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## MHR and MHW Mini-Horns

### SPECIFICATIONS

#### General Specifications

Standard Operating Temperature:	32°F to 120°F (0°C to 49°C)
Humidity Range:	10 to 93% non-condensing
Nominal Voltage:	Regulated 12DC/FWR or regulated 24DC/FWR
Operating Voltage Range:	8-33
Operating Voltage with MDL3:	8.5-33
Sounder Frequency:	3kHz (nominal)

#### Mechanical Specifications

Input terminal wire gauge:	12 to 18 AWG
Horn dimensions:	4.6"L x 2.9"W x .45"D (117 mm L x 74 mm W x 11.5 mm D)

### GENERAL DESCRIPTION

The SpectrAlert Advance MH Series mini-horns are available in red or white. They feature 12 or 24 volt operation, high and low volume settings, and temporal or continuous tones. These small footprint horns can be mounted to single gang back boxes for aesthetically sensitive applications. If required, the MDL3 module can be used to provide synchronization.

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

### FIRE ALARM SYSTEM CONSIDERATIONS

The National Fire Alarm Code, NFPA 72, requires that all horns, used for building evacuation installed after July 1, 1996, produce temporal coded signals. Signals other than those used for evacuation purposes do not have to produce the temporal coded signal.

### POWER SUPPLY CONSIDERATIONS

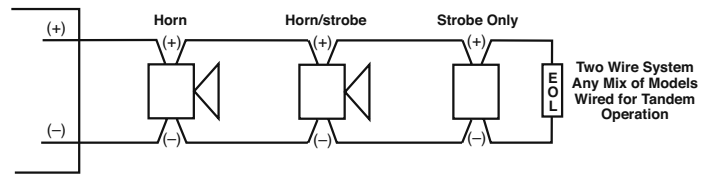
Panels typically supply DC filtered voltage or FWR (full wave rectified) voltage. The system design engineer must calculate the number of units used on a loop based on the type of panel supply. Be certain the sum of all the device currents does not exceed the current capability of the panel. Calculations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

### Loop Design and Wiring

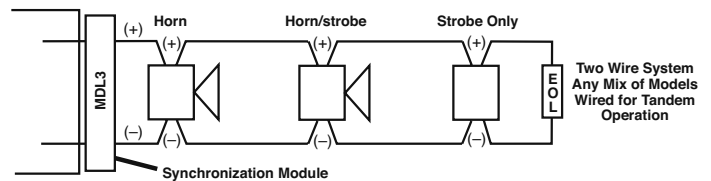
The system designer must make sure that the total current drawn by the devices on the loop does not exceed the current capability of the panel supply, and that the last device on the circuit is operated within its rated voltage. The current draw information for making these calculations can be found in the tables within this manual. For convenience and accuracy, use the voltage drop calculator on the System Sensor website (www.systemsensor.com) or CD-ROM. 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 smaller the voltage drop. Wire resistance tables can be obtained from electrical handbooks. Note that if Class A wiring is installed, the wire length may be up to twice as long as it would be for circuits that are not fault tolerant.

### WIRING

**FIGURE 1. NON-SYNCHRONIZED DEVICES; ANY COMBINATION OF MODELS POWERED BY A 2-WIRE CIRCUIT**



**FIGURE 2. SYNCHRONIZED DEVICES; ANY COMBINATION OF MODELS POWERED BY A 2-WIRE CIRCUIT**



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**NOTE:** For further information on synchronization see MDL3, panel, or power supply installation manual.

**NOTE:** For 24 volt applications, the total number of horns on a single NAC must not exceed 85 with a maximum loop resistance of 120 ohms. For 12 volt applications, the total number of horns must not exceed 85 with a maximum loop resistance of 120 ohms.

**SOUNDER SELECTION**

Sounder setting selection is accomplished by using the rotary switch on the back (see **Figure 3**). The sound measurements for the various settings are shown in **Table 1A**. The current draw for the various settings is shown in **Table 1B**.

**TABLE 1A.**

**SOUNDER OUTPUT (dBA) REVERBERANT**

SWITCH SETTING	PATTERN	OUTPUT LEVEL	8 VDC	8 VFWR	12 VDC	12 VFWR	16-33 VDC	16-33 VFWR
1	TEMPORAL	HIGH	68	67	71	70	78	76
2	TEMPORAL	LOW	66	65	69	68	76	75
3	NON-TEMPORAL	HIGH	72	71	75	74	80	79
4	NON-TEMPORAL	LOW	70	69	73	72	78	77

**TABLE 1B.**

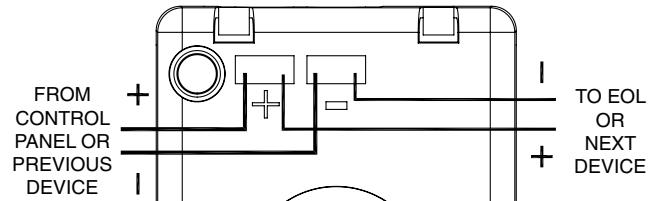
**SOUNDER CURRENT DRAW (mA RMS)**

SWITCH POSITION	SOUND PATTERN	VOLUME	8-17.5 VOLTS		16-33 VOLTS	
			DC	FWR	DC	FWR
1	TEMPORAL	HIGH	12	10	17	15
2	TEMPORAL	LOW	10	9	14	13
3	NON-TEMPORAL	HIGH	22	17	29	25
4	NON-TEMPORAL	LOW	17	13	21	19

**MOUNTING**

1. The MH Mini-Horn is intended for mounting to a standard 2½" deep single gang box or a standard 4 × 4 box, with single gang mud ring, which allows sufficient clearance for conduit entrance.
2. The MH Mini-Horn is compatible with DC line supervision. The horn is polarized and has terminals marked with polarity. Apply positive supply voltage to the (+) terminal and negative to the (-) terminal. (See Figure 3)
3. Mount the horn to the electrical outlet box using the two mounting screws supplied.

**FIGURE 3.**



NOTE: SHOWN WITH CONTROL PANEL IN ALARM. PANEL POLARITY REVERSED IN SUPERVISORY CONDITION.

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

**THE LIMITATIONS OF HORNS**



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

**The horn may not be heard.** The loudness of the horn meets (or exceeds) current Underwriters Laboratories' standards. However, the horn may not alert a sound sleeper or

one who has recently used drugs or has been drinking alcoholic beverages. The horn 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 horn may not be heard by persons who are hearing impaired.

**THREE-YEAR LIMITED WARRANTY**

System Sensor warrants its enclosed product 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 product. 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 replacement of any part of the product 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, Returns 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 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.

**FCC STATEMENT**

SpectrAlert Strobes and Horn/Strobes have been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and

can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.