



Myryad Systems Ltd  
2 Piper's Wood  
Waterberry Drive  
Waterlooville PO7 7XU  
Tel +44 (0) 23 9226 5508  
Fax +44 (0) 23 9223 1407  
info@myryad.co.uk

For further information,  
please contact  
Myryad direct or visit:  
www.myryad.co.uk

# MA 120/240/360

Power Amplifiers  
**Owner's manual**

STANDBY



**MYRYAD**

MA 120 Stereo Power Amplifier

**MYRYAD**





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## INTRODUCTION

The Myryad MA 120, 240 and 360 Power Amplifiers have been designed to offer a combination of high quality sound reproduction and simple yet elegant styling. They can be used to provide power for high quality stereo systems when partnered by a suitable preamplifier such as Myryad's MP 100, or with a Myryad integrated amplifier in bi-amp or tri-amp systems. They can also be used, in combination (e.g. one MA 240 Stereo Power Amplifier plus one Myryad MA 360 Three Channel Power Amplifier), to power a full-surround music or Home Cinema sound system of the highest quality.

The MA 120 and MA 360 have unbalanced line inputs plus directly linked line outputs, all on RCA phono sockets.

The MA 240 also has unbalanced line inputs plus directly linked line outputs, all on RCA phono sockets but it in addition it has balanced line inputs on professional quality 3-pin XLR sockets. Furthermore, the two amplifier channels may be switched to bridged-mono mode for increased power output into a single 8Ω loudspeaker using a rear panel switch.

All Myryad M-Series Power Amplifiers may be controlled remotely via the My-Link communications bus when used with other Myryad M series products. The My-Link allows remote control of standby and mute functions. In addition to this, the MA 240 and MA 360 power amplifiers may be switched into or out of standby remotely using their DC trigger inputs.

### MA 120 applications include:

- Stereo operation, delivering 2 x 60 watts into 8Ω loudspeakers
- One MA 120 with an MI 120 Integrated Amplifier in a bi-amplifier system
- Two MA 120s with an MP 100 Preamplifier in a bi-amplifier system
- Three MA 120s with an MP 100 Preamplifier in a tri-amplifier system
- Up to ten MA 120s and one MI 120 or MP 100 in a multi-room system

### MA 240 applications include:

- Stereo operation, delivering 2 x 120 watts into 8Ω loudspeakers
- High power stereo operation with two MA 240s - able to deliver 2 x 400 watts into a minimum 8Ω load
- Stereo bi-amplifier operation with two MA 240s, each delivering 2 x 120 watts into 8Ω loudspeakers
- Use in conjunction with the MA 360 Stereo Channel Power Amplifier, delivering five channels at 120 watts into 8Ω in Home Cinema systems of the highest quality

### MA 360 applications include:

- Use in conjunction with the MA 240 Stereo Power Amplifier, delivering of five channels at 120 watts into 8Ω in Home Cinema systems of the very highest quality.

**PLEASE NOTE: THIS OWNER'S MANUAL DESCRIBES ALL THREE POWER AMPLIFIERS. WHERE THE TEXT APPLIES TO ONLY ONE OR TWO OF THE AMPLIFIERS THE APPLICABLE MODEL NUMBER(S) APPEAR IN THE PARAGRAPH HEADING. WHERE NO MODEL NUMBER IS SPECIFIED IN THE PARAGRAPH HEADING THE TEXT APPLIES TO ALL POWER AMPLIFIERS.**

## INSTALLATION AND SAFETY NOTES

This amplifier generates a modest amount of heat and thus requires ventilation. Do not place it on a rug or other soft surface into which it could sink, obstructing the air inlets in its underside. Do not allow papers or cloth to obstruct the ventilation grille in the top cover. The amplifier should not be installed in a built-in situation such as a bookcase or cabinet that may impede the flow of air. If the amplifier is moved shortly after operation take care not to touch the heatsinks, which are accessible from below, as they may be very hot. The amplifier is designed for use in moderate climates.

**CAUTION: TO PREVENT A FIRE OR SHOCK HAZARD, DO NOT PERMIT THIS PRODUCT TO BECOME WET OR EXPOSE IT TO DRIPPING OR SPLASHING. DO NOT PLACE OBJECTS FILLED WITH LIQUID, SUCH AS VASES, ON THE AMPLIFIER. IF LIQUID IS ACCIDENTALLY SPILLED ON IT, IMMEDIATELY SHUT OFF ITS POWER AT THE WALL SOCKET AND UNPLUG THE AC POWER CORD. ALLOW SUFFICIENT TIME FOR COMPLETE EVAPORATION TO OCCUR BEFORE OPERATING THE AMPLIFIER AGAIN. IF THE LIQUID IS ANYTHING BUT WATER AND/OR ALCOHOL, A QUALIFIED SERVICE TECHNICIAN SHOULD EXAMINE THE AMPLIFIER BEFORE IT IS USED AGAIN.**

**DO NOT PLACE NAKED FLAMES, SUCH AS LIGHTED CANDLES ON THIS PRODUCT. DO NOT REMOVE THE COVER, OR ATTEMPT TO MODIFY OR REPAIR THE AMPLIFIER YOURSELF. REFER ALL SERVICING TO A QUALIFIED TECHNICIAN.**

## ACCESSORIES

Your Myryad Power Amplifier is supplied complete with the following accessories:

### MA 120, MA 240 and MA 360

- Separate mains power cord to suit country of sale.

### MA 240 only

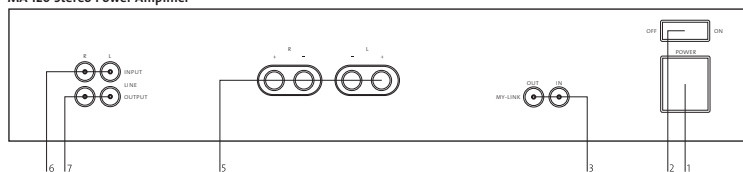
- Two "U"-shaped gold-plated XLR jumper links. Supplied inserted into the BALANCED input sockets. [If you remove these links from the amplifier store them in a safe place as they may be needed in the future.]



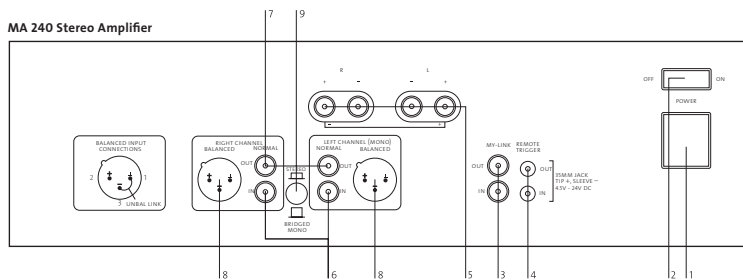


## SETTING UP YOUR SYSTEMS

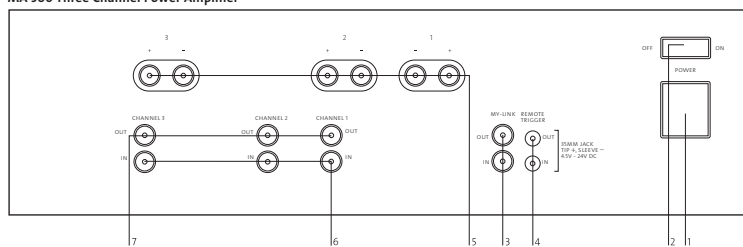
**MA 120 Stereo Power Amplifier**



**MA 240 Stereo Amplifier**



**MA 360 Three Channel Power Amplifier**



## REAR PANEL CONNECTIONS

### 1 Power inlet

Before making any connection, check that the mains voltage setting printed on the rear panel is the same as your local mains supply.

Plug the female (socket) end of the power cord into the power inlet on the rear of the amplifier. Plug the male (plug) end of the cord into a "live" wall socket or a suitable heavy-duty extension cable.

UK version: The mains plug is supplied fitted with a 5A fuse. It should only be replaced with a fuse of the same rating (5A) which complies with BS1362.

### 2 Power switch

Press one side of this rocker switch (the side nearer the edge of the rear panel) to switch amplifier ON and the other side (towards the speaker terminals) to switch it OFF. When the POWER switch is in the OFF position all power is disconnected from the amplifier. In this condition the amplifier cannot be powered up from the front panel or the My-Link (or remote trigger) if present. When the POWER switch is in the ON position (and the power cord correctly inserted and plugged in to a live wall socket) the amplifier will power up in standby mode (see FRONT PANEL CONTROLS, STANDBY).

It is recommended that the POWER switch be turned OFF if the amplifier is not going to be used for an extended period of time.

### 3 My-link input/output

When this Power Amplifier is used in a system with other Myryad M-Series products all may be joined together via the My-Link. This will allow the different products to be remotely controlled via the infra-red receiver on, for example, an MP 100 Preamplifier. My-Link offers two benefits. Firstly, only the MP 100 Preamplifier infra-red receiver needs to be in "line-of-sight" from the remote handset. Secondly, the My-Link allows remote control of some Myryad products which do not have their own infra-red receiver, such as the Myryad Power Amplifiers.

When joined via the My-Link, the Power Amplifier will respond to STANDBY and MUTE operations on the MP 100 Preamplifier i.e.: if both the MP 100 Preamplifier and the Power Amplifier are in STANDBY, then switching the MP 100 Preamplifier out of

standby will also bring the Power Amplifier out of standby. In this way the MP 100 + MA 240 (or MA 120) can be operated with the same ease as an integrated amplifier. If Power Amplifiers are being used in a bi-amp or tri-amp system all the amplifiers may be My-Linked so that they can be controlled as one from the Myryad preamplifier.

**NOTE: SWITCHING THE POWER AMPLIFIER INTO STANDBY WILL NOT SWITCH THE MP 100 PREAMPLIFIER INTO STANDBY.**

### MA 240 and MA 360 only:

When the My-Link is connected it is recommended that no connection be made to the REMOTE TRIGGER input (see below).

### 4 Remote trigger control input/output (MA 240 and MA 360 only)

If the MA 240/360 is being used in a system without a Myryad M-Series preamplifier, processor or integrated equipped with My-Link, the REMOTE TRIGGER input may be used to allow the MA 240/360 to be remotely switched into or out of STANDBY.

If your preamplifier or processor has a TRIGGER output which delivers a DC trigger signal when the unit is switched on (or out of standby) then it can be linked to the MA 240/360 to switch the MA 240/360 out of/into standby also. A lead must be used which is fitted with a 3.5mm mini-jack plug to connect to the MA 240/360's REMOTE TRIGGER input socket. The lead must be wired according to the rules below:

- Connector to MA 240/360 REMOTE TRIGGER input: 3.5mm mini-jack plug
- Jack plug wiring: sleeve negative, tip positive
- Trigger voltage: DC, 4.5V to 24V
- Nominal loading of MA 240/360 REMOTE TRIGGER input: 2200Ω
- TRIGGER voltage change from 0 to +Vc: Amplifier switched from standby to active
- TRIGGER voltage change from +Vc to 0: Amplifier switched from active to standby

If you are in any doubt about meeting any of these criteria or preparing a suitable lead, ask your dealer or installer to handle this for you.

**NOTE: IF THE TRIGGER INPUT IS ACTIVE WHEN THE REAR PANEL POWER SWITCH IS TURNED ON, THEN THE AMPLIFIER WILL NOT POWER UP INTO STANDBY MODE AS USUAL. IT WILL POWER UP IMMEDIATELY INTO ITS "ACTIVE" STATE - WITH ITS NORMAL POWER-ON MUTE DELAY (SEE FRONT PANEL CONTROLS, STANDBY BELOW).**

The REMOTE TRIGGER output is wired directly to the input. Using this output, further MA 240/360s, or other products, may be connected from a single trigger source without needing any special adaptors.

### 5 Loudspeaker outputs

The loudspeaker outputs are capable of driving all loudspeakers with impedances in the range 4Ω to 16Ω (except the MA 240 in Bridged-Mono - see below). The loudspeaker terminals are high-current binding-posts, coded red and black. The terminals on the left side of the amplifier (viewed from the front) and marked "L" should be wired to the left hand loudspeaker. Those on the right, marked "R", should be wired to the right hand loudspeaker.

**CAUTION: THE RED TERMINALS ARE MARKED WITH A HAZARD SYMBOL TO INDICATE THAT THEY CAN BE LIVE. READ ALL THE LOUDSPEAKER WIRING INSTRUCTIONS CAREFULLY. IT IS RECOMMENDED THAT READY-MADE LEADS BE USED WHERE POSSIBLE.**

For correct stereo imaging it is important that the two loudspeakers are wired "in phase". To ensure correct phasing wire the black (-) terminal on the amplifier to the black or "-" terminal on the loudspeaker. The red (+) terminal on the amplifier should be wired to the red or "+" terminal on the loudspeaker.

The loudspeakers should be positioned as recommended by the loudspeaker manufacturer. The two loudspeakers should always be placed at equal distances from the main listening position and usually spaced a similar distance apart. It is generally best to keep the loudspeakers away from room corners and many loudspeakers work best away from all walls.

### MA 240 only

When the MA 240 is switched to BRIDGED-MONO mode, only the red speaker terminals are used. No connection should be made to either of the black terminals. For correct phasing connect the Left hand red (+) terminal on the amplifier to the red or "+" terminal on the loudspeaker and connect the Right hand red (+) terminal on the amplifier to the black or "-" terminal on the loudspeaker. Each amplifier and loudspeaker should be connected in the same way.

**CAUTION: WHEN THE MA 240 IS SWITCHED TO BRIDGED-MONO MODE, EACH AMPLIFIER DRIVES INTO ONLY HALF THE SPEAKER IMPEDANCE SO LOUDSPEAKERS RATED AT LESS THAN 8 Ω IMPEDANCE MUST NOT BE USED.**





#### MA 360 only

The three channels in the MA 360 may be assigned in a variety of ways in Home Cinema systems. The two most common are: channels 1 and 2 for left surround and right surround, with channel 3 for front centre (using an MA 240 for left front and right front) or, channels 1, 2 and 3 for left front, centre and right front (using an MA 240 for left surround and right surround). In each case make sure all loudspeakers are wired "in phase" as described above.

#### 6 Line inputs – normal (unbalanced)

The NORMAL unbalanced line inputs can be driven from the line outputs of any good quality stereo preamplifier (such as the Myryad MP 100) or any other suitable line level source. High quality phono-to-phono (RCA-to-RCA) interconnects should be used.

#### MA 240 only

Note: when using the NORMAL line inputs the two XLR jumper links ("U"-shaped gold-plated links) *must* be inserted into the BALANCED input sockets on each channel (between pins 1 and 3 as indicated on the rear panel). The MA 240 is always shipped in this condition. Failure to insert these links will result in reduced input sensitivity and possibly some background hum, but it will not endanger the amplifier.

#### 7 Line outputs – normal (unbalanced)

Each channel's line output is directly connected to its line input – without buffering. The line output allows power amplifiers to be "daisy-chained" so that bi-amp, tri-amp and multi-room systems may be built. For a more detailed discussion of bi-amping, tri-amping and multi-room installations please refer to the Appendix. Only unbalanced line outputs are fitted.

#### 8 Line inputs – balanced (MA 240 only)

The BALANCED line inputs can be driven from the balanced line outputs of any good quality stereo preamplifier (such as the Myryad MP 100) or any other suitable line level source. High quality XLR-to-XLR balanced interconnects should be used. In order to use the BALANCED line inputs the two XLR jumper links (the "U"-shaped gold-plated links plugged into the BALANCED input sockets) must first be removed. Take care of these links and store them in a safe place. They will be needed again if the amplifier's unbalanced inputs are to be used.

#### 9 Bridged mono switch (MA 240 only)

The MA 240 is shipped with this switch in the STEREO position, with the button pressed in almost flush with the rear panel. In this mode the MA 240 operates as a conventional stereo amplifier as described above.

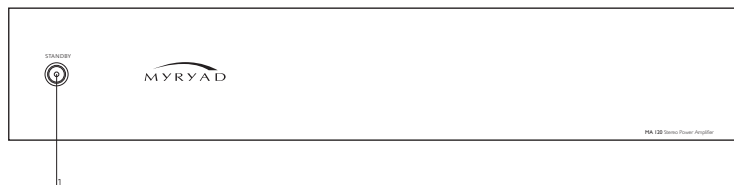
If the button is pressed to release it to the "out" position, the MA 240 is switched to BRIDGED MONO mode. The amplifier then operates as a single channel "mono" amplifier to drive just one loudspeaker, but at a much higher power level (up to 400 watts into 8Ω). A second power amplifier is needed for stereo operation in this mode.

When operated in BRIDGED MONO mode the following rules must be applied:

- Connect the line input signal to the LEFT channel input, either NORMAL (unbalanced) or BALANCED.
- Connect the loudspeaker between the two RED ("+") loudspeaker output terminals, with the red or "+" terminal of the speaker connected to the MA 240's Left "+" terminal and the black or "-" terminal of speaker connected to the MA 240's Right "+" terminal.

**CAUTION: WHEN OPERATING THE MA 240 IN BRIDGED MONO MODE THE MINIMUM RATED LOUSPEAKER IMPEDANCE IS 8Ω.**

## OPERATING YOUR SYSTEM



### FRONT PANEL CONTROLS

#### 1 Standby

When the amplifier is plugged into a live wall socket and the POWER switched is turned ON, it will power up in "standby" mode and the LED (Light Emitting Diode) in the STANDBY button will glow red. In this mode the internal circuitry of the MA 240 is powered up, but disabled so that it consumes very little power and is isolated by relays at its outputs.

When the STANDBY button is pressed the amplifier circuitry will be activated and the LED will flash green. After a few seconds delay the loudspeaker outputs will be connected to the amplifier and the LED in the STANDBY button will glow green continuously. (The mute delay in the MA 120 is about 4 seconds, but in the MA 240 and 360 it is about 8 seconds to allow for the longer settling time of the larger amplifiers' circuits.)

**PLEASE NOTE: WHEN THE POWER AMPLIFIER IS REMOTELY ACTIVATED FROM ANOTHER UNIT, THERE WILL BE A BRIEF DELAY BETWEEN THE CLOSING OF THE OUTPUT RELAYS OF THE TWO UNITS. THIS IS NORMAL AND NO CAUSE FOR CONCERN.**

When the STANDBY button is pressed again the amplifier will be returned to standby mode. The LED in the STANDBY button will change back to red.

**CAUTION: WHEN IN STANDBY MODE THE INTERNAL CIRCUITRY OF THE MA 120, 240 OR 360 IS STILL LIVE, SO ALL SAFETY PRECAUTIONS MUST BE FOLLOWED.**

### LOUDSPEAKER OUTPUT PROTECTION AND MUTING

When the amplifier is in standby mode the loudspeaker output terminals are isolated from the amplifier by a high quality relay.

When the amplifier is first switched on from standby mode the loudspeaker outputs remain disconnected for a few seconds to allow the internal voltage levels to settle. The loudspeaker outputs are immediately disconnected again when the amplifier is switched back into standby mode.

The same loudspeaker mute relay is used to protect both the amplifier and your loudspeakers against possible damage. If any one of a number of fault modes is detected (loudspeaker outputs short circuit, amplifier overheating, amplifier DC fault) the loudspeakers will be disconnected from the amplifier to protect both. In the case of a short circuit or DC fault the loudspeakers will be re-connected after a few seconds, but will be disconnected again if the fault persists. If overheating has caused the protection system to operate, then it will take some time for the heatsinks to cool sufficiently to allow the loudspeakers to be re-connected (probably between five and fifteen minutes depending upon the room temperature and ventilation). The amplifier will cool more quickly if it is switched to standby mode, or if the POWER is switched OFF.





## TROUBLE-SHOOTING GUIDE

Some of the most common problems

### No sound:

- Power turned off or system in standby mode. Check that the LED in the STANDBY button is green.
- The input connection is loose or missing. Check that the connection is secure.
- Protection relay has operated because of a short circuit loudspeaker wire or amplifier overheating. Carefully check all wiring after switching the amplifier POWER OFF to allow it to cool.
- The fuse in the power cord inlet has failed. Unplug the power cord from both the wall socket and the amplifier and pull out the small receptacle below the power cord inlet. Two fuses should be visible. The further fuse is the operative one and should be checked. If it has failed, replace it with the nearer (spare) fuse. If this too fails, then return the amplifier to your dealer for service.
- UK version only: The fuse in the mains plug has failed. Check and replace if necessary.

### Sound in one channel only:

- Loudspeaker cable pulled loose. Check all connections, both at the loudspeakers and amplifier.
- Interconnect cable pulled loose or making poor contact. Check and, if necessary, un-plug and re-plug all relevant cables.

### Amplifier fails to respond to My Link remote commands (from e.g. MP 100 Preamplifier):

- My-Link cable is loose or not connected. Check connections on all linked units.

### Loud buzz or hum:

- Interconnect cable pulled partially out of its socket.
- Defective interconnect cable.

### Incorrect operation – some functions not working:

- Control processor latched. Switch off POWER on rear panel and wait for about one minute. Then switch POWER on. Normal operation should resume.

## APPENDIX

### Systems building with the MI 120 Stereo Integrated Amplifier, the MP 100 Stereo Preamplifier and the MA 120 or MA 240 Stereo Power Amplifiers

The MI 120 was designed to integrate into a wide range of hi-fi systems and fulfill the requirements of most listeners. However, we realise that many people will want to expand their system, either to enhance the sound quality even further, or to extend the benefits of their Myryad system into other rooms. The MA 120 Power Amplifier was developed to meet these needs with a minimum of additional wiring and complexity.

For even higher quality sound and greater flexibility the MP 100 preamplifier can be used with one or more MA 120 or MA 240 power amplifiers

This paper describes how multi-amplifier systems can be built using:

- the MI 120 plus one MA 120 in "Bi-Amplifier" systems
- the MI 120 plus two MA 120s in "Tri-Amplifier" systems (with suitable loudspeakers).
- the MP 100 Preamplifier plus one or more MA 120s or MA 240s in Bi-Amp or Tri-Amp systems.

It also shows how the MI 120 or the MP 100 can feed one or more MA 120 or MA 240 Power Amplifiers for driving loudspeakers in other rooms.

### The MI 120 plus MA 120 in "Bi-Amplified" Systems

Many loudspeakers today are produced with two sets of terminals to allow "Bi-Wiring". In this configuration two sets of speaker cables are used to connect from one integrated amplifier (e.g. the MI 120) to the loudspeakers: the left channel of the amplifier is wired by one cable to the left speaker BASS terminals and also by a second cable to the left speaker TREBLE terminals – and the right channel is wired in a similar way. This arrangement is shown in Figure 1. Improved sound quality can result because the signal losses in the loudspeaker cables caused by the bass section cannot affect the treble – and vice versa.

The so called "Bi-Amplifier" mode of operation takes this principle one step further. Two power amplifier channels are used for each loudspeaker and each is wired by its own speaker cable to the relevant speaker section

(Bass or Treble). Bi-Amplified operation with the MI 120 and MA 120 is shown in Figure 2.

The MI 120 "BI-AMP" output level and the MA 120's gain are set such that the MA 120 output voltage is identical to the MI 120 output so that the bass/treble balance of the loudspeaker is unchanged when it is bi-amplified.

In the bi-amplifier configuration both the MI 120 and the MA 120 carry the full bandwidth audio signal. However, the MI 120 only has to deliver output at low frequencies so the amplifier has a very easy task in reproducing the signal accurately. Conversely, the MA 120, as it is only loaded by the speakers' treble sections, only drives significant output current at high frequencies and has to deliver almost no current on bass notes. This allows the MA 120 amplifier to operate with improved fidelity in delivering the critical signal transients as its power supply is only very lightly loaded.

In short, by restricting the bass power delivery to the MI 120 and the treble to the MA 120, interactions between bass and treble within each amplifier are very much reduced. The end result is a more transparent sound with more power and punch in the bass and a cleaner, sweeter top end. An additional advantage incurred with bi-amplification is that the total power consumed by the loudspeaker is now being drawn from two power supplies, with two massive toroidal transformers. The result is an increase in dynamics and peak power output – particularly with low impedance loudspeakers.

Alternatively the MI 120 may be used to drive the bass and the MA 120 the treble. This configuration will offer a slightly differently improved sound, which may be preferred in some systems.

### Using the MA 240 with an MI 120 or mixed MA 120s and MA 240s with an MP 100 in Bi-Amp or Tri-Amp systems

In the system described above the higher-powered higher quality MA 240 may be substituted for the MA 120. The MA 240 has the same gain (i.e. the same input signal required for a specific output power) so the system bass/treble balance will be the same, whichever power amplifier is used. The MA 240 offers a much higher sound quality than the MA 120 and can deliver considerably more output current, so it is likely to produce significantly better sound in such a bi-amp

system. However, it will not result in any substantial increase in maximum sound level as the MA 240 will only be operating at 60 watts (half its maximum power) when the MI 120 is fully driven to its maximum output of 60 watts. These same points apply to mixing MA 120s and MA 240s in any bi-amp, tri-amp or multi-room system with the MI 120 or MP 100, such as those described below.

### The MI 120 plus two MA 120s in "Tri-Amplified" Systems

There is a growing number of three and four-way loudspeaker systems which are provided with three sets of terminals allowing tri-wiring or tri-amplifying, with separate feeds for bass, mid and treble frequencies.

The MA 120 is fitted with a pair of Line Outputs, wired in parallel with the Line Inputs, which allow a second MA 120 to be wired in parallel to the first – in "daisy-chain" fashion. This configuration is depicted in Figure 3 which shows how loudspeakers can be "Tri-Amplified" using one MI 120 and two MA 120s. The MI 120 drives the bass sections, the first MA 120 the mid and the second MA 120 drives the treble so that the overall performance is optimised in a similar way to that described for bi-amplifying.

### The MI 120 or MP 100 with one or more MA 120s or MA 240s in Multi-Room systems

Once a high quality audio system is installed in your main listening room, you may find you want to the same sound quality in another room (or rooms). Installing separate sound systems in each room is one solution, but the cost and complexity is high – and you will always find the CD or record you want to play is in the other room!

Multi-room Hi-Fi installations are becoming ever more popular and many offer a great deal of flexibility – but at a considerable price. Myryad Systems offer a simple and inexpensive multi-room set-up using the MI 120 integrated amplifier, or MP 100 Preamplifier, together with one or more MA 120 or MA 240 power amplifiers. (In all instances below, wherever MA 120 is mentioned the MA 240 could be substituted, but the MA 240 is generally better suited to MP 100 based systems.)

The MI 120 is situated in your main listening room in your normal Hi-Fi system. Its BI-AMP output is fed to the Line Input of an MA 120 whose Line Output, in turn, is





connected to the Line Input of a second MA 120, and so on. In this "daisy-chain" fashion a number of MA 120s (up to about 10) can be connected to the BI-AMP output of a single MI 120. There will be no adverse loading effect owing to the low output impedance of the MA 120 and high input impedance of the MA 120 (450 Ω and 100 kΩ respectively). This arrangement is shown in Figure 4.

Each MA 120 drives a single pair of loudspeakers in a separate room. The MA 120s can either be situated close to the MI 120 with speaker cables run off to each room (similar to the diagram in Figure 4), or each MA 120 could be located in a separate room with its loudspeakers - with long interconnects between the MI 120 and the MA 120s. In the latter case the daisy-chain wiring system may not be so convenient, so an adaptor which allows the MI 120 BI-AMP output to feed a number of cables (one cable to each MA 120) might be preferred. In either case, the maximum recommended total length of interconnect cable feeding the MA 120s is in the region of 20 to 50 metres (depending upon the cable capacitance and the number of MA 120s connected).

If you wish to estimate the maximum cable length for your system then you can use the following equation:

$$\text{Maximum cable length (metres)} = \frac{7,800 - N \times 450}{C}$$

for  $\leq 1$  dB loss at 20 kHz

Where:

- N = Number of MA 120s wired to MI 120
- C = Cable capacitance in pF/metre.

The MP 100 Preamplifier can also be used to drive a number of daisy-chained MA 120 or MA 240 Power Amplifiers. The MP 100 has a much lower output impedance (75 Ω) and so can drive longer cables. In practice the maximum capacitance loading is limited by the high frequency current demand on the MP 100's output. The resulting cable length equation for the MP 100 is therefore:

$$\text{Maximum cable length (metres)} = \frac{25,000 - N \times 450}{C}$$

**"Bi-Amplified" and "Tri-Amplified" Systems using the MP 100 with MA 120 or MA 240 Power Amplifiers**

The MP 100 Preamplifier forms an excellent foundation for building a high-end bi-amplifier or tri-amplifier system using either MA 120 or MA 240 Power Amplifiers. The principles of operation are just the same as for the MI 120/MA 120 systems already described. The wiring arrangements for bi- and tri-amplifier systems are shown in Figure 5.

The MP 100 can be used with any power amplifiers in bi-amp or tri-amp systems, but it is important that all the amplifiers used have precisely matched gains. Any mis-match in the amplifier gains would produce an uneven frequency response from the loudspeakers. All Myryad power amplifiers have accurately matched gains.

It is also recommended that all the power amplifiers used in such a system have similar maximum power outputs (e.g. use all MA 120s or all MA 240s) for the reasons described earlier on page 9.

**MY - LINK**

In all the systems described above the MI 120 or MP 100 can also be linked to the MA 120s or MA 240s through the MY-LINK communications channel. The MI 120/MP 100's "MY-LINK OUT" should be wired, using a single RCA phono lead, to the "MY-LINK IN" on the first MA 120/240 and thence from its "MY-LINK OUT" to the second amplifier and so on in daisy-chain fashion. With the system connected in this way, when the MI 120/MP 100 is switched out of STANDBY (from the front panel or by remote control) all of the power amplifiers linked to it will be activated simultaneously. In addition, if the MI 120/MP 100 is switched into MUTE via its remote control, then all the linked power amplifiers will mute and their power LEDs will flash to indicate this condition.

The use of the MY-LINK communications channel makes bi/tri-amplifier systems much more convenient to operate but is a BIG benefit in a multi-room system if some MA 120/240s are installed remotely.

If you need advice concerning your particular application, whether bi-amplification, tri-amplification or multi-room please ask your Myryad dealer, or write to Myryad Systems Ltd. at the address below.

Figure 1  
Conventional Bi-Wired system

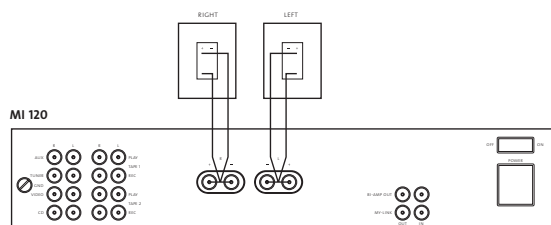


Figure 2  
Bi-Amplified system with MI 120 and MA 120

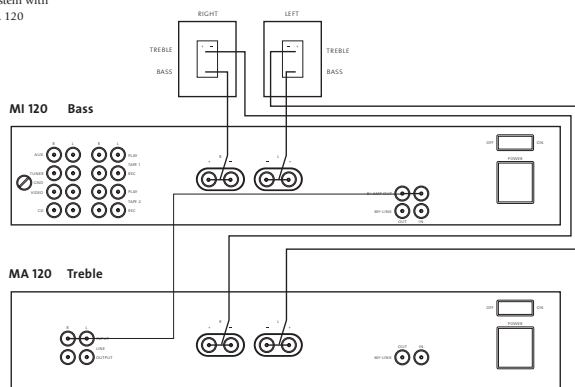




Figure 3  
Tri-Amplified system with  
one MI 120 and two MA 120s

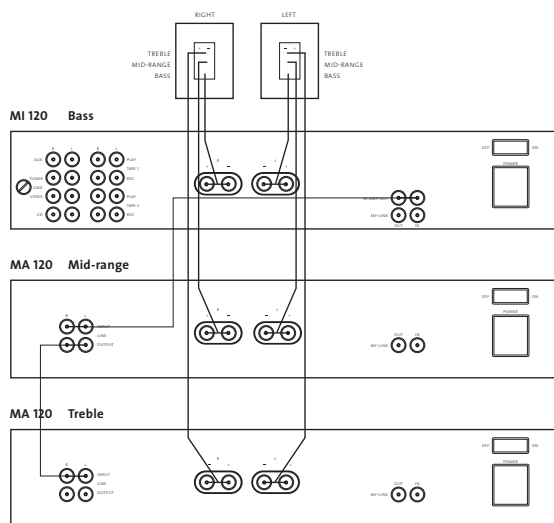
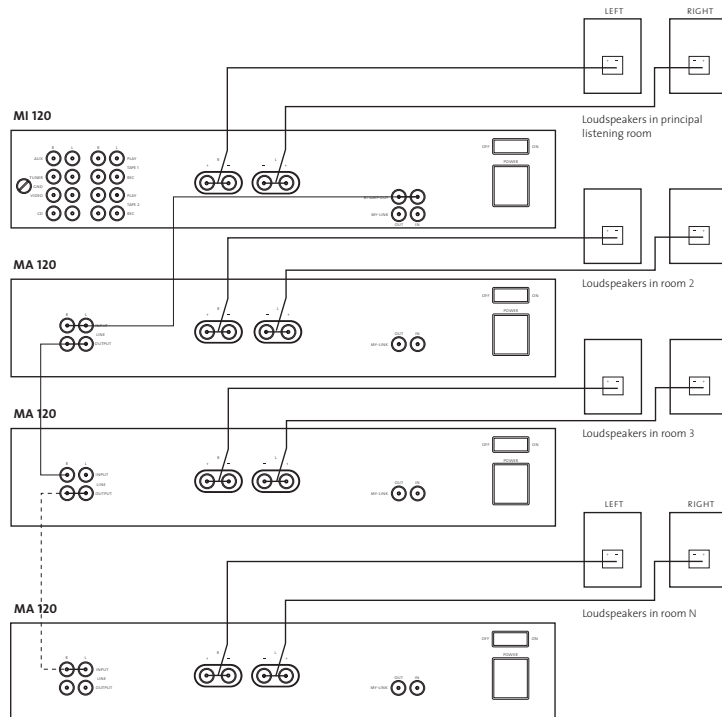


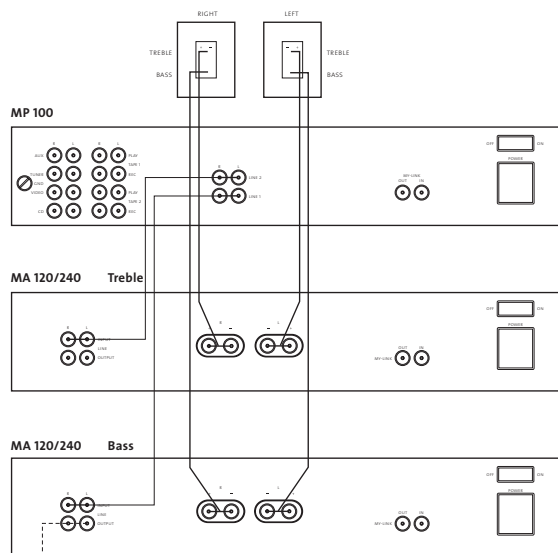
Figure 4  
MI 120 with MA 120s wired  
in Multi-room system



NOTE: MY-LINK WIRING OMITTED FROM ALL  
DIAGRAMS FOR CLARITY



Figure 5  
Bi-Amplified or Tri-Amplified  
system with MP 100 and two or  
three MA 120 or MA 240s.



To further ma 120 or ma 240  
for tri-amplification if required.

## SPECIFICATIONS

	MA 120	MA 240	MA 360
<b>Stereo/3 channel Mode</b> (all channels driven)			
Continuous average power output ( $<0.05\%$ THD, 20Hz - 20kHz)	8 $\Omega$ : .60W 4 $\Omega$ : .83W	120W 180W	120W 180W
IHF dynamic power	8 $\Omega$ : .80W 4 $\Omega$ : 1.20W 2 $\Omega$ : .160W	180W 300W 420W	180W 300W 420W
Input sensitivity (for rated power)	775mV	1.1V	1.1V
Voltage Gain	29dB	29dB	29dB
Input impedance	Unbalanced .100k $\Omega$ /450pF Balanced .N/A	21k $\Omega$ /470pF 22k $\Omega$ /235pF	25k $\Omega$ /450pF .N/A
Frequency response (20Hz - 20kHz)	$\pm 0.2$ dB	$\pm 0.2$ dB	$\pm 0.2$ dB
Signal/Noise ratio (A weighted, ref. rated power)	111dB	110dB	110dB
<b>Bridged (mono) mode</b> (8 $\Omega$ min. load)			
Continuous average power output ( $<0.0$ 5% THD, 20Hz - 20kHz)	8 $\Omega$ : .N/A	400W	.N/A
IHF dynamic power	8 $\Omega$ : .N/A 4 $\Omega$ : .N/A	600W 900W	.N/A .N/A
Input sensitivity (for rated power)	.N/A	1.0V	.N/A
Voltage gain	.N/A	35dB	.N/A
Input impedance	Unbalanced .N/A Balanced .N/A	7.2k $\Omega$ /940pF 11k $\Omega$ /470pF	.N/A .N/A
Signal/Noise ratio (A weighted, ref. 400W)	.N/A	112dB	.N/A
<b>Physical specification</b>			
Dimensions (width x height x depth)	436 x 95 x 303mm	436 x 135 x 368mm	436 x 135 x 368mm
Weight, Net:	8.75kg	15kg	18kg
<b>Power requirements</b>			
Voltage (set by internal wiring)	120 or 230V	120 or 230V	120 or 230V
Stock No: OS0011920			
Revision A			
N/A not applicable			

