

MODEL 54GC

**INSTALLATION INSTRUCTIONS FOR FEDERAL
MODEL 54GC SELECTONE®**

Address all communications and shipments to:



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

INSTALLATION INSTRUCTIONS FOR FEDERAL MODEL 54GC SelectTone®

SAFETY MESSAGE TO INSTALLERS

People's lives depend on your safe installation of our products. It is important to follow all instructions shipped with the products. This device is to be installed by a trained electrician who is thoroughly familiar with the National Electrical Code and will follow the NEC Guidelines as well as local codes.

The selection of the mounting location for the device, its controls and the routing of the wiring is to be accomplished under the direction of the Facilities Engineer and the Safety Engineer. In addition, listed below are some other important safety instructions and precautions you should follow:

- All effective warning speakers produce loud sounds, which may cause, in certain situations, permanent hearing loss. The device should be installed far enough away from potential listeners to limit their exposure while still maintaining its effectiveness. The OSHA Code of Federal Regulations 1910.95 Noise Standard provides guidelines which may be used regarding permissible noise exposure levels.
- Read and understand all instructions before installing or operating this equipment.
- Do not connect this unit to the system when power is on.
- Optimum sound distribution will be severely reduced if any objects are in front of the speaker. You should ensure that the front of the speaker is clear of any obstructions.
- All effective warning speakers produce loud sounds which may cause, in certain situations, permanent hearing loss. You should take appropriate precautions such as wearing hearing protection.
- After installation, ensure that all bolts and threaded joints are tightened.
- Establish a procedure to routinely check the sound system for proper activation and operation.
- Provide a copy of these instructions to the Safety Engineer, operator(s) and maintenance personnel.
- File these instructions in a safe place and refer to them when maintaining and/or reinstalling the device.

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

A. GENERAL.

The Model 54GC SelectTone® is a continuous duty, polarized, indoor/outdoor rated, compact, amplified speaker (with volume control) for use with fire alarm systems. Any one of available plug-in tone modules or Model UTM (purchased separately) may be used (see table 1). If use of externally generated tones or voice signals from a remote amplifier is desired, any one of three available plug-in connector cards may be used (see table 1).

Model 54GC is Underwriters Laboratories Listed as a "FIRE PROTECTIVE SIGNALING SPEAKER" when used with a Model AM25CK, AM70CK, or 300CKS connector card, and as an "AUDIBLE SIGNAL APPLIANCE FOR FIRE ALARM SERVICE" when used with an available tone module or Model UTM.

B. SPECIFICATIONS.

Operating Voltage	24VDC
Operating Current	41mA @ 24VDC
Standby Current	37mA @ 24VDC
Audibility Ratings	See table 1
Output Voltage (Tone module installed)	20VRms
Weight (approx.)	1.5 lbs. (690g -without tone module)
Dimensions (HWD -without tone module)	4-7/16" x 4-7/16" x 2-7/8" (113mm x 113mm x 73mm)
Compatible Tone Modules	TM2 or UTM
Compatible Speaker Connector Cards	AM25CK, AM70CK, or 300CKS

C. UNPACKING.

After unpacking the unit, examine it carefully for damage that may have occurred in transit. If the equipment has been damaged, file a claim immediately with the carrier, stating the extent of the damage. Before proceeding, ensure that the parts listed in the KIT CONTENTS LIST have been supplied.

D. KIT CONTENTS LIST.

Qty. Description

- 1 Adapter, 54GC
- 1 Gasket, Adapter
- 2 Screw, 8-32 x 3, Slotted Oval Hd.
- 2 Wire Nuts

E. INSTALLATION.

The Model 54GC can be attached to any relatively flat surface or to a variety of electrical wall boxes. Four wire nuts are supplied for insulating wiring splices. In addition, two 8-32 x 2-1/2" slotted machine screws are included to attach the unit to a four-inch square electrical box. After the mounting method and location have been selected, follow the procedure in the appropriate paragraph of this section.

1. *Weatherproof Mounting in WB Box.*

a. See figure 1. Insert the two 8-32 x 3" slotted oval head screws into the 54GC at opposite corners.

b. Install the adapter gasket in the 54GC adapter, and place the adapter with installed gasket over the screws inserted in the above step.

c. Secure the 54GC/adapter assembly in the WB Weatherproof Box with the oval head screws as shown in figure 1.

2. *Wall Mounting.*

Wall mounting the 54GC in an NB or NBL box is accomplished using the 54GC adapter, adapter gasket, and the 8-32 x 3" oval head screws as shown in figure 2.

3. *Surface Mounting.*

Surface mounting the 54GC in an NB or NBL box is accomplished using the 54GC adapter, adapter gasket, and the 8-32 x 3" oval head screws. Use figure 2 as a guide.

4. *Flush Mounting.*

As shown in figure 3, flush mounting can be accomplished with the use of a Federal Model FBL Wall Box and a Model FG grille. Attach the trim plate to the front of the 54GC by removing the two 8-32 x 1/2" Phillips head screws from the 54GC, and attach the trim plate to the 54GC with the same two screws. This assembly can then be installed in the FBL box that has already been mounted on the wall. Use two 8-32 x 3" slotted head screws to hold the 54GC/FG assembly in the FBL box. Use four #10 x 1" round head screws for back box mounting.

F. TONE MODULE INSTALLATION.

WARNING

Property damage, serious injury, or death could occur if independent conductors are terminated together. NFPA 72 requires that both wires of the same polarity must be terminated separately, so as to provide electrical supervision of the field wiring connections.

1. See figure 5. Connect the power source positive (+) lead to one of the red speaker leads. Connect the power source negative (-) lead to one of the black speaker leads. Connect the additional red and black speaker leads to the next unit or to an end of line device.

2. See figure 4. Insert the tone module into the receptacle, at the rear of the 54GC, with the foil side of the circuit board toward the speaker. Make sure that the tone module connector is fully inserted and that the top edge of the module is beneath the clip. Ensure that the unit is working correctly after installation.

G. CONNECTOR CARD INSTALLATION (Models AM25CK or AM70CK).

WARNING

Property damage, serious injury, or death could occur if independent conductors are terminated together. NFPA 72 requires that both wires of the same polarity must be terminated separately, so as to provide electrical supervision of the field wiring connections.

1. See figure 6. Connect the power source positive (+) lead to one of the red speaker leads. Connect the power source negative (-) lead to one of the black speaker leads. Connect the additional red and black speaker leads to the next unit or a power supervision relay.

2. See figure 4. Insert connector card into the receptacle at the rear of the 54GC, with the foil side of the circuit board toward the speaker (make sure that the connector card is fully inserted into the receptacle and that the top edge of the card is beneath the clip). Follow the wiring instructions supplied with the connector card and verify that the unit is working correctly when the wiring has been completed.

3. See figure 6. 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

The connector cards are NOT polarity sensitive, but polarity must be observed when placing speakers in close proximity to each other.

Audio wires should be sized properly for your application, by your licensed installation electrician. This cable requires a twisted pair with 18 AWG minimum, and should produce no more than a 15% signal loss over the length of the cable run.

H. VOLUME ADJUSTMENT.

▲ CAUTION

The volume control is set to maximum at the factory. If the volume level is reduced, be sure that the alarm signal is loud enough to adequately warn.

After all power is connected and the tone module is installed, the volume of the output sound level can be set by applying power to the unit and adjusting the volume control, R2. The location of R2 is shown in figure 4. Clockwise rotation of the control, with a small screwdriver, increases the volume.

▲ SAFETY MESSAGE TO MAINTENANCE PERSONNEL

- Read and understand all instructions before performing any maintenance to this unit.
- To reduce the risk of electrical shock or ignition of hazardous atmospheres, do not perform maintenance/service on this device when circuits are energized.
- Optimum sound distribution will be reduced if speaker becomes clogged with a foreign substance. Periodic checks should be performed to ensure foreign substances are not packed into the speaker.
- Any maintenance to the unit MUST be performed by a trained electrician in accordance with NEC Guidelines and local codes.
- Never alter the unit in any manner. Safety in hazardous locations may be endangered if additional openings or alterations are made in units specifically designed for use in these locations.
- The nameplate, which may contain cautionary or other information of importance to maintenance personnel, should not be obscured if exterior of housings used in hazardous locations are painted.

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

I. SERVICE.

The Federal factory 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 provided.

Address all communications and shipments to:

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

J. REPLACEMENT PARTS.

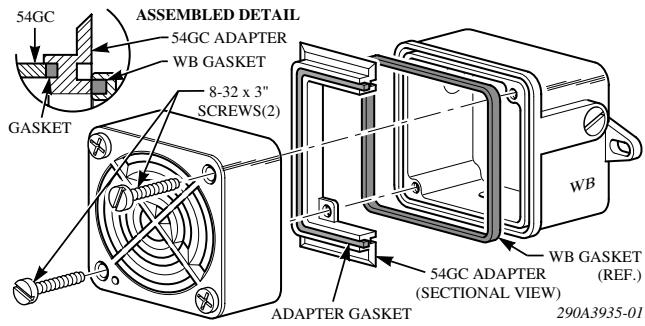
Adapter	K8476121A
Gasket	K8476122A

Table 1. Tone and Connector Card Audibility Ratings.

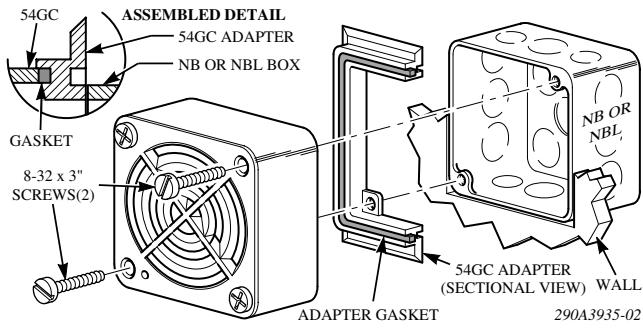
54GCB-024BG Audibility Rating	Sound Level dB(A) @ 10'	
	UL Omni-directional	On-Axis, Anechoic
Tone Cards	71*	87
Connector Cards	75	75

* Based on TM6, Horn

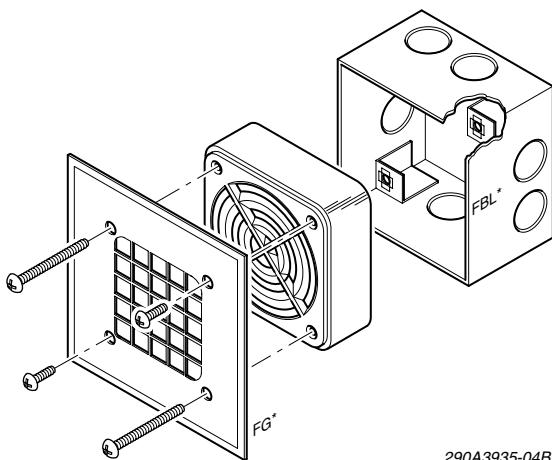
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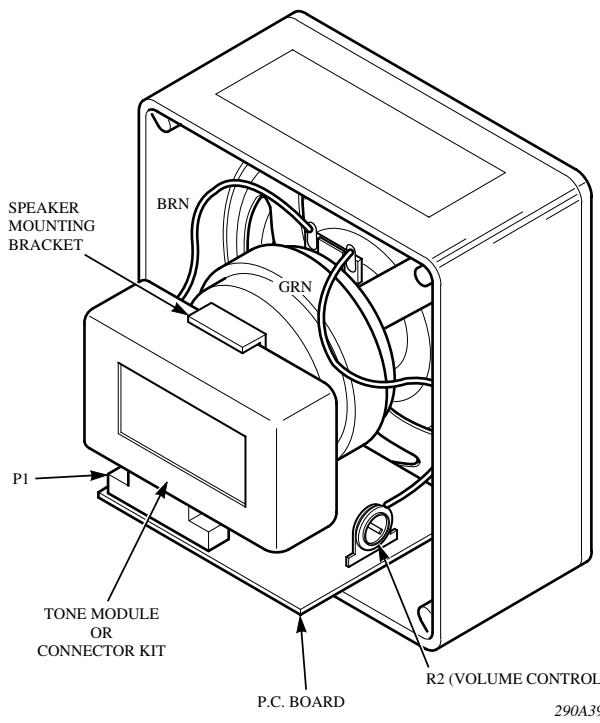


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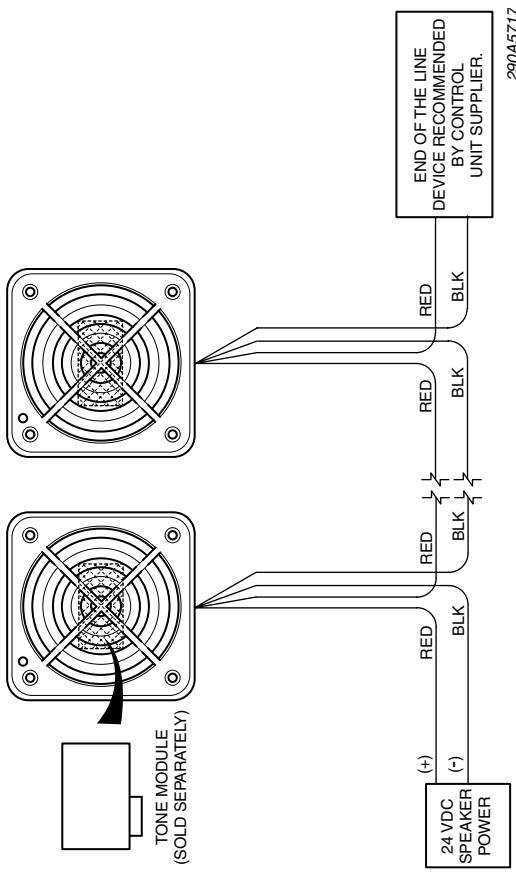


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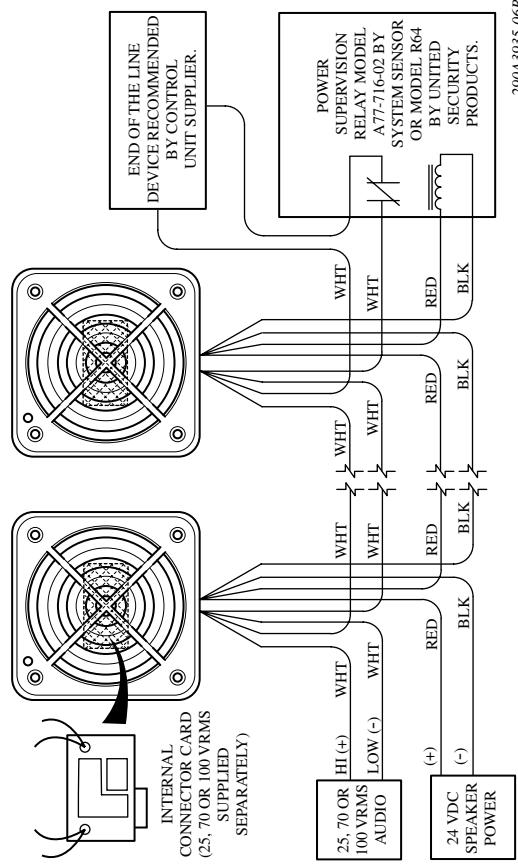
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