

Cooper-Wheelock MT Series Multitone Electronic Appliances



Description

Cooper-Wheelock's Series MT and MT Strobe Multitone electronic appliances offer a choice of eight (8) nationally and internationally recognized alerting sounds: Horn, Bell, March Time Horn, Code-3 Tone, Code-3 Horn, Slow Whoop, Siren or Hi/Lo Tone. The Code-3 Horn and tone patterns are engineered to comply with NFPA/ANSI Temporal Pattern specifications without requiring additional equipment. With MT and MT Strobe appliances, one alarm appliance meets most of your signaling needs. Strobe models can be

synchronized using the Cooper-Wheelock SM, DSM Sync Modules or a power supply equipped with Cooper-Wheelock's patented Sync Protocol.

The MT Strobes are designed for ADA applications with maximum performance, reliability and cost-effectiveness while meeting or exceeding the latest requirements of NFPA 72, ANSI 117.1, UFC and UL Standard 1971 as well as meeting ADA requirements concerning photosensitive epilepsy.

Each MT and MT Strobe appliance has two installer selective sound output levels: STANDARD dBA and HIGH dBA. Non-strobe versions provide selectable voltage capability in one unit, 12VDC or 24VDC. Strobe versions are specific for either 12VDC or 24VDC and all models may be used with filtered or unfiltered (full-wave-rectified) input voltages. Separate input terminals are available, shunt wires are provided to enable both tone and strobe to operate simultaneously from a single input.

The Series MT Multitone Strobe appliances are UL Listed for indoor wall mount applications under Standard 1971 for Signaling Devices for the Hearing Impaired and under Standard 464 for Audible Signaling Appliances.

General Notes on strobes

- Strobes are designed to flash once flash per second minimum over their "Regulated Voltage Range". Note that NFPA-72 specifies a flash rate of 1 to 2 flashes per second and ADA Guidelines specifies a flash rate of 1 to 3 flashes per second.
- All candela ratings represent minimum effective Multitone Strobe intensity based on UL Standard 1971.
- MT Strobe models are UL Standard 1971 Listed for indoor use with a temperature range of 32°F to 120°F (0°C to 49°C) and maximum humidity of 93% ±2%. The MT-12/24 and MTWP models for outdoor use are Listed for -31°F to 150°F (-35°C to 66°C) and maximum humidity of 95%
- MT Audible is UL Standard 464 Listed.
- "Regulated Voltage Range" is the newest terminology used by UL to identify the voltage range. Prior to this change UL used the terminology "Listed Voltage Range".

Features

- One alarm appliance with (8) eight selective signals to provide superior sound penetration for various ambient and wall conditions with two field selectable sound output levels
- Audible and strobe can operate from a single NAC circuit with any of the (8) eight audible sounds
- Selectable input voltage on non-strobe versions. Strobe versions are factory set for either 12 or 24VDC, with wide-Listed voltage range, filtered (DC) and FWR
- Designed to meet or exceed ADA/NFPA/UFC/ANSI Standards and Accessibility Guidelines
- Complies with OSHA 29, Part 1910.165
- Series MT appliances have IN and OUT wiring terminations that accept two #12 to #18 American Wire Gauge (AWG) wires at each terminal. Inputs are polarized for compatibility with standard reverse polarity type supervision
- Code-3 Horn and Tone meet ANSI/NFPA temporal pattern for standard emergency evacuation signaling
- MT Strobe models available with 15/75 and 75 candela ratings for independent or single input activations and can be synchronized using Wheelock's SM or DSM sync module(s) or a power supply with built-in Wheelock Sync Protocol
- Mounts to either 4" square or double gang boxes (important for retrofit installations). Attractive flush or surface mounting
- No additional trimplate required for flush mounting

Listings

Listings and approvals below apply to the basic MT Series Multitone Electronic Appliances. In some cases, certain modules may not be listed by certain approval agencies, or listing may be in process. Consult factory for latest listing status.

- UL Listed: files E5946 (Multitone Signals Models) - E5946/S5391 (Multitone Strobe Signals Models).
- ULC Listed: file CS243.
- FM Approved.
- CSFM approved: files 7125-0785:155, 7135-0785:118

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Engineer's Specifications

The notification appliance shall be a Cooper-Wheelock Series MT audible/visual appliance or equivalent. Notification appliance shall be electronic and use solid state components. Electromechanical alternatives are not approved. Each electronic appliance shall provide eight (8) field selectable alarm tones. The tones shall consist of: HORN, BELL, MARCH TIME HORN, CODE-3 HORN, CODE-3 TONE, SLOW WHOOP, SIREN and HI/LO. Tone selection shall be by durable dip switch assembly and not clips or jumpers. The Multitone Audible appliance shall be UL Listed under Standard 464 for Audible Signal Appliances. The audible and the strobe shall be able to operate from a single NAC circuit while producing any of these tones. The appliance shall provide two output sound levels: STANDARD and HIGH dBA. The HIGH dBA setting shall provide a minimum 5 dBA increase in sound output at nominal voltage. The HIGH anechoic dBA measurement at 10 feet at the alarm HORN SETTING shall be 101 dBA minimum for MT and 92 dBA minimum for MT Strobes, at nominal voltage. Operating voltages shall be either 12 VDC or 24 VDC 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 produce a flash rate of one (1) flash per second minimum over the voltage range. The strobe intensity shall be rated per UL and Listed under Standard 1971 for Signaling Devices for the Hearing Impaired for 1575 or 75 candela. The 15/75 candela strobe shall be specified when 15 candela or with 75 candela intensity on-axis is required. Strobe Models shall incorporate circuitry for synchronized strobe flash and shall be designed for compatibility with Cooper-Wheelock SM and/or DSM Sync Modules or a Power Supply with Cooper-Wheelock's 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. Strobe activation shall be via independent input or from the same input circuit as the audible.

The combination audible/visual appliances shall be installed indoors and may be 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 Series MT-12/24 audible appliance may be installed indoor or outdoor with the proper back box.

For Weatherproof applications where specifications require 75 cd @ -31°F (-35°C) and full temperature range of -31°F to 150°F refer to Data Sheet S9004 and/or Installation Instructions P84150.

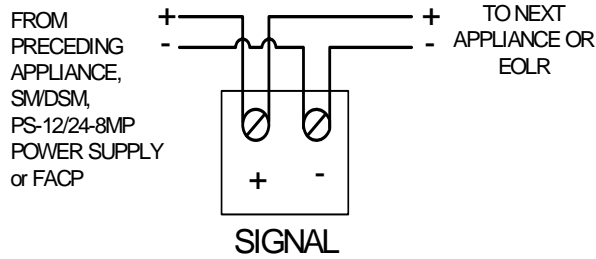
Cooper-Wheelock products must be used within their published specifications and must be PROPERLY specified, applied, installed, operated, maintained and operationally tested in accordance with their installation instructions at the time of installation and at least twice a year or more often and in accordance with local, state and federal codes, regulations and laws. Specification, application, installation, operation, maintenance and testing must be performed by qualified personnel for proper operation in accordance with all of the latest National Fire Protection Association (NFPA), Underwriters' Laboratories (UL), National Electrical Code (NEC), Occupational Safety and Health Administration (OSHA), local, state, county, province, district, federal and other applicable building and fire standards, guidelines, regulations, laws and codes including, but not limited to, all appendices and amendments and the requirements of the local authority having jurisdiction (AHJ).

! WARNING! CONTACT
Cooper-
WHELOCK FOR THE CURRENT "INSTALLATION INSTRUCTIONS" P82467 MT-12/24, P84155 MT w/Strobe P84150 MTWP WEATHERPROOF "GENERAL INFORMATION" SHEET (P82380) ON THESE PRODUCTS. THESE DOCUMENTS DO UNDERGO PERIODIC CHANGES. IT IS IMPORTANT THAT YOU HAVE CURRENT INFORMATION ON THESE PRODUCTS. THESE MATERIALS CONTAIN IMPORTANT INFORMATION THAT SHOULD BE READ PRIOR TO SPECIFYING OR INSTALLING THESE PRODUCTS, INCLUDING:

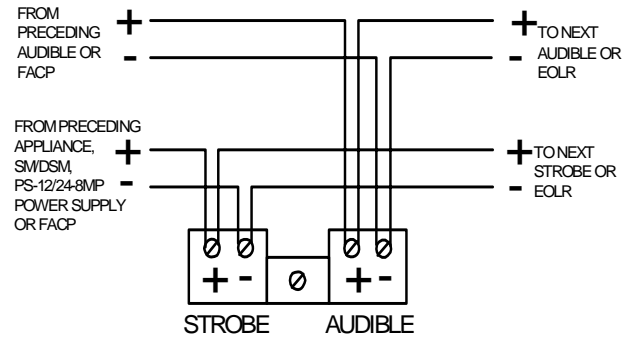
- TOTAL CURRENT REQUIRED BY ALL APPLIANCES CONNECTED TO SYSTEM SECONDARY POWER SOURCES.
- FUSE RATINGS ON NOTIFICATION APPLIANCE CIRCUITS TO HANDLE PEAK CURRENTS FROM ALL APPLIANCES ON THOSE CIRCUITS.
- COMPOSITE FLASH RATE FROM MULTIPLE STROBES WITHIN A PERSON'S FIELD OF VIEW.
- THE VOLTAGE APPLIED TO THESE PRODUCTS MUST BE WITHIN THEIR RATED INPUT VOLTAGE RANGE.
- INSTALLATION IN OFFICE AREAS AND OTHER SPECIFICATION AND INSTALLATION ISSUES.
- USE STROBES ONLY ON CIRCUITS WITH CONTINUOUSLY APPLIED OPERATING VOLTAGE. DO NOT USE STROBE ON CODED OR INTERRUPTED CIRCUITS IN WHICH THE APPLIED VOLTAGE IS CYCLED ON AND OFF AS THE STROBE MAY NOT FLASH.
- FAILURE TO COMPLY WITH THE INSTALLATION INSTRUCTIONS OR GENERAL INFORMATION SHEETS COULD RESULT IN IMPROPER INSTALLATION, APPLICATION, AND/OR OPERATION OF THESE PRODUCTS IN AN EMERGENCY SITUATION, WHICH COULD RESULT IN PROPERTY DAMAGE AND SERIOUS INJURY OR DEATH TO YOU AND/OR OTHERS.
- CONDUCTOR SIZE (AWG), LENGTH AND AMPACITY SHOULD BE TAKEN INTO CONSIDERATION PRIOR TO DESIGN AND INSTALLATION OF THESE PRODUCTS, PARTICULARLY IN RETROFIT INSTALLATIONS.

Wiring Diagram

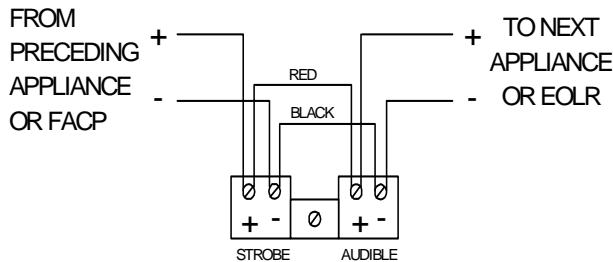
MT Signal



Audible signal and strobe operate independently



Audible signal and strobe operate in unison. Red and black shunt-wires are supplied.



NOTE: Do NOT loop wires under terminals; use In/Out wiring method per NFPA/NEC.

Ordering Information

MODEL NUMBER	INPUT VOLTAGE	RATED CANDELA	MOUNTING OPTIONS***	AGENCY APPROVALS				
				UL	MEA	CSFM	FM	BFP
MT-12/24-R*	12/24	-	D,E,F,L,M,O,P,R	X	X	X	X	X
MT-241575W-FR#	24	15 (75 on AXIS)	D,E,F,L,M,O,P,R	X	X	X	X	*
MT-2475W-FR	24	75	D,E,F,L,M,O,P,R	X	X	X	X	*
MTWP-2475W-FR**	24	75** (@ -31F/-35°C)	M	X	X	X	X	*
MT4-115-R	115VAC	-	D,E,J,K,N,O,R	X	X	X	X	X
MT4-115-WH-VFR##	115VAC	15	D,E,J,K,N,O,R	X	X	X	X	X
SYNC MODELS	INPUT VOLTAGE	AVERAGE CURRENT (AMPS)	MOUNTING OPTIONS***	UL	MEA	CSFM	FM	BFP
SM-12/24-R	12 or 24		W	X	X	X	X	X
DSM-12/24-R	12 or 24		W	X	X	X	X	X

NOTE: *MT-12/24 Audible can be used with Cooper-Wheelock's RSSP Multi-Candela for applications requiring 15, 30, 75, 110 cd Wall Strobes.

**MTWP-2475W is Weatherproof and rated for 75 cd @ -31°F (-35°C). See Cooper-Wheelock Data Sheet S9004 or Installation Instruction P84150.

***For additional information, please refer to the mounting options data sheet.

****SM Sync Modules are rated for 3.0 amperes at 12/24 VDC; DSM Dual Circuit Modules are rated for 3.0 amperes per circuit. Maximum number of interconnected DSM modules is twenty (20). Refer to Cooper-Wheelock Data Sheet S3000.

Use MT-241575W when 15cd is specified. 15/75 is UL Listed for 15cd with 75cd on AXIS.

Series WH Strobe is listed for UL Standard 1638 only. See Cooper-Wheelock Instruction Sheet P83159.



WARNING! PLEASE READ THESE SPECIFICATIONS AND INSTALLATION INSTRUCTIONS CAREFULLY BEFORE USING, SPECIFYING OR APPLYING 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, AND SERIOUS INJURY OR DEATH TO YOU AND/OR OTHERS.

Table 1: dBA and Current Ratings for Multitone Audible Portion

Tone	Average Mean Current Ratings				dBA Reverberant Ratings Per UL 464				dBA Anechoic Ratings	
	@ 24 VDC		@ 12 VDC		@ 24 VDC		@ 12 VDC		@ 12 and 24 VDC	
	HI	STD	HI	STD	HI	STD	HI	STD	HI	STD
Horn	0.040	0.025	0.100	0.020	92	87	90	77	99	93
Bell	0.020	0.013	0.031	0.010	86	80	85	69	92	87
March Time Horn	0.040	0.025	0.100	0.020	89	84	89	74	99	93
Code-3 Horn	0.040	0.025	0.100	0.020	88	83	88	73	99	93
Code-3 Tone	0.028	0.017	0.060	0.015	85	80	84	70	95	90
Slow Whoop	0.048	0.026	0.100	0.025	90	89	89	75	99	94
Siren	0.036	0.023	0.082	0.020	89	84	89	75	98	93
HWLO	0.021	0.014	0.044	0.012	86	81	86	71	93	88

Note: If the strobe and audible operate on the same circuit, add the strobe current from Table 2 to the audible current from Table 1. For Peak and Inrush current across the listed voltage range refer to Installation Instructions.

*Average RMS Current is per UL average RMS method and Average Mean Current is per UL average mean method. For rated In Rush and Peak current across the UL listed voltage range for both filtered DC and unfiltered VRMS (FWR), see installation instructions.

Table 2: Strobe Current Ratings (AMPS)

UL 12 and 24 VDC Voltage Range	Average RMS Current*	Average Mean Current*			
		MT-241575W	MT-2475W	MT-121575W	MTWP2475W
16.0 VDC	.101	.215	-	.158	
24.0 VDC	.064	.140	-	.107	
33.0 VDC	.047	.114	-	.090	
8.0 VDC	-	-	.336	-	
12.0 VDC	-	-	.179	-	
17.5 VDC	-	-	.136	-	

NOTES on dBA/CURRENT RATINGS TABLES ABOVE: 1) 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 tables above. 2) Reverberant dBA is a minimum UL rating based on sound power measurements in a reverberant test room. ***CAUTION!** This setting is acceptable only for general signaling (non-fire alarm) use. Use the "high" dBA setting with this tone or use a different tone for public mode fire alarm service.

Alarm Tones

TONES	PATTERN DESCRIPTION
Horn	Broadband Horn (Continuous)
Bell	1560 Hz Modulated (0.07 sec. ON/Repeat)
March Time Horn	Horn (0.25 sec. ON/0.25 sec. OFF/Repeat)
Code-3 Horn	Horn (ANSI S3.41 Temporal Pattern)
Code-3 Tone	500 Hz (ANSI S3.41 Temporal Pattern)
Slow Whoop	500-1200 Hz Sweep (4.0 sec. ON/0.5 sec. OFF/Repeat)
Siren	600-1200 Hz Sweep (1.0 sec. ON/Repeat)
HWLO	1000/800 Hz (0.25 sec. ON/Alternate)



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