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 1-800-SENSOR2, FAX: 630-377-6495
 www.systemsensor.com

MDL Module

For use with the following series models:

P2RX, P2WX, P4RX, P4WX, SRX, SWX, SCRX, SCWX, HRX, HWX, CHX, CHRX, CHWX, CHSRX, CHSWX,
 PC2RX, PC2WX, PC4RX, PC4WX, H12/24X, HC12/24X, PA400X, S1224MCX, SC24XX, P1224MCX, PC24XX,
 SP2C24XX, SP2R1224MCX, SP2W1224MCX, CH24MCX, MHR(A), MHW(A), MHRZA, MHWZA

Refer to System Sensor product installation manuals for model specifications.

U.S. Patent Nos. 5,850,178 and 5,598,139



Specifications

Input Voltage Range: DC or Full Wave Rectified
 9 to 33 Volts

Maximum Load on Loop:
 Current: 3 A

Voltage	Average		Peak		In-rush	
	DC	FWR	DC	FWR	DC	FWR
12 V	10mA	12mA	30mA	31mA	87mA	122mA
24 V	12mA	15mA	35mA	37mA	198mA	262mA

Operating Temperature: 0°C to 49°C (32°F to 120°F)
 Listings: UL S4011, S5512



When MDL module is used, supply voltage range at 12 volts: 9 to 17.5 VDC; at 24 volts: 17 to 33 VDC

Note for Strobes – Do not exceed: 1) 9-17.5 or 17-33 voltage range limits when the MDL module is used; 2) Maximum number of strobe lights and/or maximum line impedance specified in the strobe product installation manual; and 3) Maximum line impedance as required by the fire alarm control manufacturer.

General Description

The MDL Module is designed to work with the SpectrAlert series of notification appliances to provide a means of synchronizing the temporal-coded horns and chimes, synchronizing the one-second flash timing of the strobe, and silencing the horns and chimes of the horn/strobe and chime/strobes combination over a two-wire circuit while leaving the strobes active.

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

Module Configuration

Each MDL module has the capability of connecting two Style Y (Class B) circuits or one Style Z (Class A) circuit.

The zone output(s) from the panel are connected to the zone input(s) of the MDL module and the zone output(s) from the MDL module are connected to the notification loop(s). Supervision is accomplished in the module by a direct connection between the zone input and the zone output of each of the two zone circuits connected to the normal end-of-line device. The FACP “sees” the EOL device through the MDL module. When either or both outputs from the module are wired to the SpectrAlert products, the horns or chimes and strobes in both zones will be synchronized.

The MDL module can be configured so that more than two zones can be synchronized by the interconnection of the slave input and output (see **Figures 1 and 2**).

Zone 1 Input:	This input powers the MDL module. This input must have voltage present from the FACP before anything will work. This also supplies voltage to Zone 1 output.
Zone 2 Input:	This input only supplies voltage to Zone 2 output. Note: If Zone 1 input is not powered, the notification devices attached to the Zone 2 output will not be powered.
Horn Control:	This input enables the horns on the SpectrAlert notification appliances. Voltage present means horns are enabled. No voltage present means horns are disabled.
Slave In:	Connects to Master MDL Module slave out.
Slave Out:	Connects to Slave MDL slave in.

Synchronize SpectraAlert Horns, Chimes and Strobes

- Each module can power two 3-amp circuits wired in class B or one 3-amp circuit powered as Class A.
- Each module will synchronize 2 zones.
- Additional modules can be added and may be synchronized to all other modules by interconnecting the “slave” input and output terminals between modules.

CAUTION

Horn control wiring must be contained within common enclosure of module.

CAUTION

Slave Out – Slave In wiring must be contained within either the common enclosure of modules or enclosures within 20 feet of each other with wiring inside conduit.

CAUTION

If Zone 1 input is not powered or fails during alarm, the notification devices attached to the Zone 2 output will not be powered.

Controlling Sounder On/Off Over 2-Wires Using Module Horn Control

- Connect the current source to the horn or chime control input. If a zone output is used for the source, you must use an EOL on the horn control input terminal.
- When multiple modules are used, the horn or chime control circuits can be wired in parallel. If wired in parallel and a zone output is used from panel, use an EOL on the last module for supervision.

CAUTION

Horn/chime control wiring must be contained within common enclosure of module.

CAUTION

Slave Out – Slave In wiring must be contained within either the common enclosure of modules or enclosures within 20 feet of each other with wiring inside conduit.

CAUTION

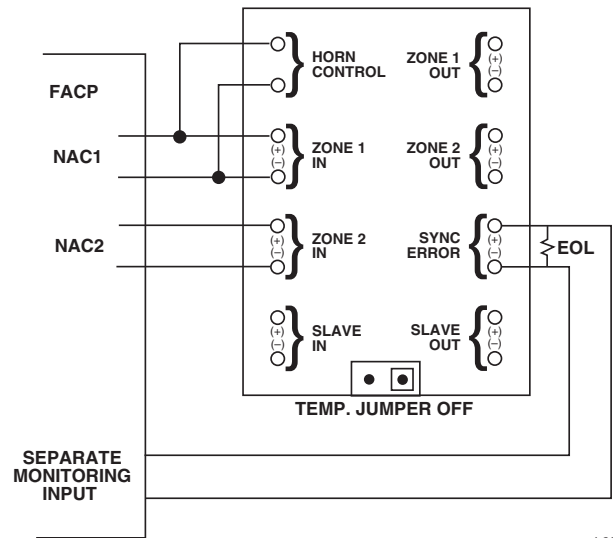
If Zone 1 input is not powered or fails during alarm, the notification devices attached to the Zone 2 output will not be powered.

Special Considerations

A latching relay contact is provided in case the synchronizing signal to the notification devices is interrupted. The output can be wired so that a trouble signal will be annunciated at the panel. If the synchronization pulse fails in the MDL module, the strobes will shut off.

Figure 1: Single MDL Using Sync Error (for panels with the capability to check for sync error)

NOTE: If zone 1 output of module is connected to strobes, chime/strobes or horn/strobes, zone 1 input supply power must be continuous for proper operation.

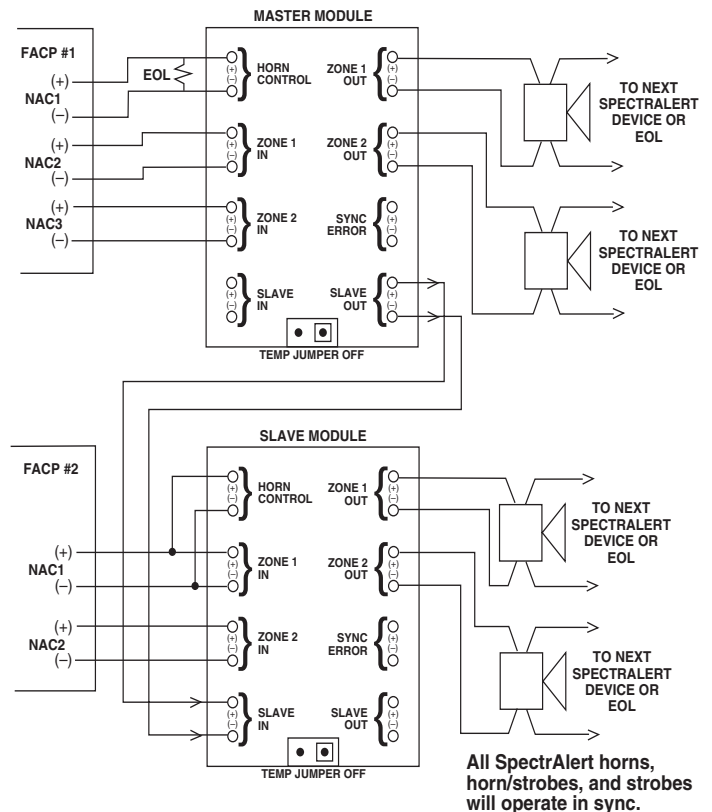


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Figure 2:

NOTE: If zone 1 output of module is connected to strobes, chime/strobes or horn/strobes, zone 1 input supply power must be continuous for proper operation.

HORNS SILENCED OVER TWO WIRE CIRCUIT MASTER MODULE HORN CONTROL CONNECTS TO INTERRUPTABLE POWER SOURCE



All SpectraAlert horns, horn/strobes, and strobes will operate in sync.

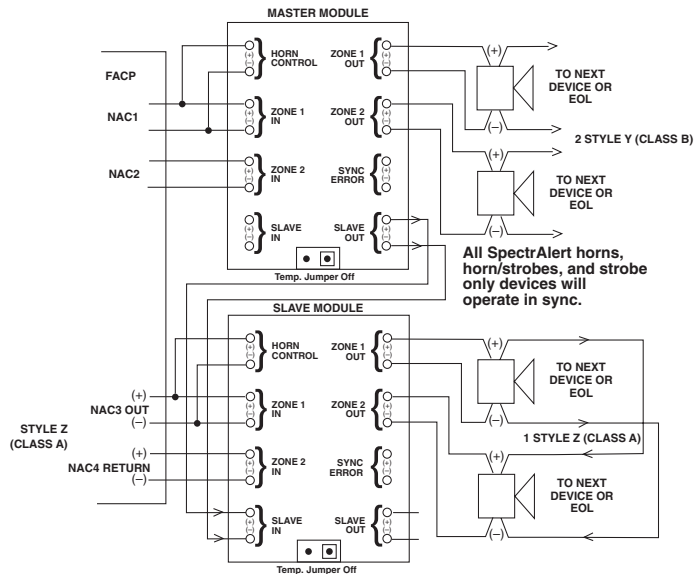
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NOTE: The MDL Module is factory set with the sync error contacts in the open state. These contacts may close during shipping. Approximately two seconds after power-up, these contacts will open.

NOTE: This contact could be wired to a separate monitoring input at FACP.

Figure 3:

NOTE: If zone 1 output of module is connected to strobes, chime/strobes or horn/strobes, zone 1 input supply power must be continuous for proper operation.

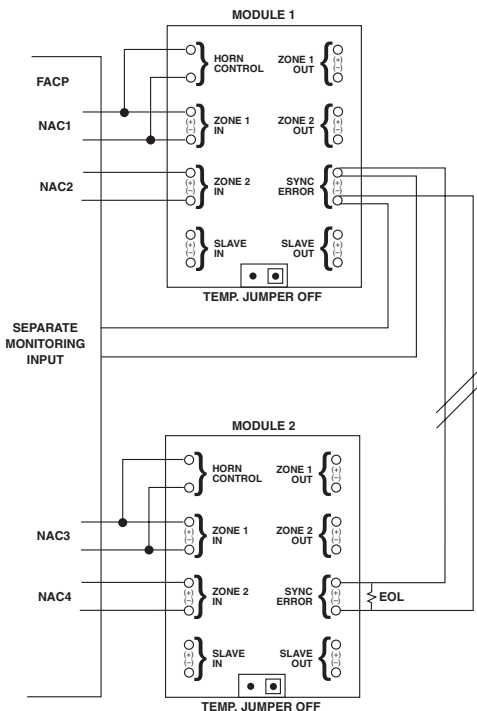


NOTE: The panel (or FACP) must be capable of providing Style Z (Class A) notification (or NAC) circuitry. Consult with panel manufacturer.

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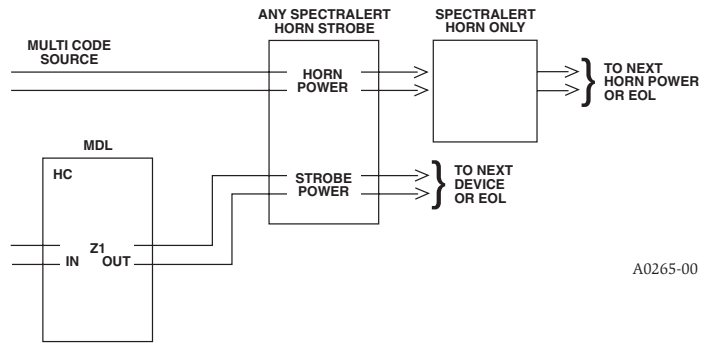
Figure 4: Multiple Devices Using Sync Error

NOTE: If zone 1 output of module is connected to strobes, chime/strobes or horn/strobes, zone 1 input supply power must be continuous for proper operation.



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Figure 5: Wiring for Coded Supplies



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NOTE: Horn/chime control must be powered for horn/strobes to operate the horn portion.

NOTE: SpectrAlert horn-only/chime-only and horn/strobe or chime/strobe devices must be set non-temporal for multi-code sourcing.

Temporal Coding on horns that produce a continuous tone (Non-SpectrAlert Horns)

See Figure 6

- Program module to provide temporal coding by inserting jumper plug per instructions.
- Connect only sounders producing a continuous tone to the module zone output(s).

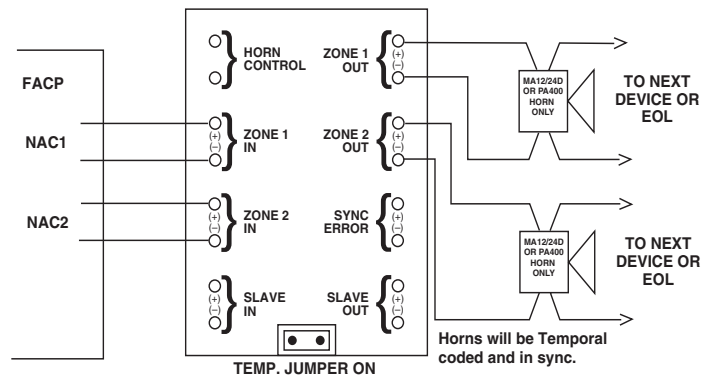
CAUTION

Strobes cannot be used on a module providing temporal coding to horns. Strobes must be wired for independent operation.

NOTE: Temporal jumper should be inserted across both pins only on non-SpectrAlert products that are to be powered for temporal sound output.

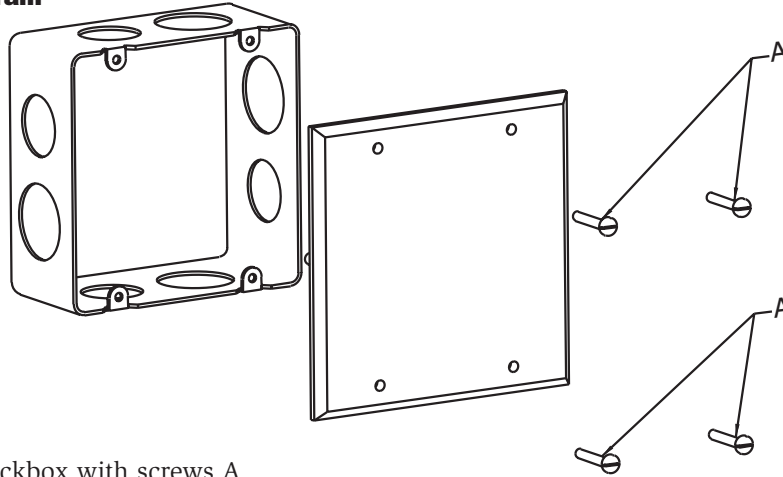
Figure 6:

NOTE: If zone 1 output of module is connected to strobes or horn/strobes, or chime/strobes zone 1 input supply power must be continuous for proper operation.



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Figure 6: Mounting Diagram



1. Complete field wiring.
2. Mount unit to 4¹¹/₁₆" backbox with screws A.

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Please refer to insert for the Limitations of Fire Alarm Systems

▲WARNING

The Limitations of Sounder/Strobes

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

The sounder may not be heard. The loudness of the sounder meets (or exceeds) current Underwriters Laboratories' standards. However, the sounder may not alert a sound sleeper or one who has recently used drugs or has been drinking alcoholic beverages. The sounder 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 sounder may not be heard by persons who are hearing impaired.

The signal strobe may not be seen. The electronic visual warning signal uses an extremely reliable xenon flash tube. It flashes at least once every three seconds and exceeds current Underwriters Laboratories standards for private mode viewing. The

visual warning signal is suitable for direct viewing and must be installed within an area where it can be seen by building occupants. The strobe must not be installed in direct sunlight or areas of high light intensity (over 60 foot candles) where the visual flash might be disregarded or not seen. The strobe may not be seen by the visually impaired and is not intended to meet American Disabilities Act (ADA) requirements.

The signal strobe may cause seizures. Individuals who have positive photic response to visual stimuli with seizures, such as persons with epilepsy, should avoid prolonged exposure to environments in which strobe signals, including this strobe, are activated.

The signal strobe cannot operate from coded power supplies. Coded power supplies produce interrupted power. The strobe must have an uninterrupted source of dc power in order to operate correctly. System Sensor recommends that the sounder and signal strobe always be used in combination so that the risks from any of the above limitations are minimized.

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 the enclosed 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.