

INSTALLATION INSTRUCTIONS
 MT-24MCW, MT-121575W MULTITONE APPLIANCES
 VERSION 2

Use this product according to this instruction manual. Please keep this instruction manual for future reference.

GENERAL:

The Multitone Strobe Appliances are UL Listed under Standard 1971 for Signaling Devices for the Hearing Impaired, and Standard 464 for Audible Signaling Devices. The Multitone strobe is also ULC Listed under Standard CAN/ULC-S526-16 for Visual Signaling Devices and under Standard CAN/ULC-S525-16 for Audible Signaling Devices for Fire Alarm Systems. The 15/75cd model strobe is listed at 15 candela under UL Standard 1971 and meets 75 candela intensity on axis with low current draw. Models with amber, red, blue or green lens are UL Listed under Standard UL1638 (Visual Signaling Appliance) for Private Mode Emergency and General Utility Signaling. The MCW strobe can provide 4 selectable candela settings (15, 30, 75, 110). These Strobes can provide a non-synchronized strobe appliance when connected directly to a Fire Alarm Control Panel (FACP), or provide a synchronized strobe appliance when used in conjunction with a Dual Sync Module (DSM) or Wheelock power supplies. The horn portion of the MT appliance can be field set to provide a synchronized code 3 horn when used in conjunction with the Dual Sync Module (DSM) or Wheelock power supplies. These models of the MT Series are listed for **indoor use only** and **wall mount only**, with the backboxes specified in these instructions (See wiring and mounting information). The Strobe uses a xenon flashtube with solid state circuitry enclosed in a polycarbonate lens to provide maximum visibility and reliability for effective visible signaling. Multitone can be field set to produce any one of eight commonly used alarm tones. Sound output can be field set to provide either HIGH (HI) dBA or STANDARD (STD) dBA sound output level.

All Multitone Strobe models are designed for use with either filtered DC or unfiltered full-wave-rectified (FWR) input voltage. The Multitone Strobe Appliances have separate input terminals for alarm tone activation and strobe activation. Shunt wires are provided to operate both the alarm tone and the strobe simultaneously on a single input circuit (See Wiring Diagram). All inputs are polarized for compatibility with standard reverse polarity supervision of circuit wiring by a fire alarm control panel (FACP).

⚠WARNING: THIS APPLIANCE IS A "FIRE ALARM DEVICE - DO NOT PAINT."

⚠WARNING: PLEASE READ THESE INSTRUCTIONS CAREFULLY. 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.

SPECIFICATIONS:

| Model | Regulated Voltage (VDC/VRMS) | Voltage Range (VDC/VRMS) | Reverberant dBA at 10 ft | Strobe Candela (cd) |
|-------------|------------------------------|--------------------------|--------------------------|---------------------|
| MT*-24MCW | 24 | 16.0-33.0 | 76-94 | 15/30/75/110 |
| MT*-121575W | 12 | 8-17.5 | 64-94 | 15/75 |

* Indicates Models with (A) amber, (R) red, (B) blue or (G) green lens. **75cd on-axis only.

NOTE: Candela ratings in Table 1 are for clear lens. Derate approximately 25% for amber lens, 55% for green lens, 70% for blue lens and 80% for red lens.

| Tone | Tone Description | Maximum RMS Current (AMPS) | | | | | | | |
|-----------------|--|----------------------------|-------|-----------|-------|------------|-------|------------|-------|
| | | 16-33 VDC | | 16-33 FWR | | 8-17.5 VDC | | 8-17.5 FWR | |
| | | HI | STD | HI | STD | HI | STD | HI | STD |
| Horn | Broadband Horn (Continuous) | 0.108 | 0.044 | 0.087 | 0.045 | 0.177 | 0.034 | 0.172 | 0.034 |
| Bell | 1560 Hz Modulated (0.07 Sec. ON/Repeat) | 0.053 | 0.024 | 0.067 | 0.028 | 0.095 | 0.020 | 0.095 | 0.023 |
| March Time Horn | Horn (0.25 Sec. ON/0.25 Sec. OFF/Repeat) | 0.104 | 0.087 | 0.087 | 0.045 | 0.142 | 0.034 | 0.142 | 0.039 |
| Code 3 Horn | Horn (ANSI S3.41 Temporal Pattern) | 0.122 | 0.035 | 0.087 | 0.045 | 0.200 | 0.034 | 0.183 | 0.039 |
| Code 3 Tone | 500 Hz (ANSI S3.41 Temporal Pattern) | 0.135 | 0.035 | 0.110 | 0.029 | 0.152 | 0.021 | 0.150 | 0.023 |
| Slow Whoop | 500-1200Hz Sweep (4.0 Sec. ON/0.5 Sec. OFF/Repeat) | 0.098 | 0.037 | 0.092 | 0.042 | 0.142 | 0.035 | 0.142 | 0.038 |
| Siren | 600-1200Hz Sweep (1.0 Sec. ON/Repeat) | 0.104 | 0.036 | 0.092 | 0.040 | 0.152 | 0.030 | 0.152 | 0.034 |
| HI/LO | 1000/800 Hz (0.25 Sec. ON/Alternate) | 0.057 | 0.025 | 0.063 | 0.032 | 0.114 | 0.026 | 0.114 | 0.029 |

| UL / ULC Voltage | CANDELA SETTING (MCW) | | | | |
|------------------|-----------------------|-------|-------|-------|-------|
| | 15 | 30 | 75 | 110 | |
| DC | 16-33 VDC | 0.060 | 0.092 | 0.165 | 0.220 |
| FWR | 16-33 VRMS | 0.102 | 0.155 | 0.253 | 0.347 |

| 15/75 Candela | | |
|------------------|--------------|-------|
| UL / ULC Voltage | Current | |
| DC | 8.0-17.5VDC | 0.255 |
| FWR | 8.0-17.5VRMS | 0.335 |

NOTE: Use Tables 2, 3 and 4 to determine the highest value of "Rated Current" for an individual Multitone strobe (across the expected operating voltage range of the Multitone strobe). Add strobe current from Table 3 or 4 to audible appliance current from Table 2 to obtain total current for each unit, if the strobe and audible are wired to operate in unison on a single circuit. Be sure to add the currents for any other appliances, including audible signaling appliances, powered by the same source and include any required safety factors.

| Tone | HI/LO Volume | dBA Reverberant Ratings Per UL 464 | | | | | | dBA Anechoic Ratings Per CAN/ULC S525-16 | | | | | |
|-------------|--------------|------------------------------------|-----|-----|----------|-----|-------|--|-----|-----|-----------|------|-------|
| | | UL 24VDC | | | UL 12VDC | | | ULC 24VDC | | | ULC 12VDC | | |
| | | 16V | 24V | 33V | 8V | 12V | 17.5V | 16V | 24V | 33V | 8V | 12V | 17.5V |
| Horn | HI | 89 | 92 | 94 | 89 | 92 | 94 | 95 | 99 | 100 | 97 | 99 | 100 |
| | STD | 84 | 87 | 90 | 78 | 80 | 81 | 89 | 93 | 94 | 84** | 87 | 88 |
| Bell | HI | 83 | 86 | 88 | 83 | 86 | 88 | 88 | 92 | 93 | 89 | 92 | 93 |
| | STD | 76 | 80 | 83 | 64* | 66* | 67* | 83** | 87 | 88 | 70** | 73** | 74** |
| March Time | HI | 86 | 89 | 91 | 86 | 89 | 91 | 95 | 99 | 100 | 97 | 99 | 100 |
| | STD | 80 | 84 | 87 | 75 | 77 | 78 | 89 | 93 | 94 | 84** | 86 | 87 |
| Code 3 Horn | HI | 85 | 88 | 90 | 85 | 88 | 90 | 95 | 99 | 100 | 97 | 99 | 100 |
| | STD | 79 | 83 | 86 | 74* | 76 | 77 | 89 | 93 | 94 | 84** | 86 | 87 |
| Code 3 Tone | HI | 81 | 85 | 86 | 81 | 85 | 86 | 91 | 95 | 96 | 88 | 91 | 92 |
| | STD | 76 | 80 | 82 | 72* | 74* | 75* | 86 | 90 | 91 | 68** | 71** | 72**^ |
| Slow Whoop | HI | 87 | 90 | 92 | 87 | 90 | 92 | 95 | 99 | 100 | 97 | 99 | 100 |
| | STD | 81 | 85 | 87 | 76 | 78 | 79 | 90 | 94 | 95 | 86 | 89 | 90 |
| Siren | HI | 86 | 89 | 92 | 86 | 89 | 92 | 94 | 98 | 99 | 96 | 98 | 99 |
| | STD | 81 | 84 | 87 | 75 | 77 | 78 | 89 | 93 | 94 | 83** | 86 | 87 |
| HI/LO | HI | 83 | 86 | 89 | 83 | 86 | 89 | 89 | 93 | 94 | 89 | 92 | 94 |
| | STD | 77 | 81 | 84 | 71* | 72* | 73* | 84** | 88 | 89 | 70** | 72** | 73** |

*Setting is intended for Private Mode Emergency Use only (USA). **Setting is intended for Dwelling Unit Use only (Canada).

| | |
|------|--|
| -3dB | + / -35 Degrees horizontal, + / -35 vertical |
| -6dB | + / -55 Degrees horizontal, + / -55 vertical |

WIRING AND SETTINGS:

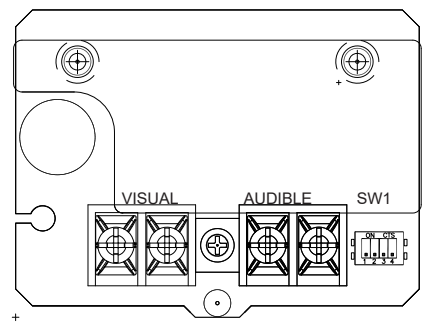


Figure 2: Showing Location of SW1

NOTE: The factory settings for MT models are: HIGH dBA SW1 POS 1 set on 1 HORN TONE SW1 POS 2, 3, 4 set on 1, 1, 1

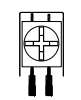


Figure 1:

- MT has in-out wiring terminals that accept two #12 to #18 American Wire Gauge (AWG) wires at each screw terminal. Strip leads 3/8 inches.
- Break all in-out wire runs on supervised circuits to assure integrity of circuit supervision as shown in Figure 1.
- The polarity shown in the wiring diagrams is for operation of the appliances. The polarity is reversed by the FACP during supervision

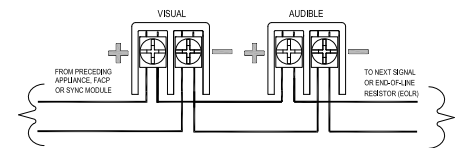


Figure 3: Horn and Strobe Operate in Unison. (Red and black wires are supplied)

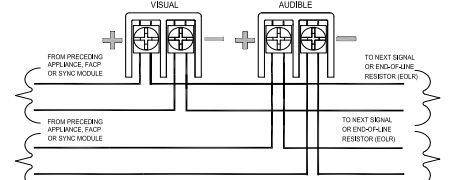


Figure 4: Horn and Strobe Operate Independently

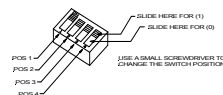
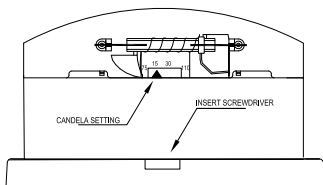


Figure 5: Switch (SW1) Settings

| Table 7: dBA Sound Output Level Settings | |
|--|--------------------------------------|
| Decibel Level | SW1 Settings |
| HIGH dBA: | Set SW1 POS 1 on 1 (Factory Setting) |
| STD dBA: | Set; SW1 POS 1 on 0 |

NOTE: The MT must be set for Code 3 horn when used with Wheelock sync protocol. Refer to instruction sheets for DSM or Wheelock power supplies for additional information.



MT-24MCW factory preset at 15 Cd.

Figure 6: Showing Location of Candela Window

WARNING: CANDELA SETTING WILL DETERMINE THE CURRENT DRAW OF THE PRODUCT.

WARNING: THE CANDELA SELECT SWITCH MUST BE FIELD SET TO THE REQUIRED CANDELA INTENSITY BEFORE INSTALLATION. WHEN CHANGING THE SETTING OF THE CANDELA SELECT SWITCH, MAKE CERTAIN THAT IT "CLICKS" IN PLACE. AFTER CHANGING THE CANDELA SETTING, THE APPLIANCE MUST BE RETESTED TO VERIFY PROPER OPERATION. IMPROPER SETTING OF THE CANDELA SELECT SWITCH MAY RESULT IN OPERATION AT THE WRONG CANDELA, WHICH COULD RESULT IN A CURRENT DRAW EXCEEDING THE POWER SUPPLY'S CAPACITY.

WARNING: 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 STROBES. THE MAXIMUM WIRE IMPEDENCE BETWEEN STROBES SHALL NOT EXCEED 35 OHMS.

| Table 8: Switch Settings | | | |
|--------------------------|-------|-------|-------|
| TONE | Pos 2 | Pos 3 | Pos 4 |
| Horn (Factory Setting) | 1 | 1 | 1 |
| Bell | 1 | 0 | 1 |
| March Time Horn | 0 | 0 | 1 |
| Code 3 Horn | 1 | 1 | 0 |
| Code 3 Tone | 0 | 1 | 1 |
| Slow Whoop | 0 | 1 | 0 |
| Siren | 1 | 0 | 0 |
| HI/LO | 0 | 0 | 0 |

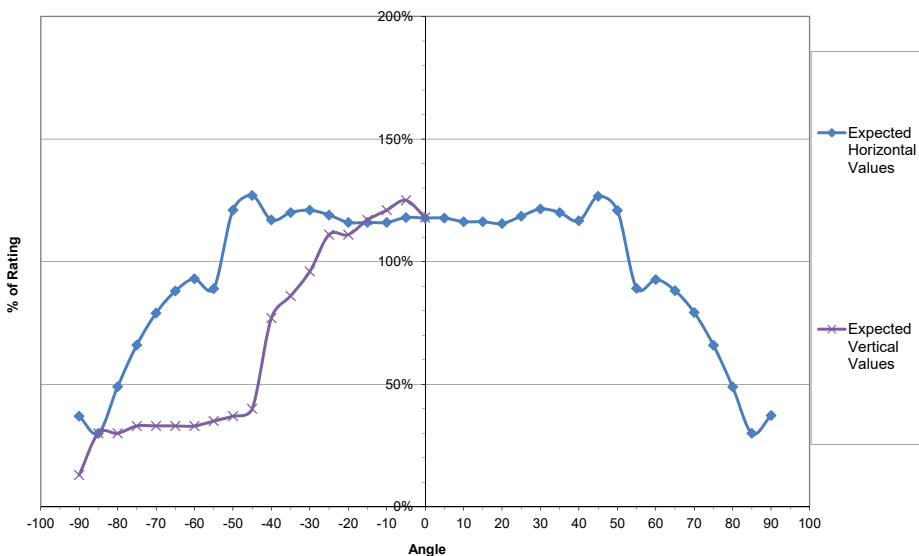


Figure 7: LIGHT OUTPUT WALL MOUNT:

NOTES:

1. Strobes will produce 1 flash per second over the "Regulated Voltage" Range.
2. All models are for indoor use with a temperature range of +32°F to +122°F (0°C to +50°C) and maximum humidity of 93+/-2% RH.
3. The 15/75cd strobe delivers UL 1971 light distribution at 15cd, and 75cd (5x) on-axis.
4. Derate candela approximately 25% for amber lens, 55% for green lens, 70% for blue lens and 80% for red lens.

CAUTION: Strobes are not designed to be used on coded systems in which the applied voltage is cycled on and off.

CAUTION: The following figures show the maximum number of field wires (conductors) that can enter the backbox used with each mounting option. If these limits are exceeded, there may be insufficient space in the backbox to accommodate the field wires and stresses from the wires could damage the product.

Although the limits shown for each mounting option comply with the National Electrical Code, Cooper Notification recommends use of the largest backbox option shown and the use of approved stranded field wires, when possible, to provide additional wiring room for easy installation and minimum stress on the product from wiring.

| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|--------|--------|--------|--------|---|---|---|---|---|--------|--------|--------|--------|---|---|---|---|---|--------|--------|--------|--------|---|---|---|---|--|--------|--------|--------|--------|---|---|---|---|
| <p>Figure A: Flush (4" Box)</p> <p>Maximum Number of Conductors</p> <table border="1"> <tr> <td>AWG#18</td> <td>AWG#16</td> <td>AWG#14</td> <td>AWG#12</td> </tr> <tr> <td>8</td> <td>8</td> <td>8</td> <td>4</td> </tr> </table> | AWG#18 | AWG#16 | AWG#14 | AWG#12 | 8 | 8 | 8 | 4 | <p>Figure B: Flush (2 Gang)</p> <p>Maximum Number of Conductors</p> <table border="1"> <tr> <td>AWG#18</td> <td>AWG#16</td> <td>AWG#14</td> <td>AWG#12</td> </tr> <tr> <td>8</td> <td>8</td> <td>8</td> <td>8</td> </tr> </table> | AWG#18 | AWG#16 | AWG#14 | AWG#12 | 8 | 8 | 8 | 8 | <p>Figure C: Surface Mounting (IOB)</p> <p>Maximum Number of Conductors</p> <table border="1"> <tr> <td>AWG#18</td> <td>AWG#16</td> <td>AWG#14</td> <td>AWG#12</td> </tr> <tr> <td>8</td> <td>8</td> <td>8</td> <td>8</td> </tr> </table> | AWG#18 | AWG#16 | AWG#14 | AWG#12 | 8 | 8 | 8 | 8 | <p>Figure D: Concealed Conduit (IOB)</p> <p>Maximum Number of Conductors</p> <table border="1"> <tr> <td>AWG#18</td> <td>AWG#16</td> <td>AWG#14</td> <td>AWG#12</td> </tr> <tr> <td>8</td> <td>8</td> <td>8</td> <td>8</td> </tr> </table> | AWG#18 | AWG#16 | AWG#14 | AWG#12 | 8 | 8 | 8 | 8 |
| AWG#18 | AWG#16 | AWG#14 | AWG#12 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 8 | 8 | 8 | 4 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| AWG#18 | AWG#16 | AWG#14 | AWG#12 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 8 | 8 | 8 | 8 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| AWG#18 | AWG#16 | AWG#14 | AWG#12 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 8 | 8 | 8 | 8 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| AWG#18 | AWG#16 | AWG#14 | AWG#12 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 8 | 8 | 8 | 8 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

MOUNTING PROCEDURES:

CAUTION: Check that the installed product will have sufficient clearance and wiring room prior to installing backboxes and conduit, especially if sheathed multiconductor cable or 3/4" conduit fittings

1. The MT can be flush mounted to a 4" square (100mm) backbox (Fig. A) or double-gang backbox (Fig. B). It can also be surface mounted to a indoor/outdoor backbox (Figs. C & D). Conduit entrances to the backbox should be selected to provide sufficient wiring clearance for the installed product. Do not pass additional wires (used for other than the signaling appliance) through the backbox. Such additional wires could result in insufficient wiring space for the signaling appliance.
2. When terminating field wires, do not use more lead length than required. Excess lead length could result in insufficient wiring space for the appliance.
3. Use care and proper techniques to position the field wires in the backbox so that they use minimum space and produce minimum stress on the product. This is especially important for stiff, heavy gauge wires and wires with thick insulation or sheathing.
4. Connect field wires to the MT terminal block (polarity must be observed). Bend the field wires up 90° at the connection to the terminal block.
5. Carefully push the field wires into the backbox by hand. Press the MT to the backbox, verifying that it is seated and aligned correctly.
6. Fasten the MT to the backbox using the supplied screws.
7. The MT is supplied with four snap-in covers to hide the mounting holes and provide an attractive installation. The snap-in covers are interchangeable and have slots on each end so they can be removed if necessary (by prying them up with a thin blade screwdriver). To insert snap-in cover, slide one side partially into mounting hole recess; align the cover so that snap-in cover and grille are parallel to each other (not tilted) and snap cover into place.

NOTE: Wiring method shall be in accordance with CSA C22.1, Canadian Electrical Code, Part 1, Safety Standard for Electrical Installations, Section 32

CAUTION: If MT appliances are operated within 15 inches of a person's ear, they can produce a sound pressure level that exceeds the maximum 120 dBA permitted by ADA and OSHA rules. Exposure to such sound levels can result in damage to a person's hearing.

WARNING: A SMALL POSSIBILITY EXISTS THAT THE USE OF MULTIPLE UNSYNCRONIZED STROBES WITHIN A PERSON'S FIELD OF VIEW, UNDER CERTAIN CIRCUMSTANCES, MIGHT INDUCE A PHOTO-SENSITIVE RESPONSE IN PERSONS WITH EPILEPSY. STROBE REFLECTIONS IN A GLASS OR MIRRORED SURFACE MIGHT ALSO INDUCE SUCH A RESPONSE. TO MINIMIZE THIS POSSIBLE HAZARD, COOPER NOTIFICATION STRONGLY RECOMMENDS THAT THE STROBES INSTALLED SHOULD NOT PRESENT A COMPOSITE FLASH RATE IN THE FIELD OF VIEW WHICH EXCEEDS FIVE (5) Hz AT THE OPERATING VOLTAGE OF THE STROBES. COOPER NOTIFICATION ALSO STRONGLY RECOMMENDS THAT THE INTENSITY AND COMPOSITE FLASH RATE OF INSTALLED STROBES COMPLY WITH LEVELS ESTABLISHED BY APPLICABLE LAWS, STANDARDS, REGULATIONS, CODES AND GUIDELINES.

NOTE: NFPA 72/ANSI 117.1 conform to ADAAG Equivalent Facilitation Guidelines in using fewer, higher intensity strobes within the same protected area. These appliances can produce a distinctive three pulse Temporal Pattern Fire Alarm Evacuation Signal for total evacuation in accordance with NFPA 72.

This equipment has been tested and found to comply with the limits for a Class A 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 A digital apparatus meets all requirements of the Canadian Interference-Causing Equipment Regulations.

Cet appareil numérique de la classe A respecte toutes les exigences du Règlement sur le matériel brouilleur du Canada.

ANY MATERIAL EXTRAPOLATED FROM THIS DOCUMENT OR FROM COOPER NOTIFICATION MANUALS OR OTHER DOCUMENTS DESCRIBING THE PRODUCT FOR USE IN PROMOTIONAL OR ADVERTISING CLAIMS, OR FOR ANY OTHER USE, INCLUDING DESCRIPTION OF THE PRODUCT'S APPLICATION, OPERATION, INSTALLATION AND TESTING IS USED AT THE SOLE RISK OF THE USER AND COOPER NOTIFICATION WILL NOT HAVE ANY LIABILITY FOR SUCH USE.