

# 450E

## ELECTRONIC HORN (With or without Strobe Warning Light)

### SAFETY MESSAGE TO INSTALLERS

People's lives depend on your safe installation of our products. It is important to read, understand and follow all instructions shipped with this product.

Selection of mounting location for this device, its controls and routing of wiring should be made by the Facilities Engineer and the Safety Engineer. Listed below are some other important safety instructions and precautions you should follow.

- This unit must be installed and maintained by a qualified electrician in accordance with NFPA 72 and National and local Electrical and Fire Codes, under the direction of the authority having jurisdiction.
- Do not connect this unit to system wiring when circuits are energized.
- For optimum sound distribution do not install this device where objects would block the front of the horn.
- All effective warning horns produce loud sounds which, in certain circumstances, may cause permanent hearing loss. Take appropriate precautions such as wearing hearing protection. Recommendations in OSHA Sound Level Standard (29 CFR 1910) should not be exceeded.
- After installation be sure that all threaded joints are securely tightened.
- After installation and completion of initial system test, a program for periodic testing of this device must be established. Refer to NFPA 72, local Fire Codes and the authority having jurisdiction for this information.
- After installation and completion of initial system test, provide a copy of this instruction sheet to all personnel responsible for operation, periodic testing and maintenance of this equipment.

### A. GENERAL.

The Underwriters Laboratories Listed CPG Model 450E Series C horn provides an audible signal when filtered, or unfiltered, full-wave rectified power is supplied to the horn. The horn, rated for 9-31 Vdc, is polarized for use in supervised fire alarm systems. A field adjustable high/low audibility setting is provided. (Units are factory set on high. Refer to paragraph B.2. and table 1 for UL omnidirectional sound pressure levels at 10 feet.) The horn is suitable for indoor or outdoor use and may have a Listed strobe-light factory-installed on the front. Refer to Model V1971 strobe instruction sheet (CPG Part No. 2561088) or Model VST strobe instruction sheet (CPG Part No. 2561310) for current ratings and suitability for outdoor use.

Horn/strobe units are factory wired for operating from the same power source. If operation from independent power sources is desired, two wire jumpers (located on the horn's circuit board) must be clipped by a qualified installer (refer to paragraph B.2.).

The Underwriters Laboratories output level of the horn unit is shown in table 1.

### B. INSTALLATION.

#### 1. Unpacking.

#### CAUTION

*Static discharge will damage sensitive electronic components. Observe static discharge precautions. Before touching the circuit board, touch a grounded metal object.*

After unpacking the horn, examine it for damage that may have occurred in transit. If equipment has been damaged, do not attempt to install or operate it. File a claim immediately with the carrier stating the extent of the damage. Carefully check all envelopes, shipping labels and tags before removing or destroying them.

#### DANGER

*To avoid electrical shock, do not attempt to connect wires when power is on.*

#### 2. Electrical Connections.

#### WARNING

*Property damage, serious injury, or death to you and others may result if an uninsulated section of a field wiring lead is*

Volts (dc)	Horn Setting	Current Draw* (mA)	UL dB(A) Sound Pressure No Strobe	UL dB(A) Sound Pressure with Strobe
9	Low	6.5	76	76
	High	8.8	79	79
12	Low	8.1	79	79
	High	10.8	82	79
18	Low	11.0	82	82
	High	14.8	85	82
21	Low	12.4	85	82
	High	16.8	85	85
24	Low	13.7	85	85
	High	18.8	88	85
31	Low	17.0	88	88
	High	24.5	88	88

Table 1.

\* NOTE: Current measured on horn device alone. Refer to the strobe instruction sheet (#2561181) for horns wired directly to strobes.

looped around any of the field wiring terminals. The installer must break the supply wire run to allow supervision of the electrical connections (per NFPA 72).

Strip 3/8" of insulation from the end of the supply leads (12 to 18 AWG). Proceed as follows:

**NOTE**

The four terminals on the rear of the horn are designed to accept two 12 to 18 AWG leads.

- a. Single Power Source for both Horn and Strobe.

Connect the supply leads to the center two terminals (marked "H+" and "H-") as shown in figures 1 and 2. Securely tighten the terminal screws.

- b. Independent Power Sources for both Horn and Strobe.

See figures 2 and 3. Clip and remove the jumper wires on the circuit board. Connect the strobe supply leads to the outer two terminals (marked "S+" and "S-"). Connect the horn supply leads to the center two terminals (marked "H+" and "H-"). Securely tighten the terminal screws.

3. *Sound Level Setting.*

The unit is factory set for high output. Refer to table 1 for sound output ratings at different voltage/jumper settings. To reduce the sound output, move the jumper block (located near the center of the circuit board) as shown in figure 4.

4. *Mounting Arrangements (see figure 5).*

**WARNING**

Property damage, serious injury, or death to you and others may result if the safety message to installers, unpacking instructions, and electrical connections instructions are not followed while installing the horn.

- a. Basic Mounting.

The basic installation consists of mounting the horn on an existing 4" x 4" outlet box. Mount the horn on the outlet box using the 8-32 x 2-1/2" slotted head machine screws provided.

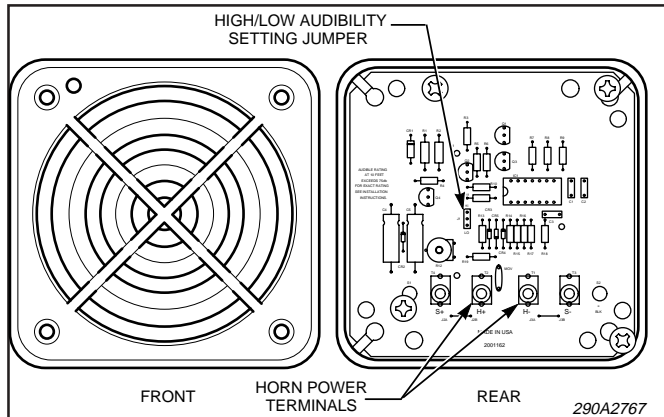


Figure 1. Horn Audibility Setting & Power Input Terminals.

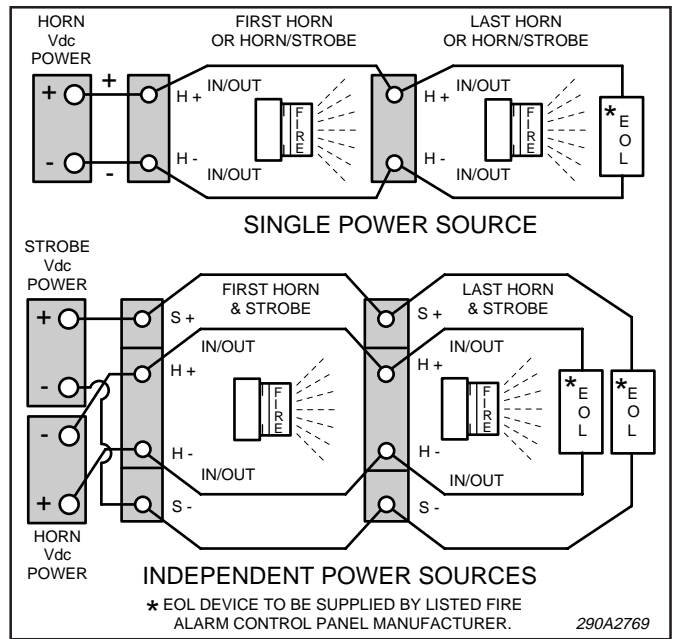


Figure 2. Wiring Diagrams.

- b. Surface Mounting.

To mount the horn on a wall or other flat vertical surface, mount a Model NB knockout box with four #10 x 1" screws (not supplied) after following the proper electrical connection method. Mount the horn on the NB knockout box with the two 8-32 x 3" machine head screws provided.

- c. Semi-Flush Mounting.

A horn can be semi-flush mounted to a wall using a 4" x 4" electrical junction box and a Model TPSF or Model SF wall plate. A plaster ring (raised cover) may be required. A plaster ring is not provided because the depth requirements usually vary from installation to installation. Use the four 6-32 x 1/4" slotted head screws to attach the TPSF or SF wall plate to the plaster ring. Use the 8-32 x 3" screws included to mount the horn on the plate.

- d. Concealed Conduit Mounting.

The concealed conduit mounting method may be useful when an existing junction box will not accommodate the basic installation. This installation configuration requires the use of a Model NB knockout box and a Model CC adapter plate. Use the pair of 6-32 or 8-

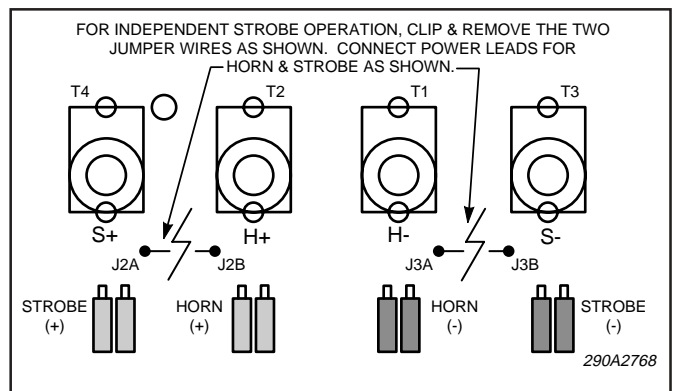


Figure 3. Independent Strobe Wiring.

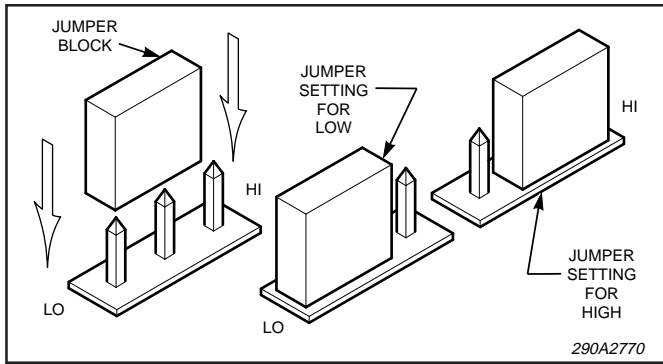


Figure 4. High-Low Audibility Setting.

32 flat head screws to mount the plate on the existing box. Install the insulated bushing in the rear of the NB knockout box before attaching the box to the adapter plate with two 10-32 x 1/4" round head screws. The insulated bushing protects the power leads that pass through the center hole in the CC adapter plate and the center knockout of the NB box to the horn.

e. Flush Mounting.

To flush mount the horn, a Model FBL wall box must be installed in the wall. Use four #10 x 1" screws for mounting the box. Use the 10-32 x 5/8" screws to attach the Model TP plate to the horn. Install the plate/horn assembly to the Model FBL wall box using the two 8-32 x 3" screws provided.

f. Projector Installation.

The Model PR or PR2 projector can be added to any of the installations described on this sheet (without strobe). To install the projector on the horn, use the supplied #10 x 5/8" thread-forming screws to attach the projector to the horn. Use the two additional 8-32 x 3" machine head screws (provided) in the remaining mounting holes of the projector to hold the assembly to the electrical box.

g. Weatherproof Mounting.

Weatherproof mounting requires the use of a Model WPB weatherproof box. The WPB is gasketed and tapped to accommodate 1/2" conduit. When mounting on the WPB, use the #8-32 x 3" slotted flat head machine screws.

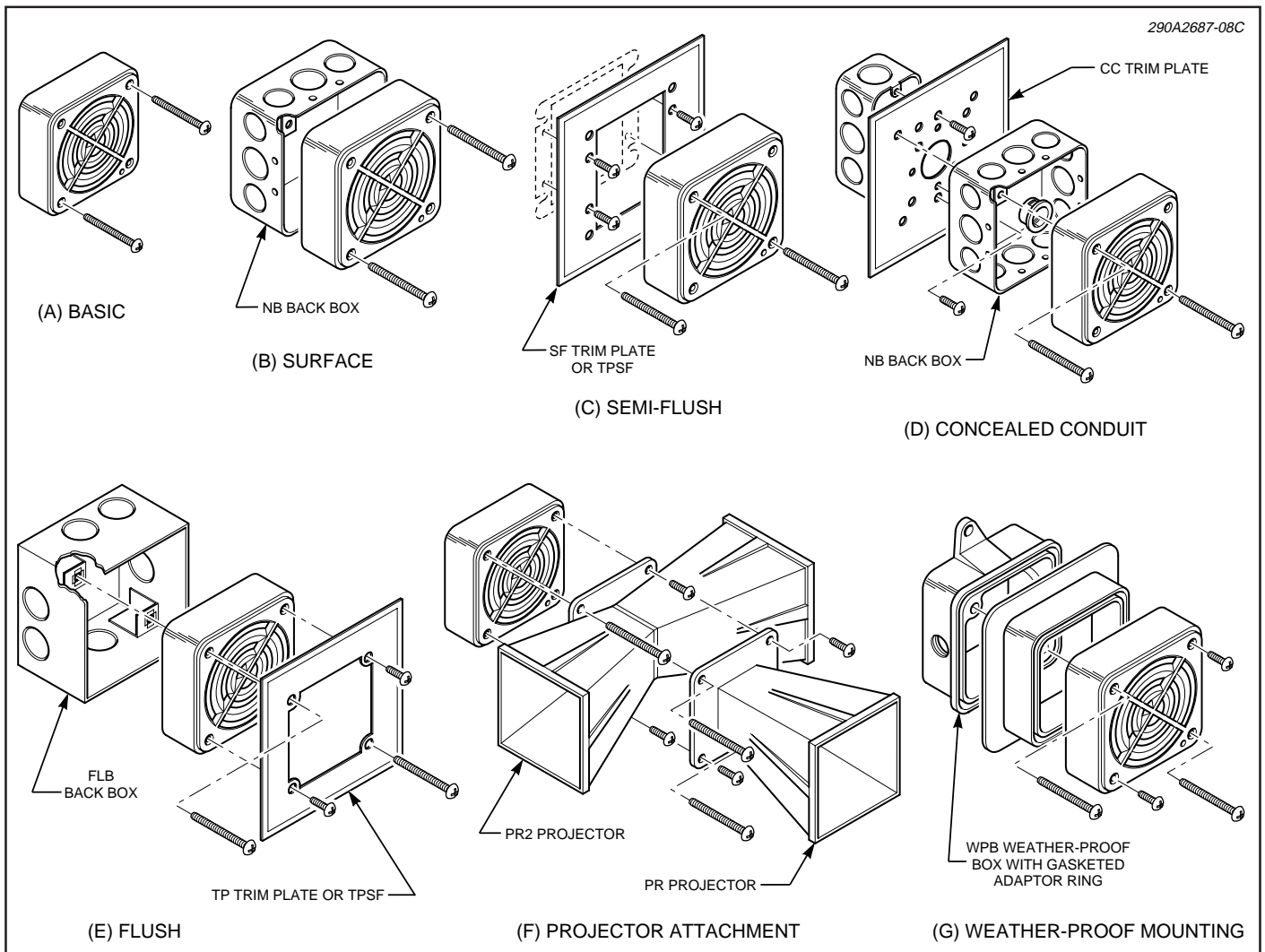


Figure 5. Mounting Arrangements.

**WARNING**

*Property damage, serious injury or death may occur in the protected premises if a horn/strobe unit is outdoor mounted. For outdoor rated strobe information, see the strobe instruction sheet (CPG Part No. 2561088).*

**C. TESTING/OPERATING.****WARNING**

*Under certain conditions these devices are capable of producing sounds loud enough to cause hearing damage. Adequate hearing protection should be worn if standing within close proximity to the device while testing. Recommendations in OSHA Sound Level Standard (29 CFR 1910) should not be exceeded.*

1. After completion of installation, be sure to test the system to verify that each horn unit and optionally attached strobe light operates satisfactorily.

2. After completion of initial system test, a program for periodic testing of this device should be established. Refer to NFPA 72, local Fire Codes and the authority having jurisdiction for this information.

3. Provide a copy of these instructions for the Safety Engineer(s), System Operator(s) and maintenance personnel.

**SAFETY MESSAGE TO OPERATORS**

*Although your warning system is operating properly it may not be completely effective. People may not hear or heed your warning signal. You must recognize this fact and ensure that your warning signal achieves its intended effect through proper test/training sequences suitable for your specific application(s).*

**D. MAINTENANCE.****SAFETY MESSAGE TO MAINTENANCE PERSONNEL**

Failure to follow all safety precautions and instructions may result in property damage, serious injury, or death to you or others.

- Read and understand all instructions before performing maintenance on this unit
- Do not perform maintenance on this unit when circuits are energized.
- Periodic checks should be made to ensure that effectiveness of this device has not been reduced because the

horn has become clogged with a foreign substance or because objects have been placed in front of the horn.

- Any maintenance to this unit **MUST** be performed by a trained electrician in accordance with NEC guidelines and local codes.
- Never alter this unit in any manner. Safety may be jeopardized if alterations are made to this device.
- The nameplates, which contain cautionary or other information of importance to maintenance personnel, should not be obscured if the exterior of the horn is painted.

**WARNING**

*Unauthorized repair/servicing of the unit may result in diminished performance and/or property damage, serious injury, or death to you or others. If a malfunctioning unit is encountered, do not attempt any field repair retrofit of parts. Refer to paragraph E. SERVICE for instructions regarding return/repair of the unit.*

**E. SERVICE.****WARNING**

*Serious injury may occur due to a shock hazard. High voltages may be present inside the strobe light assembly even though power is not connected. If the strobe is damaged exposing internal components, it must be removed and replaced. If a replacement strobe is not immediately available, the electrician must provide suitable protection for the wires that are exposed when the light is removed.*

This product is covered by a 5 year limited warranty. See CPG terms and conditions for details.

The factory will service your equipment or provide technical assistance with any problem that cannot be handled locally with satisfaction or promptness.

If any unit is returned to the factory for repair, it can be accepted only if we are notified by mail or phone in advance of its arrival. Such notice should clearly indicate service requested and give all pertinent information regarding the nature of the problem, and if possible, its cause.

Communications and shipments should be addressed to:

Technical Service Department  
Commercial Products Group  
2519 - 4th Ave  
Moline, IL 61265  
800.521.8219 • FAX 800.225.4109