



**MHRA and MHW Mini-Horns**

**MHRZA and MHWZA Silencable Mini-Horns**

**Specifications**

General Specifications

Standard Operating Temperature:	0°C to 49°C (32°F to 120°F)
Humidity Range:	10 to 93% non-condensing
Sounder Frequency:	3kHz (nominal)
Input terminal wire gauge:	12 to 18 AWG
Horn dimensions:	4.6"Lx2.9"Wx.45"D (117 mm Lx74 mm Wx11.5 mm D)

MHRA/MHWA Electrical Specifications

Nominal Voltage:	regulated 12dc/fwr or regulated 24dc/fwr
Operating Voltage:	8-33 volts
Operating Voltage with MDLA:	9-33 volts

MHRZA/MHWZA Electrical Specifications

Nominal Voltage:	regulated 24dc/fwr
Operating Voltage:	16-33 volts
Operating Voltage with MDLA:	16-33 volts
Silence time:	10 minutes max.
Power down time to reset silence:	4 seconds min.

**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 MDLA module can be used to provide synchronization.

The models MHRZA/MHWZA include an led alarm indicator and silence switch. During alarm, pressing the silence switch will silence the horn for a maximum of 10 minutes. The silence can be reset by removing power for a minimum of 4 seconds.

Also included in these models is a silence test feature. During an alarm, if the silence button is held down for more than 5 seconds and released, the unit will silence but resound in 10 seconds.

These devices are to be installed according to the requirements of local codes/authorities and CAN/ULC S524.

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

**Fire Alarm System Considerations**

The National Building Code, and CAN/ULC S525, requires that all horns, used for building evacuation produce temporal coded signals. Signals other than those used for evacuation purposes do not have to produce the temporal coded signal.

**Power Supply Considerations**

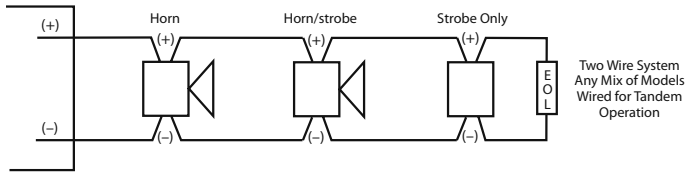
Panels typically supply DC filtered voltage or FWR (full wave rectified) voltage. The system design engineer must calculate the number of units used on a loop based on the type of panel supply. Be certain the sum of all the device currents does not exceed the current capability of the panel. Calculations 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**

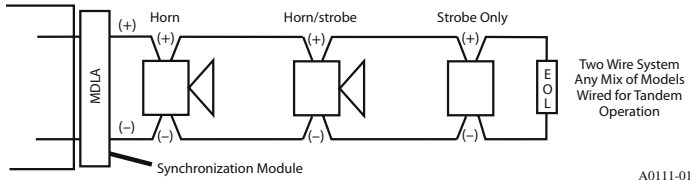
The system designer must make sure that the total current drawn by the devices on the loop does not exceed the current capability of the panel supply, and that the last device on the circuit is operated within its rated voltage. The current draw information for making these calculations can be found 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**



NOTE: For further information on synchronization see MDLA, 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 are shown in Table 1B. Directional characteristics are shown in Table 1C.

**Table 1A.**

**MHRA/MHWA SOUNDER OUTPUT (dBA) IN ANECHOIC ROOM**

Switch Position	Sound Pattern	Volume	Power Supply	Voltage				
				8	12	16	24	33
1	Temporal	High	DC	87	91	94	95	95
			FWR	90	93	94	95	95
2	Temporal	Low	DC	86	89	91	93	93
			FWR	88	92	93	92	90
3	Non-Temporal	High	DC	86	88	90	92	93
			FWR	86	89	90	92	94
4	Non-Temporal	Low	DC	85	88	89	91	92
			FWR	85	88	89	90	91

**MHRZA/MHWZA SOUNDER OUTPUT (dBA) IN ANECHOIC ROOM**

Switch Position	Sound Pattern	Volume	Power Supply	Voltage		
				16	24	33
1	Temporal	High	DC	89	90	91
			FWR	92	91	91
2	Temporal	Low	DC	87	89	89
			FWR	90	89	89
3	Non-Temporal	High	DC	89	90	90
			FWR	87	89	90
4	Non-Temporal	Low	DC	86	87	86
			FWR	86	86	89

**Table 1B.**

**MHRA/MHWA CURRENT DRAW (mA RMS)**

Switch Position	Sound Pattern	Volume	Power Supply	Voltage				
				8	12	16	24	33
1	Temporal	High	DC	6	9	13	16	18
			FWR	6	8	10	14	16
2	Temporal	Low	DC	5	8	11	13	15
			FWR	5	6	9	12	14
3	Non-Temporal	High	DC	7	11	15	19	21
			FWR	6	9	12	16	19
4	Non-Temporal	Low	DC	6	9	12	15	17
			FWR	5	8	11	14	16

**MHRZA/MHWZA CURRENT DRAW (mA RMS)**

Switch Position	Sound Pattern	Volume	Power Supply	Voltage		
				16	24	33
1	Temporal	High	DC	18	17	13
			FWR	18	15	12
2	Temporal	Low	DC	16	13	11
			FWR	16	13	10
3	Non-Temporal	High	DC	21	19	14
			FWR	20	17	14
4	Non-Temporal	Low	DC	17	15	11
			FWR	17	14	11

**Table 1C.**

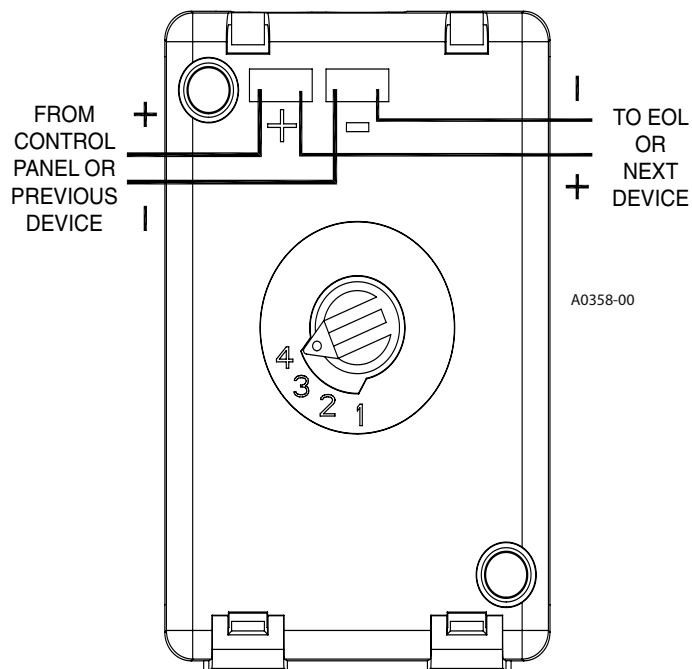
**DIRECTIONAL CHARACTERISTICS (90° REFERENCE)**

Model	Axis	-3dBA Angle	-6dBA Angle
MHRA/MHWA	Horizontal	40°, 140°	37°, 145°
	Vertical	37°, 140°	34°, 142°
MHRZA/MHWZA	Horizontal	35°, 142°	32°, 145°
	Vertical	40°, 140°	37°, 150°

## Mounting

1. The MH Mini-Horn is intended for mounting to a standard 2 1/2" deep single gang box or a standard 4 x 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.

## 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 smoke detector 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 smoke detector. 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 smoke detector 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 1-800-SENSOR2 (736-7672) for a Return Authorization number, send defective units postage prepaid to: System Sensor, Repair Department, RA # \_\_\_\_\_, 6581 Kitimat

Rd., Unit #6, Mississauga, Ontario, L5N 3T5. 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 under common law.

### 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.

– This Class B digital apparatus complies with Canadian ICES-003.