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ARCAM|HDA

INTEGRATED AMPLIFIER
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ИНТЕГРАЛЬНЫЙ УСИЛИТЕЛЬ
AMPLIFICATORE INTEGRATO
集成放大器
인티앰프

SA10/SA20

HANDBOOK
MANUEL
HANDBUCH
HANDLEIDING
MANUAL
РУКОВОДСТВО
MANUALE
手册
핸드북

ARCAM | HD

INTEGRATED AMPLIFIER

SA10/SA20

Safety Guidelines

Important Safety Instructions

1. Read these instructions.
2. Keep these instructions.
3. Heed all warnings.
4. Follow all instructions.
5. Do not use this apparatus near water.
6. Clean only with dry cloth.
7. Do not block any ventilation openings. Install in accordance with the manufacturer's instructions.
8. Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.
9. Do not defeat the safety purpose of the polarized or grounding-type plug.

   A polarized plug has two blades with one wider than the other. A grounding type plug has two blades and a third grounding prong. The wide blade or the third prong are provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.
10. Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.
11. Only use attachments/accessories specified by the manufacturer.
12. Use only with the cart, stand, tripod, bracket, or table specified by the manufacturer, or sold with the apparatus.

    When a cart is used, use caution when moving the cart/apparatus combination to avoid injury from tip-over.
13. Unplug this apparatus during lightning storms or when unused for long periods of time.

14. Refer all servicing to qualified service personnel.

    Servicing is required when the apparatus has been damaged in any way, such as power-supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.
15. Object or liquid entry

    WARNING – Take care that objects do not fall and liquids are not spilled into the enclosure through any openings. The equipment shall not be exposed to dripping or splashing. Liquid-filled objects such as vases should not be placed on the equipment.
16. Climate

    The equipment has been designed for use in moderate climates and in domestic situations.
17. Cleaning

    Unplug the unit from the mains supply before cleaning.

    The case should normally only require a wipe with a soft, lint-free cloth. Do not use chemical solvents for cleaning.

    We do not advise the use of furniture cleaning sprays or polishes as they can cause permanent white marks.
18. Power sources

    Only connect the equipment to a power supply of the type described in the operating instructions or as marked on the equipment.

    The primary method of isolating the equipment from the mains supply is to remove the mains plug. The equipment must be installed in a manner that makes disconnection possible.
19. Abnormal smell

    If an abnormal smell or smoke is detected from the equipment, turn the power off immediately and unplug the equipment from the wall outlet. Contact your dealer and do not reconnect the equipment.
20. Damage requiring service

    The equipment should be serviced by qualified service personnel when:

A. The power-supply cord or the plug has been damaged, or

B. Objects have fallen, or liquid has been spilled into the equipment, or

C. The equipment has been exposed to rain, or

D. The equipment does not appear to operate normally or exhibits a marked change in performance, or

E. The equipment has been dropped or the enclosure damaged.

⚡	CAUTION	ATTENTION	⚠
	RISK OF ELECTRIC SHOCK DO NOT OPEN	RISQUE DE CHOC ELECTRIQUE NE PAS OUVRIR	

CAUTION: To reduce the risk of electric shock, do not remove cover (or back). No user serviceable parts inside. Refer servicing to qualified service personnel.

WARNING: To reduce the risk of fire or electric shock, do not expose this apparatus to rain or moisture.

The lightning flash with an arrowhead symbol within an equilateral triangle, is intended to alert the user to the presence of uninsulated 'dangerous voltage' within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.

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

CAUTION: In Canada and the USA, to prevent electric shock, match the wide blade of the plug to the wide slot in the socket and insert the plug fully into the socket.

Class II product

This equipment is a Class II or double insulated electrical appliance. It has been designed in such a way that it does not require a safety connection to electrical earth ("ground" in the U.S.)

Warning

Mains plug/appliance coupler is used to disconnect device and it shall remain readily operable.

Safety Compliance

This equipment has been designed to meet the IEC/EN 60065 international electrical safety standard.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:
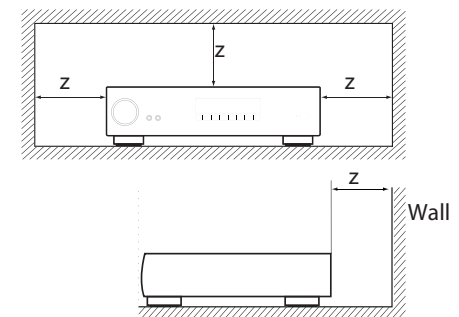
1. This device may not cause harmful interference, and
2. This device must accept any interference received, including interference that may cause undesired operation.

The building installation shall be regarded as providing protection in accordance with the rating of the wall socket outlet.

Caution on installation

For proper heat dispersal, do not install this unit in a confined space, such as a bookcase or similar enclosure.

☐ More than 0.3m (12in) is recommended.

☐ Do not place any other equipment on this unit.

FCC Information(for US customers)

PRODUCT

This product complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

1. This device may not cause harmful interference, and

2. This device must accept any interference received, including interference that may cause undesired operation.

IMPORTANT NOTICE: DO NOT MODIFY THIS PRODUCT

This product, when installed as indicated in the instructions contained in this manual, meets FCC requirements. Modification not expressly approved by ARCAM may void your authority, granted by the FCC, to use the product.

NOTE

This product has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation.

This product generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this product does cause harmful interference to radio or television reception, which can be determined by turning the product OFF and ON, the user is encouraged to try to correct the interference by one or more of the following measures:

□ Reorient or relocate the receiving antenna.

□ Increase the separation between the equipment and receiver.

□ Connect the product into an outlet on a circuit different from that to which the receiver is connected.

□ Consult the local retailer authorized to distribute this type of product or an experienced radio/TV technician for help

Safety Information (for European customers)

□ Avoid high temperatures. Allow for sufficient heat dispersion when installed in a rack.

□ Handle the power cord carefully. Hold the plug when unplugging the cord.

□ Keep the unit free from moisture, water, and dust.

□ Unplug the power cord when not using the unit for long periods of time.

□ Do not obstruct the ventilation holes.

□ Do not let foreign objects into the unit.

□ Do not let insecticides, benzene, and thinner come in contact with the unit.

□ Never disassemble or modify the unit in any way.

□ Ventilation should not be impeded by covering the ventilation openings with items, such as newspapers, tablecloths or curtains.

□ Naked flame sources such as lighted candles should not be placed on the unit.

□ Observe and follow local regulations regarding battery disposal.

□ Do not expose the unit to dripping or splashing fluids.

□ Do not place objects filled with liquids, such as vases, on the unit.

□ Do not handle the mains cord with wet hands.

□ When the switch is in the OFF position, the equipment is not completely switched off from MAINS.

□ The equipment shall be installed near the power supply so that the power supply is easily accessible.

A note about recycling

This product's packaging materials are recyclable and can be reused. Please dispose of any materials in accordance with the local recycling regulations.

When discarding the unit, comply with local rules or regulations.

Batteries should never be thrown away or incinerated but disposed of in accordance with the local regulations concerning battery disposal.

This product and the supplied accessories, excluding the batteries, constitute the applicable product according to the WEEE directive

Correct disposal of this product

These markings indicate that this product should not be disposed with other household waste throughout the EU.

To prevent possible harm to the environment or human health from uncontrolled waste disposal and to conserve material resources, this product should be recycled responsibly.

To dispose of your product, please use your local return and collection systems or contact the retailer where the product was purchased.

Welcome

Thank you and congratulations...

...for purchasing your Arcam SA10/SA20 integrated amplifier.

Arcam has been producing specialist audio products of remarkable quality for over three decades and the new SA10/SA20 integrated amplifier is the latest in a long line of award winning Hi-Fi. The design of the HDA range draws upon all of Arcam's experience as one of the UK's most respected audio companies, to produce Arcam's best performing range of stereo amplifiers yet – designed and built to give you years of listening enjoyment.

This handbook is a guide to installing and using the SA10/SA20 and includes information on its more advanced features. Use the contents list on the next page to guide you to the section of interest.

We hope that your product will give you years of trouble-free operation. In the unlikely event of any fault, or if you simply require further information about Arcam products, our network of dealers will be happy to help you. Further information can also be found on the Arcam website at ***www.arcam.co.uk***.

Your SA10/SA20 development team

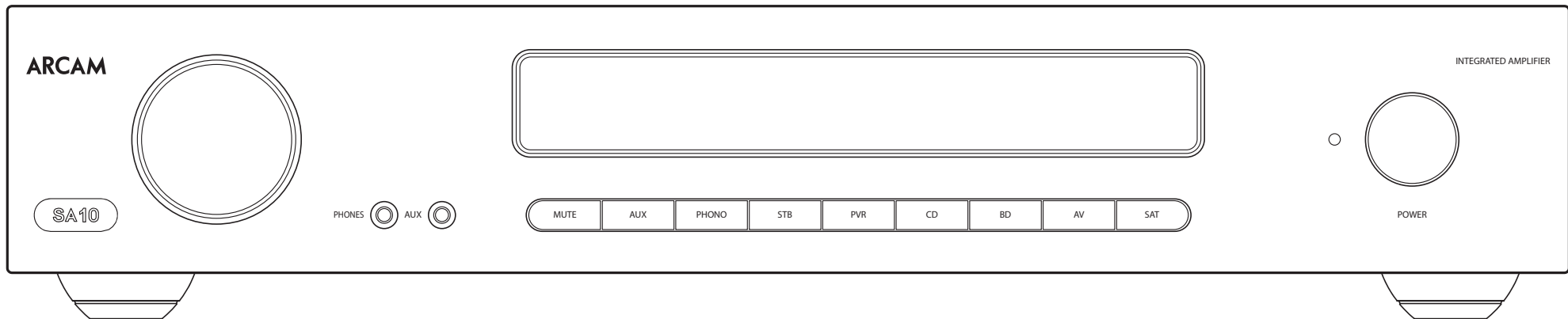# Contents

Overview

Arcam's SA10/SA20 amplifier

Arcam's SA10/SA20 integrated amplifier provides class leading sound quality for the best reproduction of your music.

Drawing on the many years of amplifier design experience at Arcam, this product uses the best quality components and engineering practice to produce a product that will give many years of musical pleasure and reliable service.

The SA10/SA20 is designed to produce a level of performance that will truly bring your music to life.

Placing The Unit

Place the amplifier on a level, firm surface, avoiding direct sunlight and sources of heat or damp.

Do not place the SA10/SA20 on top of a power amplifier or other source of heat.

Do not place the amplifier in an enclosed space such as a bookcase or closed cabinet unless there is good provision for ventilation. The SA10/SA20 is designed to run warm during normal operation.

Do not place any other component or item on top of the amplifier as this may obstruct airflow around the heat-sink, causing the amplifier to run hot. (The unit placed on top of the amplifier would become hot, too.)

Make sure the remote-control receiver to the right of the front panel display is unobstructed, otherwise this will impair the use of the remote-control.

Do not place your record deck on top of this unit. Record decks are very sensitive to the noise generated by mains power supplies which will be heard as a background 'hum' if the record deck is too close.

The normal function of the unit may be disturbed by strong electromagnetic interference. If this occurs, simply reset the unit with the power button, or move the unit to another location.

Power

The amplifier is supplied with a moulded mains plug already fitted to the lead. Check that the plug supplied fits your supply – should you require a new mains lead, please contact your Arcam dealer.

If your mains supply voltage or mains plug is different, please contact your Arcam dealer immediately

Push the IEC plug end of the power cable into the power socket on the back of the amplifier, making sure that it is pushed in firmly. Plug the other end of the cable into your mains socket and switch the socket on.

Interconnect Cables

We recommend the use of high-quality screened cables that are designed for the particular application. Other cables will have different impedance characteristics that will degrade the performance of your system (for example, do not use cabling intended for video use to carry audio signals). All cables should be kept as short as is practically possible.

It is good practice when connecting your equipment to make sure that the mains power-supply cabling is kept as far away as possible from your audio cables. Failure to do so may result in unwanted noise in the audio signals.

Front Panel Connections and Controls

AUX INPUT
Analogue 3.5mm stereo socket, intended
for connecting an external analogue
source
See "Analogue Audio Inputs" on page EN-10

VOLUME CONTROL
See "Volume Control" on page EN-10

**POWER INDICATOR AND POWER
SWITCH**
See "Switching On" on page EN-10

ARCAM

INTEGRATED AMPLIFIER

SA10

PHONES AUX

MUTE | AUX | PHONO | STB | PVR | CD | BD | AV | SAT

POWER

MUTE
Mute/unmute the SA10/SA20 audio output
See "Muting Output" on page EN-10
NOTE: This button is also used for entering the setup menu.
See "Entering Setup Mode" on page EN-14.

PHONES
3.5mm stereo socket, intended for use with headphones
See "Listening Using Headphones" on page EN-10

INPUT SELECT
See "Selecting An Audio Source" on page EN-10

Rear Panel Connections and Controls

POWER INLET
Connect the correct mains cable here

VOLTAGE SELECT
Ensure that the voltage selected matches the local power supply

PHONO GROUND CONNECTION
Connect the turntable earth lead, if required
⚠ **Note that this terminal must not be used as a safety earth**

PRE-AMPLIFIER OUTPUT
Provides the pre-amplifier output for use in a bi-amplified system.
See "Pre-Amplifier Output" on page EN-10

SA10

POWER INLET

110-120V/220-240V ~ 50/60Hz

SUPPLY VOLTAGE

SWITCH POSITIONS
115 = 110 - 120V ~
230 = 220 - 240V ~

NET

RS232

USB
5V ⎓ 100mA

DIGITAL IN
SAT
BD
AV

ANALOGUE IN
CD   PVR   STB
L
R

PHONO (MM)

PRE OUT

R   L
4-16 OHMS
CLASS 2 WIRING

ANALOGUE AUDIO INPUTS
Phono (MM) and line level audio inputs
See "Phono Input" on page EN-10 and "Analogue Audio Inputs" on page EN-10

SPEAKER TERMINALS
See "Loudspeakers" on page EN-11

SA20

R   CLASS 2 WIRING   L
4-16 OHMS

NETWORK
Connect this socket to a port on your network router using an Ethernet patch cable
See "Network Connection" on page EN-9

DIGITAL AUDIO INPUTS
Optical and coaxial digital audio connectors
See "Digital Audio Inputs" on page EN-10

RS232
This connection allows for remote control from a third-party home automation system or computer
See "RS232 Connection" on page EN-9

USB
This USB socket is used for software upgrades only
See "USB Connection" on page EN-9

⚠ **Please read the sections "Placing The Unit", "Power" and "Interconnect Cables" on page EN-6 before connecting your SA10/SA20 amplifier!**
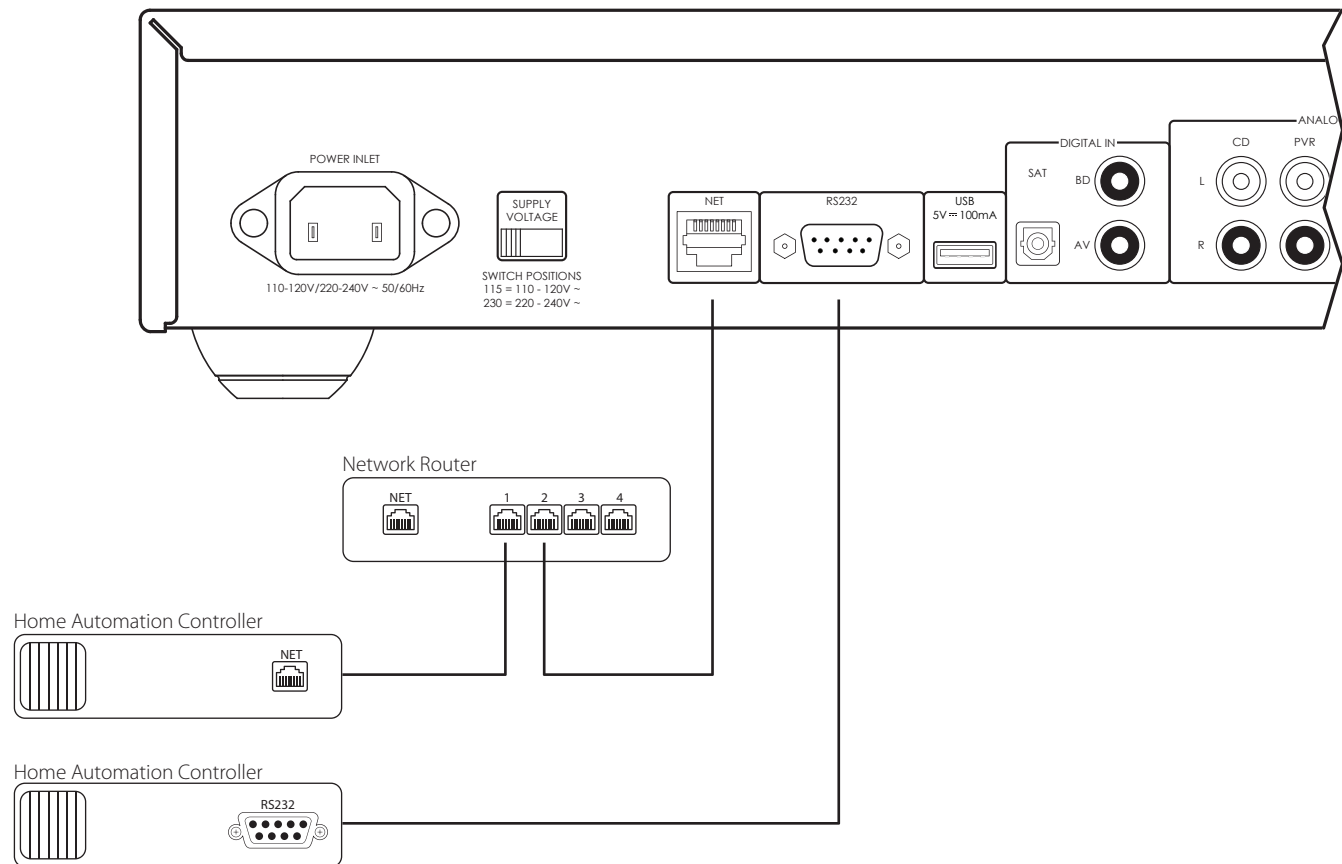
Network Connection

The SA10/SA20 can be connected to a local network, so that it can be controlled and monitored remotely. Please refer to the control document which can be found at *www.arcam.co.uk* for further information.

RS232 Connection

The RS232 input is for optional connection to a home automation system or personal computer. Various third-party systems are available providing sophisticated control over all your entertainment devices. Contact your dealer or installer for details. The technical details of the remote control protocol are available upon request, by contacting Arcam at *support@arcam.co.uk*.

USB Connection

The USB port is used for software updates only. For the latest software as well as further information, please visit *www.arcam.co.uk*.

POWER INLET

SUPPLY VOLTAGE

110-120V / 220-240V ~ 50/60Hz

SWITCH POSITIONS
115 = 110 - 120V ~
230 = 220 - 240V ~

NET

RS232

USB
5V ⎓ 100mA

DIGITAL IN

SAT

BD

AV

ANALO

CD

PVR

L

R

Network Router

NET   1   2   3   4

Home Automation Controller

NET

Home Automation Controller

RS232

Operation

Switching On

The **POWER** button switches the unit on and off. The status indicator LED indicates the state of the amplifier: it changes from red to orange then white if mains power is connected and the unit is switched on.

Setup Menu

The SA10/SA20 setup menu allows the customization of certain features of the amplifier. For details, please see "Setup Menu" on page EN-14.

Auto Standby

In order to comply with international regulations for consumer products, this unit is designed to enter a low power standby mode if no user interaction and no audio input signal are detected for an extended period of time. The unit can be brought out of standby by either turning the volume knob on the front panel in either direction or by pressing the ⏻ key on the remote control.

The available values are from 'OFF' to 4 hours, in half hour steps.

Note: if the standby time-out is set to OFF, the standby feature will be disabled.

Display

Press the **DISP** button on the remote control to adjust the brightness level of the front panel display. The brightness level can be set to 'FULL', 'DIM' or 'OFF'.

If the SA10/SA20 is powered off with the display brightness set to 'OFF', the display will momentarily resume to full brightness then turn off when the unit is powered back on.

Phono Input

The SA10/SA20 provides a pre-amplification stage to treat the low-voltage output from an MM (moving magnet) cartridge. The **PHONO** input specifications are given in "SA10 Specifications" on page EN-16 and "SA20 Specifications" on page EN-17.

WARNING: NEVER play a standard line-level source into this input. This would result in serious damage to both your amplifier and speakers due to the extra gain that is applied and would not be covered under warranty.

Selecting An Audio Source

Audio sources can be selected either from the front panel or remote control, by pressing the required button, labelled as **AUX**, **PHONO**, **STB**, **PVR**, **CD**, **BD**, **AV**, **SAT**.

In each case, the source is selected from the input sockets with the corresponding name.

Note: The **STB**, **PVR**, **CD**, **BD** and **AV** buttons are also used for navigating through the SA10/SA20 set up menu, as described in "Navigating The Setup Menu" on page EN-14.

Digital Audio Inputs

The SA10/SA20 features two coaxial and one optical digital input, which can be connected to the respective digital audio output of your available source equipment. Although the inputs are labelled for specific devices, they can be used to connect any devices with a coaxial or optical digital output.

BD   Intended for the coaxial digital output of a Blu-ray or DVD-player

AV   Intended for the coaxial digital output of general audiovisual equipment, such as a VCR, TV or satellite receiver

SAT   Intended for the optical digital outputs from a satellite TV receiver or cable TV box

NOTE: The SA10/SA20 supports only two channel PCM audio input

Analogue Audio Inputs

Although the inputs are labelled for specific devices, all have the same characteristics and each may be used with any line-level product. The exception is the **PHONO (MM)** input. Please refer to "SA10 Specifications" on page EN-16 and "SA20 Specifications" on page EN-17).

AUX   This is a 3.5mm analogue input on the front panel intended for use with devices such as MP3 players. To connect an MP3 player (or other portable audio device you will need a 3.5mm to 3.5mm cable connected (not supplied) between the **AUX** input and the headphone output socket of the portable audio player

STB   Intended for the analogue outputs of a set-top box

PVR   Intended for the analogue outputs of a Personal Video Recorder, or similar device

CD   Intended for the analogue outputs from a CD player

Pre-Amplifier Output

To use the SA10/SA20 as dedicated pre-amplifier, or as part of a bi-amped system, connect the **PRE OUT** sockets to the input sockets of your amplifier. For connection details, see "Rear Panel Connections and Controls" on page EN-8 and for output specification see "SA10 Specifications" on page EN-16 and "SA20 Specifications" on page EN-17.

Adjusting The Balance

The balance setting allows you to increase the volume of one channel (left or right) relative to the other. Altering the balance may help restoring the stereo image for an off-centre listening position.

To adjust the balance, press the [◀ BAL] or [BAL ▶] on the remote control to change the left and right channel balance, respectively.

Listening

Volume Control

Use the volume control knob (or the buttons on the remote control) to change the volume. Turn the knob clockwise to increase the volume and counter-clockwise to reduce it.

Listening Using Headphones

The headphone socket (**PHONES**) accepts phones with an impedance rating between 16Ω and 2kΩ, fitted with a 3.5mm stereo jack.

The pre-amp outputs and speakers are muted when the headphones are plugged in and the front panel displays shows 'Headphone'.

The headphone output is always active, unless the amplifier has been muted.

Muting Output

The output of the SA10/SA20 can be silenced by pressing the **MUTE** button on either the front panel or the remote control. If the unit is muted, front panel power indicator will change to orange and the display will show "**Mute**", instead of the volume level.

To cancel the mute, press **MUTE** for a second time or adjust the volume (either by turning the volume control knob or by pressing the volume control keys on the remote control).

Processor Mode

Processor mode can be assigned to any input. In this mode, the SA10/SA20 is set to a fixed level. Please refer to "Processor Mode (PM) Input" on page EN-14 for details on how to specify which input is to be used in processor mode. For setting the desired fixed volume level, please refer to "Processor Mode (PM) Volume" on page EN-14.

# Loudspeakers

Connecting Loudspeakers

There are many different ways of connecting loudspeakers to your SA10/SA20 amplifier. The following section describes how to connect the speakers and amplifier for the most common configurations.

Single Wiring

If each speaker has more than one pair of connecting terminals, use the terminals labelled '**LF**' or '**Low Frequency'** on your speakers.

Connect the red positive terminal of the right speaker connection on the amplifier (labelled **R+**) to the positive terminal of your right speaker. Similarly, connect the black negative terminal of the right speaker connection on the amplifier (labelled **R-**) to the negative terminal of your speaker. Repeat the process for the left speaker, using the terminals labelled **L+** and **L-** on the amplifier.

WARNING: If your speakers support bi-wiring, there will be a strip of conductive metal connecting the low-frequency (LF) terminals to the high-frequency (HF) terminals; this MUST NOT BE REMOVED in a single-wired system.
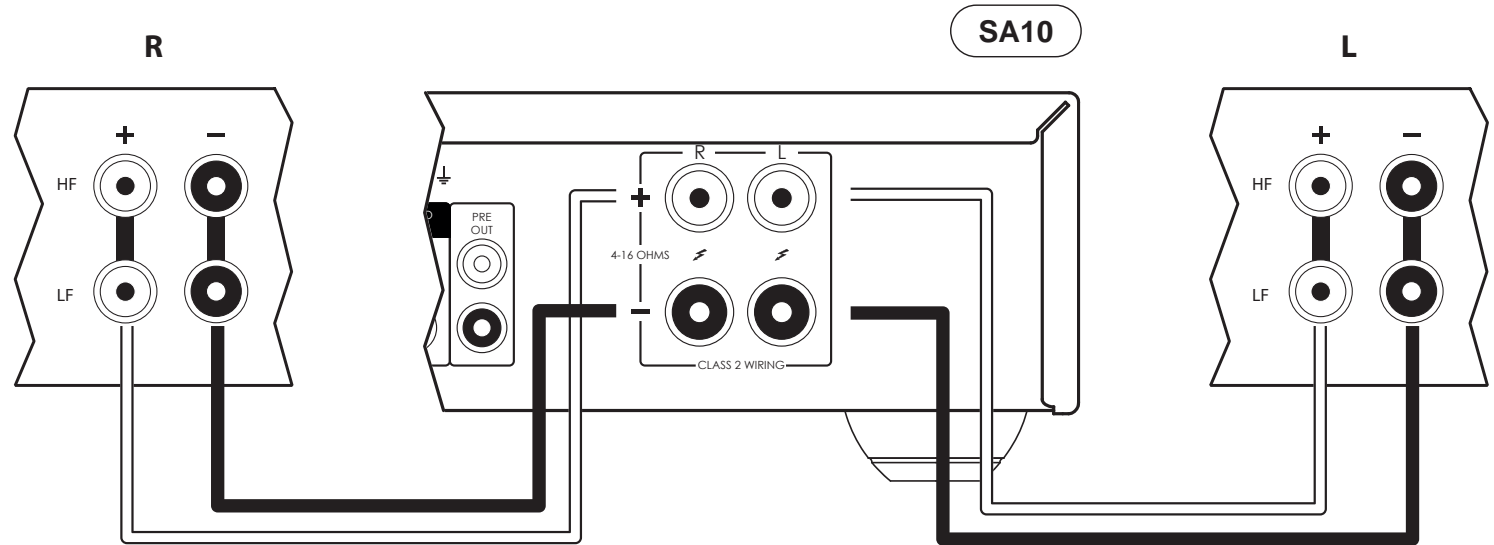
Notes On Making Speaker Connections

☐ Do not make any connections to any amplifier while it is switched on. We recommend that your amplifier is completely disconnected from the mains supply before starting.

☐ Before switching your amplifier on for the first time after connecting to speakers, please check all connections thoroughly. Ensure that bare wires or cables are not touching each other or the amplifier's chassis (which could cause short circuits), and that you have connected positive (+) to positive and negative (–) to negative. Be sure to check the wiring for both the amplifier and the speaker.

☐ After making connections: switch the amplifier on, select a source signal, then gradually increase the volume to the required listening level.

☐ If you are unsure as to how your system should be connected, please contact your Arcam dealer who will be happy to help you.

Bi-Amping

Bi-amping is the separation of the amplification of low and high-frequency signals over two amplifiers.

Bi-amping requires the use of two amplifiers per channel. Normally, your SA10/SA20 is used to drive the high frequency (treble) speakers, while a second amplifier (such as the Arcam P429) is used for the lower (bass) frequencies.

Connect the SA10/SA20 to the speakers as described for single wiring, with the exception that the SA10/SA20 should be connected to the speaker terminals labelled '**HF**' or '**High Frequency**'. Next, connect the P429 power amplifier to the '**LF**' or '**Low Frequency**' terminals, as shown in the diagram. A pair of audio interconnect cables are also required to connect the pre-amp outputs of the SA10/SA20 to the power amplifier inputs of the second amplifier.

WARNING: The strip of metal on the speakers connecting the low frequency (LF) terminals to the high frequency (HF) terminals MUST BE REMOVED. Failure to do so will result in damage to both amplifiers, which will not normally be covered under warranty.
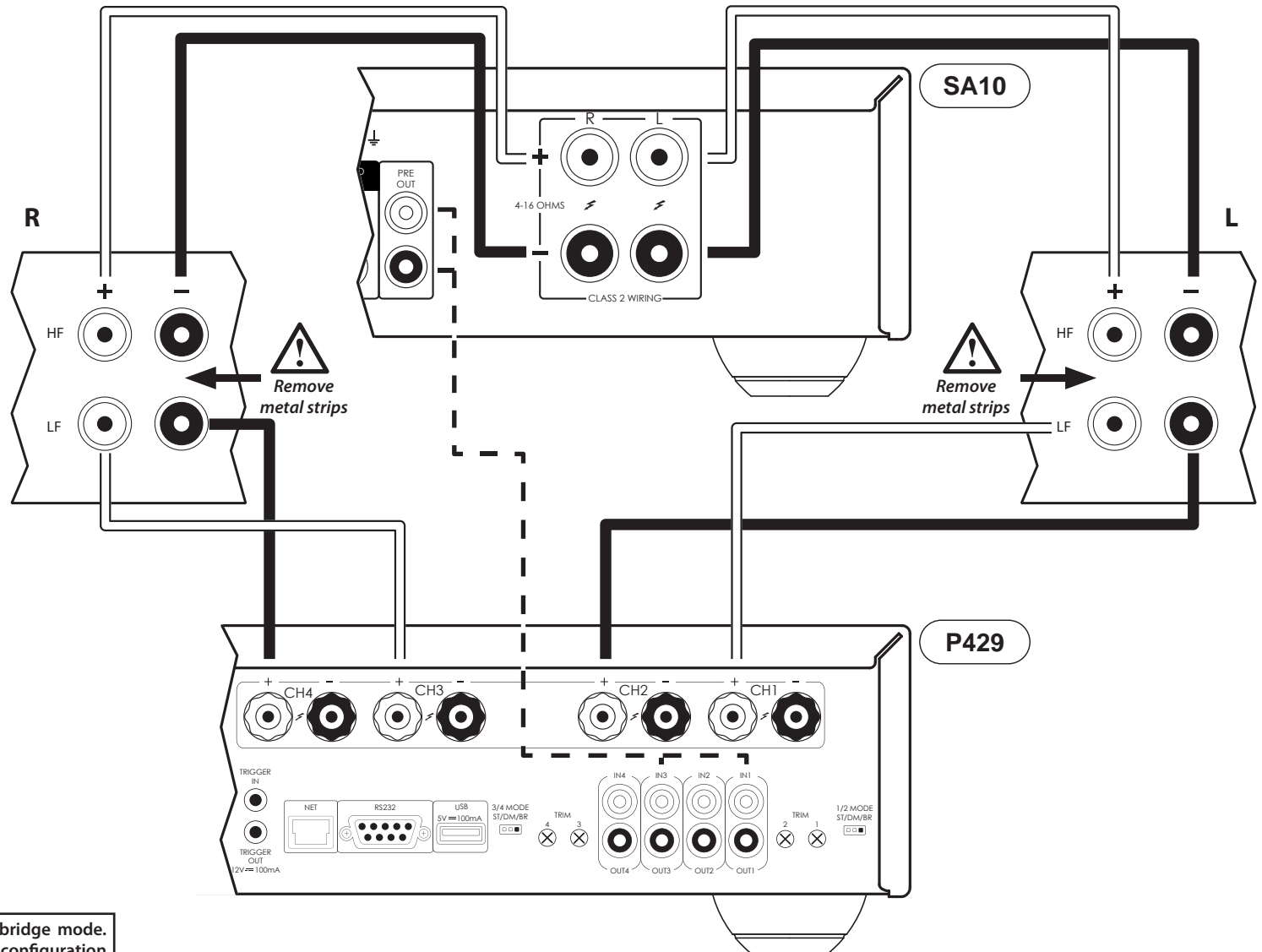
⚠ **In this example, the P429 is configured in bridge mode. Refer to the P429 user manual for various configuration modes.**

Remote Control
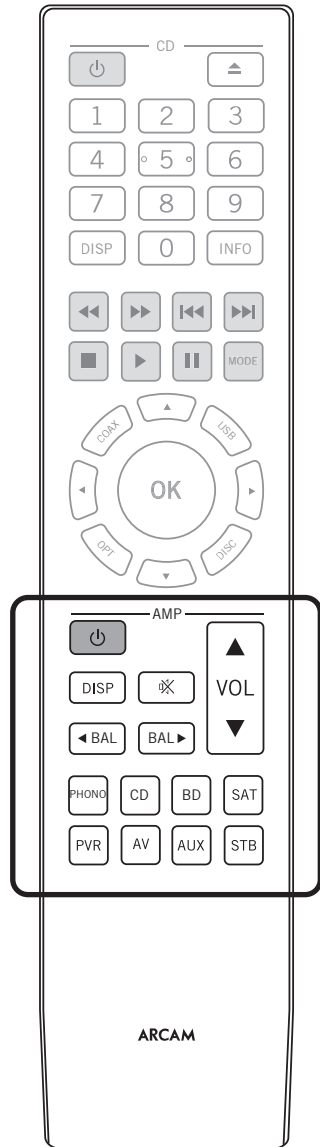
The remote control is pre-programmed for use with the SA10/SA20 amplifier and also an Arcam CD player. The information in this section applies to the **AMP** section of the remote control only.

Make sure the two AAA batteries (supplied) are installed before attempting to use the remote control.

1. With the remote face down, press down on the non-slip indentations of the battery compartment cover and slide the cover off

2. Insert the two AAA batteries (supplied). Take care to insert the batteries in the right direction by following the '+' and '-' marks in the battery compartment

3. Slide the battery compartment cover back and lock it in place with a click

The remote control requires a clear line of sight to the front panel of the SA10/SA20 to ensure reliable operation.

NOTE: The supplied remote control is designed to support both the SA10/SA20 integrated amplifier as well as an Arcam CD player. The section below applies to the **AMP** *section of the remote control only. Refer to the CD user manual for description on the* **CD** *section of the remote control unit.*

⏻	Toggles power between standby and powered on
DISP	Cycles through the front panel display brightness options
🔇	Toggles the mute function of the amplifier
▲ VOL ▼	Increase/decrease amplifier volume
◄ BAL	Adjust the balance of the left channel
BAL ►	Adjust the balance of the right channel

PHONO	Select the PHONO (MM) input
CD	Select the CD analogue input
BD	Select the BD coaxial digital input
SAT	Select the SAT optical digital input
PVR	Select the PVR analogue input
AV	Select the AV coaxial digital input
AUX	Select the 3.5mm socket analogue input (located on the front panel)
STB	Select the STB analogue input

Setup Menu

Before You Begin…

The setup menu allows you to configure various aspects of the SA10/SA20 integrated amplifier.

Entering Setup Mode

To enter the setup menu, press and hold the **MUTE** key on the front panel for approximately 3 seconds.

Navigating The Setup Menu

The setup menu can be navigated by pressing the front panel keys that correspond to the function shown on the display, as shown below.

To change a setting, simply turn the control knob left or right.

```
Processor Mode
```

| | STB | PVR | CD | BD | AV |
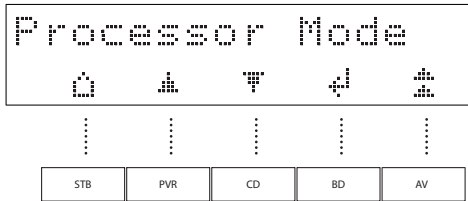
Icon	Key	Description
	HOME	Exit the menu and return to the home display
	UP	Navigate to the previous menu option
	DOWN	Navigate to the next menu option
	LEFT	Navigate left or move to the previous field
	RIGHT	Navigate right or move to the next field
	OK	Save the current setting and move to next option
	BACK	Save the current setting and exit menu option

System Settings

Display

Allows the brightness of the front panel display to be changed. The available settings are **Full**, **Dim** and **Off**. The default setting is **Dim**.

Balance

Turn the SA10/SA20 volume control knob left and right to change the left and right channel balance, respectively. The default setting is **0**.

Phones Override

Control whether or not the speaker outputs are muted when a pair of headphones are connected to the **PHONES** socket on the front panel. The default is **Off**.

Timeout

This option allows you to choose the length of idle time before the unit goes into standby. The available options are **Off**, **30** minutes, **1**, **2** and **4** hours. The default setting is **30** minutes.

Processor Mode (PM) Input

Specify which input is to be used in processor mode. This mode can be assigned to any input. In this case, the SA10/SA20 output level is set to a fixed level. The default setting is **None**.

Processor Mode (PM) Volume

Specify the required volume level for the processor mode input. The default is volume is **30**.

Filter

Specify which digital filter is used in the DAC.

C4 SDDP

Enables Control 4 discovery.

PLL Width

Normal is the default setting and is appropriate for almost all sources. Select **WIDE** only if noises or signal interruptions occur (most likely from high jitter sources such as cable TV set-top boxes).

IR System Code

Change the IR system code that the SA10/SA20 responds to (either **16** or **19**). The default code is **16**.

Note: The supplied remote control supports IR system code 16 only and cannot be changed.

Version

Displays the software version of the unit.

System Update

This option allows you to perform a software update of the system.

System Reset

Restores the SA10/SA20 to its factory default settings.

Network Settings

Net Standby

Enables or disables the network control of the SA10/SA20 while the unit is in standby. The default setting is **Off**.

Note: The unit can still be controlled via RS232 commands, even when network standby is disabled.

RS232 Standby

Enables or disables the RS232 control of the SA10/SA20 while the unit is in standby. The default setting is **Off**.

Network Setup

You can set your SA10/SA20 to obtain an IP address automatically when it connects to your network. To do so, select **DHCP On** and press **OK**.

Some providers require that you enter a fixed IP address. To do this, select **DHCP Off** and press **OK**. Use the left and right navigation keys to move between fields and turn the SA10/SA20 volume control knob to set the values. Press **OK** to save the settings.

The default network setup mode is **DHCP On**.

Network Info

Displays all the information related to the network setup, as follows: **DHCP** setting, **IP** address, **MAC** address and **Network Name** of the unit.

Troubleshooting

Problem	Check the following
No sound	□ The SA10/SA20 amplifier is correctly plugged in and switched on □ Your audio source is correctly connected, the correct input is selected and it is not muted □ The SA10/SA20 is not in protection mode, as described below
Sound cuts-out unexpectedly	The SA10/SA20 may enter a protection mode, depending on the fault being detected. The front panel LED will indicate the fault type, according to the list below □ FLASHING BLUE: The internal temperature of the unit reached an unsafe level. Allow the SA10/SA20 to cool off □ FLASHING RED: The SA10/SA20 amplifier detected a speaker short circuit. Should this happen, please inspect all the speaker cables to make sure none of them are shorted together. This fault is very common when bare wires are being used to make speaker connections □ FLASHING ORANGE: The amplifier detected a DC offset. Following any of the faults described above, the amplifier will turn itself off and power to the speakers will be removed. To continue using the SA10/SA20, the fault must be removed and the unit must be turned OFF then back ON
The unit responds erratically or not at all to the remote control	□ There are fresh batteries in the remote control □ The front panel window is visible and you are pointing the remote control towards it
The front panel display is blank	□ The display hasn't been turned off. Press the **DISP** button on the remote control. See "Display" on page EN-10
Hum on the analogue input	□ All cables are making a good connection. If necessary withdraw the cable from the connector and plug it fully in again (turn the power off before doing this) □ The connections inside the source cable connector are not broken or badly soldered □ If the hum originates only when one particular source component is connected, that an aerial cable, or dish connection to this source is ground isolated. Contact your installation contractor
Can not connect to a wired network	□ The Ethernet cable you are using is correctly connected between the SA10/SA20 and the network hardware □ The network is set up for fixed IP addressing and you have the SA10/SA20 set to use **DHCP On**. □ The network is set up for DHCP and you have the SA10/SA20 set to use fixed IP addressing. See "Network Connection" on page EN-9 and "Network Settings" on page EN-14

SA10 Specifications

Continuous power output (0.5% THD), per channel	
Both channels, 8Ω, 20Hz—20kHz	50W
Both channels, 4Ω, at 1kHz	85W
Harmonic distortion, 80% power, 8Ω at 1kHz	0.003%
Analogue Inputs	
Phono (MM) cartridge:	
Input sensitivity at 1kHz	5mV
Input impedance	47kΩ + 100pF
Frequency response (ref. RIAA curve)	20Hz – 20kHz ± 1dB
Signal/Noise ratio (A-wtd) 50W, ref. 5mV input	80dB
Overload margin, ref. 5mV at 1kHz	21dB
Line Inputs:	
Nominal sensitivity	1V
Input impedance	10kΩ
Maximum input	6Vrms
Frequency response	20Hz – 20kHz ± 0.2dB
Signal/Noise ratio (A-wtd) 50W, ref. 1V input	106dB

Digital Inputs		
DAC		ESS9016K2M
Frequency response		20Hz - 20kHz ± 0.05dB
Total harmonics distortion + Noise		0.0007%
Signal/Noise ratio (A-wtd)		115dB
Supported sample rates	Optical	32kHz, 44.1kHz, 48kHz, 88.2kHz, 96kHz
	Coaxial	32kHz, 44.1kHz, 48kHz, 88.2kHz, 96kHz, 176.4kHz, 192kHz
Bit depth		16-bit – 24-bit

Pre-amplifier output	
Nominal output level	630mV
Output impedance	230Ω
Headphone output	
Maximum output level into 600Ω	5Vrms
Output impedance	1Ω
Load range	16Ω – 2kΩ
General	
Mains voltage	110–120V or 220–240V, 50–60Hz
Maximum power consumption	350W
Dimensions W x H x D (including feet, control knob and speaker terminals)	433x87x310mm
Weight (net)	8.4kg
Weight (gross)	10.7kg
Supplied accessories	Mains leads Remote control 2 x AAA batteries

SA20 Specifications

Continuous power output (0.5% THD), per channel	
Both channels, 8Ω, 20Hz—20kHz	90W
Both channels, 4Ω, at 1kHz	150W
Harmonic distortion, 80% power, 8Ω at 1kHz	0.002%
Analogue Inputs	
Phono (MM) cartridge:	
Input sensitivity at 1kHz	5mV
Input impedance	47kΩ + 100pF
Frequency response (ref. RIAA curve)	20Hz – 20kHz ± 1dB
Signal/Noise ratio (A-wtd) 50W, ref. 5mV input	80dB
Overload margin, ref. 5mV at 1kHz	21dB
Line Inputs:	
Nominal sensitivity	1V
Input impedance	10kΩ
Maximum input	6Vrms
Frequency response	20Hz – 20kHz ± 0.2dB
Signal/Noise ratio (A-wtd) 50W, ref. 1V input	106dB
Digital Inputs		
DAC	ESS9038K2M	
Frequency response	20Hz - 20kHz ± 0.05dB	
Total harmonics distortion + Noise	0.0007%	
Signal/Noise ratio (A-wtd)	115dB	
Supported sample rates	Optical	32kHz, 44.1kHz, 48kHz, 88.2kHz, 96kHz
	Coaxial	32kHz, 44.1kHz, 48kHz, 88.2kHz, 96kHz, 176.4kHz, 192kHz
Bit depth	16-bit – 24-bit	

Pre-amplifier output	
Nominal output level	630mV
Output impedance	230Ω
Headphone output	
Maximum output level into 600Ω	5Vrms
Output impedance	1Ω
Load range	16Ω – 2kΩ
General	
Mains voltage	110–120V or 220–240V, 50–60Hz
Maximum power consumption	500W
Dimensions W x H x D (including feet, control knob and speaker terminals)	433x87x323mm
Weight (net)	9.2kg
Weight (gross)	11.1kg
Supplied accessories	Mains leads Remote control 2 x AAA batteries

All specification values are typical unless otherwise stated. Arcam has a policy of continuous improvement for its products. This means that designs and specifications are subject to change without notice. E&OE.

Worldwide Guarantee

This entitles you to have the unit repaired free of charge, during the first five years after purchase, provided that it was originally purchased from an authorised Arcam dealer. The Arcam dealer is responsible for all after-sales service. The manufacturer can take no responsibility for defects arising from accident, misuse, abuse, wear and tear, neglect or through unauthorised adjustment and/or repair, neither can they accept responsibility for damage or loss occurring during transit to or from the person claiming under the guarantee.

The warranty covers:

Parts (excluding disc drives) and labour costs for five years from the purchase date (see below for additional terms and conditions). After five years you must pay for both parts and labour costs.

*Disc drives (of any type) are covered under this warranty for **two** years from the purchase date.*

The warranty does not cover battery replacement at any time.

The warranty does not cover transportation costs at any time.

Claims under guarantee

This equipment should be packed in the original packing and returned to the dealer from whom it was purchased. It should be sent carriage prepaid by a reputable carrier – **not by post**. No responsibility can be accepted for the unit whilst in transit to the dealer or distributor and customers are therefore advised to insure the unit against loss or damage whilst in transit.

For further details contact Arcam at ***arcam.support@harman.com***

Problems?

If your Arcam dealer is unable to answer any query regarding this or any other Arcam product please contact Arcam Customer Support at the above address and we will do our best to help you.

On-line registration

You can register your product on-line at ***www.arcam.co.uk***.

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