

INSTALLATION INSTRUCTIONS POTTER WEATHERPROOF SPEAKER AND SPEAKER STROBE WITH PRE-WIRE/PRE-TEST WALL/CEILING MOUNT (CLEAR OR AMBER LENS)

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

GENERAL:

The Potter Electric weatherproof series PE-4XSPK or PE-3RSPK, PE-4XSPST or PE-3RSPST, and PE-4XSPSTA or PE-3RSPSTA (Amber) speaker appliances are designed for easy installation with a pre-wire capable PE-3RMP mounting plate, or PE-4XBB back box. All PE series weatherproof models are for indoor/outdoor use and wall or ceiling mount. The PE series 4X/3R Speakers and Multi-Candela Speaker-Strobes are designed for multiple power requirements with high dBA output at each power tap. The design incorporates a high efficiency speaker for maximum output at minimum power across a frequency range of 400-4000Hz.

The Potter PE series meets NFPA 2016 20 millisecond light pulse duration code requirements. The maximum number of PE series devices per NAC is determined by dividing the maximum current rating of the FACP NAC by the total current rating of one PE series device, with a maximum of 105 PE series strobe devices per NAC. Refer to FACP installation instructions for more detail.

The Potter PE series Multi-Candela Strobes provides a synchronized strobe appliance when used in conjunction with an FACP or power supply that incorporates the Wheelock Sync protocol.

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

ATTENTION: Ne pas modifier 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-4XSPK (Speaker), PE-4XSPST (Clear), PE-4XSPSTA (Amber) PE-3RSPK (Speaker), PE-3RSPST (Clear), PE-3RSPSTA (Amber)
Agency	Speaker: UL1480, ULC541 Strobe: UL1638, UL1971, ULC526
Input Voltage	Speaker Audio: 25 or 70Vrms (field selectable, Table 4. 8W requires 70.7V) Strobe: DC or FWR, 24V Regulated, 16 to 33V (All models)
Speaker Settings	Speaker Power: 1/8W to 8W (field selectable, Table 4)
Strobe Candela	Strobe (Clear): 15, 30, 75, 110, 150, 185cd (field selectable). Strobe (Amber): 15, 30, 75, 95, 150, 177cd (field selectable).
NAC Characteristics	Max. line resistance: 35Ω
Environmental	Indoor/Outdoor Use, -40° C to 66° C (-40° F to 150° F) 95% R.H.

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

Table 2A: Speaker Sound Pressure Level Ratings

Setting	Reverberant dBA at 10Ft per UL1480						
	1/8	1/4	1/2	1	2	4	8
25Vrms	76	79	82	85	88	---	---
70.7Vrms	76	79	82	85	88	91	94

Table 2B: Directional Characteristics

-3dB	+/- 80 Degrees Horizontal, +/- 80 Degrees Vertical
-6dB	+/- 90 Degrees Horizontal, +/- 90 Degrees Vertical

Table 3: Strobe Current Ratings (AMPS) **

Strobe (Clear)	15cd	30cd	75cd	110cd	150cd	185cd
Strobe (Amber)	15cd	30cd	75cd	95cd	150cd	177cd
DC	0.026	0.038	0.070	0.097	0.179	0.206
FWR	0.034	0.053	0.098	0.137	0.235	0.308

** Setting will determine the current draw of the product.

When calculating the total strobe current, use Table 3 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 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.

WIRING DIAGRAMS:

Figure 1A: Speaker (one circuit)

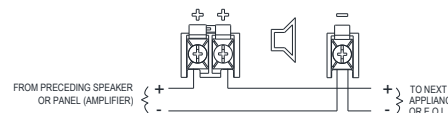
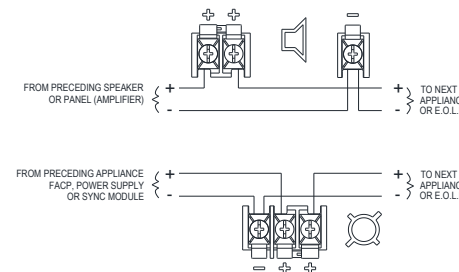


Figure 1B: Speaker-Strobe (two circuits)



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

Figure 2:



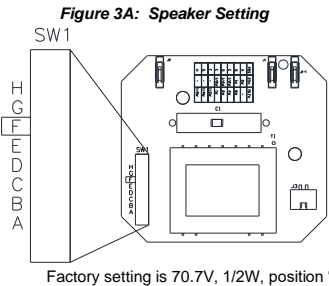
1. This model has in-out wiring terminals that accept #12 to #18 American Wire Gauge (AWG) wires at each screw terminal. Strip leads 3/8 inches and connect to screw terminals.
2. Break all in-out wire runs on supervised circuits to assure integrity of circuit supervision as shown in Figure 2. The polarity shown in the wiring diagrams is for operation of the appliances. The polarity is reversed by the FACP during supervision.

NOTES:

1. The strobe will produce 1 flash per second over the "Regulated Voltage" range.
2. Strobe is not designed to be used on coded systems in which the applied voltage is cycled on and off.
3. The maximum number of PE series strobes on a single notification appliance circuit shall not exceed 105.
4. **Amber strobe is certified as Emergency Warning Visual Signal.**
5. These appliances are UL Listed as "Regulated". They are intended to be used with FACP's whose notification circuits are UL Listed as "Regulated." Refer to the FACP instructions for special application and strobe synchronization compatibility.
6. These appliances were tested to the regulated voltage limits of 16.0-33.0 Volts. Do not apply voltage outside of this range. 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 max wire impedance between strobes shall not exceed 35 ohms.
7. The Code 3 temporal pattern (1/2 second on, 1/2 second off, 1/2 second on, 1/2 second off, 1/2 second on, 1-1/2 off and repeat) is specified by ANSI and NFPA 72 for standard emergency evacuation signaling. Code 3 shall be used only for fire evacuation signaling and not for any other purpose.
8. The effect of shipping and storage temperatures shall not adversely affect the performance of the appliance when it is stored in the original cartons and not subjected to misuse or abuse.

SETTINGS:

Switch (SW1) on the PCB is used to select the speaker voltage/wattage (Table 4) and sound output level (Table 2A). See Figure 3A.

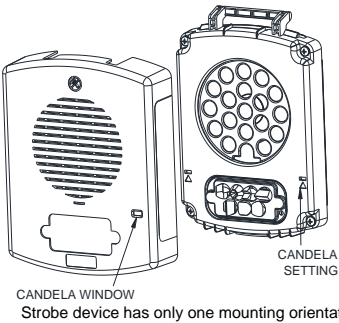


- Using the slide switch shown in Figure 3A, select voltage and wattage as shown in Table 4.
- Each letter corresponds to a position of the switch located on the printed circuit board.
- A blocking capacitor (1.5uF) for DC supervision of audio lines by the FACP is factory wired in series with the speaker input.

Important: Always operate audio amplifiers and speakers within their specified ratings. Excessive input may distort sound quality and may damage audio equipment. Do not exceed 100% of speaker input voltage per UL1480. Improper input voltage can damage speaker. If distortion is heard, check for clipping of the audio appliance with an oscilloscope and reduce the amplifier input level or gain level to eliminate any clipping.

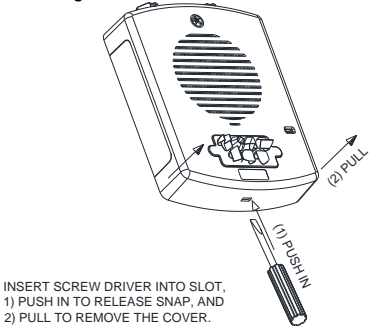
SETTINGS: To set candela, slide the selector switch to the desired setting. See Figure 3B.

Figure 3B: Candela (PE-4X/3RSPST only)
Set from rear. Factory Setting is 15cd.



NFPA 72/ANSI 117.1 provide means for determining equivalent illumination using fewer, higher intensity strobes within the same protected area.

Figure 5: Cover/Grille Removal **

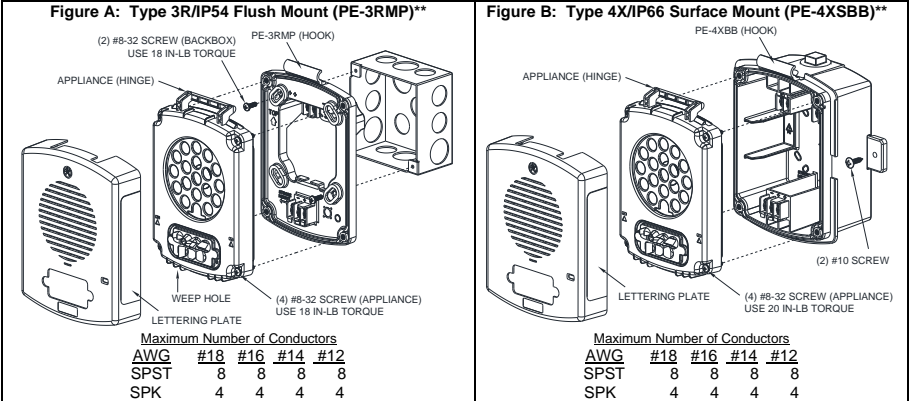


**Refer to Instruction sheet P85820-005 for additional information on PE-4XBB surface box and PE-3RMP mounting plate.

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.



All installations shall be in accordance with:

- In the United States, the National Electrical Code, NFPA 70, and the National Fire Alarm and Signaling Code, NFPA 72.
- 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:

- 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.
- 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 **26in-lb torque**.
Note: "HOOK" must be on top for wall mounting.
- 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.
- 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.
- Verify appliance settings** are correct for your application. See Fig. 3a and 3b. Factory settings are 70.7V, 1/2W, 15cd.
- 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 **18in-lb torque**. Verify the gasket is seated correctly and not "pinched".
- Align grille with lettering plates** to the appliance and snap in place. (Note: Insert letter plates with "T" tab down on strobe/logo-side).
- To remove the appliance grille**, insert a small flat-bladed screwdriver into the bottom opening to release snap as shown in Figure 5. Then "pull" xto 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 Règlement 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.