



A Division of Pittway  
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## **SpectrAlert™ Electronic Chime/Sounder**

For use with the following models:

**Chime/Sounder: 12/24 volt: CH12/24**

Add suffix "W" for white models.



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### **Specifications**

Voltage Range:	DC or Full-Wave Rectified
Chime:	8-33 Volts
Operating Temperature:	32° F to 120° F (0° C to 49° C)
Sound Output:	Sound output levels are established at Underwriters Laboratories in their reverberant room. Always use the sound output specified as UL Reverberant Room when comparing products.
Listings:	UL 464; Private Mode

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### **General Description**

The SpectrAlert series notification appliances are designed to meet the requirements of most agencies governing these devices, including: NFPA, The National Fire Alarm Code, UL, FM, CSFM, MEA. Also, check with your local Authority Having Jurisdiction for other codes or standards that may apply.

The SpectrAlert series can be installed in systems using 12- or 24-volt panels having DC or full-wave rectified (FWR) power supplies.

**NOTICE:** This manual shall be left with the owner/user of this equipment.

### **Fire Alarm System Considerations**

#### **Temporal and Non-Temporal Coded Signals:**

The American National Standards Institute and the National Fire Alarm Code require that all horns used for building evacuation installed after July 1, 1996, must produce Temporal Coded Signals. Signals other than those used for evacuation purposes do not have to produce the Temporal Coded Signal.

### **Power Supply Considerations**

Panels typically supply DC filtered voltage or FWR (full-wave rectified) voltage. The system design engineer must calculate the number of units used in a zone based on the type of panel supply. Be certain the sum of all the device currents do not exceed the current capability of the panel. Calculations are based on using the device current found in the subsequent charts and must be the current specified for the type of panel power supply used.

### **Wire Sizes**

The designer must be sure that the last device on the circuit has sufficient voltage to operate the device within its rated voltage. When calculating the voltage available to the last device, it is necessary to consider the voltage drop due to the resistance of the wire. The thicker the wire, the less the voltage drop. Generally, for purposes of determining the wire size necessary for the system, it is best to consider all of the devices as "lumped" on the end of the supply circuit (simulates "worst case").

Typical wire size resistance:

18 AWG solid:	Approximately 8 ohms/1,000 ft.
16 AWG solid:	Approximately 5 ohms/1,000 ft.
14 AWG solid:	Approximately 3 ohms/1,000 ft.
12 AWG solid:	Approximately 2 ohms/1,000 ft.

Example: Assume you have 10 devices on a zone and each requires 50 mA average and 2000 Ft. of 14 AWG wiring (total length = outgoing + return). The voltage at the end of the loop is 0.050 amps per device x 10 devices x 3 ohms/1,000 ft. x 2000 ft = 3 volts drop.

Note: If Class A wiring is installed, the wire length may be up to 4 times the single wire length in this calculation.

The same number of devices using 12 AWG wire will produce only 2 volts drop. The same devices using 18 AWG wire will produce 8 volts drop. Consult your panel manufacturer's specifications, as well as SpectrAlert's operating voltage range to determine acceptable voltage drop.

**SpectrAlert Electronic Chime Current Draw\***

12VDC: 18-31mA

24VDC: 31-61mA

\*Average current draw varies with tones selected. Current ratings per System Sensor testing at 12VDC and 24VDC.

**SpectrAlert Chime Switch Settings**

Switch 1=on 0=off

1	2	3	4	Hz	Type
1	1	1	1	1.2k	Repeating 1 second chime
1	0	1	1	1.0k	Repeating 1 second chime
1	1	0	1	0.8k	Repeating 1 second chime
1	0	0	1	1.2k	Repeating 1/4second chime
1	1	1	0	1.0k	Repeating 1/4second chime
1	0	1	0	0.8k	Repeating 1/4second chime
1	1	0	0	1.2k	Temporal 3 chime
1	0	0	0	1.0k	Temporal 3 chime
0	1	1	1	0.8k	Temporal 3 chime
0	0	1	1	1.2k	Single Stroke Chime
0	1	0	1	1.0k	Single Stroke Chime
0	0	0	1	0.8k	Single Stroke Chime
0	1	1	0	3.0k	Electromechanical Continuous
0	0	1	0	3.0k	Electromechanical Temporal 3
0	1	0	0	0.5k	500 Hz, Continuous
0	0	0	0	0.5K	500 Hz, Temporal 3

**VOLUME**

**SWITCH**

5	6	
0	0	LOW
1	0	MED
1	1	HIGH

**Chime Selection**

Chimes are factory set for high volume, 1000Hz, 1 second chime. Tones may be selected by making the appropriate settings on the Dip Switch located on the printed circuit board. The settings required for the available tone options are as follows:

**SpectrAlert Chime Tones**

Repeating 1-Second Chime



Repeating 1/4-Second Chime



Temporal 3 Chime



Single Stroke Chime



Continuous 500Hz Mechanical and 3kHz mechanical



Temporal 500Hz mechanical and 3kHz mechanical



Scale:  
1 second

**SpectrAlert Electronic Chime Sound Output Guide**

Tone	8 Volts			12 Volts			24 Volts			33 Volts		
	Low	Med.	High	Low	Med.	High	Low	Med.	High	Low	Med.	High
1.2K Repeating 1 Second Chime	51	52	55	53	54	56	57	61	52	59	61	64
1.0K Repeating 1 Second Chime	48	50	54	51	52	54	54	57	60	57	60	62
0.8K Repeating 1 Second Chime	47	47	53	49	51	52	53	55	58	55	58	60
1.2K Repeating 1/4 Second Chime	53	54	58	55	57	59	59	61	64	61	63	66
1.0K Repeating 1/4 Second Chime	49	50	54	51	53	54	55	57	60	57	59	62
0.8K Repeating 1/4 Second Chime	48	50	53	50	52	53	54	56	59	56	58	61
1.2K Temporal 3 Chime	51	52	56	52	54	55	55	57	61	58	60	63
1.0K Temporal 3 Chime	48	49	54	49	51	51	53	55	58	55	57	60
0.8K Temporal 3 Chime	46	47	51	48	50	51	52	54	57	54	56	59
1.2K Single Stroke Chime	52	53	58	52	54	56	56	58	62	58	60	64
1.0K Single Stroke Chime	47	48	53	50	51	59	53	55	58	56	58	62
0.8K Single Stroke Chime	47	48	53	49	50	52	54	56	60	56	59	61
3.0K Continuous Mechanical	56	57	61	59	60	67	65	68	70	68	70	74
3.0K Temporary Mechanical	51	52	56	53	54	61	56	59	62	58	60	64
0.5K Continuous Mechanical	48	49	53	51	52	56	54	57	60	56	55	61
0.5K Temporary Mechanical	45	47	51	47	49	53	51	52	58	52	54	60

NOTE: Factory default setting is 1.0K Repeating 1 Second Chime set at High volume.

## Mounting

1. The chime is intended for mounting to a standard 2½" deep single-gang box which allows sufficient clearance for conduit entrance.
2. The chime is compatible with DC line supervision, is polarized, and has terminals marked with polarity. Apply positive supply voltage to the (+) terminal and negative supply voltage to the (-) terminal. (See Figure 1.)
3. Mount the chime to the electrical outlet box using the two mounting screws supplied.
4. Field repair of the chime should not be attempted. Return to factory for repair or replacement.

### Figure 2: Removal of horns and strobes from mounting plates:

To remove units from mounting plates, insert screwdriver as shown to unlock snap. While pushing in screwdriver to release the snap, pull back on the horn/strobe. Hinge the horn/strobe module, disengage the Locking Rib, and lift the horn/strobe away from the mounting plate.

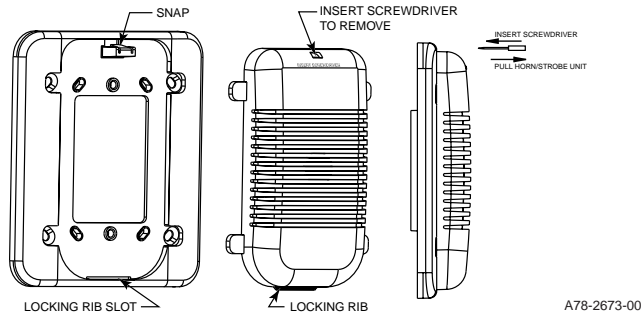
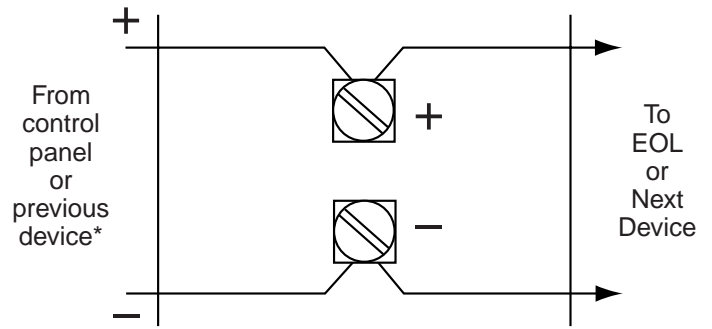


Figure 1:



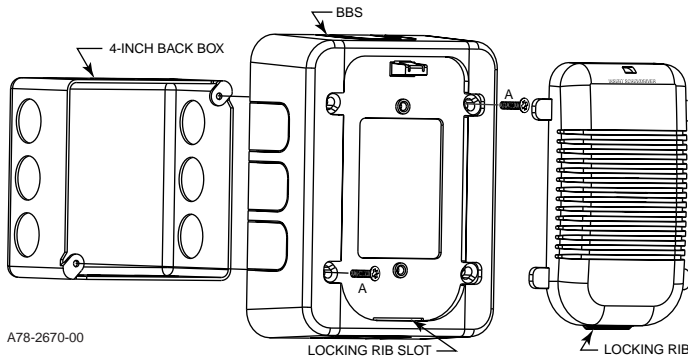
\*NOTE: Shown with control panel in alarm. Panel polarity reversed in supervisory condition.

## Mounting Diagrams:

### Screw types used for mounting:

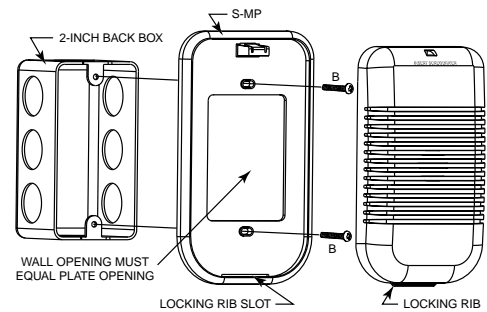
- A = 8-32 x ¾ flat head
- B = 6-32 x 1⅝ pan head

### Chime surface mount:



1. Mount skirt to back box with screws A.
2. Complete field wiring.
3. Insert locking rib on unit into slot on skirt.
4. Press into skirt; unit will make a "click" when it has locked into place. (Note: Chime and skirt may also be mounted to a 2-inch box using screws B instead of screws A.)

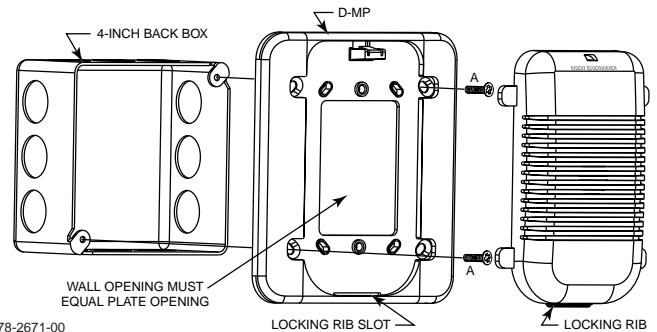
### Chime direct mount:



A78-2672-00

1. Mount plate to back box using screws B.
2. Break off four tabs from unit.
3. Complete field wiring, making sure wall opening is large enough for terminals to fit through.
4. Insert locking rib into slot on plate.
5. Press into plate; unit will make a "click" when it has locked into place.

### Chime with universal mounting plate:



A78-2671-00

1. Mount plate to back box using screws A, making sure wall opening is equal to the plate opening.
2. Complete field wiring.
3. Insert locking rib into slot on plate.
4. Press into plate, unit will make a "click" when it has locked into place.

## Please refer to insert for the Limitations of Fire Alarm Systems



### The Limitations of Electronic Chimes

**The chime will not work without power.** The chime gets its power from the fire/security panel monitoring the alarm system. If power is cut off for any reason, the chime will not provide the desired audio or visual warning.

**The chime may not be heard.** The loudness of the chime meets (or exceeds) current Underwriters Laboratories' standards. However, the

chime may not alert a sound sleeper or one who has recently used drugs or has been drinking alcoholic beverages. The chime may not be heard if it is placed on a different floor from the person in hazard or if placed too far away to be heard over the ambient noise such as traffic, air conditioners, machinery or music appliances that may prevent alert persons from hearing the alarm. The chime may not be heard by persons who are hearing impaired.

### Three-Year Limited Warranty

System Sensor warrants its enclosed electronic chime to be free from defects in materials and workmanship under normal use and service for a period of three years from date of manufacture. System Sensor makes no other express warranty for this electronic chime. No agent, representative, dealer, or employee of the Company has the authority to increase or alter the obligations or limitations of this Warranty. The Company's obligation of this Warranty shall be limited to the repair or replacement of any part of the electronic chime which is found to be defective in materials or workmanship under normal use and service during the three year period commencing with the date of manufacture. After phoning System Sensor's toll free number 800-SENSOR2 (736-7672) for a Return Authorization number, send defective units postage prepaid to: System Sensor, Repair

Department, RA # \_\_\_\_\_, 3825 Ohio Avenue, St. Charles, IL 60174. Please include a note describing the malfunction and suspected cause of failure. The Company shall not be obligated to repair or replace units which are found to be defective because of damage, unreasonable use, modifications, or alterations occurring after the date of manufacture. In no case shall the Company be liable for any consequential or incidental damages for breach of this or any other Warranty, expressed or implied whatsoever, even if the loss or damage is caused by the Company's negligence or fault. Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation or exclusion may not apply to you. This Warranty gives you specific legal rights, and you may also have other rights which vary from state to state.