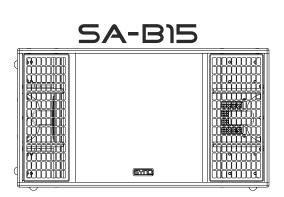
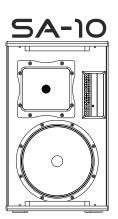
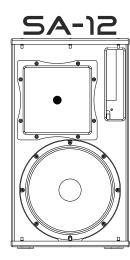
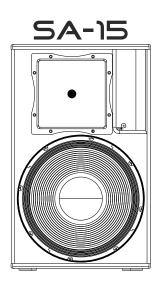
# SA-ACTIVE SERIES











# **ENGLISH**Operation Manual

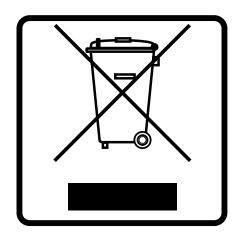
Other languages can be downloaded from: WWW.SYNQ-AUDIO.COM

CE

Version: 1.0







#### **EN-DISPOSAL OF THE DEVICE**

Dispose of the unit and used batteries in an environment friendly manner according to your country regulations.

#### FR - DÉCLASSER L'APPAREIL

Débarrassez-vous de l'appareil et des piles usagées de manière écologique Conformément aux dispositions légales de votre pays.

#### **NL-VERWIJDEREN VAN HET APPARAAT**

Verwijder het toestel en de gebruikte batterijen op een milieuvriendelijke manier conform de in uw land geldende voorschriften.

#### **DU - ENTSORGUNG DES GERÄTS**

Entsorgen Sie das Gerät und die Batterien auf umweltfreundliche Art und Weise gemäß den Vorschriften Ihres Landes.

#### **ES-DESHACERSE DEL APARATO**

Reciclar el aparato y pilas usadas de forma ecologica conforme a las disposiciones legales de su pais.

#### PT - COMO DESFAZER-SE DA UNIDADE

Tente reciclar a unidade e as pilhas usadas respeitando o ambiente e em conformidade com as normas vigentes no seu país.

### OPERATION MANUAL

Thank you for buying this SYNQ® product. To take full advantage of all possibilities, please read these operating instructions very carefully.

#### **FEATURES**

- Professional active speaker cabinet for a wide range of different applications:
  - CLUBS, BARS, ...: Incredible "hifi" sound, even at high SPL.
  - RENTAL: sturdy cabinets with versatile audio inputs.
  - STAGE MONITOR: small size & clear voice with low acoustic feedback
- Bi-Amping "Pascal Audio" technology for maximum impact:
  - SA-10: woofer 280W + tweeter 100W RMS-power
  - SA-12: woofer 500W + tweeter 150W RMS-power
  - SA-15: woofer 500W + tweeter 150W RMS-power
  - SA-B15: woofer 1600W RMS-power
- **DSP-controlled** amplifier with different presets:
  - Parametric EQs
  - Limiter / compressors
  - Active 2-way crossover with FIR filtering
  - Factory presets for different applications
  - Sophisticated amplifier temperature management
  - Software and presets are upgradeable.
  - Fully tuned 4-Band parametric EQ for perfect sound
- Perfect for both permanent installations and portable use (Rental, DJ, ...)
- Equipped with high power woofer & compression driver:
  - SA-10: 10" woofer + 1" compression driver
  - SA-12: 12" woofer + 1" compression driver
  - SA-15: 15" woofer + 1" compression driver
  - SA-B15: 15" woofer
- Two mixable input channels:
  - CH1: LINE level, balanced (XLR / Jack 6.3mm) & unbalanced (RCA / cinch)
  - CH2: different levels:
    - Balanced MIC (XLR / Jack 6.3mm)
    - · Balanced MIC with High pass filter
    - Balanced LINE input (XLR / Jack 6.3mm)
  - 2 audio outputs:
    - LINK OUTPUT for CH1
    - MIXED OUTPUT: link to other speakers
- PowerCON in/out with separate power switch.
- 6 Rigging points M6 for horizontal / vertical suspension.
- 1st choice Baltic birch plywood with scratch free black textured Polyurea finishing
- Ingenious cabinet design allows for use as monitor without separate stands
- Heavy duty carrying handles with integrated 35mm stand adapter.
- Heavy duty rubber feet

1111

#### **BEFORE USE**

- Before you start using this unit, please check if there's no transportation damage. Should there be any, do not use the device and consult your dealer first.
- **Important:** This device left our factory in perfect condition and well packaged. It is absolutely necessary for the user to strictly follow the safety instructions and warnings in this user manual. Any damage caused by mishandling is not subject to warranty. The dealer will not accept responsibility for any resulting defects or problems caused by disregarding this user manual.
- Keep this booklet in a safe place for future consultation. If you sell the fixture, be sure to add this user manual.
- To protect the environment, please try to recycle the packing material as much as possible.

#### **Check the contents:**

Check that the carton contains the following items:

- User manual
- SA-10, SA-12, SA-15 or SA-B15 speaker cabinet
- Power cord.

#### SAFETY INSTRUCTIONS:







**CAUTION:** To reduce the risk of electric shock, do not open. No user-serviceable parts inside. Refer servicing to qualified service personnel only.



The lightning flash with arrowhead symbol within the equilateral triangle is intended to alert the use or the presence of un-insulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock.



The exclamation point within the equilateral triangle is intended to alert the user to the presence of important operation and maintenance (servicing) instructions in the literature accompanying this appliance.



This symbol means: indoor use only





This speaker can easily reproduce sound pressure levels (SPL) sufficient enough to cause severe and permanent hearing damage. Always protect your ears when you are exposed for a longer period to SPL in excess of 85dB!

- Even if the speaker cabinet is made of water-resistant material, the woofer and tweeter are not protected against humidity and rain. Therefore, this speaker is intended for indoor use only, use of this product outdoors, in humid conditions, voids all warranties.
- Always mount this speaker in safe and stable matter.
- Take special care when the cabinets are suspended. This is potentially dangerous and should only be carried out by technicians who have knowledge of the techniques and regulations of rigging speakers!
- To prevent fire or shock hazard, do not expose this appliance to rain or moisture.
- To avoid condensation to be formed inside, allow the unit to adapt to the surrounding temperatures when bringing it into a warm room after transport. Condensation sometimes prevents the unit from working at full performance or may even cause damages.
- Don't place metal objects or spill liquid inside the unit. No objects filled with liquids, such as vases, shall be
  placed on this appliance. Electric shock or malfunction may result. If a foreign object enters the unit,
  immediately disconnect the mains power.
- No naked flame sources, such as lighted candles, should be placed on the appliance.
- Don't cover any ventilation openings as this may result in overheating.
- Prevent use in dusty environments and clean the unit regularly.
- Keep the unit away from children.
- Inexperienced persons should not operate this device.
- Maximum safe ambient temperature is 45°C. Don't use this unit at higher ambient temperatures.
- Always unplug the unit when it is not used for a longer time or before you start servicing.
- The electrical installation should be carried out by qualified personal only, according to the regulations for electrical and mechanical safety in your country.
- Check that the available voltage is not higher than the one stated on the rear panel of the unit.

- The socket inlet shall remain operable for disconnection from the mains.
- The power cord should always be in perfect condition. Switch the unit immediately off when the power cord is squashed or damaged. It must be replaced by the manufacturer, its service agent or similarly qualified persons in order to avoid a hazard.
- Never let the power-cord come into contact with other cables!
- When the power switch is in OFF position, this unit is not completely disconnected from the mains!
- This appliance must be earthed to in order comply with safety regulations.
- In order to prevent electric shock, do not open. There are no user serviceable parts inside.
- **Never** repair a fuse or bypass the fuse holder. **Always** replace a damaged fuse with a fuse of the same type and electrical specifications!
- In the event of serious operating problems, stop using the appliance and contact your dealer immediately.
- Please use the original packing when the device is to be transported.
- Due to safety reasons, it is prohibited to make unauthorized modifications to the unit.

#### **FUNCTIONS AMPLIFIER**

This is a combined user manual for SA-10, SA-12, SA-15 and SA-B15. The control panel of the SA-15 is shown, please note that some of the controls/inputs are not available on the SA-B15 subwoofer.

 CH2 INPUT: This input accepts both balanced and unbalanced microphones or line input. The SA-B15 only accepts line level signals. You can use both 1/4" jack and male 3pin-XLR connectors.

Attention: To prevent damage to the tweeters of your speaker cabinet, please set the gain CH2 to zero before you connect the input. Once connected you can turn the level up to the desired level.

- 2. CH2 MIC/LINE LED: indicates which audio source is selected. The choice is made in the setup menu:
  - MIC: (LED on) a microphone can be connected.
  - MIC +HPF: (LED blinking) a microphone can be connected. The 120Hz, 12dB/oct HPF filter provides better voice clarity.
  - LINE: (LED off) a line level signal can be connected.

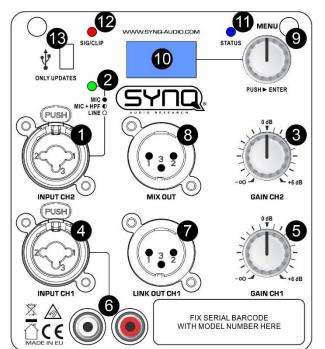
Remark: this option is not available on the SA-B15.

- 3. CH2 GAIN: Used to set the input level of the microphone / line input (1).
- 4. CH1 INPUT: balanced / unbalanced line only input.
- 5. CH1 GAIN: Used to set the input level of the line input (4).
- 6. LINE INPUT: This input is the same as CH1 INPUT (4) but accepts "RCA / cinch" unbalanced line level audio signals like for example: CD-player, tuner, MP3-player, ...

**Attention:** although the cinch input is stereo, the signal will be converted to mono inside the speaker.

7. LINK OUT CH1: This balanced output (3pin-XLR) makes it possible to connect several speaker cabinets together, the line output is NOT influenced by the settings for the master level.

- 8. MIX OUT: This balanced output (3pin-XLR) contains the mixed signal of both CH1 and CH2 inputs.
- 9. ROTARY KNOB: Used to control and set the different functions of the amplifier, see next chapter.
  - · Press the rotary knob to enter the SETUP menu
  - Turn the rotary knob to select the desired menu item and press to select
  - Select menu item [←BACK] to return to higher level or quit the setup menu.
- **10. DISPLAY:** Indicates the current working mode and helps navigation of the setup menu.
- 11. STATUS LED: indicates that the amplifier is switched on and displays the status:
  - RED: not ready, overload or protect mode.
     GREEN: normal working mode, no issues.
  - **BLUE:** in program mode, ready to receive a software update.





- **12. SIG/CLIP LED:** is green when a signal is present and red when the amplifier is clipping (close to distortion). While the LED turns red you are working on the limits of the amplifier, limiters are activated.
- **13. USB INPUT:** used to update the software and presets in the amplifier. The update procedure is explained in the instructions that come with the software update.
- 14. MAINS INPUT: Mains input with a blue Neutrik PowerCON® input socket, connect the supplied power cord here.
- **15. MAINS OUTPUT:** Mains output with a grey Neutrik PowerCON® output socket. Used to connect / daisy chain the power of extra speaker cabinets. The output is limited to 10A @ 230Vac.
- **16. POWER SWITCH:** Used to switch the internal amplifier on/off. The Status led (11) is lit while the cabinet is switched on.

#### **SETUP MENU SA-10 | SA-12 | SA-15**

Used to make al settings of the internal DSP-processor.

#### **PRESETS**

- FOH LIVE: most commonly used option for all-around use.
- FOH HPF: use this preset when the speaker is for example used with an extra subwoofer. A 100Hz, 24dB/oct Butterworth filter will cut off all frequencies below 100Hz.
- MONITOR: optimizes the use of the speaker while used as a monitor on stage.
- **SPEECH:** optimizes the clarity and voice quality in speeches.

**Note:** all presets can be adapted to your own taste using the parametric equalizers.

#### **INPUT 2**

This input can be used to connect different audio sources. See point 2 in the previous chapter for full understanding.

#### **PARAM EQ**

Each preset can be further optimized by using these 4 parametric equalizers. At any moment you can enable/disable the EQs. You can also reset all values to

Level 1	Level 2	Parameters	Settings	Defaults	
PRESETS	FOH LIVE				
	FOH HPF			100Hz, 24dB/oct	
	MONITOR				
	SPEECH				
	LINE				
INPUT 2	MIC				
	MIC + HPF			120Hz, 12dB/oct	
	EQ 1	FREQ	100 → 500Hz	100Hz	
		GAIN	-6,0 → +6,0	0,0	
	EQ 2	FREQ	50 → 15000Hz	1000Hz	
		GAIN	-6,0 → +6,0	0,0	
		Q	0,3 →4,0	0,7	
DADAMATO	EQ 3	FREQ	50 → 15000Hz	1000Hz	
PARAM EQ		GAIN	-6,0 → +6,0	0,0	
		Q	0,3 →4,0	0,7	
	EQ 4	FREQ	1000 → 10000Hz	8000Hz	
		GAIN	-6,0 → +6,0	0,0	
	ENABLE	ON / OFF		OFF	
	RESET	(5 seconds countdown before RESET)			
SETTINGS	LEDs DIM	FULL ON			
		DIMMED			
		OFF			
ABOUT	HARDWARE	Vx.x.x			
	SOFTWARE	Vx.x.x			
BACK ←	BACK ←	used to return back to the previous menu			

their factory defaults by selecting the RESET-option and press the rotary knob during 5 seconds.

#### SETTINGS

The different LEDs can be dimmed or even turned off when needed.

#### **ABOUT**

Used to check the current hardware and software versions.

#### **BACK** ←

Used to return to a higher menu of standard display.

#### **SETUP MENU SA-B15**

Used to make al settings of the internal DSP-processor.

#### **PRESETS**

- STANDARD: most commonly used option for all-around use.
- **DEEP:** lower cutoff frequency for applications where deeper bass response is needed. (Use with precaution)

Level 1	Level 2	Parameters	Settings	Defaults
PRESETS	STANDARD			
	DEEP			
SETTINGS	LEDs DIM	FULL ON		
		DIMMED		
		OFF		
ABOUT	HARDWARE	Vx.x.x		
	SOFTWARE	Vx.x.x		
BACK ←	BACK ←	used to return back to the previous menu		

#### **SETTINGS**

The different LEDs can be dimmed or even turned off when needed.

#### **ABOUT**

Used to check the current hardware and software versions.

#### BACK ←

Used to return to a higher menu of standard display.

#### SOME CONNECTION EXAMPLES

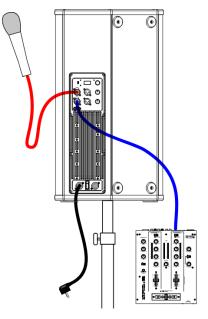
These are just some examples; many more connections are possible!

#### **FULL RANGE**

- Connect the included power cord to the PowerCON input (14)
- In the setup menu (9):
  - PRESETS: FOH LIVE
  - **INPUT2**: LINE (preferable, not mandatory)
  - PARAM EQ: leave unchanged or adapt the EQs as you like.
- Connect the output of the mixing desk to CH1 (4)
- Increase the volume of CH1 (5) to the desired level, leave CH2 (3) closed.

#### FULL RANGE + MICROPHONE

- Connect the included power cord to the PowerCON input (14)
- In the setup menu (9):
  - **PRESETS**: FOH LIVE
  - INPUT2: MIC or MIC+HPF for clearer voice.
  - PARAM EQ: leave unchanged or adapt the EQs as you like.
- Connect the output of the mixing desk to CH1 (4)
- Connect the microphone to CH2 (1)
- Increase the gain of CH1 (5) to the desired level.
- Increase the gain of CH2 (3) to the desired level.



#### COMBINATION WITH SUBWOOFER

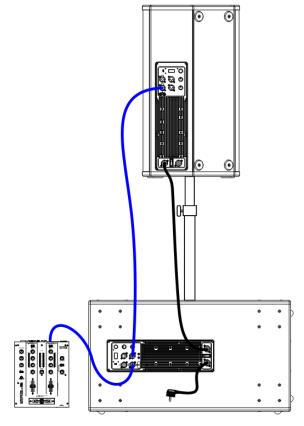
#### TOP SPEAKER (SA10 \* SA12 \* SA15)

- Connect the included power cord to the PowerCON input (14) or connect the Power output (15) of the subwoofer to the power input (14) of the SA-10/12/15.
- In the setup menu (9):
  - PRESETS: FOH HPF
  - PARAM EQ: leave unchanged or adapt the EQs as you like.
- Connect the LINK OUT (7) of the subwoofer to CH1 (4)
- Increase the volume of CH1 (5) to the desired level, leave CH2 (3) closed.

#### **SUBWOOFER (SA-B15)**

- Connect the included power cord to the PowerCON input (14)
- In the setup menu (9):
  - PRESETS: STANDARD or DEEP
- Connect the LINK OUT (7) to CH1 (4) of the top cabinet.
- Increase the volume of CH1 (5) to the desired level, leave CH2 (3) closed.

**PS:** to get good results, please make sure to make the right balance between the CH1 gains of both TOP and SUB cabinets.



#### 2 CABINETS LINKED IN FULL RANGE (MIC IS NOT LINKED)

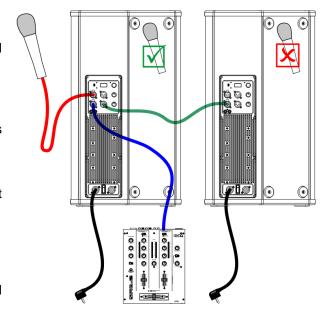
The microphone is only audible on the 1st cabinet.

#### **FIRST CABINET**

- Connect the included power cord to the PowerCON input (14)
- In the setup menu (9):
  - PRESETS: FOH LIVE
  - INPUT2: MIC or MIC+HPF for clearer voice.
  - PARAM EQ: leave unchanged or adapt the EQs as you like.
- Connect the output of the mixing desk to CH1 (4)
- Connect the microphone to CH2 (1)
- Connect the LINK OUT (7) to CH1 (4) of the next cabinet.
- Increase the gain of CH1 (5) to the desired level.
- Increase the gain of CH2 (3) to the desired level.

#### LINKED CABINET(S)

- Connect the included power cord to the PowerCON input (14)
- In the setup menu (9):
  - PRESETS: FOH LIVE
  - INPUT2: LINE (preferable, not mandatory)
  - PARAM EQ: leave unchanged or adapt the EQs as you like.
- Connect the LINK OUT (7) of the previous to CH1 (4)
- Increase the gain of CH1 (5) to the desired level.



#### 2 CABINETS LINKED IN FULL RANGE (MIC IS LINKED)

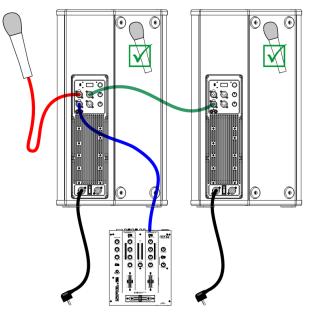
The microphone is audible on ALL cabinets.

#### **FIRST CABINET**

- Connect the included power cord to the PowerCON input (14)
- In the setup menu (9):
  - PRESETS: FOH LIVE
  - INPUT2: MIC or MIC+HPF for clearer voice.
  - PARAM EQ: leave unchanged or adapt the EQs as you like.
- Connect the output of the mixing desk to CH1 (4)
- Connect the microphone to CH2 (1)
- Connect the MIX OUT (8) to CH1 (4) of the next cabinet.
- Increase the gain of CH1 (5) to the desired level.
- Increase the gain of CH2 (3) to the desired level.

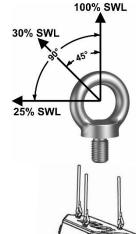
#### LINKED CABINET(S)

- Connect the included power cord to the PowerCON input (14)
- In the setup menu (9):
  - PRESETS: FOH LIVE
  - INPUT2: LINE
  - PARAM EQ: leave unchanged or adapt the EQs as you like.
- Connect the MIX OUT (8) of the first cabinet to CH1 (4)
  - (for the next cabinets: Connect the LINK OUT (7) of the previous to CH1 (4)
- Increase the gain of CH1 (5) to the desired level.



#### RIGGING

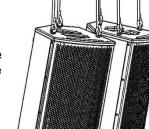
- <u>Important:</u> The installation must be carried out by qualified service personal only. Improper installation can result in serious injuries and/or damage to property. Overhead rigging requires extensive experience! Working load limits should be respected, certified installation materials should be used, the installed device should be inspected regularly for safety.
- Make sure the area below the installation place is free from unwanted persons during rigging, de-rigging.
- The cabinet should be installed out of reach of people and outside areas where persons may walk by or be seated.
- Make sure that the installation area can hold a minimum point load of 10times the cabinet's weight.
- Always use certified cable or chains that can hold 12 times the weight of the cabinet.
- The cabinet should be well fixed; a free-swinging mounting is dangerous and may not be considered!
- The operator has to make sure that the safety-relating and machine-technical installations are approved by an expert before using them for the first time. The installations should be inspected every year by a skilled person to be sure that safety is still optimal.
- Always take special care when the cabinets are suspended. This is potentially dangerous and should only be carried out by technicians who have perfect knowledge of the techniques and regulations of rigging speakers!
- The eyebolts used to suspend the speakers must be made to support heavy weights: SWL > 70kg. (SWL changes with the lifting angle, see drawing)



#### **SUSPENSION 1 CABINET IN VERTICAL POSITION**

The cabinet is suspended using the 3 fixing points on the top of the cabinet.

- Use an "allen key" to remove the 3 installed flat-head screws
- Insert the M6 eyebolts (not included) directly in the three M6-holes on the top panel: make sure the eye bolts are tightly fixed.
- Use strong and certified steel cables or chains, that are adapted for the weight of the speakers!
- Fix 2 cables/chains symmetrically to the 2 eyebolts on the front of the cabinet to hold the weight.
- The 3<sup>rd</sup> eyebolt on the back is used to tilt the speaker cabinet in the right position: make sure that you can adjust the length of this cable easily.



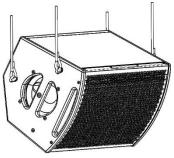
#### SUSPENSION 2 (OR MORE) CABINETS IN VERTICAL POSITION

• Use the exact same method as suspending 1 cabinet vertical position but make sure that the horizontal angle between the cabinets corresponds to the horizontal dispersion of the cabinets (in this case 90°)

#### SUSPENSION A CABINET IN HORIZONTAL POSITION

- The cabinet is suspended using 2 fixing points on the top + 2 fixing points on the bottom of the cabinet (see drawing)
- Use an "allen key" to remove the 4 installed flat-head screws
- Insert the M6 eyebolts (not included) directly in the four M6-holes: make sure the eye bolts are tightly fixed.
- Use strong and certified steel cables or chains, that are adapted for the weight of the speakers!
- Fix 2 cables/chains symmetrically to the 2 eyebolts on the back of the cabinet to hold the weight.
- The 2 eyebolts on the front are used to tilt the speaker cabinet in the right position.

**PS:** make sure that the weight is evenly distributed across the cables fixed to the top and bottom of the cabinet.



#### **SPECIFICATIONS**

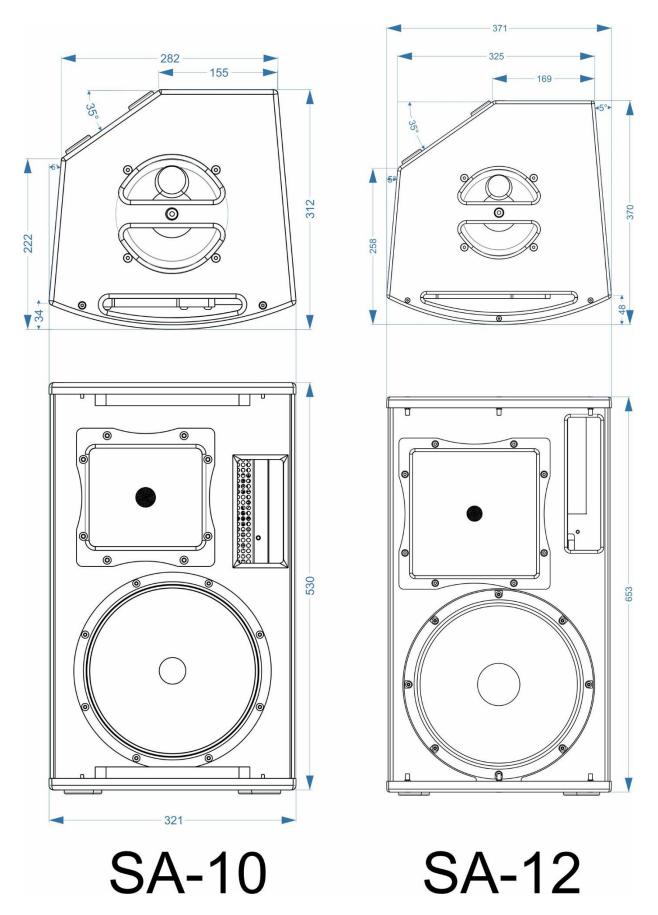
This device carries the prescribed CE marking. It was tested for this purpose in a specialized CE lab and fully complies with all currently valid European and national standards. The corresponding CE conformity declarations can be found on the product page of this product on our website.

MODEL	SA-10	SA-12	SA-15	SA-B15
Amplifier MID/HF unit	100Wrms	150Wrms	150Wrms	NA
Amplifier LF unit	280Wrms	500Wrms	500Wrms	1600Wrms
Tweeter	1"	1"	1"	NA
Woofer	10"	12"	15"	15"
Dispersion (HxV)	90° x 40°	90° x 40°	90° x 40°	omnidirectional
Max SPL @1m	127 dB	129 dB	131 dB	130 dB
Freq. Resp. (+/-3dB)	60 – 20.000Hz	45 – 20.000Hz	40 – 20.000Hz	30-150Hz
Freq. Resp. (+/-6dB)	50 – 25.000Hz	41 – 25.000Hz	36 – 25.000Hz	29-150Hz
THD (1kHz / 1W)	0,10%	0,10%	0,10%	-
Input Sensitivity line	1V	1V	1V	1V
Input Sensitivity micro	15mV	15mV	15mV	15mV
Input impedance	20 kohm	20 kohm	20 kohm	20 kohm
EQ	4 parametric EQ's	4 parametric EQ's	4 parametric EQ's	4 parametric EQ's
Input CH1	Bal/unbal XLR/Jack	Bal/unbal XLR/Jack	Bal/unbal XLR/Jack	Bal/unbal XLR/Jack
Input CH2	Bal/unbal XLR 3pin	Bal/unbal XLR 3pin	Bal/unbal XLR 3pin	Bal/unbal XLR 3pin
Link output CH1	Bal/unbal XLR 3pin	Bal/unbal XLR 3pin	Bal/unbal XLR 3pin	Bal/unbal XLR 3pin
Power input	100-240Vac 50/60Hz	100-240Vac 50/60Hz	100-240Vac 50/60Hz	100-240Vac 50/60Hz
Power consumption	0,75A @ 100Vac	1,5A @ 100Vac	1,5A @ 100Vac	5,5A @ 100Vac
I ower consumption	0,35A @ 240Vac	0,75A @ 240Vac	0,75A @ 240Vac	2,3A @ 240Vac
	T 2,5A 250V	T 4A 250V	T 4A 250V	T 10A 250V
Internal FUSE (20x5mm)	("H"-type: high breaking	("H"-type: high breaking	("H"-type: high breaking	("H"-type: high breaking
	capacity)	capacity)	capacity)	capacity)
Flying points	6x M6	6x M6	6x M6	none
Dimensions HxWxD (mm)	530x315x321	653x371x370	690x430x430	430x780x620
Weight (kg)	15	20	25	40

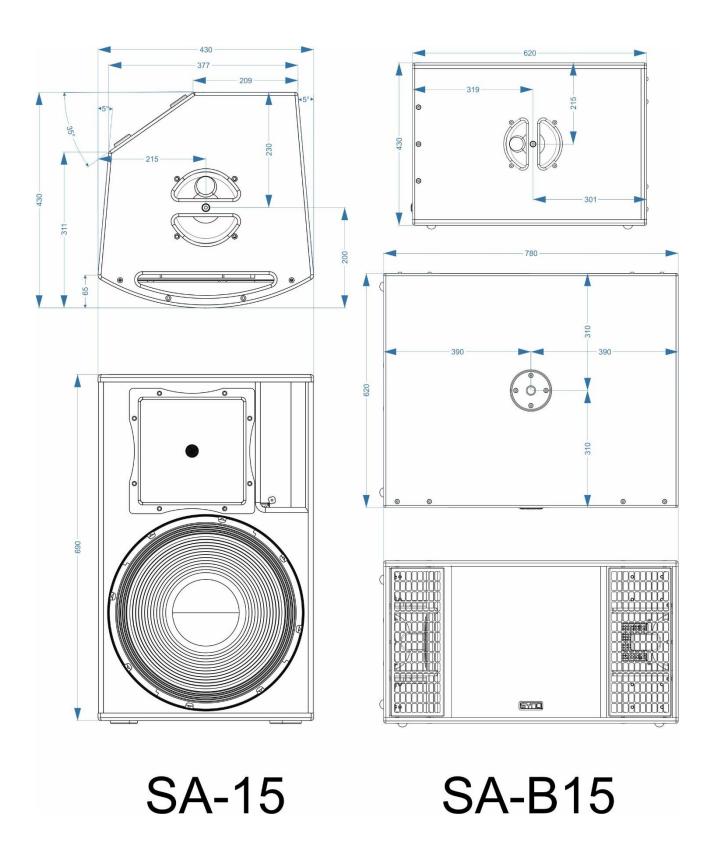
All information is subject to change without prior notice.

You can download the latest version of this user manual on our website: www.synq-audio.com

#### **DIMENSIONS**



#### **DIMENSIONS**





## **MAILING LIST**

EN: Subscribe today to our mailing list for the latest product news!

FR: Inscrivez-vous à notre liste de distribution si vous souhaitez suivre l'actualité de nos produits!

NL: Abonneer je vandaag nog op onze mailinglijst en ontvang ons laatste product nieuws!

DE: Abonnieren Sie unseren Newsletter und erhalten Sie aktuelle Produktinformationen!

ES: Suscríbete hoy a nuestra lista de correo para recibir las últimas noticias!

PT: Inscreva-se hoje na nossa mailing list para estar a par das últimas notícias!

# WWW SYNQ-AUDIO COM

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