

# Sound masking Installation Guide SM400



This sound masking kit is for an open area where conversation privacy is required. The kit contains loudspeakers which fit above and rest on the standard ceiling tile grid. They direct the sound upward to distribute it over the desired region. Also included is a sound generator-amplifier and all the necessary components for the installation.

Items in system kit; Generator/amp, Power adapter, 4 speakers with support chains, Speaker cable 75 ft., wire nut 12 pcs, raceway 2 pcs., electronic timer, and this Installation Guide.



Tools; Small blade screwdriver, wire stripper for 18 gage, pliers, and general installation tools.

### First time Installation

If this is a first time installation, it is suggested that the system be bench tested prior to installation. To do this connect the generator/amplifier to one of the 70 V speakers. Use the 2 conductor plenum speaker cable. The steps are the same as follows without any installation and use just 1 speaker.

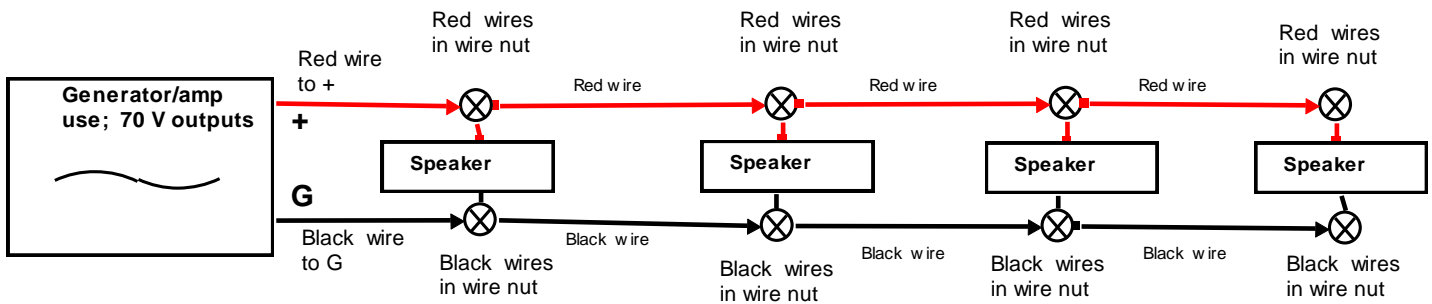


#### 1. Plan the system layout .

The generator/amp needs to be near a wall outlet where the timer and DC power adapter can be located. There is a 6 ft cord from the outlet power adapter to the Generator/amp. From the Generator/amp the 2 conductor speaker cable is routed to the first speaker. The kit contains two 3 ft. lengths of wall raceway ( total length of 6 ft) to route the speaker wire from the Generator/amp up the wall to the ceiling. From there the cable goes to the first speaker.

The speakers are operated at 70V and the connection scheme is parallel wiring. This means that the red conductor goes from the plus( + ) 70V post on the Generator/amp to the red wires on each of the speakers. The black wire can go from the G terminal to the black wire on each speaker. See the diagram.

## SOUND MASKING SYSTEM



It is suggested for most systems that the space between the speakers is about 15 ft. This can vary due to the ducts and light fixtures in the space above the ceiling tile. The speakers are placed out of sight, pointing upward, on top the ceiling tiles. Since the exact layout of the ductwork may be unknown the plan need only indicate the approximate locations.

#### 2. Connect the power wiring for the Generator/amp

Connect the Generator/amp to the DC power adapter using the 2 port 24VDC power connector . Do not plug in the adapter. Observe the voltage polarity ( red to the positive (+) port). Secure the power wire to the Generator/amp with the screw connector tab.

#### 3. Connect the speaker cable

Measure out a sufficient length of cable to reach the first speaker and cut . The kit has a wire budget of 35 ft. for the run up the wall and to the speaker. After that 15 ft has been allotted for the distance between the speakers. Should there be any shortage, a short cable length can be spliced in place.

Using the initial length strip and connect the the red conductor to the plus ( + ) 70V post on the Generator/amp. Then the black wire to the G post.

#### 4. Route the speaker cable to the first speaker site.

Having established the location for the Generator/amp, now install the wire up the wall raceway and over the ceiling to the first speaker site. At this location mount the speaker on top the tile. To access the ceiling you want to open an adjacent tile panel. Secure the speaker by attaching the auxiliary support chain to the building structure or a suitable solid support location.

Be sure to set the power knob on the speaker to the ½ watt position. This is the 2<sup>nd</sup> stop on the dial going counter-clockwise from OFF.

#### 5. Connect the first speaker

Now strip the wires and connect the red wire to the red wire on the speaker. In addition add a 3<sup>rd</sup> red wire from a second 15 ft length of cable which will go to the next speaker. Connect all 3 of the red wires using a wire nut.

Repeat the same connection process for the black wires. After connecting is completed direct the speaker cable toward the 2<sup>nd</sup> speaker location.

#### 6. Install the second speaker

Open an adjacent tile and place the speaker. Again connect the red wires for the 2 cables (add another 15 ft length) and the red speaker wire using a wire nut. Repeat for the black wires .

Again check to see the speaker power level is set to ½ watt. Attcah the aux. support chain.

Route the speaker cable to the 3<sup>rd</sup> speaker .

7. Install the 3<sup>rd</sup> speaker the same way. Install the 4<sup>th</sup> speaker with the final cable length.

#### 8. Activate the system.

All the speakers are at ½ watt setting. On the Generator/amp turn the LEVEL knob on the front full counter-clockwise to the (-) position ( lowest setting) . On the rear, set the switch to PINK, and turn EQ full counter-clockwise ( no effect on output) .

Now plug into the wall outlet the power adapter. The blue indicator LED should appear on the Generator/amp.

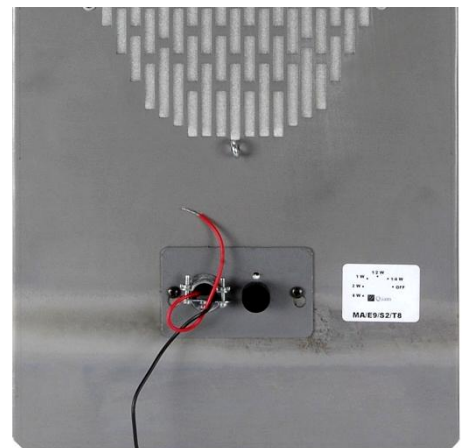
Slowly turn the LEVEL up until the pink noise sound can just be heard. This is the starting level for sound masking.

Now check to see if the sound field has about the same level at all the speaker locations. This will assure that all the speakers are operating and there are no high level sound spots.

#### 9. Adjusting the masking sound.

The desired masking is achieved by providing a masking level that is approximately 6 dB above the background noise.

Using a sound meter this can be determined by taking a set of readings and then adjusting the LEVEL control on the Generator/amp. To prevent changes to the sound masking level the Generator/amp LEVEL knob can be removed. It is recommender that the masking level be increased gradually over days or weeks. The timer can be installed to turn the power off when no one is present in the evenings and on weekends.



Top of speaker with red and black wires. Also knob to set the power level. Recommended setting at ½ Watt for start.

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