
EAGLE SECURITY PRODUCTS, INC.



**MODEL 1227
TWO WAY AUDIO SYSTEM
INSTALLATION INSTRUCTIONS**



“LEADERS IN TWO WAY AUDIO TECHNOLOGY”

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1.0 GENERAL.

1.1 FEATURES.

The Model 1227 features include:

- ◆ Self contained speaker/microphones with quick, convenient terminal connectors.
- ◆ Eagle's Enhanced Voice for extraordinary clarity in talk back mode.
- ◆ Central station detection with automatic disconnect upon central station receiver hang-up.
- ◆ Compatibility with all digital communicators and control panels.
- ◆ Microprocessor technology which provides a wide range of operating modes.
- ◆ Activation by a new auto-trigger which requires no hard trigger from the control panel.
- ◆ When used in the call back mode, the system has the ability to bypass any other devices such as an answering machine and/or downloadable communicator, which may intercept the call.
- ◆ Remote volume control of the microphone from the central station.

1.2 DEFINITIONS.

LINE HOLD - The immediate turn on of the audio module which allows the module to use the phone call generated by the digital communicator when communicating with the central station.

CALL BACK - A procedure when the central station calls the premises after an alarm activation to initiate two way communications.

MANUAL CONTROL - The central station controls who talks and who listens with commands generated from a Touch-Tone[®] phone.

LISTEN ONLY / TALK ONLY - Both terms with respect to the central station. LISTEN ONLY allows the central station to listen without talking. TALK ONLY allows the central station to talk without listening.

2.0 REQUIREMENTS.

2.1 POWER.

Operating voltage: 9 to 14 VDC.
Current draw (standby): 80 mA max.
Current draw (active): 180 mA max.
Current draw (siren): 600 mA max.

2.2 SYSTEM.

The Eagle Model 1227 requires the following hardware:

1. A communicator/control panel to provide initial communication with the central station.
2. Connections to power (+12VDC & Ground) and telephone (Tip & Ring).
3. A minimum of one speaker/microphone (Eagle Model 2171).

2.3 CENTRAL STATION.

1. A receiver with listen-in or two way capability (stays on line after kiss off).
2. A Touch-Tone[®] phone in parallel with the receiver line if used in the line hold mode.

3.0 INSTALLATION.

3.1 INSTALLATION SUMMARY.

1. Mount 1227 into control panel.
2. Connect RJ-31X cord from RJ-31X block to **P1**.
3. Connect **P2** to control panel phone connections.
4. Run cable from 1227 to Eagle 2171 speaker/microphone location. Use shielded wire on runs longer than 20 feet.
5. Connect cable from the Eagle 2171 to **TB1 & TB2** (Speaker to **SPK & SPK**, Microphone signal to **M1**, Microphone shield to **GND** and Microphone power to **+12**).
6. Mount one Eagle Model 2171 speaker/microphone.
7. Repeat steps 4 - 6 with additional Model 2171's if desired. Except connecting Microphone signal to **M2**.
8. If desired, connect external siren driver to **GREEN** and **BLUE** wires OR connect alarm +12V output to the **YELLOW** wire.
9. Set option selection switches.

3.2 OPTION SWITCH DESCRIPTION.

The Eagle Model 1227 has many modes of operation. It can be custom configured for each installation. The following is a description of each of the option setting switches.

NOTE: WHEN CHANGING THE OPTION SWITCHES, ALWAYS REMOVE POWER, SET SWITCHES, THEN RE-CONNECT POWER. THIS INSURES THAT THE NEW OPTIONS WILL BE READ BY THE MICROPROCESSOR!

SW1: ON = Normal operating mode (Auto-Trip and Hard Trip are independent).
OFF = Dual Trip mode (Hard Trip is an ENABLE for the Auto-Trip).

SW1 ON: The auto-trip and the hard trip are independent of one another. Either trip will activate the module.

SW1 OFF: The Hard Trip acts as an enable for the Auto-Trip. The enable must be activated before the Auto-Trip will activate the module. Simply put, the Auto-Trip will only activate the module after the Hard Trip has received a valid input. The enable (Hard Trip) must be 2 Volts or greater and must be present for 500 mS (milli-seconds) while the communicator is active.

SW2: ON = Activate immediately with the trigger input (Line-hold mode).
OFF = Set up the ring detector to answer after one ring.

SW2 ON: The system will activate immediately with the trigger input. (This occurs when the digital communicator is shut down with a kiss-off from the Central Station.) A trip from the communicator/control panel or the auto trigger is required.

SW2 OFF: A trigger input will activate a five (5) minute window. The 1227 will answer the phone line as soon as it sees one ring within this window. The system will ignore any invalid phone calls (see section 4.2). When the five minute window expires, the system will ignore all phone calls.

SW3: ON = Positive edge trigger on trigger input.
 OFF = Negative edge trigger on trigger input.

NOTE: BEFORE SELECTING THIS OPTION, DETERMINE WHICH TYPE OF TRIP WILL BE USED BY MEASURING THE DC VOLTAGE AT THE TRIGGER INPUT WHEN CONNECTED TO THE COMMUNICATOR.

SW3 ON: The system will interface with digital communicators that provide a trigger input that is at 2.5 VDC or greater when **NOT** reporting and switch to 1.5 VDC or less when reporting.

SW3 OFF: The system will interface with digital communicators that provide a trigger input that is at 1.5 VDC or less when **NOT** reporting and switch to 2.5 VDC or greater when reporting.

SW4: ON = All progress tones will sound.
 OFF = Only last minute warning tone will sound.

This allows the installer to disable all the progress tones (one per minute) except the last minute shut down warning tone. This is beneficial for use in demo kits.

SW5: ON = Enables the CENTRAL STATION DETECTION feature.
 OFF = Disables the CENTRAL STATION DETECTION feature. This is recommended when the subscriber has call waiting which cannot be disabled.

SW6: ON = Enables the AUTO TRIGGER FUNCTION.
 OFF = Disables the AUTO TRIGGER FUNCTION. This is recommended when using a hard trigger from a control panel.

TABLE 1: SUMMARY OF SWITCH SETTINGS.

SWITC	FUNCTION	ON	OFF
1	OPERATION:	NORMAL	DUAL TRIP
2	TRIGGER FUNCTION:	IMMEDIATE TURN ON	SET UP RING DETECT
3	TRIGGER VOLTAGE:	POSITIVE EDGE	NEGATIVE EDGE
4	TONES:	ALL TONES ACTIVE	LAST MINUTE ONLY
5	C.S. DETECT:	ON	DISABLED
6	AUTO TRIP:	ON	OFF

3.3 WIRING AND PLACEMENT.

TABLE 2: WIRING CONNECTIONS.

WIRE	CONNECTION
BROWN	Negative supply input (Ground)
RED	Positive supply input (+12 VDC)
ORANGE	Trigger input (see options)
YELLOW	Alarm active from control panel (Ground on alarm) see manual.
GREEN	Alarm active from control panel (+12VDC on alarm) see manual.
BLUE	External siren input (-) (set P5 & P6, Section 6.1)
VIOLET	External siren input (+) (set P5 & P6, Section 6.1)
GRAY	Common relay contact.
WHITE	Normally closed relay contact. Open when audio active.
BLACK	Normally open relay contact. Closed when audio active.
HEAVY GREEN	Earth Ground. MUST BE CONNECTED!

Descriptions:

BROWN: GROUND connection. to alarm panel auxiliary power out.

RED: +12 VDC connection to alarm panel auxiliary power out.

ORANGE: Trigger input. Use when control panel has dedicated two way activation trip.

YELLOW: Connect alarm output here (negative voltage active). This activates the Model 1227's internal siren driver. Do not use with GREEN (positive) input.

GREEN: Connect alarm output here (positive voltage active). This activates the Model 1227's internal siren driver. Do not use with YELLOW (negative) input.

BLUE and VIOLET: External siren driver input. Used when it is desired to use the speaker within the 2171 speaker/microphone for siren output. Maximum current: 2 amps DC. See Paragraph 6.2.

GRAY: This provides the common relay contact for external control. Maximum current: 2 amps DC.

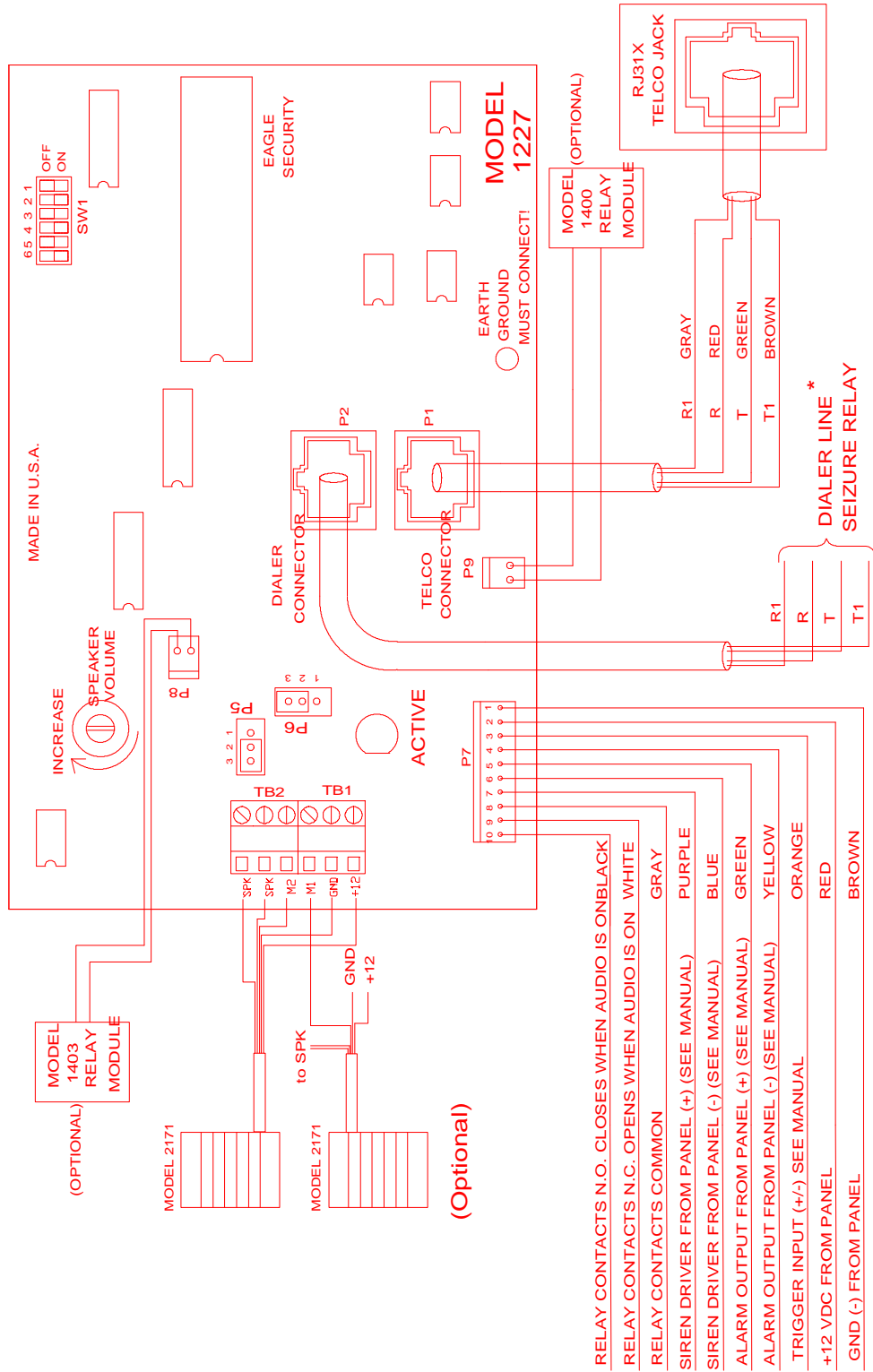
WHITE: Normally closed contact. During two way, this connection is opened.

BLACK: Normally open contact. During two way, this connection is closed.

GREEN GROUNDING WIRE: The 1227 requires EARTH GROUND for lightening protection. Connect EARTH GROUND to this wire. EARTH GROUND must be connected to maintain warranty! Failure to connect will void warranty!

**WARNING: Earth Ground must be connected for proper lightening protection!
Failure to connect voids warranty!**

DIAGRAM 1: WIRING SCHEMATIC.



* P2 CAN BE EITHER A 6 OR 8 POS CONNECTOR. TYPICALLY A 6 POS. CONNECTOR WILL HAVE 4 WIRES AND THE 8 POS. WILL HAVE ALL 8. USE THE FOLLOWING COLOR TABLE FOR THE PROPER CONNECTIONS.

6 POS. CONNECTOR	8 POS CONNECTOR
BLACK - R1	GRAY - R1
RED - R	RED - R
GREEN - T	GREEN - T
YELLOW - T1	BROWN - T1
	ORANGE } not used
	BLACK } not used
	YELLOW } not used
	BLUE } not used

3.4 ADJUSTMENTS/INSTALLATION.

SPK - Used to adjust the gain of the speaker; **CCW** - increases gain; **CW** - decreases gain.

3.5 SPEAKER/MIC INSTALLATION.

3.5.1 LOCATION.

A speaker/mic can cover a range of up to 2500 square feet. This is dependent on the environment in which they are installed. Installation is recommended at or near system keypads with a minimum of one per floor, excluding basement. Use shielded wire on runs longer than 20 feet.

3.5.2 QUANTITY OF SPEAKER/MICS.

Up to ten (10) Model 2171 Speaker/mics may be used with the Eagle Model 1227. Use shielded wire on runs longer than 20 feet.

3.6 COMMUNICATOR PROGRAMMING.

When programming the digital communicator, it is advised to begin the "TELEPHONE NUMBER" with "***70**" (tone dialing) or "**1170**" (pulse dialing). This will allow uninterrupted communication when the subscriber has call waiting.

4.0 ACTIVATION.

4.1 IMMEDIATE TURN ON.

When option **SW2** is set in the ON position, the module will activate when a trigger is received on the ORANGE wire. This trigger must correspond with the completion of the communicator's alarm report (kiss off from the Central Station). When the two way audio module is activated in this mode, the operator, if listening at that time, will hear a two tone "beep-bop" acknowledgment generated by the module. This is the operators notification that the module is on and active. The LED will light at this time.

NOTE: THE CENTRAL STATION RECEIVER MUST BE CAPABLE OF A "LISTEN-IN" FUNCTION, I.E., THE RECEIVER MUST HOLD THE PHONE LINE OPEN UNTIL AN OPERATOR CAN PICK UP THE LINE.

The operator can control the operation of the module using a Touch-Tone[®] phone per Paragraph 5.0.

4.2 USING RING DETECTOR.

4.2.1 DESCRIPTION.

FIVE MINUTE WINDOW.

The Model 1227 has a call back mode which activates upon a trip. The call back mode can initiated with hard trip input or from the auto detect circuit. This sets up the system to answer an alarm which has just been reported by the digital communicator (**SW2** is OFF). The central station operator will have 5 minutes in which to call back the system and have it answer within one ring. This feature allows call back **only** within five minutes of an alarm activation.

4.2.2 CALL ANSWERING.

When the system detects an incoming call, it will pick up the phone line and send a series of 3 "beeps" as an answer acknowledgment. The LED will light at this time.

The system now has the line, but two way is **NOT** active.

The operator has 15 seconds to press (and release) the * key to activate TWO WAY.

If the * is not sent in 15 seconds, the system will hang-up.

When the * is received, the system will generate a two tone "beep-bop" acknowledgment.

The operator can control the operation of the module using a Touch-Tone® phone per Paragraph 5.0.

4.3 LED STATUS INDICATOR.

The Model 1227 features an LED status indicator. Any time the module has picked-up the phone line, the LED will illuminate. This includes all modes of activation (line hold and call back).

4.4 CENTRAL STATION DETECTION.

The Model 1227 features central station detection with auto-disconnect. This feature allows the module to detect if the central station receiver has dropped off the line before the central station operator has picked up on the line. If the module detects a receiver line drop, it will shut down and enable the 5 minute call back window. Detection takes about 15 to 20 seconds. (This feature works in most area in the United States. Accounts in some rural areas may not be able utilize this feature due to current central office equipment. If this feature is not available, the module will function properly, but without the central station detection feature.)

Call waiting may cause erratic operation with this feature. In areas where call waiting can not be disabled (See paragraph 3.6) and the premises has call waiting, it is recommended to disable central station detection (**SW5**).

4.5 AUTO-TRIP.

The Model 1227 Two Way Audio System utilizes an Auto-Trip feature. This feature is essential for control panels that do not have a two way activation output. The Auto-Trip activates the module by monitoring the phone line and detecting when the control panel/communicator finishes sending its data to the receiver. When finished, the module activates maintaining the phone line connection at the premises. The Auto-Trip feature can be disabled at the time of installation using **SW6**. (See Paragraph 3.2).

When **SW6** is in the ON position the Auto-Trip feature is active. Do NOT use the hard trip input, the orange wire, when using the Auto-Trip.

When **SW6** is in the OFF position, the Auto-Trip feature is disabled. When disabling the Auto-Trip, the hard trip input, the orange wire, is required. (See paragraph 4.6.)

4.6 TRIP INPUT.

The model 1227 has a hard trip input. This input is used to activate the module from a control panel which has a trip for two way voice. This trip must occur at kiss-off. Consult your control panel manual or call Eagle technical assistance for further information.

5.0 CONTROLLING THE MODULE.

After the module has been successfully activated by one of the methods described above, the operator can control the operation of the system using a Touch-Tone® phone in the following manner:

To switch to "LISTEN ONLY, HIGH GAIN", press and release digit **3**. To switch to "LISTEN ONLY, NORMAL GAIN", press and release digit **2**. To switch to "TALK ONLY", press and release digit **1**. The operator can switch back and forth between these modes as often as one wishes independent of the mode in which the module was in when activated.

CAUTION: IF THERE IS A LOUD, CONTINUOUS BACKGROUND NOISE, SUCH AS A RADIO, THE CENTRAL STATION OPERATOR SHOULD **NOT** ATTEMPT TO INCREASE THE GAIN OF THE 1227. THIS MAY CAUSE THE SYSTEM TO LOOSE THE ABILITY TO RECOGNIZE THE TONES FROM THE CENTRAL STATION. IF THE MODULE "LOCKS-UP" INTO THE "LISTEN ONLY, HIGH GAIN" MODE, PRESS AND HOLD DIGIT **2** FOR A MINIMUM OF FIVE (5) SECONDS. THIS SHOULD UNLOCK THE MODULE. REPEAT IF NECESSARY.

The Model 1227 provides five (5) minutes of two way. During two way, the module will generate a "beep" once every minute. Upon the fourth and final minute of two way the module will generate a two tone "beep bop" warning the central station that there is only one more minute of two way before the module automatically disconnects. These beeps will be heard at the premise when module is in the "TALK MODE". These beeps will always be heard by the central station. To extend the listen in shut down time (reset to 5 minutes), press and release digit **7** at any time during the two way (before the module disconnects). Additionally, anytime a command is sent to the Model 1227 (a **1**, **2**, **3** or **7**) the module will automatically reset the five minute timer. The only time the **7** command need actually be sent is when the module is used in the "LISTEN ONLY" mode for the duration of the call. To shut down the module, press and release digit **9** at any time. To shut down the module and initiate the five minute call back window, press and release digit **8** at any time. This will allow the central station or any other party to call back and have an active two way session. (This is beneficial when a home or business owner wishes to have an active two way session after the central station has finished.)

Every time either shut-down command is sent (an **8** or a **9**) the module will generate an acknowledgment beep. This alerts the central that the command was received and will be exercised.

TABLE 3: TOUCH-TONE® COMMAND SUMMARY.

TOUCH -TONE ® COMMAND	FUNCTION
1	TALK ONLY
2	LISTEN ONLY
3	HIGH GAIN LISTEN ONLY
7	RESET SHUT DOWN TIMER
8	SHUT DOWN MODULE & INITIATE 5 MINUTE CALLBACK WINDOW
9	SHUT DOWN MODULE
*	ACTIVATE 1227 FROM CALL BACK MODE

5.1 INTERNAL CONTROLS.

5.1.1 CENTRAL STATION DETECTION.

The model 1227 features Eagle's exclusive central station detection. This feature allows the audio module to detect a central station receiver dropping off line before an operator picks up on the two way line. When detected (about 15 to 20 seconds post receiver hang up) the module will shut itself down and initiate the five minute call back window.

This feature also is useful if the central station operator does not send the shut-down command. In this case the module will shut down (after 15 to 20 seconds post operator hang up). It will not activate the call back mode.

6.0 OPTIONAL CONNECTIONS.

6.1 INTERNAL SIREN.

The internal siren driver requires an input from the alarm panel. This input activates the internal driver. The input is the YELLOW wire on the wire harness. When this input receives +12VDC the Model 1227 will generate a siren tone. The tone will cease during two way or when the input returns to zero.

6.2 EXTERNAL SIREN DRIVER.

It may be desired to connect an external siren driver to the Eagle Model 1227 utilizing the speaker within the Model 2171 SPEAKER/MIC. The module must be configured to accept this input. Jumpers **P5** and **P6** (both) must be moved to positions 2 and 3.

6.3 MODEL 1403 REMOTE CONTROL RELAY MODULE.

An Eagle Model 1403 Remote Control Relay Module may be connected to **P8**. The Model 1403 may be connected to provide additional central station control of the premises.

6.4 MODEL 1400 RELAY MODULE.

An Eagle Model 1400 Relay Module may be connected to **P9**. The Model 1400 may be connected to provide an additional DPDT if required.

7.0 NOTES.

TECHNICAL SUPPORT HOTLINE: 800/926-TECH (9324)

When using multiple speaker/mics at the subscriber end, be aware that loud background noise picked up by one speaker/mic will "drown out" the other speaker/mic.

As with all electronic devices, electrostatic discharges can damage the components. Handle the circuit board with care!

Features and specifications subject to change without notification.

Use of this equipment may be in violation of local laws. Please verify and obey all local laws. Eagle Security Products, Inc. does not assume any liability for the illegal use of this equipment.

Trademarks and Registered Trademarks are the property of their respective owners/companies.

8.0 FCC REQUIREMENTS

1. The Federal Communications Commission (FCC) has established Rules which permit this device to be directly connected to the telephone network. Standardized jacks are used for these connections. This equipment should not be used on party lines or coin lines.
2. If this device is malfunctioning, it may also be causing harm to the telephone network; this device should be disconnected until the source of the problem can be determined and until repair has been made. If this is not done, the telephone company may temporarily disconnect service.
3. The telephone company may make changes in its technical operations and procedures; if such changes affect the compatibility or use of this device, the telephone company is required to give adequate notice of the changes. You will be advised of your right to file a complaint with the FCC.
4. If the telephone company requests information on what equipment is connected to their lines, inform them of:
 - a. The telephone number this unit is connected to
 - b. The ringer equivalence number
 - c. The USOC jack required
 - d. The FCC Registration number

Items 'b' and 'd' are indicated on the label.

The ringer equivalence (REN) is used to determine how many devices can be connected to your telephone line. In most areas, the sum of the RENs of all devices on any one line should not exceed five (5.0). If too many devices are attached, they may not ring properly.

5. In the event of equipment malfunction, all repairs should be performed by our Company or an authorized agent. It is the responsibility of users requiring service to report the need for service to our Company or to one of our authorized agents. Service can be obtained at:

Eagle Security Products, Inc.
20 North America Drive
West Seneca, NY 14224-2225
SALES: 800/447-EAGLE (3245) or 716/674-9192
FAX: 716/674-9216

TECHNICAL SUPPORT HOTLINE: 800/926-TECH (8324)

or at your local installation company.

EAGLE SECURITY PRODUCTS MODEL 1227
Complies with Part 68, FCC Rules
FCC Registration #: 1SYUSA-18688-KX-N
Ringer Equivalence : 0.0B

LIMITED WARRANTY

Eagle Security Products, Inc. Warrants that the products of its manufacture shall be free from defects in materials or workmanship to one year from the date of invoice if such goods have been properly installed, are subject to normal proper use, and have not been modified in any manner whatsoever. Upon return of the defective product to the nearest Eagle Security Products dealer, Eagle Security Products will, at its sole discretion, either repair or replace, at no cost to the customer, such goods as may be of defective material or workmanship. Customers outside the United States are to return products to their distributor for repair.

In addition, any out of the box failure will be replaced at no charge providing the unit has not been altered physically. Alterations include, but not limited to, soldering, the addition of tape / foam tape or any form of physical damage.

EAGLE SECURITY PRODUCTS, INC. SHALL NOT UNDER ANY CIRCUMSTANCES BE LIABLE FOR ANY INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING FROM LOSS OF PROPERTY OR OTHER DAMAGE OR LOSSES OWING TO THE FAILURE OF EAGLE SECURITY PRODUCTS' PRODUCTS BEYOND THE COST OF REPAIR OR REPLACEMENT OF ANY DEFECTIVE PRODUCTS.

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