Shadow

All Weather Loudspeakers

IP55
WEATHER
RESISTANT

Designed, Engineered
and Manufactured in ITALY

ENGLISH

FBT elettronica SpA
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WARNING

Wherever this symbol appears it warns of the presence of important instructions for use and maintenance in the attached documents. Please consult the manual.

ATTENTION

To avoid the risk of electric shocks and fires, do not expose the speaker to rain or moisture unless expressly designed and built with an adequate IP protective degree.

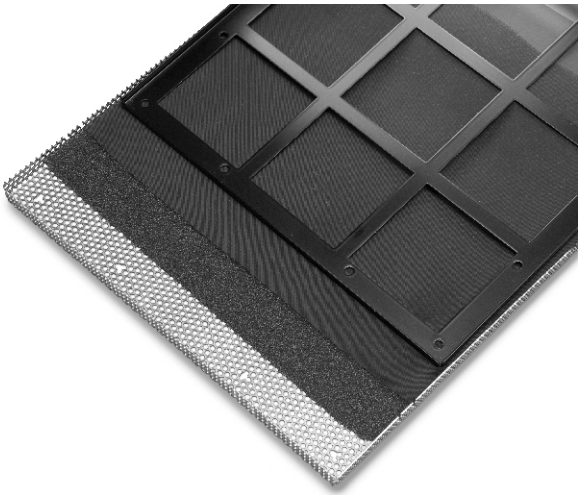
IMPORTANT SAFETY WARNINGS

- The speaker line can have sufficiently high voltage (e.g. 100V) constituting an electrocution risk for individuals; never connect the speaker when the line is powered.
- Make sure that all the connections are correct and that the input voltage (in a constant voltage system) or the speaker impedance is compatible with the output features of the amplifier.
- Should smoke come out of the speaker, immediately shut off power from the line and disconnect the speaker.
- Use only the optional devices/accessories specified by the manufacturer.
- FBT Elettronica SpA will not be held liable for damage or injuries caused by supports or structures which are not sufficiently sturdy or by incorrect installation.
- To prevent inductive phenomena causing humming or disturbances, the speaker lines must not be channelled together with electric power lines, microphone cables or low level signal lines (amplifiers).
- Seek qualified personnel for technical assistance. Technical assistance is necessary should the unit be damaged, for example liquid spilling or objects falling inside the appliance, operating faults or dropping of the appliance.

SHADOW speakers have been designed for indoor and outdoor use, thanks to a polyethylene covering resistant to UV rays and with an IP55 protective degree against dust and water.

Curves and rounded edges of the SHADOW speaker reduce acoustic reflections and standing waves inside the box, improving low-frequency performance; they also keep water from settling on the covering and wind diffraction.

The SHADOW series was designed primarily to provide extreme water resistance.
Therefore the metal protective grid was also designed to meet this requirement. The grid consists of three layers with an external stainless steel perforated metallic part treated with a special protection, a central layer with cross-linked foam and a layer formed of a special waterproof polyester mesh.



SHADOW
108CT ALL WEATHER LOUDSPEAKERS

- 8" coaxial woofer with 2" coil
- HF driver with 1.4" coil
- Nominal impedance 8 Ohm
- 100V line transformer with selectable 100W / 50W power tapping
- Conical 90° horn
- Sturdy molded polyethylene curved enclosure
- Steel "U" bracket
- IP55 weather resistant
- Standard grey finishes

CONFIGURATION	2 way
RECOMMENDED AMPLIFIER	450W RMS
LONG TERM POWER OF SYSTEM	225W
SHORT TERM POWER OF SYSTEM	900W
TRANSFORMER	100V / 100W
NOMINAL IMPEDANCE	8 Ohm
FREQUENCY RESPONSE	80Hz - 20kHz
LOW FREQUENCY WOOFER AES POWER	8" - coil 2" 200W
HIGH FREQUENCY DRIVER AES POWER	1" - coil 1.4" 25W
SENSITIVITY (@1W / 1M)	95dB
MAX SPL cont / peak	120 / 124dB
DISPERSION	90° conical
CROSSOVER FREQUENCY	1.8kHz
RECOMMENDED HP FILTER	60Hz - 24dBoct
INPUT CONNECTORS	4 wires cable
DIMENSIONS (W x H x D)	11.22 x 11.22 x 9.84 inch
WEIGHT	15.43lb

AES LONG TERM APPLICABLE POWER denotes the thermal power that can be dissipated by the loudspeaker or by the individual drivers when operated in bi-amp mode. This value is measured in accordance with the AES standard, which involves a 2 hour test with pink noise signal, crest factor of 2.

IEC 268-5 SHORT TERM APPLICABLE POWER corresponds to the power that the loudspeaker can withstand for a very short time interval; it is calculated on the basis of the maximum peak voltage that the recommended amplifier can supply to the loudspeaker.

THE RECOMMENDED AMPLIFIER is not measured; it takes account of the dynamic capacities of the speakers to withstand short duration power peaks.

SHADOW 112CT ALL WEATHER LOUDSPEAKERS

SHADOW 112HC ALL WEATHER LOUDSPEAKERS

SHADOW 114S ALL WEATHER LOUDSPEAKERS

112CT

- 12" coaxial woofer with 2.5" coil
- 1" HF driver with 1.7" coil
- Nominal impedance 8 Ohm
- 100V line transformer with selectable 200W / 100W power tapping
- Conical 90° horn
- Sturdy molded polyethylene curved enclosure
- Steel "U" bracket
- IP55 weather resistant
- Standard grey finishes

112HC

- 12" coaxial woofer with 2.5" coil
- 1" HF driver with 1.7" coil
- Nominal impedance 8 Ohm
- 100V line transformer with selectable 200W / 100W power tapping
- Dispersion 90° x 60°
- Sturdy molded polyethylene curved enclosure
- Steel "U" bracket
- IP55 weather resistant
- Standard grey finishes

114S

- 14" woofer with 3" coil
- Nominal impedance 8 Ohm
- 100V line transformer with selectable 300W / 150W power tapping
- Frequency response from 60Hz to 400Hz
- Sturdy molded polyethylene curved enclosure
- Steel "U" bracket
- IP55 weather resistant
- Standard grey finishes

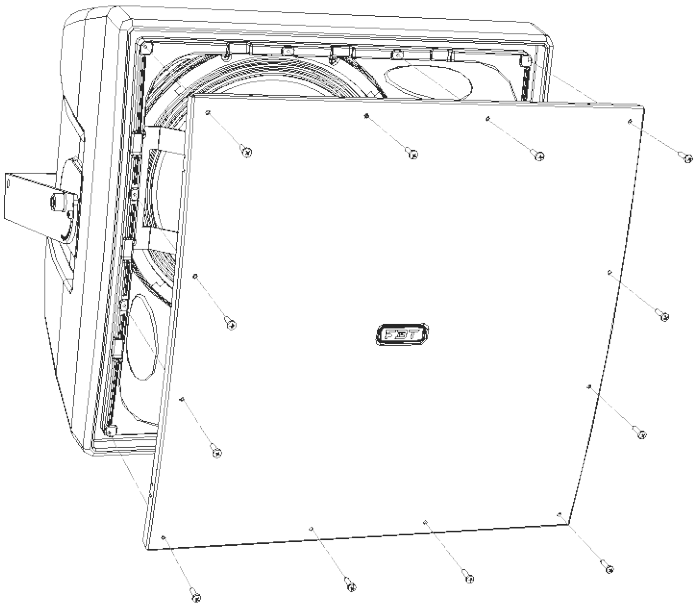
	112CT	112HC	114S
CONFIGURATION	2 way	2 way	2 way
RECOMMENDED AMPLIFIER	600W RMS	600W RMS	700W RMS
LONG TERM POWER OF SYSTEM	300W	300W	350W
SHORT TERM POWER OF SYSTEM	1200W	1200W	1400W
TRANSFORMER	100V / 200W	100V / 200W optional	100V / 300W optional
NOMINAL IMPEDANCE	8 Ohm	8 Ohm	8 Ohm
FREQUENCY RESPONSE	70Hz - 20kHz	95Hz - 20kHz	60Hz - 400Hz
LOW FREQUENCY WOOFER AES POWER	12" - coil 2.5" 250W	12" - coil 2.5" 250W	14" - coil 3" 350W
HIGH FREQUENCY DRIVER AES POWER	1" - coil 1.7" 50W	1" - coil 1.7" 50W	-----
SENSITIVITY (@1W / 1M)	98dB	101dB	97dB
MAX SPL cont / peak	124 / 128dB	128 / 132dB	125.5 / 129.5dB
DISPERSION	90° conical	90° x 60°	omnidirectional
CROSSOVER FREQUENCY	1.6kHz	1.6kHz	ext.
RECOMMENDED HP FILTER	50Hz - 24dBoct	70Hz - 24dBoct	40Hz - 24dBoct
INPUT CONNECTORS	4 wires cable	4 wires cable	4 wires cable
DIMENSIONS (W x H x D)	16.92 x 16.92 x 15.74inch	16.92 x 16.92 x 15.74inch	16.92 x 16.92 x 15.74inch
WEIGHT	33.06lb	46.29lb	37.47lb

SHADOW
112HC ALL WEATHER LOUDSPEAKERS

The SHADOW 112HC model features an asymmetrical dispersion rotatable horn so that the loudspeaker can be installed in both vertical and horizontal position.

To rotate the horn follow the instructions below:

1



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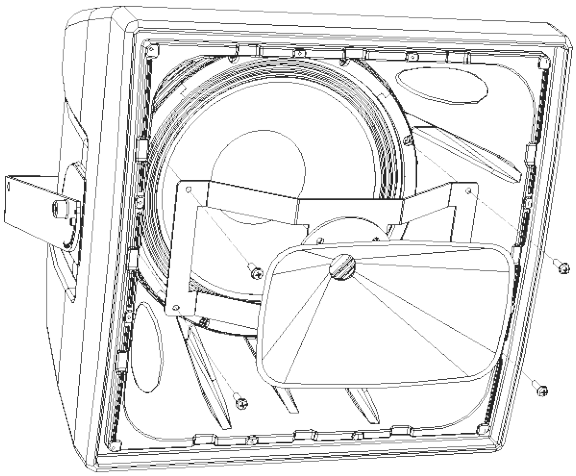
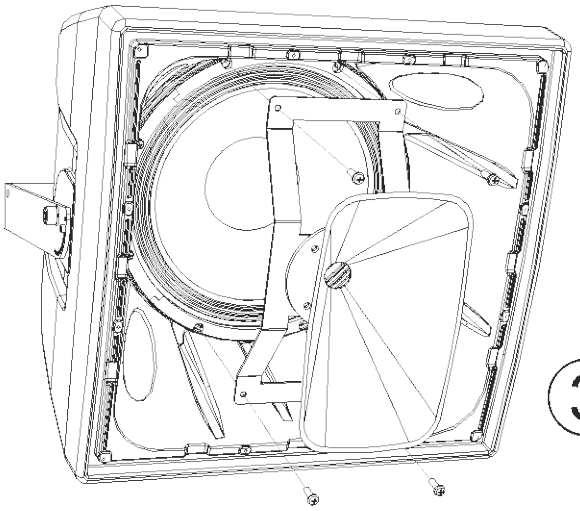




3

INSTALLATION

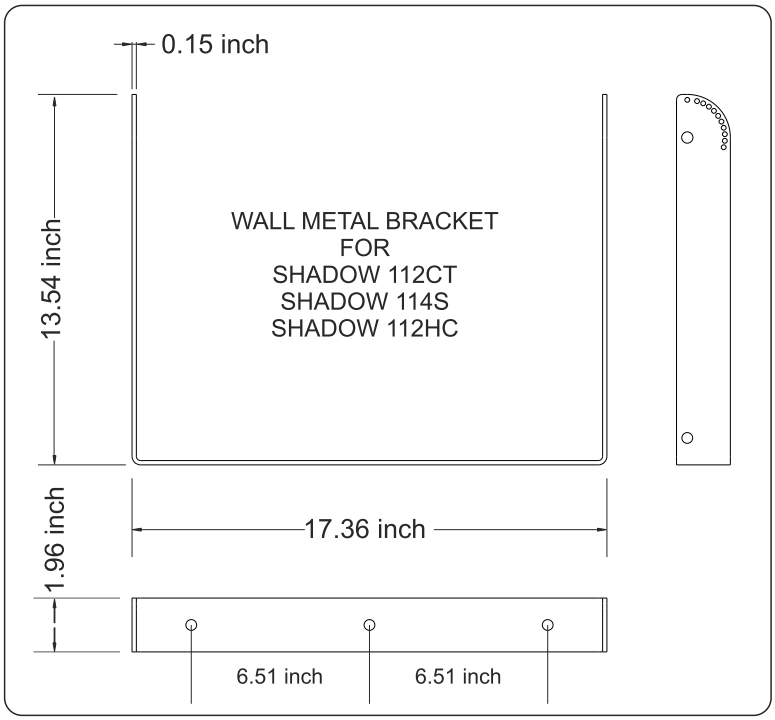
SHADOW sound speakers must be installed using the flying accessories described in this manual and following the special assembly instructions by qualified staff only, strictly complying with the current regulations and safety standards in force in the country of installation.
FBT flying accessories are manufactured for their exclusive use with SHADOW systems and have not been designed for being used with any other speaker or device.
Any possible elements of the ceiling, floor or further supports where SHADOW systems are to be installed shall be able to safely bear the load. The flying accessories in use are to be coupled and secured safely to both the sound speaker and the ceiling (or the other support).
When components are fitted to ceilings, floors or beams, always make sure that all couplers and fixing elements are properly sized and have an adequate load capacity.
Besides the main suspension system, all flying speakers in theatres, indoor stadiums or in several other work and/or leisure facilities shall be provided with an additional independent safety system with the adequate load capacity. Only steel cables and chains with certified load capacity can be used as an additional safety device.

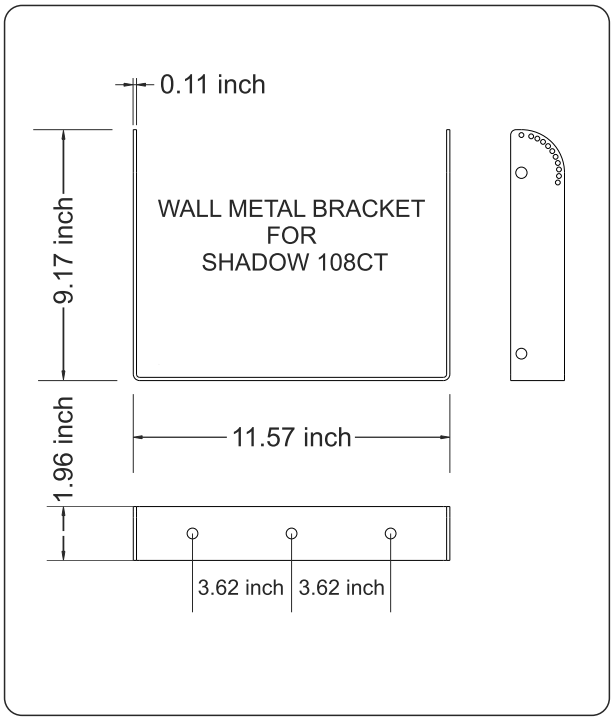
° Hang SHADOW speakers using only original accessories
° When choosing the place of installation, the suspension cable and the mounting supports make sure they are able to bear speaker and flying accessories' weight with the proper safety factor
° As for fixed installations, always schedule and carry out special inspections on a regular basis in order to check all the parts that have to guarantee system safety over time
° Do not hang the system by the handles: handles have been designed for speaker transport, and are not suitable for its suspension
° Never lean on/hang from the flying speaker

SUPPLIED ACCESSORIES

The SHADOW speakers use only with FBT mount for wall installation.

USE WITH OTHER MOUNTS IS CAPABLE OF RESULTING IN INSTABILITY CAUSING POSSIBLE INJURY.

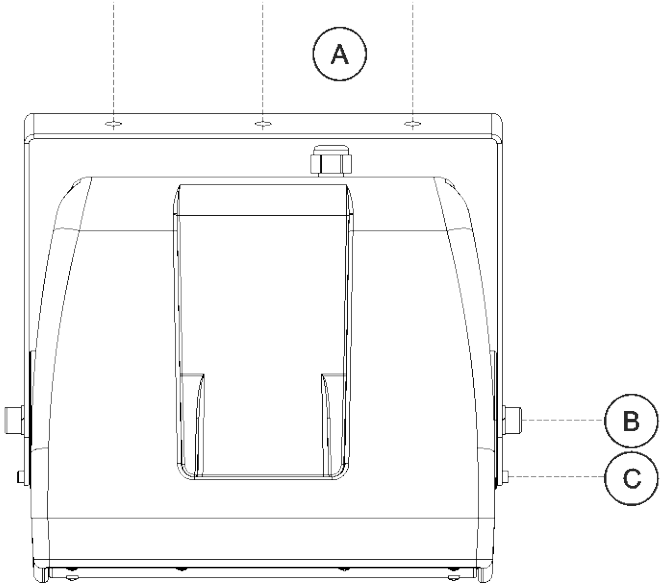




SUSPENSION BY WALL BRACKET

1) Carefully choose the area to install the speakers and make sure the structure is adequate to support the weight of the box.
2) Fasten the bracket to the wall with the appropriate screws, using all its fixing holes (A).
3) Position the speaker between the two bracket arms and fasten it with the two bolts M10 (B).
4) Turn the speaker the way you want and secure it with the specific pins M6 (C).

N.B. To obtain the IP55 protective degree, the rotation angle of the speaker must be less than 15° downwards (see fig 1); subsequently the angle of the speaker can be modified by 10° steps (see fig.2).



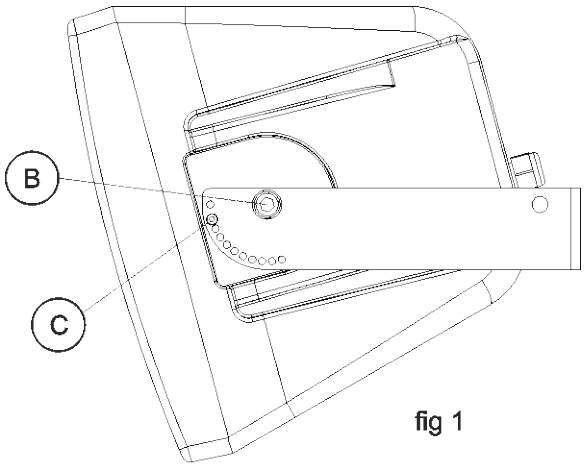


fig 1

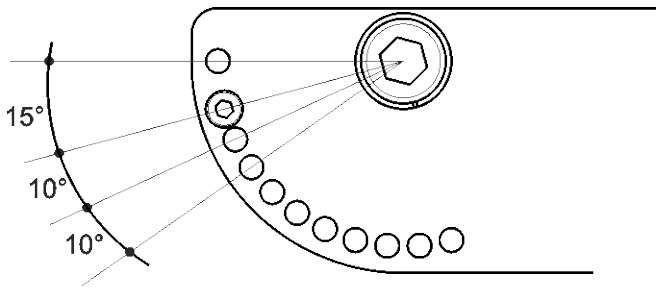
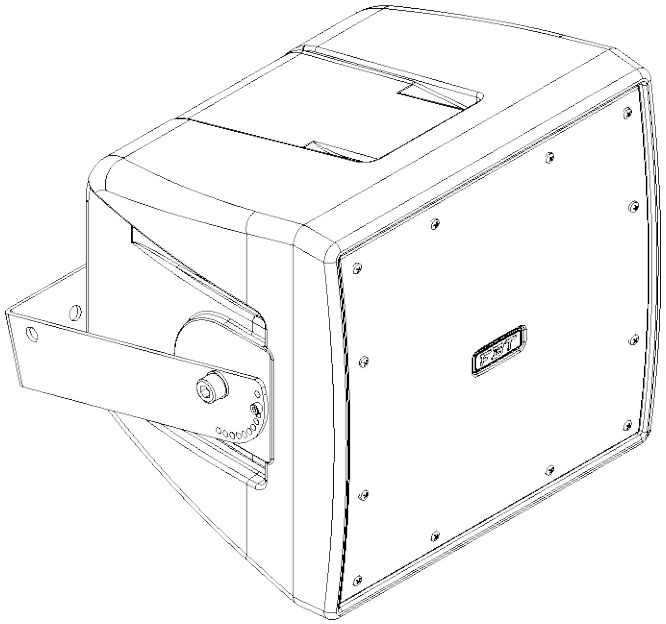
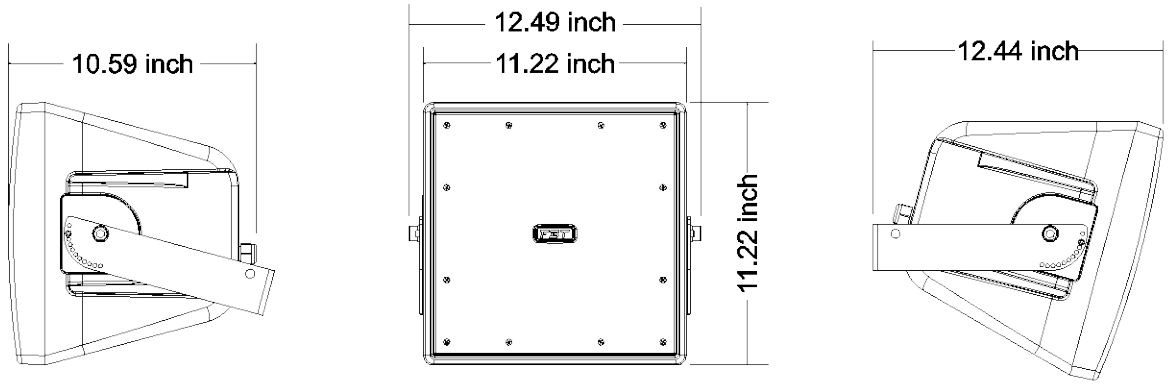


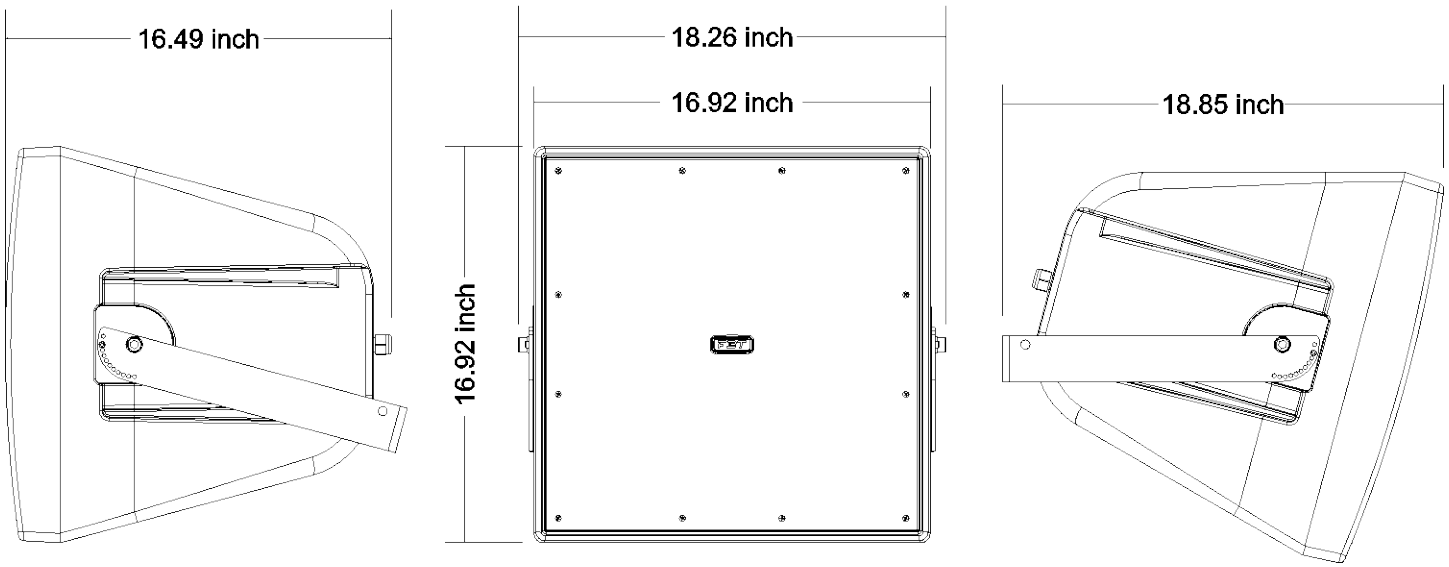
fig 2



SHADOW 108CT



SHADOW 112CT
SHADOW 114S
SHADOW 112HC

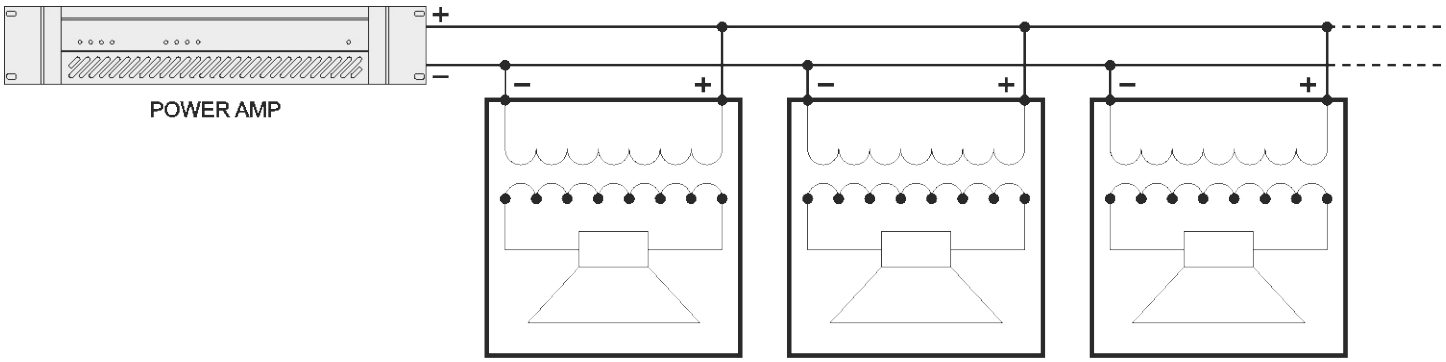


CONNECTIONS

ATTENTION
>Seek qualified personnel to connect the speaker.
>Do not connect the speaker with the amplifier on to avoid the risk of electrical shock.
>Check all connections several times before switching the system on, making sure there are no short-circuits
<Implement the system in compliance with standards in force concerning electric installations.
>If the speaker is installed outdoors, therefore with an IP55 protective degree, wiring must be done inside watertight protective boxes.
>Use cables with conductors having an appropriate cross-section considering their length and the power of the speakers.
>To prevent humming or disturbances which could cause the system to malfunction, do not channel electric lines together with the speaker cables.
>**DO NOT CONNECT LOW IMPEDANCE SPEAKER INPUTS (e.g. 8 Ohm) TO A CONSTANT 100V VOLTAGE LINE.**

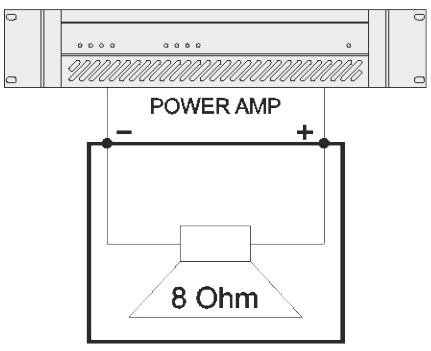
CONSTANT VOLTAGE SPEAKER SYSTEMS

This connection system entails each speaker being equipped with its own line transformer. The amplifier must be supplied with 100V or 70V constant voltage outputs.
The loudspeakers, connected in parallel to the amplifier output, will make it easy to amplify the system deriving from any of the speakers installed previously, if necessary; in the same manner loudspeakers which are no longer necessary can be eliminated.
In the connections, the «phase» both of the individual speaker to its transformer and the in-parallel connection of speakers must be respected.
The input voltage of the speaker must correspond to the output voltage of the amplifier; the sum total of the rated power outputs of all the speakers connected to the line must not exceed that of the amplifier.

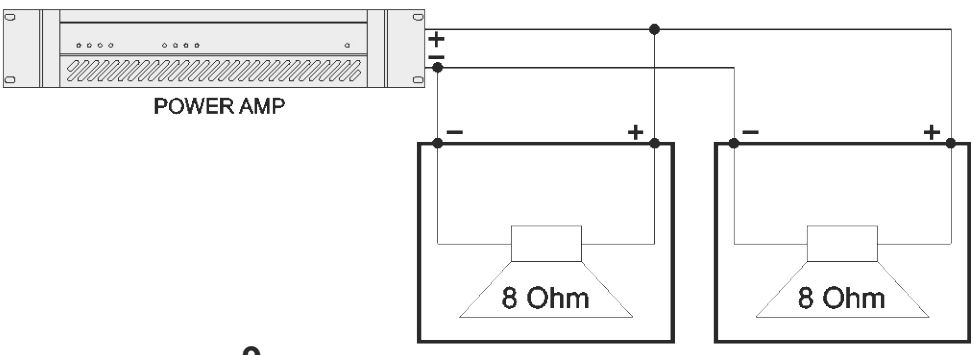


CONSTANT IMPEDANCE SPEAKER SYSTEMS

Constant impedance outputs are generally used for lines with a reduced number of speakers of a certain power output placed at a short distance from the amplifier. Connection between speakers is a mixture between in series/parallel, in order to re-conduct the overall impedance of the loudspeakers to a value which is not critical for the amplifier. Constant impedance connections require that the total impedance of the speakers is the same or greater than that of the amplifier. The sum total of speaker power outputs must be appropriate to the maximum power output of the amplifier.



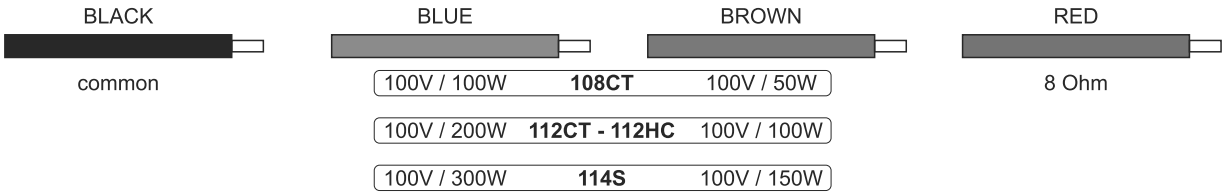
Overall impedance 8 Ohm



Overall impedance 4 Ohm

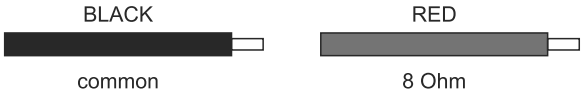
CONNECTIONS

CONSTANT VOLTAGE LINE



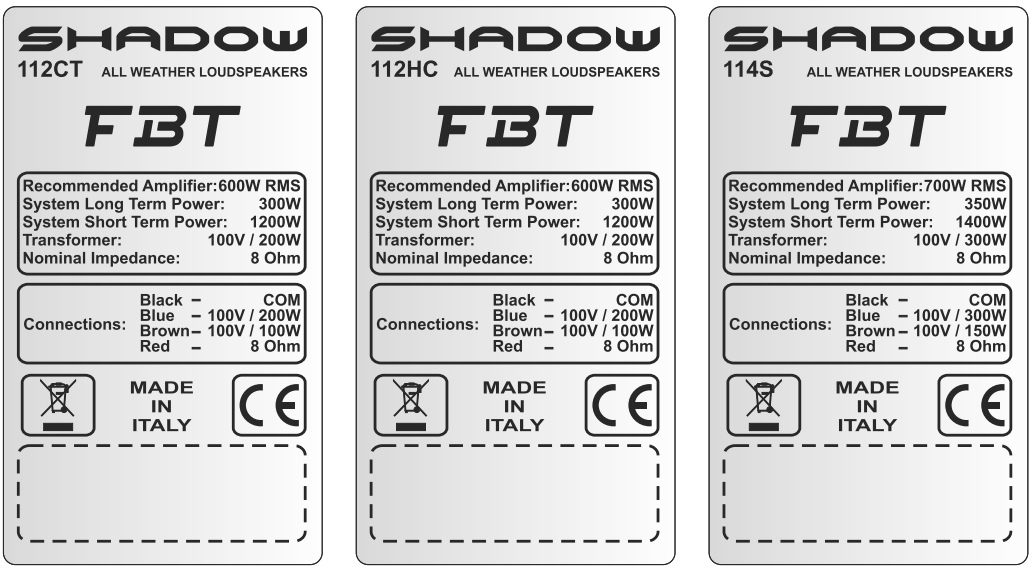
Connect the «common» BLACK conductor of the speaker to the 100V line referring to the terminal of the amplifier marked "-", "0", "COM".
Choose the BLUE (full power) or BROWN (half hour) conductor and connect it to the 100V line referring to the terminal of the amplifier marked "100V", "+".
NEVER use the RED conductor.

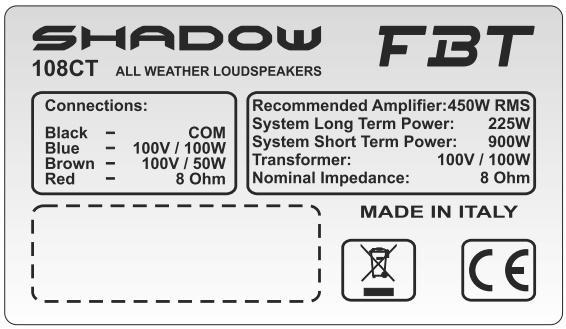
CONSTANT IMPEDANCE CONNECTION



NOT to be performed with 100V lines.
Connect the "common" BLACK conductor of the speaker to the amplifier terminal "-"
Connect the "8 Ohm" RED conductor of the speaker to the amplifier terminal "+"

LAYOUT





WARNING: where affixed on the equipment or package, the barred waste bin sign indicates that the product must be separated from other waste at the end of its working life for disposal. At the end of use, the user must deliver the product to a suitable recycling centre or return it to the dealer when purchasing a new product. Adequate disposal of the decommissioned equipment for recycling, treatment and environmentally compatible disposal contributes in preventing potentially negative effects on the environment and health and promotes the reuse and/or recycling of equipment materials. Abusive product disposal by the user is punishable by law with administrative sanctions.

CODE 36566 # Maggio2013

All informations included in this operating manual have been scrupulously controlled; however FBT is not responsible for eventual mistakes. FBT Elettronica SpA has the right to amend products and specifications without notice.

FBT elettronica SpA can not be considered responsible for damages which may be caused to people and things when using this product.