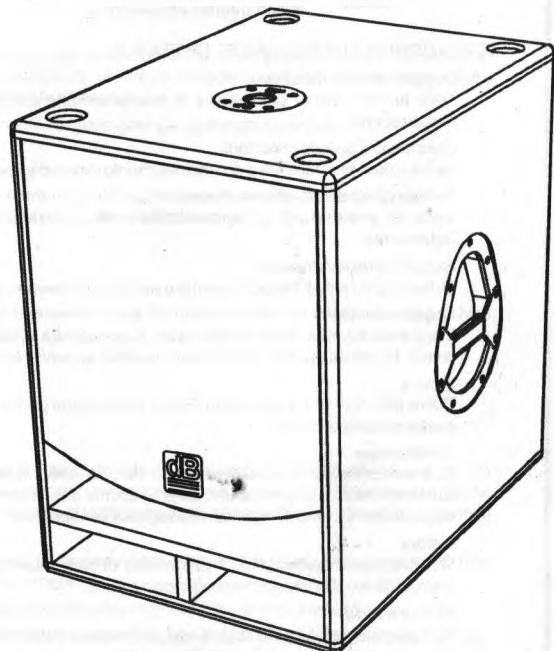


dB TECHNOLOGIES

**ACTIVE
SUB-WOOFER**

OPERASUB



**MANUALE D'USO
USER MANUAL
BEDIENUNGSANLEITUNG
CARACTERISTIQUES TECHNIQUES**



Made In ITALY

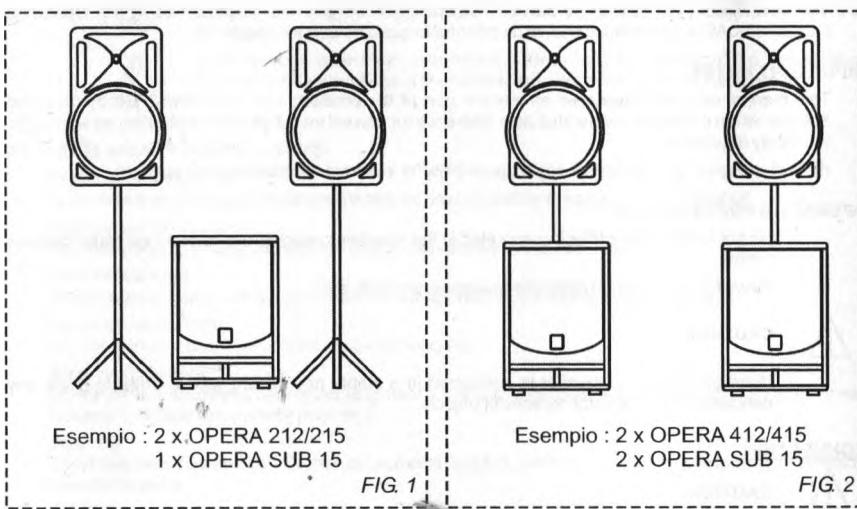
DESCRIPTION

The OPERA SUB 15 speaker features an 15" woofer with an amplifier able to deliver 800W (RMS).

The subwoofer speaker is made using "BAND PASS" so high sound pressures can be achieved in compact dimensions. Being made of poplar wood, weight is reduced and handling is easier.

The OPERA SUB 15 diffuser is an active sub-woofer that has been designed to function in stereo (fig. 1) and in mono (fig. 2) modes.

This sub-woofer is ideal for sounding medium-sized rooms using a pair of diffusers from the OPERA (212-215) connected in stereo mode or for installations requiring greater sound pressure, such as those in the open-air, two OPERA SUB 15 diffusers should be used together with two OPERA(412-415) diffusers connected in mono mode.



FEATURES

Microprocessor

The OPERA SUB 15 amplifier features a processor for managing and controlling the light indicators (POWER, STATUS, SIGNAL) and the control/protection circuits to ensure correct system operation.

Cooling

Amplifier cooling is ensured by a fan controlled by a circuit that automatically regulates speed in relation to any increase in temperature inside the amplifier.

The four speeds, including stand-by, optimize cooling and ensure reduced forced cooling noise levels.

For best speaker use, always make sure the amplifier is properly ventilated and never block the ventilation grilles.

CUTOUTS

Thermal cutouts

Thermal cutouts trip whenever the temperature inside the amplifier overheats (temperature >90°).

Such tripping of the thermal cutouts is indicated by the slow flashing of the "STATUS" indicator light and by a "mute" status audio signal (see diagnostics table).

Also featured is a circuit that controls the temperature of the toroidal transformer and protects this against even the most exasperated operating conditions. If this cutout trips, then the equipment is being used at the limits of its characteristics.

Such tripping is indicated by the fast flashing of the "STATUS" indicator light and by the "mute" status audio signal (see diagnostics table).

All functions restart automatically when normal operating temperature is achieved.

Restart times can be fairly long, especially when the thermal cutout of the transformer trips because the core takes a long time to dissipate the accumulated heat.

CC/DC/RFI

The amplifier features a short-circuit cutout for each output. This cutout places the output signal of the stage involved in "mute".

The amplifier features relays on the audio outputs. These devices protect the speakers in case of direct current, radio disturbances, subsonic frequencies and have an anti-bump function at amplifier switch-on.

Tripping of these cutouts is indicated by the "POWER" indicator light going off and by the different flashing sequences of the "STATUS" indicator light (see diagnostics table).

The amplifier will start operating normally again when the cutout condition is eliminated.

Power voltage

The amplifier features a circuit that ensures correct speaker operation in case the mains power voltage is too high.

If the power voltage exceeds a max pre-established value (+15%) for a short time (power peak), the fault will be indicated by means of the "POWER" indicator light, which will flash quickly for about 10 seconds (see diagnostics table).

If the power voltage stabilizes at high levels, the amplifier will become disabled.

If the power voltage drops below the minimum established value (about -20%), the fault will be indicated by means of the "POWER" indicator light which will start flashing slowly (see diagnostics table).

This function is also useful in case of inadequate power supply wiring.

DIAGNOSTICS TABLE

MODULE STATUS	"POWER" INDICATOR LIGHT (green)	"STATUS" INDICATOR LIGHT (yellow)	AUDIO FUNCTIONS
Power ON	On	On for 5 sec.	In mute for 5 sec.
Normal use	On	Off	Complete
Mains power voltage too low too high	Slow flashing Fast flashing	Off Off	Complete Disengaged
Temperature too high Amplifier Transformer	On On	Slow flashing Fast flashing	In mute In mute
Section amplifier In short circuit CC Direct current DC Does not work properly	Off Off Off	1 flash + 1 pause 1 flash + 1 pause 1 flash + 1 pause	In mute In mute In mute

CONTROLS AND FUNCTIONS

AMPLIFIER PANEL (FIG. 1)

- 1) "POWER" MASTERSWITCH
This switch permits turning the FL18 speaker on and off.
- 2) "MAINS FUSE" FUSE CARRIER
Main fuse housing.
- 3) "MAINS INPUT" POWER SOCKET
For connecting the power cable provided.
The connector used for mains connection is a POWERCON® (blue).
- 4) "MAINS OUTPUT LINK" RELAUNCH POWER SOCKET
For launching the mains power. The output is connected in parallel with input (3).
and can be used to power another amplified speaker.
The connector uses a POWERCON® (grey).
- 5) COOLING GRILLE
These grilles permit cooling the amplifier during operation. Do not block accesses and clean the grilles whenever necessary to ensure correct air circulation.
The grille on the bottom part of the amplifier features an air filter that can be removed and cleaned.
- 6) "BALANCED INPUT" INPUT CONNECTORS (LEFT - RIGHT)
Balanced inputs for connecting balanced or unbalanced audio sources at level 0dBu.
The connectors are able to accept "XLR" sockets or 1/4" Jacks (6.3 mm).
- 7) "BALANCED LINK" OUTPUT CONNECTORS (LEFT - RIGHT)
The "XLR" connectors connected in parallel with the inputs (6) can be used to send input audio signals to other amplified speakers.
- 8) "BALANCED XOVER OUTPUTS" OUTPUT CONNECTOR (LEFT - RIGHT)
Internal crossover balanced outputs.
These signals must be sent to other OPERA type amplified speakers.
The crossover frequency can be selected by means of the "XOVER SET" switch (9).
- 9) "XOVER SET" CROSSOVER FREQUENCY SWITCH
This 3-position switch permits selecting the crossover frequency between the subwoofer and the speakers connected to the XOVER outputs. Choice depends on the type of speaker used for reproduction of mid-high frequencies.
For speakers with 12" cones, it is best to use 100Hz or 120Hz, while with 15" speakers, 80Hz or 100Hz.
- 10) "SUB LEVEL" VOLUME CONTROL
This control regulates only the volume of the subwoofer. The double indication 0dB (mono-stereo) facilitates balancing between the subwoofer and the satellites in the stereo/mono configuration.
- 11) "SUB PHASE" SWITCH
This two-position switch permits turning the audio signal reproduced by the subwoofer by 180°.
Rotation makes it easier to optimise the reproduction of the low frequencies even in the most difficult installation situations. After completing installation, play a piece of music and move the switch to achieve the best sound reproduction at low frequencies.
- 12) "POWER" INDICATOR LIGHT
This indicator comes on green to indicate that the main power voltage is correct. In normal operating conditions, the LED is on; if it flashes or is off, refer to the diagnostics table to check amplifier status.

13) "STATUS" INDICATOR LIGHT

This yellow indicator indicates amplifier status. In normal operating conditions, the LED is off; if it flashes or is always on, refer to the diagnostics table to check amplifier status.

14) "SIGNAL" INDICATOR LIGHT

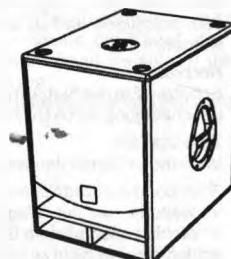
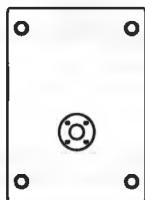
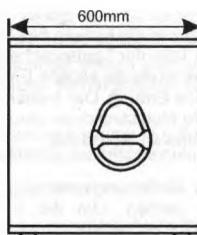
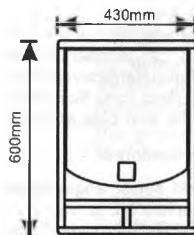
This indicator comes on green to indicate the presence of the audio signal (at a level of -20dB).

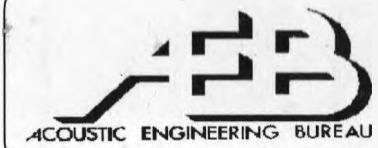
15) "LIMITER" INDICATOR LIGHT

This indicator comes on red to indicate that the internal limiter circuit has tripped. This prevents amplifier distortion and protects the speakers against overloads.

TECHNICAL SPECIFICATION

TECHNICAL DETAIL	
System	BAND PASS Active
Type of amplifier	class H
RMS power	800W
Frequency response	40-120Hz
Crossover	80Hz-100HZ - 120Hz 12dB/oct
Sound pressure (SPL)	133 peak
Component parts	1 woofer 15" 3" coil - aluminium basket
Input sensitivity	0 dBu (max)
Impedance input	
Balanced	20Kohm
Unbalanced	10Kohm
Power supply	As indicated on rear panel
Speaker shape	rectangular
Dimension [LxHxP]	430x600x600mm
Weight	32Kg

DIMENSIONI



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