



MUSTANG
COMMUNICATIONS

MP12.B AUDIO MONITOR PANEL
INSTALLATION & MAINTENANCE HANDBOOK

Issue No.1

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Electromagnetic compatibility (EMC) directive 89/336/EEC and amendment directive 92/31/EEC
This equipment has been designed and manufactured to the highest standards. If connected and operated as set out in this manual, there should be no Electromagnetic Compatibility problems. If any aspect of operation gives rise to concern, then please contact the manufacturer for advice.

INTRODUCTION

Thank you for purchasing this unit. We are confident that you have made a wise decision, and that you will have many years of trouble-free operation. Considerable care has been taken during the design and manufacturing processes to ensure your entire satisfaction and naturally, we would hope that the unit will perform to our design expectations, though this will be possible only if the installation is in line with professionally accepted standards and techniques.

This manual is intended, therefore, to ensure that both the installer and operator have all the necessary information to enable them to install, commission, and operate the unit in the most effective manner. We hope you will find the manual helpful, and easy to read.

The Company and its quality statement

Mustang Communications, is the manufacturing mark of equipment manufactured by Mustang Communications Limited, of Scarborough, England. The company is independent, wholly British, and dedicated to the manufacture and distribution of high-reliability, high performance public address and associated control equipment. Mustang Communications was first registered in 1966, in England.

The Company undertakes to manufacture equipment to the highest standards of workmanship and performance. Our Quality Assurance scheme operates to, or exceeds, the standards set out in British Standard BS.5750, or European standard ISO.9000. If you have cause to doubt at any time that the design, manufacture, or distribution does not comply, then you are invited to write to us with your comments, which will be most welcome.

Please address your correspondence to The Managing Director.

Applications

The MP.12B audio monitor panel is designed to be used with an assembly of audio units for the purpose of audibly monitoring the signals associated with those units, so as to be reassured that they are functioning correctly. It is not intended to be a definitive measuring unit, nor a primary sound source in itself. Further circuitry provides a visual confirmation of the units performance. The MP.12B may be used as a stand-alone item or installed into a standard 19" equipment cubicle.

The unit would normally be used by commissioning and maintenance engineers. It could also be used to ensure that a tuner unit or CD player, for example, is correctly adjusted to station or track prior to passing through to an entertainment system.

Immediate technical advice for specific problems is available from the Technical Services Department, Mustang Communications Ltd.

Carton contents

On receipt from the manufacturer, this carton will contain:

- 1 MP.12B unit
- 1 installation & operation handbook
- 1 AC mains connection lead
- 1 BRK-20 rack mount kit
- 1 guarantee registration sheet

GENERAL DESCRIPTION

The MP.12B consists of a small high quality audio amplifier whose input is fed by a 12 position selector circuit. 12 audio signals may thus be individually selected, amplified and passed to the front panel monitor loudspeaker for evaluation by the operator. Running alongside the audio amplifier is a small bargraph circuit giving a visual indication of average signal levels and peaks. The 12 input circuits each have two different signal sensitivities, and 8 of the inputs have different sensitivities to the other 4, ensuring that the unit can be applied to a very wide level of input signal levels.

Input channel selection is highlighted by an array of 12 LEDs positioned adjacent to a legend card.

The input channels are comprehensively protected, both from each other, and from the possibility of high level electrostatic pick up on very long loudspeaker lines.

The audio output of the MP.12B may also be controlled from a remote location, to eliminate the possibility of howl-round in certain paging circumstances..

The power requirements for the amplifier are taken from the normal AC mains supply at 220-240 Volts (or 120 Volts to special order) , or by 24V DC which may be derived from other equipment within the cubicle.

See Appendix B for a block schematic representation.

In use the MP.12B will give trouble free and accurate performance, and failure or partial failure is likely to be a result of external problems with loudspeaker or input cabling etc. The following pages will provide a guide to setting up, operation and maintenance of the amplifier, but in case of difficulty it would be advisable to consult a qualified dealer or the manufacturer.

SPECIFICATION

Input channels	8 channels for 100V line input or 0db input
	4 channels for 100V line or 15V line (typically 50W into 4 ohms or 25W into 8 ohms etc
Input mode	Precision electronic balanced
Input headroom	25dB @ 1kHz
Input transient protection	Two stage, primary - 33V and secondary - 15V
Input isolation	1500V between 100V circuits
Input channel crosstalk	better than -40dB, 60Hz to 10kHz, lines terminated. Typically -60dB
Input switching	Two pole. Break before make
Bargraph	5 pole. 6dB increments. Flying dot. +6dB is red, 0dB, -6dB, -12dB, -18dB are green
Remote muting control	Connect to 0V to mute. Requires 2mA switching capacity. +15V source.
Amplifier frequency response	-3dB @ 150Hz and 18kHz ref 1kHz
Amplifier output capacity	Nominally 2 Watts RMS, loaded to 0.5W
Loudspeaker specification	Wideband, 66mm cone, square chassis, rated at 3Watts
Power requirements	AC: 220-240V 50/60Hz. 5VA Limits 180-250V. T500mA x 20mm fuse
	DC +24V. 70mA quiescent, 300mA maximum. Limits 18-38V. Reverse polarity protected. F1A x 20mm fuse.
Connectors	IEC 6A standard for AC, Terminal blocks for all others. Capacity 2.5mm ²
Rack mounting	19" rack mount kit included with the unit. Equivalent to Mustang BRK-20
Mechanical construction	Enclosed steel chassis. Powder coat
Weights and shipping volume	Net 5kg, gross 6.5kg, carton .04cu.M
Dimensions (W x H x D)	Case size 432 x 329 x 89mm. 483mm wide if rack mounting. Removable feet add 6mm, front control knobs add 20mm and rear terminals add 15mm.

CONTROLS

Fascia controls are kept to a minimum, and none of them if operated without authorisation will cause any disturbance to the system operation. There are no user accessible configuration adjustments.

Channel selector

This is a continuously rotating switch, linked to the vertical LEDs adjacent to the Channel Ident card. Switching circuitry is "Break Before Make", double pole, balanced, and operates in high impedance bridge mode. When unselected, all input lines are still subject to high voltage transient limiting to safeguard other inputs and the internal wiring.

Monitor level

This is a simple audio "volume" control with adjustment between zero and maximum. It has no influence on the LED bargraph "Level" display.

Power

This rocker switch operates on both the AC and DC supply inputs simultaneously. It is associated with an adjacent green LED to indicate that the unit is powered.

CHANNEL IDENT LEGEND CARD

As a convenience to the user, this Ident (Identification) card has lined space to identify the circuits and equipment allocated to each input circuit. It may be written on using ball pen, but best results will be obtained using a permanent marker pen such as the Staedtler Lumocolour series.

If changes are required, then even the permanent marker ink can be removed using a slightly damp swab of methylated spirit. Do not let the meths come into contact with the fascia paint or the surface may be disfigured.

The Ident card is permanently fixed to the fascia.

LED DISPLAY

The five LEDs in this display are arranged in 6dB increments with the topmost set at +6dB and coloured red. This display is a useful visual aid giving a general idea of the characteristics of the monitored signal - regarding peaks and average signal level. It is not intended as an accurate measuring device. The display equates to a traditional VU meter concept, and uses a flying dot rather than a bar progression.

REMOTE MUTING

For applications where the MP.12B is to be located near to a paging microphone, the audio aspect of the circuitry may be muted by a remote switching circuit, or contact. This would be of maximum benefit if the muting could coincide specifically with the paging control circuit, thus ensuring that there was no possibility of feedback, or howl-round. The current sinks on most Mustang amplification products would provide ideal control in this context.

POWER SUPPLY

The MP.12B can be powered from either AC mains or 24VDC. The DC need not be regulated or entirely smooth. The DC negative supply terminal is connected to chassis via 10ohm resistor in order to minimise earth hum loop problems.

INSTALLATION IN 19" RACK

The MP.12B may be used as a stand-alone unit or, by using the rack mount kit type BRK-20, may be mounted in a standard 19" cubicle, occupying 2U of rack space. APPENDIX A illustrates the use of the kit.

FUSES

Fuses for the protection of both the AC and DC supplies are located on the rear panel and identified. The AC supply input fuse is part of the IEC inlet and is accessed by firstly removing the cable plug from the unit and then, by using a small screwdriver to unclip the fuse carrier from the fixed part of the connector. As shipped from the factory, a spare fuse is supplied within this carrier.

REPAIRS AND MAINTENANCE

Should components be required for replacement purposes, these may be obtained without delay from the address on the cover of this manual. It would be preferable to use original specification components rather than improvise or modify the amplifier.

Top cover removal

Disconnect the power source(s). Remove the countersunk screws and lift the cover clear. It is connected to the chassis by a clip-on safety earth which MUST be re-connected when refitting the lid. Always re-fit the cover and safety earth, and do not over-tighten the screws.

WARRANTY

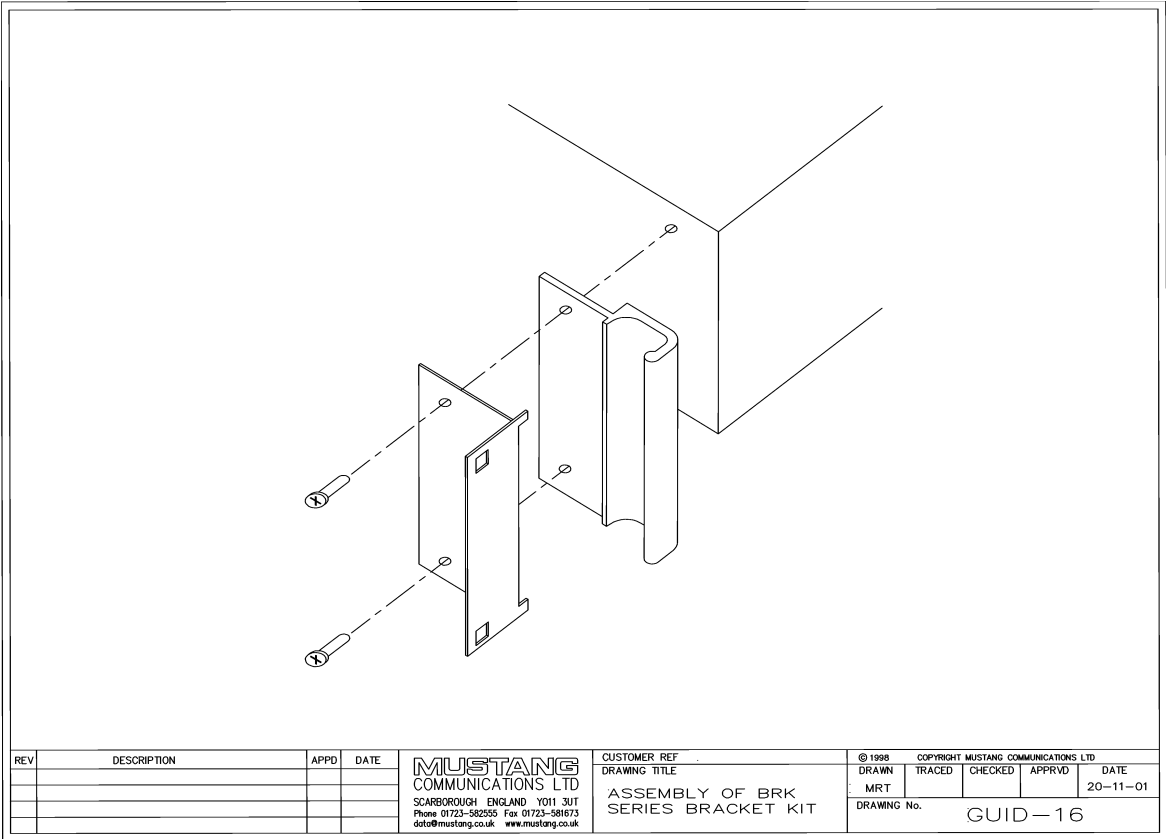
This unit should operate successfully for many years if installed correctly. However, should any fault occur within 24 months of installation, irrespective of usage or application, the manufacturer undertakes to replace parts, or the whole unit, at their discretion, free of all labour or parts charges. However, should investigation of such a fault indicate operation of the unit outside its specification, then the manufacturer reserves the right to levy an appropriate repair charge.

Should a fault be suspected, your dealer should be notified in the first instance. All returns should be made via your dealer, forward carriage paid, and be accompanied by details of:

- a the reported symptoms
- b brief details of the installation.
- c details of the circumstances of failure

Following the routine warranty period, Mustang equipment may be returned via your dealer, to the manufacturer for any necessary repairs or refurbishing. Details of the work required/reported fault must accompany the unit, and nominal charges will be levied.

Appendix A



Appendix B

