

# PROFESSIONAL ACTIVE SPEAKERS



F15



F212





MANUALE D'USO USER MANUAL BEDIENUNGSANLEITUNG CARACTERISTIQUES TECHNIQUES





F315







# DESCRIPION

The speakers F8. F10, F12 and F15 of FLEXSYS series use cutting edge digital amplifiers of the DIGIPRO<sup>®</sup> series, providing with powers 200W and 400W to meet the requirements of any kind of application.

These highly efficient amplifiers provide high power with limited weight and dimension. Thanks to the low power dissipated, the cooling of the amplifier module does not require a fan.

The digital preamplifier with DSP (Digital Signal Processing) controls the audio crossover between the acoustic components, the frequency response, the limiter, and the acoustic alignment. A selector enables to select one of two different equalizations - "FLAT" or "PROCESSED" - to provide high versatility for the different applications.

The amplifiers DIGIPRO<sup>®</sup> 400W use power supplies featuring SMPS (Switched-Mode Power Supplies) technology.

This technology increases power supply efficiency and minimizes its weight.

### FLEXSYS F8

The F8 bi-amped active speaker is equipped with a DIGIPRO<sup>®</sup> amplifier delivering 150W RMS for the bass section and 50W RMS for the high frequency section.

F8 active two-way speaker features woofer 8" (voice coil 1,5") and a neodymium compression driver 1" (voice coil 1") on a 90°/40°x 60° asymmetrical horn.

The speaker is made of 12mm ply wood, the one top handle housing and the 10 M8 threads located on the sides and the back of the speaker are enabling easy transport and installation.

The speaker has been designed to be used also as stage monitor ( $40^{\circ}$  angle), by rotating the horn you can maintain the same audio coverage angle of high frequencies also when the speaker is used as monitor.

In the bottom of the box there is a standard pole mount cup (D36mm).

### FLEXSYS F10

F10 bi-amped active speaker is equipped with a DIGIPRO<sup>®</sup> amplifier delivering 150W RMS for the bass section and 50W RMS for the high frequency section.

F10 active two-way speaker features a woofer 10" (voice coil 2") and a neodymium compression driver 1" (voice coil 1") on a  $90^{\circ}/40^{\circ}x 60^{\circ}$  asymmetrical horn.

The speaker is made of 12mm plywood, the one top plastic handle and the 12 M8 threads located on the sides and the back of the speaker are enabling easy transport and installation.

The speaker has been designed to be used also as stage monitor ( $40^{\circ}$  angle), by rotating the horn you can maintain the same audio coverage angle of high frequencies also when the speaker is used as monitor. In the bottom of the box there is a standard pole mount cup (D36mm).





# FLEXSYS F8 - F10 - F12 - F15

### **FLEXSYS F12**

The F12 bi-amped active speaker is equipped with a DIGIPRO<sup>®</sup> amplifier delivering 300W RMS for the bass section and 100W RMS for the high frequency section.

F12 active two-way speaker features woofer 12" (voice coil 1") and compression driver 1" (voice coil 1,5") on a 90°x40° CD- horn.

The speakers' horizontal directivity is 90° by default factory setting.

The speaker is made of 15mm birch plywood, the three plastic handles and the 12 M10 threads located on the sides and the back of the speaker are enabling easy transport and installation.

The speaker has been designed to be used also as stage monitor (45° angle), by rotating the horn you can maintain the same audio coverage angle of high frequencies also when the speaker is used as monitor.

In the bottom of the box there is a standard pole mount cup (D36mm).

### **FLEXSYS F15**

F15 bi-amped active speaker is equipped with a DIGIPRO<sup>®</sup> amplifier delivering 300W RMS for the bass section and 100W RMS for the high frequency section.

F15 active two-way speaker features a woofer 15" (voice coil 2") and a neodymium compression driver 1" (voice coil 1,5") on a 90°x40° CD-horn.

The speakers' horizontal directivity is 90° by default factory setting.

The speaker is made of 15mm birch plywood, the three plastic handles and the 12 M10 threads located on the sides and the back of the speaker are enabling easy transport and installation.

The speaker has been designed to be used also as stage monitor (45° angle), by rotating the horn you can maintain the same audio coverage angle of high frequencies also when the speaker is used as monitor.

In the bottom of the box there is a standard pole mount cup (D36mm).





**F10** 







# **COMMANDS AND FUNCTIONS**

### AMPLIFIER PANEL

### 1) "Balenced Input" - "Link" - "Input Link" CONNECTORS

These balanced inputs can be used to connect balanced or unbalanced microphones or audio sources at line level (0dB) (eg. preamplifier, mixer, recorder, CD player, musical instrument, ...).

The balanced connector is connected in parallel and can be used to send the audio signal to other amplified speakers, recorders or supplementary amplifiers.

### 2) "Ready" INDICATOR LIGHT

This indicator shows green to indicate that the main power voltage is correct. The LED shows green normal operating conditions.

### 3) "Signal" INDICATOR LIGHT

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

### 4) "Limiter" INDICATOR LIGHT

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

### 5) "Sensitivity" INPUT SENSITIVITY CONTROL

This control adjusts the sensitivity of the signal amplifier input. This control does not affect the "Link" - "Input - Link" output level

### 6) MODE SWITCH

This two-way switch allows to choose between two different system presets. The "Flat" position allows linear response of the speaker, which is mainly suitable for the "live" application.

The "Processed" position emphasizes the low frequency and regulates the mid frequency. It is suitable for music play back

### 7) "Input Sens" SWITCH

Position the switch in LINE to use a line level source (0 dB) or MIC to use a microphone.

### 8) POWER CABLE SOCKET "MAINS"

Used for connecting the power cable supplied.

### 9) FUSE CARRIER "FUSE"

Mains fuse housing.

### 10) POWER SWITCH "POWER"

This switch can be used to switch the diffuser on and off.

# **REFERENCE DRAWINGS AT PAGES 49 and 50**

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# **CHARACTERISTICS AND PROTECTION**

### **Front Grille**

The speakers's components in the box are protected by 1.2mm metal steel grille covered by foam on backside.

### Cooling

Thermal control is provided by the internal microprocessor which, by means of two sensors, controls the temperature of the amplifier and of the power supply, avoiding overheating by limiting the overall volume.

In case of overheating (> 80 degrees) the volume decreases proportionally to the temperature increase, making the change unnoticeable.

The correct volume and all the functions are automatically restored when standard operating temperatures are reached.

### Switch on

The amplifiers are equipped with a microprocessor to control the DSP and the amplifier.

The correct switch on of the amplifier is ensured by an initialization procedure; during this test stage, the blue front LED flashes twice and the LEDs ("Limiter", "Signal" and "Ready"), located on the amplifier module, remain off for approx. 2 sec.

At the end of the switch on procedure, the front LED lights up (if enabled) and on the amplifier module the "Ready" green LED only remains steadily on.

In case of severe failure of the speaker, the LED on the front panel flashes several times and on the amplifier module, the "Limiter" red LED flashes and the speaker switches to "mute".

### Failure indications and safeties

The microprocessor is able to signal three different kinds of failure by flashing the "Limter" red LED on the amplifier panel before the lighting up of the "Ready" green LED. The three types of failure are:

- 1) **WARNING:** a non severe error or auto-ripristinate malfunction is detected and the performance of the speaker is not limited
- LIMITATION: an error is detected and the performance of the speaker is limited (the sound level is reduced by 3dB). This does not affect the operation of the speaker since it continues to operate.

However, it is necessary to call the service centre to solve the issue.

3) **FAILURE:** a severe malfunction is detected. The speaker switches to "mute".

Flashing	Indication
1 or 2	Warning
3 or 4	Limitation
from 5 to 8	Failure

In case of failure, the "Ready" green LED remains off.

Perform the checks listed below:

- Check if the speaker is properly connected to the power supply.
- Make sure that the power supply is of correct voltage.
- Check that the amplifier is not overheated.
- Disconnect the speaker from the mains power supply, wait for a few minutes and connect it again.

If after these tests the red "LIMITER" LED is still on, please contact an authorised service centre.

### DESCRIPTION

The FLEXSYS series bi-amped speakers are equipped with DIGIPRO<sup>®</sup> series class D amplifier. This high-efficiency amplifier delivers high output power in a compact size at low weight. Thanks to its high efficiency the cooling of the amplifier module is obtained statically, thus avoiding the use of a fan.

The power supply circuits of the DIGIPRO<sup>®</sup> amplifier has been conceived to work in full-range mode; thanks to the SMPS (Switched-Mode Power Supply) technology with PFC (Power Factor Correction) the operation with supply voltages between 100 Vac and 240Vac is guaranteed by ensuring the same sound performances even with floating and nonstabilized power supply systems.

### FLEXSYS F212 (2 ways)

The F212 bi-amped active speaker is equipped with a DIGIPRO<sup>®</sup> amplifier which delivers 500W RMS for the bass section and 250W RMS for the high frequency section.

The F212 active two-way speaker features two 12" (voice coil 2.5") woofers and a neodymium 1"(voice coil 1.75") compression driver. The phase plug attached to the front of the upper 12" woofer avoids the vertical phase modulation which usually take place in this type of configuration and ensures a precise horizontal coverage of the medium frequencies.

The speaker is made of 15mm birch ply wood, the 4 handles, the 12 M10 threads located on the sides and the back of the speaker are enabling easy transport and installation.

The trapezoidal-shaped housing (20° angle) allows the sideby-side setup of several speakers in cluster configuration. For side-by-side installation, the horn must be turned ( $40^\circ \times 60^\circ$ )!

The bottom features a adjustable foot (in height) to inclinate the tilt angle up to a max. of  $5^{\circ}$ . This allows to direct the sound radiation without using additional supports.

In the bottom of the box there is a standard pole mount cup (D36mm) made of aluminium

### FLEXSYS F315 (3 ways)

The F315 active speaker is equipped with a DIGIPRO<sup>®</sup> amplifier delivering 500W RMS for the bass section featuring a 15" woofer (voice coil 3") and 500W RMS for the mid-high section featuring a passive filter driving a 6" midrange (voice coil 2") and a 1" compression driver (voice coil 1.5").

The speaker is made of 15mm birch ply wood, the 4 handles, the 12 M10 threads located on the sides and the back of the speaker are enabling easy transport and installation

The 15" woofer and the midh-high section with horizontal 90° coverage is the ideal solution for all demanding full-range applications .

In the bottom of the box there is a standard pole mount cup (D36mm) made of aluminium





# FLEXSYS F212 - F315

# **CONTROLS AND FUNCTIONS**

1) "BALANCED INPUT" INPUT CONNECTOR Balanced input at line level. Accepts "XLR" sockets.

### 2) "BALANCED LINK/OUT" OUTPUT CONNECTOR The "XLR" connector connected in parallel with input (1) can be used to send the input audio signal to another active speaker.

### 3) "LIMITER" INDICATOR LIGHT This indicator shows red to indicate that the internal limiter circuit has tripped. This prevents amplifier distortion and protects the speakers against overloads.

### 4) "SIGNAL" INDICATOR LIGHT

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

### 5) "MUTE" INDICATOR LIGHT

This yellow indicator indicates amplifier status. The LED is off in normal operating conditions.

### 6) "READY" INDICATOR LIGHT

This indicator shows green to indicate that the main power voltage is correct. The LED shows green in normal operating conditions

### 7) "INPUT SENS" INPUT SENSITIVITY CONTROL

This control adjusts the sensitivity of the signal amplifier input.

This control does not affect the "BALANCED LINK/OUT" output level

### FLEXSYS F212

### 8) "MODE" SWITCH

This two-way switch allow to choose between two different system presets. The "SINGLE SPEAKER" position allows linear response when one single speaker is used.

The "CLUSTERED SPEAKER" position reduces the medium-bass frequencies which are coupling by the side-by-side attachment of several speakers.

### 9) "MAINS INPUT" POWER SOCKET

For connecting the power cable provided. The connector used for mains connection is a POWER CON® (blue) socket

### 10) "MAINS OUTPUT LINK" POWER SOCKET

For linking the mains power. The output is connected in parallel with input (9) and can be used to power another active speaker. The connector is a POWER CON® (grey) socket

# 11) "MAINS FUSE" FUSE CARRIER

Mains fuse housing.

### FLEXSYSF315

### 8) "MODE" SWITCH

This two-way switch allows to choose between two different system presets. The "FLAT" position allows linear response of the speaker, which is mainly suitable for the "live" application in closed rooms.

The "PROCESSED" position increases the low frequencies and it is suitable for music play back or for the use in open air applications.

### 9) POWER CABLE SOCKET "MAINS INPUT" Used for connecting the power cable supplied.

10) FUSE CARRIER "MAINS FUSE" Mains fuse housing.

### 11) **POWER SWITCH "POWER"** Switches the active speaker on and off.

# **REFERENCE DRAWINGS AT PAGES 51 and 52**

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# CHARACTERISTICS

### **Front Grille**

The speakers's components in the buffle are protected by 1.5mm metal steel grille covered by foam on backside.

### Cooling

The amplifier is cooled by means of the aluminium panel placed on the back of the speaker.

The thermal protection is ensured by an internal circuit which controls the temperature of the amplifier and protects this against any risk of overheating thus limiting the general volume (temperature >80°C).

If the temperature reaches the maximum operating temperature (>80°C), the audio signal is set to the "MUTE" position and it will be indicated by the switching on of the yellow "MUTE" LED.

The requiriered volume and all functions will be restored automatically when the normal operating temperatures are reached.

### Protection

When the yellow "MUTE" LED turns on, it means that a malfunction has been detected on the speaker, thus setting this to the mute position.

Perform the checks listed below:

- Check if the speaker is properly connected to the power supply.
- Make sure that the power supply is of correct voltage.
- Check that the amplifier is not overheated.
- Disconnect the speaker from the mains power supply, wait for a few minutes and connect it again.

If after these tests the yellow "MUTE" LED is still on, please contact an authorised service centre.

# **CONNECTIONS (Only for FLEXSYS F212)**

### Connecting to the mains supply

Each active speaker features its own power cable. Connection is done by a Neutrik POWER CON® (blue) model which permits easy and fast connection to the speaker as well as being an excellent locking system.

The same connector serves as a switch to turn ON and OFF the active loudspeaker by turning the connector to the left (OFF) or right (ON).

The active speaker must be connected to a power supply able to deliver the maximum required power.

### Main power supply linking

On the rear of the speaker, a Neutrik POWER CON® connector (grey) offers linking the mains power supply.

This socket links the power supply to another speaker, thereby reducing the direct connections to the mains. Maximum amplifier input power is shown on the amplifier panel.

The maximum number of speakers connected together varies of max input power and of the maximum allowed current of the first power socket.

### **EMI CLASSIFICATION**

According to the standards EN 55103 this equipment is designed and suitable to operate in E3 (or lower E2, E1) Electromagnetic environments.

# FLEXSYS F8 - F10 - F12 - F15 - F212 - F315

# **ROTATING HORN (Except FLEXSYS F315)**

Loudspeaker allows to maintain the same coverage angle by featuring a rotating horn.

The speakers are always supplied by the manufacturer with the horn positioned horizontal by default at 90° for Flexsys F8, F10, F12 and F15 and 60° by default for F212.

Only Flexsys F212 can be used placing more speakers side by side (cluster), in this case is necessary rotate the horn.

If you wish to change the coverage angle (Fig. 5):

- unscrew the fixing screws of the grille
- remove the front protective grille by slightly pressing on one side and taking the grille off the recessed slots
- unscrew the fixing screws of the horn
- rotate the horn in the desired position (the horn should never be removed from the driver!)
- tighten the fixing screws of the horn
- put the grille back in the recessed slots and tighten the screws of the grille.

# LOUDSPEAKER INSTALLATION

### WARNING

Make sure that the loudspeaker is securely installed in a stable position to avoid any injuries or damages to persons or property.

For safety reasons do not place one loudspeaker on top of another without proper fastening systems. Before hanging the loudspeaker check all the components for damages, deformations, missing or damaged parts that may compromise safety during installation. If you use the loudspeakers outdoors avoid places that are exposed to bad weather.

The loudspeaker has the following mounting options:

- bookshelf (Fig. 1)
- floor (monitor) (Fig.2)
- on speaker stands (Fig.3)
- suspended with support rails or brackets supplied by the manufacturer (Fig.4)



### WARNING

Never use the handles to hang the speaker!







### WARNING

To hang the loudspeaker use only one eyebolt for each hanging point The hanging points are of M8 threads for Flexsys F8.F10 and M10 threads for Flexsys F12, F15, F212 and F315.

Do not unscrew both bolts recessed in the housing!

WRONG!



EXACT!





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<b>TECHNICAL SPECIFIC</b> ,	ATIONS		
	FLEXSYS F8	FLEXSYS F10	FLEXSYS F12
System	Active Bi-Amp	Active Bi-Amp	Active Bi-Amp
Type of amplifier	Class D	Class D	Class D
RMS power	150W + 50W	150W + 50W	300W +100W
Frequency response	90-19000Hz (+/-3dB) 75-20000Hz (-10dB)	80-19000Hz (+/-3dB) 70-20000Hz (-10dB)	75-19000Hz (+/-3dB) 65-20000Hz (-10dB)
Crossover	2050Hz , 24dB/oct	2050Hz , 24dB/oct	1800Hz, 24dB/oct
Sound pressure (max SPL)	121dB	125dB	127dB
Components	1x8" woofer - 1.5" voice coil 1x1" compression driver - 1" voice coil Neodimium	1x10" woofer - 2" voice coil 1x1" compression driver - 1" voice coil Neodimium	1x12" woofer - 2" voice coil 1x1" compression driver - 1.5" voice coil
Dispersion	90°/40°x60° Asymmetrical	90°/40°x60° Asymmetrical	90°x40°
Input sensitivity	-3dBu Max	-3dBu Max	-3dBu Max
Input impedance	2K2ohm/20Kohm (MIC/LINE)	2K2ohm/20Kohm (MIC/LINE)	2K2ohm/20Kohm(MIC/LINE)
Power supply	110-120Vac 50-60Hz 220-240Vac 50-60Hz	110-120Vac 50-60Hz 220-240Vac 50-60Hz	110-120Vac 50-60Hz 220-240Vac 50-60Hz
Housing shape	Trapezioidal	Trapezioidal	Trapezioidal
Colour	Black	Black	Black
Dimensions (WxHxD)	260x420x260mm	300x480x300mm	360x610x360mm
Weight	9,5Kg	12Kg	16,5Kg
Flying support	10 × M8	12 × M8	12 x M10
Pole mount cup	D36mm	D36mm	D36mm
Handle	 1 top side, niche	 1 top side	2 (one per side) 1 top side
Rotating horn	Yes	Yes	Yes
Integrated tilt unit	No	No	No

	FLEXSYS F15	FLEXSYS F212	FLEXSYS F315
System	Active Bi-Amp	Active Bi-Amp	Active Bi-Amp
Type of amplifier	Class D	Class D	Class D
RMS power	300W + 100W	500W +2 50W	500w + 500W
<b>Frequency response</b>	60-19000Hz (+/-3dB) 55-20000Hz (-10dB)	65-19000Hz (+/-3dB) 50-20000Hz (-10dB)	60-19000Hz (-3dB) 47-20000Hz (-10dB)
Crossover	1800Hz, 24dB/oct	1800Hz - 24dB/oct	750Hz - 24dB/oct 2000Hz - 18dB/oct passive
Sound pressure (max SPL)	128dB	132dB	131dB
Components	1x15" woofer - 2" voice coil 1x1" compression driver - 1.5" voice coil	2x12" woofer - 2,5" voice coil 1x1" compression driver - 1,75" voice coil	1x15" woofer - 3" voice coil 1x6.5" midrange - 2" voice coil 1x1"compression driver - 1,5" voice coil
Dispersion	90°x40°	60°x40°	90°x40°
Input sensitivity	-3dBu Max	-3dBu Max	-3dBu Max
Input impedance	2K2ohm/20Kohm (MIC/LINE)	Balanced 20Kohm Unbalanced 10Kohm	Balanced 20Kohm Unbalanced 10Kohm
Power supply	110-120Vac 50-60Hz 220-240Vac 50-60Hz	Full-range with PFC 100-240Vac 50-60Hz	Full-range with PFC 100-240Vac 50-60Hz
Housing shape	Trapezioidal	Trapezioidal	Trapezioidal
Colour	Black	Black	Black
Dimensions (WxHxD)	430x680x430mm	300x480x300mm	440x880x500mm
Weight	20Kg	31,5Kg	31 Kg
Flying support	12 ×M10	12 × M10	12 x M10
Pole mount cup	D36mm	D36mm	D36mm
Handle	2 (one per side) 1 top side	<ul><li>2 (one per side)</li><li>1 top side</li><li>1 back side, niche</li></ul>	<ul><li>2 (one per side)</li><li>1 top side</li><li>1 back side, niche</li></ul>
Rotating horn	Yes	Yes	No
Integrated tilt unit	No	Yes	No
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# **TECHNICAL SPECIFICATIONS**

### ISTRUZIONI DI SICUREZZA PER ACCESSORI / SAFETY INSTRUCTIONS FOR ACCESSORIES ZUBEHÖR SICHERHEITSHINWEISE / INSTRUCTIONS DE SÉCURITÉ POUR LES ACCESSOIRES



Contattare dB Technologies per gli accessori da utilizzare a corredo.

Si declina ogni responsabilità da un utilizzo inappropriato degli accessori o di dispositivi aggiuntivi non idonei allo scopo.

Contact dB Technologies for accessories to be used with speakers. Will not accept any responsibility when inappropriate accessories or not suitable additional devices are used.

Kontaktieren sie dBTechnologies für passendes Lautsprecherzubehör.

Falls unpassendes Zubehör verwendet wird, wird jegliche Haftung ausgeschlossen.

Contact dBTechnologies pour les accessoires à utiliser avec la machine.

N'accepterons pas toutes les responsabilités lorsque des accessoires inappropriés ou ne conviennent pas à des dispositifs supplémentaires sont utilisés.

# FLEXSYS F8 FLEXSYS F10



# FLEXSYS F12 FLEXSYS F15





# **FLEXSYS F315**







### ANGOLO DI COPERTURA TROMBA / HORN ANGLE COVERED HOCHTONHORN ABSTRAHLWINKEL / ANGLE DE COUVERTURE COTÉ



### ANGOLO DI COPERTURA TROMBA / HORN ANGLE COVERED HOCHTONHORN ABSTRAHLWINKEL / ANGLE DE COUVERTURE COTÉ



# ANGOLO DI COPERTURA TROMBA / HORN ANGLE COVERED HOCHTONHORN ABSTRAHLWINKEL / ANGLE DE COUVERTURE COTÉ

## **FLEXSYS F212**





Um eine Cluster-Aufstellung (80°) vorzunehmen, muss das Horn gedreht werden Pour le montage des côtés, il faut tourner le cornets



DIMENSIONI DIMENSIONS ABMESSUNGEN DIMENSIONS







### SCHEMA A BLOCCHI BLOCK DIAGRAM BLOCKSCHALTBILD SCHEMAS FONCTIONNELS

### FLEXSYS F8 FLEXSYS F10



SCHEMA A BLOCCHI BLOCK DIAGRAM BLOCKSCHALTBILD SCHEMAS FONCTIONNELS





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