

MODEL 304X and 314X
INSTALLATION AND SERVICE INSTRUCTIONS
FOR MODELS 304X AND 314X

Address all communications and shipments to:



FEDERAL SIGNAL CORPORATION
Electrical Products Division
2645 Federal Signal Drive
University Park, IL 60466-3195

**INSTALLATION AND SERVICE INSTRUCTIONS
FOR
MODEL 304X/314X**

 SAFETY MESSAGE TO INSTALLERS

Peoples 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 the 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 all National and local Electrical and Fire Codes, and be acceptable to the authority having jurisdiction.
- Do not connect this unit to the 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 72G, 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.

 WARNING

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

I. GENERAL.

The SelectTone® Models 304X and 314X are hazardous location, continuous duty, polarized, regulated 24 Volt DC, indoor/outdoor, high output audible signal/amplified speaker devices for use with fire alarm systems. They are suitable for use in areas where flammable gases, vapors or liquids are present, and in areas with high ambient noise levels requiring a loud distinctive signal. A plug-in tone module is required for tone generation. If the use of externally generated tones or voice signals from a remote amplifier is desired, the plug-in speaker connector cards may be used. See the specification section for compatible plug-in models. The mounting bracket is adjustable to allow positioning to obtain desired sound coverage.

II. SPECIFICATIONS.

Operating Voltage: Regulated 24V dc (16 - 33V dc)

Current

Model 304X: 0.70A max.

Model 314X: 1.00A max.

Weight:

Model 304X 15.4 lbs. (7.0 kg)

Model 314X 16.4 lbs. (7.4 kg)

Size:

Model 304X - 16.3" (414 mm) long x 17.0" (432 mm) high x 13.1" (333 mm) wide.

Model 314X - 19.5" (496 mm) long x 18.8" (478 mm) high x 16.7" (425 mm) wide.

Construction: Aluminum enclosure and adjustable steel mounting bracket painted with a powder coat finish.

Approval Agency Listings: Reference product nameplate.

Compatible Tone Modules:

TM2 or UTM

Compatible Speaker Connector Cards:

AM25CK*, AM70CK*, or 300CKS

* - Series A versions of these connector cards are not compatible.

Audibility information is shown in table 1.

III. INSTALLATION.

A. *Unpacking.*

After unpacking the amplified 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 the extent of the damage. Carefully check all shipping labels and tags for special instructions before removing or destroying them.

B. *Mounting Arrangements.*

The speaker can be mounted on any relatively flat surface capable of supporting the speaker's weight. Conduit connections can be made to the 1/2" NPT threaded openings at bottom of the housing (see figure 2).



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 the speaker projector is pointed horizontally or slightly downward.

1. Remove the two 1/2"-13 hex head bolts, flat washers and lockwashers that secure the mounting bracket to the unit. Disconnect the lanyard from the mounting bracket at the cotter ring.

2. 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.

3. 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.

4. Drill holes at the previously scribed drill position marks to accommodate 1/2" diameter bolts.

5. Secure bracket to mounting surface with 1/2" diameter hex head bolts, lockwashers and hex nuts.

7. Reattach unit to its mounting bracket with the 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.

8. Reattach the lanyard to the cotter ring and mounting bracket. Check to verify that it is securely attached to both the cover and the mounting bracket. Loosen and remove the threaded cover by turning it counter-clockwise. Allow the cover to hang by the attached lanyard.

▲WARNING

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

9. Route wires through the 1/2" NPT threaded openings into the SelecTone unit in accordance with national and local electrical and fire codes. Wire size depends upon the operating current and the distance from the power source.

10. Before reinstalling the housing cover, read paragraph C, in section 3, Electrical Connections below and make necessary connections.

C. *Electrical Connection.*



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

National Electrical Codes as well as local codes must be adhered to in the installation of these models. All electrical wiring must be routed through approved conduit and fittings as specified.

1. TONE CARD INSTALLATION.



Property damage, serious injury, or death could occur if independent conductors are terminated together; both wires of the same polarity must be used as two separate connections. NFPA 72 requires that the wires be terminated independently to provide electrical supervision of the connection.

a. Plug the desired tone card (purchased separately) into the socket as shown in figure 2.

b. Rotate the card retainer into position over the tone card so that it holds the card in place.

c. See figures 2 and 5. Connect the power source positive (+) lead to the terminal block labeled (+). Connect the power source negative (-) lead to the terminal block labeled (-). Connect the additional (+) and (-) terminal blocks to the next unit or to an end of line device.



Property damage, serious injury, or death could occur if the housing is not closed properly. To reduce possibility of explosion, the housing cover must be kept tight while circuits are energized.

d. Carefully reinstall housing cover and tighten it until the cover flange makes contact with the housing. Tighten the setscrew on the cover to secure the cover. Verify the mounting bolts have been securely tightened.

2. SPEAKER CONNECTOR CARD INSTALLATION.
(Models AM25CK, AM70CK)



Property damage, serious injury, or death could occur if independent conductors are terminated together; both wires of the same polarity must be used as two separate connections. NFPA 72 requires that the wires be terminated independently to provide electrical supervision of the power supply connection and audio lines.

a. Plug the desired connector card (purchased separately) into the socket as shown in figure 2.

b. Rotate the card retainer into position over the connector card so that it holds the card in place.

c. See figures 2 and 6. Connect the power source positive (+) lead to the terminal block labeled (+). Connect the power source negative (-) lead to the terminal block labeled (-). Connect the additional (+) and (-) terminal blocks to the next unit or to a power supervision relay.

d. Connect one pair of white leads from the connector card to the audio output of the fire alarm panel and the other pair of white leads to the connector card in the next unit or a power supervision relay contact and an end of line device.

NOTE

Check with authority having jurisdiction for proper application of EOL resistor and power supervision relay required (see figure 5).



Ignition of the hazardous atmosphere may cause property damage, serious injury, or death if the housing is not properly closed while the circuits are energized.

e. Carefully reinstall housing cover and tighten it until the cover flange makes contact with the housing. Tighten the setscrew on the cover to secure the cover. Verify the mounting bolts have been securely tightened.

IV. TESTING/OPERATING.



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.

A. After installation is complete, be sure to test the system to verify that each amplified speaker operates satisfactorily. If it is found that the unit is too loud for its location, an internal volume control can be adjusted. Remove the housing cover and insert a slotted electricians' type screwdriver into the volume control shown in figure 2. Gently turn the control counter-clockwise to decrease the sound output to the desired loudness. Reinstall the housing cover.



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 while circuits are energized.

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

C. 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).

V. 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 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 the National Electrical Code, National Fire Codes, and the 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**

Explosion hazard—substitution of components may impair suitability for Class I, Division 2 and Class I, Zone 2.

 **WARNING**

Property damage, serious injury or death could occur if this product's machined sealing surfaces are damaged. To maintain the effectiveness of the explosion-proof enclosure, use caution to avoid damaging the machined surfaces.

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

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

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



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.

VI. SERVICE.

Federal Signal will service your equipment or provide technical assistance with any problems that cannot be handled locally.

Any units returned to Federal Signal for service, inspection, or repair must be accompanied by a Return Material Authorization. This R.M.A. can be obtained from the local Distributor or Manufacturer's Representative.

At this time a brief explanation of the service requested or the nature of the malfunction, should be given.

Address all communications and shipments to:

FEDERAL SIGNAL CORPORATION
Electrical Products Division
Service Department
2645 Federal Signal Drive
University Park, IL 60466-3195

Table 1. Tone and Connector Card UL Audibility Ratings.

RATING	UL dB (A) SOUND PRESSURE PER UL1480	
	Model 304X	Model 314X
AUDIBILITY RATING*	91	97
AM25CK	101	99
AM70CK	101	99

*=Based on TM6, HORN

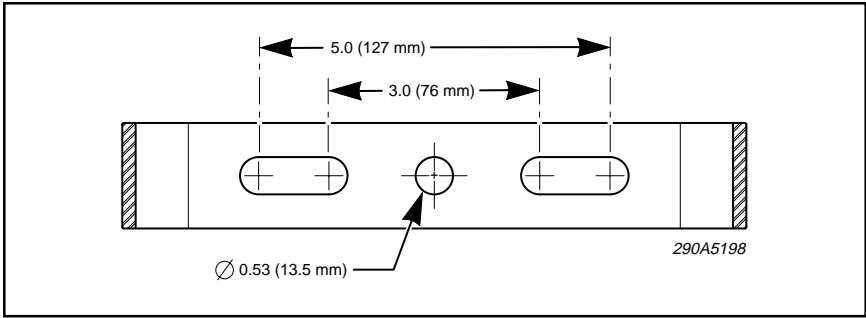


Figure 1.

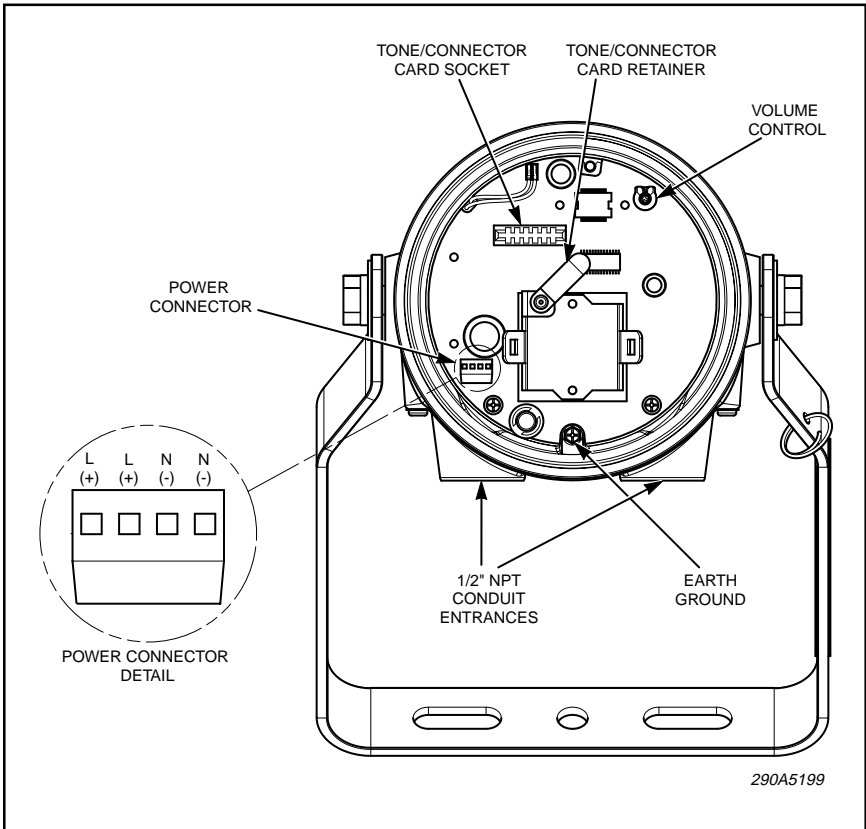


Figure 2.

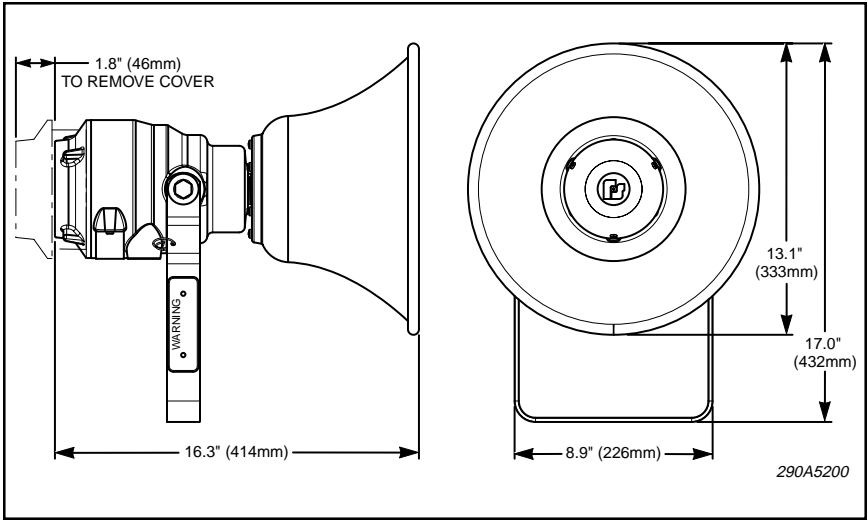


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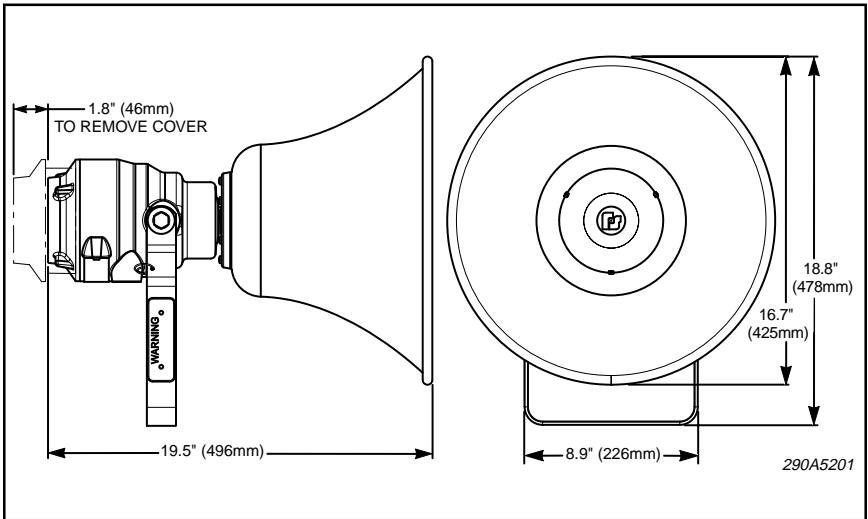


Figure 4.

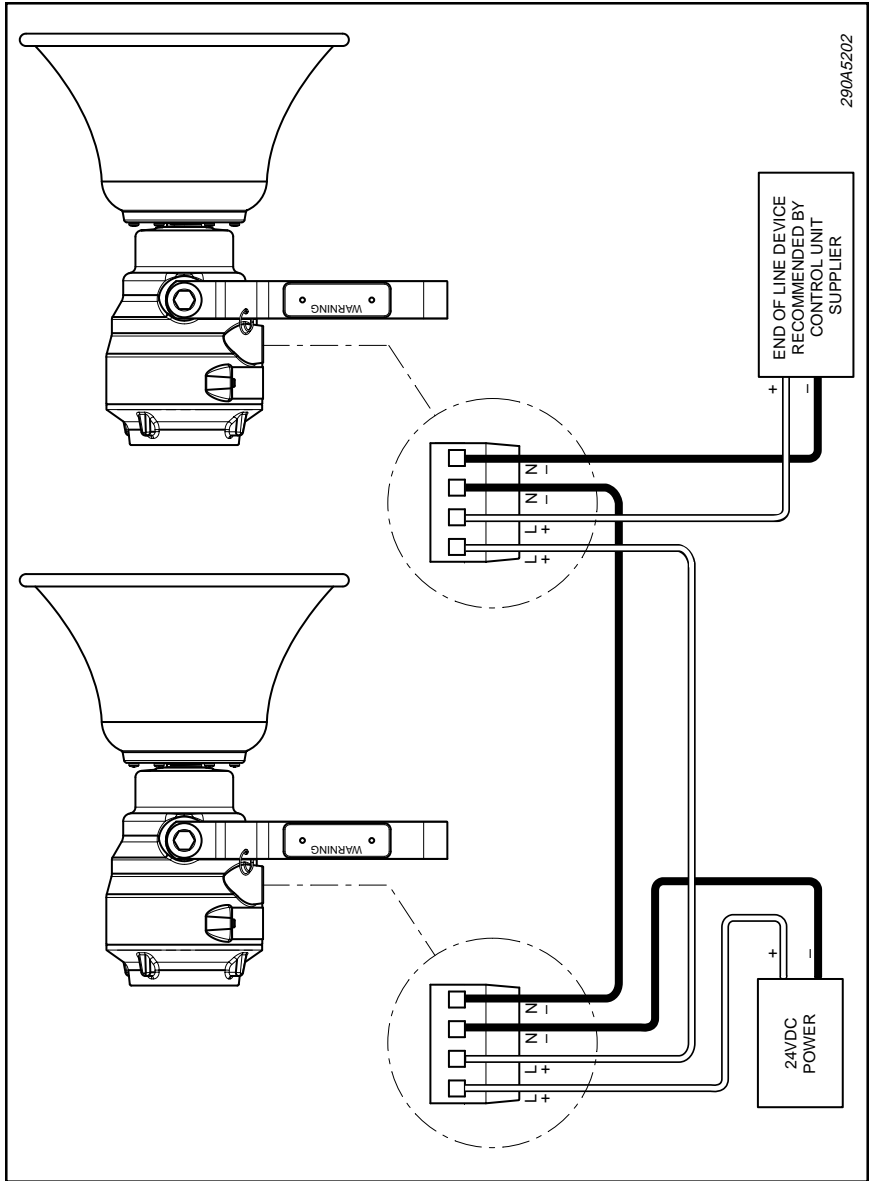
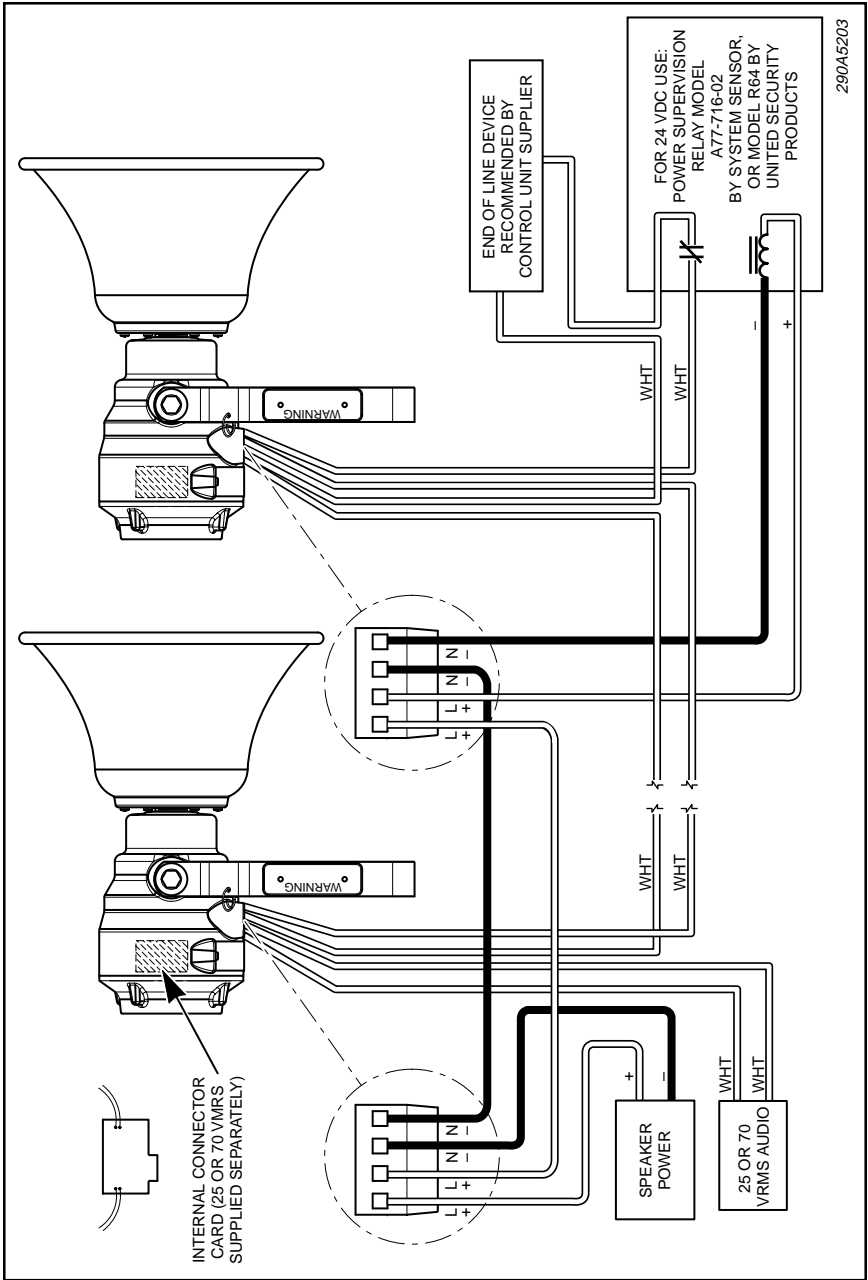


Figure 5.



290A5203

Figure 6.

