

# SPHX

## POWERTONE® EXPLOSION-PROOF SPEAKER

### 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 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 any portion of front of speaker.
- All effective warning speakers 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, ensure that all bolts and threaded joints are 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.

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

### A. GENERAL.

The PowerTone Model SPHX is a 25 Vrms and 70 Vrms, indoor/outdoor, selectable power output (0.5 to 15 watts), hazardous location loudspeaker for use with fire alarm signalling systems such as CPG's PowerTone system. This model is suitable for use in NEC Class I, Groups B, C, & D hazardous locations; and in areas with high ambient noise levels. It is designed to reproduce electronically generated warning tones, which command rapid recognition, and full range voice communication. The speaker is equipped with a blocking capacitor to allow use in supervised alarm systems. An adjustable mounting bracket is provided to allow positioning for desired sound coverage.

### B. SPECIFICATIONS.

Operating Voltage	25 Vrms or 70 Vrms
Power Input (selectable)	0.5 W, 1 W, 2 W, 7 W and 15 W
Weight (approx.)	15 lb. (6.8 kg)
Size	14.75" (375mm) long, 14.75" (375mm) high, 8.875" (225mm) wide.
Construction	Aluminum enclosure and adjustable steel mounting bracket painted with red enamel.

### Approval Agency Listings:

- Underwriters Laboratories Inc.  
File E190743 (Guide UGKZ) Listed as a HAZARDOUS LOCATION FIRE PROTECTIVE SIGNALING SPEAKER.
- California State Fire Marshal—7135-1517:101
- New York City—(Listing is pending.)
- Canadian Standards Association—(Listing is pending.)

Audibility information is shown in table 1.

### C. INSTALLATION.

#### 1. Unpacking.

After unpacking the speaker, examine it carefully for possible damage that may have occurred in transit. If equipment has been damaged, immediately file a claim with carrier stating extent of damage. Carefully check all shipping labels and tags for special instructions before removing or destroying them.

#### 2. Mounting Arrangements.

The speaker can be mounted on any relatively flat surface. Conduit connection can be made to 1/2" threaded opening at bottom of housing (see Figure 1).

### WARNING

*Property damage, serious injury, or death could occur if an accumulation of water, snow, dust, etc. resides in the speaker projector, severely reducing or preventing operation of this device. Mount the unit so speaker projector is pointed horizontally or slightly downward.*

- Remove the two 1/2-13 hex head bolts, flat washers and

POWER TAP	INITIAL SOUND LEVEL @ 10' dB(A) (before rounding)	UL SOUND LEVEL @ 10' dB(A) (after rounding)	SOUND POWER dB(A)
0.5watt	89.6	87	104.2
1 watt	92.2	90	106.8
2 watt	95.0	93	109.6
7 watt	99.6	99	114.2
15 watt	102.2	99	116.8

Table 1. Power Tap Setting vs. Sound Output on Model SPHX.

lockwashers that secure mounting bracket to unit.

- b. Select mounting location.

**WARNING**

*Property damage, serious injury, or death could occur if any objects are in front of speaker, severely reducing optimum sound distribution. For maximum effectiveness, ensure that the front of the speaker is clear of obstructions.*

- c. Using the mounting bracket as a template, scribe drill position marks on the mounting surface. See figure 1 for mounting hole locations and dimensions.

**CAUTION**

*Before drilling holes in any surface, be sure both sides of surface are clear of anything that could be damaged.*

- d. Drill holes at the previously scribed drill position marks to accommodate 1/2" diameter bolts.
- e. Secure bracket to mounting surface with 1/2" diameter hex head bolts, lockwashers and hex nuts.
- f. Remove eight 5/16-18 x 1-3/4" hex head bolts, lockwashers and hex nuts that secure cover to housing and carefully lift off cover.

**WARNING**

*Property damage, serious injury, or death could occur if the machined sealing surfaces are damaged on this product. To maintain effectiveness of explosion-proof enclosure, be careful to avoid damaging the machined sealing surfaces of cover and housing.*

- g. Reattach unit to its mounting bracket with two 1/2-13 hex head bolts, flat washers and lockwashers previously removed. Position

speaker so as to obtain desired sound coverage then tighten these bolts securely.

- h. Before reinstalling the housing cover, read paragraph C.3. Electrical Connections below and make necessary connections.

3. *Electrical Connections.*

**DANGER**

*To avoid electrical shock, do not connect wires when circuits are energized.*

National Electrical Code, as well as local codes, must be followed during installation of these models. All electrical wiring must be routed through conduit and fittings approved for explosion-proof installations.

**WARNING**

*Property damage, serious injury, or death could occur if suitable barriers are not provided for explosive gases and other atmospheres. To reduce the possibility of explosion when this unit is used in Class I, Group B atmospheres, the conduit MUST have a sealing fitting within 18-inches of enclosure. Be sure to refer to the National Electrical Code or the authorities having jurisdiction in the area.*

- a. Connect audio leads, common leads (-) to common terminal and positive (+) leads to desired wattage terminal (see figures 2 and 3).

**WARNING**

*An uninsulated section of a single conductor must NOT be looped around a terminal and used as two separate connections. NFPA 72 requires that the wire is severed to provide electrical supervision of the connection.*

- b. Connect green or red lead found in the speaker to 25 V or 70 V terminal as appropriate, see Figure 3.

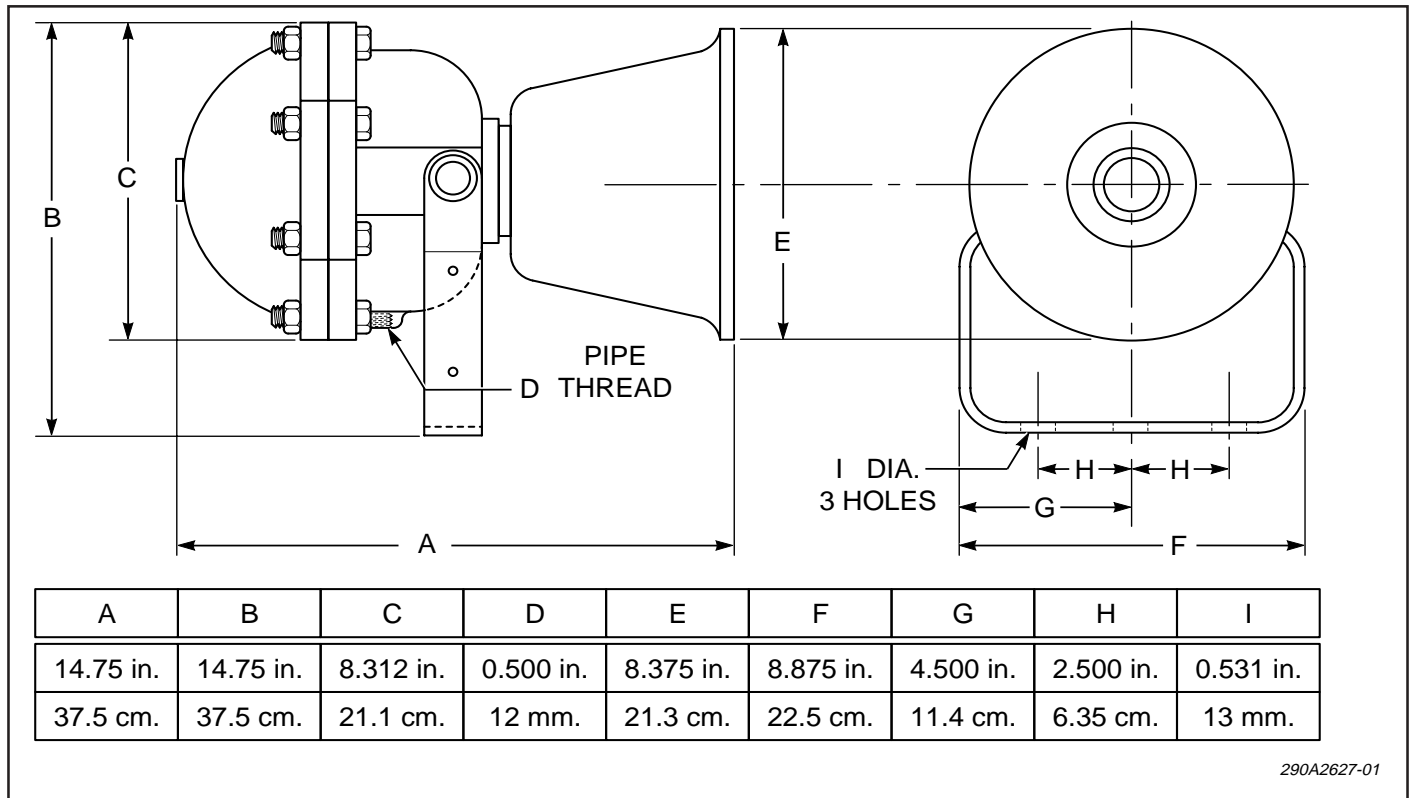


Figure 1. Model SPHX Speaker Dimensions.

c. Carefully reinstall housing cover using eight 5/16-18 x 1-3/4" hex head bolts, lockwashers and hex nuts that were previously removed. Verify that all housing and mounting bolts have been securely tightened.

#### WARNING

*Property damage, serious injury, or death could occur if the housing is not closed properly. To reduce possibility of explosion, housing cover must be kept tight (all eight bolts fully tightened) while circuits are energized.*

#### D. 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 device while testing. Recommendations in the OSHA Sound Level Standard (29 CFR 1910) should not be exceeded.*

1. After installation is complete, be sure to test the system to verify that each speaker operates satisfactorily. If it is found that the unit is too loud for its location, a lower wattage tap may be selected. Carefully remove the housing cover and move the positive (+) lead to a lower wattage tap (see Figure 3). Reinstall the housing cover and retest.

#### WARNING

*Property damage, serious injury, or death could occur if the housing is not closed properly. To reduce possibility of explosion, housing cover must be kept tight (all eight bolts fully tightened) while circuits are energized.*

2. After completion of initial system test, establish a program for periodic testing of this device. 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, system operator(s) and maintenance personnel.

#### SAFETY MESSAGE TO OPERATORS

*Even if 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 within your specific application(s).*

#### E. MAINTENANCE.

#### SAFETY MESSAGE TO MAINTENANCE PERSONNEL

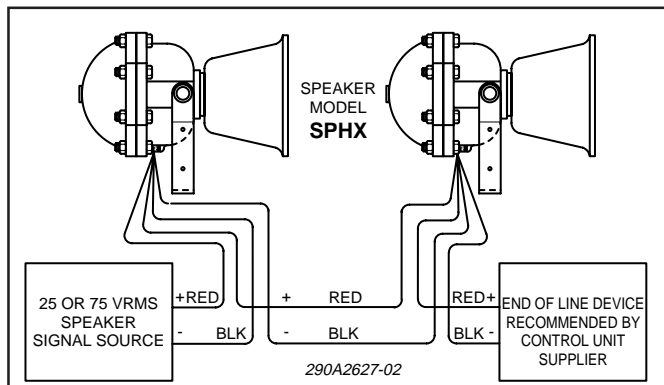


Figure 2. Typical Installation Wiring.

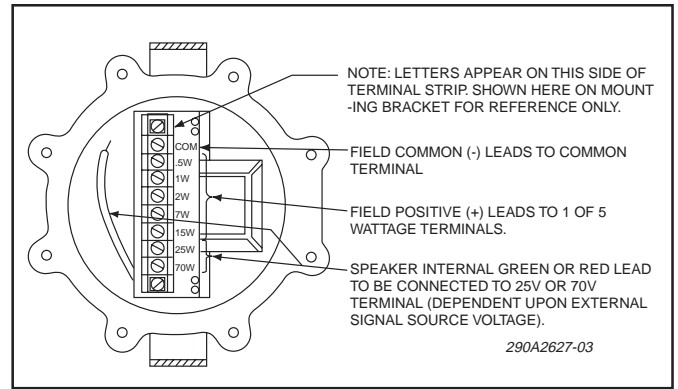


Figure 3. Internal Multi-tap Wiring Set-up.

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 speaker has become clogged with a foreign substance or because objects have been placed in front of the speaker.
- 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 in hazardous locations may be jeopardized if additional openings or alterations are made to this device.
- The nameplates, which contain cautionary or other information of importance to maintenance personnel, should not be obscured if exterior of device is painted.

#### WARNING

Effectiveness of explosion-proof enclosure must be maintained. Use caution to avoid damaging machined surfaces.

1. Periodically check this device to verify that there are no foreign substances in, or in front of, the speaker which will reduce its effectiveness.

2. Testing should be periodically performed. Refer to NFPA 72, local Fire Codes and the authority having jurisdiction for information.

3. In the event a volume adjustment or other repair is required, be sure to refer to the Safety Message For Maintenance Personnel before proceeding.

#### WARNING

Unauthorized repair/servicing of the unit may result in degradation of 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.

#### F. SERVICE.

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 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 nature of problem and, if possible, its cause.

Communications and shipments should be addressed to:

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

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