INSTALLATION INSTRUCTIONS
POTTER TYPE 4X/3R WEATHERPROOF MULTI-TONE
WITH PRE-WIRE/PRE-TEST (WALL/CEILING MOUNT)

1609 Park 370
Hazelwood, MO 63042
1-800-325-3936
www.pottersignal.com

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

**GENERAL:**

The Potter Electric 4X/3R weatherproof series PE-4XMT/PE-3RMT Multi-Tone appliances are designed for easy installation with a pre-wire capable PE-4XBB surface box or PE-3RMP mounting plate. PE series 4X/3R Multi-Tone is UL Listed for fire protection service under Standard UL464 for Public Mode Audible Signal Appliances as well as ULC525 (Audible Signaling Devices for Fire Alarm and Signaling Systems). All PE series 4X/3R models are listed for indoor/outdoor use, and for wall or ceiling mount.

Potter Multi-Tone appliances 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. Potter Multi-Tone appliances are designed for use with either filtered or unfiltered Full-Wave-Rectified (FWR) input voltage. All inputs are polarized for compatibility with standard reverse polarity supervision of circuit wiring by a Fire Alarm Panel (FACP). The horn portion of the Multi-Tone appliance can be field set to provide a synchronized code 3 horn when used in conjunction with Wheelock Sync.

⚠**CAUTION: Do not change factory applied finishes. "DO NOT PAINT".**

⚠**ATTENTION: Ne pas modifiez les finitions appliquées en usine. "NE PAS PEINTURER"**

**IMPORTANT: PLEASE READ THESE INSTRUCTIONS CAREFULLY. FAILURE TO COMPLY WITH ANY OF THE FOLLOWING INSTRUCTIONS 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:**

***Table 1: Specifications***

| | |
|---|---|
| Models* | PE-4XMT (Type 4X), PE-3RMT (Type 3R) |
| Agency | UL464, ULC525 |
| Input Voltage | 8.0 – 17.5VDC/VRMS or 16 – 33VDC/VRMS (Selectable via Jumper Plug) |
| Volume Setting | STD (standard) or HI (high) (selectable via DIP switch SW1 POS1) |
| Tone Setting | Eight (8) selectable tones (via DIP switch SW1, POS 2,3,4) |
| Environmental | Indoor/Outdoor Use: -40°F to +150°F (-40°C to +66°C) 95% RH |

*Prefix "PE-WP" indicates "Subassembly". Requires PE-4XBB surface box or PE-3RMP mounting plate for installation.

***Table 2: Multi-Tone Current Ratings***

| Tone | Tone Description | Maximum RMS Current (AMPS) | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | 16-33VDC | | 16-33VFWR | | 8-17.5VDC | | 8-17.5VFWR | |
| | | 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 | 0.039 |
| 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 | 0.156 | 0.041 |
| 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 | 0.032 | 0.152 | 0.027 | 0.150 | 0.030 |
| Slow Whoop | 500-1200Hz Swp (4sec ON/0.5sec OFF/Repeat) | 0.098 | 0.037 | 0.092 | 0.042 | 0.142 | 0.035 | 0.142 | 0.038 |
| Siren | 600-1200Hz Swp (1.0 Sec. ON/Repeat) | 0.104 | 0.042 | 0.092 | 0.040 | 0.152 | 0.030 | 0.152 | 0.034 |
| HI/LO | 1000/800 Hz (0.25 Sec. ON/Alternate) | 0.057 | 0.035 | 0.063 | 0.035 | 0.114 | 0.027 | 0.114 | 0.030 |

When calculating the total currents: Use Table 2 to determine the highest value of "RMS Current" for an individual appliance, then multiply these values by the total number of appliances; be sure to add the currents for any other appliances powered by the same source and include any required safety factors. Make sure that the total RMS current required required by all appliances that are connected to the system's PRIMARY and SECONDARY power sources, NAC circuits, Sync Modules or Potter Power Supplies does not exceed the power sources' rated capacity or the current ratings of any fuses on the circuits to which these appliances are wired. 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 appliance.

⚠**CAUTION: If Multi-Tone 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.**

⚠**ATTENTION: Si les appareils Multi-Tone sont utilisés à moins de 15 pouces de l'oreille d'une personne, ils peuvent produire un niveau de pression acoustique supérieur à la vitesse maximale de 120 dBA permise par les règles de l'ADA et de l'OSHA. L'exposition à de tels niveaux sonores peut endommager l'ouïe d'une personne.**

***Table 3: Multi-Tone Sound Pressure Level Ratings (SPL)***

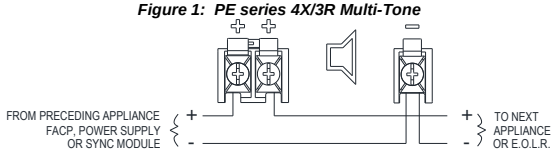
| Tone | Reverberant dBA at 10ft Per UL464/ULC525 | | | |
|---|---|---|---|---|
| | 24V Regulated | | 12V Regulated | |
| | HI | STD | HI | STD |
| Horn | 88 | 83 | 88 | 74 |
| Bell | 81 | 75 | 81 | 65 |
| March Time Horn | 88 | 83 | 88 | 74 |
| Code 3 Horn | 88 | 83 | 88 | 74 |
| Code 3 Tone | 81 | 76 | 82 | 67 |
| Slow Whoop | 87 | 81 | 87 | 71 |
| Siren | 87 | 81 | 87 | 71 |
| HI/LO | 84 | 79 | 84 | 68 |

***Table 4: Directional Characteristics***

| | |
|---|---|
| -3dB | +/- 43 Degrees Horizontal, +/- 48 Degrees Vertical |
| -6dB | +/- 53 Degrees Horizontal, +/- 56 Degrees Vertical |
| -18dB | +/- 90 Degrees Horizontal/Vertical |

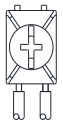
**WIRING DIAGRAMS:**

***Figure 1: PE series 4X/3R Multi-Tone***




*Refer to Potter power supply or sync module instructions for additional information.

***Figure 2:***



1. This model 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 and connect to screw terminals.

2. Break all in-out wire runs on supervised circuits to assure integrity of circuit supervision as shown in Figure 2. The polarity shown in the wiring diagrams is for operation of the appliances. The polarity is reversed by the FACP during supervision.

**SETTINGS:** To set Voltage, Volume, and Tone, see Figure 3, 4, 5.

NOTE: Set desired input voltage and dBA sound output level as follows (Refer to Figures 4 and 5): PE series Multi-Tone Appliances are field set for input voltage and dBA sound output level by inserting a 24/12 Jumper Plug and adjusting a four position Switch (SW1) as shown in Table 5 and Figures 4 and 5. Use Jumpeer Plus to select the desired voltage and SW1 Position 1 to select the dBA sound output level.

**IMPORTANT: Do not apply 24VDC input if the 24/12 Jumper Plug is set on 12. This can damage the unit. Verify the Jumper Plug and Switch (SW1) settings to make sure they are correct. Improper settings can damage the unit or result in no sound output or a dBA sound output level that is below code requirements for public mode fire protection. This could result in property damage, serious injury or death to you and/or others.**

PE series Multi-Tone Appliances are field set for any one of eight alarm tones by setting a four-position switch (SW1) as shown in Figure 5 and Table 6. Use SW1 POS 2, 3, 4 to select the desired alarm tone (refer to Table 6 below).

**SETTINGS:**

| *Table 5: Input Voltage and dBA Sound Output Level Settings* | |
|---|---|
| Input Voltage/Sound Output Level | 24/12 Jumper Plug and Switch SW1 Settings |
| 24 VDC/HIGH dBA | Set Jumper on 24; set SW1 POS 1 on 1 (Factory Setting) |
| 24 VDC/STD dBA | Set Jumper on 24; set SW1 POS 1 on 0 |
| 12 VDC/HIGH dBA | Set Jumper on 12; set SW1 POS 1 on 1 |
| 12 VDC/STD dBA | Set Jumper on 12; set SW1 POS 1 on 0 |

**IMPORTANT: Do not apply 24VDC input if the 24/12 Jumper Plug is set on 12. This can damage the unit.**

***Figure 3:***
24/12 Jumper Plug and Switch (SW1) located as shown

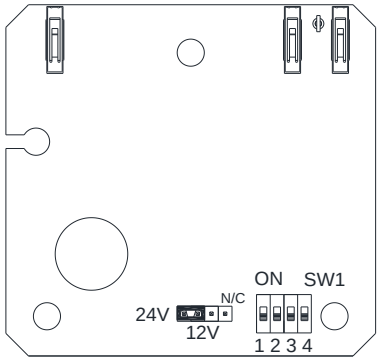



***Figure 4:*** 24/12 Jumper Plug Settings
(Use Needle Nose Pliers to Lift and Properly Insert the Jumper Plug)

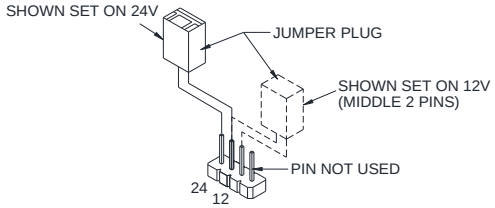
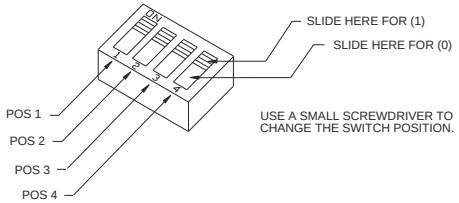



***Figure 5:*** Switch (SW1) Settings




| *Table 6: Alarm Tone Settings* | | | | |
|---|---|---|---|---|
| Tone | Pattern Description | Switch (SW1) | | |
| | | POS 2 | POS 3 | POS 4 |
| Horn* | Broadband Horn (Continuous) | 1 | 1 | 1 |
| Bell | 1560 Hz Modulated (0.07 Sec. ON/Repeat) | 1 | 0 | 1 |
| March Time Horn | Horn (0.25 Sec. ON/0.25 Sec. OFF/Repeat) | 0 | 0 | 1 |
| Code 3 Horn | Horn (ANSI S3.41 Temporal Pattern) | 1 | 1 | 0 |
| Code 3 Tone | 500 Hz (ANSI S3.41 Temporal Pattern) | 0 | 1 | 1 |
| Slow Whoop | 500-1200Hz Sweep (4 sec ON/0.5 sec OFF/Repeat) | 0 | 1 | 0 |
| Siren | 600-1200Hz Sweep (1.0 Sec. ON/Repeat) | 1 | 0 | 0 |
| HI/LO | 1000/800 Hz (0.25 Sec. ON/Alternate) | 0 | 0 | 0 |

* Factory setting is Horn with Switch SW1 POS 2, 3, 4 set on 1, 1, 1.

The Code 3 Horn and Code 3 Tone incorporate the temporal pattern specified by ANSI/NFPA/ISO for standard emergency evacuation signaling. They shall 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. All other tones are recommended for use only on continuous (non-coded) systems.

The Multi-Tone must be set for Code 3 horn when used with Wheelock Sync. Refer to Potter power supply instructions for additional information concerning Wheelock Sync.

***Figure 7: Cover/Grille Removal *****

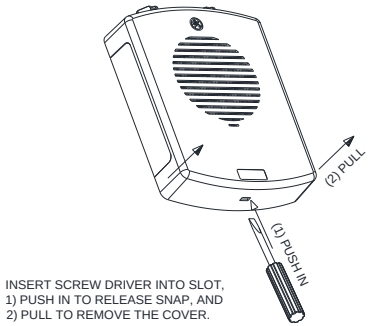
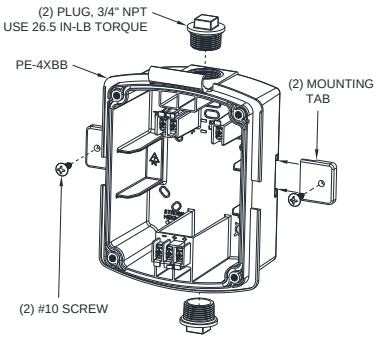



***Figure 8: Type 4X/IP66 Surface Box (PE-4XBB)*****

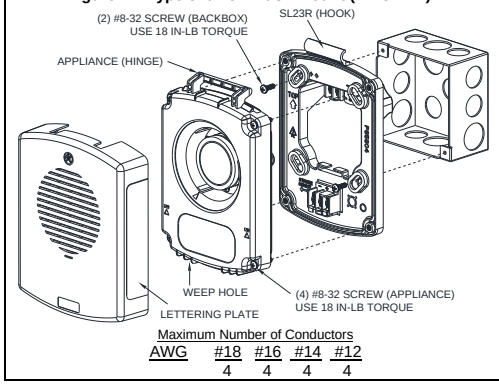



**Refer to Instruction sheet P85820-005 for additional information on PE-4XBB surface box and PE-3RMP mounting plate.

**MOUNTING OPTIONS:**
The following figures (A and B) 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.

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 are used.

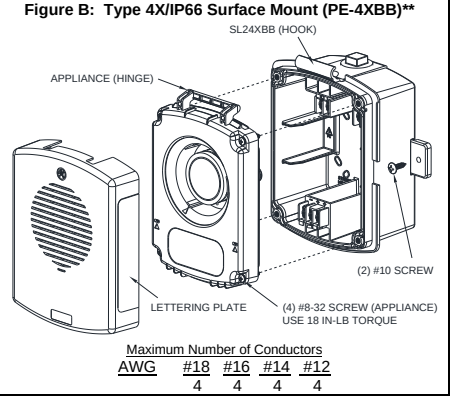
**Figure A: Type 3R/IP54 Flush Mount (PE-3RMP)****




Maximum Number of Conductors

| AWG | #18 | #16 | #14 | #12 |
|---|---|---|---|---|
| | 4 | 4 | 4 | 4 |

**Figure B: Type 4X/IP66 Surface Mount (PE-4XBB)****




Maximum Number of Conductors

| AWG | #18 | #16 | #14 | #12 |
|---|---|---|---|---|
| | 4 | 4 | 4 | 4 |

**All installations shall be in accordance with:**
1) In the United States, the National Electrical Code, NFPA 70, and the National Fire Alarm and Signaling Code, NFPA 72.
2) In Canada, CSA C22.1, Canadian Electrical Code, Part I, Safety Standard for Electrical Installations, Section 32; and the Canadian Standard for the Installation of Fire Alarm Systems ULC524.

**MOUNTING PROCEDURES:**

1. Preliminary Info: Use PE-3RMP for flush mount, or PE-4XBB for surface mount. Screws are provided for installation. 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. A: Install the **PE-3RMP** Mounting Plate on the 4" square 2-1/8" deep backbox (flush mount only) using 8-32 screws. PE-3RMP is suitable for mounting to brick, ceramic tile, concrete and masonry surfaces. For Type 3R/IP54 wall mount applications, a weep hole knock-out is provided below the strobe. See Figure A. To open the weep hole knock-out (1/8" dia.), use a small screwdriver.
   B: Install the **PE-4XBB** Back Box – Two external mounting tabs must be used along with two #10 screws (provided). See Figure 6. Mounting hole spacing is 5-9/16". Conduit fittings must be rated Type 4X/IP66 and UL certified. Installer must ensure ground continuity when metallic conduit is used. Teflon tape must be used on all conduit fittings. 3/4" NPT Plugs must be installed using Teflon tape and O-Ring (provided). Secure NPT plug with ***26.5 in-lb torque***.
   Note: "HOOK" must be on top for wall mounting.
3. **Pre-Wire:** Connect field wires to terminals on PE-3RMP or PE-4XBB (reference Figure 1 and 2). 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. When terminating field wires, do not use more lead length than required. Excess lead length could result in insufficient wiring space for the signaling appliance.
4. **Pre-Test:** PE-3RMP and PE-4XBB contain a SHUNT between adjacent "+" terminals to facilitate testing before device is attached. Note: Shunt will open permanently when device is installed.
5. Verify appliance settings are correct for your application. Settings are shown in Fig. 3-5. Factory settings are HIGH dBA, Horn.
6. Place the appliance "HINGE" over the "HOOK" on the PE-3RMP or PE-4XBB. Verify the appliance is aligned, then secure with four #8-32 screws attached to appliance with ***18 in-lb torque***. Verify the gasket is seated correctly and not "pinched".
7. Align grille with lettering plates to the appliance and snap in place. (Note: Insert letter plates with "T" tab down on strobe/logo-side).
8. Recommend applying outdoor rated silicone to all outdoor Type 4X/3R installations.
9. To remove the appliance grille, insert a small flat-bladed screwdriver into the bottom opening to release snap as shown in Figure 7. Then "pull" to remove the cover/grille.

**Important: Do not fully back out terminal screws. Do not over tighten screws or terminals. Excessive torque may affect operation. When using power tools, ensure the torque is set to the lowest setting available.**

NOTE: Final acceptance is subject to Authorities Having Jurisdiction.

Check the installation instructions of the manufacturers of other equipment used in the system for any guidelines or restrictions on wiring and/or locating Notification Appliance Circuits (NAC) and notification appliances. Some system communication circuits and/or audio circuits, for example, may require special precautions to assure immunity from electrical noise (e.g. audio crosstalk).

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 Réglement sur le matériel brouilleur du Canada.

Any material extrapolated from this document or from Potter Electric 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 Potter Electric will not have any liability for such use. IN NO CASE WILL SELLER'S LIABILITY EXCEED THE PURCHASE PRICE PAID FOR A PRODUCT. **11/24**