



FIRE ALARM SYSTEMS

SERIES AMT and AMT STROBE MULTITONE ELECTRONIC APPLIANCES FOR NEW YORK CITY

Description

WHEELLOCK'S Series AMT Multiple Input Electronic Appliances provides New York City with a UL1971/464 combination audible/visual appliance that simplifies installation and offers three (3) distinct preset prioritized audible signals from three isolated inputs. Priority (1) will override all other commands upon activation.

The AMT offers 3 preset prioritized sound combinations. The 3 preset priorities are Bell - Priority 1; Code 3 Horn - Priority 2; and Vibrating Chime - Priority 3.

The AMT with Strobe is designed for ADA applications with maximum performance, reliability and cost-effectiveness while meeting or exceeding the latest requirements of NFPA 72 (the National Fire Alarm Code), ANSI 117.1 (the American National Standard For Accessible and Usable Buildings and Facilities) and UL Standard 1971 (Standard for Signaling Devices for the Hearing Impaired). AMT Strobes, when properly specified and installed in accordance with NFPA/ANSI Standards, can provide the Equivalent Facilitation allowed under ADA Accessibility Guidelines (ADAAG General Section 2.2) by meeting or exceeding the illumination which results from the ADA specified strobe intensity of 75 candela at 50 feet. This is an illumination of 0.030 lumens per square foot (footcandles).

Each AMT and AMT Strobe appliance has two user selective sound output levels: STANDARD dBA and HIGH dBA. The AMT provides dual voltage capability in one unit, 12VDC or 24VDC operation, filtered or FWR. The AMT Strobe Electronic Appliance operates with 24VDC and may be used with filtered or unfiltered (full-wave-rectified) 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.

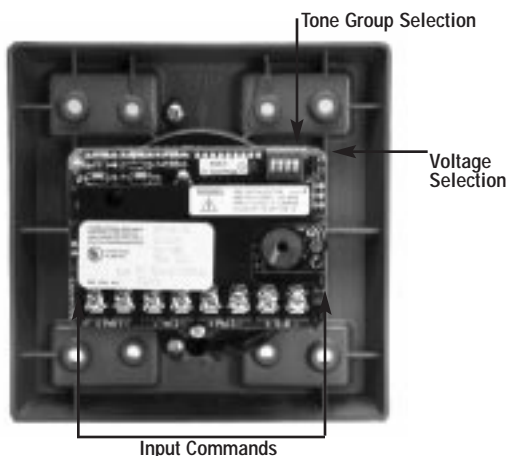
The AMT Multitone Strobe Appliance is UL Listed for indoor wall mount use, under Standard 1971 for Signaling Devices for the Hearing Impaired and Standard 464 for Audible Signal Appliances, and use a Xenon flashtube with solid state circuitry enclosed in a rugged Lexan® lens to provide maximum reliability for effective visible signaling. The Series LSM 15/75 candela wall mounted strobes were tested at UL for 75cd on axis. They are Listed at 15 candela under UL 1971 and meet 75 candela intensity on axis for ADA guidelines with low current draw.



SERIES AMT

Features

- **Approvals include:** Underwriters Laboratories (UL 1971 and UL 464) and New York City (MEA #151-92-E; Vol. 21).
- Compliance with RFI limits in FCC Part 15, Class B for compatibility with sensitive detection and communication circuits.
- Designed to meet or exceed NFPA/ANSI Standards and ADA Accessibility Guidelines. Meets OSHA 29 Parts 1910.165.
- Three separate preset 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 normal dBA @ 10 feet.
- Low current draw with low temperature compensation to reduce power consumption and wiring costs.
- AMT Strobe model is available with a 15/75 candela rating for independent or combination input activations.
- AMT with strobe can flash independently or in unison with all audible signals.
- 12VDC and 24VDC models with wide Listed voltage range, filtered (DC) and FWR. (AMT Strobe version in 24 volts only.)
- 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 UL Listed under Standard 1971 for Emergency Devices for the Hearing Impaired and UL Standard 464 for Audible Signal Appliances. They are listed for indoor only use with the backboxes specified in these instructions (See Mounting Options). Models with LSM strobes are Listed for wall mounting. LSM strobes were tested at UL for 75cd on axis. The AMT Multitone Strobe appliance uses 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. REFER TO CURRENT INSTALLATION INSTRUCTION SHEET.**

Tone	Tone Description	Rated Average Current (Amps)		Rated Average Current (Amps)	
		24 VDC		12 VDC	
		HI dBA	STD dBA	HI dBA	STD dBA
Bell	1560 Hz Modulated (0.07 Sec. ON/Repeat)	0.016	0.012	0.031	0.010
Code-3 Horn	Horn (ANSI S3.41 Temporal Pattern)	0.040	0.023	0.100	0.020
Vibrating Chime	700Hz (1.0 Sec. Delay/Repeat)	0.017	0.012	0.027	0.010

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

Add average strobe current from Table 3 (ordering information) 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. Refer to Installation Instruction Sheet P83611 (AMT-12/24) or P83612 (AMT 24-LSM) for rated average peak and inrush current across the UL listed voltage range for both filtered and unfiltered full-wave-rectified voltage.

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. 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 (F.A.C.P.). In the event that three simultaneous commands occur, priority one will activate. If priority 2 + priority 3 exist, priority 2 will activate.

Specifications:

Tone	dBA for AMT Multitone Signal						dBA for AMT Multitone with Strobe					
	Typical Anechoic dBA at 10 Feet		Rated Reverberant dBA At 10 Feet Per UL 464				Anechoic dBA @ 10'		Reverberant dBA @ 10' Per UL 464			
	At Nominal		At Minimum		At Maximum		Nominal		Minimum		Maximum	
	Input Voltage		Input Voltage		Input Voltage		Voltage		Voltage		Voltage	
HI	STD	HI	STD	HI	STD	HI	STD	HI	STD	HI	STD	
Bell	93	88	82	75	85	79	91	86	79	75	82	75
Code-3 Horn	99	93	85	75	85	79	98	92	82	75	82	79
Vibrating Chimes	89	83	79	73*	82	75	88	82	75	70*	79	73*

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.

▲ **WARNING: AMT MULTITONE STROBE MODELS SET ON "VIBRATING CHIME" WITH STANDARD dBA DO NOT MEET THE 75 dBA MINIMUM UL REVERBERANT SOUND LEVEL REQUIRED FOR PUBLIC MODE FIRE PROTECTION SERVICE (NOTED BY * IN TABLE 2). MODELS WITH SETTINGS WHICH PRODUCE LESS THAN 75 dBA MAY NOT BE HEARD. THIS SETTING IS ACCEPTABLE ONLY FOR GENERAL SIGNALING (NON-FIRE ALARM) USE. USE THE "HIGH" dBA SETTING WITH THIS TONE.**

Ordering Information

MODEL NUMBER	ORDER CODE	INPUT VOLTAGE	RATED CANDELA	AVERAGE* STROBE CURRENT (AMPS)	MOUNTING** OPTIONS
AMT-12/24-R-NYC	7920	12/24	—	—	E,F,L,M,O
AMT-24-LSM-VFR-NYC	7921	24	15/75	.100	E,F,L,M,O

* 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 Installation Instruction Sheet (P83611 for AMT-12/24 or P83612 for AMT-24-LSM).

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

The UL Listed "Rated Voltage" range is 20-31 VDC for 24 VDC models and 10.5-15.6 VDC for 12 VDC models 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 appliances.

▲ 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 rate of 32°F to 120°F (0°C to 49°C) and maximum humidity of 85%.

AMT Multitone models are UL Listed for indoor and outdoor use with a temperature rate of -31°F to 150°F (-35°C to 66°C) and maximum humidity of 95%.

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.

The Series AMT is a single multitone appliance capable of three separate and distinct signals from three different sources together with an ADA compliant strobe light. These appliances may be employed only in the following installations:

1. Computer rooms, libraries, museums, etc. which utilize FM-200, halon inergen or any other fire extinguishing system as defined in the Rules of the City of New York 15-08.
2. Pre-Action Sprinkler Systems
3. In lieu of the three separate and distinct signals at the Interior Fire Alarm, Smoke Detection and Sprinkler Alarm Systems control panel.

Table 4 below shows the sequence of tones for various systems.

Note: The prioritized tones are factory preset and cannot be changed.

Priority and Tone	Pre-Action Sprinkler	Halon, FM-200 Inergen, etc.	Lieu of 3 Separate and Distinct Signals at IPA
Priority 1 (Bell Tone)	Waterflow, Smoke Detector and Manual Pull Station	Agent Discharge	Waterflow
Priority 2 (Code 3 Horn Tone)	Valve Tamper Device and Low-Air Supervisory	Cross-Zoned Smoke Detector	Smoke Detector and Manual Pull Station
Priority 3 (Vibrating Chime)	Trouble Condition	First Smoke Detector	Valve Tamper Device or any Trouble Condition
Strobe Activation	Priority 1 & 2	Priority 1, 2 & 3	Priority 1 & 2

For example, whenever the vibrating chime (Priority 3) is activated in a computer room protected by FM-200 agent then the occupants will know that one smoke detector has been activated. When the code 3 horn (Priority 2) is activated, then the occupants will be advised to evacuate the premises and finally the bell tone (Priority 1) means the release of the extinguishing agent. The ADA compliant strobe will be activated upon the first fire detection and will stay on throughout the sequence of operation leading to discharge.

Please note that during any time when multiple signals are received a Priority 3 signal shall be overridden by a Priority 2 signal which consequently shall be overridden by a Priority 1 signal.

Note: The Code-3 Horn (set on HIGH dBA) incorporates 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. The Vibrating Chime Tone is 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, a device 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 a 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 specifically designed to comply with New York City MEA requirements. Notification appliance shall be electronic and use solid state components. Electromechanical alternatives are not approved. The audible and the strobe shall be able to operate from a single NAC circuit. 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 99 dBA for AMT and 99 dBA for AMT with Strobe, at nominal voltage. Operating voltages shall be either 12VDC for AMT appliance and 24VDC for AMT strobe appliance using filtered power or unfiltered power supply (full-wave-rectified). 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 UL 1971 and produce a flash rate of one (1) flash per second minimum over the listed input voltage (20VDC-31VDC) range. The strobe intensity shall be rated per UL 1971 for 15 or 75 Candela. The Series LSM 15/75 candela strobe shall be specified when 15 candela UL 1971 Listing with 75 candela intensity near-axis is required.

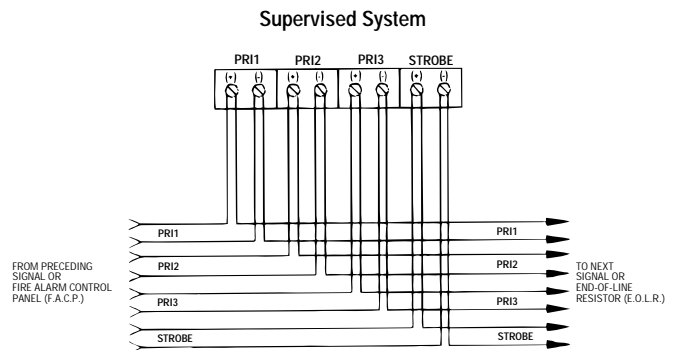
All UL 1971 Listed strobe appliances shall be verified to meet FCC Part 15, Class B and incorporate low temperature compensation to insure the lowest possible current consumption. Strobe activation shall be via independent NAC circuit or from the same NAC circuit as the audible.

The combination audible/visual appliances may be installed indoors, 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 device may be installed indoors or outdoors utilizing the IOB-R backbox.

Wiring Diagram:

- 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.
- Leave any unused inputs disconnected.



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

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.

3 YEAR WARRANTY

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