



## FIRE ALARM SYSTEMS

### SERIES AMT AND AMT STROBE MULTITONE ELECTRONIC APPLIANCES

#### Description

WHEELLOCK'S Series AMT Multiple Input Electronic Appliances provide the industry with a ULC combination audible/visual appliance that simplifies installation and offers three (3) distinct prioritized audible signals from three isolated inputs. Priority (1) will override all other commands upon activation.

The AMT offers a choice of eight (8) self-prioritized sound combinations for suppression releasing systems, combination security and emergency evacuation systems and high risk installations as well as many other applications.

Each AMT Audible and AMT Strobe appliance has two user selective sound output levels: Standard dBA and High dBA. The AMT Audible provides 12VDC or 24VDC operation, filtered or FWR. The AMT Strobe Appliances operate at 24VDC and may be used with filtered or unfiltered (FWR) input voltages. Separate supervised sets of input terminals are available for each prioritized input. Jumper plugs are provided to enable both tone and strobe to operate simultaneously for all inputs.

The AMT Multitone Strobe Appliances are ULC Listed under Standard CAN/ULC-S526-02 for Visual Signaling Appliances and Standard CAN/ULC-S525-99 for Audible Signaling Appliances and use a Xenon flashtube with solid state circuitry enclosed in a rugged Lexan® lens to provide maximum reliability for effective visible signaling.

All models may be synchronized when used in conjunction with the Wheelock SM or DSM Sync Modules, with patented Sync Protocol.

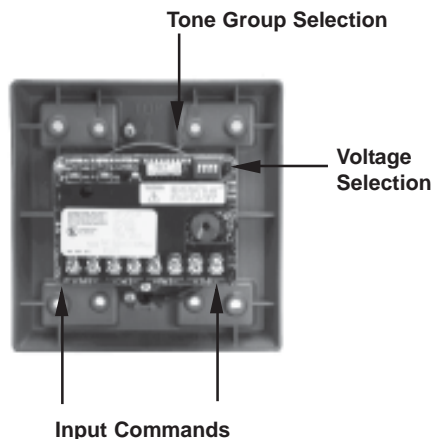
Synchronization of the continuous horn tone provides the temporal (Code 3) tone as mandated by NFPA-72 for all audible appliances. This ensures a distinct temporal (Code 3) pattern when 2 or more audibles are within hearing distance. If not synchronized, the temporal sound may overlap and not be distinctive. At the same time, the strobes will also be synchronized. This provides the ability to comply with ADA recommendations concerning photosensitive epilepsy and NFPA and UFC standards when installing two or more visual appliances within the field of view.



SERIES AMT

#### Features

- Approvals include: CAN/ULC-S526-02 for Visual Signaling Appliances and Standard CAN/ULC-S525-99 for Audible Signal Appliances
- Designed to meet or exceed NFPA/ANSI Standards and ADA Accessibility Guidelines. Meets OSHA 29 Parts 1910.165
- Three separate prioritized inputs that will activate three isolated signals
- All inputs are supervised
- Code-3 Horn and Tone meet ANSI/NFPA/ISO temporal pattern.
- Two power taps for High dBA and Standard dBA @ 10 feet
- AMT Strobe models available with 15/75 and 75 candela ratings for independent or combination input activations
- AMT with strobe can flash independently or in unison with all audible signals
- Selectable input voltage (12 or 24 VDC) for non-strobe applications
- Polarized inputs for compatibility with standard reverse polarity type supervision of circuit wiring by an alarm panel.
- Low cost installation via standard electrical boxes. Attractive flush or surface mounting options
- No additional trimplate required for flush mounting. Fast installation with In/Out screw terminals using #12 to #18 AWG



## General:

The Series AMT Multitone Strobe Appliances are ULC Listed under Standard CAN/ULC-S525-99 for Visual Signaling Appliances and Standard CAN/ULC-S526-02 for Audible Signaling Appliances for Fire Alarm Systems for indoor use with a temperature range of 0°C to 49°C (32°F to 49°F). They are listed for indoor only use with the backboxes specified in these instructions (See Mounting Options). The AMT Multitone Strobe signals use a Xenon flashtube with solid state circuitry enclosed in a rugged Lexan® lens to provide maximum visibility and reliability for effective visible signaling.

**NOTE: All CAUTIONS and WARNINGS are identified by the symbol ▲ . All warnings are printed in bold capital letters. ▲WARNING: PLEASE READ THESE INSTRUCTIONS CAREFULLY BEFORE USING THIS PRODUCT. FAILURE TO COMPLY WITH ANY OF THE FOLLOWING INSTRUCTIONS, CAUTIONS AND WARNINGS COULD RESULT IN IMPROPER APPLICATION, INSTALLATION AND/OR OPERATION OF THESE PRODUCTS IN AN EMERGENCY SITUATION, WHICH COULD RESULT IN PROPERTY DAMAGE, SERIOUS INJURY OR DEATH TO YOU AND/OR OTHERS.**

**Table 1: Current Ratings for AMT Multitone Audible Signals**

Tone	Tone Description	Rated Average Current (AMPS) 24 VDC-Audible		Rated Average Current (AMPS) 12 VDC-Audible	
		HI dBA	STD dBA	HI dBA	STD dBA
Horn	Broadband Horn (continuous)	.046	.025	.100	.020
Bell*	1560 Hz Modulated (0.07 Sec. On/Repeat)	.018	.014	.031	.010
March Time Horn	Horn (0.25 Sec. ON/0.25 Sec. Off/Repeat)	.046	.025	.100	.020
Code-3 Horn	Horn (ANSI S3.41 Temporal Pattern)	.046	.025	.100	.020
Code-3 Tone	500 Hz (ANSI S3.41 Temporal Pattern)	.027	.014	.060	.015
Slow Whoop	500-1200Hz Sweep (4.0 Sec. On/0.5 Sec OFF/Repeat)	.043	.025	.100	.025
Siren	600-1200 Hz Sweep (1.0 Sec. On/Repeat)	.037	.019	.082	.020
HI/LO	1000/800 Hz (0.25 Sec. On/Alternate)	.022	.016	.044	.013
Vibrating Chime	700 Hz (1.0 Sec. Decay, Repeat)	.013	.010	.027	.010

**Table 2: UL dBA Ratings**

Tone	HI/LO Volume	dBA Reverberant Ratings Per UL 464	dBA Anechoic Ratings
		24V	24V
Horn	HI	92	98
	STD	86	92
Bell	HI	84	91
	STD	78	86
March Time	HI	88	98
	STD	82	92
Code 3 Horn	HI	88	98
	STD	81	92
Code 3 Tone	HI	84	94
	STD	78	89
Slow Whoop	HI	88	98
	STD	83	93
Siren	HI	89	97
	STD	83	92
HI/LO	HI	86	92
	STD	81	87
Chime	HI	78	88
	STD	71	82

Add 25% more input current than shown in Table 1 when operating the unit at maximum input voltage.

Add average strobe current from Table 4 to average audible current from Table 1 to obtain total average current for each unit, if the strobe and audible are wired to operate in unison on a single circuit.

Wheelock's AMT Appliances are unique multitone alarm signals with separate input terminals for each sound. They are the ideal choice for suppression systems and emergency signaling systems where distinctive multiple alarm conditions are required. Eight groups of three self-prioritized sound outputs are provided with separate electrically isolated input terminals for each sound (see Table 2 and Table 5 for sound selections). Sound output can be field set to provide either HIGH (HI) dBA or STANDARD (STD) dBA sound output level.

All AMT Multitone Strobe models are designed for use with either filtered or unfiltered Full-Wave-Rectified (FWR) input voltage. The AMT Multitone Strobe Appliances have separate input terminals for alarm tone activation and strobe activation. The strobes can be easily field programmed to operate independently or in unison with all of the audible alarms. All inputs are polarized for compatibility with standard reverse polarity supervision of circuit wiring by a Fire Alarm Control Panel (FACP). In the event that three simultaneous commands occur, priority one will activate. If priority 2 + priority 3 exist, priority 2 will activate.

Anechoic dBA is measured on axis in a non-reflective (free field) test room using fast meter response. For peak dBA (measured with peak meter response), add 5 dBA to typical anechoic values shown in Table 2. Reverberant dBA is a minimum UL rating based on sound power measurements in a reverberant test room.

Model Number	Order Code	Input Voltage	Rated Candela	Average* Strobe Current 24 VDC(AMPS)	Mounting Options**
AMT-12/24-R	5887	12/24	-	-	D,E,F,L,M,N,O,P,R
AMT-12/24-W	5893	12/24	-	-	D,E,F,L,M,N,O,P,R
AMT-241575W-FR	9463	24	15/75	0.072	D,E,F,L,M,N,O,P,R
AMT-241575W-FW	9466	24	15/75	0.072	D,E,F,L,M,N,O,P,R
AMT-24MCW-FR	3300	24	15/30/75/110	.041/.063/.109/.140	D,E,F,L,M,N,O,P,R
AMT-24MCW-FW	3302	24	15/30/75/110	.041/.063/.109/.140	D,E,F,L,M,N,O,P,R

\* Average current per Wheelock Production Testing at 12/24 VDC nominal voltage. For rated average, peak and in-rush current across the UL listed voltage range for both filtered DC and full wave rectified FWR refer to table above.

\*\* Mounting Options: Refer to Data Sheet S7000 or current catalog for mounting options.

The ULC Listed "Rated Voltage" range is 20-31 VDC for 24 VDC models and 10.5-15.6 VDC for 12 VDC audible only model using either filtered (DC) or unfiltered full-wave-rectified (FWR) voltage. Check the minimum and maximum output of the power supply and standby battery and subtract the voltage drop from the circuit wiring resistance to determine the applied voltage to the notification appliance.

**▲ WARNING: ALTHOUGH UL TESTING HAS VERIFIED THAT THESE PRODUCTS FUNCTION EVEN AT 80% OF THEIR MINIMUM RATING AND 110% OF THEIR MAXIMUM RATING, WHEELOCK STRONGLY RECOMMENDS THAT THE VOLTAGE APPLIED TO THESE PRODUCTS BE WITHIN THEIR RATED VOLTAGE RANGE. THE APPLICATION OF IMPROPER VOLTAGE MAY RESULT IN DEGRADED OPERATION OR DAMAGE TO THESE PRODUCTS.**

**▲ WARNING: MAKE SURE THAT THE TOTAL CURRENT REQUIRED BY ALL APPLIANCES THAT ARE CONNECTED TO THE SYSTEM'S PRIMARY AND SECONDARY POWER SOURCES AND NAC CIRCUITS DOES NOT EXCEED THEIR RATED CURRENT. OVERLOADING THESE SOURCES COULD RESULT IN LOSS OF POWER AND FAILURE TO ALERT OCCUPANTS DURING AN EMERGENCY.**

**▲ WARNING: MAKE SURE THAT ALL FUSES USED ON NAC CIRCUITS ARE RATED TO HANDLE THE MAXIMUM INRUSH OR PEAK CURRENT FROM ALL APPLIANCES ON THOSE CIRCUITS. FAILURE TO DO THIS MAY RESULT IN LOSS OF POWER TO THE NAC CIRCUIT AND THE FAILURE OF ALL APPLIANCES ON THAT CIRCUIT TO OPERATE.**

**▲ WARNING: THE STROBES ARE DESIGNED TO FLASH AS SPECIFIED WITH CONTINUOUS (NON-CODED) APPLIED VOLTAGE. THE STROBES MAY NOT FLASH IF USED IN CODED SYSTEMS.**

AMT Multitone strobe models are UL Listed for indoor use with a temperature range of 0°C to 49°C (32°F to 120°F) and maximum humidity of 85%.

NOTE: This equipment has 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 in residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures: 1) Reorient or relocate the receiving antenna, 2) Increase the separation between the equipment and receiver, 3) Connect the equipment into an outlet on a circuit different from that to which the receiver is connected, and 4) Consult the dealer or an experienced radio/TV technician for help.

AMT Multitone Strobe Appliances are field set for any one of eight groups of self-prioritized tones by setting a four position switch (SW1) as shown in Table 4. Use SW1 POS 2,3,4 to select the desired alarm tones.

Note: The prioritized tones contained in each group is factory pre-set which can not be changed.

Rated Current	Voltage	
	24 VDC	24 VFWR
Average	.080	.081
Peak	190	.216
Inrush	.250	.380

Tones			Switch Settings		
PRI 1	PRI 2	PRI 3	POS 2	POS 3	POS 4
Horn	Bell	Siren	1	1	1
Code 3 Horn	Siren	Vibrating Chime	1	0	1
Slow Whoop	March Time Horn	H/LO	0	0	1
March Time Horn	H/LO	Vibrating Chime	1	1	0
Code 3 Horn	Bell	Siren	0	1	1
Siren	Horn	Vibrating Chime	0	1	0
Bell	March Time Horn	Siren	1	0	0
Code 3 Tone	H/LO	Siren	0	0	0

Note: The **Code-3 Horn** and **Code-3 Tone** (set on HIGH dBA) incorporate the temporal pattern specified by ANSI/NFPA for standard emergency evacuation signaling. They should be used only for fire evacuation signaling and not for any other purpose.

The Horn and Bell Tones can be used on coded systems with a minimum On-Time of 1/4 second if the audible and strobe are wired to operate independently. All other tones are recommended for use only on continuous (non-coded) systems.

# Architects and Engineers Specifications

When notification appliances are required for applications with more than one function, an appliance with multiple inputs and capable of being programmed shall be used. The notification appliance shall be capable of accepting three (3) individual DC signals and providing three (3) distinct audible signals. In the event the signals are simultaneous, the priority shall be as follows. Highest priority = PR1, Second priority = PR2 and the Third priority = PR3. With the addition of the Strobe, the appliance shall operate with an independent input DC voltage to the strobe terminals. When it is desired to operate the strobe with all of the audible signals, only a set of jumpers shall be required.

The notification appliance shall be a Wheelock Series AMT audible/visual appliance or equivalent. Notification appliance shall be electronic and use solid state components. Electromechanical alternatives are not approved. Tone selection shall be by durable dip switch assembly and not clips or jumpers. The audible and the strobe shall be able to operate from a single NAC circuit while producing any of these tones. The appliances shall provide two output sound levels: Standard and High dBA. The High anechoic dBA measurement at 10 feet at the alarm HORN SETTING shall be 98 dBA for AMT and 98 dBA for AMT Strobes, at nominal voltage. Operating voltages shall be either 12VDC (Audible only) or 24VDC using filtered power or unfiltered power supply (FWR). All models shall have provisions for standard reverse polarity type supervision and IN/OUT field wiring using terminals that accept #12 to #18 AWG wiring.

Combination audible/visual appliances shall incorporate a Xenon flashtube enclosed in a rugged Lexan lens or equivalent with solid state circuitry. Strobe shall meet ULC Listed under Standard CAN/ULC-S526-02 for Visual Signaling Appliances and Standard CAN/ULC-S525-99 for Audible Signaling Appliances

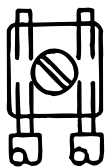
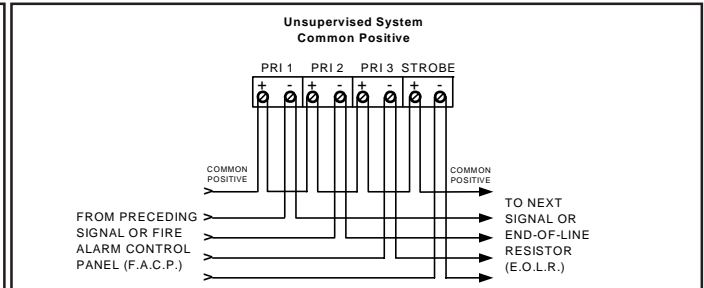
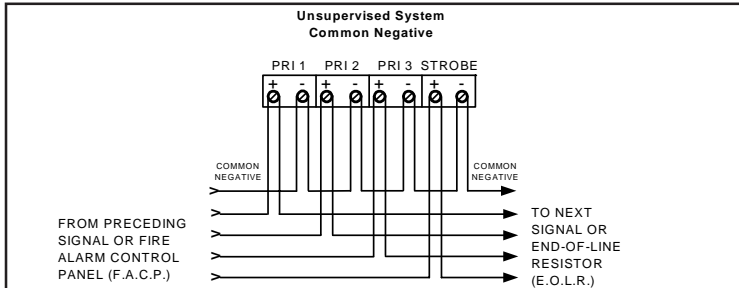
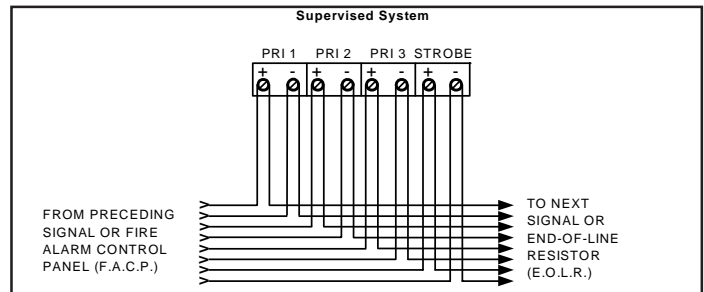
The combination audible/visual appliances may be installed indoors and surface or flush mounted. They shall mount to standard electrical hardware requiring no additional trimplate or adapter. The aesthetic appearance shall not have any mounting holes or screw heads visible when the installation is completed. The appliance shall be finished in a textured red color.

The audible appliance may be installed indoor or outdoor with the proper backbox.

Strobe models shall incorporate circuitry for synchronized strobe flash and shall be designed for compatibility with Wheelock SM and/or DSM Sync Modules with Sync Protocol. The strobes shall not drift out of synchronization at any time during operation. If the module fails to operate (i.e., contacts remain closed), the strobes shall revert to a non-synchronized default flash rate.

## Wiring Diagrams (for all models)

- Isolated inputs are provided for independent supervision and actuation of the three audible inputs.
- In case of simultaneous inputs, the three audible outputs are self-prioritized as follows: 1st priority = PRI 1; 2nd priority = PRI 2, 3rd priority = PRI 3. (See table 4 for tone selection).
- Leave any unused inputs disconnected.
- For applications not requiring supervision: connect all positive (+) terminals to the power source. The negative (-) terminal for each signal will actuate the device.



1. AMT Multitone appliances have in-out wiring terminals that accept two #12 to #18 American Wire Gauge (AWG) wires at each screw terminal. Strip leads 3/8 inches and connect to screw terminals.

**▲WARNING: NFPA CODES REQUIRE SIGNALING APPLIANCES TO BE SUPERVISED. CHECK TO BE CERTAIN THAT UNSUPERVISED SIGNALING APPLIANCES DO NOT VIOLATE ANY APPLICABLE CODES.**

2. Break all in-out wire runs on supervised circuits to assure integrity of circuit supervision as shown on left. The polarity shown in the wiring diagrams is for operation of the appliance. The polarity is reversed by the F.A.C.P. during supervision.

**NOTE: Due to continuous development of our products, specifications and offerings are subject to change without notice in accordance with Wheelock Inc. standard terms and conditions.**

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