

AC-A3016 Referenz Operating Manual

OPERATING MANUAL



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Congratulations on your purchase of an AC-A3016 active power distributor. This high-tech product was developed drawing on the latest technological advancements and is equipped with the most up-to-date technological features.

So that you can enjoy your new product from the very beginning, we ask that you carefully read the following operating manual.

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Safety instructions

1. General

Please read, observe and follow the following safety instructions. Please save the operating manual. Observe all the warning notices on the device and in the operating manual.

2. Proper use

Connect the product as indicated in the operating manual. Only use the cables and accessories provided by the manufacturer. Use only appropriate stands, brackets, shelves and other devices for the attachment and support of the products. When moving the support surfaces upon which products are placed, be very careful in order to avoid injuries and damage resulting from falling products.

3. Moisture

Select a location for the product which does not have a high level of relative humidity. Never use this device near water. Wetness can bypass the electrical insulation and thus present a fatal danger, as it can for all devices not specially designed to be water-resistant. The devices may not be exposed to dripping or sprayed water. No objects may be placed on the devices, especially those which are filled with water or other liquids (e.g. vases, etc.).

4. Protecting the product

Do not under any circumstances expose the devices to high levels of humidity. Extreme temperature fluctuations, humidity and extended exposure to light can damage the devices and alter their appearance. Make sure that no foreign objects or liquids enter the device.

5. Positioning

Do not position the product near sources of heat, heaters, heating valves, ovens or other devices which generate heat. Never block the ventilation slots on the devices. The devices may only be stored and operated in a temperature range from +15 to +30°C.

The device heats up during operation. To prevent unnecessary activation of the over-temperature shutdown feature, the device must be allowed proper air circulation.

Products without a magnetic shield may discolour or distort a nearby television. A distance of 0.5 m or greater is normally sufficient to prevent such disturbances. Most televisions have a built-in correction circuit for such occurrences. When these devices are switched off and switched on again a few minutes later, the picture should be largely corrected.

Do not place credit cards or other magnetic data carriers on the device; the information saved on them could be destroyed.

6. Grounding / Earthing

Caution! The decoupling filters of the AC-A3016 cause increased heat losses. For this reason, the device must only be plugged into sockets (grounded/earthed outlets) with a properly functioning protective earth!

7. Connection

The device may only be connected to the mains voltage which is indicated on the device (pos. 6)! Improper handling of the mains voltage may cause fatal injuries! All cables must be positioned in such a way that there is no danger of them being damaged (e.g. being stepped on, placed under furniture or spikes underneath loudspeakers). Never remove cables by pulling the cable; instead, always hold the plug when disconnecting.

When the device is in stand-by mode, it is not completely disconnected from the mains, as is indicated on the LED on the front. In order to avoid unnecessary risks and energy consumption during extended absences, the mains switch on the back of the device should be switched off and the mains plug should be disconnected.

The mains plug and the mains on/off switch for the device should be easily accessible.

8. Overload

In cases of extreme overload, it is possible for individual components to burn through despite multiple fuses. It is also theoretically possible (although we are not aware of any such incidents) that such overload could cause a fire to ignite inside of the device. Therefore, you should not leave the devices unattended when operating an at extremely high level.

9. Maintenance

All service work on the devices should be performed exclusively by service personnel. Servicing is necessary for all types of damage, i.e. if cables and plugs are damaged, if liquid spills into or objects fall onto the device, if the device is dropped or falls down, if foreign objects enter the device, if the device is exposed to rain or humidity or if any other influences should impair the device from functioning properly.

Opening the housing is strictly prohibited, as the components and conductors may carry potentially fatal voltage!

10. Fuses

All necessary fuses have been integrated in the device. These fuses may only be changed by qualified service technicians. In doing so, all specified fuse values must be observed. If the replaced fuse blows immediately, the device should be handed in to be serviced. No liability is accepted for damage caused by unauthorised intervention or incorrect fuse types.

11. Care

Unplug the active power distributor before cleaning it. Always clean the product with a soft, dry and lint-free cloth, or with a brush. Do not under any circumstances use scouring agents, alcohol, benzene, furniture polish or similar substances.

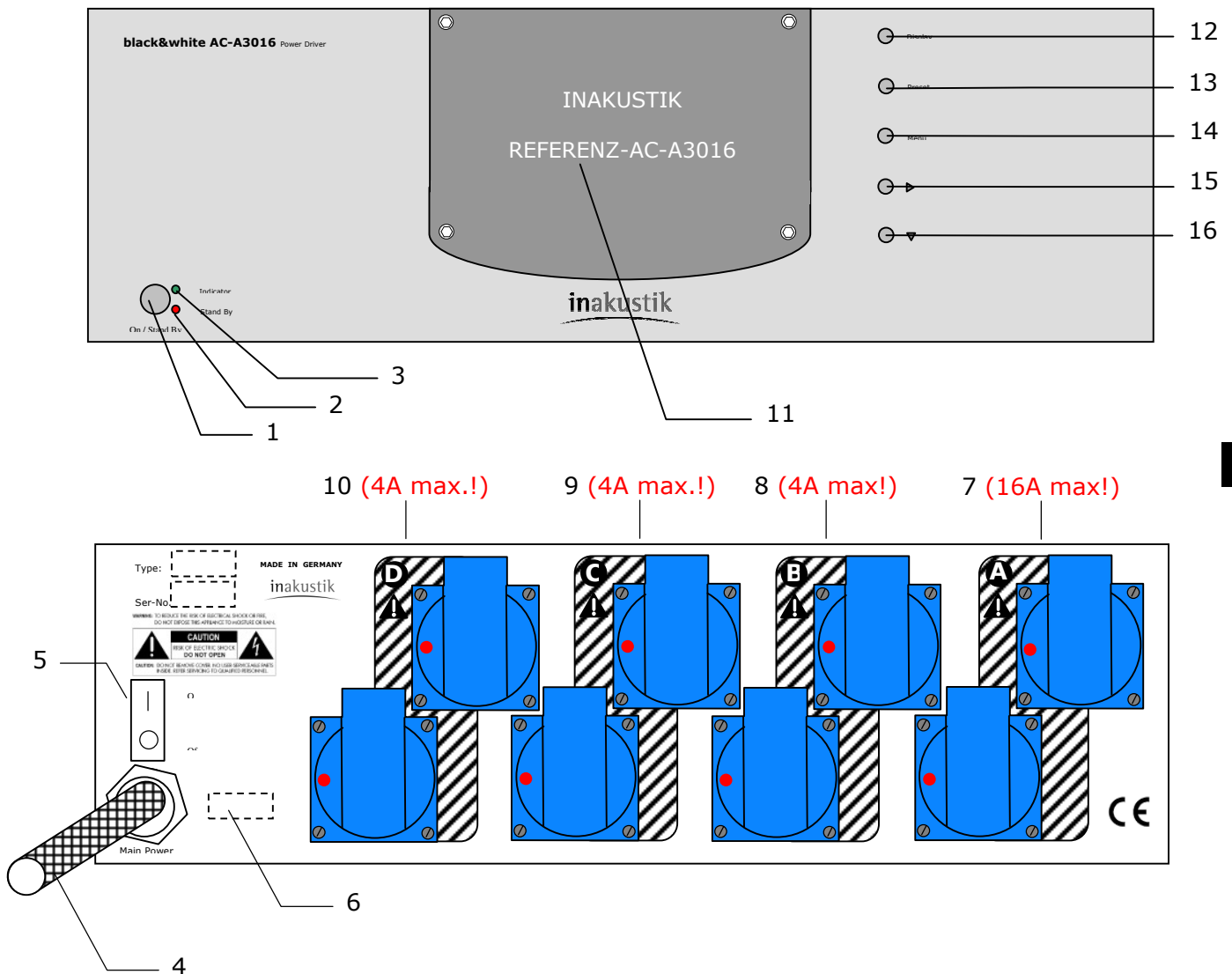
Package contents

1 x AC-A3016 active power distributor
1 x active screening/phase tester
1 x operating manual

Set-up

The AC-A3016 active power distributor is a high-performance power source which can become hot during operation. In order to avoid malfunctions and damage, the AC-A3016 active power distributor should not be covered and must be well ventilated. To ensure sufficient heat dissipation, the device should be positioned so that at least 15 cm of clearance space is maintained (above, next to and behind) between the device and walls or other devices.

Front- and Rearview



- The Phase of the AC-sockets is always on the side of the AC power cable (on the left – when seen from behind as marked here with a RED dot)

- 1 - STAND BY BUTTON
- 2 - STAND BY LED (RED)
- 3 - INDICATOR LED (GREEN)
- 4 - AC POWER CABLE
- 5 - MAINS SWITCH
- 6 - OPERATING VOLTAGE INDICATION

- 7 - 2 X SOCKETS GROUP A "HIGH POWER", 16A MAX.
- 8 - 2 X SOCKETS GROUP B "ANALOG", 4A MAX.
- 9 - 2 X SOCKETS GROUP C "DIGITAL", 4A MAX.
- 10 - 2 X SOCKETS GROUP D "VIDEO", 4A MAX.

- 11 - DISPLAY
- 12 - BUTTON "DISPLAY"
- 13 - BUTTON "PRESET"
- 14 - BUTTON "MENU"
- 15 - BUTTON "RIGHT"
- 16 - BUTTON "DOWN"

Connection

CAUTION: The active power distributor is equipped with safety features (see pages 11- 12) which may cause all connected components to be switched off suddenly! In certain circumstances, this could damage components or result in the loss of data. It is **IMPERATIVE** that table 1 on page 10 is observed in order to determine which components may not be suitable for use with the device or which may be at risk of being damaged.

1. Before connecting the AC-A3016 active power distributor, please switch off all components and un-plug the respective mains plugs.
2. If your system already has a power strip, please remove it.
3. Position the active power distributor next to your other components. The active power distributor may not be covered and should be sufficiently ventilated (refer to Set-up on page 6). Note the length of the cables of the other components which will be connected to the active power distributor. The cables should be sufficient in length and may not be crimped, crushed or stretched under too much tension.
4. The AC-A3016 is equipped with 4 groups, each with 2 sockets (items 7-10). Every group can be assigned to a special filter (page 14) perfectly tailored to device characteristics. The following filters are available: Filter Off | High Power | Analogue | Digital | Group D | Video. The groups can also be switched off individually (page 15).

Please note that socket groups B, C and D can each be loaded with a maximum of 4 ampere (4A / 920 W in total - distributed to two sockets)..

The device categories are described in more detail on page 10. You can find an example on page 21 and a table where you can plan the device connections and the preset configurations on page 23.

The voltage regulators for groups B - C - D can be loaded with a maximum of 920 W/4 A. The peak current here is 25 ampere.

5. Plug the mains power cable (item 4) of the active power distributor into a wall socket.

CAUTION: It is imperative that the phase orientation on the mains plug is observed! The pin on the SAFETY socket with the white indicator dot MUST be connected in phase. Non-compliance will significantly reduce the functionality and performance of the active power distributor.

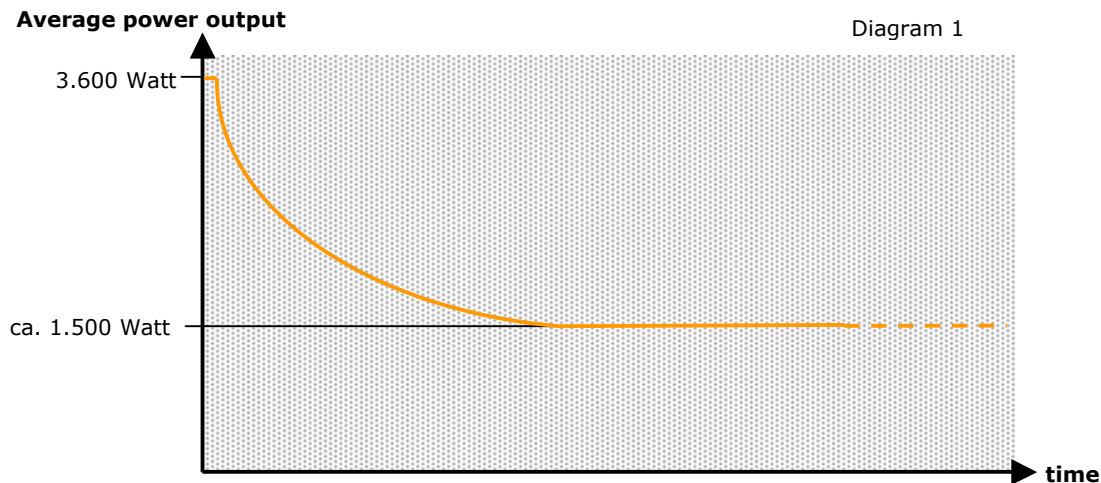
An active screening tester has been supplied in order to determine the phase of the power socket (see page 13). If in doubt, please consult a qualified electrician.

6. Before you start running all components now, please check again the whole installation of your components.

Power rating

The active power distributor was developed for the operation of hi-fi and video devices. Its core component is a sophisticated power controller, which stabilises the voltage to the plug sockets (pos. 7 – 10). In principle, the controller (group A) regulates outputs of up to 3600 W / 16A. The controller can even handle short current spikes exceeding 100 amps, which may be produced when connected components are switched on. The voltage regulators for groups B-C-D can be loaded with a maximum of 920 W/4 A. The peak current here is 25 ampere.

Heat which is generated during continuous high-output operation is largely dissipated through an integrated cooling system. The maximum average power output of the active power distributor is dependent on the ambient air temperature, ventilation and the effective mains voltage. Prolonged, extremely high-output operation (i.e. average power output too high) can cause the power distributor to reach the temperature limit, at which point it will switch off (more under Safety features on page 12). The following diagram is intended to provide a better understanding of how the active power distributor's power-handling capacity is dependent on time:



Devices have different performance characteristics. We differentiate between devices with high and low, as well as constant and dynamic power consumption. For example, the power consumption of amplifiers is high but dynamic. Thus, the average power output of a 1000 W amplifier may "only" amount to 100 W at very high levels. In other words, large amplifiers have lower power consumption and normally do not pose a problem, even during prolonged operation. In contrast, a hotplate has a high and constant power output, which means it has a high average power output. These performance characteristics are shown in table 1 on page 10 (household appliances and electric machines have been listed in order to help provide a better understanding).

Intended use

The active power distributor is exclusively designed to power consumer electronics / AV equipment. This function is linked to maximum continuous output and safety aspects.

The following table provides information about devices which may and may **not** be operated with the active power distributor:.

table 1

Device/socket class	Device	Performance characteristics	Average power output	Suitable?	Comment
AV Analog	D Record player Preamplifier Phono Tape Decks Cassette recorder	Low, constant Low, constant Low, constant Low, constant Low, constant	Low Low Low Low Low	Yes	
AV Video	C Video recorder LCD TV Plasma TV Tube (CRT) TV Sat Receiver DVD Player	Low, constant Medium, constant Medium, dynamic Medium, dynamic Low, constant Low, constant	Low medium medium medium Low Low	Yes	
AV Digital	B CD Player D/A converter Surround Processors MD Player DAT Geräte MP3 / i-pod	Low, constant Low, constant Low, constant Low, constant Low, constant Low, constant	Low Low Low Low Low Low	Yes	
AV High Power	A Integrated amplifier Power amplifier AV Receiver Class A Verstärker	High, dynamic High, dynamic High, dynamic high, +/- constant	high high high high - very high	Yes	
Household appliances	! Washing machine Clothes dryer Hair dryer Clothes iron Waffle iron / deep fryer Microwave Oven / hot plates	high, constant high, constant high, constant high, constant high, constant high, constant high, constant	very high very high very high very high very high very high very high	Not suitable	The active power distributor would be unnecessarily loaded and would very quickly reach its power / temperature limit.
Electric machines	! Drills Keyhole saws Circular saws Angle grinders Welding devices etc.	High, dynamic High, dynamic High, dynamic High, dynamic Very high	high high high high very high	Not suitable	See Above!
Others *	! Medical devices Computer Computer accessories Data storage unit Projectors ** Refrigerators freezers etc.			May NOT be connected !!	Damages and data loss may result if the active power distributor shuts down on its own.

Very Important!

* Absolutely no medical/life-supporting devices or any other such devices which require a controlled shutdown may be connected to the active power distributor!

** Projectors may not be connected, as fan after-run time has to be ensured for the cooling of the lamp. If the active power distributor were to be unexpectedly switched off, either manually or automatically for safety reasons, the lamp could be destroyed.

Operating

After you have made all connections and inspected them, switch-on the AC-A3016 active power distributor at the main switch (pos. 5). The device is now in stand-by mode and the red LED (pos. 2) is lit. Activate the power distributor by pressing the stand-by button (pos. 1), the red LED goes out. The blinking of the green LED indicator (pos. 1) signals the switch-on delay. After approx. one minute, the active power distributor's power sockets are switched on and the connected components are supplied with power.

Note:

The active power distributor requires approx. 15 minutes after a cold start (first time it is switched on after being disconnected from the mains) in order to reach its operating temperature, to bias all electronic operation points and to stabilise the output voltage at the plug sockets (pos. 7 – 10) to 230 V.

Only then will the active power distributor have reached its full performance level. To facilitate this process, the active power distributor is equipped with an integrated heater which helps to stabilise the internal voltage reference in terms of temperature.

During the warm-up phase, the voltage at the plug sockets on the active power distributor can be slightly higher than 230V, but still within standard mains tolerance. This poses no problem for the connected devices.

If you would like to make an A-B comparison with another mains distributor (e.g. your old power strip), you should first allow the AC-A2016 active power distributor to reach its operating temperature..

Safety features

The active power distributor has various process-controlled safety features, which protect both the connected devices as well as the active power distributor itself.

1. Normal operation:

The LED indicator (pos. 3) continuously lights up in green during normal operation.

2. Over-voltage protection:

The active power distributor suppresses short voltage spikes, and thus protects the connected devices. Caution: The active power distributor is NOT equipped with a lightning arrester!

If the mains voltage from the wall socket is too high over a prolonged period (>245V), thus putting the active power distributor and connected devices at risk, the active power distributor will switch off the plug sockets (pos. 7 – 10).

The message "Mains voltage too high" appears in the display (item 11).

3. Under-voltage protection:

If the mains voltage from the wall socket is too low over a prolonged period ($< 215V$), thus compromising the performance of the active power distributor, the device will switch off the plug sockets (pos. 7 – 10). The message "Mains voltage too low" appears in the display (item 11).

4. Over-temperature protection:

The active power distributor is equipped with a fan to facilitate the dissipation of heat during high-output operation. This fan is regulated by the temperature of the device. If the fan cannot provide sufficient cooling because the operating temperature is too high, the device is not properly positioned or output is too high over a prolonged period (diagram 1, page 9), the active power distributor can switch off. In order to allow counter measures to be carried out (e.g. switching off components not in use, lowering the volume), from $65^{\circ}C$ the temperature is automatically indicated. If, however, the active power distributor still becomes too hot ($>75^{\circ}C$), the sockets are switched off and the message "Device too hot" appears in the display. Once the temperature drops below $65^{\circ}C$, the sockets switch on again and the device can be operated normally.

5. Overload protection:

If the active power distributor reaches its maximum output limit, it will switch off. This may result from connecting too many devices when the overall output exceeds 3600 W or if the active power distributor has to compensate for excessive differences in voltage due to insufficient power supply from the wall socket. In this case, the message "Output too high" appears in the display.

6. Current-limit control:

If devices are connected which require a starting current that is too high (> 100 Amps), the active power distributor will attempt to activate the connected device via the integrated current limiter. You may hear the internal relays clicking when this happens. If this attempt should fail, the active power distributor switches the sockets off and the message "Current too high" appears in the display.

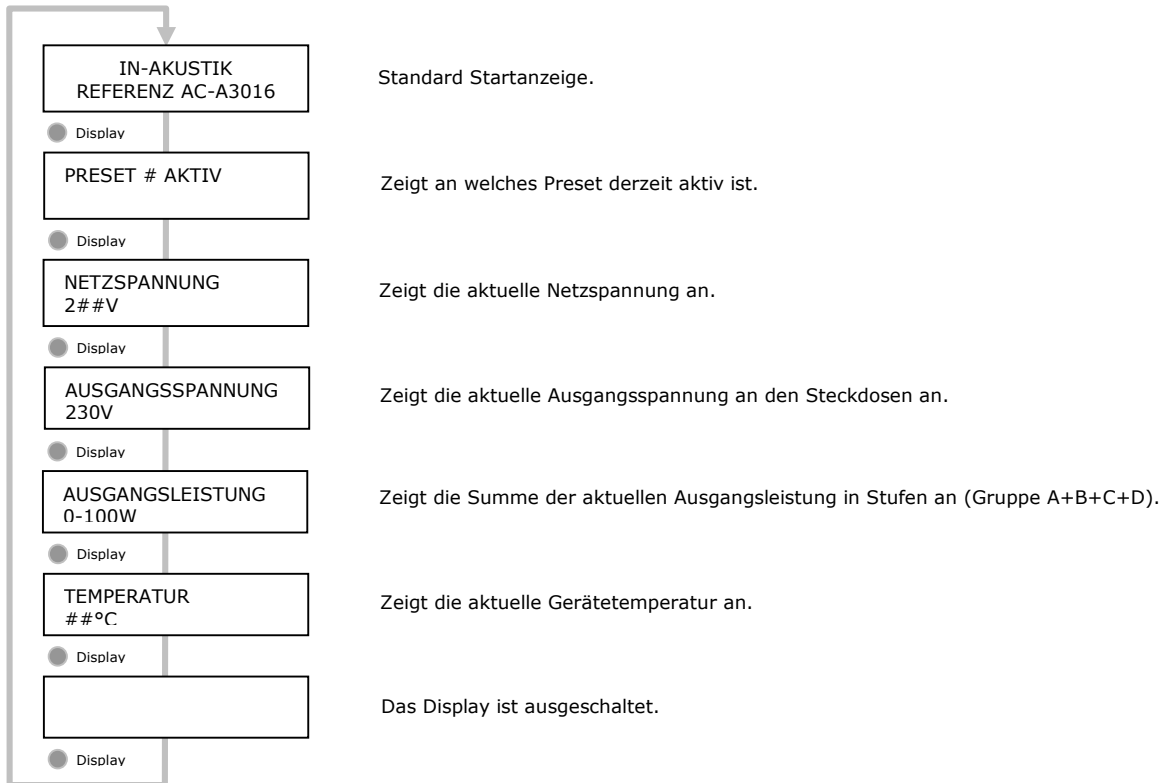
7. Bridge mode:

The power distributor is equipped with a bridge mode to protect the voltage regulators from critical loads. It is automatically activated if the maximum permissible peak current is exceeded, e.g. when a large amplifier is connected. The active power distributor returns to normal operation after approximately 3 min.

This mode is also active for 3 min. after switching on the system.

Display

Über das Display können verschiedene Parameter wie unten beschrieben abgerufen werden.



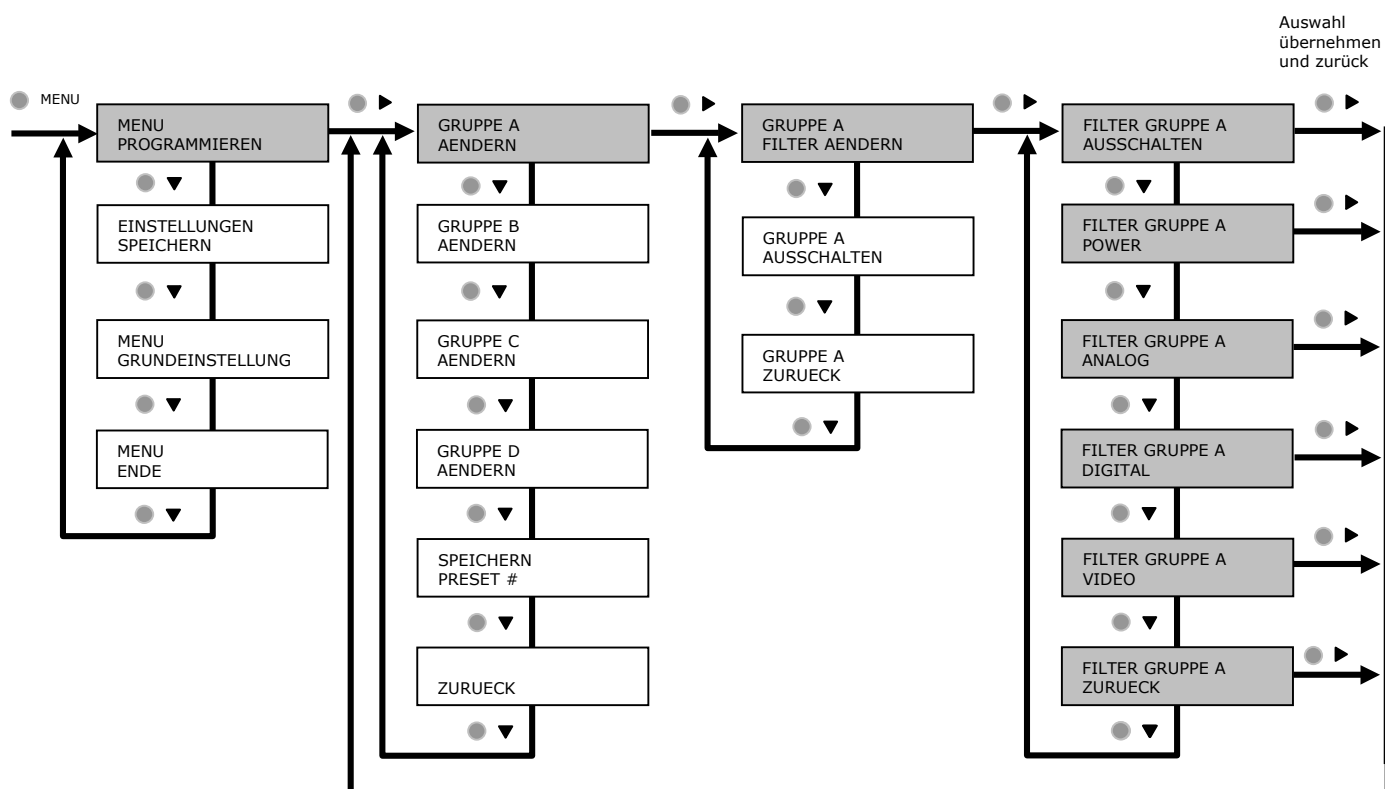
Programming

You can adapt the AC-A3016 active power distributor to suit your individual needs. You can either freely define filters for the four socket groups or switch on the groups individually. There are also eight preset memory spaces available for storing scenarios. The table on page 22 is provided for planning the configuration of the active power distributor. Programming instructions are provided on the following pages.

Programming

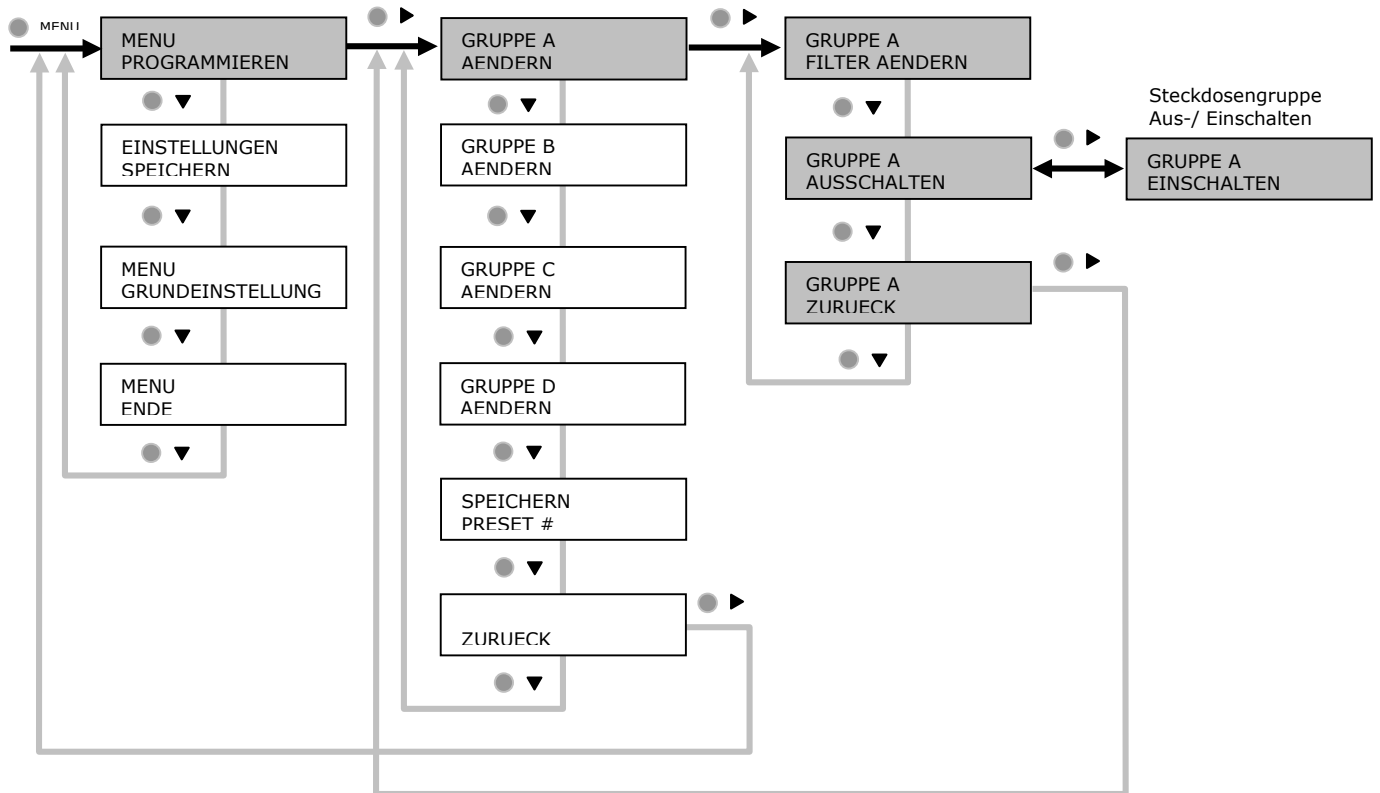
1. Socket groups - Setting filters

The diagram below shows how filters are set for socket group A. The same approach applies to groups B to D. To save these settings, follow the instructions on page 16 and 17.



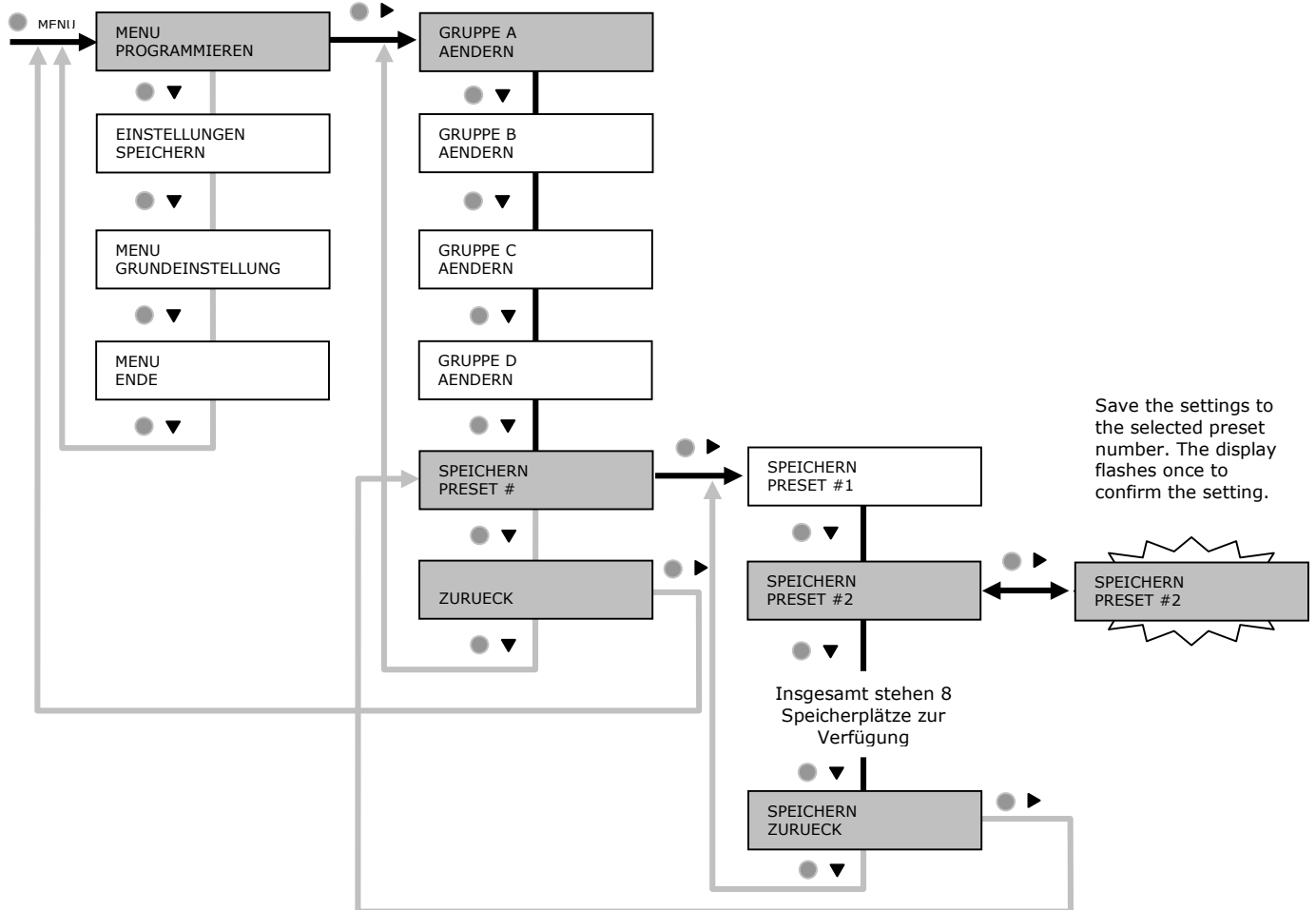
2. Switching socket groups on/off

For example, the diagram below shows how socket group A is switched on and off. The same approach applies to groups B to D. To save these settings, follow the instructions on page 16 and 17.



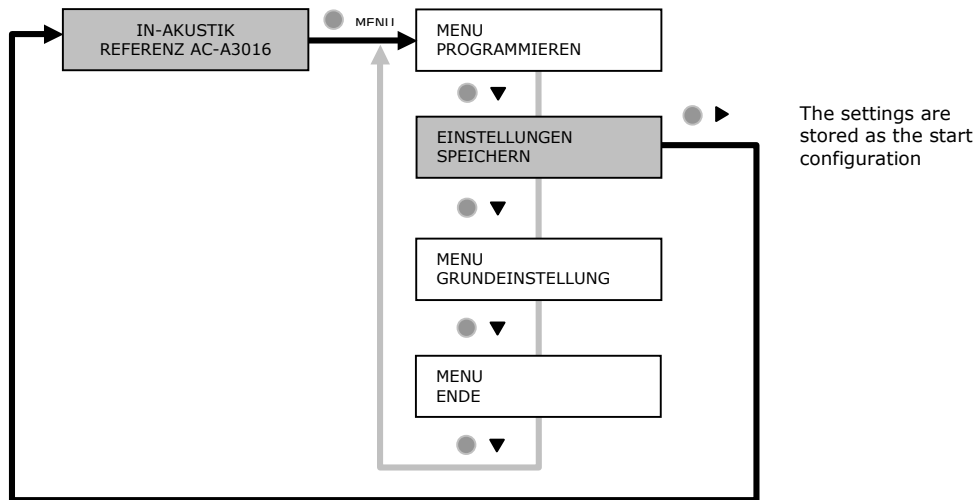
3. Saving settings

There are a total of 8 memory spaces (presets #1 to #8) to save the current settings of all groups; these can be called up with the Preset button (see page 17). In the example below, the settings are saved to preset #2.



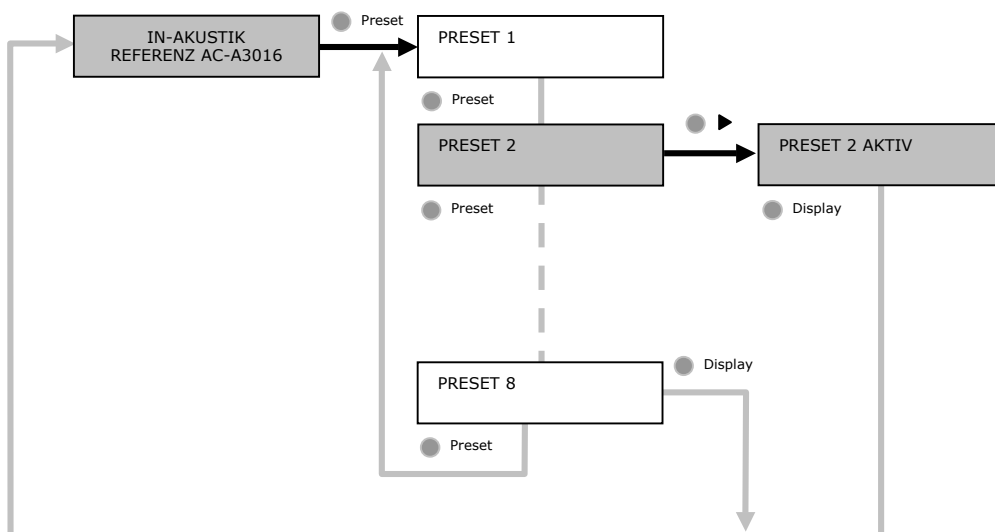
4. Storing a start configuration

You can store the current settings as the start configuration. The settings are automatically called up each time the AC-A3016 is started (preset 0). To do this, proceed as follows:



5. Calling up stored settings

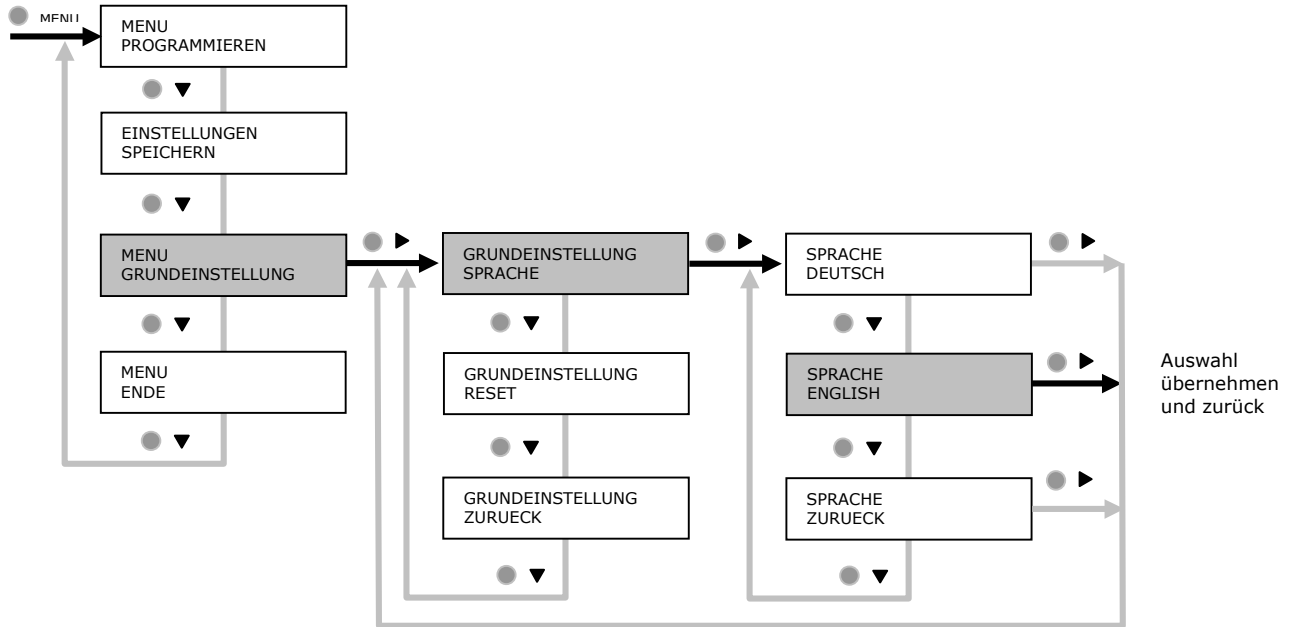
There are a total of eight memory spaces available for storing the current settings of all groups. In the example below, the settings stored to preset #2 are called up and adopted.



Basic settings

1. Select a language

The menu language of AC-A3016 can be set as follows:

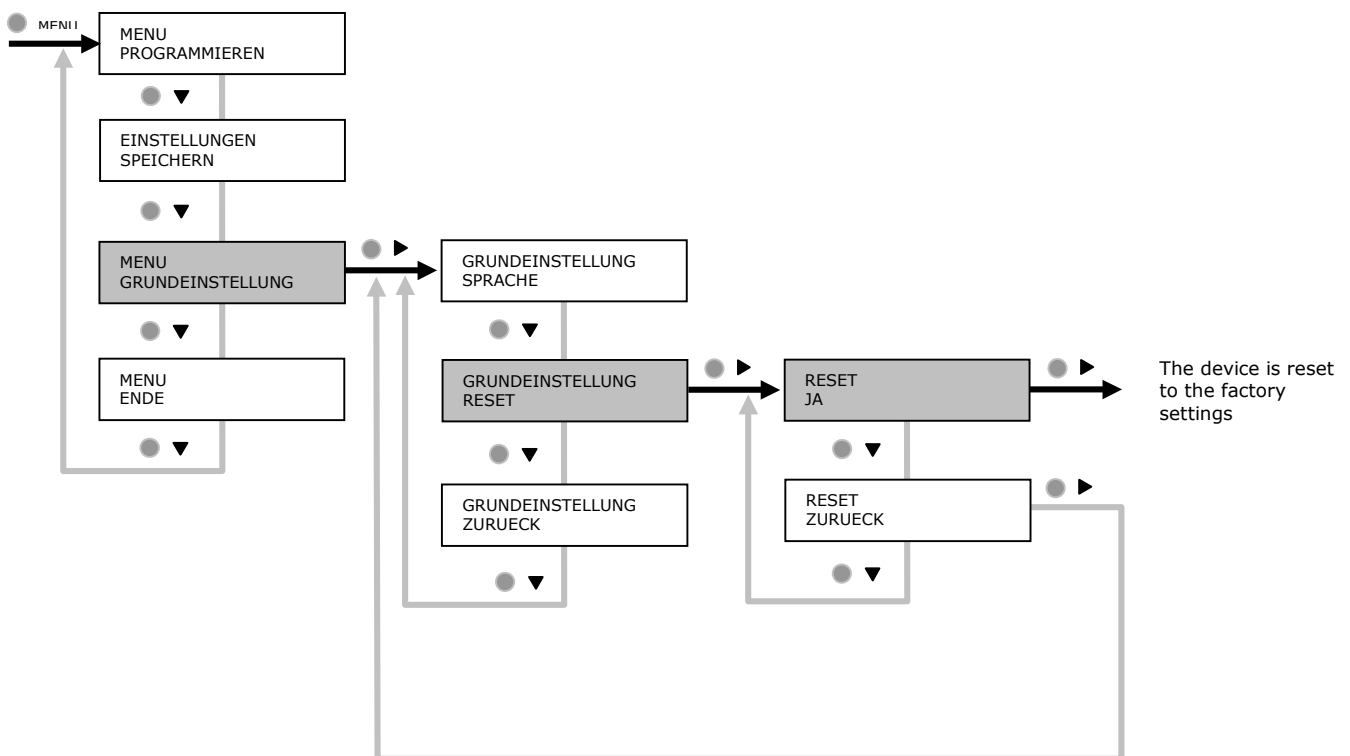


4. Reset

The AC-A3016 is delivered with the following factory settings

Menusprache	= Deutsch	
Start Set up Gruppe A	= Ein	Filter = Power
Start Set up Gruppe B	= Ein	Filter = Analog
Start Set up Gruppe C	= Ein	Filter = Digital
Start Set up Gruppe D	= Ein	Filter = Video

The factory settings of the device can be reset as described below. However, the stored presets #1 to #8 are retained.



Care

The active power distributor may NOT be cleaned with aggressive or caustic cleaning agents. Remove dust and dirt with a soft cloth or brush. Please observe the safety instructions.

Troubleshooting

The red stand-by LED (pos. 3) is not lit and the device will not switch on.

- Check the mains connection (pos. 4)
- Check the plug socket and the corresponding fuse in the mains distribution panel

The green LED indicator (pos. 2) is blinking and the device will not switch on, but the fan is running.

- The device overheated and is still cooling down. Allow it to cool
- Check the position and ventilation
- Check the sum of the connected continuous loads (diagram 1, page 9).

The active power distributor switches off after operating for a short period, the green LED indicator (pos. 2) is blinking and the fan is running.

- Check the position and ventilation
- Check the sum of the connected continuous loads (diagram 1, page 9)

When a connected component is switched on, the active power distributor clicks three times then switches off.

- The starting current of the respective component is much too high (> 100 Amps))

The active power distributor also switches off after a short period even though output is minimal.

- Check the polarity/phase of the mains plug (see details on page 8 under Connection, point 5)

After switching on the active power distributor, it immediately switches back to stand-by mode.

- The device has malfunctioned and must be handed in for service.

Technical data

Dimensions:	ca. 435 x 142 x 365m m (LxHxD)
Weight:	ca. 20 kg
Temperature range:	+15 bis +30°C
Power consumption:	stand by = 8 VA on = 80 – 3600VA
Sockets:	4 groups per 2 sockets
Output rating:	group A: max. 16A / 3600 VA group C-D: max 4A / 920 VA per group (see details under Power rating on pages 9 + 10)

Example configuration

The table shows an example of multiple uses for the AC-A3016. The devices are grouped and filters set here in such a way as to achieve the highest performance with each different application - for pure analogue audio, digital audio and, of course, home cinema.

You can also use the various filter settings to make targeted changes to the sound properties of your system.

Gruppe	Steckdose	Gerät	Preset 1 (analog Audio)		Preset 2 (digital Audio)		Preset 3 (Heimkino)	
			EIN/AUS	Filter	EIN/AUS	Filter	EIN/AUS	Filter
A (16A)	1	Endstufe	EIN	HIGH POWER	EIN	HIGH POWER	EIN	VIDEO
	2	AV Receiver						
B (4A)	1	Vorverstärker	EIN	ANALOG	EIN	ANALOG	EIN	HIGH POWER
	2	Subwoofer						
C (4A)	1	Phono Vorstufe	EIN	ANALOG	AUS	AUS	EIN	VIDEO
	2	DVD Player						
D (4A)	1	Beamer	AUS	AUS	EIN	DIGITAL	EIN	VIDEO
	2	CD Player						

Configuration table Device connection

In the adjacent table you can plan the grouping and connections for your components, which will ensure you can store and later access the best possible AC-A3016 configuration for each individual system use.

Gruppe	Gerät	Preset 0		Preset 1		Preset 2		Preset 3		Preset 4		Preset 5		Preset 6		Preset 7		Preset 8	
		EIN/AUS	FILTER	EIN/AUS	FILTER	EIN/AUS	FILTER	EIN/AUS	FILTER	EIN/AUS	FILTER	EIN/AUS	FILTER	EIN/AUS	FILTER	EIN/AUS	FILTER	EIN/AUS	FILTER
A	1																		
	2																		
B	1																		
	2																		
C	1																		
	2																		
D	1																		
	2																		

Active screening/phase tester

Phase test:

Plug the tip of screening tester into both of the holes (alternately) in the plug socket and then let go of the screening tester. The hole in which the screening tester lights up (LED) is the phase. Plug the mains plug from the AC-A1016 active power distributor into the plug socket so that the white indicator dot on the plug is aligned with the phased hole of the plug socket. We also recommend that you mark the phase hole on the plug socket.

CAUTION: The screening tester is not suitable for determining whether the plug sockets and the devices are de-energised! Work on electrical devices and installations should only be performed by a qualified electrician.

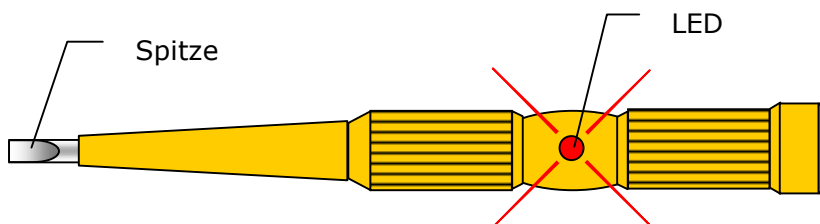
Screening test:

Hold the screening tester firmly by the tip and run it along the length of the cable to be tested. If the screening tester lights up, the cable is not screened

Note: This only works, of course, with 230V power cables which are also plugged in / switched on!

Polarity test:

You can also use the screening tester to test whether lamps and devices with cable switches are plugged in in the right direction. The switch should switch the phase, not the neutral conductor. Switch off the lamp and run the screening tester along the length of the cable. It will light up in front of the switch, and go out behind the switch. If not, rotate the mains plug and test the cable again. This can be done to reduce electromagnetic pollution in your environment, as well as to reduce the "load" on your hi-fi components.



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Note: All product illustrations are approximate. Specifications subject to change without notice