

# SP2300 Omnidirectional speaker for white noise generators



White noise generators are widely used for protecting premises against acoustic leakage eavesdropping. The SP2300 omnidirectional speaker is an important component for such systems. While transducers inject their generated noise into surfaces and structures, stopping the distribution of sound through them, the role of the speaker is to fill voids, cavities and ventilation shafts with audio interference to prevent leakage of sound through the air. This creating of audio noise in the voids/cavities of premises increases the general level of protection by preventing such kinds of listening as:

- Listening with the help of a wall stethoscope placed behind the construction which is adjacent to a cavity in the room (typically from the floor above, behind a dropped ceiling)
- Leakage of sound outside the target room through voids/cavities (for example, through ventilation shafts or common holes for the pipes of a heating system)
- Placing a wired microphone in a void or cavity
- Hiding a covert surveillance device in a void or cavity



The SP2300 speaker, when connected to a white noise generator, will create efficient interference for all the above mentioned kinds of eavesdropping.

The DNG-2300 is the recommended white noise generator for the SP2300 as it has a separate 'SPEAKERS' output with adjustable volume and can feed up to 12 speakers simultaneously.

## SPECIFICATION

Power output	9 W (3 x 3W)
Resistance	24 Ohm
Dimensions	110 x 80 mm
Weight	360 g



## USAGE

### Ventilation shafts and other voids leading outside of the protected room

Ventilation makes it possible to carry out eavesdropping without penetrating into the target zone. Sound from the target room propagates through its shafts/voids and can be picked up remotely. In some cases a wired microphone can be run within a shaft. In order to prevent such ways of leakage the SP2300 can be positioned inside voids or shafts and connected to a white noise generator. If the void is not large enough to accommodate the speaker as is, the speaker can be disassembled and placed inside without the holders.

Since the SP2300 is assembled from 3 parts, each being a separate speaker, it is possible to use the speaker parts for smaller voids. Disassemble the SP2300 by removing the triangular holder, cut the cables, place the separate speaker parts where necessary and reconnect them in the correct series.

► Use 1 x **SP2300** for each large shaft, or a disassembled speaker part for a smaller void

## Spaces behind dropped ceilings

Sound distributes in all directions; therefore, all conversations inside the target area can be easily picked up under a dropped ceiling. The most popular methods of eavesdropping are:

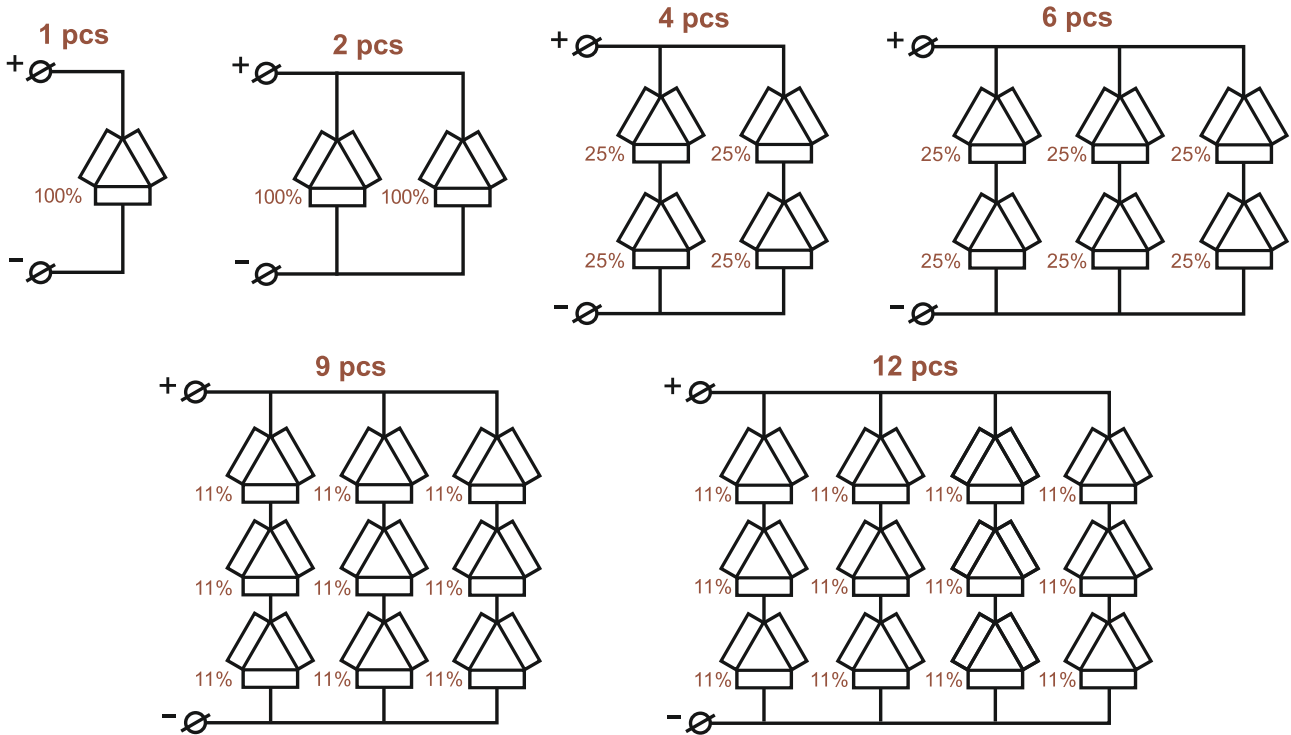
- ① Drilling a hole down from the upper floor in order to place a wired microphone or its tube extender behind the dropped ceiling. This method is preferred over direct drilling into the room as the dropped ceiling hides all signs of work.
- ② Placement of a bugging device in the space under the dropped ceiling.

The SP2300 can be placed behind the dropped ceiling in order to protect from the mentioned listening methods. If the area behind the ceiling is not separated, i.e. it is one large area, the quantity of speakers can be selected in correspondence with the following suggestion:

▶ 1 x **SP2300** speaker for each 9-10 square meters

## CONNECTION

Depending on the selected number of speakers, please choose a wiring diagram from the picture below. And please consider the generator's minimum load for the SPEAKERS channel (e.g. 8 Ohm for the DNG2300)



The power output is divided between the speakers, so when there are more speakers, each separate unit will receive less power.

The percentage shows the relative power produced by a speaker.

- "100% level" speakers are recommended for large ventilation shafts
- "25% level" – for regular voids/cavities
- "11% level" – for small voids/cavities

Combining levels can be done, but care should be taken to verify the load for the generator and the correct output volume of each speaker.

The percentage reflects the relative power, while the real output will also depend on the generator's volume control. Typically, when there are more speakers the volume should be set higher. To determine the sufficient level for the output channel it is necessary to conduct some tests with the help of an acoustic leakage probe. By creating a test sound in the room with the generator active it is possible to adjust the noise to such a level that the external probing does not capture any sound from within, or near the void/cavity

