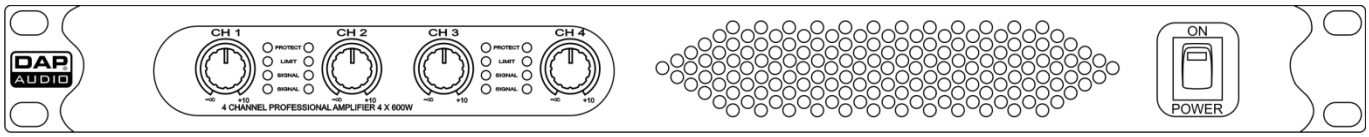
MANUAL



ENGLISH

Qi-4200 / 4400 / 4600 V1

Ordercode: D4530 / D4531 / D4532

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Warning

For your own safety, please read this user manual carefully before your initial start-up!

Unpacking Instructions

Immediately upon receiving this product, carefully unpack the carton and check the contents to ensure that all parts are present and have been received in good condition. Notify the dealer immediately and retain packing material for inspection if any parts appear damaged from shipping or the carton itself shows signs of mishandling. Save the carton and all packing materials. In the event that a fixture must be returned to the factory, it is important that the fixture be returned in the original factory box and packing.

Your shipment includes:

- Qi-4200 / 4400 / 4600
- User manual

CAUTION!
Keep this device away from rain and moisture!
Unplug mains lead before opening the housing!

Safety Instructions

Every person involved with the installation, operation and maintenance of this system has to:

- be qualified
- follow the instructions of this manual

CAUTION! Be careful with your operations.
With a dangerous voltage you can suffer
a dangerous electric shock when touching the wires!

Before the initial start-up, please make sure that there is no damage caused by transportation. Should there be any, consult your dealer and do not use the system.

To maintain perfect condition and to ensure a safe operation, it is absolutely necessary for the user to follow the safety instructions and warning notes written in this manual.

Please consider that damages caused by manual modifications to the system are not subject to warranty.

This system contains no user-serviceable parts. Refer servicing to qualified technicians only.

IMPORTANT:
The manufacturer will not accept liability for any resulting damages caused by the non-observance of this manual or any unauthorized modification to the system.

- Always let the device cool down before cleaning or servicing.
- Always disconnect power from the mains, when system is not used. Only handle the power cord by the plug. Never pull out the plug by tugging the power cord.
- Always operate the unit with the AC ground wire connected to the electrical system ground.
- Avoid flames and do not put close to flammable liquids or gases.
- Avoid ground loops! Always be sure to connect the power amps and the mixing console to the same electrical circuit to ensure the same phase!

- Before changing the ground, always turn off your amplifier.
- Connecting amplifier outputs to oscilloscopes or other test equipment, while the amplifier is in bridge mode, may damage both, the amplifier and test equipment.
- Do not connect this device to a dimmer pack.
- Do not drive the inputs with a signal level bigger than required to drive the equipment to full output.
- Do not insert objects into air vents.
- Do not open the device and do not modify the device.
- Do not open this device. Risk: hazardous radiation exposure.
- Do not switch the system on and off in short intervals, as this would reduce the system's life.
- Do not put your equipment next to TV, radio, etc., because of interference or distortion.
- If device is dropped or struck, disconnect mains power supply immediately. Have a qualified engineer inspect for safety before operating.
- If the system has been exposed to drastic temperature fluctuation (e.g. after transportation), do not switch it on immediately. The arising condensation water might damage your system. Leave the system switched off until it has reached room temperature.
- If you connect other parts of the system, beware ground loops.
- If your Dap Audio device fails to work properly, discontinue use immediately. Pack the unit securely (preferably in the original packing material) and return it to your Dap Audio dealer for service.
- In system setup, the amplifier's output power must be 50%-100% higher than the loaded loudspeakers rated power.
- In typical use, please set the volume to 0dB position.
- Make sure that the amplifier is turned down, before turning the power on or off. In this way you can avoid supersonic frequencies, which could damage your speakers.
- Make sure that the available voltage is not higher than stated on the rear panel.
- Make sure that the power cord is never crimped or damaged. Check the device and the power cord from time to time.
- Make sure that the signals coming into the mixer are balanced, otherwise hum could be created.
- Make sure you do not use the wrong kind of cables or defective cables.
- Make sure you use DI boxes to balance unbalanced signals; All incoming signals should be clear
- Never let the power cord come into contact with other cables! Handle the power cord and all connections with the mains with particular caution!
- Never remove warning or informative labels from the unit.
- Never use anything to cover the ground contact.
- Only use device indoors, avoid contact with water or other liquids.
- Please read this manual carefully and keep it for future reference. Remember that the amplifier has a better value on the market, if you save the carton and all packing materials.
- Please turn off the power switch, when replacing the power cord, signal cable or selecting the input mode switch.
- Prevent distortion! Make sure that all components connected to the device have sufficient power ratings. Otherwise, distortion will be generated because the components are operated at their limits.
- Sometimes, when you want to send one signal to more than one amplifier, you should use a signal distributor.
- The best way to avoid ground loops is connecting the electrical system ground to one central point ("star" system). In this case the mixer can act as a central point.
- This device falls under protection class I. Therefore it is essential to connect the yellow/green conductor to earth.
- The user is responsible for correct positioning and operating of the Qi amplifier. The manufacturer will not accept liability for damages caused by the misuse or incorrect installation of this device.
- Repairs, servicing and electric connection must be carried out by a qualified technician.
- WARRANTY: Till one year after date of purchase.

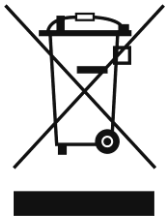
Operating Determinations

This system is not designed for permanent operation. Consistent operation breaks will ensure that the system will serve you for a long time without defects.

If this system is operated in any other way than the one described in this manual, the product may suffer damages and the warranty becomes void.
Any other operation may lead to dangers like short-circuit, burns, electric shock, etc.

You endanger your own safety and the safety of others!

Improper installation can cause serious damage to people and property !



Return Procedure

Returned merchandise must be sent prepaid and in the original packing, call tags will not be issued. Package must be clearly labeled with a Return Authorization Number (RMA number). Products returned without an RMA number will be refused. Highlite will not accept the returned goods or any responsibility. Call Highlite 0031-455667723 or mail aftersales@highlite.nl and request an RMA prior to shipping the fixture. Be prepared to provide the model number, serial number and a brief description of the cause for the return. Be sure to properly pack fixture, any shipping damage resulting from inadequate packaging is the customer's responsibility. Highlite reserves the right to use its own discretion to repair or replace product(s). As a suggestion, proper UPS packing or double-boxing is always a safe method to use.

Note: If you are given an RMA number, please include the following information on a piece of paper inside the box:

01) Your name
02) Your address
03) Your phone number
04) A brief description of the symptoms

Claims

The client has the obligation to check the delivered goods immediately upon delivery for any short-comings and/or visible defects, or perform this check after our announcement that the goods are at their disposal. Damage incurred in shipping is the responsibility of the shipper; therefore the damage must be reported to the carrier upon receipt of merchandise.
It is the customer's responsibility to notify and submit claims with the shipper in the event that a device is damaged due to shipping. Transportation damage has to be reported to us within one day after receipt of the delivery.
Any return shipment has to be made post-paid at all times. Return shipments must be accompanied with a letter defining the reason for return shipment. Non-prepaid return shipments will be refused, unless otherwise agreed in writing.
Complaints against us must be made known in writing or by fax within 10 working days after receipt of the invoice. After this period complaints will not be handled anymore.
Complaints will only then be considered if the client has so far complied with all parts of the agreement, regardless of the agreement of which the obligation is resulting.

Description of the device

Qi-series is a family of powerful amplifiers, which guarantee high output level. There are three different versions available: Qi-4200, Qi-4400 and Qi-4600.

Features

- Amplifier class: D
- 4 channels
- 4x Speakon out
- Built-in Clip Limiter
- Stereo, mono and 2-channel bridge mode for higher output
- Variable cooling fan speed
- Front panel gain level control
- Excellent audio signal performance
- IEC 120-230V power connector
- Very little harmonic distortion
- Amplifier protection: short circuit thermal, turn-on and –off muting, DC fault output and RF protection
- Good quality metal housing
- Compact size

Frontside

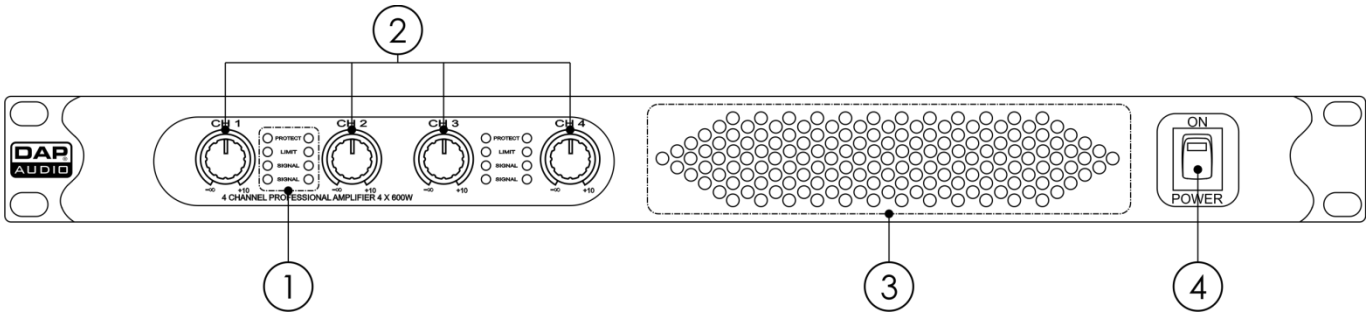


Fig. 01

1. PROTECT.LIMIT.SIGNAL LEDs
2. Gain control
3. Air intake grill
4. Power Switch + LED indicator

Backside

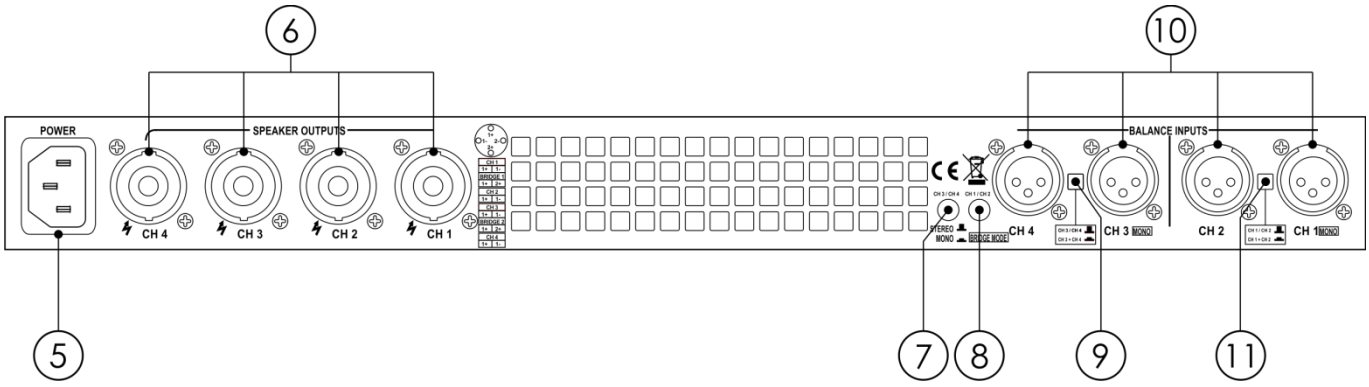


Fig. 02

⑤ IEC power connector 120-230V + internal fuse
⑥ Speakon speaker output connectors
⑦ Channel 3 / Channel 4 stereo / mono / bridge switch
⑧ Channel 1 / Channel 2 stereo / mono / bridge switch
⑨ Channel 3 / Channel 4 mode switch
⑩ 3-pin XLR balanced inputs
⑪ Channel 1 / Channel 2 mode switch

Installation

Remove all packing materials from the Qi. Check if all foam and plastic padding is removed.
Fit the equipment to a 19" rack. Connect all cables.
Always disconnect from electric mains power supply before cleaning or servicing.
Damages caused by non-observance are not subject to warranty.

Set Up and Operation

Before plugging the unit in, always make sure that the power supply matches the product specification voltage. Do not attempt to operate a 120V specification product on 240V power, or vice versa.
Install this device on a flat surface, not bending or curved.
Do not supply power before all components of the system are set up and connected properly.

Names and Functions

Frontside

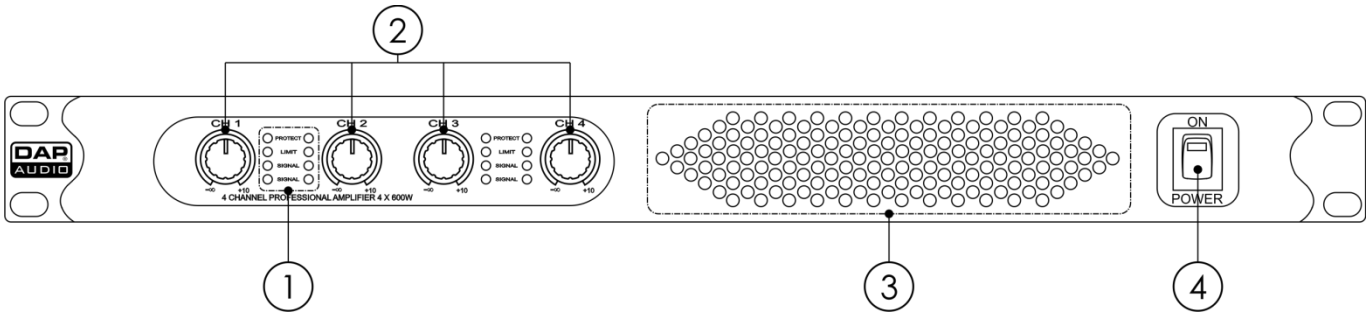
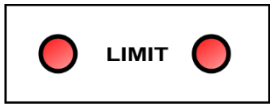


Fig. 03

01) PROTECT.LIMIT.SIGNAL LEDs

Protection LED
When this indicator lights up, the power amplifier is in protection mode. Switch off the device and find out what the problem is. The power amplifier is protected against overheat, overload, short circuit, etc.



Limit LED
Any illumination of the Limit LED indicates distortion. In this case, check the signal of your source and turn down the input gain control. Please keep in mind that the power amplifier cannot correct any distortion.

Signal LED
The illumination of this LED indicates safe operation.

02) Gain control
Use the control to adjust the channels' gain level.

03) Air intake grill
Provides appropriate air circulation, crucial for safe operation of the device.

04) Power-Switch + LED indicator
Use this switch to switch the amplifier on. If the device is switched on, the LED will light up in blue.

Backside

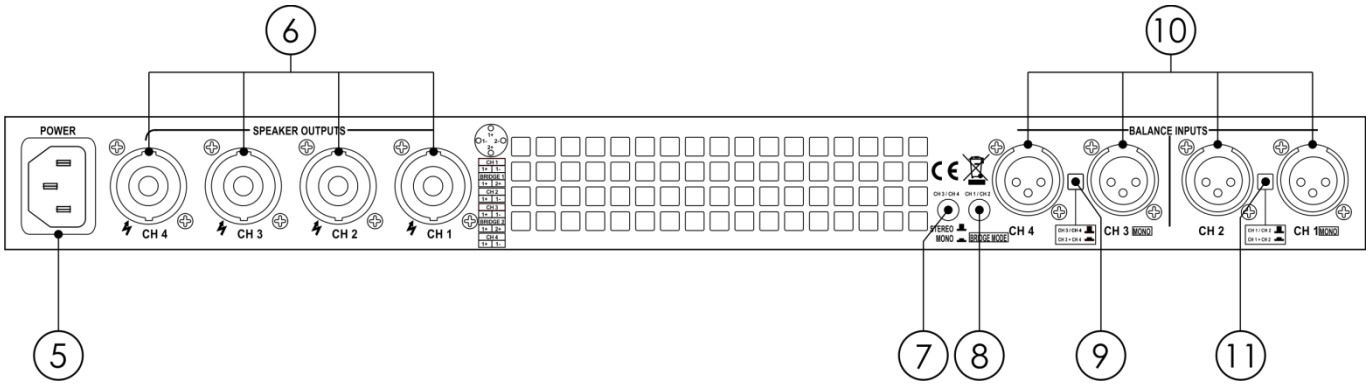


Fig. 04

05) IEC power connector 120-230V + internal fuse
Use this connector to connect the device to main power supply.

06) Speakon speaker output connectors
Use these connectors to connect the device to speakers, using professional speaker cables with twist-locking plugs.

07) Channel 3 / Channel 4 stereo / mono / bridge switch
When this button is pressed, the channels 3 and 4 operate in mono or bridge mode.
When the button is **NOT** pressed, the channels 3 and 4 operate in stereo mode.

08) Channel 1 / Channel 2 stereo / mono / bridge switch
When this button is pressed, the channels 3 and 4 operate in mono or bridge mode.
When the button is **NOT** pressed, the channels 1 and 2 operate in stereo mode.

09) Channel 3 / Channel 4 mode switch
Use this button to determine the mode which channels 3 and 4 operate in.
When the button is pressed, channels 3 and 4 are recognized as a single unit.
When the button is **NOT** pressed, channels 3 and 4 are recognized as two separate units.

10) 3-pin XLR balanced inputs
Use these connectors to connect sound source equipment to the amplifier.

11) Channel 1 / Channel 2 mode switch
Use this button to determine the mode which channels 1 and 2 operate in.
When the button is pressed, channels 1 and 2 are recognized as a single unit.
When the button is **NOT** pressed, channels 1 and 2 are recognized as two separate units.

Connection modes

Stereo connection

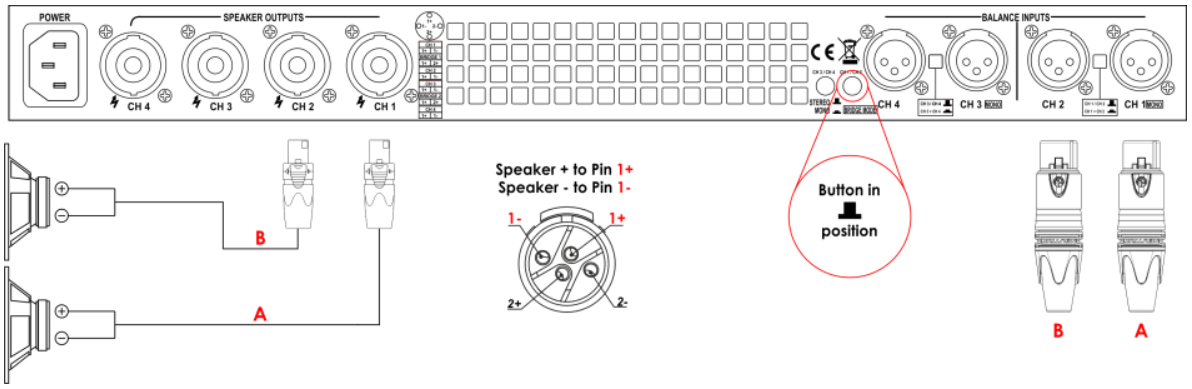


Fig. 05

Note: The connection example above presents only channels 1 and 2. However, channels 3 and 4 can be connected in exactly the same manner. Impedance of **2Ω** or lower is **not allowed** in stereo mode, as it would cause a short circuit which would severely damage the amplifier.

Mono connection

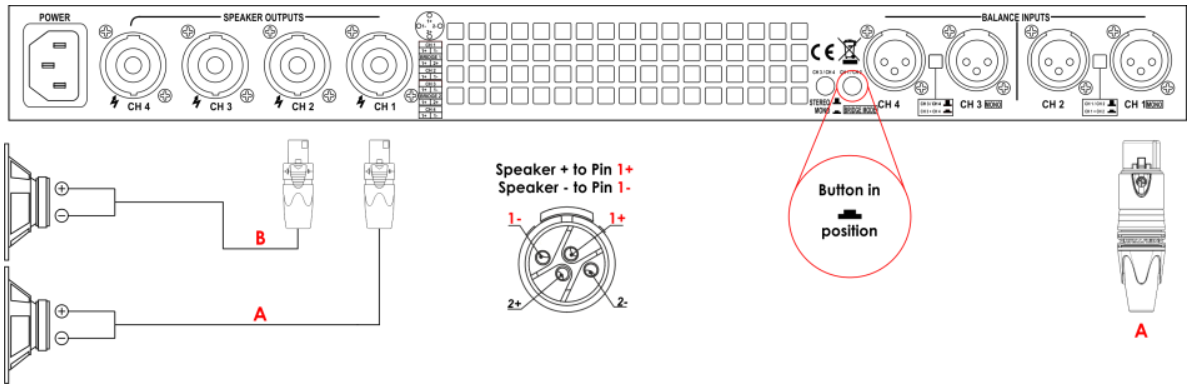


Fig. 06

Note: The connection example above presents only channels 1 and 2. However, channels 3 and 4 can be connected in exactly the same manner.

Bridge connection

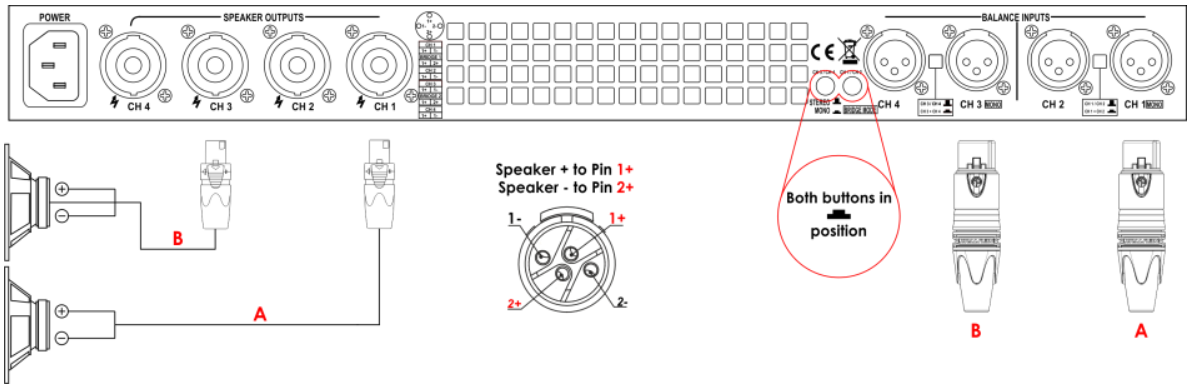


Fig. 07

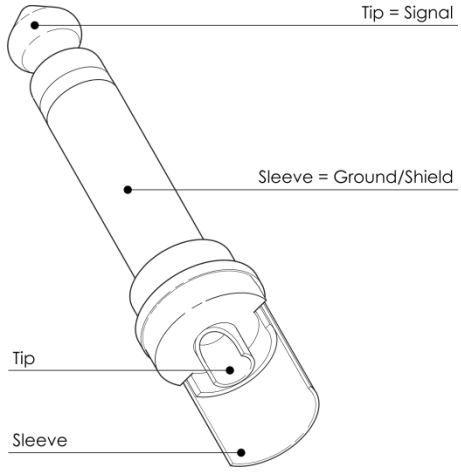
Note: To make sure that bridge mode **functions properly**, you need to connect the speakers **only** to the **channel 1** and **channel 3** outputs.
If you connect the speakers to channel 2 and channel 4 outputs, bridge mode **will not** function.

Make sure that you have connected the speakers to the appropriate pins. In case of bridge mode, those are **1+** and **2+**. In stereo mode and mono mode (see page 9, fig. 05 and fig. 06) those are **1+** and **1-**. Impedance of**4Ω** or lower is **not allowed** in bridge mode, as it would cause a short circuit which would severely damage the amplifier.

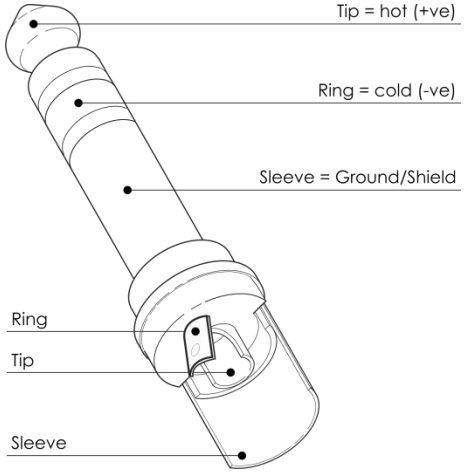
Connection Cables

Take care of your cables by always holding them by the connectors and avoiding knots and twists when coiling them: This gives the advantage of increasing their lifespan and reliability. Periodically check your cables. A great number of problems (faulty contacts, ground hum, discharges, etc.) are caused entirely by using unsuitable or faulty cables.

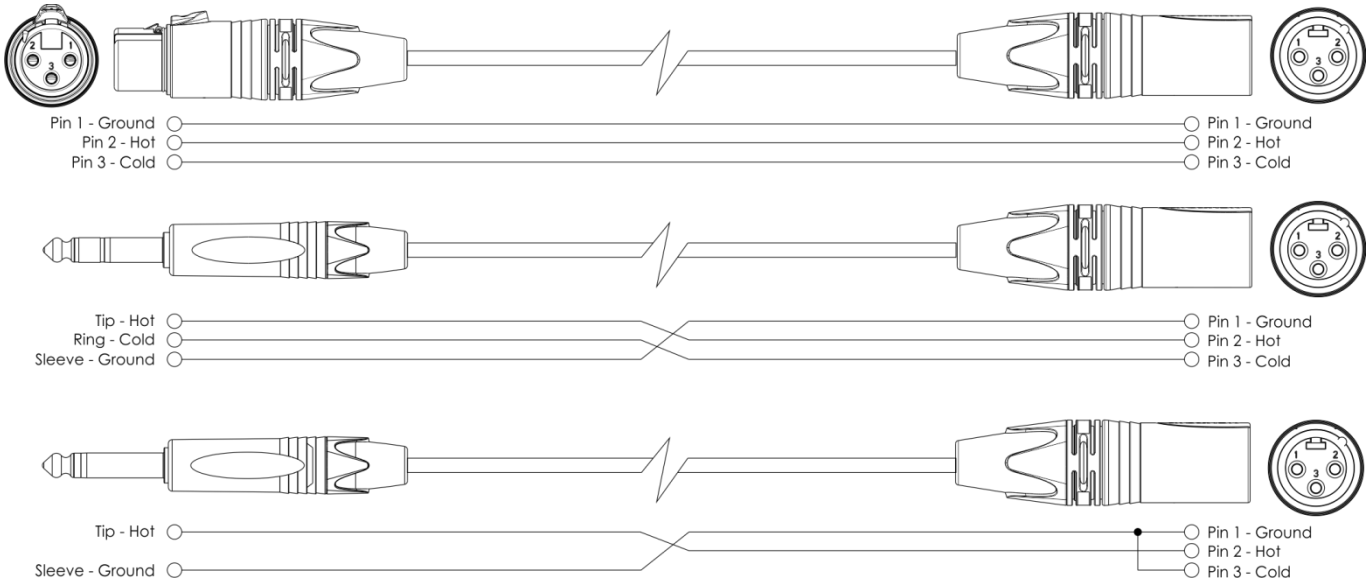
Unbalanced



Balanced



For these applications the unit provides 1/4" TRS and XLR connectors to easily interface with most professional audio devices. Follow the configuration examples below for your particular connection.



Maintenance

The Qi-4200 / 4400 / 4600 requires almost no maintenance. However, you should keep the unit clean. Disconnect the mains power supply, and then wipe the cover with a damp cloth. Do not immerse in liquid. Do not use alcohol or solvents.
Keep connections clean. Disconnect electric power, and then wipe the audio connections with a damp cloth. Make sure connections are thoroughly dry before linking equipment or supplying electric power.

Troubleshooting

Qi-4200 / 4400 / 4600
This troubleshooting guide is meant to help solve simple problems. If a problem occurs, carry out the steps below in sequence until a solution is found. Once the unit operates properly, do not carry out following steps.

01) If the device does not operate properly, unplug the device.
02) Check power from the wall, all cables, connections, etc.
03) If all of the above appears to be O.K., plug the unit in again.
04) If nothing happens after 30 seconds, unplug the device.
05) Return the device to your DAP Audio dealer.

Product Specifications

Rated power / model	Qi-4200	Qi-4400	Qi-4600
1kHz (HIA) with 1%THD 4Ω stereo (per channel):	4 x 200W	4 x 400W	4 x 600W
8Ω stereo (per channel):	4 x 120W	4 x 250W	4 x 360W
8Ω bridge mono:	2 x 400W	2 x 800W	2 x 1200W
Power supply:	120-230VAC, 60/50Hz		
Power consumption (2 x 4Ω):	1100W		
Max Input Voltage:	+20dBu		

Performance			
Frequency Response (at 1 Watt):	+/-2dB		
Input Sensitivity for full rated power at 8Ω:	0.65V	0.7V	0.775V
Input impedance:	20kΩ balanced, 10kΩ unbalanced		
S/N:	>90dB		
VR residual sound:	>85dB		
AMP efficiency:	>93%		
Front panel controls:	AC power switch, CH1 - CH4 gain control		
Ground-lift:	No		
Signal to Noise Ratio:	-96.5dB Flat, -100dB(A)		
Amplifier protection:	Short circuit thermal, turn-on and –off muting, DC fault output and RF protection		

Control	
Output modes	Stereo / mono / bridge
LED indicators:	Power ON - Blue Protect – Orange Signal – Green Limit – Red
Inputs:	4 x 3-pin XLR
Outputs:	4 x Speakon
AMP class:	Class D

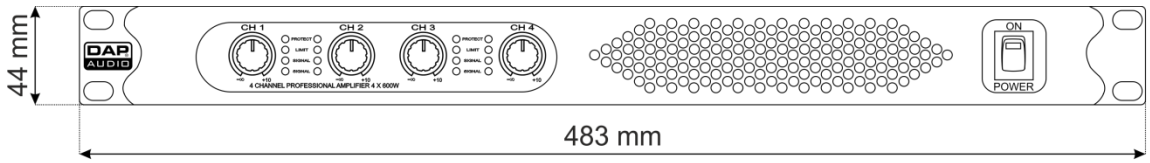
Construction	
Cooling system:	Variable speed cooling fan
Dimensions:	483 x 390 x 44 mm (LxWxH) 19 inch x 1HE (LxH)
Weight:	6.4 kg

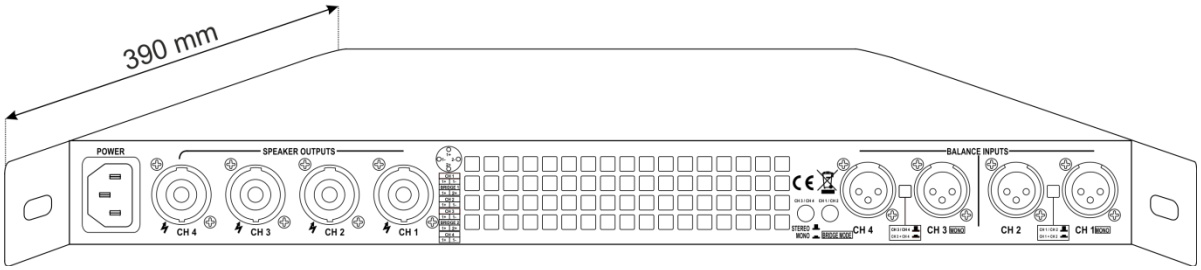
Design and product specifications are subject to change without prior notice.

CE

Website: www.Dap-audio.info
Email: service@highlite.nl

Dimensions


44 mm
CH 1
CH 2
CH 3
CH 4
ON
POWER
483 mm


390 mm
POWER
SPEAKER OUTPUTS
CH 4
CH 3
CH 2
CH 1
BALANCE INPUTS
CH 4
CH 3 MONO
CH 2
CH 1 MONO

Notes

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