

Sonitron Ceramic Speakers

SCS SERIES

The **SCS series** are reliable quality piezo speakers, who are used for many years in numerous applications.

These loudspeakers are characterized for their complex sound in which two or more tones can be combined. Good sound quality and limited distortion guarantee a clear reproduction of multiple tones. The SCS series can be modified by options. These options ensure that the SCS series can be used in difficult environmental conditions, such as resistance of the front to water, humidity, vibrations and dust.



SCS-17



SCS-24



SCS-32

ADVANTAGES & APPLICATIONS

ADVANTAGES :

- ✓ Very flat and solid design
- ✓ Robust design
- ✓ Dust, water- and shockproof front panel
- ✓ Broad frequency range in small size
- ✓ No electro magnetic field (EMC)
- ✓ Little energy required at low frequencies
- ✓ Long lifetime
- ✓ High impedance
- ✓ Low weight
- ✓ Can be driven directly by IC

APPLICATIONS :



Medical equipment



Communication equipment



Computer equipment



Paging systems



Home equipment



Industrial equipment



Flight instrumentation

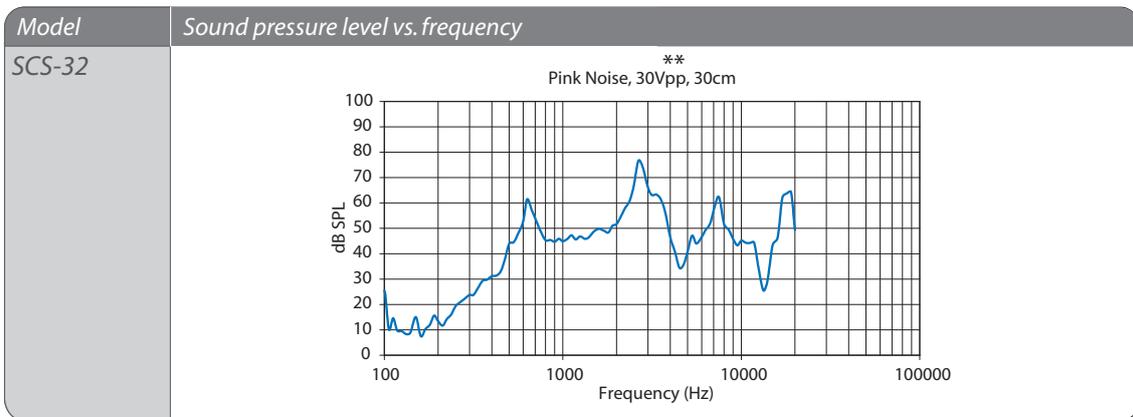
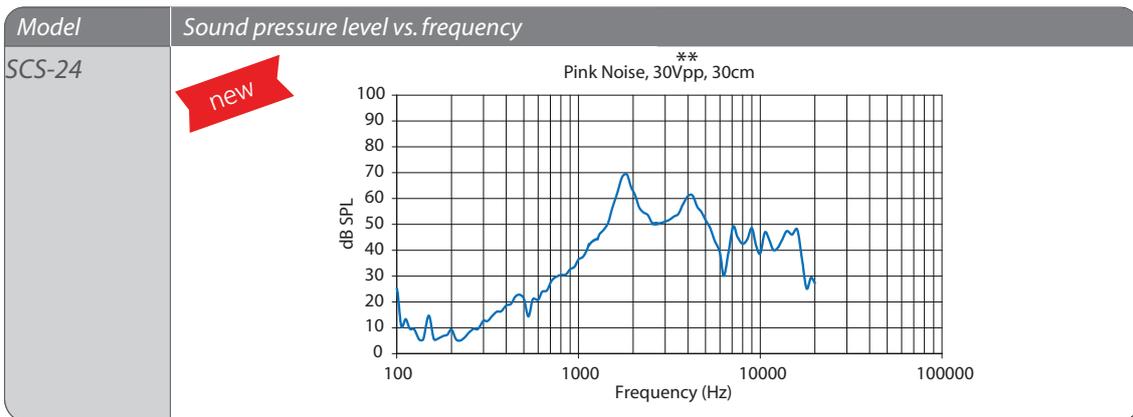
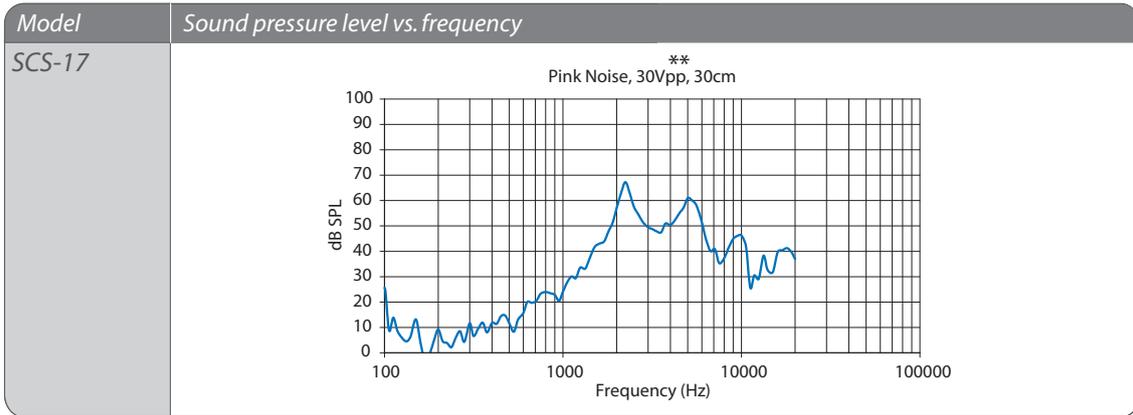


Multimedia equipment

SPECIFICATIONS

Operating temperature	-40°C to +85°C
Storage temperature	-40°C to +85°C
Case material	PBT (UL rating: 94 HB) for pin-version PPS (UL rating: 94 V0/5V) for SMD-version
Standard colour of case	Black

FREQUENCY RESPONSE

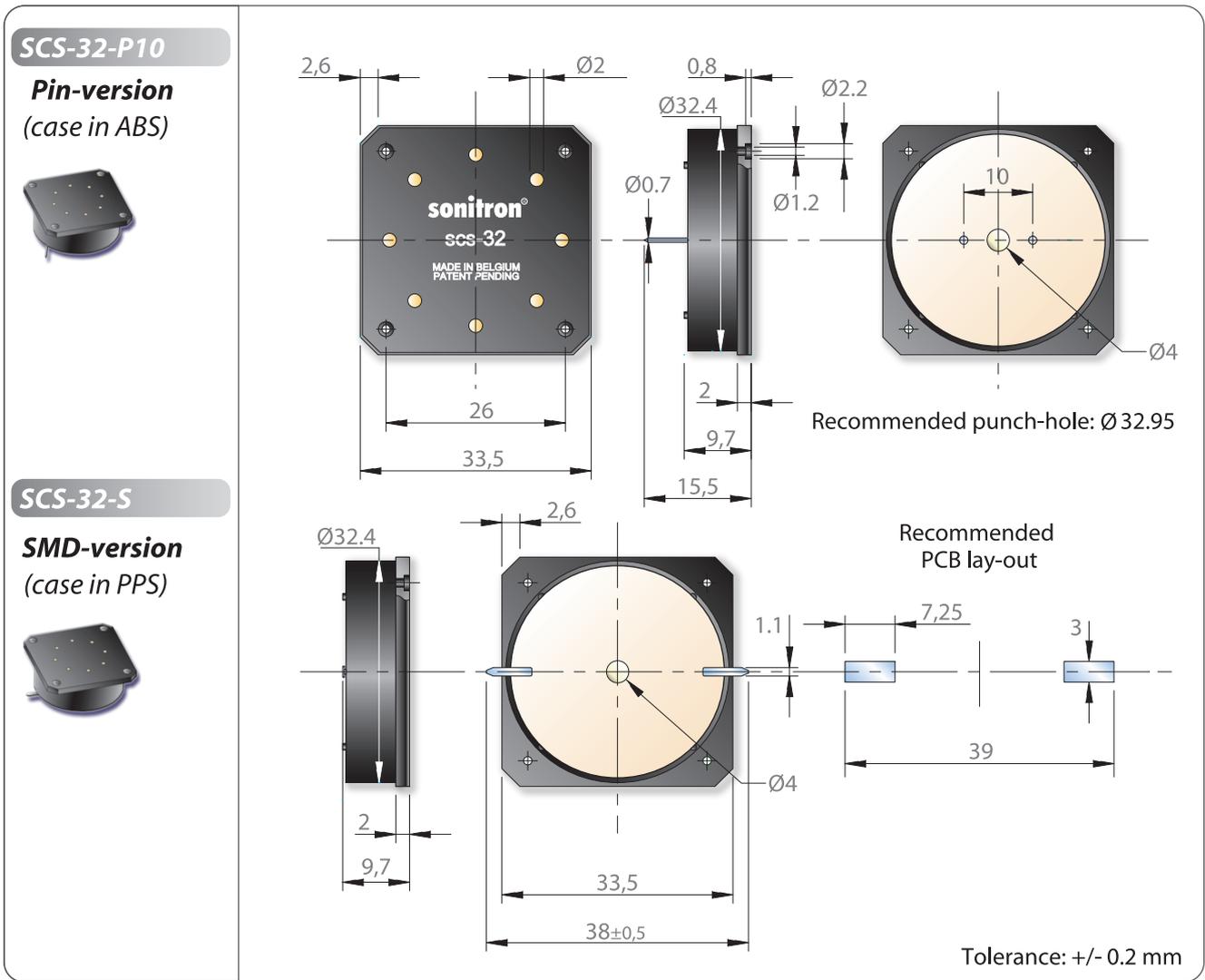


**30VPP Sine wave is translated to a Pink Noise of 10.5 Vrms.

Model	Frequency range	Peak frequency SPL *	Capacitance ±20%	Operating signal voltage		Impedance @ 1KHz ±20%	Weight
SCS-17	1500 - 8000 Hz	2200 Hz - 92 dB 5000 Hz - 91 dB	20 nF	Sine wave	5 to 30 Vpp	7957 ohm	1.7 g
				Square wave	5 to 21 Vpp		
SCS-24	1000 - 8000 Hz	800 Hz - 68 dB 1600 Hz - 95 dB 4000 Hz - 87 dB	37 nF	Sine wave	5 to 30 Vpp	4300 ohm	4 g
				Square wave	5 to 21 Vpp		
SCS-32	500 - 8000 Hz	650 Hz - 85 dB 2700 Hz - 100 dB 3700 Hz - 88 dB 7500 Hz - 80 dB	66 nF	Sine wave	5 to 30 Vpp	2400 ohm	5.9 g
				Square wave	5 to 21 Vpp		

*All measurements are made in free air @30 cm using a 30 Vpp sine wave.
The speakers were mounted in a box with dimensions 40x15x5 cm.

DIMENSIONS (All dimensions are in mm)



PRODUCT OPTIONS

Option Code	example	Description
SP02	SCS-32-P10/ SP02	Contains heavy duty wires (plastic insulation), connection sealed with silicone.
FP17S	SCS-24-S- FP	Acoustic stabilization Foam Patch, easy to stick. For: SCS-24-P10 SCS-24-S
FP24S	SCS-32-S- FP	Acoustic stabilization Foam Patch, easy to stick. For: SCS-32-P10 SCS-32-S
MC	SCS-32 -S MC	Acryl coating (Membrane coating). Recommended for aggressive, humid or smoggy environment.

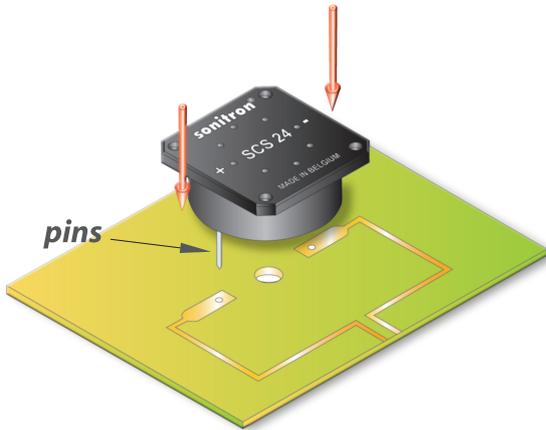
LIST OF AVAILABLE PRODUCT TYPES

SCS-17-P10 SCS-17-S	SCS-24-P10 SCS-24-S	SCS-32-P10 SCS-32-S
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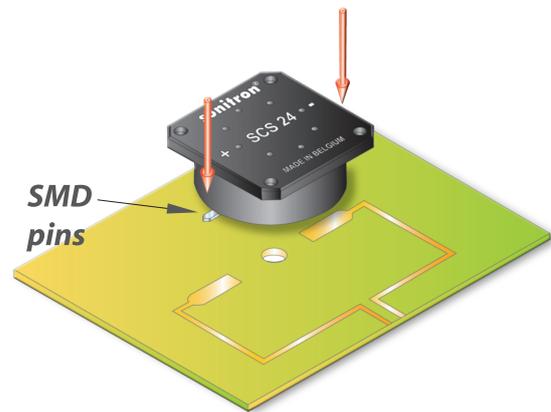
ACOUSTIC MOUNTING INSTRUCTIONS FOR SCS-SPEAKERS

- The SCS speakers can be mounted in several different ways. The recommended mounting methods illustrated below are the best ways to mount all the SCS speaker models.

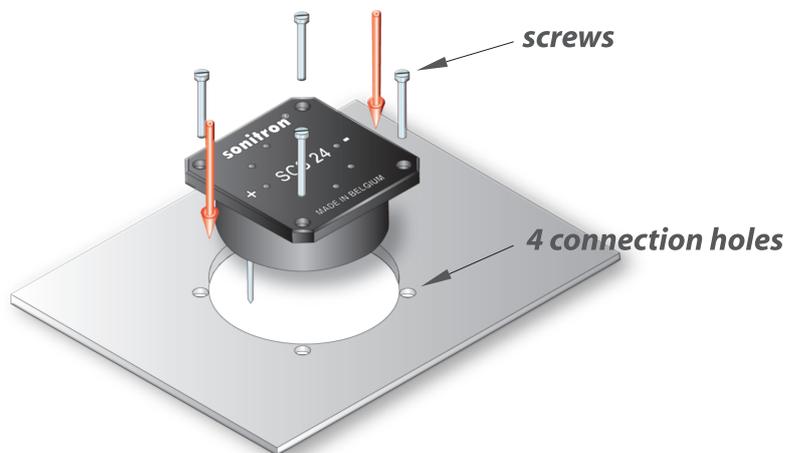
Soldered with pins on the PCB



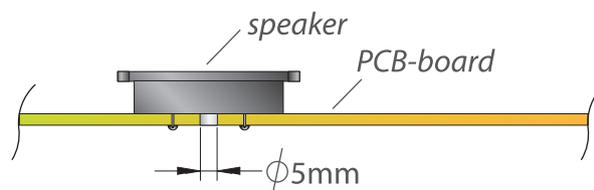
SMD soldered on the PCB



Panel mounting, secured with 4 screws



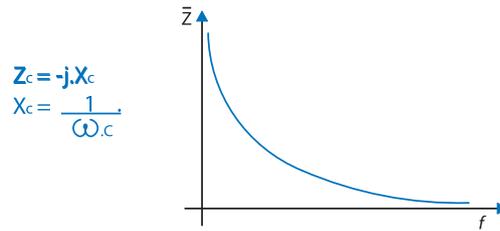
When mounted on a PC-board, a central hole in the PC-board of minimum 5 mm diameter is recommended.



Other methods...

IMPEDANCE

Theoretical the main impedance of the piezo speakers is a capacitive reactance and follows an asymptotic function.



The typical practical impedance values ($\pm 20\%$) for frequencies of 100 Hz up to 20 kHz of our speakers are as follows:

Model	SCS-17	SCS-24	SCS-32
Capacitance ($\pm 20\%$)	20 nF	37 nF	66 nF
Z (0.1 kHz)	79577 ohm	43000 ohm	24114 ohm
Z (1 kHz)	7957 ohm	4300 ohm	2411 ohm
Z (2 kHz)	3978 ohm	2150 ohm	1205 ohm
Z (5 kHz)	1591 ohm	860 ohm	482 ohm
Z (10 kHz)	795 ohm	430 ohm	241 ohm
Z (15 kHz)	530 ohm	286 ohm	161 ohm
Z (20 kHz)	397 ohm	215 ohm	121 ohm

PACKAGING

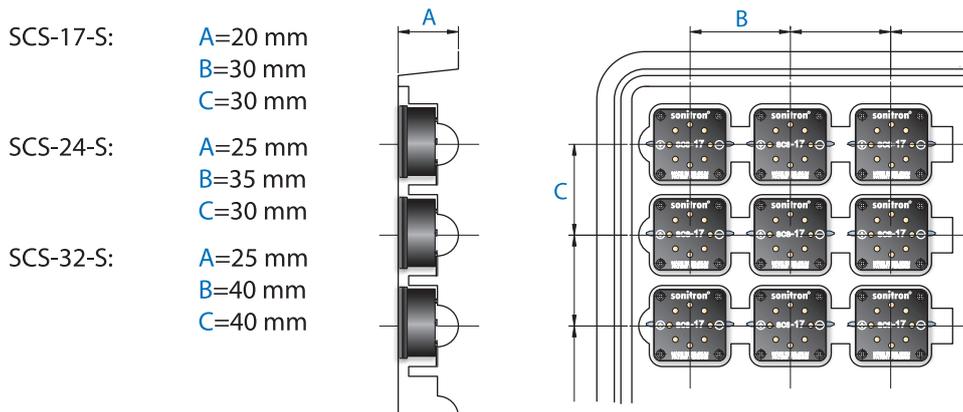
All speakers with through hole pins, are packed in trays (245 L x 245 W) and sold in boxes with dimensions of 250 L x 250 W x 125 H.

Number	SCS-17 P10	SCS-24 P10	SCS-32 P10
per board	100	81	49
per box	(5x100) 500	(5x81) 405	(5x49) 245

All SMD models are packed in trays (245 L x 245 W) and sold in boxes with dimensions of 250 L x 250 W x 125 H.

Number	SCS-17-S	SCS-24-S	SCS-32-S
per board	49	42	25
per box	(7x49) 343	(5x42) 210	(6x25) 150

Dimensions of the tray and position of the SMD components of the models SCS-17-S, SCS-24-S and SCS-32-S are illustrated below:



SCS - 32 CON SP02

SCS SERIES

Multi Tone Piezo Speaker

The **SCS-32 CON SP02** speaker is an extremely energetic and reliable, quality piezo speaker of the SCS - series which have proven themselves for many years in harsh environmental conditions and applications.



Good sound quality and limited distortion guarantee a clear reproduction of multiple tones. These loudspeakers are characterized for its complex sound in which two or more tones can be combined. No soldering is required as this speaker has a WAGO 2060 terminal block on the back. Due to the robust design and strong internal wires, the speaker can be used in difficult environmental conditions because of resistance of the front to water, humidity, vibrations and dust.

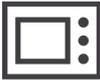


ADVANTAGES & APPLICATIONS

ADVANTAGES :

- ✓ Very flat and solid design
- ✓ Robust design
- ✓ Dust, water- and shockproof front panel
- ✓ Broad frequency range in small size
- ✓ No electro magnetic field (EMC)
- ✓ Optional acrylcoating (MC)
- ✓ Terminal block WAGO 2060
- ✓ No need for soldering
- ✓ Possible wire connections (18 AWG -24 AWG)
- ✓ Long lifetime

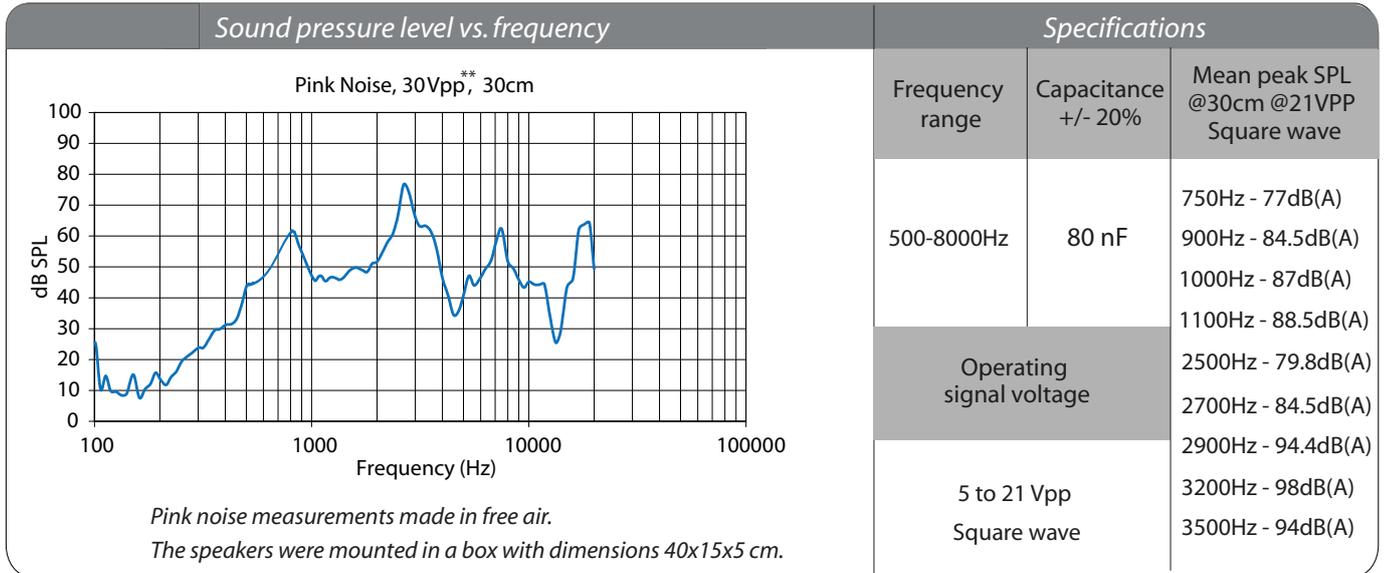
APPLICATIONS :

 Medical equipment	 Communication equipment	 Computer equipment	 Paying systems
 Home equipment	 Industrial equipment	 Flight instrumentation	 Multimedia equipment

SPECIFICATIONS

Operating temperature	-40°C to +85°C
Storage temperature	-40°C to +85°C
Case material	PBT (UL rating: 94 HB)
Standard colour of case	Black
Weight	6.7g

FREQUENCY RESPONSE



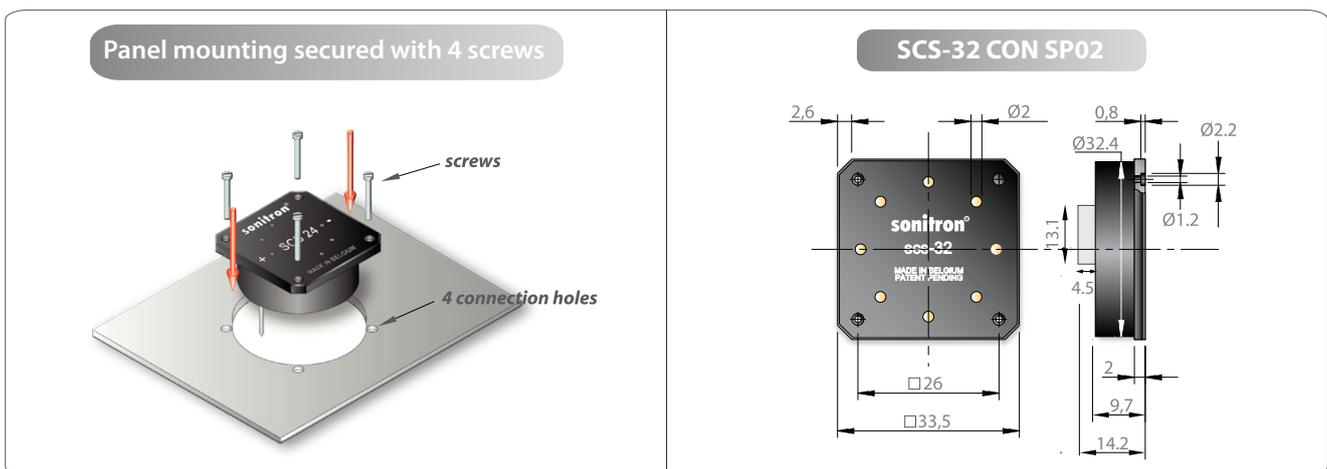
Pink noise: 1/f noise is a signal with a frequency spectrum such that the power spectral density is inversely proportional to the frequency. In pink noise, each octave carries an equal amount of noise power. There is equal energy in all octaves (or similar log bundles)

**30VPP Sine wave is translated to a Pink Noise of 10.5 Vrms.

PRODUCT OPTIONS

Option Code	example	Description
MC	SCS-32 CON SP02 MC	Acryl coating (Membrane coating). Recommended for aggressive, humid or smoggy environment.

MOUNTING INSTRUCTIONS & DIMENSIONS (in mm)



PRODUCT CODIFICATION

SCS ↓ Sonitron Ceramic Speaker	32 ↓ Square diameter (mm)	CON ↓ WAGO 2060 Connector for wires 18 AWG - 24 AWG	SP02 ↓ Inside heavy duty wires and solder connections sealed with silicone
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* Would you like to know how you can increase the lifetime of your Sonitron sound component?
learn more at <https://www.sonitron.be/soundcomponentlifetime/>