiling - Ceiling separated from the floor or roof above by a dead air space. Also called a false ceiling or plenum.

Hardware - All of the "metal" fittings that go into the home when it is near completion. For example, door knobs, towel bars, handrail brackets, closet rods, house numbers, door closers, etc. The Interior Trim Carpenter installs the "hardware".

Hardwired - (1) System that uses wires to connect all of the devices to the control, as opposed to a system that uses wireless transmitters. (2) Function that is a built -in part of a physical circuit (as opposed to functions that are provided by software or programmable functions). The function can not be changed without making physical changes to the circuit itself, which is usually not feasible or convenient.

Hardwood - Close-grained wood from broad-leaved trees such as oak or maple.

Harmonic - Sine wave that is smaller in amplitude and some multiple of a fundamental frequency. Example: 880 Hz. Is the second harmonic of 440 Hz., 880 Hz. Is the third harmonic of 220 Hz.

Harmonic Distortion - Distortion that occurs when an audio component adds unwanted overtones to the original music tones.

Harness - Bundle of wires or cables for wiring electronic equipment.

Hatch - Small access door, as to an attic.

Hatchway - Opening in a ceiling, roof or floor of a building.

Haunch - Extension, knee like protrusion of the foundation wall that a concrete porch or patio will rest upon for support.

Hazard Insurance - Protection against damage caused by fire, windstorms, or other common hazards. Many lenders require borrowers to carry it in an amount at least equal to the mortgage.

Hazardous Area - An area of a structure or building that poses a degree of hazard greater than that normal to the general occupancy of the building or structure.

HDTV - (high -definition television) Super high -resolution television broadcasts as part of digital TV services.

Head - Electronic component that makes contact with magnetic tape to convert electricity to magnetism (for recording) or magnetism to electrical signals (for playback).heads are used to record, erase or play tape signals.

Head End - Primary transmission or reception source in a system.

Header - (1) Beam placed perpendicular to joists and to which joists are nailed in framing for a chimney, stairway, or other opening. (2) Wood lintel. (3) Horizontal structural member over an opening (for example over a door or window). (4) Header is the extra information in a packet that is needed for the protocol stack to process the packet.

Header Joists - Joists running on the outside of the floor platform at a right angle to the common floor joists.

Headroom - Temporary output level beyond a component's continuous rating which it can handle for short periods of time without overload.

Health Care Occupancy - An occupancy used for purposes of medical or other treatment or care of four or more persons where such occupants are mostly incapable of self-preservation due to age, physical or mental disability, or because of security measures not under the occupants' control.

Hearth - Inner or outer floor of a fireplace, usually made of brick, tile, or stone.

Heat Alarm - A single or multiple station alarm responsive to heat.

Heat Detector - A fire detector that detects either abnormally high temperature or rate of temperature rise, or both.

Heat Detector, Fixed - Detector that will trigger an alarm when the temperature at the device reaches a preset limit.

Heat Detector, Rate of Rise - Detector that will trigger an alarm if the temperature at the detector increases at a preset rate.

Heat Pump - Mechanical device which uses compression and decompression of gas to heat and/or cool a house.

Heat Release Rate (HRR). The rate at which heat energy is generated by burning.

Heat Rough - Work performed by the Heating Contractor after the stairs and interior walls are built. This includes installing all duct work and flue pipes.

Heat Sensor – (1) Temperature sensitive device that can be used to activate an alarm if the ambient temperature exceeds a specific level. (2) A sensor that detects the heat generated by a fire. See Heat Detector.

Heat Shrink Tubing - Insulated flexible sleeve made from a plastic that shrinks permanently for a tight fit when heated.

Heat Sink - Method used to transfer a rise in temperature by means of a metal plate or fin-shaped object with good heat transfer efficiency that helps dissipate heat into the surrounding air, into a liquid, or into a larger mass.

Heat Trim - Work done by the Heating Contractor to get the home ready for the municipal Final Heat Inspection. This includes venting the hot water heater, installing all vent grills, registers, air conditioning services, turning on the furnace, installing thermostats, venting ranges and hoods, and all other heat related work.

Heating Load - Amount of heating required to keep a building at a specified temperature during the winter regardless of outside temperature.

Heating, Ventilation, Air Conditioning (HVAC) Alarm - A system that reports heating, ventilation, and air conditioning system problems, rather than life-threatening emergencies. Public emergency response or dispatch personnel are not normally contacted when these alarm systems detect a problem; protected property maintenance personnel tend to be notified by the monitoring facility.

Heel - End of a rafter that rests on the wall plate.

Heel Cut - Notch cut in the end of a rafter to permit it to fit flat on a wall and on the top, doubled, exterior wall plate.

Henry - Basic unit of inductance.

Hertz (Hz) - Unit of frequency equal to one cycle per second (cps).

Hexadecimal - Base 16 numbering system in which binary numbers are arranged in groups of four bits each.

HI -Z (Unterminated) - Video input of a piece of CCTV equipment, wired so as to allow the video signal to be fed to further equipment. Does not necessarily include extra sockets for the extra coaxial cables.

Hickey - Hand tool with a side opening used for bending conduit.

High Fidelity - (Hi Fi) Sound reproduction equipment that reproduces sound as near to the original sound as possible

High Frequency - In audio, the range from about 5 kHz to20 kHz.

High Hazard Industrial Occupancy - An industrial occupancy in which industrial operations that include high hazard materials, processes, or contents are conducted.

High Rise - Tall multi-storied structure.

High Temperature Sensor - A sensor that detects a higher-than-expected temperature -- often in an unattended industrial process system.

High Water Level Sensor - A sensor that detects higher-than-expected water or other liquid levels.
Example: Rising ground water in the basement of a building.

Highlights - A light spot, area, or streak on a painted surface.

High-Rise Building - A building greater than 23 m (75 ft) in height where the building height is measured from the lowest level of fire department vehicle access to the floor of the highest occupiable story.

Hinge - Two part moving joint used to hang doors so that they swing.

Hip - External angle formed by the meeting of two sloping sides of a roof.

Hip Roof - Roof that slants upward on three or four sides.

Historic Building - A building or facility deemed to have historical, architectural, or cultural significance by a local, regional, or national jurisdiction.

History - Log of system activity.

Holdup - To rob at gunpoint.

Holdup Alarm – (1) Silent alarm signal generated by the manual activation of a device intended to signal a robbery or holdup in progress. (2) A system that reports the presence of one or more criminals attempting to take goods or funds with implied or actual threat of force.

Hold-Up Alarm Devices - Hold-up alarms are silent alarm signals, whose sole purpose is to alert a monitoring facility that a possibly life threatening situation exists in which the person who triggers the signal feels it is too dangerous to do what the criminal requests and to wait to notify the police until after the criminal has departed. See also Panic Alarm.

Hole Saw - Circular, saw like cutting device used for cutting holes. Sizes vary from 9/16” to 6” in diameter.

Hollerith Card - Card with small holes which can be read by a light source or contact brushes.

Hollow Core Door - Door constructed so that the center space (core) between the two facing sides is not completely filled.

Hollow Wall - Walls separated by an air space. Usually 2” deep. Brick and brick, brick and concrete or concrete block are used.

Hollow Wall Anchor - Metal or plastic anchoring device used to fasten into a hollow wall, such as drywall. The anchor folds together to fit through the hole, the sides spring open and are tightened back against the inside of the wall.

Home Automation - Integration of systems to operate under one convenient interface.

Home Networking - Generic term to describe a multitude of schemes to interconnect various home electronics, appliances, and heating/ventilation and security systems for centralized or decentralized control using wireless RF, the Internet, phone wiring, FireWire, electrical wiring, proprietary wiring, etc, and a TV, a PC or other separate control device.

Homerun - (1) Cable or wiring running directly back to the control panel. (2) The electrical cable that carries power from the main circuit breaker panel to the first electrical box, plug, or switch in the circuit.

Homerun - Wiring method that connects individual devices directly to the control panel.

Homing - Process of displaying one of a number of camera outputs on a given monitor.

Homing Sequential Switcher - Switcher in which the outputs of multiple cameras can be switched sequentially onto a monitor.

Honey Combs - The appearance concrete makes when rocks in the concrete are visible and where there are void areas in the foundation wall, especially around concrete foundation windows.

Hood - Metal canopy designed to collect air and fumes.

Hood Contact - Switch used for the supervision of a closed safe or vault door. Usually installed on the outside surface of the protected door.

Hook - Bent device for holding or pulling something.

Hook and Eye - Simple form of mechanical latch for holding two things together. The eye (an open loop) is mounted on one object, and a hinged hook is mounted on the other. To hold them together, the hook is fitted into the eye loop.

Hook Switch - Switch on a telephone system that is turned on or off when the handset is lifted or returned.

Hookup - Method of connection between various units in a circuit.

Horizontal (Hum) Bars - Horizontal bars, alternately black and white, which extend over the entire picture. They may be stationary or move up or down. They are often caused by approximately 60 Hertz interfering frequency or its harmonic frequencies.

Horizontal Blanking - Blanking signal produced at the end of each scanning line.

Horizontal Exit - A way of passage from one building to an area of refuge in another building on approximately the same level, or a way of passage through or around a fire barrier to an area of refuge on approximately the same level in the same building that affords safety from fire and smoke originating from the area of incidence and areas communicating therewith.

Horizontal Resolution - Maximum number of individual picture elements that can be distinguished in a single scanning line.

Horn - Noise -making device used as an annunciator.

Horn Type Speaker - Metallic speaker that is well suited for outdoor use.

Hose Bib - Exterior water faucet (sill cock).

Hospital - A building or portion thereof used on a 24-hour basis for the medical, psychiatric, obstetrical, or surgical care of four or more inpatients.

Host - Computer that has full two -way access to other computers on the Internet. Or a computer with a web server that serves the pages for one or more Web sites.

Hot - Energized with electricity.

Hot Water Heating - See, "Hydronic Heating."

Hot Wire - Wire that carries electrical energy to a device—in contrast to a neutral, which carries electricity away again. Normally the black wire. Also see ground.

Hotel - A building or groups of buildings under the same management in which there are sleeping accommodations for more than 16 persons and primarily used by transients for lodging with or without meals.

House Circuit - Protective circuit.

Household – (1) Family living unit in single family detached dwellings, multifamily buildings, and mobile homes. (2) For purposes of fire alarm system classification, the family living unit in a single-family detached dwelling, single-family attached dwelling, multifamily building and mobile home. The definition excludes common usage areas in multifamily buildings such as corridors, lobbies, basements, etc.

Household Fire Alarm - A fire alarm system that protects a household, as opposed to any other type of occupancy. See Household, as defined herein.

Household Fire Alarm System - A system of devices that uses a fire alarm control unit (panel) to produce an alarm signal in the household for the purpose of notifying the occupants of the presence of a fire so that they will evacuate the premises. See Fire Alarm System.

HPNA - Home Phoneline Network Adapter, a network type that links computers via existing household telephone wiring.

HTTP Proxy - Server that acts as a middleman in the communication between HTTP clients and servers.

HTTPS - Specifies the use of HTTP enhanced by a security mechanism, which is usually SSL.

Hub - Network device that operates by repeating data that it receives on one port to all the other ports.

Humidifier - Appliance normally attached to the furnace, or portable unit device designed to increase the humidity within a room or a house by means of the discharge of water vapor.

Humidity - Amount of moisture in the air.

Hunt Group - A group of associated telephone lines within which an incoming call is automatically routed to an idle (not busy) telephone line for completion.

Hurricane Clip - Metal straps that are nailed and secure the roof rafters and trusses to the top horizontal wall plate. Sometimes called a Teco clip.

HVAC - Abbreviation for Heat, Ventilation, and Air Conditioning

Hydronic Heating - Heating system which uses various types of fuel to heat water which is then distributed through pipes to radiators located in various portions of the house.

Hyperlink - In hypertext or hypermedia, an information object (such as a word, a phrase, or an image; usually highlighted by color or underscoring) that points (indicates how to connect) to related information that is located elsewhere and can be retrieved by activating the link.

Hypertext Markup Language (HTML) -Set of markup symbols or codes inserted in a file intended for display on a World Wide Web browser page.

Hypertext Transfer Protocol (HTTP) - Protocol in the Internet Protocol (IP) family used to transport hypertext documents across an internet.

I - Symbol for current. (From Intensity)

I -Beam - Beam with a cross section resembling the letter I.

I -Joist - Manufactured structural building component resembling the letter "I".

I.S.D.N. (Integrated Services Digital Network) -Digital phone lines that allow transmission of video signals via fast scan at speeds of 128Kb/second; used with terminal adapters.

IC - (Integrated circuit) Electronic circuit in the form of a micro miniature silicon chip, consisting of thousands or even millions of transistors (and other components), usually about the size of a fingernail or smaller.

IC voltage regulator - Three terminal device used to hold the output voltage of a power supply constant over a wide range of load variations.

Ice Dams - When snow or ice melts on a roof over a heated or partially heated attic space, the melting water may refreeze over unheated areas such as a roof overhang. This re -frozen water may create a "dam" and allow additional melt water to back up under shingles and cause leaks.

ICS - Internet Connection Sharing, which allows one computer, called the ICS host, to share its Internet connection with the rest of the computers on a home network.

Identification of Alarm System Users - Means used to reliably identify users or alarm systems to monitoring facilities.

IEEE 1394 - Miniature high -speed network within a single cable and connector—also known by the brand Firewire or i.Link. It's most common application is transferring video from digital video cameras to computers.

Illumination - Light on an object or scene.

Image - Optical counterpart of an object produced by an optical device (as a lens or mirror) or an electronic device

Image Size - Size of an image formed by the lens onto the camera pickup device. The current standards are -1", 2/3", 1/2" and 1/3" measured diagonally.

Impedance - (Z) Measured in ohms it is the total opposition to the flow of current offered by a circuit. Impedance consists of the vector sum of resistance and reactance. The opposition which a circuit or component offers to the flow of electric current, expressed in ohms. In A.C. circuits a complex quantity that includes both resistance and reactance. In D.C. circuits, it is purely resistive.

Impedance Matching - Matching the output impedance of a source to the input impedance of a load to attain maximum power transfer.

Impractical Evacuation Capability - The inability of a group to reliably move to a point of safety in a timely manner.

Improvement - Change made on a structure or site that increases its value.

In Phase - Condition existing when waves pass through their maximum and minimum values of like polarity at the same instant.

Incandescence - State of a material when heated to the point where it emits light. (red hot or white hot).

Incandescent Lamp - Lamp employing an electrically charged metal filament that glows at white heat. A typical light bulb.

Incapacitation - A condition under which humans do not function adequately and become unable to escape untenable conditions.

Incident Light - Light that is falling directly over an object.

Incremental Backups - Incremental backups only backup the files that have been modified since the last backup. If dump levels are used, incremental backups only backup files changed since last backup of a lower dump level.

Indicator - To point out that a given condition either has changed or that the status is the same.

Indicator Light - Light that indicates the status of an alarm system.

Induced Voltage - Voltage generated in a conductor when subjected to a moving magnetic field.

Inductance - Property of a circuit to oppose a change in current. The moving magnetic field produced by a change in current causes an induced voltage to oppose the original change.

Inductor - Length of conductor used to introduce inductance into a circuit. The conductor is usually wound into a coil to concentrate the magnetic lines of force and maximize the inductance. While any conductor has inductance, in common usage the term inductor usually refers to a coil.

Industrial Occupancy - An occupancy in which products are manufactured or in which processing, assembling, mixing, packaging, finishing, decorating, or repair operations are conducted.

Industrial Park - Development created especially for commercial and industrial use.

Industrial Process - Water -level, boiler -pressure or temperature monitoring systems.

Industrial Process Alarm - A system that provides supervision for a wide variety of commercial and industrial processes, including sump-pump operations, water levels, pressures and temperatures, chemical processes, and special furnace operations, to name but a few. Normally, user employees or sub-contractors are notified when these systems report problems. When detected problems may affect the safety of life or property, regulations may also re-quire notification of an AHJ.

Industrial Process Monitoring - Monitoring of water-level, boiler-pressure, temperature monitoring or other systems.

Inertia - Tendency of a moving object to continue moving in the same direction, or of an object at rest to remain at rest.

Inertia Detector - Device attached to a protected surface that detects shock waves generated by an impact against that surface, Impact momentarily displaces a small metal mass, which initiates an alarm.

Inertia sensor - See Inertia Detector.

Infiltration - The passage of air from indoors to outdoors and vice versa; term is usually associated with drafts from cracks, seams or holes in buildings.

Infrared - Electromagnetic heat radiation whose frequencies are above the microwave frequency band and below red in the visible band.

Infrared Beam - A beam of light that is outside the visible spectrum. In alarm systems it can be used to detect motion. If an object (such as an intruder's body) passes between the beam source and a sensor, the alarm will be sounded. Since the infrared beam is invisible to the naked eye, it is harder for the intruder to know it is there and to avoid it.

Infrared Card - Card that contains a series of bar codes, similar to standard bar code cards, that are only visible when exposed to special infrared light.

Infrared Card Reader - Card reader that uses an infrared light source to read information encoded on a card.

Infrared Detector - There are two types. A passive infrared (PIR) device does not emit IR energy; rather, it measures existing IR energy. It detects an intruder by sensing body heat. An active infrared device is a photoelectric beam that emits IR energy instead of visible light.

Infrared Light - Wavelength of light produced above the visible part of the spectrum.

Infrared Repeater System - Device to receive an infrared signal at one location, convert it to an electrical signal for re-transmission by wire to a second location where the signal is then converted back to infrared.

Infrasonic - Frequency below the range of human hearing. The frequency can be felt but not heard.

Infrasonic Alarm - Senses abrupt sub audible changes in air pressure which may be caused by a sudden door or trunk opening.

Ingress - Enter (opposite of egress).

Inhibit - To stop an action or block data from passing.

Initialize - To establish a starting condition.

Initiating Device - A system component that originates transmission of a change-of-state condition, such as in a smoke detector, manual fire alarm box, or supervisory switch.

Initiating Device Circuit - A circuit to which automatic or manual initiating devices are connected where the signal received does not identify the individual device operated.

Input Data Specification - Information required by the verification method.

Input Impedance - Opposition to the flow of signal current at the input of a circuit or load.

Inrush - Initial surge of current through a load when power is first applied.

Insertion Loss - Signal strength loss that occurs when a piece of equipment is inserted into a line.

Inside Corner - Point at which two walls form an internal angle, as in the corner of a room.

Inspection - A visual survey of the appearance of an alarm installation intended to discover any obvious problems. Typically these might be alarm system wires that have been covered up during building construction or remodeling, loose doors or windows that may cause false alarms during storms, sprinkler risers and controls that may be blocked by merchandise making fire department access difficult or impossible during emergencies, etc. An inspection may include actual tests of alarm system sensors, controls, or transmitters.

Inspection Service - A service to provide visual surveys of the appearance of alarm installations intended to discover any obvious problems. Typically these might be alarm system wires that may have been covered up during building construction or remodeling, loose doors or windows that may cause false alarms during storms, sprinkler risers and controls that may be blocked by merchandise making fire department access difficult or impossible during emergencies, etc. An inspection may include actual tests of alarm system sensors, controls, or transmitters.

Install - (1) Process of hooking up components. (2) To transfer operating or application software from the original disks to a hard drive.

Instant circuit - Circuit which would initiate an alarm the instant it is disturbed.

Instant Loop - Circuit that indicates a violation as soon as it occurs.

Insulated - When a non conducting material is used to isolate conducting materials from one another.

Insulating Glass - Window or door in which two panes of glass are used with a sealed air space between. Also known as Double glass.

Insulating Material - Material that will prevent the flow of current due to its chemical composition.

Insulation - (1) Protective covering on conducting wires or cable. (2) Any material high in resistance to heat transmission that, when placed in the walls, ceiling, or floors of a structure, and will reduce the rate of heat flow.

Insulation - Material that does not readily conduct electricity.

Insulation Board, rigid - Structural building board made of coarse wood or cane fiber in ½ - and 25/32 -inch thickness. It can be obtained in various size sheets and densities.

Insulation Resistance - Resistance of insulating material. The greater the insulation resistance, the better the insulation.

Insulator - Material that stops the flow of current.

Integrated - When two or more components are combined into a circuit and then incorporated into a single package.

Integrated Amplifier - Component that combines a pre-amp and power amp in a single unit. An integrated amp combined with a tuner in a single unit is called a receiver.

Integrated Circuit (IC) - Monolithic equivalent for tens to thousands of discrete components (transistors, resistors, capacitors, etc.) etched onto a tiny semiconductor slab to perform some specific circuit function.

Integrator - To form, coordinate, or blend into a functioning or unified whole.

Intercom - Two way communications system without a central switchboard which permits selective speaker voice communication via wires between any pair of several stations.

Interconnected System - Two or more systems that are connected or joined.

Interface - (1) Common boundary between two or more items. (2) Hardware or software required to be able to communicate with, sense or control equipment.

Interference - Electrical signals that have an undesirable effect on electronic transmission, especially wireless or broadcast radio - frequency (RF) signals, such as radio, TV, cordless phones and radar detectors. Interaction of 2 sound waves which produce cancellation at some frequencies and reinforcement at others.

Interior - Within the premises.

Interior Ceiling Finish - The interior finish of ceilings.

Interior Finish – (1) Material used to cover the interior framed areas of walls and ceilings. (2) The exposed surfaces of walls, ceilings, and floors within buildings.

Interior Floor Finish - The interior finish of floors, ramps, stair treads and risers, and other walking surfaces.

Interior Protection - Line of protection along the interior boundary of a protected area including all points through which entry can be made.

Interior Wall Finish - The interior finish of columns, fixed or movable walls, and fixed or movable partitions.

Interior Zones - Devices that would be activated by movement within the premises.

Interlace - Scanning process where every other horizontal line is scanned in one field while the alternate lines are scanned in the next field to produce a complete picture frame.

Interleaving - Method used in activity detection which allows extra frames of video from cameras to be added to a time multiplexed sequence while a state of alarm exists.

Interlock – (1) Device (often used for safety) to ensure that a piece of apparatus will not operate until certain conditions have been satisfied. (2) System of multiple doors with controlled interaction. Also known as mantraps.

Intermediate Fire Alarm or Fire Supervisory Control Unit - A control unit used to provide area fire alarm or area fire supervisory service that, where connected to the proprietary fire alarm system, becomes a part of that system.

Intermittent - Occurring at random intervals of time.

Intermittent Duty - Service requirement that demands operation for alternate intervals of load and no load.

Internal Resistance - Every source has some resistance in series with the output current. When current is drawn from the source some power is lost due to the voltage drop across the internal resistance. Usually called output impedance or output resistance.

Internal Sync - Internal generation of sync pulses in a camera using a crystal controlled oscillator. This is needed on non -mains powered cameras.

Internally Illuminated - Refers to an illumination source that is contained inside the device or legend that is illuminated.

Internet - Term to describe connecting multiple separate networks together.

Internet Message Access Protocol (IMAP) - Protocol that defines how a client should fetch mail from and return mail to a mail server.

Internet Protocol (IP) - Method or protocol by which data is sent from one computer to another on the Internet.

Interoffice Trunk - Connection between two telephone company central offices.

Interrupt - An Interrupt is a signal that informs the computer operating system that something has occurred.

Interval - Period of time from one event or another.

Intranet - Computer network, especially one based on Internet technology that an organization uses for its own internal and usually private, purposes and that is closed to outsiders.

Intrinsic Material - Semiconductor material with electrical properties essentially characteristic of ideal pure crystal.

Intrusion - Unauthorized entry onto the property of another.

Intrusion Alarm - Combination of devices that detects and reacts to the presence of an intruder or the attempt to break into a protected location.

Intrusion Alarm System – See Intrusion Alarm.

Intrusion Detection - (1) Detection of entry into an area. (2) Security management system for computers and networks.

Inventory - Stock of products held.

Inverse Square Law - Mathematical relationship in which one quantity is inversely proportional to the square of another quantity (i.e. signal strength decreases according to the distance squared).

Inverter - (1) A "reversing" circuit, that exchanges HIGH for LOW, and vice versa. Both analog and digital inverter circuits exist. A digital inverter is one of the simplest types of digital gate, with just a single input and a single output, which are always at opposite states. (2) A device that changes AC power to DC power.

Invoice - Bill for payment for goods and/or services.

Ion - Atom with fewer electrons in orbit than the number of protons in the nucleus is a positive ion. Atom with a greater number of electrons in orbit than the number of protons in the nucleus is a negative ion.

Ionization - Process of adding or removing electrons from an atoms orbit.

Ionization Smoke Detector - Ionization Smoke Alarm - Smoke alarm in which the air in a sensing chamber is ionized, permitting an electric current to flow across the sensing chamber. Smoke particles reduce the level of ionization, disrupting the electric current flow and producing an alarm.

Ionization Smoke Detection - The principle of using a small amount of radioactive material to ionize the air between two differentially charged electrodes to sense the presence of smoke particles. Smoke particles entering the ionization volume decrease the conductance of the air by reducing ion mobility. The reduced conductance signal is processed and used to convey an alarm condition when it meets preset criteria.

Ionized - Atoms become ionized when they gain or lose a valence electron.

IP Address - Computer's inter-network address that is assigned for use by the Internet Protocol and other protocols.

IP Flood - Denial of service attack that sends a host more echo request ("ping") packets than the protocol implementation can handle.

IP Spoofing – Technique of supplying a false IP address.

IR - Abbreviation for Infrared.

IR Drop - Voltage drop across a resistance due to the flow of current through the resistor.

Iris - the mechanism that can be adjusted to vary the amount of light falling on the imaging device.

Irregular Activity - Alarm industry term referring to subscribers occupying their protected premises at times other than those normally scheduled.

Irrigation - Lawn sprinkler system.

ISDN - Integrated Services Digital Network. Public digital network designed to integrate voice and non-voice traffic.

ISO - International Organization for Standardization, a voluntary, non -treaty, non -government organization.

Isolated - Set apart from others. Insulated.

J Channel - Metal edging used on drywall to give the edge a better finished appearance when a wall is not "wrapped" Generally, basement stairway walls have drywall only on the stair side. J Channel is used on the vertical edge of the last drywall sheet

Jack - (1) Socket or connector into which a plug may be inserted. (2) Female connector usually mounted in a faceplate or on equipment. Accepts a plug.

Jack Post - Type of structural support made of metal, which can be raised or lowered through a series of pins and a screw to meet the height required. Basically used as a replacement for an old supporting member in a building. See Monopost.

Jack Rafter - Rafter that spans the distance from the wall plate to a hip or from a valley to a ridge.

Jacket - Outer covering or casing.

Jalousies - Windows with movable, horizontal glass slats angled to admit-ventilation and keep out rain. This term is also used for outside shutters of wood constructed in this way.

Jamb - The side and head lining of a doorway, window, or other opening. Includes studs as well as the frame and trim.

Jamming - Intentional transmission of radio signals in order to interfere with the reception of signals from another station.

Jitter - fluctuations in a digital signal resulting from speed variations during playback.

Job Specifications - Information of the type, quality, and/or other details relating to the installation, programming, and the operating and testing procedures of the overall project.

Joint - Location between the touching surfaces of two members or components joined and held together by nails, glue, cement, mortar, or other means.

Joint Cement or Joint Compound - A powder that is usually mixed with water and used for joint treatment in gypsum -wallboard finish. Often called "spackle" or drywall mud.

Joint Trench - When the electric company and telephone company dig one trench and "drop" both of their service lines in.

Joist – See Joists.

Joist Hanger - Metal "U" shaped item used to support the end of a floor joist and attached with hardened nails to another bearing joist or beam.

Joists - A framing member, often a 2 X 8, 10, or 12 piece of lumber, which is usually spaced every 16" to 24" that run parallel to one another and support a floor or ceiling, and supported in turn by larger beams, girders, or bearing walls.

Joule - The unit of work and energy.

Journeyman - Craftsman who has completed an apprenticeship in trade.

Joystick - Device that moves on the x and y axes used for controlling video camera position.

Jump Out - To eliminate a device from the circuit by using a jumper.

Jumper Cord - Short, connectorized cable which interconnects two jacks, e.g. from equipment to a wall plate.

Jumpers - (1) Short length of conductor, usually a temporary connection. (2) Water pipe installed in a water meter pit (before the water meter is installed). (3) Electric wire that is installed in the electric house panel meter socket before the meter is installed.

Junction - Contact or connection between two or more wires or cables. The area where the p -type material and n -type material meet in a semiconductor.

Junction Box - Box or container housing electrical connections.

Junction Diode - Semiconductor diode in which the rectifying characteristics occur at a junction between the n -type and p -type semiconductor materials.

Keeper - Metal latch plate in a door frame into which a doorknob plunger latches.

Kernel - Essential center of a computer operating system, the core that provides basic services for all other parts of the operating system.

Key Holder - A user, system operator, or authorized user agent who has a key or some other means to access the protected premises in the event that an alarm is received by the monitoring facility, and someone needs to provide police, fire, or EMS personnel access to the protected premises, or to reset the system.

Key Holder Notification List - See Call List.

Key Pad Alarm Control - Control that is turned on and off by entering a numeric code into a digital key pad.

Key Switch - Switch that requires a key to be opened or closed.

Keyed Alarm Control - System is turned on and off with a key.

Keyhole Saw - Saw with small tapered blades, used for cutting small openings or notches. Blades are interchangeable.

Keyless - Plastic or porcelain light fixture that operates by a pull string.

Keypad – (1) Set of push -button switches, usually numbered for entry of security codes and other types of data. (2) Device used to arm or disarm the system and to interface with the system. (3) Flat device which has buttons that may be pressed in sequence to send data to a controller. (4) Numeric pad, similar to that of a telephone. (5) The portion of the arming station containing numbered pushbuttons similar to those on telephones or calculators. These control the arming or disarming of the system. They may also perform other functions.

Keyswitch - An alternate device used to arm or disarm the alarm system, instead of a keypad.

Keyway - Slot formed and poured on a footer or in a foundation wall when another wall will be installed at the slot location. This gives additional strength to the joint/meeting point.

kHz - Kilohertz

Kick Plate - Metal plate that is used to strengthen a door and spread out any applied force to minimize its effect. Kick plates are also known as strike plates.

Kiln-Dried - Artificial drying of lumber, superior to most lumber that is air dried.

Kilo – Metric prefix for 1000. (103)

Kilohertz - Unit of high frequency; 1 kHz equals 103 cycles per second (1000 Hz); abbreviated kHz.

Kilovolt -ampere - 1000 volts at 1 ampere.

Kilowatt (kw) - One thousand watts. Also see watt.

Kilowatt Hour - 1000 watts for 1 hour. A kilowatt hour is the base unit used in measuring electrical consumption.

Kilowatt Hour Meter - Meter used by electric utility companies to measure the amount of electric power used by a customer.

Kinetic Energy - Energy associated with motion.

King Post - Middle post of a truss. Large, heavy screws, used where great strength is required, as in heavy framing or when attaching ironwork to wood.

King Stud - Vertical "2 X's" frame lumber (left and right) of a window or door opening, and runs continuously from the bottom sole plate to the top plate.

Kirchhoff"s Current Law - The sum of the currents flowing into a point in a circuit is equal to the sum of the currents flowing out of that same point.

Kirchhoff"s Voltage Law - The algebraic sum of the voltage drops in a closed path circuit is equal to the algebraic sum of the source voltages applied.

Kiss-Off - Tone signal generated to a digital communicator by a receiver to indicate that its transmission was received.

Klaxon - Audible signaling device.

Knife switch - Switch in which the moving contact (usually a hinged blade) is sandwiched between two contact clips.

Knockout - Portion of an enclosure designed to be readily removed for the installation of wire or a raceway.

Knockout Punch - Punch for making holes in electrical enclosures for conduit.

Knot - In lumber, the portion of a branch or limb of a tree that appears on the edge or face of the piece.

KO - See knockout.

Labeled - Equipment or materials with a label symbol or other identifying mark of an organization acceptable to the “authority having jurisdiction”.

Labor Union - Association of workers banded together for the purpose of setting standards, upholding the tradition of the craft, and bargaining for their rights.

Laborer – Carpenters assistant. A laborer selects and saws lumber, holds for nailing or nails, nails sheathing onto rough frame, removes forms, cleans used lumber and forms and moves materials as needed.

Lacing - A means of protecting against penetration of a surface by constructing a closely spaced pattern of fine wire. The wire, when broken, initiates an alarm.

Ladder - Series of rungs or steps supported by two side rails; used for climbing up on a structure.

Lag - (1) The image retention of an object after the object has been scanned. Sometimes, it causes smearing effect. (2) Difference in time between two waveforms of the same frequency expressed in degrees. Example: One waveform lags another waveform by a certain number of degrees.

Lag-Screws or Coach-Screws - Large, heavy screws, used where great strength is required, as in heavy framing or when attaching ironwork to wood.

Lally Column - Steel tube sometimes filled with concrete, used to support girders or other floor beams.

Laminate - Material made by bonding together two of more materials.

Laminated Core - Core made up of sheets of magnetic material insulated from one another by an oxide or varnish.

Laminated Safety Glass - Glass consisting of two layers of plate bonded with a plastic interlayer. When smashed, the glass pieces tend to remain connected to the interlayer.

Laminated Shingles - Shingles that have added dimensionality because of extra layers or tabs, giving a shake -like appearance.

Laminating - Bonding together two or more layers of materials.

Lamp - Device that produces light.

Lamp Cord - Two conductors, constructed in parallel, usually 18 - gauge wire, typically used for lamps and extension cords. Often used in alarm systems.

LAN - Local Area Network.

Landing - Platform between flights of stairs or at the termination of a flight of stairs. Often used when stairs change direction. Normally no less than 3 ft. X 3 ft. square.

Landline - Traditional wired telephone that one might find in a home or office.

Lap - To cover the surface of one shingle or roll with another.

Larceny - Unlawful taking of property from the possession of another.

Laser - Device that produces a very narrow intense beam of light. The name is an acronym for "light amplification by stimulated emission of radiation. Used to play the signals stored on laser video discs or CD recordings.

Laser Beam - Highly focused beam of light at a single frequency. Because of its tight focus, a laser can make very efficient use of its supply power, and it can be very precisely aimed. Laser light can be visible (usually, but not necessarily red) or invisible to the human eye (infrared).

Laser Crosshatch - Pattern of laser beams (usually infrared) that covers a large two - or three -dimensional area (as opposed to a simple straight line). Multiple sensors monitor the various beams of the crosshatch pattern. If an object (or person) breaks any element of the crosshatch, the motion is sensed and the alarm is activated.

Laser Level - Tool that uses a laser beam to establish a level line or exact height.

Latch - (1) In electronics a latch is a circuit that holds some specific electric value or condition, even if the causative input signal is removed. The latch circuit must be reset by some other means, usually manually. (2) Beveled metal tongue operated by a spring -loaded knob or lever. The tongue's bevel lets you close the door and engage the locking mechanism, if any, without using a key. Contrasts with dead bolt.

Latch - Metal tongue or bolt in a lock that is operated by the door knob.

Latching – To hold until reset.

Latching Relay - Special relay that can hold its activated state. All relays are activated by a current passing through the coil. In most relays, the switch contacts are automatically deactivated when the current flow through the coil stops. A latching relay will remain activated, even if the current flow through the coil stops. The relay can only be deactivated by a separate reset signal or manual button.

Latching Switch - Opposite of a momentary -action switch. Once it is moved from open to closed, it will stay closed until it is physically moved back to the open position, or vice versa.

Late Opening - The alarm system has not been disarmed, and there is a time deadline beyond which the user wants to be sure that the premises are occupied. Late opening is an access control and recording system function.

Lateral- (1) Situated on, directed toward, or coming from the side. (2) Underground trench and related services (i.e., electric, gas, telephone, sewer and water lines) that will be buried within the trench.

Late-to-Set, Fail-to-Set, Late-to-Close - The alarm system has not been armed by the agreed-on time deadline. Follow-up action by the monitoring facility may be appropriate. Late-to-Set and Fail-to-Set are generally synonymous terms.

Lath - Building material of narrow wood, metal, gypsum, or insulating board that is fastened to the frame of a building to act as a base for plaster, shingles, or tiles.

Lath and Plaster - Common wall finish prior to the introduction of drywall. Thin wood strips (lath) were nailed onto the framing as a base for the sand/lime plaster.

Latitude - Distance, expressed in degrees, from the Earth's equator to points north and south. The equator is assigned the value of 0°. The North and South poles are 90°.

Lattice - Open framework of crisscrossed wood or metal strips that form regular, patterned spaces.

Law Enforcement Authority - Commissioner, Superintendent, Sheriff, Chief of Police, director or other authorized representative of a law enforcement agency.

Law of charges - Unlike charges attract and like charges repel each other.

Law of magnetism - Unlike magnetic poles attract and like poles repel each other.

Law of reflection - Angle of reflection is equal to the angle of incidence

LCD (liquid crystal display) - Technology used to create video displays on flat, thin screens, also used in remote control devices such as touch screens.

LCRS (left, center, right, surrounds) - Standard channel and speaker configuration for commercial and home theater systems.

Leaching Bed - Tiles in the trenches carrying treated wastes from septic tanks.

Lead – (1) (pronounced leed) Wire that connects two points in a circuit. (2) Angle by which one alternating signal leads another in time. Opposite of lag. (2) (pronounced led) A heavy soft metal.

Lead Acid Battery - Type of rechargeable battery used for standby power in alarm systems.

Lead Acid Cell - Cell made up of lead plates immersed in a sulphuric acid electrolyte.

Lead Anchor - Molded lead tube that is inserted in a drilled hole and expanded by a screw.

Leakage - Small undesirable flow of current through an insulator or dielectric.

Lease - Rental or conveyance of real estate, equipment and or services for a set period of time.

Leased Alarm - Service in which the customer does not buy the system.

Leased Line - Line or circuit that is leased from the telephone company and used for alarm reporting. See Dedicated Circuit.

LED - Light Emitting Diode. Electronic device that lights up when power is applied. These devices are used as various status indicators.

Ledge - Level surface, often on the side of a wall.

Ledger - Piece of wood which is attached to a beam to support joists.

Ledger Strip - Strip of lumber nailed along the bottom of the side of a girder on which joists rest.

Leech Field - Method used to treat/dispose of sewage in rural areas not accessible to a municipal sewer system. Sewage is permitted to be filtered and eventually discharged into a section of the lot called a leech field.

Left Hand Rule - If fingers of the left hand are placed around a wire so that the thumb points in the direction of electron flow, the fingers will be pointing in the direction of the magnetic field being produced by the conductor.

Leg - Portion of a circuit.

Leg Facility – The portion of a communications channel that connects not more than one protected premises to a primary or secondary trunk facility. The leg facility includes the portion of the signal transmission circuit from its point of connection with a trunk facility to the point where it is terminated within the protected premises at one or more transponders.

Legitimate Stage - A stage with a height greater than 15m(50 ft) measured from the lowest point on the stage floor to the highest point of the roof or floor deck above.

Length - Long dimension of something.

Lens - Usually circular piece of glass with one or both surfaces curved in cross section, used to focus or spread rays that pass through it because of its refractive characteristics.

Lens Speed - Light transmitting ability of a lens, given as an f -stop number (a lens f -stop equals its focal length divided by its diameter).

Lenz's Law – The current induced in a circuit due to a change in the magnetic field is so directed as to oppose the flux, or to exert a mechanical force to oppose the motion.

Let -in Brace - Nominal 1 inch -thick boards applied into notched studs diagonally. Also, an "L" shaped, long (@ 10') metal strap that are installed by the framer at the rough stage to give support to an exterior wall or wall corner.

Letter of Intent - Letter outlining intention to do something.

Level - (1) True horizontal. (2) Also a tool used to determine level. Bubble in the glass is centered when the surface is true.

Level ceilings – (1) Ceilings that are actually level or have a slope of 1.5 inches or less per foot. (2) Ceilings that are level or have a slope of less than or equal to 1 in 8. See Ceiling.

Level Control - Main Iris Control. Used to set the auto -iris circuit to a video level desired by the user in changing lighting conditions.

Level Detector - Op-amp circuit that compares two inputs and provides a DC output indicating the polarity relationship between the inputs. A comparator.

Level of Exit Discharge - (1) The lowest story from which not less than 50 percent of the required number of exits and not less than 50 percent of the required egress capacity from such a story discharge directly outside at grade; (2) the story with the smallest elevation change needed to reach grade where no story has 50 percent or more of the required number of exits and 50 percent or more of the required egress capacity from such a story discharge directly outside at grade.

Lever Switch - Mechanical intrusion detection sensor activated by movement of the surface upon which it is mounted. When an opening occurs, the lever is moved and an alarm is triggered.

Liability – Debt. Obligation. Responsibility

License - Legal permit to do something.

Lie Detector - Piece of electronic equipment also called a polygraph used to determine whether a person is telling the truth by looking for dramatic changes in blood pressure, body temperature, breathing rate, heart rate and skin moisture in response to questions.

Lien - Encumbrance that usually makes real or personal property the security for payment of a debt or discharge of an obligation.

Life - Number of performance hours, days, years or actual operations for which an item is designed.

Life Safety Evaluation - A written review dealing with the adequacy of life safety features relative to fire, storm, collapse, crowd behavior, and other related safety considerations.

Life Safety Network - A type of combination system that transmits fire safety control data through gateways to other building system control units.

Lifetime - Time from the creation of an electron hole pair until recombination occurs.

Light– (1) Electromagnetic radiation in a band of frequencies that can be received by the human eye. (2) Space in a window sash for a single pane of glass. (3) A pane of glass.

Light Emitting Diode - (LED) A small electronic device that gives off light when current is passed through it. Most often used as indicators in alarm systems.

Lighting Protection - Consists of one or more of the following: Preset time intervals, Monitored ambient light levels or Tripped sensor(s) indicating a possible intrusion into a protected area.

Lightning - Discharge that occurs between positive and negative poles in a thunderstorm. These discharges may attain current levels of more than 100,000 amperes.

Limit Switch - Safety control that automatically shuts off a device before t will cause damage.

Limited Access Structure - A structure or portion of a structure lacking access openings.

Limited Care Facility - A building or portion of a building used on a 24-hour basis for the housing of four or more persons who are incapable of self-preservation because of age; physical limitations due to accident or illness; or limitations such as mental retardation/developmental disability, mental illness, or chemical dependency.

Limited-Combustible (Material) - Refers to a building construction material not complying with the definition of noncombustible (see 3.3.135.3) that, in the form in which it is used, has a potential heat value not exceeding 8140 kJ/kg (3500 Btu/lb), where tested in accordance with NFPA 259, Standard Test Method for Potential Heat of Building Materials, and includes (1) materials having a structural base of noncombustible material, with a surfacing not exceeding a thickness of 3.2mm(1/8 in.) that has a flame spread index not greater than 50; and (2) materials, in the form and thickness used, other than as described in (1), having neither a flame spread index greater than 25 nor evidence of continued progressive combustion, and of such composition that surfaces that would be exposed by cutting through the material on any plane would have neither a flame spread index greater than 25 nor evidence of continued progressive combustion.

Limiter - Circuit which limits the maximum level of a signal. Circuit or device that prevents some portion of its input from reaching the output. A clipper.

Line - (1) Circuit in an electronic communication system (2) Telephone connection. (3) Individual telephone extension. (4) Principal circuits of an electric power system. (5) Any of the successive horizontal rows of picture elements on the screen of a cathode -ray tube (as a television screen). (6) Merchandise or services of the same general class for sale or regularly available.

Line - Telephone circuit from the central office to the subscriber's telephone.

Line Carrier - See AC Line Carrier.

Line Conditioning - Addition of equipment to a channel to improve characteristics to allow higher rates of data transmission.

Line Cut Monitor - Device that detects and reacts to a telephone line being cut or shorted.

Line Doubler - Video enhancement component, often used with front projection systems, appearing to double the number of scan lines to sharpen the image and increase brightness.

Line Level Signals - Audio signals that are at a level too low to drive speakers directly. Line -level signals must be amplified by a preamplifier and power amplifier (or receiver) before being sent to speakers.

Line Lock - To synchronize the field sync pulses, of an AC powered camera, to the frequency of the voltage input (line voltage).

Line Locked - Sync pulses of cameras are locked to the AC mains frequency.

Line of Sight - Unobstructed optical path between two objects.

Line Powered - Camera in which the power is supplied along the same coaxial cable that carries the video signal.

Line Security - Degree of protection of the channel that connects the subscriber's system to the central station.

Line Security Alarm - A system that monitors the integrity of the communication link between the alarm system and the monitoring facility, or between the alarm system and the serving telephone company's nearest switching center.

Line Seizure - Feature of some alarm systems that causes a tape dialer or digital communicator to disconnect all telephones from the line when the system is tripped, thus preventing an intruder from defeating the system by lifting the telephone receiver.

Line Supervision - Electronic protection of an alarm line accomplished by sending a continuous or coded signal through a circuit. Change in the circuit characteristics, such as a change in impedance due to the circuit having been tampered with, will be detected and initiate an alarm if the change exceeds a certain level.

Lineal Foot - Unit of measure for lumber equal to 1 inch thick by 12 inches wide by 12 inches long. Examples: 1" x 12" x 16' = 16 board feet, 2" x 12" x 16' = 32 board feet.

Linear - Relationship between input and output in which the output varies in direct proportion to the input.

Linear Drive - Analog tone arm for turntables or laser scanner for CD players that moves in a straight line instead of pivoting from a center point.

Linear Scale - Scale in which the divisions are uniformly spaced.

Linearity - Straightness of a frequency response curve as an indication of true or accurate sound reproduction.

Lineman's Pliers - Side cutting pliers.

Line-Type Detector - A device in which detection is continuous along a path. Typical examples are rate-of-rise pneumatic tubing detectors, projected beam smoke detectors, and heat-sensitive cable.

Lintel - Horizontal structural member that supports the load over an opening such as a door or window.

Liquid Crystal Display – See LCD.

Liquidtight Flexible Metal Conduit - Special flexible metal conduit that provides protection from liquids or vapors.

Listed - Equipment, materials, or services included in a list published by an organization that is acceptable to the authority having jurisdiction and concerned with evaluation of products or services, that maintains periodic inspection of production of listed equipment or materials or periodic evaluation of services, and whose listing states that either the equipment, material, or service meets appropriate designated standards or has been tested and found suitable for a specified purpose.

Listen In - Feature of some alarm systems that allows central station personnel to listen for sounds of intrusion by means of microphones at the protected premises.

Live - (1) Energized; having voltage applied. (2) Circuit or piece of equipment that is on and has current flow within it.

Living Area - Any normally occupiable space in a residential occupancy, other than sleeping rooms or rooms that are intended for combination sleeping/living, bathrooms, toilet compartments, kitchens, closets, halls, storage or utility spaces, and similar areas.

Living Unit - Complete residential unit that includes facilities for one family, with provisions for living, sleeping, eating, cooking, and sanitation.

Load - (1) Component or piece of equipment is connected to a source and draws current from a source is a load on that source. (2) Resistance in a current path, which consumes power. The larger the resistance, the greater the load (and the more power consumed).

Load Bearing Wall - Wall which is supporting its own weight and some other structural elements of the house such as the joists. Includes all exterior walls and any interior wall that is aligned above a support beam or girder. Normally, any wall that has a double horizontal top plate.

Load Current - Current drawn from a source by a load.

Load Impedance - Vector sum of reactance and resistance in a load.

Load Regulation - Ability of a voltage regulator to maintain a constant output voltage under varying load currents.

Load Resistance - Resistance of a load.

Load-Bearing Wall - Strong wall capable of supporting weight.

Loading Capacity - The maximum number of discrete elements of fire alarm systems permitted to be used in a particular configuration.

Loading Effect - Large load impedance will draw a small load current and so loading of the source is small. (Light load). A small load impedance will draw a large load current from the source. (Heavy load).

Lobby - Entrance hall, vestibule.

Local Alarm System –An alarm system which relies on one or more visual or audible devices to alert occupants, neighbors, or passers-by to a detected condition. A local alarm system does not send an alarm signal to a monitoring facility.

Local Energy Type Auxiliary Fire Alarm System - An auxiliary system that employs a locally complete arrangement of parts, initiating devices, relays, power supply, and associated components to automatically trip a municipal transmitter or master box over electrical circuits that are electrically isolated from the municipal system circuits.

Local Loop - Telephone wires and other facilities that link local subscribers to the local telco's central office.

Lock - Device for securing a door or window.

Lock Switch - Special security switch that requires a key to be opened or closed.

Locking Pliers - Adjustable pliers that can be tightened or loosened with a screw in one of the handles. It clamps on the object being held.

Lodging or Rooming House - A building or portion thereof that does not qualify as a one- or two-family dwelling, that provides sleeping accommodations for a total of 16 or fewer people on a transient or permanent basis, without personal care services, with or without meals, but without separate cooking facilities for individual occupants.

Log In - To enter a computer system.

Log Out - To exit a computer system.

Logic - Science of dealing with the principle and applications of gates, relays and switches.

Long Nose Pliers - Pliers with a long, often needlelike, nose.

Long Range Radio - See Radio Network.

Longitude - Distance in degrees from one meridian to any other. Longitude is usually measured from the prime meridian (Greenwich, England).

Lookout - Short wood bracket or cantilever that supports an overhang portion of a roof.

Loop - (1) Complete current path. (2) Electrical circuit consisting of several elements (switches or sensors) connected in series. (3) Group of sensors treated as a single unit by the central control box. Loops using normally closed sensors are in series, while loops using normally open sensors are in parallel.

Loop Frame Store - Series of video frames is compressed and stored in a continuous loop. This means that frames before and after the incident are recorded.

Loop Resistance - Electrical resistance of an entire closed loop, including all connections, presented to the control unit.

Loop Response Time - Time, usually in milliseconds, that it takes for a sensor to be in a violated state before the control unit reacts.

Loop Status Indicator - Light, LED, or meter that indicates the status of a protective loop.

Loopback Address - The loopback address (127.0.0.1) is a pseudo IP address that always refers back to the local host and is never sent out onto a network.

Looping - Indication that a high impedance device has been permanently connected in a parallel to a video source.

Loss– (1) Describe a decrease in power. (2) Decrease in signal strength during transmission, propagation or reception.

Loss of Power - The reduction of available voltage at the load below the point at which equipment can function as designed.

Louver - Opening with horizontal slats to permit passage of air, but excluding rain, sunlight and view.

Low Frequency - frequency below 160 Hz.

Low Temperature Sensor - A sensor that detects a lower-than-expected temperature.
Examples: Unattended industrial process systems, a heated building subject to damage or whose contents are subject to damage due to below-freezing temperature, wet-pipe sprinkler systems, etc.

Low Water Level Sensor - A sensor that detects lower-than-expected water or other liquid levels.
Examples: A sprinkler system tank, a building heating system's boiler, a sprinkler system water reservoir, etc.

Low-Power Radio Transmitter - Any device that communicates with associated control/receiving equipment by low-power radio signals.

LRR - A synonym for Long Range Radio.

Lumber - Sawn wood used in construction.

Lumens - Unit of measure for total light output. The amount of light falling on a surface of one square foot.

Lux - Unit of measuring the intensity of light. (1 FC = 10 lux). The lower the lux, the better to see in low light conditions.

M - Mega.

mA - Milliamp.

MAC Address - Physical address; a numeric value that uniquely identifies that network device from every other device on the planet.

Machine Screw - Threaded fastener designed to screw into a threaded hole. Machine screws are identified by the head shape: round, flat, oval, and so on. Lengths vary from 1/8” up to 2”.

Magnet - Body that can be used to attract or repel magnetic materials.

Magnetic Card - Plastic card containing thousands of magnetic bits or particles which can be arranged to match the required pattern set up in the card reader.

Magnetic Circuit Breaker - Circuit breaker that is tripped or activated by use of an electromagnet.

Magnetic Coil - Spiral of a conductor which is called an electromagnet.

Magnetic Contact - Magnetically operated switch used on doors and windows to detect opening.

Magnetic Core - Material that exists in the center of the magnetic coil to either physically support the windings (non -magnetic material) or to concentrate the magnetic flux (magnetic material).

Magnetic Disk - Device for storing computer data.

Magnetic Field - Magnetic lines of force traveling from the north pole to the south pole of a magnet.

Magnetic Flux - Magnetic lines of force produced by a magnet.

Magnetic Leakage - Passage of magnetic flux outside the path along which it can do useful work.

Magnetic Lock - Door lock consisting of an electromagnet and strike plate. The electromagnet is mounted in the door frame opposite the strike plate, which is mounted in the door. When current is applied, the strength of the magnet holds the door locked.

Magnetic Poles - Points of a magnet from which magnetic lines of force leave (north pole) and arrive (south pole).

Magnetic Reed Switch - Two unit device, consisting of a small permanent magnet (with no electrical connections) and a magnetically sensitive reed switch, which is physically wired into the circuit. The reed switch is activated whenever the magnet is brought close enough to it. Moving the magnet further away deactivates the switch. Magnetic reed switches are widely used to electronically monitor doors and windows.

Magnetic Spot Card - Type of magnetic card having a barium ferrite core on which a code is fixed by the polarity of magnetized spots arranged in a readable pattern.

Magnetic Stripe - Band of ferrous material that is sealed onto or into card key or credit card.

Magnetic Stripe Card - Cards that use the same technology that is employed in credit cards, and are probably the most common type of card in use.

Magnetic Switch - Switch consisting of two separate units - a magnetically actuated switch and a magnet. Switch is usually mounted in a fixed position such as a doorjamb or window frame opposite the magnet. Magnet is fastened to the door or window. When the door or window is opened, the removal of the magnet allows the switch contacts to change status, either opening or closing, depending upon the design of the switch.

Magnetic Switch, Balanced - Magnetic switch which operates using a balanced magnetic field in such a manner as to signal an alarm when it detects either an increase or decrease in magnetic field strength so as to resist. Compromise with an external magnet.

Magnetic Tape - Ribbon of thin plastic coated with magnetic material used in both audio and video tape decks.

Magnetism - Property of some materials to attract or repel others.

Magnetizing Force - Also called magnetic field strength. It is the magneto motive force per unit length at any given point in a magnetic circuit.

Magnetomotive Force - Force that produces a magnetic field.

Magnification - Increase in size.

Main – Utility power line.

Main Control Panel - Primary operating controls of a system.

Maintained Contact - Switch that stays in its last set position until reset.

Maintenance - Recurrent inspections, tests and corrections to keep the system and it's component parts in an operative condition at all times.

Make - To close or establish a connection or circuit.

Male - Part, such as a bolt, designed to fit into another (female) part. External threads are male.

Malicious Code - Software (e.g., Trojan horse) that appears to perform a useful or desirable function, but actually gains unauthorized access to system resources or tricks a user into executing other malicious logic.

Mall - A roofed or covered common pedestrian area within a mall building that serves as access for two or more tenants and does not exceed three levels that are open to each other.

Mall Building - A building, including the mall, enclosing a number of tenants and occupancies wherein two or more tenants have a main entrance into the mall.

Malware - Generic term for a number of different types of malicious code.

Man Day - Full project work day; used in estimating and scheduling.

Man Made Interference - Interference generated by circuits, devices and machines.

Management - People who run a project or business.

Mantel – (1) Shelf above a fireplace opening. (2) Decorative trim around a fireplace opening.

Mantrap - Double door booth that allows a person to enter at one end and is allowed to proceed out the other end if an identification routine is satisfied.

Manual - (1) Actuated or operated directly by mechanical means rather than automatically. (2) Book that describes the operation and maintenance of a device.

Manual Burglar Alarm - See Hold-Up Alarm and Panic Alarm.

Manual Fire Alarm Box - A manually operated device used to initiate an alarm signal. See pull station.

Manual Fire Alarm Station. A device that permits a fire alarm signal to be triggered manually.

Manual Hold-Up Alarm Button - A fixed-location or portable device that can be manually activated to initiate a hold-up alarm signal.

Manual Iris Lens - Lens with a manual adjustment to set the iris opening (F stop) in a fixed position.

Manual Reset - Alarm system that must be turned off and physically restored to a non alarm condition.

Manual station - See pull station.

Manual switcher - Electronic control device with multiple switches permitting the connection of one or a number of CCTV camera outputs into a single monitor or videotape recorder.

Manufactured Wood - Wood product such as a truss, beam, Glue Lam TM or joist which is manufactured out of smaller wood pieces and glued or mechanically fastened to form a larger piece. Often used to create a stronger member which may use less wood. See also Oriented Strand Board.

Manufacturer's Specifications - Written installation and/or maintenance instructions which are developed by the manufacturer of a product and which may have to be followed in order to maintain the product warrantee.

March Time Signal - Audible signal having pulses that sound continuously at a rate between 108 to 120 per minute. the march time rhythm of the signal is designed to encourage orderly evacuation.

Masonry - Stone, brick, concrete, hollow -tile, concrete block, or other similar building units or materials. Normally bonded together with mortar to form a wall.

Masonry Bit - High strength steel drill or bit with a hard tungsten carbide tip used to drill into concrete or masonry units.

Masonry Nails - Heavy, hardened steel nails used for driving into masonry: a concrete nail.

Master Box - A municipal fire alarm box that can also be operated by remote means. See Fire Alarm Box.

Master Control Unit (Panel) - A control unit that serves the protected premises or portion of the protected premises as a local control unit and accepts inputs from other fire alarm control units. See Control Unit.

Master Key - Single key that fits multiple locks.

Mastic - Pasty material used as a cement (as for setting tile) or a protective coating (as for thermal insulation or waterproofing)

Mat Switch - Pressure -sensitive switch that resembles a rubber mat, hidden under carpets and padding and contains switch contact surfaces that make contact when stepped on.

Matched Impedance - Condition that occurs when the output impedance of a source is equal to the input impedance of a load.

Matching - Connection of two components or circuits so that maximum power is transferred between the two.

Matrix Switcher - Switcher able to route any of its (camera) inputs to any of its (monitor) outputs, they often include telemetry control.

Matrix(ing) - Process of mixing two distinct signals with specific phase and amplitude relationships to form one signal so that the original components of the total signal can be separated at a later time

Maximum Rating - Absolute maximum condition in which a device is designed to operate.

Maxwell - Unit of magnetic flux. One Maxwell equals one magnetic line of force.

Mbps - Megabits (millions of bits) Per Second.

McCulloh Circuit (loop) - Supervised single wire loop connecting a number of coded transmitters located in different protected areas to a central station receiver.

MD (MiniDisc) - 2.5 -inch optical disc encased in a sleeve for use in audio MD players/recorders.

Mean Time Between Failures - Statistical figure representing the average time between component or equipment failures.

Mean Time to Failure - Statistical figure representing the average time between initial startup and the first failure of components or equipment.

Mean Time to Repair - Statistical figure representing the average time between component or equipment failure and completed repair of the unit.

Means of Egress - A continuous and unobstructed way of travel from any point in a building or structure to a public way consisting of three separate and distinct parts: (1) the exit access, (2) the exit, and (3) the exit discharge.

Means of Escape - Away out of a building or structure that does not conform to the strict definition of means of egress but does provide an alternate way out.

Measures of Effectiveness (MOE) - Probability model based on engineering concepts that allows one to approximate the impact a given action will have on an environment.

Mechanic -Skilled craftsman or worker.

Mechanical Drawings - Blueprints that show the HVAC or plumbing systems.

Mechanical Focus (Back -Focus) - Mechanical aligning of the imaging device with the focal point of the lens.

Mechanical Switch - Switch in which the contacts are opened and closed by means of a depressible plunger or button. Often used with a tamper switch or a switch within the hinge assembly of a door.

Mechanics Lien - Lien on real property in favor of persons supplying labor or materials for a building or structure, for the value of labor or materials supplied by them. Clear title to the property cannot be obtained until the claim for the labor, materials, or professional services is settled.

Medical Alert - Alarm system that allows notification that medical assistance is needed, usually by pushing a button.

Medical Emergency (Service) Alarm - A system that reports a medical problem for response by relatives, friends, neighbors, or by a community's EMS personnel, paramedics, or ambulance, depending on arrangements made with the monitoring facility.

Mega - Prefix indicating 106 and abbreviated as M.

Megabyte - (MB) One million byte.

Megahertz - One million Hertz or cycles per second, abbreviated MHz

Megaohm - One million Ohm, abbreviated M^.

Megavolt - One million Volts, MV

Megawatt - One million Watts, MW

Megger - Instrument used to test the insulation resistance of a conductor.

Membrane - For the purposes of membrane structures, thin, flexible, water-impervious material capable of being supported by an air pressure of 38 mm (11/2 in.) water column.

Membrane Structure - A building or portion of a building incorporating an air-inflated, air-supported, tensioned-membrane structure; a membrane roof; or a membrane-covered rigid frame to protect habitable or usable space.

Membrane Switch - Thin, flat, lightweight panel containing one or more individual touch activated switches.

Memory - Circuitry and devices that hold information, in electrical or magnetic form, such as a preset radio station frequency in a frequency -synthesized tuner or programmed tracks in a CD player.

Memory - Part of a system where information is stored.

Mercantile Occupancy - An occupancy used for the display and sale of merchandise.

Mercury Cell - Primary cell using a mercuric oxide cathode, a zinc anode and a potassium hydroxide electrolyte.

Mercury Fence Alarm - Mercury switch which is sensitive to the vibration caused by an intruder climbing the fence.

Mercury Switch - Small globule of mercury enclosed in a glass tube. When at the correct angle, the mercury shorts the two terminals together, closing the switch. If the mercury switch is moved from this position, the mercury will roll away from one or both of the internal terminals, opening the switch. Also known as tilt switches.

Metal Clad - (MC) Cable core is enclosed in a flexible metal covering.

Metal Film Resistor - Film of metal oxide or alloy is deposited on an insulating substrate.

Metal Lath - Sheets of metal that are slit to form openings within the lath. Used as a plaster base for walls and ceilings and as reinforcing over other forms of plaster base.

Metal Oxide Field Effect Transistor - (MOSFET) Transistor in which the insulating layer between the gate electrode and the channel is a metal oxide layer.

Metal Oxide Resistor - Metal film resistor in which an oxide of metal (such as tin) is deposited as a film onto the substrate.

Metal Oxide Varistor (MOV) - Varistor in which the resistance material is a metallic oxide such as zinc oxide; used in surge protection and for neutralizing excess electrical impulses.

Metal Studs - Webbed or hollow steel studding used in light construction.

Metal Tape - Tape whose coating is of iron particles; noted for its wide dynamic range and frequency response capability.

Metallic Circuit - Circuit, such as a two -wire telephone line, in which radio, microwave or earth ground is not a part of the circuit.

Meter - (1) Electrical or electronic measuring device. (2) Metric unit of length equal to 39.37 inches.

Meter - (1) Instrument for measuring and indicating the value of a particular quantity. (2) Metric unit of linear measure equal to 39.37 inches and abbreviated m.

Meter FSD Current - Value of meter current needed to cause the needle to deflect to its maximum position (full scale deflection).

Meter Resistance - DC resistance of the meter's armature coil.

Metric System - Measuring system used in most parts of the world. Units are made larger or smaller by multiplying or dividing by 10.

Mezzanine – (1) Floor located between the main floor and the second floor. (2)An intermediate level between the floor and the ceiling of any room or space.

MHz - Abbreviation for megahertz.

Mica Capacitor - Capacitor using mica as the dielectric.

Micro - (1) Prefix meaning millionth or 10 -6. (2) Prefix meaning extremely small, as in microstructure; the opposite of macro.

Micro - Prefix meaning one -millionth (1/1,000,000).

Microlam - Manufactured structural wood beam. It is constructed of pressure and adhesive bonded wood strands of wood. They have a higher strength rating than solid sawn lumber. Normally comes in l ½" thickness' and 9 ½", 11 ½" and 14" widths

Microphone – (1) Electroacoustic transducer that converts sound energy into electric energy. (2) A sensor that hears sound within its area of sensitivity. The microphone, or its control circuit, can be adjusted to hear a certain frequency range or require a certain level of sound before sending an alarm transmission to the monitoring facility which can then "listen in" remotely.

Microwave - A motion sensor that detects Doppler pattern shifts when a body moves within its area of sensitivity, using high-frequency microwave energy. The emitted transmissions may penetrate solid building walls, partitions, floors or ceilings.

Microwave– (1) Motion detector that uses high frequency radio waves to detect motion. Similar to an ultrasonic. (2) Band of very short wavelength radio waves within the UHF, SHF and EHF bands above one gigahertz.

Microwave Alarm System - System that uses microwaves as the detection method.

Microwave Detection - Method of motion detection using self - contained transceivers that radiate controlled patterns of microwave energy from transmitter/ receiver antennas. The transmitter portion radiates microwave energy. The receiver portion receives the energy reflected from objects in the area. Moving objects disrupt the reflection, thus causing an alarm condition.

Microwave Detector - Device that detects movement by using the Doppler shift principle. Detector transmits and receives microwave energy that is reflected back by objects in the room. Movement of an intruder changes this pattern and trips the alarm.

Mil - One thousandth of an inch (0.001 in.)

Milar (mylar) - Plastic, transparent copies of a blueprint.

Milli – Prefix meaning one -thousandth (1/1,000).

Millwork - Generally all building materials made of finished wood and manufactured in millwork plants. Includes all doors, window and door frames, blinds, mantels, panel work, stairway components (ballusters, rail, etc.), moldings, and interior trim. Does not include flooring, ceiling, or siding.

Mini System - Audio system that is downsized.

Minimum Object Distance - (M.O.D.) Closest distance a given lens will be able to focus on an object. Measured from the vertex (front) of the lens to the object.

Mismatch - Term used to describe a difference between the output impedance of a source and the input impedance of a load. A mismatch prevents the maximum transfer of power from source to load.

Miter Joint - Joint of two pieces at an angle that bisects the joining angle. For example, the miter joint at the side and head casing at a door opening is made at a 45° angle.

Mixed Occupancy - A multiple occupancy where the occupancies are intermingled.

Mixer – Unit that combines or blends several sound inputs.

Mobile Home - Complete house that is designed to be towed or moved.

Mock Up - Construction of a building or element at full scale to test structural stability and design.

Mode - Condition or status of the alarm system; operational condition

Model Home - Completed and furnished home used for showing prospective buyers what a completed unit look like.

Modem - MODulator dEMulator. Device that converts the digital information into analog information and transmits it over a telephone line. Another modem must be used when the information is received to convert the information back from analog to digital.

Modification - The reconfiguration of any space, the addition or elimination of any door or window, the reconfiguration or extension of any system, or the installation of any additional equipment.

Modified Bitumen Roof – See, "Torch Down Roof,"

Modular - Made up of modules.

Modulate - To change or vary some parameter such as varying the amplitude of a signal for amplitude modulation or the frequency of a signal for frequency modulation.

Modulation - Variation of a wave parameter (such as amplitude or frequency) to carry information. Process by which an information signal (audio for example) is used to modify some characteristic of a higher frequency wave known as a carrier (radio for example).

Module - (1) Assembly containing a complete self-contained circuit (or sub -circuit) and often made for plug -in operation. (2) Add -on device to a control for expanded capabilities or functions.

Moisture Alarm - Circuit that responds and sets off an alarm when the level of some liquid is detected above some specific point, usually by creating a short circuit current path between a pair of simple probes.

Moisture Barrier - Treated paper or metal that retards or bars water vapor, used to keep moisture from passing into walls or floors.

Moisture Detector - Sensor that indicates when moisture above a preset concentration is present.

Molding - Strip of decorative material having a plane or curved narrow surface prepared for ornamental application. These strips are often used to hide gaps at wall junctures.

Molecule - Smallest particle of a compound that still retains its characteristics.

Momentary Action Switch – See Momentary switch.

Momentary Contact – See Momentary Switch.

Momentary Switch - Switch that, after being activated, automatically returns to its original position.

Money Clip - Special type of switch used in hold -up alarms. It is placed in a cash drawer, with the bottom bill of a stack inserted in the switch. The alarm is activated by removing that bill. See Bill Trap.

Monitor - (1) In CCTV, a video display device which shows the images detected and transmitted by a camera. (2) To receive the status signals from a signaling device at a remote location.

Monitored Alarm System - An alarm system which reports detected conditions to a monitoring facility. Monitoring facilities are usually located off-site from the protected premises. When a monitoring facility is located within the building or complex that includes the protected premises, the alarm system is called a Proprietary system.

Monitoring - Sending of alarm, trouble, and other signals to a remote location such as a central station.

Monitoring Company - Any individual, corporation, partnership, association, organization or similar entity in the business of providing monitoring services.

Monitoring Equipment - Equipment at a monitoring facility that receives and displays signals from alarm systems.

Monitoring Facility - Any organization or agency that watches over alarm receiving equipment and follows up with appropriate actions when alarm and other signals are received. Monitoring facilities are divided into the following categories:

Monitoring Facility Structure - The physical structure of the monitoring facility includes the room and associated areas in which the monitoring equipment and monitoring operations personnel are located, and general offices and other support facilities.

Monitoring Facility, Non-UL/FM-Listed - A monitoring facility, or central station, that is not listed by UL or FMRC, the operation of which is not supervised or inspected by either of these nationally-recognized organizations.

Monitoring Facility, UL/FM-Listed, Full Service - See Central Station, UL/FM-Listed, Full Service.

Monitoring Operations Room - The physical room or rooms that house alarm monitoring equipment, monitoring operations personnel, directly-related equipment and personnel support rooms. This is often referred to as "the central station."

Monitoring Station – Location where personnel observe annunciators reporting on the condition of security systems.

Monochrome - Having only one color. In television it is black and white.

Monoculture - Monoculture is the case where a large number of users run the same software, and are vulnerable to the same attacks.

Monopost - Adjustable metal column used to support a beam or bearing point. Normally 11 gauge or Schedule 40 metal, and determined by the structural engineer

Mortar - Mixture of cement (or lime) with sand and water used in masonry work.

Mortise - Slot cut into a board, plank, or timber, usually edgewise, to receive the tenon (or tongue) of another board, plank, or timber to form a joint.

MOSFET - Abbreviation for "metal oxide field effect transistor" also known as an "insulated gate field effect transistor). A field effect transistor in which the insulating layer between the gate electrode and the channel is a metal oxide layer.

Motion Detection - System designed to generate an alarm by sensing movements of an intruder within a protected area. These systems detect the intruder's presence by motion alone. Such detection usually is accomplished through ultrasonic, microwave or infrared detectors.

Motion Sensor - Device that detect motion within their range of sensitivity.

MOV - Metal oxide varistor, a device used to prevent the EMF generated by the locks from damaging the control.

Moving Coil Loudspeaker - Loudspeaker that uses a moving "voice coil" placed within a fixed magnetic field. Audio frequency current in the voice coil causes movement which is mechanically transferred to the speaker cone.

Moving Coil Microphone - Microphone that uses a moving coil within a fixed magnetic field.

Moving Coil Pick Up - Dynamic phonograph pick-up in which the stylus causes a coil to move within a fixed magnetic field.

Mudsill - Bottom horizontal member of an exterior wall frame which rests on top a foundation, sometimes called sill plate. Also sole plate, bottom member of interior wall frame.

Mullion - Vertical divider in the frame between windows, doors, or other openings.

Multi Segment Display - Device made of several light emitting diodes arranged in a numeric or alphanumeric pattern. By lighting selected segments numeric or alphabet characters can be displayed.

Multi Tone Siren - An electronic alarm output device that periodically varies its pitch to make a more distinctive and ear - catching sound than a continuous tone. The frequency can switch instantly between specific, discrete values, or it can sweep through a range of values.

Multicast - Broadcasting from one host to a given set of hosts.

Multiconductor Cable - Set of multiple wires, insulated from one another, each carrying its own independent signal. The wires are grouped together into a single cable for convenience in physically running the wiring in a system.

Multilevel Play Structure - A structure that consists of tubes, slides, crawling areas, and jumping areas that is located within a building and is used for climbing and entertainment, generally by children.

Multimeter - Electronic test equipment that can perform multiple tasks. Typically one capable of measuring voltage, current and resistance. More sophisticated modern digital multimeters also measure capacitance, inductance, current gain of transistors and/or anything else that can be measured electronically.

Multiple Dwelling Unit - MDU. (1) A building containing three or more dwelling units.(2) Any housing structure that is broken into more than one living area to accommodate multiple "family" units (apartment buildings, condominiums, duplexes, etc.).

Multiple Occupancy. A building or structure in which two or more classes of occupancy exist.

Multiple Sensor Alarm. An alarm generated when at least two separate sensors detect the condition before the alarm is triggered. In some instances, redundant sensors in different system zones must trip before the alarm is triggered. However, activation of one sensor may trigger a trouble or pre-alarm signal. Example: Smoke detectors that are cross-zone-wired so that two or more zones must detect the smoke before an alarm condition is created.

Multiple Station Alarm Device. Two or more single station alarm devices that can be interconnected so that actuation of one causes all integral or separate audible alarms to operate; or one single station alarm device having connections to other detectors or to a manual fire alarm box.

Multiple Station Alarm. A single station alarm capable of being interconnected to one or more additional alarms so that the actuation of one causes the appropriate alarm signal to operate in all interconnected alarms.

Multiple Activation Trigger. This is not really a special type of sensor. Rather it is a system-designed feature that requires two or more sequential activations of the sensor before an alarm signal is transmitted to the monitoring facility.

Multiplex Alarm Systems - Generally a phone company arrangement of dedicated voice -grade or data channels, shared by multiplex subscribers, to signal alarm -related information to a central station. Multiplex refers to the time -shared use of those channels.

Multiplex Network - A multi-point analog data network providing continuous polling by the receiving terminal of control panels at multiple subscriber locations. The polling provides the receiver with reports on the status or status changes of subscriber alarm systems.

Multiplexer – (1) A device that combines several communication channels into a single unit. (2) An electronic system that can accept a number of camera inputs and record or display them virtually simultaneously.

Multiplexing – (1) To combine multiple signals from possibly disparate sources, in order to transmit them over a single path. (2) A signaling method characterized by simultaneous or sequential transmission, or both, and reception of multiple signals on a signaling line circuit, a transmission channel, or a communications channel, including means for positively identifying each signal.

Multiplier Resistor - Resistor connected in series with a moving coil meter movement to extend the voltage ranges.

Multipurpose Assembly Occupancy - An assembly room designed to accommodate temporarily any of several possible assembly uses.

Multitasking - Mode of operation where work is done on more than one task simultaneously.

Multi-user - System that allows access to more than one person at a time.

Multizone - System with two or more circuits connected to the same control unit.

Municipal Fire Alarm Box (Street Box) - An enclosure housing a manually operated transmitter used to send an alarm to the public fire service communications center.

Municipal Fire Alarm System - A system of alarm initiating devices, receiving equipment, and connecting circuits (other than a public telephone network) used to transmit alarms from street locations to the public fire service communications center.

Municipal Transmitter - A transmitter that can only be tripped remotely that is used to send an alarm to the public fire service communications center.

Muntin - Small member that divides the glass or openings of sash or doors.

Muriatic acid - Used as a brick cleaner after masonry work is completed.

Mushroom - Unacceptable occurrence when the top of a caisson concrete pier spreads out and hardens to become wider than the foundation wall thickness.

Mushroom Button - Switch with a button shaped like a mushroom.

Nail - Long shanked fastener.

Nail Inspection - An inspection made by a municipal building inspector after the drywall material is hung with nails and screws (and before taping).

Nail Set - Small punch for driving a nail head below the surface. Also called a nail punch.

National Electronic Security Alliance – NESA- Alliance to support state associations.

National Electrical Code - Code specifying the safe use of electricity and safe wiring methods.

National Fire Protection Association - (NFPA) Organization that promotes the science and strives to improve methods of fire protection. It sponsors various codes.

National Institute of Standards and Technology - (NIST) Unit of the US Commerce Department. Formerly known as the National Bureau of Standards, NIST promotes and maintains measurement standards.

Natural Disaster - Any "act of God" (e.g., fire, flood, earthquake, lightning, or wind) that disables a system component.

Natural Finish - Transparent finish which does not seriously alter the original color or grain of the natural wood. Natural finishes are usually provided by sealers, oils, varnishes, water repellent preservatives, and other similar materials.

NBFAA - National Burglar & Fire Alarm Association-Now ESA

NC - Normally closed.

NEC - National Electrical Code.

Negative - Terminal that has an excess of electrons.

Negative Charge - Charge that has more electrons than protons

Negative Ground - System where the negative terminal of the source is connected to the system's metal chassis.

Negative Temperature Coefficient - Component whose resistance or capacitance decreases when temperature increases.

NEMA - National Electrical Manufacturers Association - an Association that standardizes specification for wires, cables, and electrical components.

Neon Bulb - Glass envelope filled with neon gas which when ionized by an applied voltage will glow red.

NESA- National Electronic Security Alliance

Net Floor Area - The floor area within the inside perimeter of the outside walls, or the outside walls and fire walls of the building under consideration with deductions for hallways, stairs, closets, thickness of interior walls, columns, or other features.

Network - Combination of interconnected components, circuits or systems.

Network Adapter - Device that connects a computer to a network.

Network Address Translation - Translation of an Internet Protocol address used within one network to a different IP address known within another network. One network is designated the inside network and the other is the outside.

Network Interface Device - (NID) Demarcation point between the telephone company facilities and the wiring in a home or business.

Network Mapping - To compile an electronic inventory of the systems and the services on your network.

Network Taps - Network taps are hardware devices that hook directly onto the network cable and send a copy of the traffic that passes through it to one or more other networked devices.

Neutral - Terminal, point or object with balanced charges. Neither positive nor negative.

Neutral Atom - Atom in which the number of negative charges (electrons in orbit) is equal to the number of positive charges (protons in the nucleus).

Neutral Wire - Usually color -coded white, this carries electricity from an outlet back to the service panel. Also see hot wire and ground.

Neutron - Subatomic particle in the nucleus of an atom and having no electrical charge.

Newel - Upright post or the upright formed by the inner or smaller ends of steps about which steps of a circular staircase wind. In a straight flight staircase, the principal post at the foot or the secondary post at a landing.

NFPA - See National Fire Protection Association.

Ni-cad - nickel -cadmium battery.

NICET - National Institute for Certification in Engineering Technologies - Organization that administers testing and certification programs in the fire alarm and sound industry.

Nickel-cadmium Battery - Type of rechargeable battery used to supply standby power in alarm systems.

Nickel-cadmium Cell - Secondary cell that uses a nickel oxide positive electrode and a cadmium negative electrode.

Nineteen Hundred Box - Common term for any two gang (4 -inch square) outlet box.

Nipple - Threaded pipe or conduit less than 2 ft long.

NIU - Network Interface Unit (or NID - Network Interface Device). Small box, usually mounted on the outside wall of the house, which is the boundary between the phone (or cable) company wiring and the house wiring. Also called the demarcation point.

NO - Normally open.

Node - Junction or branch point in a circuit.

Noise– (1) Unwanted electromagnetic radiation within an electrical or mechanical system. (2) Random spurts of electrical energy or interference. In a video signal this appears as snow or graininess in the picture.

Nominal - Approximate, assumed not actual.

Non Linear Scale - Scale in which the divisions are not equally spaced.

Nonbearing Wall - Wall supporting no load other than its own weight.

Noncombustible (Material) - Refers to a material that, in the form in which it is used and under the conditions anticipated, does not ignite, burn, support combustion, or release flammable vapors, when subjected to fire or heat. Materials that are reported as passing ASTM E 136, Standard Test Method for Behavior of Materials in a Vertical Tube Furnace at 750 Degrees C, are considered noncombustible materials.

Noncontiguous Property - An owner- or user protected premises where two or more protected premises, controlled by the same owner or user, are separated by a public thoroughfare, body of water, transportation right-of way, or property owned or used by others. (SIG-SSS)

Nonrequired (Voluntary) System - A fire alarm system component or group of components that is installed at the option of the owner, and is not installed due to a building or fire code requirement.

Nonrestorable Initiating Device - A device in which the sensing element is designed to be destroyed in the process of operation.

Nonvolatile Memory - Feature of a system having memory components that retain all memory when power is entirely absent.

Normally Closed - Designation which states that the contacts of a switch or relay are closed or connected when at rest. When activated, the contacts open or separated.

Normally Closed (NC) Switch - Switch, magnetic or mechanical, in which the contacts are closed (electrically conductive) when no external forces act upon the switch in its usual state.

Normally Open - Switch or relay whose contacts are open when nonenergized.

Normally Open (N0) Switch - Switch in which the contacts are open or separated (electrically non -conductive) when no external forces act upon the switch in its usual state.

Normally Open Loop - Protective loop in which all detection devices are wired in parallel and are open in the secure mode.

North Pole - Pole of a magnet out of which magnetic lines of force are assumed to originate.

Nosing - Projecting edge of a molding or drip or the front edge of a stair tread.

NOT Gate - Digital inverter. Digital gate with a single input and a single output, which is always at the opposite state as the input. If the input state is HIGH, the output state is LOW (or not HIGH), and if the input state is LOW, the output state is HIGH (or not LOW).

Notch - Crosswise groove at the end of a board.

Notification Appliance - A fire alarm system component such as a bell, horn, speaker, light, or text display that provides audible, tactile, or visible outputs, or any combination thereof.

Notification Appliance Circuit - A circuit or path directly connected to a notification appliance(s).

Notification of Authorities - See Request For Response (RFR).

Notification Zone - An area covered by notification appliances that are activated simultaneously.

Nozzle - Part of a heating system that sprays the fuel of fuel -air mixture into the combustion chamber.

NTSC - Video standard,

Nucleus - Core of an atom. Nucleus contains both positive (protons) and neutral (neutrons) subatomic particles.

Nuisance Alarm - Any alarm caused by mechanical failure, malfunction, improper installation, or lack of proper maintenance, or any alarm activated by a cause that cannot be determined.

Numerator - Term above the bar in a fraction; the number being divided by the denominator.

Nursing Home - A building or portion of a building used on a 24-hour basis for the housing and nursing care of four or more persons who, because of mental or physical incapacity, might be unable to provide for their own needs and safety without the assistance of another person.

Nut - Internally threaded fastening device that runs onto the threaded end of a bolt.

Nut Driver - Screwdriver -shaped tool used for driving hex nuts.

O, S & Y (Open, Stem and Yoke) Valve - See Gate Valve.

Oakum - Loose hemp or jute fiber that's impregnated with tar or pitch and used to caulk large seams or for packing plumbing pipe joints

Object Protection - Protection of a single object, such as a safe or file cabinet.

Objective - A requirement that needs to be met to achieve a goal.

OC - On Center - Measurement of spacing for studs, rafters, and joists in a building from the center of one member to the center of the next.

Occupancy - The purpose for which a building or portion thereof is used or intended to be used.

Occupancy Sensor - Energy conservation measure that uses motion or sound to switch lights and or HVAC on and off.

Occupant Characteristics - The abilities or behaviors of people before and during a fire.

Occupant Load - The total number of persons that might occupy a building or portion thereof at any one time.

Occupiable Area - The spaces of a facility that can be occupied or used by the facility occupants as part of the building function or to support building operations and maintenance. This includes, but is not limited to, storage areas, mechanical and electrical equipment areas, walk-in closets or janitor's rooms, restrooms, conference rooms, and individual offices.

Occupiable Story - A story occupied by people on a regular basis.

Octave - The bandwidth of a filter that comprises a frequency range of a factor of 2. (That is, f2 = 2f1 as defined in IEC 61260. For example, for an octave-band centered on 500 Hz, the lower frequency is 353 Hz, and the upper frequency is 707 Hz).

Octet - Sequence of eight bits. An octet is an eight -bit byte.

Off Air TV – Broadcast Television received by an antenna.

Off Center - Not on center; not centered.

Off Hook - (1) Condition which results when a telephone is lifted from its mounting, activating the hook switch. (2) Signal sent to the central office as a result of the off -hook condition. (3) To make connection with the public switched telephone network in preparation for dialing a telephone number.

Off Line – Device that is not connected.

Off Site Construction - Building parts off the site.

Office - (1) Switching center. (2) Central station (4) Place where business is transacted or a service is supplied.

Offset - Setting back of one part from another.

Offset Null - Op amp control pin used to eliminate the effects of internal component voltages on the output of the device.

Ohm - Unit of resistance symbolized by the Greek capital letter omega (Ω). Named for its discoverer, 19th century German physicist Georg Simon Ohm.

Ohmmeter - Device used to measure electrical resistance.

Ohm's Law - Relationship between voltage, current and resistance. Ohm's law states that current in a resistance varies in direct proportion to voltage applied and inversely proportional to resistance.

Ohms Per Volt – Refers to a value of ohms per volt of full scale defection for a moving coil meter movement. The number of ohms per volt is the reciprocal of the amount of current required to produce full scale deflection of the needle. A meter requiring 50 micro amps for full scale deflection has an internal resistance of 20 kΩ per volt. The higher the ohms per volt rating, the more sensitive the meter.

Omega - Ω Last letter of the Greek alphabet; capital omega is the symbol Ohm.

On Center - Measurement from the center of one member to the center of corresponding member; center to center.

On Hook – (1) Idle condition for a telephone handset. It is not active for transmitting but active to receive a ringing signal. (2) To disconnect from the public-switched telephone network.

On Line - Device that is part of a functional system, or a device connected to, and interacting with, a functional system.

One and Two-Family Dwelling Unit - A building that contains not more than two dwelling units with independent cooking and bathroom facilities.

One Plus Duress Alarm - Manual activation of a silent alarm signal by entering at an arming station a code that adds one to the last digit of the normal arm/disarm code (e.g., normal code = 1234, one plus duress code = 1235)

One Way Screw - Screw specifically designed to resist being removed once installed.

One Family Dwelling Unit - A building that consists solely of one dwelling unit with independent cooking and bathroom facilities.

One-Third Octave - The bandwidth of a filter that comprises a frequency range of a factor of 21/3. (That is, f2 = 21/3 f1 as defined in IEC 61260). The octave filter can be subdivided into three 1/3 octave-bands.

Open - Break in a circuit.

Open Area Detection (Protection) - Protection of an area such as a room or space with detectors to provide early warning of fire.

Open Circuit - Broken or incomplete current path.

Open Circuit Loop - See Normally open loop.

Open Circuit System - System in which the switches are connected in parallel. When a switch is activated, the circuit is closed, permitting current to flow, which activates the alarm signal.

Open End Wrench - Wrench with an open -end jaw.

Open Hole Inspection - When an engineer (or municipal inspector) inspects the open excavation and examines the earth to determine the type of foundation (caisson, footer, wall on ground, etc.) that should be installed in the hole.

Open Parking Structure - A parking structure that, at each parking level, has wall openings open to the atmosphere, for an area of not less than 0.13 m2 (1.4 ft2) for each linear 305 mm (12 in.) of its exterior perimeter. Such openings are distributed over at least 40 percent of the building perimeter or uniformly over two opposing sides. Interior wall lines and column lines are at least 20 percent open, with openings distributed to provide ventilation.

Open Shop - Employer that hires both union and non-union workers.

Open Structure - A structure that supports equipment and operations not enclosed within building walls.

Open Air Mercantile Operation - An operation conducted outside of all structures, with the operations area devoid of all walls and roofs except for small, individual, weather canopies.

Opening - Any possible point of entry - -doors, windows, vents, skylights, etc.

Openings and Closings – Recording when the system is on and off.

Open Pipe (Deluge) Flow Sensor - A sensor that detects the flow of water in an open-pipe sprinkler system.

Operating System Software - The basic operating system software that can be altered only by the equipment manufacturer or its authorized representative. Operating system software is sometimes referred to as firmware, BIOS, or executive program.

Operations - Day to day activities of a business.

Optical card - Card containing rows of spots of varying transparency. The relative passage of light through the pattern of spots forms a code.

Optical Fiber - Glass fiber used to transmit light energy.

Optics - (1) Science of light, its measurement, application and control. (2) System of lenses, prisms, filters of mirrors used in electronics to direct, control or otherwise modify light rays.

OR gate - Circuit or device, usually digital in design, which deals with just two input and output levels -HIGH and LOW. An AND gate always has at least two inputs. The output level is LOW if and only if all inputs are LOW. If any one or more of the inputs is HIGH, then the output will be HIGH.

Ordinance - A local law.

Orientation - A direction, as the direction a building faces.

Oriented Strand Board or OSB or Chip Board or Wafer Board - Manufactured wood panel made out of 1" - 2" wood chips and glue.

Orthographic View - View or drawing of something taken looking straight at the object.

Oscillate - To produce a continuous output waveform without an input signal present.

Oscillator - Electronic circuit that produces a continuous output waveform with only DC applied.

Oscilloscope - Instrument used to display a signal graphically. Shows signal amplitude, period and wave shape in addition to any DC voltage present.

Other Fire Detectors - Devices that detect a phenomenon other than heat, smoke, flame, or gases produced by a fire.

Other Notifications - Notification provided by the monitoring facility to guard services, serving alarm companies, AHJs, and non-alarm equipment service vendors

Out of Phase - When the maximum and minimum points of two or more wave shapes do not occur at the same time.

Outage - (1) Loss of power to a system. (2) Loss of a received signal.

Outlet - Point on the wiring system at which current is taken to supply equipment.

Outlet Box - Box used to mount receptacles, switches and lights.

Outline - Line that follows the outside edge of a figure or object.

Outliner – Roof extension beyond arch support at wall.

Output– (1) Energy delivered by a circuit or device (2) Terminal at which a component, circuit or piece of equipment delivers current, voltage or power.

Output Alarm Device - Part of an alarm system that alerts the user(s) to a detected problem or possible emergency condition.

Output Power - Amount of power a component, circuit or system can deliver to a load.

Output Relays - Relays that control external devices.

Outrigger - Extension of a rafter beyond the wall line. Usually a smaller member nailed to a larger rafter to form a cornice or roof overhang.

Outside Corner - Point at which two walls form an external angle, one you usually can walk around.

Outside Stair - A stair with not less than one side open to the outer air.

Overcurrent - Electrical current in excess of rated capacity.

Overcurrent Device - Circuit breaker or fuse.

Overhang - Outward projecting eave -soffit area of a roof; the part of the roof that hangs out or over the outside wall.

Overhead – Indirect expenses.

Overhead Door - Truck, loading dock, or garage door. It usually requires specialty made, wide -gap magnetic contacts.

Overlap - Lapping of one part over another.

Overload - Hindrance of system operation by placing excess burden on the performance capabilities of a system component.

Overload Protection - Protective device such as a fuse or circuit breaker that automatically disconnects a load when current exceeds a predetermined value.

Override - (1) To go around an automatic control system intentionally. (2) To bridge a functional stage of a system.

Owned - To have or hold as property.

Owner - Person or institution that has legal right to property.

Ownership - Any property or building or its contents under legal control by the occupant, by contract, or by holding of a title or deed.

P- Symbol for power.

P Trap - Curved, "U" section of drain pipe that holds a water seal to prevent sewer gasses from entering the home through a fixtures water drain.

P.I.V., or Post Indicator Valve - Valve for shutting off the water supply to a sprinkler system. It should be closed only in emergencies or when repairs are being made to the sprinkler system.

Packet - Piece of a message transmitted over a packet -switching network. One of the key features of a packet is that it contains the destination address in addition to the data. In IP networks, packets are often called datagrams.

Packet Switched Network – (1) Individual packets each follow their own paths through the network from one endpoint to another. (2) A data transmission network, shared by many users, in which multiple data transmissions can be sent concurrently. The communication paths are supervised and man-aged by the service-providing telephone company and are generally equipped to provide alternate paths automatically and quickly without interruption of service.

Pad Out, Pack Out - To shim out or add strips of wood to a wall or ceiling in order that the finished ceiling/wall will appear correct.

Padding - Material installed under carpet to add foot comfort, isolate sound, and to prolong carpet life.

Paging System - A system intended to page one or more persons by such means as voice over loudspeaker, coded audible signals or visible signals, or lamp annunciators.

Paint - Combination of pigments with suitable thinners or oils to provide decorative and protective coatings. Can be oil based or latex water based.

PAL/CCIR - Video standards used throughout Europe. CCIR is the monochrome standard. Pal is the color standard which adds on top of the CCIR.

Pallets - Wooden platforms used for storing and shipping material. Forklifts and hand trucks are used to move these wooden platforms around.

Palm Geometry Reader - Device that optically scans the geometry of the hand.

Pan - To make a panoramic sweep; to sweep a wide area with a beam or to sweep a wide band of frequencies with a suitable tuning circuit.

Pan Tilt - Device that can be remotely controlled to provide both vertical and horizontal movement for a camera.

Pane - A window glass.

Panel - (1) Thin flat piece of wood, plywood, or similar material, framed by stiles and rails as in a door (or cabinet door), or fitted into grooves of thicker material with molded edges for decorative wall treatment. (2) Flat often insulating support (as for computer hardware or parts of an electrical device) usually with control handles on one face (3) Usually vertical mount for controls or dials (as of instruments of measurement). (4) Unit that provides basic control circuitry for the function required.

Panel Door - Door with stiles (vertical members) and rails (horizontal members) that hold wood panels.

Panelboard - Electrical control center or main distribution panel which receives outside power and distributes it to the various branch circuits.

Panic– (1) Manually activated devices used to summon help. These devices can either be silent or cause the sounders to activate. If silent is desired the system must be monitored. (2) A sudden overpowering fright.

Panic Alarm - 24-hour sensing device such as a push button switch which is manually activated to indicate an emergency has occurred which does not directly threaten the life of the user. See also Duress Alarm Device.

Panic Bar - Device, usually a small electrical switch in a mounting plate, used for unlocking a door in a emergency.

Panic Button - A manually-activated device to trigger a panic alarm. See panic alarm.

Panic Circuit - See panic alarm.

Panic Exit Bar - Push bar used on doors in public structures; door opens when bar is pushed.

Panic Hardware - A door-latching assembly incorporating a device that releases the latch upon the application of a force in the direction of egress travel.

Paper Trail - Written documentation including dates and/or times that work, task, test, maintenance, etc. was performed or completed.

Paper, Building - General term for papers, felts, and similar sheet materials used in buildings without reference to their properties or uses. Generally comes in long rolls.

Parabolic Mirror - Concave mirror with the curvature of a parabola.

Parallel - Circuit having two or more paths for current flow.

Parallel Circuit - Circuit in which the elements are connected side - by -side, with all "top" ends wired in unison and all "bottom" ends similarly shorted together. Normally open sensors must be wired in parallel within a loop.

Parallel Connection (batteries) - Connecting two or more batteries of the same type with the positive terminals connected together and the negative terminals connected together. This does not change the voltage, but reduces the current drain from each battery.

Parallel Pair Wire - Two wires that run next to each other and are connected with plastic insulation. See Zip cord.

Parallel Telephone System - A telephone system in which an individually wired circuit is used for each fire alarm box.

Parameter - Set of physical properties whose values determine the characteristics or behavior of something.

Parapet - A wall placed at the edge of a roof to prevent people from falling off.

Parging - Rough coat of mortar applied over a masonry wall as protection or finish; may also serve as a base for an asphaltic waterproofing compound below grade.

Parity - Error-checking scheme whereby additional bits are added to data to aid in detecting common errors in data transmissions.

Parity Bit - Additional bits added to a character code or string of codes to provide a means for determining if transmitted information has been received correctly.

Parking Gate - Barrier that can be opened or closed to control vehicular access

Parquet - Hardwood floor made by inlaying with small pieces of wood, usually square.

Partial Protection - Protection that will detect the opening of a door or window.

Particle Board - Plywood substitute made of course sawdust that is mixed with resin and pressed into sheets. Used for closet shelving, floor underlayment, stair treads, etc.

Particleboard - Panels made from reconstituted wood particles bonded with resin under heat and pressure; 4’ x 8’ panels are standard.

Parting Stop or Strip - Small wood piece used in the side and head jambs of double hung windows to separate the upper sash from the lower sash.

Partition - (1) A zone or group of zones programmed as an area within the premises. (2) A wall that subdivides spaces within any story of a building or room. (3) Major division of the total physical hard disk space.

Partition - (1) Interior wall used for dividing rooms from each other, or separating different parts of a building. (2) Separate section of an alarm system that can operate independently and are controlled from the master keypad or by separate user control points.

Partitioned System - A burglar alarm system operated from a single control panel which allows two or more areas to be armed and disarmed independently of each other.

Partnership - Two or more people organized together in a business association. Limited partnership - each partner liable for his interest only. General partnership - all partners liable for the entire interest.

Party Wall - Common wall between two living units; wall is shared between the two units.

Pass Card - Issued to users, system operators, and authorized user agents. The card generally lists a pass word or number.

Pass Code - A word or number, issued at the user's request, to identify the user, a system operator, and an authorized user agent to the monitoring facility. The code may be used as part of the arming or disarming procedure.

Pass Word - See Pass Code.

Passive - Non powered element of a system.

Passive Bridge - Device used in multiplexed communications.

Passive Component - Component that does not amplify a signal. Resistors and capacitors are examples.

Passive Detector - Detector that does not emit or send out any type of energy in order to perform its detection function.

Passive Infrared (PIR) Detector - A motion sensor that detects a change in infrared energy that typically occurs when a person, pet, or other object moves within the detector's field of sensitivity.

Passive Infrared Sensor – See Passive Infrared Detector.

Passive Sensor - See passive detector

Passive System - System that emits no energy. It only receives. It does not transmit or reveal its position.

Password - Security code. Specific sequence of numbers, letters, or other keystrokes that must be entered to gain access to the protected function(s). Unauthorized person presumably would not know the password, and would therefore be denied access. A password is often used to disarm an alarm system, or to permit operation of its main control panel.

Patch - Small update released by a software manufacturer to fix bugs in existing programs.

Patch Panel - Panel that joins or terminates many different circuits.

Patching – (1) Repairs and alterations made on any surface, such as a wall or ceiling. (2) Process of updating software to a different version.

Path (Pathways) - (1) The route over which current flows (2) In radio and navigation, the imaginary line extending directly between transmitter and receiver or target. (3) In a computer program, the logical order of instructions. (4) Any conductor, optic fiber, radio carrier, or other means for transmitting fire alarm system information between two or more locations.

Pattern - Shape of the area or volume of coverage of motion detectors.

Paver, paving – Materials laid down to make a firm, even surface.

Payment Schedule - Pre-agreed upon schedule of payments to a contractor usually based upon the amount of work completed.

Payroll - Wages and salaries for employees, including state and federal payroll taxes.

PBX - Private branch exchange. Small manual telephone switchboard providing local and trunked telephone service on a subscriber's premises.

PC - (1) Printed circuit (2) Personal Computer.

PC board - See Printed Circuit Board.

Peak - Maximum or highest amplitude level.

Peak to Peak - Difference between the maximum positive and maximum negative values of an AC waveform.

Pedestal - Metal box installed at various locations along utility easements that contain electrical, telephone, or cable television switches and connections.

Pen register - Instrument that records electronic pulses as inked dashes on a paper tape.

Penalty Clause - Provision in a contract that provides for a reduction in the amount otherwise payable under a contract to a contractor as a penalty for failure to meet deadlines or for failure of the project to meet contract specifications.

Pendulum Switch - Switch used to sense vibration or motion. The switch is designed with a set of contacts that come into contact with each other when the switch is moved or shaken.

Penetration - Gaining unauthorized logical access to sensitive data by circumventing a system's protections.

Penetration Testing - Penetration testing is used to test the external perimeter security of a network or facility.

Penny - Measure of nail length and is abbreviated by the letter "d". Normally, 16d (16 "penny") nails are used for framing

Percolation Test or Perc. Test - Tests that a soil engineer performs on earth to determine the feasibility of installing a leech field type sewer system on a lot.

Performance Bond - Amount of money that a contractor must put on deposit with a governmental agency as an insurance policy that guarantees the contractors' proper and timely completion of a project or job.

Performance Criteria - Threshold values on measurement scales that are based on quantified performance objectives.

Perimeter - Distance around the outside edge of something.

Perimeter Detection - Detection of access to the outer limits of a detection area.

Perimeter Drain - 3" or 4" perforated plastic pipe that goes around the perimeter (either inside or outside) of a foundation wall (before backfill) and collects and diverts ground water away from the foundation.

Perimeter Protection - (1) Protection of access to the outer limits of a protected area by means of physical barriers, sensors on physical barriers, or external sensors not associated with a physical barrier. (2) Protection of openings on the exterior of a building. These can be windows, doors, vents or the like.

Perimeter Zones - Devices connected to exterior doors and windows.

Period - Time to complete one full cycle of a periodic or repeating waveform.

Periodic Maintenance Calls - Regularly scheduled preventive service calls to prevent and catch any possible problems before they interfere with the operation of the system.

Peripheral Device - Unit, distinct from the central processor, that can provide a computer system with input or output.

Permanence - Magnetic equivalent of magnetic inductance and consequently equal to the reciprocal of reluctance, just as conductance is equal to the reciprocal of resistance.

Permanent Magnet - Magnet normally made of hardened steel that retains its magnetism indefinitely.

Permanent Schedule - A set of time periods during which the alarm system is scheduled to be armed or disarmed. Permanent schedules are access control and recording system functions.

Permanent Structure - A building or structure that is intended to remain in place for a period of more than 180 consecutive days.

Permanent Visual Record (Recording) - An immediately readable, not easily alterable, print, slash, or punch record of all occurrences of status change.

Permeability– (1) Measure of how a material serves as a path for magnetic lines of force with respect to air which has a permeability of one. (2) Measure of the ease with which water penetrates a material.

Permit - Governmental authorization to perform a building process.

Permutation - Permutation keeps the same letters but changes the position within a text to scramble the message.

Perpendicular - Lines, framing members, walls that meet at a right angle (90^{O})

Person - An individual, corporation, partnership, association, organization or similar entity.

Personal Care - The care of residents who do not require chronic or convalescent medical or nursing care.

Personal Firewalls - Personal firewalls are those firewalls that are installed and run on individual PCs.

Personal Identification Number (PIN) - Number unique to an individual that serves as identification to another person or a system.

Personal property - Personal, moveable possessions, such as household goods.

Personal Video Recorder - Also called a digital video recorder. Records a finite amount of content on a hard drive. Like a VCR but with extra features and "time -skipping" capabilities.

PERT- Project evaluation and review technique - Critical path scheduling for a job.

Pet Mat - Special type of mat switch that is less sensitive to pressure, so that small pets will not trip the alarm by walking on the mat.

Phantom Resistor - Resistance of an open circuit, usually just plain air. A true open circuit is not possible except in a vacuum. Normally open air resistance is extremely high.

Phase - Angular relationship between two waves.

Phillips Head - Type of screw head having a slot shaped like a deep cross.

Phillips Screwdriver - Screwdriver with a X -shaped tip used for Phillips head screws. Comes in four sizes: 1 - Phillips screws up to #4, 2 - #5 to #9, 3 - #10 to 16, 4 - #18 and over.

Phone - Telephone or earphone or head phone

Phonograph - Piece of equipment used to reproduce sound stored on a disk called a phonograph record.

Phosphor - Luminescent material applied to the inner face of a cathode ray tube that when bombarded with electrons will emit light of various colors.

Photo Resistor - Continuous range sensor that responds to light. The resistance of this device varies proportionately to the amount of light striking its sensing surface.

Photo Sensor - Type of sensor that responds to light from some outside source striking its surface

Photoconduction - Process by which the conductance of a material is change by incident electromagnetic radiation in the visible light spectrum.

Photoconductive Cell - Material whose resistance decreases or conductance increases when exposed to light.

Photodetector - Component used to detect or sense light.

Photodiode - Semiconductor diode that changes its electrical characteristics in response to illumination.

Photoelectric Beam - A sensor that detects the blocking of a beam of invisible light between two or more points.

Photo-Electric Beam Detector - A smoke sensor that detects the loss of light between a transmitting unit and an accompanying receiving unit, due to the presence of visible smoke between the units.

Photo-Electric Detector - A smoke sensor that detects light reflected off smoke particles in a tiny chamber within the sensor.

Photoelectric Eye – See photoelectric detector.

Photoelectric Light Obscuration Smoke Detection - The principle of using a light source and a photosensitive sensor onto which the principal portion of the source emissions is focused. When smoke particles enter the light path, some of the light is scattered and some is absorbed, thereby reducing the light reaching the receiving sensor. The light reduction signal is processed and used to convey an alarm condition when it meets preset criteria.

Photoelectric Light-Scattering Smoke Detection - The principle of using a light source and a photosensitive sensor arranged so that the rays from the light source do not normally fall onto the photosensitive sensor. When smoke particles enter the light path, some of the light is scattered by reflection and refraction onto the sensor. The light signal is processed and used to convey an alarm condition when it meets preset criteria.

Photoelectric Sensor - See photoelectric detector.

Photoelectric Smoke Alarm - Smoke alarm in which a beam of light is projected across a sensing area onto a photocell. Smoke particles reduce the amount of light reaching the photocell, triggering an alarm.

Photoluminescent - Having the property of emitting light that continues for a length of time after excitation by visible or invisible light has been removed.

Photometer - Meter used to measure light intensity.

Photon - Discrete portion of electromagnetic energy. A small packet of light.

Photoresistor - Also known as a photoconductive cell or light dependent resistor. Device whose resistance decreases with exposure to light.

Photosensitive Controller - Circuit using some sort of photo sensor to operate some other circuit or device in specific ways, dependent on the detected light levels.

Photovoltaic Cell - Component commonly called a solar cell used to convert light energy into electrical energy.

Physical Response to Alarm Site - Physical response to receipt of a signal from a protected premises is initiated by the monitoring facility when it causes someone to travel to the alarm site. Such a person may be an employee of the monitoring facility, a contract guard or maintenance service organization, or a representative of the alarm user. If appropriate, the monitoring facility may also request response from police, fire, or EMS personnel.

Pi - Value representing the ratio between the circumference and diameter of a circle and equal to approximately 3.142.

Piano Hinge - Continuous hinge that extends for the full length of the moving part to which it is applied.

Pictorial View - Showing something in three dimensions.

Picture Molding - Wall molding used at the ceiling; the molding has a recessed edge that will receive hooks for suspending wires to hang pictures.

Picture Window - Large window area, generally with a fixed sash.

Pier - Column of masonry, usually rectangular in horizontal cross section.

Piezoelectric Crystal - Crystal material that will generate a voltage when mechanical pressure is applied and conversely will undergo mechanical stress when subjected to a voltage.

Piezoelectric Effect - Production of a voltage between opposite sides of a piezoelectric crystal as a result of pressure or twisting. Also the reverse effect which the application of a voltage to opposite sides causes a deformation to occur at the frequency of the applied voltage. (Converts mechanical energy into electrical energy and electrical energy into mechanical energy.)

Pigment - Powdered solid used in paint or enamel to give it a color.

Pigtail - Splice made by twisting together the bared ends of two conductors laid side by side.

Pilaster - Projection or the foundation wall used to support a floor girder or stiffen the wall.

Pilot Hole - Small diameter, predrilled hole that guides a nail or screw.

Pilot Light - Small, continuous flame that ignites gas or oil burners when needed.

PIN - Personal Identification Number assigned to a user.

Pin Switch - Small normally open plunger -type switch designed for use in automobile security systems; it uses the body of the car for the ground connection to the alarm system.

Ping - Packet Internet Groper. Program that sends packets to a remote host on the Internet and looks for replies.

Pinhole Camera - See pinhole lens.

Pinhole Lens - Lens having a small (less than 1/4 inch) front opening permitting its use in covert surveillance applications.

Pinrail - A rail on or above a stage through which belaying pins are inserted and to which lines are fastened.

Pipe - Hollow cylinder used for flowing liquids, gas, or air.

PIR – Passive Infrared Detector. Device that uses Infrared energy to detect motion within the premises.

Pitch – (1) Incline slope of a roof. (2) Ratio of the total rise to the total width of a house, i.e., a 6 -foot rise and 24 -foot width is a one -fourth pitch roof. Roof slope is expressed in the inches of rise, per foot of horizontal run.

PIXEL - Smallest element of data in a video image.

Placarded - A means to signify that the fire alarm system of a particular facility is receiving central station service in accordance with this Code by a listed central station or listed fire alarm service–local company that is part of a systematic follow-up program under the control of an independent third-party listing organization.

Plaintext - Ordinary readable text before being encrypted into ciphertext or after being decrypted.

Plan View - Drawing of a structure with the view from overhead, looking down.

Planning - Process of anticipating the future based upon your experience to date.

Plans - Complete set of blueprints for a building or structure

Plans - See, "Blue Prints."

Plant - One or more buildings under the same ownership or control on the same property.

Plant. One or more buildings under the same ownership or control on a single property.

Plasma Display - Computer or video display in which each pixel on the screen is illuminated by a tiny bit of plasma or charges gas, somewhat like a tiny green light. Plasma displays are thinner that CRT displays and brighter than LCD displays.

Plaster - Covering troweled on over wire lath or gypsum lath on walls and ceilings.

Plasterboard – See drywall.

Plastic Anchor - Expandable anchor for holding screws in plaster or drywall construction. Anchor is fitted into a bored hole, then screw is driven in to expand and wedge the anchor.

Plastic Film Capacitor - Capacitor in which alternate layers of aluminum foil are separated by thin films of plastic dialectric.

Plastic Toggle - Plastic holding device that tightens back on itself when in place in plaster or drywall.

Plate - (1) Normally a 2 X 4 or 2 X 6 that lays horizontally within a framed structure. (2) Conductive electrode in either a capacitor or battery. In vacuum tube technology, it is the name given to the anode.

Platform - The raised area within a building used for the presentation of music, plays, or other entertainment.

Plenum - A compartment or chamber to which one or more air ducts are connected and that forms part of the air distribution system.

Plenum Cable - Any technology-wiring cable listed as being suitable for use in ducts, plenums and other spaces used for environmental air. It must also be listed as having adequate fire-resistant and low smoke-producing characteristics. You can install plenum cable exposed in spaces used to move environmental air, such as the space above a suspended ceiling for return air.

Plenum Rated - Construction that complies with the National Electrical Codes requirements for use in plenum spaces.

Pliers - Type of hand tool having a two part handle that operates a set of jaws. Used for grasping, holding, bending, twisting, cutting, and the like.

Plot - Building site or a development site.

Plot Plan - An overhead view plan that shows the location of the home on the lot. Includes all easements, property lines, set backs, and legal descriptions of the home. Provided by the surveyor.

Plough, Plow - To cut a lengthwise groove in a board or plank. An exterior handrail normally has a ploughed groove for hand gripping purposes

Plug - Male connector, usually on a cable. Plugs into a jack.

Plumb - Exactly vertical and perpendicular.

Plumb Bob - Lead weight attached to a string. It is the tool used in determining plumb.

Plumbing Boots - Metal saddles used to strengthen a bearing wall/vertical stud(s) where a plumbing drain line has been cut through and installed.

Plumbing Ground - Plumbing drain and waste lines that are installed beneath a basement floor.

Plumbing Jacks - Sleeves that fit around drain and waste vent pipes at, and are nailed to, the roof sheeting.

Plumbing Permit - Separate permit required for new plumbing and larger modifications of existing plumbing systems.

Plumbing Rough - Work performed by the plumbing contractor after the Rough Heat is installed. This work includes installing all plastic ABS drain and waste lines, copper water lines, bath tubs, shower pans, and gas piping to furnaces and fireplaces. Lead solder should not be used on copper piping.

Plumbing Stack - Plumbing vent pipe that penetrates the roof.

Plumbing Trim - Work performed by the plumbing contractor to get the home ready for a final plumbing inspection. Includes installing all toilets (water closets), hot water heaters, sinks, connecting all gas pipe to appliances, disposal, dishwasher, and all plumbing items.

Plumbing Waste line - Plastic pipe used to collect and drain sewage waste.

Plunger Switch - Switch that is operated by a plunger being depressed or released.

Ply - Term to denote the number of layers of roofing felt, veneer in plywood, or layers in built -up materials, in any finished piece of such material.

Plywood - A panel (normally 4' X 8') of wood made of three or more layers of veneer, compressed and joined with glue, and usually laid with the grain of adjoining plies at right angles to give the sheet strength.

Pneumatic Rate-of-Rise Tubing Heat Detector - A line-type detector comprising small-diameter tubing, usually copper, that is installed on the ceiling or high on the walls throughout the protected area. The tubing is terminated in a detector unit containing diaphragms and associated contacts set to actuate at a predetermined pressure. The system is sealed except for calibrated vents that compensate for normal changes in temperature.

Pneumatic Tubing, Heat Sensor - A heat sensor that detects the expansion of air inside the tubing, resulting from an increase of temperature caused by a fire. This type of heat detector is ideal for use in areas in which no electrical devices should be operating.

Pocket Door - Door that slides into an opening in the wall.

Pocket Level - Level used to check trueness of surfaces in tight areas. Sometimes called a torpedo level.

Point Load - Point where a bearing/structural weight is concentrated and transferred to the foundation.

Point of Protection - Single detection device such as a door contact or motion detector.

Point of Safety - A location that (a) is exterior to and away from a building; or (b) is within a building of any type construction protected throughout by an approved automatic sprinkler system and that is either (1) within an exit enclosure meeting the requirements of this Code, or (2) within another portion of the building that is separated by smoke barriers in accordance with Section 8.5, with not less than a 1/2-hour fire resistance rating, and that portion of the building has access to a means of escape or exit that conforms to the requirements of this Code and does not necessitate return to the area of fire involvement; or (c) is within a building of Type I, Type II(222), Type II(111), Type III(211), Type IV, or Type V(111) construction (see 8.2.1.2) and is either (1) within an exit enclosure meeting the requirements of this Code, or (2) within another portion of the building that is separated by smoke barriers in accordance with Section 8.5, with not less than a 1/2-hour fire resistance rating, and that portion of the building has access to a means of escape or exit that conforms to the requirements of this Code and does not necessitate return to the area of fire involvement.

Pointing - Treatment of joints in masonry by filling with mortar to improve appearance or protect against weather.

Polarity - Term used to describe positive and negative charges.

Polarity Reversal - A direct connected alarm system that uses polarity reversal to indicate an alarm condition at the monitoring alarm receiving panel. See also Direct Connect.

Polarized - Component which must be connected in correct polarity to function and/or d/or prevent destruction.

Pole - In an active filter, a single RC circuit. A one pole filter has one capacitor and one resistor. A two pole filter has two RC circuits and so on.

Police Call Alarm - See Panic Alarm.

Police Connect - An alarm system that reports directly to alarm receiving equipment at a police department. See also Direct Connect.

Police Department - Municipal police, sheriff's department, or other law enforcement personnel who respond to an RFR.

Police Department Alarm - Alarm transmitted directly to a police department.

Police Dispatch - An agency that dispatches police.

Police/Fire Department Monitoring Facility - A municipal facility that, in addition to performing other activities, monitors alarm signals received by monitoring equipment that it provides or allows others to provide within the facility. Alarm systems connected to such equipment are called "Direct Connected" or "Remote Station" systems. Note: Such systems rarely incorporate "verification" capabilities to permit screening of false alarms prior to police or fire department dispatch procedures being followed.

Polling - Electronic interrogation between devices to ascertain status.

Polybutylene - Plastic pipe (often gray in color) sometimes used in domestic water supply systems.

Polyisocyanurate Foam - Rigid foam board insulation often used in locations where there is not enough room for standard batt insulation. Programmed to various temperature settings.

Porch - Covered entryway to a house.

Port - A port is nothing more than an integer that uniquely identifies an endpoint of a communication stream. Only one process per machine can listen on the same port number.

Port - Interface on a computer system to allow a connection.

Portable - (1) Capable of being carried or moved about. (2) Usable on many computers without modification.

Ported Coax - Cable that has a ported shield which radiates electrical energy.

Portland Cement - Cement made by heating clay and crushed limestone into a brick and then grinding to a pulverized powder state.

Positive - Polarity of point that attracts electrons as opposed to negative which supplies electrons.

Positive Alarm Sequence - An automatic sequence that results in an alarm signal, even when manually delayed for investigation, unless the system is reset.

Positive Charge - Charge that exists in a body that has fewer electrons than protons.

Positive Ground - System where the positive terminal of the source is connected to the system's conducting chassis.

Possession - Possession is the holding, control, and ability to use information.

Post - Vertical framing member usually designed to carry a beam. Often a 4" x 4", a 6" x 6", or a metal pipe with a flat plate on top and bottom.

Post Office Protocol, Version 3 (POP3) - An Internet Standard protocol by which a client workstation can dynamically access a mailbox on a server host to retrieve mail messages that the server has received and is holding for the client.

Post-And-Beam Construction - Wall construction in which beams are supported by heavy posts rather than many smaller studs.

Potential Difference - Voltage difference between two points which will cause current to flow in a closed circuit.

Potential Energy - Energy that has potential to do work because of its position relative to others.

Potentiometer - Variable resistor with three terminals. Mechanical turning of a shaft can be used to produce variable resistance and potential.

POTS - Plain Old Telephone Service. Also referred to as "analog" telephone service.

Power - Rate at which electrical energy is applied to or taken from a device. It is expressed in terms of watts, milliwatts or microwatts.

Power Amplifier - Amplifier designed to deliver maximum power output to a load.

Power Dissipation - Amount of heat energy generated by a device in one second when current flows through it.

Power Drill - See electric drill.

Power Failure Sensing Circuit - Circuit that monitors the system AC power source.

Power Failure Sensor - See Power Off Sensor.

Power Off Sensor - A sensor that detect loss of power. Often this is provided as part of a sprinkler supervisory system that monitors the ability of a fire pump to operate, but is also used to detect loss of power for many other systems requiring continuous power.

Power Supply - A source of electrical operating power, including the circuits and terminations connecting it to the dependent system components.

Power Vent - Vent that includes a fan to speed up air flow. Often installed on roofs.

Practices - Set of published instructions for doing work in a uniform, standard manner.

Pre Action System - System used in facilities where water damage would cause serious problems. The pipes leading to the spray nozzles normally are filled with air. During a fire, an independent fire -detection system opens a valve to allow water to fill the pipes before the nozzles open. Heat from the fire opens the nozzles, letting water spray the fire.

Pre Alarm - Audible warning given by a separate sounder device indicating that a violation has occurred and that, if not cleared within a specific time, the control unit will produce an alarm.

Pre Position Lenses - Zoom lenses which allow the operator to view different pre -set areas quickly without having to re -adjust the zoom and focus each time.

Pre Set Controller - Function contained within a telemetry system that, on receipt of a signal, causes a particular camera to pan, tilt and zoom to a predetermined field of view.

Pre Wiring - Practice of concealing wire or cable in the walls of buildings while they are being constructed.

Prefabrication - Construction of components such as walls, trusses, or doors, before delivery to the building site.

Premises - Continuous or contiguous portion of building occupied by the customer.

Preservative - Any pesticide substance that, for a reasonable length of time, will prevent the action of wood -destroying fungi, insect borers, and similar destructive agents when the wood has been properly coated or impregnated with it.

Pressure Alarm System - System which protects an enclosed space by maintaining and monitoring a predetermined air pressure differential between the inside and the outside of the space.

Pressure Mat - Small, flat mat that closes an internal switch when pressure is placed on it, usually by someone stepping on the mat.

Pressure Pad – See pressure mat

Pressure Relief Valve - Device mounted on a hot water heater or boiler which is designed to release any high steam pressure in the tank and thus prevent tank explosions.

Pressure Treated Wood - Lumber that has been saturated with a preservative.

Prevailing Wage - Standard wage for a job, including benefits, in any area, often required on federal jobs.

Preventive Maintenance - Testing a system on a regular basis to be sure that all components are functioning properly, preferably before problems occur.

Previously Approved - That which was acceptable to the authority having jurisdiction prior to the date this edition of the Code went into effect.

Primary - (1) First rank, importance, or value, principal (2) Main source of power. (3) First winding of a transformer. Winding that is connected to the source as opposed to secondary which is a winding connected to a load.

Primary Battery (Dry Cell) - A nonrechargeable battery requiring periodic replacement.

Primary Cell - Cell that produces electrical energy through an internal electrochemical action. Once discharged a primary cell cannot be reused.

Primary PSAP - Another term for PSAP. See Public Safety Answering Point.

Primary Trunk Facility - That part of a transmission channel connecting all leg facilities to a supervising or subsidiary station.

Prime Contractor - The one company contractually responsible for providing central station services to a subscriber as required by this Code. The prime contractor can be either a listed central station or a listed fire alarm service–local company.

Primer - First, base coat of paint formulated to seal raw surfaces and holding succeeding finish coats.

Printed Circuit Board - Insulating board containing conductive tracks for circuit connections.

Privacy Lock - Lock secured by a button or thumb turn device, and not designed for keyed operation.

Private Branch Exchange (PBX) - (1) Private telephone switchboard (2) Small private manual central office

Private Guard Service - A non-public business organization providing trained, armed or unarmed response personnel in uniform. A monitoring facility or a serving alarm company may provide such personnel.

Private Operating Mode - Audible or visible signaling only to those persons directly concerned with the implementation and direction of emergency action initiation and procedure in the area protected by the fire alarm system.

Private Party Tent - A tent erected in the yard of a private residence for entertainment, recreation, dining, a reception, or similar function.

Private Radio Signaling - A radio system under control of the proprietary supervising station.

Private Telephone Line - See Unlisted Telephone Number.

Process Monitoring - Use of equipment to detect and annunciate events associated with industrial machinery, such as temperature limits and overload switches.

Processor - Device that processes data.

Professional Engineer - A person registered or licensed to practice engineering in a jurisdiction, subject to all laws and limitations imposed by the jurisdiction.

Profit - Excess of selling price over all costs and expenses incurred in making a sale.

Program - Sequence of coded instructions that can be inserted into a mechanism.

Programmable - Function that can be created, selected, or modified without making any physical changes in the circuitry itself. The programmable instructions or data are usually entered via a keyboard or keypad of some sort, but some simple types of programmability can use a group of ordinary switches, whose desired positions are "remembered" by the programmed system.

Programmable Read Only Memory (PROM) - Chip that can store a program by use of PROM programmer.

Progressive Scan -Technology that makes for a more -film like picture.

Project - Complete job.

Project Manager - Coordinator of all work on a project.

Project Manual - Volume which covers the requirements for a project, including bidding information, contract between the owner and the contractor, bond and security information, general and supplementary conditions of the contract, addenda to the contract information and documents, and specifications.

Projected Beam–Type Detector - A type of photoelectric light obscuration smoke detector wherein the beam spans the protected area.

PROM - Programmable read -only memory.

PROM Programmer - Electronic device which, through the use of a built -in keyboard, can be made to store a program/data in a PROM.

Prompt - Message that instructs the operator to take action.

Prompt Evacuation Capability - The ability of a group to move reliably to a point of safety in a timely manner that is equivalent to the capacity of a household in the general population.

Propagation - Travel of an electromagnetic radio wave through space.

Propagation - Traveling of electromagnetic, electrical or sound waves through a medium.

Propagation Delay - Time required for a signal to pass through a device or circuit.

Propagation Time - Time required for a wave to travel between two points.

Property - Building lot and all the structures on it. See Contiguous Property and Noncontiguous Property.

Property Line - Surveyed lot line of a building site or property.

Property Survey - A survey to determine the boundaries of your property. The cost depends on the complexity of the survey.

Proposal - Offer to perform work and furnish labor and materials at the quoted prices.

Proposed Design - A design developed by a design team and submitted to the authority having jurisdiction for approval.

Proprietary Central Station - See Proprietary Monitoring Facility.

Proprietary Information - Information unique to a company and its ability to compete, such as customer lists, technical data, product costs, and trade secrets.

Proprietary Monitoring Facility - A monitoring facility owned and operated by the owner or management of the protected premises or by the owner or management of the building complex in which the alarm system is located.

Proprietary Supervising Station - A location to which alarm or supervisory signaling devices on proprietary fire alarm systems are connected and where personnel are in attendance at all times to supervise operation and investigate signals.

Proprietary Supervising Station Fire Alarm System - An installation of fire alarm systems that serves contiguous and noncontiguous properties, under one ownership, from a proprietary supervising station located at the protected property, or at one of multiple non-contiguous protected properties, at which trained, competent personnel are in constant attendance. This includes the proprietary supervising station; power supplies; signal-initiating devices; initiating device circuits; signal notification appliances; equipment for the automatic, permanent visual recording of signals; and equipment for initiating the operation of emergency building control services.

Proprietary System - An alarm system owned and operated by the user, who is fully responsible for its operation.

Proscenium Wall - The wall that separates the stage from the auditorium or house.

Protected Area - (1) Area monitored by an alarm system or guards, or enclosed by a suitable barrier. (2) Portion of premises that is covered by an alarm system. (3) Vicinity actually within the protective range of an alarm system or sensor.

Protected Premises – (1) The physical site at which an alarm system is installed and operational. (2) The physical location protected by a fire alarm system.

Protected Premises (Local) Control Unit (Panel) - A control unit that serves the protected premises or a portion of the protected premises and indicates the alarm via notification appliances inside the protected premises.

Protected Premises (Local) Fire Alarm System - A protected premises system that sounds an alarm at the protected premises as the result of the manual operation of a fire alarm box or the operation of protection equipment or systems, such as water flowing in a sprinkler system, the discharge of carbon dioxide, the detection of smoke, or the detection of heat.

Protection - (1) To prevent an undesired event. (2) Often used interchangeably with detection.

Protection Device - (1) Sensor such as a grid, foil, contact or sensor connected to an intrusion alarm. (2) Barrier which inhibits intrusion, such as a grille, lock, fence, or wall.

Protective Circuit - Also called protective loop. Circuit connecting all detection devices to the control unit.

Protective Clothing - Clothing worn to protect oneself while working on a job.

Protective Screen - See Grid.

Protective Signaling - Initiation, transmission and reception of signals from detection systems.

Protector - Electrical device that will open an electrical circuit if excessive electrical conditions occur.

Protocol - Formal specification for communicating.

Proton - Sub atomic particle within the nucleus of an atom. Has a positive charge.

Proximity Alarm System - Object is electronically connected as a capacitance sensor so that its capacitance forms part of a tuned circuit. The approach of an intruder causes sufficient change in capacitance to upset the balance of the system and initiate the alarm signal.

Proximity Cards - No direct contact is required between the card and the reader for the system to operate, the card must only be in the proximity of the reader.

Proximity Sensor - See Capacity Sensor.

Proxy Server - Server that acts as an intermediary between a workstation user and the Internet so that the enterprise can ensure security, administrative control, and caching service.

Pry Bar - Bent, flat metal levering device used for pulling nails. Also known as cats paw, crowbar, nail puller, ripping bar.

PSI - Pounds per square inch.

Public Fire Alarm Reporting System - A system of fire alarm-initiating devices, receiving equipment, and connecting circuits used to transmit alarms from street locations to the communications center.

Public Fire Service Communications Center - The building or portion of the building used to house the central operating part of the fire alarm system; usually the place where the necessary testing, switching, receiving, transmitting, and power supply devices are located.

Public Operating Mode - Audible or visible signaling to occupants or inhabitants of the area protected by the fire alarm system.

Public Safety Answering Point (PSAP) - A generic name for a municipal or county emergency communication center (ECC) dispatch agency that directs 9-1-1 or other emergency calls to appropriate police, fire, and EMS agencies and personnel.

Public space - Legal open space accessible by a public way or street and devoted to public use.

Public Switched Telephone Network - An assembly of communications facilities and central office equipment operated jointly by authorized common carriers that provides the general public with the ability to establish communications channels via discrete dialing codes.

Public Way - A street, alley, or other similar parcel of land essentially open to the outside air deeded, dedicated, or otherwise permanently appropriated to the public for public use and having a clear width and height of not less than 3050 mm (120 in.).

Pull Box - Enclosure used in conduit runs to facilitate pulling cable from point to point.

Pull Line - Rope, string, wire, or cable places in a wiring path or conduit used to pull conductors.

Pull Station - Manually activated device generally used to activate the fire alarm. See Manual Fire Alarm Station.

Pull String - See pull line.

Pull Trap - Device with a mechanical triggering mechanism typically installed on infrequently used windows or doors. The pull trap's plunger is connected by wire or string to a screw eye on the jamb.

Pulling Ell - Conduit body providing a 90 degree bend and access to the enclosed wires for the purpose of expediting wire pulling.

Pulse - Rise and fall of some quantity (usually voltage) for a period of time.

Pulse Count - Feature of an intrusion detection system in which an alarm is triggered only after there has been a series of detections in a short period of time.

Pulse Extender/stretcher - Electronic circuit which detects momentary opening of fast -acting detection devices and provides an extended detection signal to the alarm control.

Pump Mix - Special concrete that will be used in a concrete pump. Generally, the mix has smaller rock aggregate than regular mix.

Punch - Steel rod -shaped tool with a point; the punch is struck with a hammer to make holes or dents in metal.

Punch List - List of discrepancies that need to be corrected by the contractor.

Punch Out - To inspect and make a discrepancy list.

Purchase Agreement - Document spelling out conditions of sale.

Purchase Order - Company authorization to buy material and supplies. Abbreviated PO.

Push Bar - Door unlatching device. When pushed on, the door is released (allowed to open).

Push Button - Momentary switch that is activated manually.

Push Drill - Hand drill that is operated in an up and down motion.

Push -on/Push -off Switch - Latching push -button switch. Most push -button switches are momentary -action type.

Push Pull Rule - Rule consisting of a steel tape wound up in a case. Widely used on the job for layout and measuring. Common lengths are 6,8,10,12 and 20 feet.

Pushbutton - Momentary switch that is activated manually.

Putty - Type of dough used in sealing glass in the sash, filling small holes and crevices in wood, and for similar purposes.

PVC or CPVC - Poly Vinyl Chloride -A type of white or light gray plastic pipe sometimes used for water supply lines and waste pipe.

Pyroelectric Sensor - Transducer that converts infrared energy into electrical energy.

Quad selector - Device that allows simultaneous viewing of pictures from four separate cameras on one CCTV monitor.

Quarry Tile - Clay tile used to finish a floor or wall.

Quarter Round - Small trim molding that has the cross section of a quarter circle.

Quasi - Adjective meaning to some extent or like.

Queue - Lineup of operations or input signals in a system.

Quick Break - Operating characteristic of a switch, relay, or circuit breaker whereby the contacts open rapidly, even when the actuating current or mechanical force is slow acting.

R factor or Value - Measure of a materials resistance to the passage of heat.

Rabbet - Groove cut in a board to receive another board.

Rabbet - Rectangular longitudinal groove cut in the corner edge of a board or plank.

Raceway - Channel designed expressly for holding wire or cable and used solely for that purpose.

Rack - Device to support cables, wiring or components.

Radar - Acronym for "radio detection and ranging" A system that measures the distance and direction of objects.

Radar Alarm - Incorrect term sometimes used in reference to microwave detectors.

Radiant Energy–Sensing Fire Detector - A device that detects radiant energy, such as ultraviolet, visible, or infrared, that is emitted as a product of combustion reaction and obeys the laws of optics.

Radiant Heat - Coils of electricity, hot water or steam pipes embedded in floors, ceilings, or walls to heat rooms.

Radiant Heating - Method of heating, usually consisting of a forced hot water system with pipes placed in the floor, wall, or ceiling. Also electrically heated panels.

Radiation - Energy transmitted from a heat source to the air around it. Radiators actually depend more on convection than radiation.

Radio Alarm Monitoring - Monitoring alarm systems via the use of Long Range Radio.

Radio Alarm Repeater Station Receiver (RARSR) - A system component that receives radio signals and resides at a repeater station that is located at a remote receiving location.

Radio Alarm Supervising Station Receiver (RASSR) - A system component that receives data and annunciates that data at the supervising station.

Radio Alarm System (RAS) - A system in which signals are transmitted from a radio alarm transmitter (RAT) located at a protected premises through a radio channel to two or more radio alarm repeater station receivers (RARSR) and that are annunciated by a radio alarm supervising station receiver (RASSR) located at the central station.

Radio Alarm Transmitter (RAT) - A system component at the protected premises to which initiating devices or groups of devices are connected that transmits signals indicating a status change of the initiating devices.

Radio Broadcast - Transmission of music, voice and other information on radio carrier waves that can be received by the general public.

Radio Channel - A band of frequencies of a width sufficient to allow its use for radio communications. See Channel.

Radio Communication - Term used to describe the transfer of information between two or more points by use of radio or electromagnetic waves.

Radio Frequency - (R.F.) (1) Signals with a repetition rate above audible range, but below the frequencies associated with heat and light. (2) Transmission technology using radio waves for signaling status, supervisory and/or alarm information from one point to another.

Radio Frequency (RF) Motion Detector - Sensor that detects the motion by sensing a disturbance in the radiated RF field caused by intruder motion.

Radio Network - A network of radio transmitters or transceivers capable of sending alarm status messages to one or more radio receivers or transceivers which are at, or in communication with, an alarm monitoring facility or other alarm signal receiving station.

Radio Transmission - A voice or data communication path between the monitoring facility and a PSAP using an FCC-licensed radio frequency.

Radon - Naturally occurring radio active gas. Mitigation measures may involve crawl space and basement venting and various forms of vapor barriers.

Radon System - Ventilation system beneath the floor of a basement and/or structural wood floor and designed to fan exhaust radon gas to the outside of the home

Rafter - (1) Lumber used to support the roof sheeting and roof loads. Generally, 2 X 10's and 2 X 12's are used. The rafters of a flat roof are sometimes called roof joists. (2) Hip Rafter - A rafter that forms the intersection of an external roof angle. (3) Valley Rafter - a rafter that forms the intersection of an internal roof angle. The valley rafter is normally made of double 2 -inch -thick members.

Rail - Cross members of panel doors or of a sash. Also, a wall or open balustrade placed at the edge of a staircase, walkway bridge, or elevated surface to prevent people from falling off. Any relatively lightweight horizontal element, especially those found in fences (split rail).

Railroad Tie - Black, tar and preservative impregnated, 6" X 8" and 6' -8' long wooden timber that was used to hold railroad track in place. Normally used as a member of a retaining wall.

Rake - Slope or slanted.

Rake Fascia - Vertical face of the sloping end of a roof eave.

Rake Siding - Practice of installing lap siding diagonally

RAM – (1) Random access memory. (2) A synonym for Radio Alarm Monitoring. See also Radio Network.

Ramp - A walking surface that has a slope steeper than 1 in 20.

Ranch - Single story, one level home.

Random Access - Access to computer data in a random fashion, without having to consider all irrelevant data on the device, or in file, that precedes the needed data.

Random Interlace - Scanning technique commonly used in CCTV systems in which there is no external control over the scanning process. That is, there is no fixed relationship between adjacent lines and successive fields.

Range Finder - Used to determine the focal length needed and what the picture will look like on the monitor.

Raster - Rectangular pattern of scanning lines upon which the picture is produced. The illuminated face of the TV monitor without the video information present.

Rate Compensation Detector – (1) A device that responds when the temperature of the air surrounding the device reaches a predetermined level, regardless of the rate of temperature rise. (2) Heat detector that compensates for thermal lag. In operation, the unit alarms at a rated operating temperature regardless of whether the heat increases rapidly or gradually. Sensing element consists of a pair of expansion struts and electrical contacts housed in an expandable outer shell. Ambient heat expands the outer shell and relieves the pressure on the struts. This operates electrical contacts that trigger an alarm.

Rate of Rise Detector – (1) A device that responds when the temperature rises at a rate exceeding a predetermined value. (2) Thermal detector that responds to the rate of temperature change rather than to a fixed temperature.

Rated - Indicating the limits of operating characteristics for application under specified conditions.

Rate-of-Rise Sensor - See rate of rise detector.

Ratio - (1) Relation of one thing to another, as the ratio of 1/2 is the relation of 2 to 1. (2) A number that results from dividing one value by another.

Raw Materials - Components that are assembled into a finished product.

Re Key - Process of changing a keylock to accommodate a new key.

Reactance - Symbol "X". Opposition to current flow without the dissipation of energy. Example: The opposition provided by inductance or capacitance to AC current.

Read Only Memory - (ROM) Chip in which instruction or data are permanently stored for use or for reference.

Read Out - Means for displaying an electronically transmitted message in a form meaningful to human intelligence.

Reader - Any device that reads encoded information from a card, token, etc.

Reader - Refers to the “front end” that a user must interact with to allow access. Readers can be keypads, card readers, and proximity readers.

Ready Light - Light or LED used to indicate whether the protective circuit is in the secured condition.

Ready Mixed Concrete - Concrete mixed at a plant or in trucks en route to a job and delivered ready for placement.

Real Number - Number having no imaginary part.

Real Property - Land, buildings and crops on the land; land and everything on it that cannot be readily moved off.

Real time - Processing now, without delay, to indicate processing transactions as they occur.

Ream - To smooth the inside of a pipe or hole.

Reamer - Tool for removing burrs or metal pieces from the inside of a pipe or hole.

Rebar - Reinforcing bar -Ribbed steel bars installed in foundation concrete walls, footers, and poured in place concrete structures designed to strengthen concrete.

Rebate - Discount or reduction in price or cost.

Receivable - Amounts due.

Receiver - Unit or piece of equipment used to receive information.

Receptacle - (1) Fixed or stationary part of a two piece multiple contact connector. (2) Electrical outlet that receives a plug from a light or appliance.

Reception - Listening to, copying, recording, or viewing any form of emission.

Recessed - Placed back or behind.

Recessed Mounting - Installation in which a hole is drilled or cut out to hold the installed unit snugly so it is flush with the original mounting surface rather than jutting out on top of the mounting surface.

Rechargeable Battery - Battery that can be recharged, such as a lead acid or nickel -cadmium battery, as opposed to a dry cell battery that cannot be recharged.

Reciprocal - Math term denoting the reversal of a fraction or whole number. As an example, the reciprocal of 5 is 1/5.

Record Drawings - Drawings (as-built) that document the location of all devices, appliances, wiring sequences, wiring methods, and connections of the components of the fire alarm system as installed. See As Built Drawings.

Record of Completion - A document that acknowledges the features of installation, operation (performance), service, and equipment with representation by the property owner, system installer, system supplier, service organization, and the authority having jurisdiction.

Rectification – Process that converts alternating current to direct current.

Rectifier - Diode circuit that converts alternating current into pulsating direct current.

Recycle - Time needed to reset and reinitiate the timing function and remain within the specified timing tolerances.

Redline - Red lined prints. Blueprints that reflect changes and that are marked with red pencil.

Reducer - Fitting with different size openings at either end and used to go from a larger to a smaller pipe.

Redundancy - (1) Repetition of components in a circuit, for example, so that one will be available for circuit operation if the other fails. (2) Having available more than one method for performing a function. (3) Having on hand several copies of data or pieces of equipment as a safeguard against loss or damage.

Reed Relay - Relay consisting of two thin magnetic strips within a glass envelope. When a coil around the envelope is energized, the relay’s contacts snap together making a connection between leads attached to the reed strips.

Reed Switch - Type of magnetic switch consisting of electrical contacts formed by two thin, magnetically actuated metal reed -like vanes, held in a normally open position within a sealed glass envelope.

Reflected Ceiling Plan - Plan view of the lighting outlets on a ceiling. The view shows the ceiling as if it were reflected down as into a mirror.

Reflected Light - Scene brightness or the light being reflected from a scene. Usually it represents 5 to 95 percent of the incident light, and it is expressed in foot -lamberts.

Reflection - Property of materials to bounce back, or reflect, sound.

Reflective Insulation - Sheet material with one or both faces covered with aluminum foil.

Refraction - Change of direction experienced by a wave when it passes from one medium to another.

Refresh rate - Speed to update video pictures.

Refrigerant - Substance that remains a gas at low temperatures and pressure and can be used to transfer heat. Freon is an example and is used in air conditioning systems.

Register - Grill placed over a heating duct or cold air return.

Registered Architect - A person licensed to practice architecture in a jurisdiction, subject to all laws and limitations imposed by the jurisdiction.

Registered Design Professional (RDP) - An individual who is registered or licensed to practice his/her respective design profession as defined by the statutory requirements of the professional registration laws of the state or jurisdiction in which the project is to be constructed.

Registry - Central set of settings and information required to run a Windows computer.

Reglaze - To replace a broken window.

Regular Stage - A stage with a height of 15m(50 ft) or less measured from the lowest point on the deck above.

Regulated Power Supply - Power supply that maintains a constant output voltage under changing load conditions.

Regulator - Device or circuit that maintains a desired output under changing conditions.

Reinforced Concrete - Concrete strengthened with wire or metal bars.

Relative - Not independent. Compared with or with respect to some other measured quantity.

Relative Humidity - Amount of moisture in a volume of air as a percentage of the maximum amount of moisture which can be held in that air at a certain temperature. Cold air can't hold as much moisture as warm air.

Relay - (1) Electrically operated switch. (2) Electromechanical device that opens or closes contacts when a current is passed through a coil. (3) Electromechanical switching device with electrically isolated input and output circuits. When an input current flows through the relay coil, the switch contacts in the output circuit are pulled into their activated positions.

Relief Valve - Device designed to open if it detects excess temperature or pressure.

Relocation - The movement of occupants from a fire zone to a safe area within the same building.

Relock switch - Switch that retains the bolt in a retracted position until the door is closed.

Remodeling Contractor - Contractor who specializes in remodeling work.

Remote - Remote electrical, gas, or water meter digital readouts that are installed near the front of the home in order for utility companies to easily read the home owners usage of the service.

Remote Alarm - Alarm signal transmitted to a remote paging unit or monitoring station.

Remote Arming - Allows an alarm system to be turned on and off from any of several locations throughout the premises, away from the actual control unit.

Remote Host - Main computer that controls the system is remotely located.

Remote Monitoring Station - Facility located away from the protected premises that receives and monitors signals.

Remote Program - Ability to access the program in the control panel and make changes.

Remote Station - An alarm system that transmits signals directly to alarm receiving equipment at a Public Safety Answering Point (PSAP). The "Remote Station" term is generally used for fire alarm systems reporting to fire departments, rather than for burglar or hold-up alarm systems. See also Direct Connect.

Remote Supervising Station Fire Alarm System. A system installed in accordance with this Code to transmit alarm, supervisory, and trouble signals from one or more protected premises to a remote location where appropriate action is taken.

Remote Switcher - Video switcher.

Remote Zone Annunciator - Device, usually a light or LED, located away from the control unit that indicates which portion of the system is in an alarm condition or unsecured.

Repeater Station - The location of the equipment needed to relay signals between supervising stations, subsidiary stations, and protected premises.

Request For Response (RFR) - A communication from the monitoring facility to the Public Safety Answering Point (PSAP) or Public Fire Service Communication Center (PFSCC) in which the monitoring facility requests that appropriate emergency personnel be dispatched in response to an alarm. An RFR is more than merely a retransmission of the received alarm signal at the monitoring facility. RFRs may be made verbally or digitally via computer-to-computer, or computer-to-printer data transmission. An RFR may also be made to a private response organization.

Rescission - Cancellation of a contract.

Reset - (1) To restore a device to its original or normal condition after an alarm or violation signal has been transmitted. (2) To silence a loud alarm and/or to restore the system to a non alarm condition. (3) A control function that attempts to return a system or device to its normal, non alarm state. (4) A return to normal operation for an alarm system that has been in a trouble condition, out of service, or in an alarm condition. When a system has been "reset" it is back in full operation and subsequent signals received from the system will be treated normally. A reset is more than merely the restoration-to-normal of a sensor, or an abort message or call from the user. With a reset event, the system is back in full and normal operation.

Reset Switch - Switch that shuts down the alarm when sounding and rearms the system to monitor for additional indications of intrusion (or other emergency condition).

Reset Time -Time required to return the output to its original condition.

Residential - A private home.

Residential Board and Care Occupancy - A building or portion thereof that is used for lodging and boarding of four or more residents, not related by blood or marriage to the owners or operators, for the purpose of providing personal care services.

Residential Board and Care Resident - A person who receives personal care and resides in a residential board and care facility.

Residential Burglar Alarm, Audible - An audible system in a house, apartment, condominium or other dwelling with an interior or exterior sounding device.

Residential Burglar Alarm, Silent - A system in a house, apartment, condominium or other dwelling without any sounding de-vices. A distinctive signaling device intended to provide an early warning signal to the system operator is not considered a sounding device for purposes of this definition, and the presence of one or more of these signaling devices does not make the system an audible alarm system.

Residential Fire Alarm - See Household Fire Alarm.

Residential Occupancy - An occupancy that provides sleeping accommodations for purposes other than health care or detention and correctional.

Resistance - Symbolized "R" and measured in ohms. Opposition to current flow and dissipation of energy in the form of heat.

Resistivity - Measure of a material's resistance to current flow.

Resistor - Component made of material that opposes flow of current and therefore has some value of resistance.

Resistor Color Code - Color code that identifies the value of a resistor; Black 0, Brown 1, Red 2, Orange 3, Yellow 4, Green 5, Blue 6, Violet 7, Gray 8, White 9, Gold 5% tolerance, Silver 10% tolerance. The first two colors indicate the first two digits; the next color indicates the multiplier, and the fourth indicates tolerance. Tolerance is 20% if there is no fourth color band.

Resolution - Measure of the ability to reproduce detail. Used to express the clarity of an image.

Responder - Individual capable of reaching the alarm site and having access to the alarm site, the code to the alarm system and the authority to approve repairs to the alarm system.

Response Statistics - Statistical records of alarms received by monitoring facilities, times of various follow-up actions, and reported causes.

Restorable Initiating Device - A device in which the sensing element is not ordinarily destroyed in the process of operation, whose restoration can be manual or automatic.

Restore - A system, zone, or sensor that is returned to normal status. This does not necessarily mean that the alarm system is considered to be back to full operating status by the monitoring facility. However, the term tends to be used interchangeably with Reset, and there is no formal or generally-accepted distinction between them.

Restore-to-Normal - See Restore.

Restraint of Trade - Illegal action taken to prevent the free flow of goods in a market area.

Restricted Keyway - Special keyway and key blank for high security locks, with a configuration which is not freely available.

Retained Image (Image Burn) - Change produced in or on the target of the pickup device which remains for a large number of frames after the removal of a previously stationary light image.

Retaining Wall - Structure that holds back a slope and prevents erosion.

Retard Transmitter - Transmitter with a delay between the time of activation and the time of signal transmission.

Retentions - Amounts withheld from progress billings until final and satisfactory project completion.

Return Air - Inside air returned back to the heating or cooling unit.

Return Call Verification - Technique for restricting access to a computer's dial -up ports. Person wishing access to a computer by phone dials a designated number and gives an identification code. if the code is correctly given, the computer hangs up and calls a predetermined number to allow a connection to the computer.

Return Line - Wire(s) that brings the loop signal back into the central control box to determine if any of the sensors in that loop have been tripped (also called signal return).

Reverse Current - Current through a diode when reverse biased. An extremely small current also referred to as leakage.

Reverse Door - Swinging door that opens outward.

Reverse Engineering - Acquiring sensitive data by disassembling and analyzing the design of a system component.

Reverse Polarity Protected - Control that avoids damage if the polarity of the input is reversed.

Reverse Polarity Transmission Alarm - Alarm caused when the flow of current in a transmission line is reversed. Absence of voltage is interpreted as a trouble signal.

Revision Block - Area near title block on drawing to describe any change or revision made to the drawing. Number of the change, the date and initials of approving authority are given.

REX - Request -to exit device.

REX Button - Request to exit button. A device that must be pushed in order to release the door.

RF - Radio Frequency. Used to describe wireless transmission of signals.

RFI- Radio frequency interference.

RG -6 Coaxial Cabling - Used to deliver cable and satellite signals to multiple TVs.

Rheostat - Variable resistor with two terminals used to control current.

Ribbon - (girt) Normally a 1 X 4 board let into the studs horizontally to support the ceiling or second -floor joists.

Ribbon Cable - Flat electrical cable containing several individually insulated conductors.

Ridge - Horizontal line at the junction of the top edges of two sloping roof surfaces.

Ridge Board - Board placed on the ridge of the roof onto which the upper ends of other rafters are fastened.

Ridge Pole - Thick longitudinal plank to which the ridge rafters of a roof are attached.

Ridge Shingles - Shingles used to cover the ridge board.

Right Angle Drill - Drill that bores at a right angle to the body of the drill.

Right Angle Triangle - Triangle having a 90° or square corner.

Right Hand Door - Hinges are on the right when you face the door from the outside, and the door swings away from you.

Right Hand Reverse Door - Hinges are on the right when you face the door from the outside, and the door swings toward you.

Right to Work - Laws that specify that no person can be denied work because of membership or non membership in a labor organization.

Rim Joist - Joist that runs around the perimeter of the floor joists and home.

Ringback - Acknowledgment from a monitoring station to a subscriber that a signal has been received.

Ring-Down Circuit - See Dedicated Circuit.

Ring-Down Line - A dedicated circuit used for voice communication between the monitoring facility and the PSAP, operating so that when the telephone handset is picked up at either end, the other end rings.

Ripple - Result of imperfect filtering of a DC power supply operating from an AC source.

Rise - Vertical distance from the eaves line to the ridge. Also the vertical distance from stair tread to stair tread (and not to exceed 7 ½").

Riser– (1) Upright section of a stair. The board between one stair tread and the next. Each of the vertical boards closing the spaces between the treads of stairways. (2) Vertical pipe (as for water or gas) or a vertical portion of an electric wiring system

Riser and panel - Exterior vertical pipe (riser) and metal electric box (panel) the electrician provides and installs at the "Rough Electric" stage.

Riser Diagram - Document which explains wire type, size, and the number of conductors to be run from a control panel to each component.

Riser Shaft - Vertical shaft that holds electrical cables.

Risk - Risk is the product of the level of threat with the level of vulnerability. It establishes the likelihood of a successful attack.

Risk Analysis - Analytical tool used to minimize risk by applying security measures commensurate with the relative threats, vulnerabilities, and values of the assets to be protected.

Risk Assessment - Process to determine the vulnerabilities, threats, likelihood, loss or impact, and theoretical effectiveness of countermeasures.

Risk Avoidance - Practice of removing or placing a target outside the effective reach of a threat.

Risk Management – Implementation of: loss prevention, loss control and loss indemnification.

Risk Reduction - Practice of reducing criminal opportunity by reducing the exposure of an asset to the possibility of criminal attack.

Rivet - Kind of unthreaded bolt made of a malleable metal. The rivet is run through holes made in two or more metal pieces; then the plain end is mashed or flattened to make a second head to hold the metal pieces together.

RJ - Denotes registered jack.

RJ-11 - Miniature surface mount six position jack (RJ11C), or miniature wall mount six position jack (RJ11W).

RJ-31X - 8 position, non keyed miniature jack assembly equipped with shorting bars returns circuits to bridged service when the mating 8 position modular plus is removed.

RJ-45 Cable - Registered Jack -45, eight -wire telephone cable used for linking computers to a local area network (LAN).

RL Differentiator - RL circuit whose output voltage is proportional to the rate of change of the input voltage.

RL Filter - Selective circuit of resistors and inductors that offers little or no opposition to certain frequencies while blocking or attenuating other frequencies.

RL Integrator - RL circuit with an output proportionate to the integral of the input signal.

RMS - Abbreviation for "root mean square"

RMS Value - RMS value of an AC sine wave is 0.707 times the peak value. This is the effective value of an AC sine wave. The RMS value of a sine wave is the value of a DC voltage that would produce the same amount of heat in a heating element.

Road Base - Aggregate mixture of sand and stone.

Robbery - The unlawful taking or attempted taking of property that is in the immediate possession of another by force or threat of force.

Rock 1, 2, 3 - When referring to drywall, this means to install drywall to the walls and ceilings (with nails and screws), and before taping is performed.

Roll - Loss of vertical sync which causes the picture to move up or down on the TV screen.

Roll Roofing - Asphalt roofing products manufactured in roll form. 36 -inch wide rolls with and 108 square feet of material. Weights are generally 45 to 90 pounds per roll.

Roll, Rolling - Install the floor joists or trusses in their correct place. (To "roll the floor" means to install the floor joists).

Roller Strike - Strike for latch bolts. It has a roller mounted on the lip to reduce friction.

ROM - Read Only Memory.

Romex - Name brand of nonmetallic sheathed electrical cable that is used for indoor wiring. Type NM cable.

Roof - Covering for a structure.

Roof Certification - Written opinion by a roofing professional (contractor or inspector) regarding the expected remaining useful life of a roof system (roofing, venting, flashing).

Roof Jack - Sleeves that fit around the black plumbing waste vent pipes at, and are nailed to, the roof sheeting.

Roof Joist - Rafters of a flat roof. Lumber used to support the roof sheeting and roof loads. Generally, 2 X 10's and 2 X 12's are used.

Roof Sheathing or Sheeting - The wood panels or sheet material fastened to the roof rafters or trusses on which the shingle or other roof covering is laid.

Roof Valley - The "V" created where two sloping roofs meet.

Root - Root is the name of the administrator account in Unix systems.

Rosin - Resin derived chemically from an extract of pine wood and used in some solders.

Rosin Core Solder - Solder that has a rosin flux: suitable for electrical connections.

Rotary Switch - Electromechanical device that has a rotating shaft connected to one terminal capable of making or breaking a connection to one or more other terminals.

Rough In - Preliminary rough work done on a job.

Rough Opening - Horizontal and vertical measurement of a window or door opening before drywall or siding is installed.

Rough Sill - Framing member at the bottom of a rough opening for a window. It is attached to the cripple studs below the rough opening.

Roughing In - Initial stage of a plumbing, electrical, heating, carpentry, and/or other project, when all components that won't be seen after the second finishing phase are assembled.

Round file - File that is round in cross section; used for filing curved surfaces.

Route - (1) To physically position wires or conducting circuit paths by planning and deliberation. (2) Path over which conductors are positioned. (3) Path over which signals or information may be carried.

Router - Routers interconnect logical networks by forwarding information to other networks based upon IP addresses.

RS232 - Commonly used computer serial interface.

Rubber Mallet - Rubber headed striking tool used for hitting finished surfaces.

Rule - Measuring tool marked in inches and fractions of an inch, used for layout and measuring.

Run, Roof - Horizontal distance from the eaves to a point directly under the ridge. One half the span.

Run, Stair - Horizontal distance of a stair tread from the nose to the riser.

Runner - A person other than the required number of operators on duty at central, supervising, or runner stations (or otherwise in contact with these stations) available for prompt dispatching, when necessary, to the protected premises.

Runner Service - The service provided by a runner at the protected premises, including resetting and silencing of all equipment transmitting fire alarm or supervisory signals to an off-premises location. See Alarm Investigator Service.

Runner/Guard - Alarm company employee dispatched to a premises from which an alarm has been received. His or her primary duty is to assist the police with their investigation.

S/N (Signal To Noise) Ratio - Measure of noise levels of a video signal - the higher the number the better. In a video signal values from 45db to 60db produce an acceptable picture. Less than 40db is likely to produce a 'noisy' picture.

Sack Mix - Amount of Portland cement in a cubic yard of concrete mix. Generally, 5 or 6 sack is required in a foundation wall.

Saddle – (1) Small second roof built behind the back side of a fireplace chimney to divert water around the chimney. (2) Plate at the bottom of some—usually exterior—door openings. Sometimes called a threshold.

Safe Alarm - see Capacitance detector.

Safe Cover - Magnetic cover that fits over the dial of a safe.

Safe Door Switch - A special sensor that detects the open or closed position of a safe door.

Safe Location. A location remote or separated from the effects of a fire so that such effects no longer pose a threat.

Safety - Safety is the need to ensure that the people involved with the company, including employees, customers, and visitors, are protected from harm.

Safety Color Codes - Colors used by law to symbolize different safety considerations or dangers. Red - Fire equipment; flammable -liquid container; stop button on machinery or electrical equipment. Yellow - Caution; power source; waste container. Orange - Exposed cutting or moving parts; danger area on a machine; starter button. Purple - Radiation hazard. Green - Safety; first aid equipment.

Safety Factor - A factor applied to a predicted value to ensure that a sufficient safety margin is maintained.

Safety Margin - The difference between a predicted value and the actual value where a fault condition is expected.

Sale - Transfer of ownership of and title to property from one person to another for a price.

Sales Contract - Contract between a buyer and seller which should explain: (1) What the purchase includes, (2) What guarantees there are, (3) What the costs are, and (4) What recourse the parties have if the contract is not fulfilled.

Sally Port (Security Vestibule) - A compartment provided with two or more doors where the intended purpose is to prevent continuous and unobstructed passage by allowing the release of only one door at a time.

Sand Float Finish - Lime that is mixed with sand, resulting in a textured finish on a wall.

Sandpaper - Paper with an abrasive, such as crushed flint or garnet particles, glued to it.

Sandwich Panel - Panel with plastic, paper or other material enclosed between two layers of a different material.

Sanitary Sewer - Sewer system designed for the collection of waste water from the bathroom, kitchen and laundry drains, and is usually not designed to handle storm water.

Sash - Single light frame containing one or more lights of glass. The frame that holds the glass in a window, often the movable part of the window.

Sash Balance - Device, usually operated by a spring and designed to hold a single hung window vent up and in place

Satellite Station - A structure, remote from the primary monitoring facility, housing equipment used to gather signals to be forwarded to the primary monitoring facility for processing and response.

Saturated Felt - Felt which is impregnated with tar or asphalt.

Saturation - (1) Vividness of a color. It is directly related to the amplitude of the chrominance signal. (2) Condition in which a further increase in one variable produces no further increase in the resultant effect. (2) In a bipolar junction transistor, the condition when the emitter to collector voltage is less than the emitter to base voltage. This condition puts forward bias on the base to collector junction.

Saw - Hand or powered tool used for cutting wood or metal.

Saw Tooth Wave - Repeating waveform that rises from zero to maximum value linearly drops back to zero and repeats. A ramp waveform.

Sawhorse - Support frame for holding lumber or other material while it is being worked on.

Scaffolding - Temporary metal or wooded platforms constructed as work areas above ground level.

Scale - Set of markings used for measurement.

Scaled Drawing - Drawing made to a reduced size. Floor plans are commonly made to a scale of 1/4" =1'. Each 1/4" on the plan represents 1' on the actual building.

Scanner - (1) Motorized CCTV camera mounting that moves from side to side to survey a large area. (2) Equipment located at the telephone company wire center that monitors each local leg and relays status changes to the alarm center. Processors and associated equipment might also be included. (3) Device used to transform printed pages into electronic images.

Scanning - Rapid movement of the election beam in a pickup device of a camera or in the CRT of a television receiver.

Scene Illumination - Density of light in lux falling on the area to be viewed.

Schedule - Table on the blueprints that list the sizes, quantities and locations of the items such as windows, doors, locks and alarm equipment.

Scheduled Test - Activation of one or more sensors (flow switches, motion detectors, door switches, alarm buttons, etc.), controls and communicators, according to a formal arrangement between the user and the testing organization (monitoring facility, serving alarm company, or organization that specializes in system testing), or according to some published requirement of NFPA, AHJ, FMRC, or UL.

Schematic Design - Circuit diagram; also called wiring diagram and schematic.

Schematic Diagram - Illustration of an electrical or electronic circuit with the components represented by their symbols.

Schottky Diode - High speed diode that has very little junction capacitance. Also known as a "hot-carrier diode" or a "surface - barrier diode."

Score - Cut or notch cut in something.

Scoring - To mark wood or plaster with lines or scratches to help form a better surface for a glue or plaster bond.

Scotia – Concave molding.

SCR - Silicon Controlled Rectifier. Electrically switch able diode. Current can not flow through the device until an appropriate trigger signal is applied to the gate terminal. Once triggered, an SCR will conduct current in one direction like an ordinary diode unless the external flow of current is cut off or reverses direction, resetting the SCR.

Scrap Out - Removal of all drywall material and debris after the home is "hung out" (installed) with drywall.

Scratch Coat - First coat of plaster, which is scratched to form a bond for a second coat.

Screed, Concrete - To level off concrete to the correct elevation during a concrete pour.

Screed, Plaster - Small strip of wood, usually the thickness of the plaster coat, used as a guide for plastering.

Screen - (1) Frame holding a usually metallic netting used especially in a window or door to exclude pests (as insects) (2) A flat surface on which a picture or series of pictures is projected or reflected (3) Surface on which the image appears in an electronic display (as in a television set, radar receiver, or computer terminal) (4) Intrusion detection device made of a frame interlaced with grooved dowels laced with fine copper wire. This device is installed inside air-conditioning ducts, ventilation shafts and other structures through which the building might be entered. Any attempt to remove or cut through the screen breaks the wire and generates an alarm.

Screen Splitter - Device that can combine the views from two cameras on a single screen. The split can be arranged horizontally, vertically or one picture inserted in another.

Screw - Threaded pointed fastening device.

Screw extractor - Threaded device used for removing broken screws and bolts. A hole is drilled into the broken screw end, then the screw extractor is screwed in counterclockwise to remove the screw.

Screw, Phillips - Screw which is driven by means of an indented cross on its head.

Screw, Self-tapping - Externally threaded fastener whose thread cuts or forms its own mating thread as it is driven into a hole in the mating material.

Screwdriver - Tool designed for driving in or extracting screws.

Scribing – Cutting and fitting woodwork to an irregular surface.

Scupper - (1) Opening for drainage in a wall, curb or parapet. (2) Drain in a downspout or flat roof, usually connected to the downspout.

Scuttle Hole - Small opening either to the attic, to the crawl space or to the plumbing pipes.

SDTV - Standard definition television. Digital television that's not high definition.

Sealed drawings - Drawings with the seal of a registered architect.

Sealed Lead Acid Battery – Rechargeable battery with good temperature characteristics and relatively low energy density.

Sealer - Finishing material, either clear or pigmented, that is usually applied directly over raw wood for the purpose of sealing the wood surface.

Seasonality - Effect of a period of the year.

Seasoning - Drying and removing moisture from green wood in order to improve its usability.

Secondary - Output winding of a transformer. Winding that is connected to a load.

Secondary Cell - Electrolytic cell used to store electricity. Once discharged may be restored by recharging by putting current through the cell in the direction opposite to that of discharge current.

Secondary PSAP - A dispatch agency that receives calls for services the Public Safety Answering Point (PSAP) or Primary PSAP originally receives but does not dispatch and direct. An example might be when a 9-1-1 center dispatches police on a metropolitan-wide basis, but relays fire calls to individual community fire department dispatch centers. Such centers are then referred to as Secondary PSAPs.

Secondary Trunk Facility - That part of a transmission channel connecting two or more, but fewer than all, leg facilities to a primary trunk facility.

Secure Mode - Condition when all sensors and control units are ready to respond to any intrusion.

Security Code - See password.

Security Film - Polyester film applied to the interior surface of glass plate. Security film can significantly increase a glass plate's resistance to impact and reduce the flying glass hazard.

Security Glazing - Special glass designed to provide physical protection. It is usually laminated, and different varieties are rated according to degree of resistance.

Security Interlock - Multidoor system in which all doors are normally closed and locked; releasing one door disables the releases for all other doors until the first door is closed and relocked.

Security Switch - Hidden or otherwise protected switch on a central control box that must be used to permit access to the control of critical functions.

Security System - Electronic system consisting of sensors, a warning device, and a control unit designed to detect an intrusion into a protected area and to activate the warning device upon detection of an intrusion.

Security Timer - Electric timer that can be used to turn lights (or other electrical devices) on and off at preset times, which is often used to create the illusion of someone at home in an unoccupied house.

Seepage Pit - Sewage disposal system composed of a septic tank and a connected cesspool.

Segment - A part of the whole.

Seismic Detector - (1) Sensor that detects the hammer like impact on a rigid surface. (2) Device designed to detect the vibrations caused when breaking glass, wood or other materials. (3) Outdoor perimeter detector, usually buried in the ground that senses the seismic waves of an intruder or vehicle moving over or near it.

Seismic Glass Break Detector - A glass break detector that senses unique seismic shock frequencies that travel through the glass as it breaks.

Seismic Sensor - A sensor that detects vibrations generated by a person walking or digging in its area of sensitivity.

Selectivity - Characteristic of a circuit to discriminate between wanted and unwanted signals.

Self Restoring Alarm - System that restores itself to a non alarm condition after it has been tripped, if all detection devices have been returned to the secure position.

Self Sealing shingles - Shingles containing factory -applied strips or spots of self -sealing adhesive.

Self Stick Foil - Foil tape with an adhesive on one side.

Self-Closing - Equipped with an approved device that ensures closing after opening.

Self-Luminous - Illuminated by a self-contained power source and operated independently of external power sources.

Self-Preservation (Day-Care Occupancy) - The ability of a client to evacuate a day-care occupancy without direct intervention by a staff member.

Semi gloss Paint or Enamel - Paint or enamel made so that its coating, when dry, has some luster but is not very glossy. Bathrooms and kitchens are normally painted semi -gloss

Semiconductor - Element which is neither a good conductor nor a good insulator, but rather lies somewhere between the two. Characterized by a valence shell containing four electrons.

Sensing Devices - Sensors that detect a hazard such as an intruder or fire. See Sensor.

Sensitive Relay - Extremely sensitive type of relay that requires very little current to operate.

Sensitivity - Measure of how strong a signal or force must be to activate a given function or reaction.

Sensitivity Analysis - An analysis performed to determine the degree to which a predicted output will vary given a specified change in an input parameter, usually in relation to models.

Sensor - Device designed to produce a signal or offer an indication in response to an event or stimulus (such as heat, light, sound, pressure, magnetism, or a particular motion) within its detection zone.

Sensor Reset - Certain devices, such as smoke detectors, must be manually reset after tripping. This reset process generally involves removing power from the detector for a few seconds.

Separate Atmosphere - The atmosphere that exists between rooms, spaces, or areas that are separated by an approved smoke barrier.

Separate Sleeping Area - Area or areas of the family living unit in which the bedrooms (or sleeping rooms) are located.

Separated Occupancy - A multiple occupancy where the occupancies are separated by fire resistance– rated assemblies.

Separation of Duties - Separation of duties is the principle of splitting privileges among multiple individuals or systems.

Septic Permit - Health dept. authorization to build or modify a septic system.

Septic System - On site waste water treatment system

Septic Tank - Sewage settling tank in which part of the sewage is converted into gas and sludge before the remaining waste is discharged by gravity into a leaching bed underground.

Sequence Cameras - Take photos only when activated. A push button, connection with a holdup system or connection to a motion sensor or alarm may be used to activate the camera. The cameras usually use film cartridges which are removed to be developed after the camera is activated.

Sequential Alarm - When two or more sensors sequentially detect a condition and each triggers an alarm. When this happens, there is a high probability that a real emergency exists.

Sequential Switcher - Device allowing scenes from two or more CCTV camera to be shown one after another on a monitor.

Series Circuit - Circuit in which the components are connected end to end so that current has only one path to follow through the circuit. A normally closed sensor loop is a series circuit.

Series Parallel Network - Network that contains components connected in both series and parallel.

Server - System entity that provides a service in response to requests from other system entities called clients.

Service - Repair and/or maintenance of a system.

Service Drop - Run of cables that extend from the street or transformers to the service equipment of the premises being supplied.

Service Entrance Panel - Main power cabinet where electricity enters a home wiring system.

Service Equipment - Main control gear at the service entrance, such as circuit breakers, switches, and fuses.

Service Interruption - Interruption of alarm system service or communication to monitoring facility or between the monitoring facility and the PSAP, or other necessary locations.

Service Lateral - Underground power supply line.

Service Life - Length of time a product will meet or exceed the performance criteria for which it was designed.

Service Loop - Deliberate surplus of wire looped at one or more points in a wire run for future system modifications or servicing.

Servicing Alarm Company - A company that provides on-site service, inspections, tests, training, and related services. A servicing alarm company may, or may not, provide monitoring services.

Serving and Responding Organization - An alarm company that provides a complete line of alarm-related services. These include consulting, system design, sales, installation, service, emergency response, inspections, tests, transmission tests, monitoring, and guard or trained alarm investigator response. Other organizations provide only one or more of these services.

Setback Thermostat - Thermostat with a clock which can be programmed to various temperatures at different times of the day/week. Usually used as the heating or cooling system thermostat.

Settlement - Shifts in a structure, usually caused by freeze -thaw cycles underground.

Seven Segment Display - Device made of several light emitting diodes arranged in a numeric or alphanumeric pattern. By lighting selected segments numeric or alphabet characters can be displayed.

Severe Mobility Impairment - The ability to move to stairs but without the ability to use the stairs.

Sewage Ejector - Pump used to 'lift' waste water to a gravity sanitary sewer line. Usually used in basements and other locations which are situated below the level of the side sewer.

Sewer Lateral - Portion of the sanitary sewer which connects the interior waste water lines to the main sewer lines.

Sewer Stub - Junction at the municipal sewer system where the home's sewer line is connected.

Sewer Tap - Physical connection point where the home's sewer line connects to the main municipal sewer line.

Shake - Wood roofing material, normally cedar or redwood. Produced by splitting a block of the wood along the grain line.

Shakes - Hand cut wood shingles.

Shall - Indicates a mandatory requirement.

Shank - (1) Body of a tool below the handle or top, as the shank of a chisel. (2) End of a drill or bit that is inserted in the chuck.

Shapes of Ceilings - The shapes of ceilings can be classified as sloping or smooth.

Share - Share is a resource made public on a machine, such as a directory (file share) or printer (printer share).

Shear Block - Plywood that is face nailed to short (2 X 4's or 2 X 6's) wall studs (above a door or window, for example). This is done to prevent the wall from sliding and collapsing.

Shear Lock - Type of magnetic lock. The lock is embedded into the doors fame and a plate is installed on the adjoining edge of the door proper. The holding force is augmented through friction. It generally requires custom fitted doors.

Sheath - Metallic close fitting protective covering.

Sheathing (See Wall Sheathing) - First covering of boards or material on the outside wall or roof prior to installing the finished siding or roof covering.

Sheathing, Sheeting - Structural wood panel covering, usually OSB or plywood, used over studs, floor joists or rafters/trusses of a structure.

Shed Roof - Roof containing only one sloping plane.

Sheet Metal Duct Work - Round or rectangular metal pipes and sheet metal (for Return Air) and installed for distributing warm (or cold) air from the furnace to rooms in the home.

Sheet Metal Screw - Threaded fastener used for holding metal pieces or sheets together.

Sheet Metal Work - All components of a house employing sheet metal, such as flashing, gutters, and downspouts.

Sheet Rock - Drywall -Wall board or gypsum - Manufactured panel made out of gypsum plaster and encased in a thin cardboard. Usually 1/2" thick and 4' x 8' or 4' x 12' in size. The 'joint compound'. 'Green board' type drywall has a greater resistance to moisture than regular (white) plasterboard and is used in bathrooms and other "wet areas".

Shelf Life - Longest time equipment or material may be stored before deterioration of materials or degradation of performance is evidenced.

Shells or Bands - Orbital path containing a group of electrons having a common energy level.

Shield - Metal grounded cover used to protect a wire, component or piece of equipment from stray magnetic and/or electric fields.

Shielded Cable - Type of cable with a metallic mesh shield between the individually insulated internal conductors, and the cable collective outside insulation jacket. The purpose of the shield is usually to prevent RFI pick up or transmission.

Shielded Wire - See shielded cable.

Shim - Small piece of scrap lumber or shingle, usually wedge shaped, which when forced behind a furring strip or framing member forces it into position. Also used when installing doors and placed between the door jamb legs and 2 X 4 door trimmers. Metal shims are a wafer 1 1/2" X 2" sheet metal of various thicknesses used to fill gaps in wood framing members, especially at bearing point locations.

Shingle - Machine sawn wood, usually cedar, roofing and siding product. See also "shake."

Shingles - Roof covering of asphalt, asbestos, wood, tile, slate, or other material cut to stock lengths, widths, and thicknesses.

Shiplap - Siding Boards of special design nailed horizontally to vertical studs with or without intervening sheathing to form the exposed surface of outside walls of frame buildings.

Shock - Sudden stimulation of the nerve and convulsive contraction of the muscles caused by a discharge of electricity through the body. The severity depends upon (a) the amount of current, (b) whether the path of the current is through the path of a vital organ (c) the duration of the current.

Shock Detector - See seismic detector.

Shop Drawings - Manufacturer or contractor drawings that show in detail the fabrication and assembly of building components, or the installation details of materials or equipment.

Shore - Temporary brace used at an angle to brace or hold a wall.

Shoring - Use of temporary supports or shores.

Short - Short circuit.

Short Circuit - Also called a short. (1) Low resistance connection between two points in a circuit typically causing excessive current. (2) Direct electrical connection, with little or no load resistance. Usually the term is used for an undesired fault condition, rather than a desired electrical connection. (3) Path for current flow in a circuit, usually caused by electrical contact between connecting wires.

Should - Indicates a recommendation or that which is advised but not required.

Shunt - Bypass. The deliberate shorting of an electrical circuit. Also refers to a key operated switch that removes some portion of a security system from normal operation, allowing entry into a protected area without initiating an alarm signal.

Shunt Auxiliary Type Auxiliary Fire Alarm System - An auxiliary system electrically connected to an integral part of the municipal alarm system extending the municipal circuit into the protected premises to interconnect the initiating devices, which, when operated, open the municipal circuit shunted around the trip coil of the municipal transmitter or master box. The municipal transmitter or master box is thereupon energized to start transmission without any assistance from a local source of power.

Shunt Resistor - Resistor connected in parallel or in shunt with another component or circuit.

Shunt Switch - Switch used to bypass a detection device, usually at an entrance, to permit the user to enter without tripping the alarm system.

Shunt Time - When a door is released the status switch is automatically "shunted" for a period of time to allow the person to enter/exit. If the time is exceeded a door held open signal will occur.

Shut Off Timer - Timer circuit that automatically turns off a sounding alarm after a preset time.

Shutter - Usually lightweight louvered decorative frames in the form of doors located on the sides of a window. Some shutters are made to close over the window for protection.

SIA Control Panel Standard CP -01 - Security Industry Association standard that details recommended design features for security system control panels and their associated arming and disarming devices to reduce the incidence of false alarms.

Side Cutting Pliers - Widely used heavy -jawed pliers that have cutting edges on the side.

Side Sewer - The portion of the sanitary sewer which connects the interior waste water lines to the main sewer lines. The side sewer is usually buried in several feet of soil and runs from the house to the sewer line. It may be 'owned' by property owner or by the sewer utility, but it usually must be maintained by the owner and may only be serviced by utility approved "side sewer" contractors.

Siding - (1) Finished exterior covering of the outside walls of a frame building. (2) (Lap siding) - Slightly wedge -shaped boards used as horizontal siding in a lapped pattern over the exterior sheathing. Varies in butt thickness from ½ to ¾ inch and in widths up to 12".

Siding - Covering that goes on the outside of a building over the sheathing.

Signal - (1) A status indication communicated by electrical or other means. (2) Electrical wave used to convey information. (3) Alerting signal. (4) Acoustic device such as a bell or a visual device such as a lamp which call attention.

Signal Circuit - Supervised circuit that is used to cause horns/bells/speakers etc. to operate.

Signal Indicating Device - A device that provides an audible or visual indication that an emergency condition has been detected. Audible devices include electronic sounders, bells, horns, and sirens. Visual devices include incandescent or strobe lights. Signal indicating devices also include panels that provide lamps or schematic building diagrams to identify the specific location of the sensor or sensors that detected an emergency, or that are in other-than-normal status.

Signal Return - Same as return line. The wire(s) that brings the loop signal back into the central control box to determine if any of the sensors in that loop have been tripped.

Signal To Noise Ratio - Ratio (expressed in decibels) between a useful video signal and unwanted noise.

Signal Transmission Sequence - A DACT that obtains dial tone, dials the number(s) of the DACR, obtains verification that the DACR is ready to receive signals, transmits the signals, and receives acknowledgment that the DACR has accepted that signal before disconnecting (going on-hook).

Signal, Analog - Nominally continuous electrical signal that varies in amplitude or frequency in response to changes of sound, light heat, position or pressure.

Signaling Device - Annunciator of an alarm system.

Signaling Line Circuit - A circuit or path between any combination of circuit interfaces, control units, or transmitters over which multiple system input signals or output signals, or both, are carried.

Signaling Line Circuit Interface - A system component that connects a signaling line circuit to any combination of initiating devices, initiating device circuits, notification appliances, notification appliance circuits, system control outputs, and other signaling line circuits.

Silent Alarm - Alarm that does not sound at the protected premises, but transmits a signal.

Sill - (1) 2 X 4 or 2 X 6 wood plate framing member that lays flat against and bolted to the foundation wall (with anchor bolts) and upon which the floor joists are installed. Normally the sill plate is treated lumber. (2) The member forming the lower side of an opening, as a door sill or window sill.

Sill Cock - Exterior water faucet (hose bib).

Sill Plate - (Mudsill). Bottom horizontal member of an exterior wall frame which rests on top a foundation, sometimes called mudsill. Also sole plate, bottom member of an interior wall frame.

Sill Seal - Fiberglass or foam insulation installed between the foundation wall and sill (wood) plate. Designed to seal any cracks or gaps.

Silver - (Ag) Precious metal that does not easily corrode and is more conductive than copper.

Silver Solder - Solder composed of silver, copper and zinc. Has a melting point lower than pure silver, but higher than lead -tin solder.

Simplex - Communication in only one direction at a time. Example: FAX.

Simplex Multiplexer - Multiplexer that allows the user to look at multi -screen images or perform time multiplex recording. It cannot record multiplexer pictures while showing multi -screen pictures.

Simulated Camera - Genuine appearing but non -functional camera intended as a crime deterrent.

Simulcast - Broadcasting a program simultaneously in two different forms, for example a program broadcast in both AM and FM.

Sine - Sine of an angle of a right angle triangle is equal to the opposite side divided by the hypotenuse.

Sine Wave - Wave whose amplitude is the sine of a linear function of time. It is plotted on a graph that plots amplitude against time or radial degrees relative to the angular rotation of an alternator.

Single Closed Loop - Protective loop in which all detection devices are wired in series and closed in the secure mode.

Single Dwelling Unit - A building consisting solely of one dwelling unit.

Single Hung Window - Window with one vertically sliding sash or window vent.

Single Ply Roof - See, "Torch Down Roof

Single Pole Double Throw - (SPDT) Three terminal switch in which one terminal can be connected to either one of the other terminals.

Single Pole Single Throw - (SPST) Two terminal switch or relay that can open or close one circuit.

Single Sensor Alarm - A sensor detects the emergency condition and causes an alarm to be transmitted to the monitoring facility or to be indicated audibly or visually. Some sensors use single switches to trigger the alarm; other sensors require that two switches activate before the alarm is triggered. Some sensors use two or more detection technologies and require that two or more technologies sense the emergency condition before the alarm is triggered. All of these are single sensors.

Single Sideband - (SSB) AM radio communication technique in which the transmitter suppresses one sideband and therefore transmits only a single sideband.

Single Station Alarm - A detector comprising an assembly that incorporates a sensor, control components, and an alarm notification appliance in one unit operated from a power source either located in the unit or obtained at the point of installation.

Single Station Alarm Device - An assembly that incorporates the detector, the control equipment, and the alarm sounding device in one unit operated from a power supply either in the unit or obtained at the point of installation.

Single Throw Switch - Switch containing only one set of contacts which can be either opened or closed.

Sink - Device such as a load that consumes power or conducts away heat.

Sintering - Process of bonding either a metal or powder by cold pressing it into a desired shape and then heating to form a strong cohesive body.

Siren - (1) Electronic output alarm device, designed to produce a very loud, hard to ignore sound when activated. (2) Combination of speaker and siren driver.

Siren Driver -Electronic device that generates the siren signal; a high -power speaker converts the signal to sound.

Site - Location where work is done.

Site Plan- Map showing the location of a new building project on a piece of property.

Site-Specific Software - Software that defines the specific operation and configuration of a particular system. Typically, it defines the type and quantity of hardware modules, customized labels, and specific operating features of a system.

Sketch -Freehand drawing of something.

Skew - To lean or twist.

Skip Sheathing - Normal base for shake, shingle and some tile roofs. 1" x 4" or similar sized boards are nailed at 90 degrees to the rafters leaving a space of about 4" between each row and allowing for better ventilation.

Skirtings - Narrow boards around the margin of a floor; baseboards.

Skylight - Glazed roof opening used for extra lighting.

Skylight - More or less horizontal window located on the roof of a building.

Slab - Concrete floor placed directly on earth or a gravel base and usually about four inches thick.

Slab - Flat concrete area.

Slab On Grade - Type of foundation with a concrete floor which is placed directly on the soil. The edge of the slab is usually thicker and acts as the footing for the walls.

Slab, Concrete - Concrete pavement, i.e. driveways, garages, and basement floors.

Slab, Door - Rectangular door without hinges or frame.

Slag - Concrete cement that sometimes covers the vertical face of the foundation void material.

Slave Communicator - Communicator designed to connect to an Alarm Control and transmit alarms to the central station.

Sledge - Heavy hammer used for pounding, breaking concrete, driving heavy stakes, and the like.

Sleeper - Usually, a wood member embedded in concrete, as in a floor, that serves to support and to fasten the subfloor or flooring.

Sleeve - Short cable path through materials such as walls or floors. Typically requires a fire stop material to maintain the fire rating of the wall or floor it penetrates.

Slide Switch - Switch having a sliding button, bar or knob.

Sliding Doors - Doors that run horizontally on tracks with door hanger rollers.

Slope - Incline angle of a roof surface, given as a ratio of the rise (in inches) to the run (in feet). See also pitch.

Sloped Ceiling – (1) A ceiling that has a slope of more than 1 in 8. (2) Having a slope of more than 1.5 inches per foot.

Sloping Peaked-Type Ceiling - A ceiling in which the ceiling slopes in two directions from the highest point. Curved or domed ceilings can be considered peaked with the slope figured as the slope of the chord from highest to lowest point.

Sloping Shed-Type Ceiling - A ceiling in which the high point is at one side with the slope extending toward the opposite side.

Slow Acting Relay - Slow operating relay that when energized may not pull up the armature for several seconds.

Slow Blow Fuse - Fuse that can withstand a heavy current (up to ten times its rated value) for a small period of time before it opens.

Slow Evacuation Capability - The ability of a group to move reliably to a point of safety in a timely manner, but not as rapidly as members of a household in the general population.

Slow Scan - Electronic television transmission system consisting of a transmitter and a receiver that transmit single frame television pictures at rates slower than the normal frame rate of 30 per second.

Slump - "Wetness" of concrete. A 3 inch slump is dryer and stiffer than a 5 inch slump.

Smartcard - Card that includes a magnetic strip or chip that can record and replay information.

Smoke Alarm – (1) A single or multiple station alarm responsive to smoke. (2) Simple localized fire alarm, which responds to the presence of smoke, rather than the fire or heat.

Smoke Barrier - A continuous membrane or a membrane with discontinuities created by protected openings, where such membrane is designed and constructed to restrict the movement of smoke.

Smoke Compartment - A space within a building enclosed by smoke barriers on all sides, including the top and bottom.

Smoke Detection - See Cloud Chamber Smoke Detection, Ionization Smoke Detection, Photoelectric Light Obscuration Smoke Detection and Photoelectric Light-Scattering Smoke Detection

Smoke Detector - A device that detects visible or invisible particles of combustion. There are 2 basic types of smoke detectors, Ionization and Photoelectric.

Smoke Detector, Ionization - Detectors that sense microscopic particles of combustion. Ionization detectors operate at the early stages of a fire's development, usually before smoke or flame is visible.

Smoke Partition - A continuous membrane that is designed to form a barrier to limit the transfer of smoke.

Smoke Sensor - See Smoke Detector.

Smokeproof Enclosure - A stair enclosure designed to limit the movement of products of combustion produced by a fire.

Smoke Protected Assembly Seating - Seating served by means of egress that is not subject to smoke accumulation within or under the structure.

Smooth Ceiling - A ceiling surface uninterrupted by continuous projections, such as solid joists, beams, or ducts, extending more than 100 mm (4 in.) below the ceiling surface.

Snake - (1) Long, strong, flexible wire or strip used to pull other wires through pipes or tubes. (2) To route wires or cables through a group of circuits, components, or boards.

Snaking - Procedure of running wire through walls using a flexible metal device called a snake.

Snap Action Switch - Push button switch with a lightweight extension arm over its plunger, which can be activated with a very light pressure.

Snap Switch - Switch containing a spring under tension or compression that causes the contacts to come together suddenly when activated.

Snips - Hand shears for cutting sheet metal.

Soffit – (1) Area below the eaves and overhangs. The underside where the roof overhangs the walls. Usually the underside of an overhanging cornice. (2) Visible underside of structural members such as staircases, cornices, beams, a roof overhang or eave.

Soft Magnetic Material - Ferromagnetic material that is easily demagnetized.

Software - Program of instructions that directs the operation of a computer.

Softwood - Easily worked wood or wood from a cone bearing tree.

Soil Pipe - Large pipe that carries liquid and solid wastes to a sewer or septic tank.

Soil Stack - Plumbing vent pipe that penetrates the roof.

Solar Battery - Battery that charges through a photovoltaic cell.

Solar Cell - Photovoltaic cell that converts light into electric energy. Especially useful as a power source for space vehicles.

Solder - (1) Small metal alloy, usually of tin and lead, which is melted to join pieces of other metals. (2) To join metals with solder.

Solder - Metallic alloy used to join two metal surfaces.

Soldering - Process of joining two metallic surfaces to make an electrical contact by melting solder (usually tin and lead) across them.

Soldering Gun - Electric soldering iron having the general shape of a pistol. Also called solder gun or soldering pistol.

Soldering Iron - Tool with an internal heating element used to heat surfaces being soldered to the point where the solder becomes molten.

Solderless Connection - Connection between leads or leads and terminals accomplished entirely through crimping, pinching, splicing, and the like.

Solderless Terminal - Terminal to which a solderless connection can be made.

Sole Plate - Bottom, horizontal framing member of a wall that's attached to the floor sheeting and vertical wall studs.

Solenoid - An air core coil. Equipped with a movable iron core the solenoid will produce motion. As a result of current through the coil the iron core is pulled into the center of the winding. When the coil is deenergized, a spring pulls the movable core away from the center of the winding. Mechanical devices connected to the movable core are made to move as a result of current through the coil. Example: Electric door locks on some automobiles.

Solid Bridging - Solid member placed between adjacent floor joists near the center of the span to prevent joists or rafters from twisting.

Solid Conductor - Conductor having a single solid wire instead of strands of fine wire twisted together.

Solid Core Door - Flush door made of a solid center, usually solid blocks glued together, with plywood glued to the faces.

Solid Joist Construction - Ceilings that have solid structural or solid nonstructural members projecting down from the ceiling surface for a distance of more than 100 mm (4 in.) and spaced at intervals of 0.9 m (3 ft) or less, center to center.

Solid State - Pertaining to circuits where signals pass through solid semiconductor material such as transistors and diodes as opposed to vacuum tubes where signals pass through a vacuum.

Solid Wire - See Solid Conductor

Sonar - Acronym for "sound navigation and ranging." A system using reflected sound waves to determine the position of some target.

Sonic - Pertaining to sound.

Sonotube - Round, large cardboard tubes designed to hold wet concrete in place until it hardens.

Sound - (1) Noise. (2) Free from defect.

Sound Attenuation - Sound proofing a wall or sub floor, generally with fiberglass insulation.

Sound Card - Circuit card installed in a computer to control connected sound system.

Sound Detector - See Audio Detector or Microphone.

Sound Discriminator - Sensor which responds to sound; a microphone.

Sound Sensing Detection System - System which detects the audible sound caused by an attempted forced entry into a protected structure.

Sound Sensor - Sensor that responds to acoustic vibrations in the air. Some can respond to any sound of a sufficient volume, and others are tuned to specific frequencies (also known as an acoustic sensor).

Sound Wave - Pressure waves propagated through air or other plastic media. Sound waves are generally audible to the human ear if the frequency is between approximately 20 and 20,000 vibrations per second. (hertz)

Sounding Alarm - Activated alarm, emitting some sort of loud, ear -catching noise.

Source - Device that provides power or energy to a load.

South Pole - Pole of a magnet into which magnetic lines of force are assumed to enter.

Space Alarm - See Volumetric protection.

Space Detection - Use of sensor devices to detect an intruder in an enclosed space.

Space Heat - Heat supplied to the living space, for example, to a room or the living area of a building.

Space Heater - Individual freestanding heating unit used to heat a single room.

Space Protection - See space detection.

Spacing - A horizontally measured dimension related to the allowable coverage of fire detectors.

Spade Bit - Standard spade shaped bit used in power drills. Sizes vary from 3/8” to 11/2”.

Spam - Electronic junk mail or junk newsgroup postings.

Span - Clear distance that a framing member carries a load without support between structural supports. The horizontal distance from eaves to eaves.

Spark – (1) A moving ember. (2) Momentary discharge of electrical energy due to ionization of air or other dielectric material separating two charges.

Spark/Ember Detector Sensitivity - The number of watts (or the fraction of a watt) of radiant power from a point source radiator, applied as a unit step signal at the wavelength of maximum detector sensitivity, necessary to produce an alarm signal from the detector within the specified response time.

Spark/Ember Detector. - A radiant energy–sensing fire detector that is designed to detect sparks or embers, or both. These devices are normally intended to operate in dark environments and in the infrared part of the spectrum.

SPDT Single Pole, Double Throw - Basic switching function in which a single common line can be connected to either one of two optional circuits, depending on the switch position.

Speaker - Also called "loudspeaker." Transducer that converts electrical energy into mechanical energy at audio frequencies.

Spec Home - House built before it is sold. Builder speculates that he can sell it at a profit.

Special Amusement Building - A building that is temporary, permanent, or mobile that contains a device or system that conveys passengers or provides a walkway along, around, or over a course in any direction as a form of amusement arranged so that the egress path is not readily apparent due to visual or audio distractions or an intentionally confounded egress path; or is not readily available due to the mode of conveyance through the building or structure.

Special Inspection. - Services provided by a qualified person, retained by the owner and approved by the authority having jurisdiction, who observes the installation and witnesses the pretesting and operation of the system or systems.

Special-Purpose Industrial Occupancy - An industrial occupancy in which ordinary and low hazard industrial operations are conducted in buildings designed for, and suitable only for, particular types of operations, characterized by a relatively low density of employee population, with much of the area occupied by machinery or equipment.

Specialty Contractor - Licensed to perform a specialty task e.g. electrical, side sewer, asbestos abatement.

Specifications or Specs - List of materials, methods, model numbers, colors, allowances, and other details which supplement the information contained in the blue prints. Written elaboration in specific detail about construction materials and methods. Written to supplement working drawings.

Spectrum - Arrangement or display of light or other forms of electromagnetic radiation separated according to wavelength, energy or some other property.

Spectrum Analyzer - Instrument used to display the frequency domain of a waveform plotting amplitude against frequency.

Speed of Transmission - Amount of data sent in a given unit of time, generally measured in bits per second, characters per second or words per minute; used primarily for digital codes.

Spike - Momentary increase in electrical voltage or current, can damage electronic equipment.

Spiral Ratchet Screwdriver - Screwdriver that drives a screw when the handle is pushed down. A spring pushes the handle back up. The ratchet can be reversed so that screws can be removed.

Spiral Stair - Stair that turns completely around as it ascends or descends.

Splash Block - Pad which is placed under the lower end of a downspout and diverts the water from the downspout away from the house. Usually made out of concrete or fiberglass.

Splice - (1) Connection between two or more wires.(2) To make such a joint.

Split Level – House with the living areas at slightly different heights but not separated by a full floor.

Spontaneous combustion - Ignition of fire in an object by internal development of heat without the action of an external agent.

Spoof - Attempt by an unauthorized entity to gain access to a system by posing as an authorized user.

Spot Filter - Small insert used in a lens to increase the f -stop range of the lens.

Spot Protection - Protecting one specific object or small area.

Spot-Type Detector - A device in which the detecting element is concentrated at a particular location. Typical examples are bimetallic detectors, fusible alloy detectors, certain pneumatic rate-of-rise detectors, certain smoke detectors, and thermoelectric detectors.

Spread Spectrum - Communications technique in which the modulated information is transmitted in a bandwidth considerably greater than the frequency content of the original information. A feature of "CDMA" technology.

Spring Contact - Device employing a current -carrying cantilever spring.

Sprinkler Control Valve Switches - A switch that detects the off-normal position of a shut-off control valve in a sprinkler system to warn of a potentially dangerous situation in which water cannot flow through the pipes in case of fire. Three common types of switches are: Gate Switch, Outside Stem & Yoke (OS&Y) Switch and Post Indicator Valve (PIV) Switch

Sprinkler Fitter - One who installs piping, equipment, and fittings for an automatic sprinkler system.

Sprinkler Supervision - Alarm system used along with sprinkler systems. It checks valves and critical parts of the system to make sure they are ready to function in case of a fire.

Sprinkler System - System for retarding fires by automatically supplying water through spray nozzles. Sprinkler heads are installed at suitable intervals and connected to a water source. The heads have thermal elements that open at a pre -set temperature to allow water to spray the area.

Sprinkler System Water Flow Sensors - A sensor that detects the flow of water in a sprinkler system.

SPST Single pole, single throw. -

Spurious alarm - See false alarm.

Square - (1) Unit of measure. (2) Two elements at right angles to each other. (3) Instrument having at least one right angle and two straight edges used especially to lay out or test right angles (4) Rectangle with all four sides equal
(5) Product of a number multiplied by itself

Square Tab Shingles - Shingles on which tabs are all the same size and exposure.

Squeegie - Fine pea gravel used to grade a floor (normally before concrete is placed).

Stachybotrys - Toxic black colored mold sometimes found in wet or flooded homes.

Stack - Vertical piping for waste or vent.

Stack Trusses - To position trusses on the walls in their correct location.

Staff (Residential Board and Care) - Persons who provide personal care services, supervision, or assistance.

Stage - A space within a building used for entertainment and utilizing drops or scenery or other stage effects.

Stair - Run of treads and risers with supports from floor to floor.

Stair Carriage or Stringer - Supporting member for stair treads. Usually a 2 X 12 inch plank notched to receive the treads; sometimes called a "rough horse."

Stair Landing - Platform between flights of stairs or at the termination of a flight of stairs. Often used when stairs change direction. Normally no less than 3 ft. X 3 ft. square.

Stair Rise - Vertical distance from stair tread to stair tread (and not to exceed 7 ½").

Stairwell - Framed opening in which stairs are placed.

Stakeholder - An individual or representative of same, having an interest in the successful completion of a project.

Stand By - Battery provided to power the system in the event of an electrical outage.

Standalone - System that makes its own decisions without communicating with a central controller.

Standard Practices of the Trade(s) - One of the more common, basic, and minimum construction standards. This is another way of saying that the work should be done in the way it is normally done by an average professional in the field. Among the many other "standards of construction", the following terms are used in an attempt to define a quality of work (listed here in a rough order of quality, lowest first):

- "to code"
- "minimum standards of the trades" or "builder basic"
- "standards of the trades"
- "standards of the industry"
- "manufacturers specifications"
- "craftsman like"
- "custom construction"
- "custom practices"
- "first class" or "top quality"

The specific application of the "standards" can't be found in any one book or list, they are just one more attempt to define expectations for a specific job.

Standby Battery - Battery used to supply electricity to an alarm system in case of AC power failure.

Standby Power Supply - Equipment that provides a source of power to a system in the event that the primary source of power is interrupted or lost. Generally, it consists of batteries and charging circuits.

Standpipe - Outlet (required in tall buildings) that provides water for a fire hose.

Standpipe System - An arrangement of piping, valves, hose connections, and allied equipment installed in a building or structure, with the hose connections located in such a manner that water can be discharged in streams or spray patterns through attached hose and nozzles, for the purpose of extinguishing a fire, thereby protecting a building or structure and its contents in addition to protecting the occupants. This is accomplished by means of connections to water supply systems or by means of pumps, tanks, and other equipment necessary to provide an adequate supply of water to the hose connections.

Staple – U shaped fastener.

Staple Gun - Hand gun loaded with a strip of staples. The trigger trips a spring -loaded hammer, which drives a staple.

Stapler - Mechanical, air-powered, or electric device for driving staples.

Star Drill – Manual carbide tipped four sided masonry bit used for drilling holes. Head is struck with a hammer or sledge.

Start Bit - First, or beginning bit of a sequence.

Starter Strip - Asphalt roofing applied at the eaves to provide protection by filling in the spaces under the cutouts and joints of the first course of shingles.

State - Condition of a device, circuit or system, which remains until some internal or external occurrence changes it.

State of the Art - Using the latest scientific or engineering developments.

Static - Interference caused by natural electric disturbances in the atmosphere or the electromagnetic phenomenon capable of causing such interference.

Static Discharge - Sudden release of accumulated static. Static discharge can cause damage to relatively delicate components.

Static Electricity - Stationary electrical charges produced by friction; touching electronic products may cause a spark of static when electricity built up in the human body leaps from a fingertip to the electronics. Carpeting and dry wintertime air help create this condition.

Static– Interference caused by electrical interference in the atmosphere. Example - Crackling noise heard on AM radio receivers. Caused by electric storms or electric devices.

Static Vent - Vent that does not include a fan.

Stator - Stationary part of some rotary device such as a variable capacitor.

Status - Condition of the system or device.

Status Light Indicator - Visual device used to inform a user of some particular system condition, such as an activated function.

Status Switch - Magnetic contact mounted on the controlled door. It is used to detect door held or door forced.

STC - (Sound Transmission Class) Measure of sound stopping of ordinary noise.

Steel Beam - Steel beam used as a beam, column or as a cross brace.

Steel Inspection - Municipal and/or engineers inspection of the concrete foundation wall, conducted before concrete is poured into the foundation panels.

Steel Tape - Steel measuring tape; available in lengths of 50’ or 100’.

Steel Wool - Ball or pad made of fine steel threads, used for polishing and to clean metal surfaces.

Step - A stair.

Step Down Transformer - Transformer delivering an output voltage that is lower than the input voltage

Step Flashing - Flashing application method used where a vertical surface meets a sloping roof plane. 6" X 6" galvanized metal bent at a 90 degree angle, and installed beneath siding and over the top of shingles. Each piece overlaps the one beneath it the entire length of the sloping roof (step by step).

Step Up Transformer - Transformer in which the output voltage is greater than the input voltage.

Stepladder - Folding ladder that opens to an “A“ shape and is supported on two sets of legs.

Stereo Sound - System in which reproduced sound is delivered through two or more channels to give a sense of direction to the source.

Stick Built - House built without prefabricated parts. Also called conventional building.

Stile - Upright framing member in a panel door.

Still Cameras- Photographic equipment designed to take still photographs of an area. See Continuous still cameras and Sequence cameras.

Stool - Flat molding fitted over the window sill between jambs and contacting the bottom rail of the lower sash.

Stop - Window moldings at the sides and top of the frame, designed to hold the sash in.

Stop Box - Normally a cast iron pipe with a lid (@ 5" in diameter) that is placed vertically into the ground, situated near the water tap in the yard, and where a water cut -off valve to the home is located (underground). A long pole with a special end is inserted into the curb stop to turn off/on the water.

Stop Order - Formal, written notification to a contractor to discontinue some or all work on a project for reasons such as safety violations, defective materials or workmanship, or cancellation of the contract.

Stop Valve - Device installed in a water supply line, usually near a fixture, that permits an individual to shut off the water supply to one fixture without interrupting service to the rest of the system.

Stops - Moldings along the inner edges of a door or window frame. Also valves used to shut off water to a fixture.

Storage Occupancy - An occupancy used primarily for the storage or sheltering of goods, merchandise, products, vehicles, or animals.

Stored Audio - Limited duration recording of audible sounds at the protected premises at the time when an alarm signal is generated. Generally, such recorded audio data can be retrieved immediately after the alarm signal reaches the monitoring facility while the communication link between the protected premises and the monitoring facility remains in place. Stored audio allows the monitoring facility to recall the sounds occurring at about the time the alarm was activated, and shortly thereafter.

Stored Video - Limited duration video recording of conditions at the protected premises at the time when an alarm signal is generated. Generally, such recorded data can be retrieved immediately after the alarm signal reaches the monitoring facility while the communication link between the protected premises and the monitoring facility remains in place. Stored video allows the monitoring facility to view events occurring at about the time the alarm was activated, and shortly thereafter.

Storm Sash or Storm Window - An extra window usually placed outside of an existing one, as additional protection against cold weather.

Storm Sewer - Sewer system designed to collect storm water and is separated from the waste water system.

Story - Portion of a building included between the upper surface of a floor and the upper surface of the floor or roof next above.

Straight Through Cable - Straight through cable is where the pins on one side of the connector are wired to the same pins on the other end. It is used for interconnecting nodes on the network.

Straightedge - Long wood or steel tool used for marking or checking straight lines.

Strain Gauge Sensor - Sensor which, when attached to an object, will provide an electrical response to an applied stress upon the object, such as bending, stretching or compressive force.

Strain Sensitive Cable - Electrical cable which is designed to produce a signal whenever cable is strained by a change in applied force. Typical uses include mounting it in a wall to detect an attempted forced entry through the wall or fastening it to a fence to detect climbing on the fence or burying it around a perimeter to detect walking or driving across the perimeter.

Strand - Single fibers or filament that is twisted together to form a conductor.

Stranded Conductor - Conductor composed of a group of strands of wire twisted together.

Stranded Wire - Wire composed of many thinner wires twisted together.

Strategy - A broad plan.

Stratification - The phenomenon where the upward movement of smoke and gases ceases due to the loss of buoyancy.

Street - A public thoroughfare that has been dedicated for vehicular use by the public and can be used for access by fire department vehicles.

Street Floor - A story or floor level accessible from the street or from outside a building at ground level, with the floor level at the main entrance located not more than three risers above or below ground level and arranged and utilized to qualify as the main floor.

Stress - Load or force on a bearing member.

Stress Detector - Device that detects the stress in beams when walking above or near the detector.

Stress Sensitive Cable - Electrical cable that produces a varied signal as a function of stress on the cable.

Stress Sensor - Sensor that responds to load changes or reacts to the flexing of a material that it is mounted to.

Strike - Plate mortised into or mounted on the door jamb to accept and restrain a bolt when the door is closed. In some metal installations or with a deadlock, the strike may simply be an opening cut into the jamb. (Synonym - keeper) The plate on a door frame that engages a latch or dead bolt.

Strike Plate - Plate, usually of metal, mortised into or mounted on the door jamb to accept and restrain a bolt when the door is closed. The plate spreads out the force of impact over a larger area, lessening its effect (also called a kick plate).

String, Stringer - Timber or other support for cross members in floors or ceilings. In stairs, the supporting member for stair treads. Usually a 2 X 12 inch plank notched to receive the treads

Strip Flooring - Wood flooring consisting of narrow, matched strips.

Stripping - Removing the insulation from the ends of wire to make connections.

Strobe Light - Light with very rapid, bright flashes.

Structural Drawings - Blueprints that show the structural detail, the support of a building, the location of steel beams and columns.

Structural Floor - Framed lumber floor that is installed as a basement floor instead of concrete. This is done on very expansive soils.

Structure – (1) Building or construction on a site. (2) That which is built or constructed.

Structured Wiring - Built into some new homes, this is a combination of high -speed cable and a distribution panel used to network a home.

Stub, Stubbed - To push through.

Stucco - Refers to an outside plaster finish made with Portland cement as its base.

Stud - Vertical wood framing member, also referred to as a wall stud, attached to the horizontal sole plate below and the top plate above. Normally 2 X 4's or 2 X 6's, 8' long (sometimes 92 5/8"). One of a series of wood or metal vertical structural members placed as supporting elements in walls and partitions.

Stud Finder - Magnetic device used to locate nail heads in a finished stud wall.

Stud Framing - Building method that distributes structural loads to each of a series of relatively lightweight studs. Contrasts with post -and –beam.

Stud Shoe - Metal, structural bracket that reinforces a vertical stud. Used on an outside bearing wall where holes are drilled to accommodate a plumbing waste line.

Sub Floor - Framing components of a floor to include the sill plate, floor joists, and deck sheeting over which a finish floor is to be laid.

Subassembly - Components contained in a unit for convenience in assembling or servicing equipment.

Subatomic - Particles such as electrons, protons and neutrons that are smaller than atoms.

Subcontractor - General or specialty contractor who works for another general contractor.

Subdivision - Division of land into lots and blocks for the purpose of development.

Subfloor - Usually, plywood sheets that are nailed directly to the floor joists and that receive the finish flooring.

Subscriber – (1) Customer who leases a system. (2) The recipient of a contractual supervising station signal service(s). In case of multiple, noncontiguous properties having single ownership, the term refers to each protected premises or its local management.

Subscriber Account Code – Unique code given to the subscriber's reporting device.

Subsequent Alarm - Feature which provides for resounding of the alarm signals for any new alarm after the signals have been silenced from a previous alarm.

Subsidiary Station - A subsidiary station is a normally unattended location that is remote from the supervising station and is linked by a communications channel(s) to the supervising station. Interconnection of signals on one or more transmission channels from protected premises with a communications channel(s) to the supervising station is performed at this location.

Substrate - Mechanical insulating support upon which a device is fabricated.

Sump - Hole designed to collect water.

Sump Pit - Large plastic bucket/barrel inside the building designed to collect ground water from a perimeter drain system.

Sump Pump - Submersible pump in a sump pit that pumps any excess ground water to the outside of the home.

Super High Frequency - (SHF) Frequency band between 3 GHz and 30 GHz. So designated by Federal Communications Commission (FCC).

Super VHS - Super Video Home System. Format of high resolution VHS video recorders, capable of giving greatly improved picture if all features and special tapes are used. VHS compatible.

Superconductor - Metal such as lead or niobium that, when cooled to within a few degrees of absolute zero, can conduct current with no resistance.

Superimposed - Laid on top of.

Superintendent - Someone in charge on a construction site.

Supervised Alarm Service - Central station monitored alarm systems that report opening and closing activities.

Supervised Closing - Signal sent to the central station indicating a system has been armed.

Supervised Lines - Interconnecting lines in a system that are electrically checked to detect tampering. See Line Supervision.

Supervised Opening - Signal sent to the central station indicating a system has been disarmed.

Supervised System - Also called supervised loop. Open or closed circuit system that initiates an alarm if violated or indicates trouble with a circuit.

Supervising Station - A facility that receives signals and at which personnel are in attendance at all times to respond to these signals.

Supervision – Monitoring of wiring to detect compromise attempts or failures.

Supervisory Alarm – see supervisory signal

Supervisory Circuit - Electrical path, wired or wireless, that sends information on the status of a sensor to a control unit or annunciator.

Supervisory Service - The service required to monitor performance of guard tours and the operative condition of fixed suppression systems or other systems for the protection of life and property.

Supervisory Signal - A signal indicating the need for action in connection with the supervision of guard tours, the fire suppression systems or equipment, or the maintenance features of related systems.

Supervisory Signal-Initiating Device - An initiating device such as a valve supervisory switch, water level indicator, or low air pressure switch on a dry-pipe sprinkler system in which the change of state signals an off-normal condition and its restoration to normal of a fire protection or life safety system; or a need for action in connection with guard tours, fire suppression systems or equipment, or maintenance features of related systems.

Supplementary - Supplementary refers to equipment or operation not required by signaling system standards or codes and designated as such by the authority having jurisdiction.

Supplier - Entity that supplies a user with goods and services.

Supply Air - Air from the heating or cooling unit.

Supply Current - Alternating or direct current available for operating equipment.

Supply Power - Power of an AC or DC supply.

Supply Voltage - Voltage provided by a power source.

Surface Mounting - Installation in which the installed unit is affixed directly over the wall or other surface.

Surge - Transient sudden rise of current or voltage in an electrical circuit

Surge Current - High charging current that flows into a power supply filter capacitor as the power is first turned on.

Surge Protection - Device or system designed to reduce the potential damage cause my a surge.

Surge Suppressor - Device that reduces the effect of a high voltage transient, such as a lightning spike.

Surreptitious - Covert, hidden, concealed or disguised.

Surround Sound - Reproduction of ambience, atmospherics and occasional special effects form any point around the listener by means of multichannel sound recording and reproduction.

Surveillance - (1) Monitoring of premises through alarm systems, CCTV or other monitoring methods. (2) Supervision or inspection of industrial processes by monitoring.

Suspended Ceiling - Ceiling system supported by hanging it from the overhead structural framing.

Swale - Wide shallow depression in the ground to form a channel for storm water drainage.

Sway Brace - Metal straps or wood blocks installed diagonally on the inside of a wall from bottom to top plate, to prevent the wall from twisting, racking, or falling over "domino" fashion.

Swinger - Intermittent short or open condition in a protective circuit.

Swinger Shunt - A method of by-passing a complete alarm system or a portion of an alarm system to prevent repeated alarm signals from being transmitted by the alarm system before it can be reset. The purpose of a swinger shunt is to prevent false alarms and to prevent unduly loading a communication channel with unnecessary signal volume

Swinging Door - Door that swings on hinges.

Switch– (1) Electrical device having two states, on (closed) or off (open). Ideally having zero impedance when closed and infinite impedance when open. Device that completes or disconnects an electrical circuit. (2) Networking device that keeps track of MAC addresses attached to each of its ports so that data is only transmitted on the ports that are the intended recipient of the data.

Switched Network - Communications network, such as the public switched telephone network, in which any user may be connected to any other user through the use of message, circuit, or packet switching and control devices. Any network providing switched communications service.

Switched Telephone Network - An assembly of communications facilities and central office equipment operated jointly by authorized service providers that provides the general public with the ability to establish transmission channels via discrete dialing. See public switched telephone network.

Switcher - Device allowing scenes from two or more CCTV cameras to be selectively shown on a monitor.

Switching Device - Electrical or mechanical unit that performs some switching function.

Symbol - Pictorial view or sign that represents something.

Symmetrical - Anything that has two matching halves; something that is artistically balanced.

SYNC - Electronic pulses that are inserted in the video signal for the purpose of assembling the picture information in the correct position.

Sync Pulse - Pulse used as a reference for synchronization.

Synchronization - Also called sync. Precise matching of two waves or functions.

Synchronous - Two or more signals in step or in phase.

System - (1) Integrated assemblage of elements operating together to accomplish a prescribed end -purpose, as in alarm system, CCTV system, etc. (2) Methodology incorporating fixed and ordered procedures for accomplishing an end -purpose. (3) Combination of several pieces of equipment to perform in a particular manner.

System Code - Number or alphanumeric sequence printed on and embedded on or in an access control card.

System Manual (owner's manual) - Provides instructions on how a system is to be armed disarmed, lists special features and how to prevent false alarms. Tells how to obtain additional information and training for new system operators.

System Number (alarm system ID) - A number or code that uniquely identifies an alarm system to the monitoring facility. One address or location may contain several separate alarm systems but each system has its own system number. Also one control panel may represent two or more systems.

System Operator - A person who operates an alarm system. Such person is assumed to have been taught how to arm or how to arm and disarm the system and how to prevent alarm signals from being transmitted to the monitoring facility unnecessarily or by mistake. A system operator may or may not be an authorized user agent.

System Operator Instructions - An abbreviated version of the system manual that tells system operators how to arm and disarm the system, how to prevent false alarms and what they can do if they cause a false alarm.

System Unit - The active subassemblies at the central station used for signal receiving, processing, display, or recording of status change signals; a failure of one of these subassemblies causes the loss of a number of alarm signals by that unit.

T & G, Tongue and Groove - Joint made by a tongue (a rib on one edge of a board) that fits into a corresponding groove in the edge of another board to make a tight flush joint.

T bar - Ribbed, "T" shaped bars with a flat metal plate at the bottom that are driven into the earth. Normally used chain link fence poles, and to mark locations of a water meter pit.

T1, T3 - Digital circuit using TDM (Time -Division Multiplexing).

T56BA - Designation for the pin assignments in a modular jack. Most appropriate for use in the residence.

Tab - Exposed portion of strip shingles defined by cutouts.

Tactic - Short term ploy to implement a strategy.

Tactile Notification Appliance - A notification appliance that alerts by the sense of touch or vibration.

Taguchi Gas Sensor (TGS) - Continuous -range semiconductor sensor that can detect and measure very low or very high concentrations of deoxidizing gases.

Tail Beam - Relatively short beam or joist supported in a wall on one end and by a header at the other.

Tailgate - To enter through an access control point close behind an authorized person without satisfying the access identification routine.

Take Off contact - Type of contact used on sliding glass doors or windows to connect to foil or glass break sensors on the movable section of the window or door.

Takeoff – The material necessary to complete a project or job.

Takeoff Block - Foil connector.

Takeover - Transaction or process by which an alarm user takes over control of an existing alarm system, which was previously controlled by another alarm user.

Tamper - (1) To attempt to a system or component. (2) To deliberately alter a system's logic, data, or control information to cause the system to perform unauthorized functions or services.

Tamper Device - (1) Any device, often a switch, which is used to detect an attempt to gain access to intrusion alarm circuitry. (2) A monitor circuit to detect any attempt to modify the alarm circuitry, such as by cutting a wire.

Tamper Resistant Hardware - Builders hardware with screws or nut and bolt connections that are hidden or cannot be removed with conventional tools.

Tamper Switch - Switch installed in such a way as to be activated by an attempt to open, move or remove the enclosure of a security system or one of its components.

Tampering - Unauthorized act to open, close, destroy, modify, or remove a device.

Tap - (1) To cut an internal thread. (2) Electrical connection to some point other than at the ends of a resistor or inductor.

Tape - (1) See Foil. (2) Measuring device. (3) Used to wrap splices (4) Flexible strip used to cover drywall sheet joints.

Tape Dialer - Device for the transmission of alarm signals over telephone lines using a prerecorded tape message to notify someone at a remote location.

Tape, Electrical - Tape which, because of its insulating and voltage break -down characteristics, can substitute for the normal insulation of an electrical conductor at splices.

Taping - Process of covering drywall joints with paper tape and joint compound.

Taut Wire Detector - System of intrusion detection that features a strong wire strung tautly along the top of a fence or wall. A change in the tension of the wire sets off the alarm.

TCP/IP - Synonym for "Internet Protocol Suite;" in which the Transmission Control Protocol and the Internet Protocol are important parts. TCP/IP is the basic communication language or protocol of the Internet.

Tearing - Picture condition in which horizontal lines are displaced in an irregular manner.

Technician - Expert in troubleshooting circuit and system malfunctions. Along with a thorough knowledge of test equipment and how to use it to diagnose problems, the technician is also familiar with how to repair or replace faulty components. Technicians basically translate theory into action.

Teco - Metal straps that are nailed and secure the roof rafters and trusses to the top horizontal wall plate. Sometimes called a hurricane clip.

Tee - "T" shaped plumbing fitting.

Telco - Term for telephone company.

Telecommunication - (1) Communication over a distance by telephone, radio, telegraph, etc. (2) Transmission, emission, or reception of signs, signals, writing, images, or sounds or intelligence of any nature by wire, radio, visual or other electromagnetic systems.

Telegraphy - Communication between two points by sending and receiving a series of current pulses either through wire or by radio.

Telemetry - Transmission of instrument readings to a remote location either by wire or by radio.

Telephone - Apparatus designed to convert sound waves into electrical waves which are sent to and reproduced at a distant point.

Telephone Dialer - Device that, when activated, automatically dials one or more pre programmed telephone numbers and plays a prerecorded voice or coded message giving the nature and location of the alarm.

Telephone Entry System - Entry control system that has a telephone at the point of entry that can be used to contact someone who can control the point of entry.

Telephone Line - Wires existing between subscribers and central stations in a telephone system.

Telephone Line Monitor - Sensing device which detects telephone line tampering or failure.

Telephone Lines - Method of transmitting signals.

Telephony - Telecommunications system involving the transmission of speech information, allowing two or more persons to communicate verbally.

Television - System that converts both audio and visual information into corresponding electrical signals which are then transmitted through wires or by radio waves to a receiver which reproduces the original information.

Temperature Coefficient of Frequency - Rate at which frequency changes with temperature.

Temperature Sensor - Electromechanical device that produces a switched or continuous range response to the ambient temperature of its immediate environment.

Tempered - Strengthened.

Tempered Glass - Window plate approximately six to seven times more resistive to breaking than standard glass. When fractured tempered glass shatters into small comparatively harmless pieces.

Template - Precise detailed pattern used as a guide in the drilling or cutting.

Temporal Pattern Fire Alarm Signal - Distinctive audible signal having an output of two short bursts followed by one long tone burst.

Temporary Platform - A platform erected within an area for not more than 30 days.

Temporary Schedule - Temporary changes in times during which the alarm system is supposed to be armed or disarmed. Temporary schedules are access control and recording system functions.

Temporary Structure - A building or structure not meeting the definition of permanent structure.

Temporary Test Alarm Device - Small, low volume (or visual) indication device temporarily used in place of the system main (loud) output alarm devices during test procedures to avoid creating unnecessary disturbances from repeatedly triggering the alarm.

Tensile Strength - Pull stress required to break a given item. The term usually applies to wire.

Tensioned-Membrane Structure - A membrane structure incorporating a membrane and a structural support system such as arches, columns and cables, or beams wherein the stresses developed in the tensioned membrane interact with those in the structural support so that the entire assembly acts together to resist the applied loads.

Tent - A temporary structure, the covering of which is made of pliable material that achieves its support by mechanical means such as beams, columns, poles, or arches, or by rope or cables, or both.

Tera - (T) Metric prefix that represents 1012.

Terminal - (1) Wire connection point. (2) Point at which electrical connections are made. (3) Jack end of a connector or cable that accepts bare or terminated wire, such as cable TV, speaker or phone wire.

Terminal Box - Point where electrical connections are made.

Terminal Resistor - Resistor used as a terminating device.

Terminal Strip - Row or strip of terminals.

Terminating Capacitor - Capacitor sometimes used as a terminating device. Capacitor allows for supervision of the sensor antenna, especially if a long wire is used as the sensor.

Terminating Device - Used to terminate an electrically supervised circuit. It makes the electrical circuit continuous and provides a fixed impedance reference against which changes are measured to detect an alarm condition. The impedance changes may be caused by a sensor, tampering, or circuit trouble.

Termination– (1) Connection point (2) Non inductive resistor that has the same resistance as the characteristic of the cable being used.

Termite Shield - Shield, usually of galvanized metal, placed in or on a foundation wall or around pipes to prevent the passage of termites.

Termites - Wood eating insects that superficially resemble ants in size and general appearance, and live in colonies.

Terra Cotta - Ceramic material molded into masonry units.

Test – (1) Sequence of operations intended to verify the correct operation or malfunctioning of a piece of equipment or system. (2) The act of activating one or more sensors, devices, controls, communicating devices, or other components of an alarm system in an effort to confirm proper operation of the equipment.

Test Block - Strip used for testing and troubleshooting.

Test lead - Flexible, insulated wire attached to a test prod.

Test point - Terminal intended for connection of test equipment in the repair or debugging of a circuit.

Test Service - A service to test the operation of alarm systems. See also Test.

Textual Audible Notification Appliance - A notification appliance that conveys a stream of audible information. An example of a textual audible notification appliance is a speaker that reproduces a voice message.

Textual Visible Notification Appliance - A notification appliance that conveys a stream of visible information that displays an alphanumeric or pictorial message. Textual visible notification appliances provide temporary text, permanent text, or symbols. Textual visible notification appliances include, but are not limited to, annunciators, monitors, CRTs, displays, and printers.

TGS - See Taguchi gas sensor.

Theft - Larceny, or in some legal classifications, the group of offenses including robbery, burglary, extortion, fraudulent offense, hijacking.

Thermal Barrier - A material that limits the average temperature rise of an unexposed surface to not more than 139°C (250°F) for a specified fire exposure complying with the standard time-temperature curve of NFPA 251, Standard Methods of Tests of Fire Endurance of Building Construction and Materials.

Thermal Detector - Device that senses a rapid rise in temperature or responds at a fixed temperature.

Thermal Relay - Relay activated by a heating element.

Thermal Switch - Heat sensitive switching sensor that is activated when the sensed temperature exceeds a specific level.

Thermistor - Temperature sensitive semiconductor that has a negative temperature coefficient of resistance. As temperature increases, resistance decreases.

Thermocouple - Temperature transducer consisting of two dissimilar metals welded together at one end to form a junction that when heated will generate a voltage.

Thermoply ™ - Exterior laminated sheathing nailed to the exterior side of the exterior walls. Normally ¼“thick, 4 X 8 or 4 x 10 sheets with an aluminumized surface.

Thermostat - Device that opens or closes a circuit in response to changes in temperature.

Third Party - (1) Distributors or retailers who provide warranty service and technical support in place of the original manufacturer. (2) Companies that manufacture products that are sold under another company’s brand name.

Threads - Grooves cut in metal.

Threat - Potential for violation of security, which exists when there is a circumstance, capability, action, or event that could breach security and cause harm.

Threat Assessment - Identification of types of threats that an organization might be exposed to.

Three Dimensional Shingles - Laminated shingles. Shingles that have added dimensionality because of extra layers or tabs, giving a shake -like appearance. May also be called "architectural shingles".

Three Phase Supply - AC supply that consists of three AC voltages 120° out of phase with each other.

Threshold– (1) Minimum point at which an effect is produced or detected. (2) The bottom metal or wood plate of an exterior door frame. Generally they are adjustable to keep a tight fit with the door slab.

Thumb Turn - Unit which is gripped between the thumb and forefinger, and turned to project or retract a bolt.

Thyristor - Term used to classify all four layer semiconductor devices. SCRs and triacs are examples of thyristors.

Tie - Wood member which binds a pair of principal rafters at the bottom.

Tie Line - See Dedicated Circuit.

Tile - Hard ceramic or plastic unit used for flooring or covering walls.

Tile Field - Open-joint drain tiles laid to distribute septic tank effluent over an absorption area or to provide subsoil drainage in wet areas.

Tilt - Vertical up and down movement.

Tilt Switch - Alternate name for a mercury switch.

Time and Attendance - Ability to utilize the time in and time out information per user, for the purpose of keeping track of employee's hours at a facility.

Time and Material (T&M) Service - Service provided for a user who does not have a maintenance agreement or where the service provided is not included in the service contract.

Time and Materials Contract - Contract which specifies a price for different elements of the work such as, cost per hour of labor, overhead, profit, etc. Such a contract may not have a maximum price or may state a 'price not to exceed...'.

Time Delay - (1) Circuit designed to introduce a pause of a preset length before the system responds to some triggering condition. (2) Time interval, measured by an electronic circuit, used to provide a desired feature such as entry/exit delays.

Time Division Multiplexing - (TDM) Transmission of two or more signals on the same path, but at different times.

Time Lapse Imaging - Recording system that takes periodic sequential samples of a scene.

Time Lapse VCR - a type of video recorder that can be set to record continuously over long periods.

Time Schedules – Action based on time of day, date and user. Also allows for holidays, etc.

Time Zones - "Schedules" that set actions or allow cards to function or not function depending on the time of day.

Time/date Generator - Device that displays the time and date in the monitor display.

Time-Out Device - A separate device or feature built into alarm system control equipment that turns off signal indicating devices after a pre-determined time interval which is deemed adequate to warn occupants of a detected emergency, to scare criminals, or to alert neighbors, public safety personnel, or passers-by. Time-out devices help reduce the nuisance effect of an alarm system on neighbors. Before signal indicating devices can operate again, a manual reset procedure is generally required.

Timer - Circuit that is activated when triggered and remains activated for a specific preset period of time and then automatically deactivates itself. Also called a timing circuit.

Timing - Procedure that times events so the controller can determine whether the event is normal and within limits or not.

Timing Circuit – See timer.

Tin Snips - Hand shears for cutting sheet metal.

Tinfoil – See window foil

Tinned Copper - Tin coating added to copper to aid in soldering and to inhibit corrosion.

Tinned, Wire - Copper wires which have been coated or plated with metallic tin to facilitate soldering to terminals.

Tinner - Another name for the heating contractor.

Tip Up - Downspout extension that directs water (from the home's gutter system) away from the home. They typically swing up when mowing the lawn, etc.

Toe Nailing - To drive a nail in at a slant. Method used to secure floor joists to the plate.

Toenail - Driving nails at an angle into corners or other joints.

Toggle - Bi-stable device.

Toggle Bolt - Holding device with spring out wings, used in panel or drywall construction. Device is inserted through bored hole, then the wings spring open on the other side of the panel or wallboard. Bolt is then tightened into the holder.

Toggle Switch - Spring loaded switch that is put in one of two positions either on or off.

Token Ring - Local area network in which all computers are connected in a ring or star topology and a binary digit or token - passing scheme is used in order to prevent the collision of data between two computers that want to send messages at the same time.

Tolerance - Permissible deviation from a specified value normally expressed as a percentage.

Tone Generator - Tool use to identify conductors and breaks in conductors. The generator induces a signal onto the conductor at one end, and the sensor can determine which conductor has the signal connected to it. May be used at the end of the cable or any point along the cable.

Tongue-And-Groove - Carpentry joint in which the jutting edge of one board fits into the grooved end of a similar board.

Tool - Device or instrument used for doing mechanical work.

Top Chord - Upper or top member of a truss.

Top Plate - Top horizontal member of a frame wall supporting ceiling joists, rafters, or other members.

Topology - Geometric arrangement of a computer system. Common topologies include a bus, star, and ring.

Torch Down Roof or Single Ply or Modified Bitumen - Newer roofing material mostly used on flat roofs. This material usually comes in rolls and is applied to the roof with an open flame or 'torch'.

Torque - Twisting force.

Torque Wrench - Wrench having a measuring device on it that indicates the number of pounds of pressure exerted.

Touch Screen Control - System by which all the controls are displayed on the screen of a special monitor. Touching a portion of the screen controls system functions.

Touch Sensitivity - Sensitivity of a capacitance sensor at which the alarm device will be activated only if the intruder touches or comes in very close proximity to the protected object.

Tower - An enclosed independent structure or portion of a building with elevated levels for support of equipment or occupied for observation, control, operation, signaling, or similar limited use.

Townhouse - Multi unit construction where dwelling units share common walls.

TP - Twisted Pair Wire. Two insulated copper wires twisted together. The twists provide balance and noise immunity.

Tracking - Zoom lens' ability to remain in focus during the entire zoom range from wide angle to telephoto position.

Trade - Organized craft, such as electricians or plumbers, a construction specialty.

Trade Associations - Groups of manufacturers or contractors who join together to promote safety and high standards.

Trade Secret - Information that derives independent economic value from being not generally known to and not being readily ascertainable by other persons who can obtain economic value from its disclosure or use, and is the subject of efforts that are reasonable under the circumstances to maintain its secrecy.

Transaction - Economic event that affects the financial affairs of a business. Examples are buying materials and paying wages.

Transceiver - Device capable of sending and receiving signals.

Transducer– (1) Device that converts energy from one form to another. (2) A device that produces an electric current in response to vibration, motion, or shock.

Transformer– (1) Device used to change the level of AC voltage. (2) Inductor with two or more windings. Through mutual inductance, current in one winding called a primary will induce current into the other windings called secondaries.

Transformer Coupling - Also called inductive coupling. Coupling of two circuits by means of mutual inductance provided by a transformer.

Transient - (1) Brief surge of voltage in power lines. (2) Any increase or decrease in voltage, current, power, heat, and so forth, above or below a nominal value that is not normal to the source.

Transient Suppressor - Protects data lines from high transients such as lighting and inductive loads.

Transistor - Term derived from "transfer resistor." Semiconductor device that can be used as an amplifier or as an electronic switch.

Transistor Switch - Electronic switch circuit built around one or more saturated transistors.

Transmission - Sending of information.

Transmission Channel - A circuit or path connecting transmitters to supervising stations or subsidiary stations on which signals are carried.

Transmission Control Protocol (TCP) - Set of rules (protocol) used along with the Internet Protocol to send data in the form of message units between computers over the Internet.

Transmission Line - Conducting line used to transmit signal energy between two points.

Transmission Test - Verification of the ability of a system control to send signals to the monitoring facility which it is intended to notify.

Transmitter - (1) Equipment used to achieve transmission. (2) Small, push button device that causes the garage door to open or close. (3) Device that sends a signal to a remote point. (4) Device or part of the alarm system that actually signals the central station. (5) A system component that provides an interface between signaling line circuits, initiating device circuits, or control units and the transmission channel.

Transom - Hinged window over a door.

Transponder – (1) Device that gathers and converts alarm sensor data for transmission to a signal processor. (2) A multiplex alarm transmission system functional assembly located at the protected premises.

Transport Layer Security (TLS) - Protocol that ensures privacy between communicating applications and their users on the Internet.

Trap – (1) Device, usually a switch, installed within a protected area, which serves as secondary protection in the event a perimeter alarm system is successfully penetrated. (2) Plumbing fitting that holds water to prevent air, gas, and vermin from backing up into a fixture. See Trip Wire.

Trap Detection Zone - Volumetric sensor installed so as to detect an intruder in a likely traveled corridor or pathway.

Trap Door - Small door opening into attic or cellar areas; an access door.

Tread - Walking surface board in a stairway on which the foot is placed.

Treated Lumber - Wood product which has been impregnated with chemicals to reduce damage from wood rot or insects. Often used for the portions of a structure which is likely to be in ongoing contact with soil and water. Wood may also be treated with a fire retardant.

Trench - Narrow excavation made in the earth.

Trend - General direction, indicating how things change over time.

Trespass - Entering upon the property of another without consent after receiving immediately prior to entry, notice that entry is prohibited, or remaining upon the property after receiving notice to depart.

Triac - Bidirectional SCR. Similar to a SCR in all ways, except when triggered it permits the current to flow in either direction. The external current flow must be interrupted to deactivate a triac.

Trickle Charge - Continuous direct current, usually very low, which is applied to a battery to maintain it at peak charge or to recharge it after it has been partially or completely discharges. Usually applied to nickel cadmium (NICAD) or wet cell batteries.

Trigger - Pulse used to initiate a circuit action.

Trigger Diode - Special diode designed to provide an optimum gating signal for a SCR, triac, or similar device.

Trigger Outputs - Solid state digital switches (transistors) that can be configured as programmable signal outputs.

Triggering - Activating or turning on a function in response to some external stimulus.

Trim - (1) Finish materials in a building, such as moldings applied around openings (window trim, door trim) or at the floor and ceiling of rooms (baseboard, cornice, and other moldings). (2) Work that contractors perform to finish their respective aspects of work. (3) Physical work of installing interior doors and interior woodwork, to include all handrails, guardrails, stair way balustrades, mantles, light boxes, base, door casings, cabinets, countertops, shelves, window sills and aprons, etc. (4) Exterior - Finish materials on the exterior a building, such as moldings applied around openings (window trim, door trim), siding, windows, exterior doors, attic vents, crawl space vents, shutters, etc. Also, the physical work of installing these materials

Trimmer - (1) Vertical stud that supports a header at a door, window, or other opening. (2) Small value variable capacitor, resistor or inductor used to fine tune a larger value.

Trip - To activate or set off a device or system.

Trip wire switch - A string or wire manually set before the alarm system is armed, that an unsuspecting intruder will knock out of its receiving socket if the trip wire is disturbed.

Trouble – (1) Abnormal condition, such as a short circuit, within a loop that prevents normal arming and subsequent operation. (2) A non-emergency condition indicating that the alarm system is inoperative or functioning at less than optimum capability. Trouble conditions may include sensors that have become less sensitive or more susceptible to causing false alarms, or batteries that have deteriorated or are inoperative.

Trouble Advisory - Sensor circuits inside control equipment, or devices outside control equipment that detect electrical or mechanical problems of the alarm system as opposed to problems relating to the protected premises.

Trouble Signal – (1) Signal indicating trouble of any kind. (2) A signal initiated by the fire alarm system or device indicative of a fault in a monitored circuit or component.
See Signal.

Troubleshooting - (1) Systematic approach to locating the cause of a fault in an electronic circuit or system. (2) Process of logically analyzing a circuit or system to localize the source of some fault or problem, so it can be repaired or replaced.

Truss - Engineered and manufactured roof support member with "zig-zag" framing members. Does the same job as a rafter but is designed to have a longer span than a rafter.

T-tap - Method of connecting more than two conductors together at one point.

Tub Trap - Curved, "U" shaped section of a bath tub drain pipe that holds a water seal to prevent sewer gasses from entering the home through tubs water drain.

Tube and Knob Wiring - Form of electrical wiring used before W.W.II.

Tuner - Portion of a radio or TV set that selects the desired incoming radio waves and translates them into audio signals.

Tuner Cleaner Spray - Chemical used to clean electrical switch contacts, potentiometers, and similar devices.

Turnkey - When the subcontractor provides all materials (and labor) for a job.

Turnstile - Rotating gate.

Turpentine - Petroleum, volatile oil used as a thinner in paints and as a solvent in varnishes

TV - (1) Television. (2) Terminal velocity.

Twenty-four Hour Circuit - Circuit that will initiate an alarm regardless of the systems arming status.

Twist Off Screw or Bolt - Screw or bolt designed to be tightened but once in place, any attempt to loosen it will cause the head to twist of, leaving only a flat head they can not be turned.

Twisted Pair - Cable composed of two small substantially insulated conductors, twisted together with or without a common covering.

Twisted Pair Wire - Two wires that are held together by twisting around each other.

Twisted Wire, Heat Sensor - A length of twisted steel wire, separated by thermoplastic insulation designed to melt at temperatures indicative of fire. As the plastic insulation melts, the pressure of the twisted steel wires causes the wires to "short", triggering the fire alarm signal.

Two Man Rule - Rule that requires the presence of at least two authorized persons, each capable of monitoring the conduct of the other. Also called the two person rule.

Two-Family Dwelling Unit - A building that consists solely of two dwelling units with independent cooking and bathroom facilities.

Type A Error - Error in which a valid card is rejected. Also called a Type 1 error.

Type A Public Fire Alarm Reporting System - A system in which an alarm from a fire alarm box is received and is retransmitted to fire stations either manually or automatically.

Type B Error - Error which an invalid card is accepted. Also called a type 2 error.

Type B Public Fire Alarm Reporting System - A system in which an alarm from a fire alarm box is automatically transmitted to fire stations and, if used, is transmitted to supplementary alerting devices.

U Nail - Curved, double -pronged nail (also called a staple) designed to hold a wire or cable against a wall or other surface, under the curved center of the nail.

UHF - Abbreviation for "ultra high frequency.

UL - Underwriters' Laboratories. Independent testing agency that checks electrical devices and other components for possible safety hazards including security devices, the installation of security systems, and the monitoring of security systems.

UL Certificate - Certificate issued by an alarm company listed with Underwriters Laboratories to indicate the system meets certain specifications for service, installation and degree of protection.

UL Certified – System that meets UL specifications for equipment, installation, and service.

Ultra - Prefix meaning above or higher than.

Ultrasonic - Sound wave whose frequency lies above the typical upper limit of human hearing, which is 20,000 cycles per second or 20 kHz.

Ultrasonic Detection - Ultrasonic sound waves saturate an area. If there is movement, sound waves are disrupted, triggering an alarm.

Ultrasonic Detector – (1) Device that detects movement using the Doppler shift principle; the detector transmits and receives high frequency sound waves and reacts to changes in those sound waves. (2) A motion sensor, similar to a microwave sensor, but one that operates in a lower frequency range in which the emitted transmissions do not penetrate solid building walls, partitions, floors or ceilings

Ultrasonic Wave – See Ultrasonic.

Ultraviolet - Electro magnetic radiations at a frequency above that of visible light. Radiations having wavelengths from about 200 to 4000 angstrom units.

Ultraviolet (UV) Fire Detector - Sensor that detects a specific increase in ultraviolet radiation such as that generated by a flame.

Uncertainty Analysis - An analysis performed to determine the degree to which a predicted value will vary.

Under Dome Bell - Type of bell on which the hammer is completely covered by the gong.

Undercoat - Coating applied prior to the finishing or top coats of a paint job.

Underground Plumbing - Drain and waste lines that are installed beneath a basement floor.

Underground Structure - A structure or portions of a structure in which the floor level is below the level of exit discharge.

Underlayment – (1) ¼" material placed over the sub floor plywood sheeting and under finish coverings, such as vinyl flooring, to provide a smooth, even surface. (2) Secondary roofing layer that is waterproof or water -resistant, installed on the roof deck and beneath shingles or other roof -finishing layer.

Unicast - Broadcasting from host to host.

Uninterruptible Power Supply - (UPS) Device that provides continuous power conditioning to an AC line within prescribed plus or minus tolerances.

Union - Plumbing fitting that joins pipes end to end.

Unix - Popular multi-user, multitasking operating system.

Unlisted Telephone Number - A non-published dial-up network telephone number used for a specific purpose.

Unregulated - Not held to a constant value; free to fluctuate.

Unregulated Power Supply -Power supply where the output current or voltage is not automatically held to a constant value.

Update - See Follow-up Notification.

UPS - See uninterruptible power supply.

URL - Uniform Resource Locator. Global address of documents and other resources on the World Wide Web. The first part of the address indicates what protocol to use, and the second part specifies the IP address or the domain name where the resource is located.

USB Port - Computer connection port, or interface, for plugging in devices such as a keyboard, mouse, printer, scanner, and telephone equipment without restarting your computer.

User - Person, organization entity, or automated process that accesses a system, whether authorized to do so or not.

User Codes - Codes that are used to arm, disarm, or perform other operations of the system.

User Friendly - Equipment or a process that is easy to use.

User ID - Unique sequence of alphanumeric characters assigned to an authorized system user.

User Password - Password that must be correctly supplied to gain access to a system.

User Representative Notification - Notification provided to authorized user agents upon receipt of, or failure to receive, certain signals, whether or not one or more PSAPs have been notified.

User Training - Training authorized personnel in the correct use of the system, including ways to prevent false alarms and alarm abort and cancellation procedures.

Utility Easement - Area of the earth that has electric, gas, or telephone lines.

Utility Knife - Cutting tool with a replaceable blade.

UTP - Unshielded twisted pair.

UURHOT - Unused underground residential heating oil tank. Usually found in homes which were once heated with oil.

V – Symbol for voltage

VA - Abbreviation for "volt ampere"

VAC - Volts AC.

Vacuum Tube - Electron tube evacuated to such a degree that its electrical characteristics are essentially unaffected by the presence of residual gas or vapor. Have been essentially replaced by transistors for amplification and rectification. Cathode ray tubes are still used as display devices.

Valence Electrons - Electrons in the outermost orbits of an atom. It is these electrons which determine the chemical and physical properties of a material; see Free Electron.

Valence Shell - Outermost electron shell for a given atom. The number of electrons in this shell determines the conductivity of the atom.

Valley - "V" shaped area of a roof where two roofs meet.

Valley Flashing - Sheet metal that lays in the "V" area of a roof valley.

Value Added Reseller - Company that sells hardware and software, and adds value to the product by installing it and servicing it after the sale.

Vapor Barrier - Building product installed on exterior walls and ceilings under the drywall and on the warm side of the insulation. It is used to retard the movement of water vapor into walls and prevent condensation within them. Normally, polyethylene plastic sheeting is used.

VAR - See value added reseller.

Variable Capacitor - Capacitor whose capacitance can be change by varying the effective area of the plates or the distance between the plates.

Variable Resistor - Resistor whose resistance can be changed by turning a shaft. See also "potentiometer and rheostat."

Varnish - Used on window foil after installation to protect the foil and help adhere it to the glass.

Vault - Windowless closure with walls, floor and roof and one or more doors designed and constructed to delay penetration from forced entry.

Vault Door Switch - A special sensor that detects the open or closed position of a vault door.

VCO - Voltage controlled oscillator. The frequency of the output signal is determined by the level of some external control voltage. Often used in whooper alarms.

VCR – Abbreviation for "video cassette recorder."

Veneer - Extremely thin sheets of wood. Also a thin slice of wood or brick or stone covering a framed wall.

Venetian Window - Window with one large fixed central pane and smaller panes at each side.

Vent – (1) Pipe or duct which allows the flow of air and gasses to the outside. (2) Moving glass part of a window sash.

Vent Pipe - Pipe which allows gas to escape from plumbing systems.

Ventilated - Provided with a means to permit enough circulation of air to remove an excess of heat fumes and vapors.

Verbal Notification - A telephone or radio call to the PSAP, to provide RFR information about a detected emergency, the type of emergency, name of the alarm user, address, and other relevant information that the monitoring facility can provide or the PSAP may request.

Verge - Edge of tiles, slates or shingles, projecting over the gable of a roof.

Verification Method - A procedure or process used to demonstrate or confirm that the proposed design meets the specified criteria.

Verified Alarm - An alarm that has been confirmed by monitoring facility contact with the protected premises or an authorized user agent, an alarm from sequentially detected and reported events, a multiple-sensor detected event, or an alarm reported by a system user.

Verify - (1) To prove to be true. (2) To call the alarm site by telephonic or other electronic means in an attempt to avoid an unnecessary dispatch.

Vermiculite - Mineral used as bulk insulation and also as aggregate in insulating and acoustical plaster and in insulating concrete floors.

Vertical - Straight up and down. Opposed to horizontal.

Vertical Opening - An opening through a floor or roof.

Very High Frequency - (VHF) Electromagnetic frequency band from 30 MHz to 300 MHz.

Very Low Frequency - (VLF) Frequency band from 3 kHz to 30 kHz.

VHF - Very high frequency.

Vibrating Horn - Electrically operated horn in which the action of a vibrating armature working against a metal diaphragm produces a sound.

Vibration Contact - Type of switch that responds to vibration of the surface it is mounted on.

Vibration Detection System - Alarm system which employs one or more contact microphones or contact vibration sensors which are fastened to the inner surfaces of the area or object being protected to detect excessive levels of vibration.

Vibration Sensor - A sensor that detects vibrations generated during forced entry or an attempted forced entry.

Video - Relating to any picture or visual information. From the Latin word meaning "I see."

Video Alarm Verification - See Visual Alarm Verification.

Video Amplifier - Amplifier having one or mare stages designed to amplify video signals.

Video Card - Circuit card that controls the monitor of other visual display of a computer.

Video Cassette Recorder - Magnetic recorder which records live CCTV picture in black and white or color, with sound onto a cassette containing magnetic tape.

Video Motion Detection - Detecting movement in the view of the camera by the electronic analysis of the change in picture contrast.

Video Motion Detector - Device used in conjunction with a CCTV system to detect movement within an area covered by a video camera. The video motion detector digitally analyzes a static picture several times a second. Any significant change in the picture triggers an alarm. Some video motion detectors allow the operator to select only portions (windows) of the video image for motion detection.

Video Switcher - Electronic device that routes video signals from multiple camera locations to one or more monitors. A switcher may also provide sequencing, homing, and bridging.

Video Type Lens - Auto-iris lens without an internal circuit to control the iris. All iris control voltages come from circuit located within the camera.

Vidicon - Common type of camera pickup tube. It translates the effect of light striking its photo -sensitive surface into electrical impulses.

Violation – Disturbance, interruption, tampering.

Virtual Ground - Point in a circuit that is always at approximately ground potential. Often a ground for voltage, but not for current.

Virtual Private Network - (VPN) Restricted-use, logical (i.e., artificial or simulated) computer network that is constructed from the system resources of a relatively public, physical (i.e., real) network (such as the Internet).

Virus - Hidden, self replicating section of computer software, usually malicious logic, that propagates by infecting - i.e., inserting a copy of itself into and becoming part of another program. A virus cannot run by itself; it requires that its host program be run to make the virus active.

Vise - Tool for holding or clamping; jaws tighten to grasp the work.

Visible Notification Appliance - A notification appliance that alerts by the sense of sight.

Visqueen - A 4 mil or 6 mil plastic sheeting.

Visual Alarm Verification - The transfer to the monitoring facility of visual conditions existing at the protected premises as a result of activation of one or more non-video sensors, to confirm or deny the validity of the alarm signal.

VOD - Video on demand. Material you can order from digital cable or satellite and pause and fast -forward just like a video or DVD.

Voice Coil - Coil attached to the diaphragm of a moving coil loudspeaker. The coil is moved through an air gap between magnetic pole pieces.

Voice Driver - Integrated circuit that creates a signal simulating the human voice.

Voice Grade - Telephone circuit suitable for transmitting band pass from 300 to 2700 Hz or greater, or having certain standards of noise and interference suppression to facilitate intelligible speech transmission.

Voice Intelligibility - Audible voice information that is distinguishable and understandable.

Voice Over Internet Protocol (VoIP)- VoIP or IP Telephony, also called 'Internet telephony', is technology that enables routing of voice conversations over the Internet or a dedicated Internet Protocol (IP) network instead of dedicated voice transmission lines. This allows elimination of circuit switching and the associated waste of bandwidth. Instead, packet switching is used, where IP packets with voice data are sent over the network only when data needs to be sent, i.e., when a caller is talking. VoIP may not properly handle outgoing calls from fax machines, TiVo/ReplayTV boxes, satellite television receivers, alarm systems, conventional modems or FAX modems, and other similar devices that depend on access to a voice-grade telephone line for some or all of their functionality. At present, these types of calls sometimes go through without a hitch, but in other cases they won't go through at all.

Voice Synthesizer - Synthesizer that can simulate speech by stringing together phonemes.

Void - Cardboard rectangular boxes that are installed between the earth (between caissons) and the concrete foundation wall. Used when expansive soils are present.

VoIP- see Voice Over Internet Protocol.

Volt Ampere - Unit of apparent power in an AC circuit containing capacitive or inductive reactance. Apparent power is the product of source voltage and current.

Voltage - (V) Term used to designate electrical pressure or force that causes current to flow. A measure of electrical potential. One volt is the potential difference needed to produce one ampere of current through a resistance of one ohm.

Voltage Drop - Loss of voltage in circuit wires. The greater the distance voltage has to travel, the greater the voltage drop.

Voltage Rating - Maximum voltage a component can withstand without breaking down.

Voltage Regulator - Circuit designed to hold an input voltage to a specific value, despite varying external conditions (such as a variable load).

Voltage Source - Circuit or device that supplies voltage to a load.

Voltage Transient - Momentary surge or dip on an AC line, frequently caused by the shutdown or startup of motor driven equipment sharing the same line.

Voltmeter - Instrument used to measure difference in potential between two points.

Volume - Magnitude or power level of audio frequency. Measured in volume units (VU).

Volumetric Protection - Protection of three dimensional space.

Volumetric Sensor - Sensor with a detection zone that extends over a volume, an area in three dimensions, such as an entire room, part of a room, or a hallway. Ultrasonic motion and microwave detectors are an example of this type of sensor.

VOM Volt -Ohm -Milliammeter - Basic piece of test equipment, good for most troubleshooting of most standard home alarm system. A VOM can measure voltage, resistance, or current.

Vulnerability - Flaw or weakness in a system's design, implementation, or operation and management.

Wafer Board - Manufactured wood panel made out of 1" - 2" wood chips and glue. Often used as a substitute for plywood in the exterior wall and roof sheathing. See, "Oriented Strand Board."

Wainscoting - Lower three or four feet of an interior wall when lined with paneling, tile or other material different from the rest of the wall.

Walk Test– (A) Function that allows an authorized user to test the detection devices. You should test all devices on a regular basis. (2) Testing of a motion detector by walking through the protected area to determine the range of the detector.

Walk Through - Final inspection of a home before "Closing" to look for and document problems that need to be corrected.

Wall - Load bearing, enclosing side or interior part of a building. Non load bearing interior walls are called partitions.

Wall Heater - Heater recessed in the wall.

Wall Out - When a painter pray paints the interior of a home.

Wall Outlet - Spring contact device permanently connected to the power line wiring of a home or building and installed in a box mounted in or on the wall.

Wall Sheathing - Sheets of plywood, gypsum board, or other material nailed to the outside face of studs as a base for exterior siding.

Wallboard Saw - Short, thin bladed saw used for cutting gypsum board, insulating board, masonite, hardboard, and the like.

War Chalking - War chalking is marking areas, usually on sidewalks with chalk.

Warning Decal - Sticker that warns that the premises are protected by some specific type of alarm system.

Warning Device - Any siren, bell, light, telephone dialer, or other device to indicate when a violation has taken place in a security system.

Warping - Any distortion in a material.

Warranty – (1) Usually written guarantee of the integrity of a product and of the maker's responsibility for the repair or replacement of defective parts. (2) A written document that defines the alarm company's obligations to correct identified and reported to the Alarm company problems experienced by a user. A warranty (1) may include an obligation to repair or replace defective parts, subassemblies, or equipment, (2) may, or may not, include labor to effect such repairs and replacements, and (3) may be for defined periods of time. Hardware manufacturers' warranties may, or may not, extend to the user.

Washer - Round collar used with a bolt and nut or screw to give an enlarged bearing surface under the nut, bolt or screw.

Waste Pipe and Vent - Plumbing plastic pipe that carries waste water to the municipal sewage system.

Watch Mode - Sometimes called Chime or Monitor. An arming level that will only activate a sounder at the keypad when a door or window is opened.

Watchman's Reporting System - Supervisory alarm system arranged for the transmission of a patrolling watchman; regular recurring report signals from stations along the patrol route to a central supervisory agency.

Water Board - Water resistant drywall to be used in tub and shower locations. Normally green or blue colored

Water Closet - Another name for toilet.

Water Detector - Sensing device that detects the presence of water.

Water Flow Sensors - See Sprinkler System Water Flow Sensors.

Water Meter Pit (or vault) - Box/cast iron bonnet and concrete rings that contains the water meter.

Water Repellent Preservative - Liquid applied to wood to give the wood water repellant properties

Water Table - Location of the underground water.

Water Tap - Connection point where the building water line connects to the main municipal water system.

Waterflow Alarm - Initiates an alarm signal whenever water flows through the sprinkler system. The alarm is transmitted to the central station, where it is handled as a fire alarm.

Waterflow Sensor - Device that detects the movement of water in a pipe.

Water-Surrounded Structure. A structure fully surrounded by water.

Watertight - Constructed so moisture will not enter or interfere with operation.

WATS (Wide Area Telephone Service) - Telephone company service allowing reduced costs for certain telephone call arrangements. In-WATS or 800-number service calls can be placed from anywhere in the continental United States to the called party at no cost to the calling party. Out-WATS is a service whereby, for a flat-rate charge, dependent on the total duration of all such calls, a subscriber can make an unlimited number of calls within a prescribed area from a particular telephone terminal without the registration of individual call charges.

Watt - Rate of flow of electrical energy; the rate at which electrical energy is converted to other kinds of energy. One watt of power is expended when one ampere of direct current flows through a resistance of one ohm. In an AC circuit, true power is the product of effective volts and effective amperes, multiplied by the power factor.

Watt Hour - Unit of electrical work, equal to a power of one watt being absorbed for one hour.

Wattage Rating - Maximum power a device can safely handle continuously.

Wattmeter - Instrument used to measure electric power in watts.

Wave - Electric, electromagnetic, acoustic, mechanical or other form whose physical activity rises and falls or advances and retreats periodically as it travels through some medium.

Waveform - Shape of a wave.

Waveguide - Rectangular or circular pipe used to guide electromagnetic waves at micro frequencies.

Wavelength - Distance between two points of corresponding phase and is equal to waveform velocity divided by frequency. The distance between the peaks of a sinusoidal wave. All radiant energy can be described as a wave having a wavelength. Wavelength serves as the unit of measure for distinguishing between different parts of the spectrum. Wavelengths are measured in microns (µm), nanometers (nm), or angstroms (Å).

WC - Abbreviation for water closet (toilet).

Weather Strip - Narrow sections of thin metal or other material installed to prevent the infiltration of air and moisture around windows and doors.

Weather Stripping - Metal, wood, plastic or other material installed around door and window openings to prevent air infiltration.

Weathered-Membrane Material - Membrane material that has been subjected to not less than 3000 hours in a weatherometer in accordance with ASTM G 155, Standard Practice for Operating Xenon Arc Light Apparatus for Exposure of Non-Metallic Materials, or approved equivalent.

Weatherization - Work on a building exterior in order to reduce energy consumption for heating or cooling. Work involving adding insulation, installing storm windows and doors, caulking cracks and putting on weather -stripping.

Weatherproof - Constructed so that exposure to weather will not interfere with operation.

Weatherproofing - Method for limiting corrosive or damaging effects of outdoor environmental conditions, such as rain, high winds, wide temperature extremes, etc.

Web – Central portion of an I beam

Web Server - Software process that runs on a host computer connected to the Internet to respond to requests for documents from client web browsers.

Weber - (Wb) Unit of magnetic flux. One Weber is the amount of flux that when linked with a single turn of wire for an interval of one second will induce an electromotive force of one volt.

Weep Holes - Small holes in storm window frames that allow moisture to escape.

Wet Cell - Battery cell having a liquid electrolyte.

Wet Pipe System - Fire sprinkler system that normally contains water. Water is available in the pipe, at the sprinkler head, to begin extinguishing the fire immediately.

Wet-Pipe Flow Sensor - A sensor that detects the flow of water in a wet-pipe sprinkler system.

Wetting - Term used in soldering to describe the condition that occurs when the metals being soldered are hot enough to melt the solder so it flows over the surface.

Wheatstone Bridge - Four arm bridge circuit used to measure resistance, inductance or capacitance.

Whetstone - Stone for sharpening a cutting edge.

White Level - Brightest part of a video signal corresponding to approximately 1.0 volt.

WHOIS - An IP for finding information about resources on networks.

Whole House Fan - Fan designed to move air through and out of a home and normally installed in the ceiling.

Wholesale - Business to business sales versus retail which are sales to the public.

Whooper Siren - Type of electronic output alarm device with a very distinctive and ear -catching "whoop -whoop" sound,

Wide Gap Contact - Special type of magnetic contact designed to work efficiently when the gap between the switch and the contact is greater than that suitable for standard magnetic contacts.

Wiegand Card - Plastic card, approximately the shape of a credit card, which has an embedded module of inert, specially treated ferromagnetic wires which generate a voltage pulse that can be sensed by a coil within the card reader.

Wiegand Effect - Manner in which magnetic fields in specially prepared wire suddenly and forcibly reverse themselves when exposed to an external magnetic field. The magnetic reversals can be converted into distinct consistent electrical pulses.

Wind Bracing - Metal straps or wood blocks installed diagonally on the inside of a wall from bottom to top plate, to prevent the wall from twisting, racking, or falling over "domino" fashion.

Winding - One or more turns of a conductor wound in the form of a coil.

Window - Glazed opening in a wall of a building.

Window Buck - Square or rectangular box that is installed within a concrete foundation or block wall. A window will eventually be installed in this "buck" during the siding stage of construction

Window Foil - Thin metal tape applied to windows and similar breakable surfaces to detect breakage.

Window Frame - Stationary part of a window unit; window sash fits into the window frame.

Window Jamb - Side area of window.

Window Sash - Operating or movable part of a window; the sash is made of window panes and their border.

Window Schedule - Table giving the number, size, rough opening, type, hardware, manufacturer, light size, finish and so on for every window in a structure.

Window Sill - Bottom area of a window.

Window Switch - A sensor that detects the open or closed position of a window, or an in-between position in a situation where a window may be set to a partially open position while the alarm system is armed, to permit outside air to enter a room without the window open wide enough for an intruder to enter.

Windowing - System for sharing a computer's graphical display presentation resources among multiple applications at the same time.

Wire - Single solid or stranded group of conductors having a low resistance to current flow. Used to make connections between circuits or points in a circuit.

Wire Cutter - Tool for cutting and stripping solid and stranded wire.

Wire Gauge - American wire gauge (AWG) is a system of numerical designations of wire diameters.

Wire Nut - Plastic device used to connect bare wires together.

Wire Pulling Basket - Tool used to grip conductors so that they may be pulled into a conduit or other wireway. This device that connects to a fishtape, drag line, or rope reduces the ends of the wires getting caught as the cable is pulled in.

Wire Stripper - Pliers type hand tool. It cuts and pulls off the insulation from the end of an insulated wire without scoring the wire.

Wire Tag - Small labels on one end of a long wire in a group of such wires, identifying the function of the wire or the location of its far end.

Wire Wrapping – Method of making a connection by wrapping wire around a rectangular pin.

Wired Alarm System - Alarm system that uses wires between sensors and the control panel.

Wireless– (1) Term describing radio communication that requires no wires between two communicating points. (2) A network type that links computers without wiring, by using radio signals. (3) System that uses radio waves or RF to send intrusion or status signals from detectors to the control. A supervised system also monitors the condition of the transmitter as well as its battery.

Wireless Application Protocol - Specification for a set of communication protocols to standardize the way that wireless devices, such as cellular telephones and radio transceivers, can be used for Internet access, including e -mail, the World Wide Web, newsgroups, and Internet Relay Chat.

Wireless Control Panel - A component that transmits/ receives and processes wireless signals.

Wireless Protection System - A system or a part of a system that can transmit and receive signals without the aid of wire. It can consist of either a wireless control panel or a wireless repeater.

Wireless Repeater- A component used to relay signals between wireless receivers or wireless control panels, or both.

Wiretapping - Monitoring and recording data that is flowing between two points in a communication system.

Wirewound resistor - Resistor in which the resistive element is a length of high resistance wire or ribbon usually nichrome wound onto an insulating form.

Wiring Diagram - Schematic showing the wiring layout and connections.

Wonderboard ™ - Panel made out of concrete and fiberglass usually used as a ceramic tile backing material. Commonly used on bathtub decks.

Wood Screw - Threaded, pointed fastener used for holding wood members together.

Woofer - Large loudspeaker designed primarily to reproduce low frequency audio signals.

Work - Work is done any time energy is transformed from one type to another. The amount of work done is dependent on the amount of energy transformed.

Workers Compensation Insurance - Required form of insurance for employers, designed to ensure that employees are compensated for work related accidents.

Working Drawings - Architects final drawings used to build the structure.

World Wide Web ("the Web", WWW, W3) - Global, hypermedia - based collection of information and services that is available on Internet servers and is accessed by browsers using Hypertext Transfer Protocol and other information retrieval mechanisms.

Worm - Computer program that can run independently, can propagate a complete working version of itself onto other hosts on a network, and may consume computer resources destructively.

Wrapped Drywall - Areas that get complete drywall covering, as in the doorway openings of bifold and bipass closet doors.

Wrench - Turning device used for tightening nuts on bolts, piping or other heavy fasteners.

X - Symbol for reactance.

X axis - Horizontal axis.

X -OR gate - Type of digital gate with two inputs and a single output. It is a specialized variation of the basic OR gate. In an X - OR gate, the output is HIGH if and only if one and only one of the inputs is HIGH. If both inputs are LOW, or if both inputs are HIGH, the output is LOW.

X10 - Way for electrical devices to communicate via existing wiring.

Y - "Y" shaped plumbing fitting.

Y axis - Vertical axis.

Yard - An open, unoccupied space other than a court, unobstructed from the ground to the sky on the lot on which a building is situated.

Yard of Concrete - One cubic yard of concrete is 3' X 3' X 3' in volume, or 27 cubic feet. One cubic yard of concrete will pour 80 square feet of 3 ½" sidewalk or basement/garage floor.

Yoke - Location where a home's water meter is sometimes installed between two copper pipes, and located in the water meter pit in the yard.

Z Axis - Axis perpendicular to both X and Y axes.

Z Bar Flashing - Bent, galvanized metal flashing that's installed above a horizontal trim board of an exterior window, door, or brick run. It prevents water from getting behind the trim/brick and into the home.

Zener Diode - Semiconductor diode in which reverse breakdown voltage current causes the diode to develop a constant voltage. Used as a clamp for voltage regulation.

Zeroing - Calibrating a meter so that it shows a value of zero when zero is being measured.

Zip Cord - Any parallel construction wire.

Zone– (1) Point or group of points in a system. (2) Section of a building that is served by one heating or cooling loop because it has noticeably distinct heating or cooling needs. (3) Section of property that will be watered from a lawn sprinkler system. (4) A defined area within the protected premises. A zone can define an area from which a signal can be received, an area to which a signal can be sent, or an area in which a form of control can be executed. (5) An identifiable sensor or group of sensors, connected to an alarm control, which can be addressed and manipulated from the control, from the monitoring facility, or from an arming station. Zones may also represent different types of protection such as burglar, fire, hold-up, etc.

Zone Expander - Device in an alarm system that allows more than one individual zone to be monitored over a single pair of wires.

Zone Light - Light or LED used to indicate the status of each zone in a zoned alarm system.

Zone Shunting - Removing a particular zone from an alarm system, allowing the rest of the system to function normally.

Zone Valve - Device (usually placed near the heater or cooler) which controls the flow of water or steam to parts of the building; it is controlled by a zone thermostat.

Zoned Circuit - Electrical path that provides continual protection for parts or zones of the protected area while releasing normally used doors and windows for access.

Zoned Systems - Identifies the zone area in which an alarm signal originates. Some systems can signal this zone information to the central station.

Zones - Small subdivision into which large areas are divided to permit selective access to some zones while maintaining other zones secure; and to permit pinpointing the specific location from which an alarm signal is transmitted.

Zoning– (1) Dividing an alarm system devices into sections to indicate the general location from which an alarm system signal is transmitted. (2) Governmental process and specification which limits the use of a property e.g. single family use, high rise residential use, etc.

Zoom - To enlarge or reduce on a continuously variable basis, the size of a televised image.

Zoom Lens - A lens system that may be effectively used as a wide angle, standard or telephoto lens by varying the focal length of the lens.

Zoom Ratio - Ratio of the starting focal length (wide position) to the ending focal length (telephoto position) of a zoom lens. A lens with a 10X zoom ratio will magnify the image at the wide angle end by 10 times.