PMC®

USER GUIDE

power20

Mono power amplifier

PMC

IMPORTANT

Warranty

Please take a few moments to register your product by completing the warranty online at: www.pmc-speakers.com This also gives you the opportunity to make suggestions and provide feedback directly to us.

Product Support

For product support, accessories, or servicing advice please contact a PMC authorised representative. See: www.pmc-speakers.com/where-to-buy

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INTRODUCTION

Thank you for choosing PMC products. Please read this user guide and install your new monitors according to the advice you'll find in the following pages.

Discerning music makers regard our monitors as the absolute reference; PMC speakers are found throughout the audio chain, from composer to recording or mixing, through post-production, mastering, and broadcast. They deliver a forensic level of detail that allows you to work faster, without fatigue and with complete confidence knowing that your finished mix will translate technically and emotionally anywhere. Our signature sound — ultra-low distortion, effortlessly extended bass, and smooth, super-wide dispersion — is a feature of every PMC monitor, from compact nearfield to our large main monitors.

This renowned flexibility and dependability result from our holistic design process in which the impact on overall performance of every part of our speakers, right down to component level, is carefully considered. We take this approach with every loudspeaker we manufacture, including our latest generation of active reference main monitors, the PMC10, PMC12, PMC15 and PMC10-4, along with their associated subwoofers and DSP amplifiers.

Designed from the ground up with more than five years R&D, and combined with invaluable input from the PMC community, these British-made monitors are intended for audio recording, mixing, mastering, and broadcast professionals working in any format from stereo to immersive sound. This new main monitor range is packed with innovations including all-new drive units, cutting-edge Class-D amplification with analogue and digital connectivity, DSP crossovers, non-invasive protection systems, and the latest generation of our proprietary ATL™ bass-loading and Laminair™ air flow technologies.

Remote configuration over a standard Network is provided via our class-leading and upgraded SoundAlign2 web-interface (PC or Mac).

All of our active monitors are also scalable through the option of combining an active subwoofer to create PMC's unique dual-cabinet XBD format with enhanced headroom and bass extension.

Whether you're composing, recording, mixing, or mastering, and in stereo or the latest immersive formats, you can guarantee the best possible results in the shortest possible time with PMC monitoring.

IMPORTANT SAFETY INSTRUCTIONS

1 Read and keep these instructions.

2. Heed all warnings and follow all instructions.

3. Do not use this apparatus near water.

4. Clean only with a dry, non-abrasive cloth. Do not use solvents, abrasives, waxes, or liquids as they may be detrimental to the cabinet finish.

5. Do not inhibit airflow around the unit. A free flow of air through the amplifier is necessary to maintain sufficient cooling. A minimum of 50mm (2-inches) is required both in front and behind the unit.

6. Do not install near heat sources eg: direct sunlight, radiators, or other apparatus that produce heat.

7. This unit must be Earthed. Do not use the amplifier with an unearthed mains cable or an unearthed mains connection as this may compromise electrical safety. A suitable mains cable is supplied with the product.

    - Apparatets stikprop skal tilsluttes en stikkontakt med jord, som giver forbindelse til stikproppens jord.
    - Laite on liitettävä soujakoskettimilla varustettuun pistorasiaan
    - Apparatet må tilkoples jordet stikkontakt
    - Apparaten skall anslutas till jordat uttag

8. The amplifier is not disconnected from the mains supply unless the power cord is removed from the unit or the mains outlet.

9. The powerCON mains plug should always remain accessible as it is the mains disconnect device.

10. Protect the power cord from being walked on or pinched, particularly at inlets and outlets.

11. Unplug this unit during lightning storms or when unused for long periods.

12. Maintenance or replacement of the fan in this amplifier should only be carried out by a skilled person suitably qualified to handle a Class 3 Energy Source.

13. Refer all servicing to qualified personnel.

14. Disconnect the amplifier from the mains supply before servicing the fan. Ensure that the amplifier's front trim panel is fitted and secured in place before reconnecting the amplifier to the mains supply.

15. Servicing is required when the unit has been damaged in any way, produces abnormal odours, has been exposed to liquids, rain or moisture, does not operate normally, or has been dropped.

16. Disconnect the amplifier from the mains supply before removing an expansion card or the expansion card blanking cover. Ensure that an expansion card or the expansion card blanking cover is fitted and secured in place before reconnecting the amplifier to the mains supply.

17. Only use in non-tropical climate areas and below an altitude of 2000m.

    - 仅适用于海拔 2000m **以下地区安全使用**

/contd

18. Warning! This is a Class-A device. This device may cause interference in residential areas; in this case, the operator may be required to take appropriate measures.
19. Packaging can pose a danger to the young and vulnerable. Ensure these items are stored or disposed of safely, and in accordance with your local legislation.
20. PMC has made every effort to provide accurate installation information and good quality fixings. However, PMC will not be held responsible or liable for injuries or property damage (direct, indirect or consequential) arising out of use or inability to use this product safely and properly.
21. The manufacturing date code of this product is marked on the rear of the product in the format WW/YYYY.
22. Except for the loudspeaker output cable, only use this device with cables less than three metres in length.
23. This equipment can be mounted in a 19" rack. When doing so, ensure that the amplifier is securely mounted with 4 bolts into a stable rack, and heed all previous warnings.

UNPACKING AND CARE

Our amplifiers are packed in heavy-duty protective cartons. Please retain these to ensure that the equipment can be transported safely if the need arises in the future. If you dispose of the packaging please do so in an environmentally responsible and safe way.

PMC amplifiers provide many years of trouble-free operation, but in the unlikely event that you suspect damage or failure has occurred do not attempt to repair the unit yourself. Contact your local representative for advice.

What's In The Box?

1 x power20 Amplifier

1 x Masterlink Cable (red)

1 x User Guide

1 x Warranty Reminder

1 x powerCON mains cable is supplied with the speaker cable.

What's Required To Build A Working System?

The power20 is controlled from and supplements the amplifier power of a master36 DSP Amplifier as part of a full main monitor, xbd or SUB system.

POWER20 DESCRIPTION

The power20 provides additional power amplification for low-frequency drivers as a supplement to the master36 DSP Amplifier. One or more power20 amplifiers are required for the PMC10-4 main monitor, PMC10-4 XBD system, PMC10-4 SUB subwoofer, and the PMC15 XBD system.

Designed and built in-house using extensive R&D alongside comparative testing, the compact 3U power20 is a powerhouse contains a single 2000W amplifier module, identical to that employed in the master36. This state-of-the-art Class-D power amplifier is designed for maximum transparency and the highest resolution, with ultra-low distortion and high damping factors and high reliability. It is capable of sustained high output power, with jaw-dropping dynamics, and near-instantaneous control over the bass driver.

The amplifier is power-efficient and normally runs cool with passive convection cooling. However, a silent fan is mounted behind the front panel to supply forced-air cooling in the event that it becomes necessary.

MasterLink input and output connections allows convenient daisy-chaining of multiple power20 amplifiers from a controlling master36 DSP Amplifier unit, passing both audio and trigger control signals. In addition, an analogue line-level input and loop-through output are provided, along with a Trigger input (2-12VDC) and output (12VDC) to enable remote power on/off control.

CONTROLS AND CONNECTIONS

1 **Power On/Off —** Master power switch.

2 **Illuminated Logo —** The colour of this logo indicates the amplifier's operating status:

Colour	Status
White	Normal operation
Off (unlit)	Amplifier is not powered* or normal operation with brightness set to minimum
Red	Amplifier clipping

*if the power20 is connected to a master36 via Masterlink, the brightness of the logo will be controlled by the master36.

3 **MasterLink In —** This RJ45 connector receives audio and control data from a master36 DSP amplifier. A suitable colour-coded cable is provided with the power20 amplifier. This is not an Ethernet port and must not be connected to a LAN. If the Masterlink is connected the power20 will await a trigger signal from the master36 before it powers up.

4 **MasterLink Out —** This RJ45 passes audio and control data received from a master36 DSP Amplifier at the Masterlink In socket, allowing daisy-chaining of multiple power20 amplifiers. This is not an Ethernet port and must not be connected to a LAN.

5 **Trigger Status LED —** This LED indicates the status of the trigger system.

LED Colour	Status
Red	Mains power applied, awaiting trigger input
Orange	Trigger input received, booting up
Green	Normal operation, trigger output active

If the power20 is connected via Masterlinkthe brightness of the logo will be controlled by the master36.

6 **Speaker Out —** This Neutrik speakON NL4 connector carries the speaker-level amplifier output on pins 1+/1– to the connected loudspeaker cabinet's bass drivers(s).

7 **Power Inlet —** This Neutrik powerCON mains power inlet accepts 100–240VAC 50–60Hz with auto-switching of voltage.

Additional Connectors for use when Masterlink is not connected:

8 **Analogue Input —** An XLR3f input socket receives a balanced analogue line-level signal.

9 **Analogue Thru —** An XLR3m output sockets Provides a loop-through of the analogue input signal for daisy-chaining to other amplifiers, if required.

10 **Trigger In —** This 3.5mm TS input socket is used to power-up the power20 automatically on receipt of a DC voltage between 2 and 12V between the tip and sleeve pins of the connector (polarity not important).

11 **Trigger Out —** The 3.5mm TS output socket provides 12V DC a few seconds after the power20 is powered up. It can be used to control other equipment in the system. Tip = 12V trigger signal, s;eeve = 0V/ground reference, 50mA max.

SPEAKER CONNECTIONS

The power20 contains one power amplifier whose output is presented via a speakON NL4 Speaker Out connector.

Speaker Out

Connector 1: speakON NL4

LF1	pin 1+/1-

AMPLIFIER POWER RATING

Standard Main Monitor Ampifier Power

Driver	**PMC10-4**
LF	2000W
	(1000W per LF driver)

SUB and XBD Systems

PMC15 XBD and PMC10-4 systems use additional power 20 amplifier(s) in addition to the master 36 DSP/amplifier to provide the amplification required for the extra LF drivers.

Driver	**PMC15 XBD/SUB**	**PMC10-4 XBD/SUB**
LF/LFX	2000W per amplifier	2000W per amplifier*

*2 x power20 required

ILLUMINATED PMC LOGO

The illuminated PMC logo on the front of the power20 amplifier indicates its current operating status.

Colour	Status
White	Normal operation
Off (logo not lit)	Amplifier not powered* or normal operation with brightness set to minimum
Red	Amplifier clipping

*If the power20 is connected to a master36 via Masterlink, the brightness of the logo will be controlled by the master36.

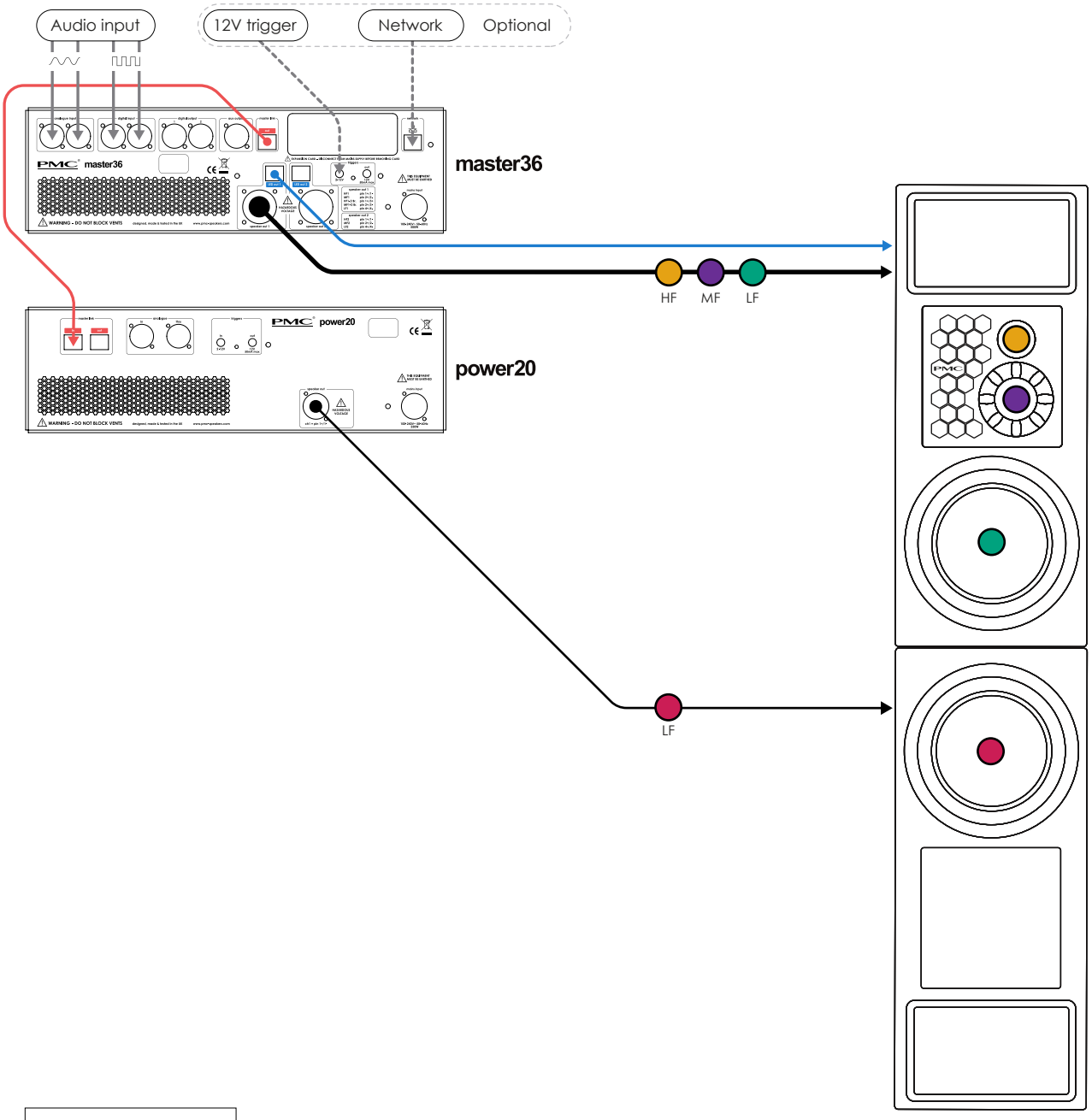
INITIAL CONFIGURATION

The audio and control inputs to a power20 amplifier normally come from a master36 DSP Amplifier, via the Masterlink connector. Where multiple power20 amplifiers are used, the Masterlink connections can be daisy-chained between each unit.

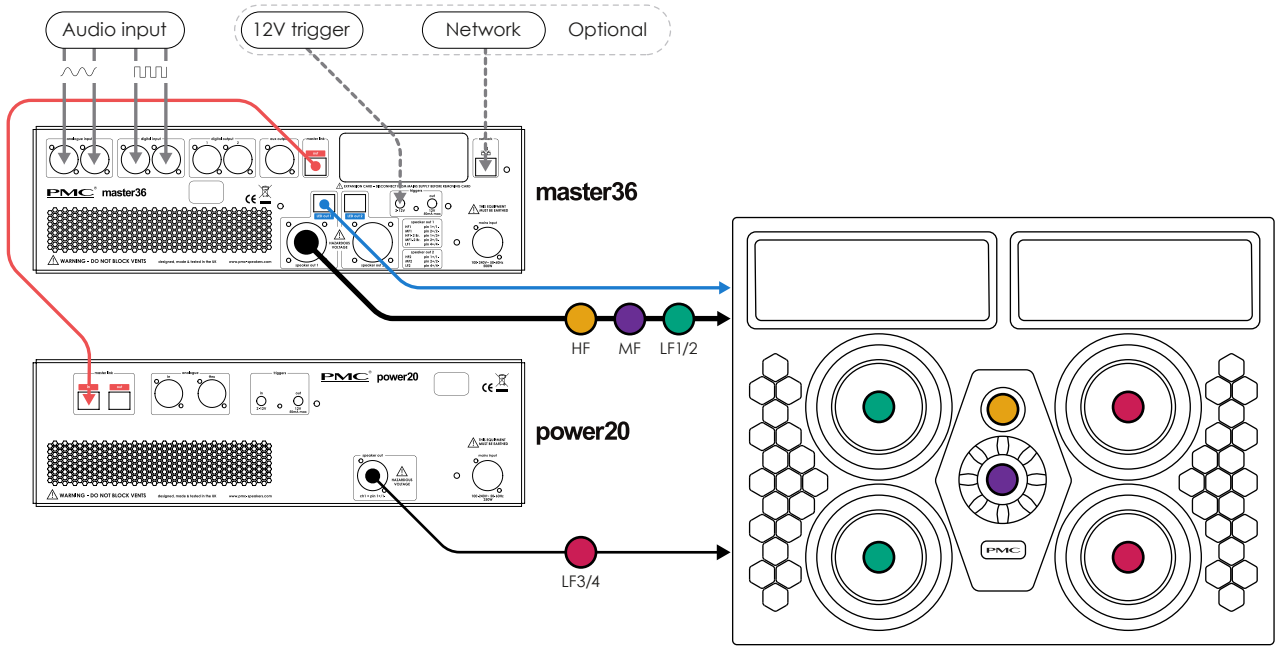
SYSTEM CONNECTION DIAGRAMS

PMC15 XBD

connections per channel



PMC10-4
connections per channel



Key

masterlink

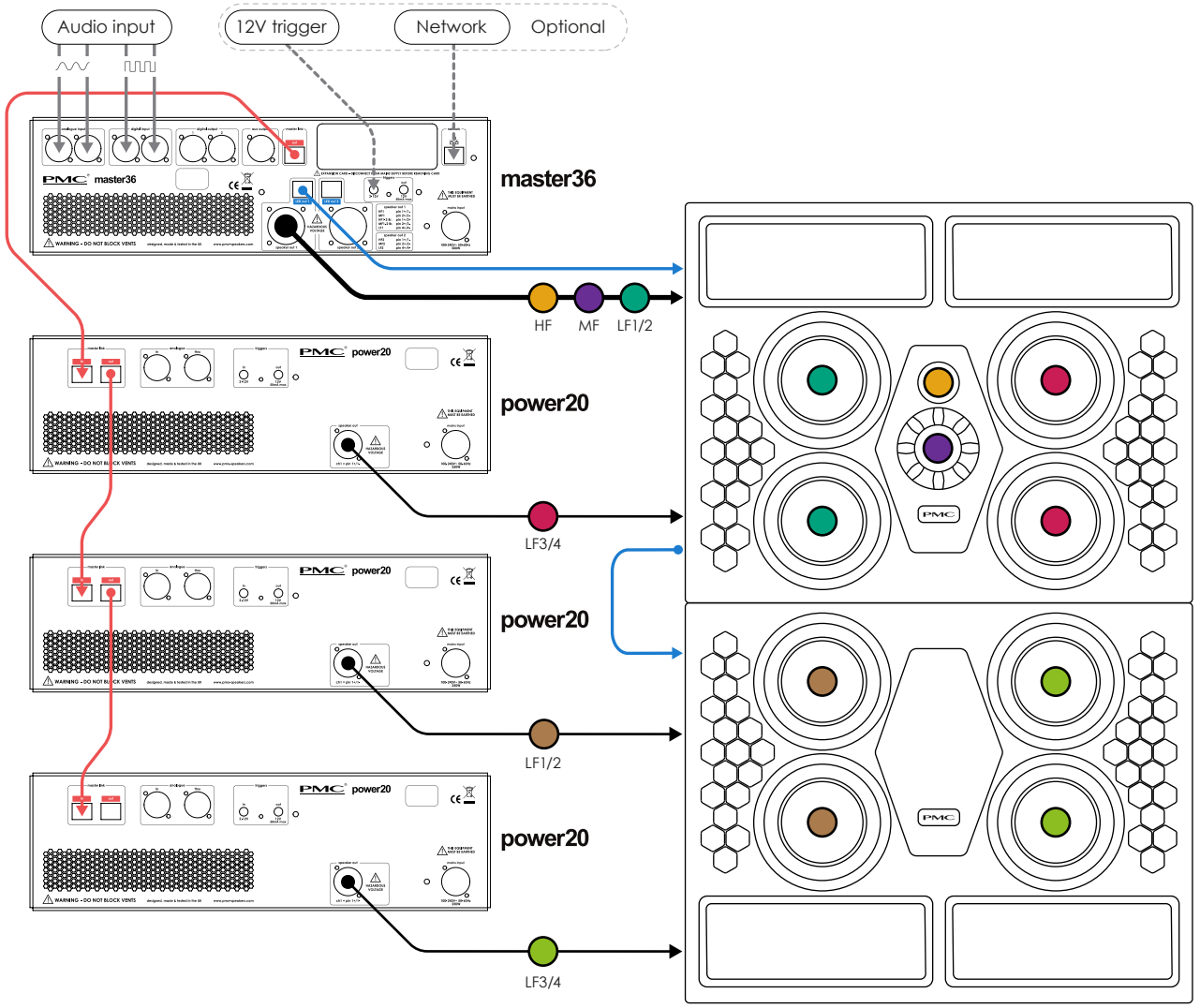
LED cable

speaker cable

input cables (not supplied)

PMC10-4 XBD

connections per channel

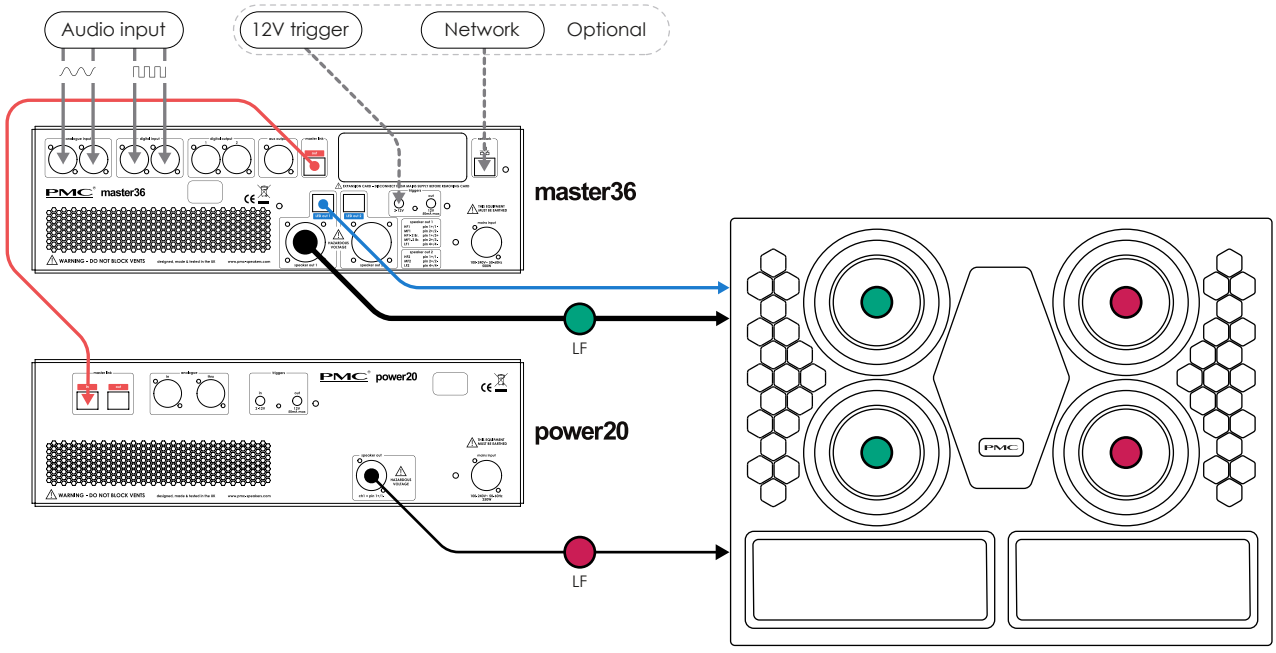


Key

- masterlink
- LED cable
- speaker cable
- input cables (not supplied)

SUB CONNECTIONS

PMC10-4 SUB
connections per channel



NB: PMC SUB subwoofers are fully independent loudspeaker channels controlled and powered by their own master36 DSP amplifier.

Key
masterlink
LED cable
speaker cable
input cables (not supplied)

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WARNING - DO NOT BLOCK VENTS

power20

GENERAL

Type	19" rack-mount amplifier
Control	None
Features	Masterlink In/Out, Trigger In/Out

AUDIO

Frequency response	20Hz – 20kHz
Amplifier Power	1x 1000W (8Ω) / 2000 W (4Ω)
Gain	29.5dB
THD	<0.005% typ (1kHz, 4Ω. AES17 filter)
Dynamic Range	> 120dB

INPUT

Connections	1x Analogue XLR, 1x Masterlink In for audio/control from master36
Input Impedance	38kΩ differential

OUTPUT

Connections	1x Analogue Through XLR, 1x Neutrik NL4 speakON, 1x Masterlink Out for control of power20

OTHER

Trigger In	3.5mm jack, Tip +ve, Sleeve -ve (2 –12V DC)
Trigger Out	3.5mm jack, Tip +ve, Sleeve -ve (12V DC, 50mA)

MAINS

Connector	Neutrik powerCon 20A
Voltage	100 - 240VAC auto-switching
Frequency	50-60Hz
Power Consumption	

Mains Voltage	100VAC	120VAC	230VAC
Idle	0.7A	0.6A	0.3A
1/8th Power 12dB Crest Factor	4.7A	3.9A	2.0A

PHYSICAL

Dimensions	**H** 132mm +7mm for removable feet (5.32" + 0.3") **W** 483mm (19") **D** 527mm (20.8")
Rack Height /Depth	3U / Minimum 475mm (18.7")
Weight	11.5kg (25.4lbs)
Operating Conditions	10–40°C, <2000m Altitude
Thermal Dissipation	Idle: 30 Watts / 103 BTU/Hr, 1/8th Power, 12dB Crest Factor: 69 Watts / 235 BTU/Hr

OUR ACTIVE STUDIO MONITORS

The PMC range of studio monitors spans many different models, from the enormous PMC10-4 XBD flagship system down to the diminutive result6 active speaker.

Every PMC monitor is designed with exactly the same care and attention, using shared families of drive units, crossover designs, and amplifiers. As a direct consequence they all enjoy the same family characteristics of wide dispersion, low distortion, consistent voicing, and an even bass response regardless of listening level. This feature allows different sizes of monitors to be used in concert to create effective multichannel systems where space is at a premium.

SERVICE

We are confident that your main monitor system and amplifiers will afford many years of trouble-free listening of the highest order. However, in the unlikely event that they should require repair, all replacement parts will exactly match the performance of those originally installed because, for everything we produce, we record the precise value of each component, along with the system response as a whole.

For any issues that might arise, or for advice and service requirements, the primary point of contact should be your authorised PMC dealer/distributor. If you do not have a local representative see www.pmc-speakers.com and click on 'where to buy' to locate them.

Important Note:

Please do not return any products to PMC directly without first contacting our service department by email at service@pmc-speakers.com. Alternatively, you can fill out a service request form at www.pmc-speakers.com/support/service-request

Important Note: Please do not return any products to PMC directly without first contacting our service department.

FAN MAINTENANCE

The power20 incorporates an ultra-quiet cooling fan. To ensure reliable operation of the amplifier, this fan and its foam dust filter should be cleaned regularly, following to the instructions below (recommended every six months).

If the fan is faulty or is generating audible noise from its bearings, it should be replaced with a fan of the same specification, following the instructions below. The fan in the master36 and power20 amplifiers is a Noctua NF-B9 redux-1600 PWM with the following specifications:

Size: 92 x 92 x 25mm

Airflow: 64.3m3/h (37.85 CFM)

Acoustic Noise: 17.6dB(A)

Voltage: 12V

Input Power: 0.91W

Input Current @ 12V: 75mA

Do not replace the fan with an alternative that draws more than 1W of power from the amplifier.

Cleaning The Fan

Tools required: T20 Torx driver

1. **IMPORTANT**: Maintenance or replacement of the fan in this amplifier should only be carried out by a skilled person suitably qualified to handle a Class 3 Energy Source.
2. **IMPORTANT**: Disconnect the amplifier from the mains supply before servicing the fan.
3. Remove the front trim panel by loosening the 6 bolts shown in red:

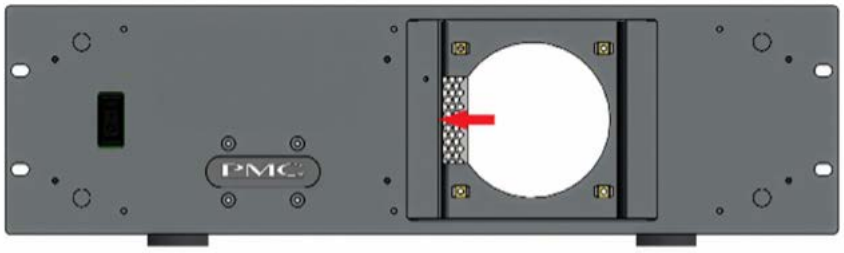
4. Remove the foam dust filter and clean with compressed air.
5. Check that the fan is clear of dust and other debris.
6. Re-position the clean foam dust filter.
7. Re-attach the front trim panel with the 6 bolts.
8. **IMPORTANT**: Ensure the amplifier's front trim panel is fitted and secured in place before reconnecting the amplifier to the mains supply.

Replacing The Fan:

1. **IMPORTANT**: Maintenance or replacement of the fan in this amplifier should only be carried out by a skilled person suitably qualified to handle a Class 3 Energy Source.
2. **IMPORTANT**: Disconnect the amplifier from the mains supply before servicing the fan.
3. Remove the front trim panel by loosening the 6 bolts shown in red:

4. Remove the foam dust filter and clean with compressed air.
5. Loosen the 4 bolts which hold the fan and fan grille in place:

6. Remove the fan from the amplifier, reaching into the left-hand side of the fan opening to disconnect the cable:



7. Connect the replacement fan's cable to the same connector.
8. Secure the fan and fan grille to the amplifier chassis with the 4 bolts removed in step 4.
9. Re-position the foam dust filter.
10. Re-attach the front trim panel with the 6 bolts removed in step 2.
11. **IMPORTANT**: Ensure that the amplifier's front trim panel is fitted and secured in place before reconnecting the amplifier to the mains supply.

METICULOUS CARE AND ATTENTION

All PMC loudspeakers are hand-built in the UK using components that are individually matched to our reference model. This includes the structural integrity of every cabinet, and the testing and recording of each individual component to guarantee adherence to our strict tolerances. In this way we can ensure your purchase sounds identical to the original design.

Each completed monitor undergoes a set of objective listening tests and measurements. For example, frequency response sweeps ensure that the unit meets our exacting performance criteria, and critical listening tests are conducted against the reference model using a wide variety of audio material, from a benchmark BBC speech recording to carefully selected classical music, pop and rock tracks.

“Computers don’t tell the full story. As well as a full frequency analysis, we listen to each speaker we make and run a benchmark BBC speech and music test on every single one.”

ONLINE WARRANTY

Register within 30 days to unlock your extended 5 year warranty

Visit pmc-speakers.com and click on:

support > product registration

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CE Conformity

PMC loudspeakers conform to CE Directive LVD 73/23/EEC and EMC 89/336/EEC. WEEE European directive - PMC is a member of a National Compliance scheme and have gained the associated certification of compliance and the following registration number from the Environment Agency WEEE/GJ0101WU

WEEE EU Directive

This symbol on the product or in/on its packaging indicates that this product must not be disposed of with other household waste. It is the responsibility of the owner to dispose of waste equipment via a designated collection point for the recycling of waste electrical and electronic equipment. The recycling of your waste equipment is an attempt to conserve natural resources and ensures that it is recycled in a manner that protects human health and the environment. For more information about where you dispose of your waste equipment for recycling, please contact your local waste/ recycling authority or the dealer from whom you purchased the product.

VIEW THE PRODUCTS ONLINE

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