IM30
Issue 4 28/03/2000
ECR 1085

# M30

# Operating Instructions

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BALDWIN BOXALL
COMMUNICATIONS

# SAFETY

## IMPORTANT NOTES - DO'S AND DON'TS

### Ventilation
Always ensure adequate ventilation to the amplifier  Do not obstruct ventilation holes in cover or base.

### AC Power Input - Danger High Voltage
Only connect to an AC 50-60 Hz 230V supply using the lead assembly supplied or an equivalent type with a suitable IEC connector.
Always ensure that the amplifier is earthed.
Always unplug the power before removing the top cover.

### 100V Loudspeaker Output - Danger High Voltage
Ensure that the loudspeaker connections are suitably protected and cannot be touched.
Always replace output plug insulated covers.

Always ensure that the total speaker load does not exceed the rating of the amplifier used.  If unsure use an impedance meter to measure the unknown load.  Using a multimeter selected to the resistance range ensure that the speaker line is not connected to earth.

### Moisture
Do not allow water to come in contact with the amplifier and its external connections.

### Cable Types
Always ensure that the correct cable type is used for the signal level.
A twin screened cable should be used for balanced inputs operating at mic or line level.
Zone selection and access control cables do not generally require screening but should not share the same screen as the balanced input.

Loudspeaker output cables should be rated in excess of 100V and the cross sectional area to suit the load without excessive power loss.  Always ensure that output cables are kept as far away from input cables as possible reducing the risk of instability.

### Fuses
Always replace using the correct rating and type to ensure safe operation.

# M30 INTEGRATED AMPLIFIER FEATURES

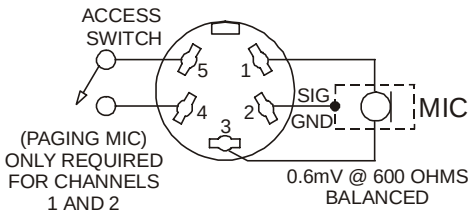
1. Two balanced microphone inputs and one unbalanced Auxiliary input.
2. Unbalanced Auxiliary Input can be converted into a Balanced Line or Balanced Microphone input.
3. Both balanced inputs have cascade priority, chime and volume restoration/busy options.
4. Built-in three note chime with pre-set volume control.
5. Internal option socket for Time Pip module (MIM20) or Alarm Tone Generator (MIM21).
6. Master volume, treble and bass controls.
7. Music mute facility, which allows for music to be totally muted or 'ducked' to a pre-set level, when paging operated.
8. Output stage protected in event of an unsuitable load being applied.
9. 24V DC output.

# CONNECTION DETAILS

## Input connections

### Balanced Microphone Inputs 1 & 2

| | |
|---|---|
| Pin 1 | Signal Input |
| Pin 2 | Screen |
| Pin 3 | Signal Input |
| Pin 4 / 5 | Link together to gain access using a remote switch or link mounted in the plug. |

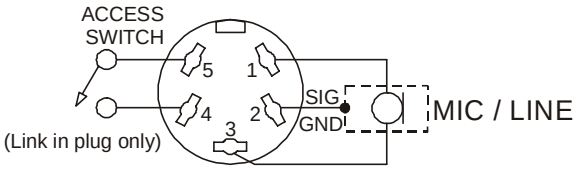



### Unbalanced Auxiliary Input 3 (Without MIM1 or MIM16)

| | |
|---|---|
| Pin 1 | Not applicable |
| Pin 2 | Signal Ground |
| Pin 3 | Not applicable |
| Pin 4 | Not applicable |
| Pin 5 | Signal Input |

### Input 3 with MIM1 or MIM16 (Converted to Balanced Mic or Balanced Line)

| | |
|---|---|
| Pin 1 | Signal Input |
| Pin 2 | Screen |
| Pin 3 | Signal Input |
| Pin 4 /5 | Link together in plug only |

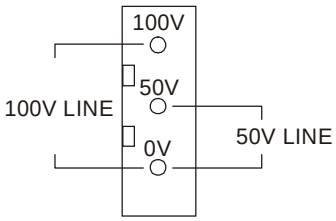


## Output Connections

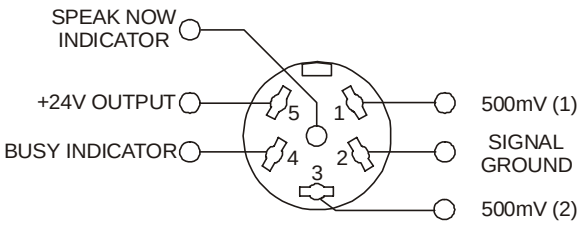
### Loudspeaker Outputs

Low Impedance Output: The two pin DIN socket provides 4 / 8 Ohm output.
Centre Pin Earth
Side Pin Signal

100V Line Output: The three pin connector provides 50V or 100V floating line output.




### Sub-Socket




Pin 1 Provides 500mV signal output for driving slave amplifiers or tape recorder. This output is direct from the power amplifier after the master gain and tone controls. Output impedance 7k Ohms.

Pin 2 Output signal ground.

Pin 3 As pin 1 but signal is derived prior to master gain and tone controls. Output impedance 500 ohms.

Pin 4 Open collector ‘busy’ indicator: 0V switched output used in conjunction with pin 5.

Pin 5 1 A fused DC output at +24V, used in conjunction with pin 4 to provide an electrical relay supply for zoning purposes, priority circuit indicators or DC power for external tuner and also for signal processing and line pre-amplifiers.

Pin 6 Open collector ‘speak now’ indicator; 0V when active.

# OPTIONS AND FACILITIES

## Priority and Chime Facilities.

Other than the Alarm Input (refer to section on page 6 for details) which takes total priority, mic inputs 1 & 2 can operate a chime and offer a priority facility. The chime and priority options are selectable via an internal 4 way DIL switch, which is located near the alarm socket on the main PCB (refer to schematic diagram on page 7). To gain access to this switch the lid of the amplifier must be removed.

The unit is supplied with all switches in the 'ON' position. By following the table below you can select the following options.

| Option | Yes | No |
|---|---|---|
| Chime Facility Mic 1 | Select switch 1 'ON'. | Select switch 1 'OFF'. |
| Chime Facility Mic 2 | Select switch 2 'ON'. | Select switch 2 'OFF'. |
| Priority on Mic 1 | Select switch 3 'ON'. | Select switch 3 'OFF'. |
| Priority on Mic 2 | Select switch 4 'ON'. | Select switch 4 'OFF'. |
| With switches 3 & 4 selected both mic inputs will override the auxiliary input. | | |

The Chime level can be adjusted via a pre-set control located on the underside of the amplifier.

## Mixing Mode

For full mixing of all three inputs, set DIL switches 3 & 4 to the 'OFF' position and maintain access to the inputs 1 & 2 by a remote switch or linking pins 4 & 5 in the DIN plug.

## Music Mute control

The amplifier has an internal pre-set control (VR2) which controls the residual level of background music (input 3) during paging. For full muting VR2 should be turned fully clockwise. For partial muting VR2 should be turned anti-clockwise to suit operational requirements. Once the priority microphone is de-selected the background music level (input 3) will fade up gently to its original setting. The unit is supplied with muting set to maximum.

## Plug In Options

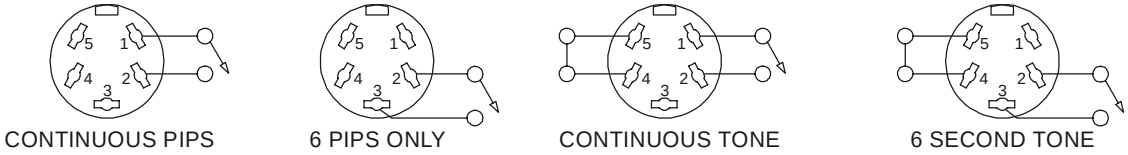
**MIM1**: Auxiliary to balanced MIC converter card. By inserting this card onto the internal connector at the rear of the amplifier the third input is converted from an unbalanced Auxiliary input into a balanced low impedance microphone input.

**MIM16**: Auxiliary to balanced LINE converter card. By inserting this card onto the internal connector at the rear of the amplifier the third input is converted from an unbalanced Auxiliary input into a balanced floating bridging 600Ω line input.

**NB**: To access these converted inputs pins 4&5 must be linked on the input plug.

## 1kHz tone Generator (MIM 20) – Options and Connections

The MIM20 is a 1kHz Tone Generator that can be set to provide a variety of outputs depending on the connections to the Alarm socket on the rear panel. To fit the MIM20 the lid of the unit must be removed and the module plugged into the internal multi-way connector. Refer to the schematic diagram on page 7 for the position of this connector.



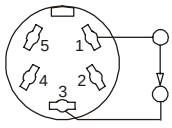

CONTINUOUS PIPS | 6 PIPS ONLY | CONTINUOUS TONE | 6 SECOND TONE

## Alarm Module (MIM 21) - Options and Connections

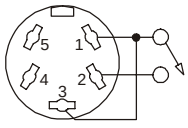
The MIM21 is an Alarm Tone Generator that can provide a selection of Alarm Tones depending on the internal DIL switch selection. To fit the MIM21 the lid of the unit must be removed and the module plugged into the internal multi-way connector. Refer to the schematic diagram on page 7 for the position of this connector.

| **Alarm Sound** | **SW1.1** | **SW1.2** | **Sw1.3** | **SW1.4** |
|---|---|---|---|---|
| Low frequency slow whoop | On | On | Off | Off |
| Low frequency fast whoop | On | Off | Off | Off |
| High frequency slow whoop | On | On | On | Off |
| High frequency fast whoop | On | Off | On | Off |
| Low frequency slow ‘Dee Daa’ | Off | Off | Off | On |
| Low frequency fast ‘Dee Daa’ | Off | Off | Off | Off |
| High frequency slow ‘Dee Daa’ | Off | Off | On | On |
| High frequency fast ‘Dee Daa’ | Off | Off | On | Off |

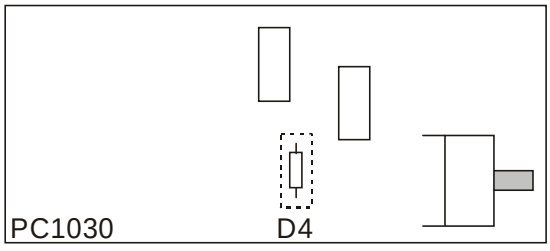
The input DIN connection for the MIM21 can be configured to use either normally closed or normally open contacts.




ALARM SWITCH CONTACTS NORMALLY CLOSED



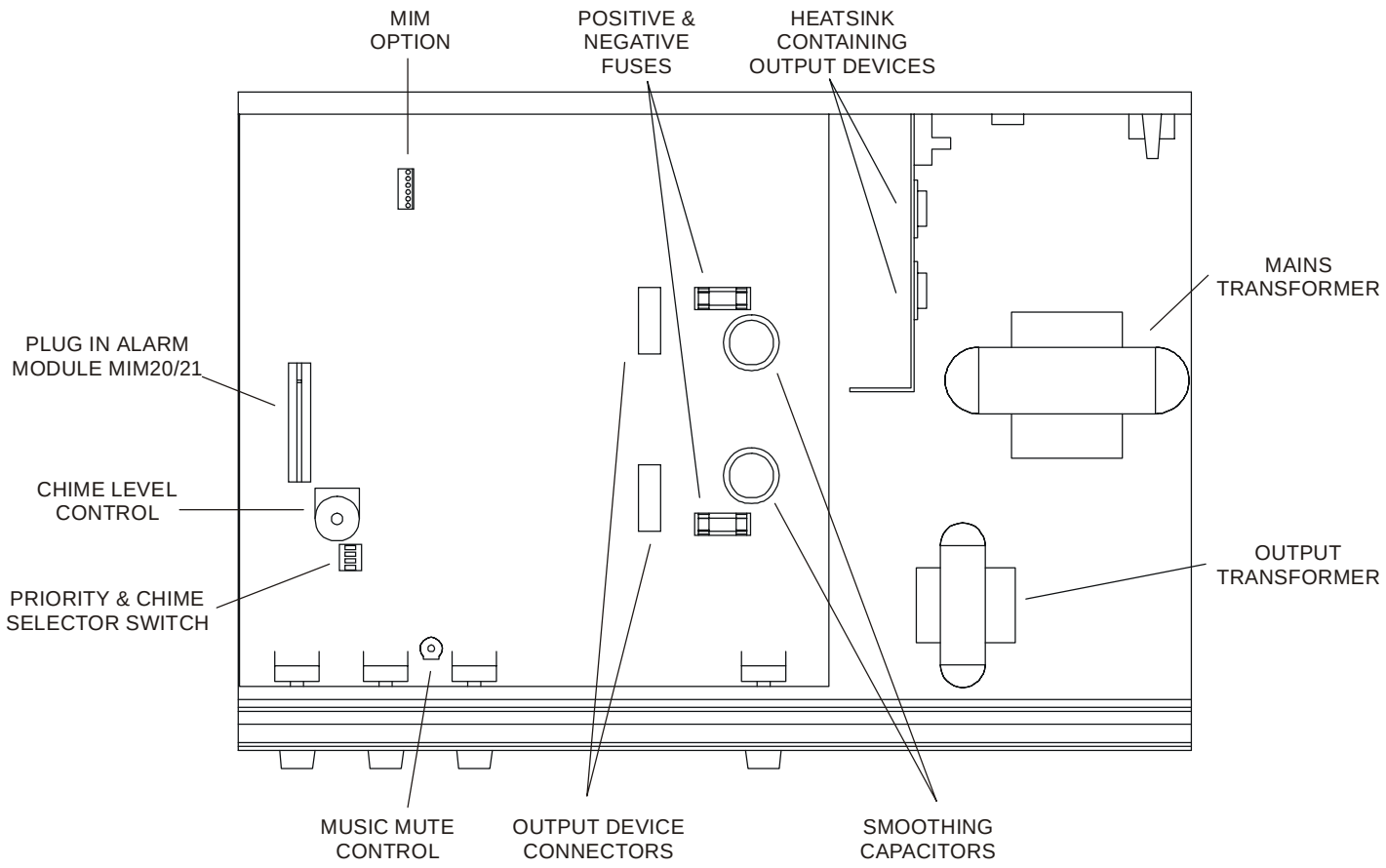

ALARM SWITCH CONTACTS NORMALLY OPEN

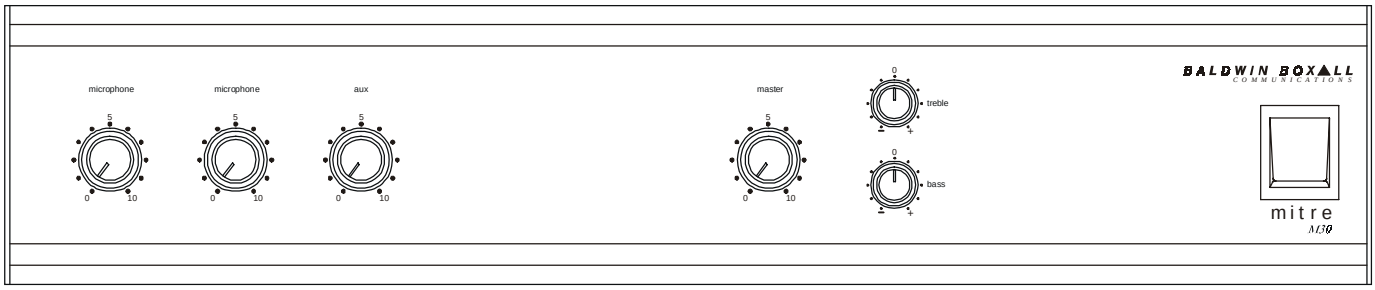


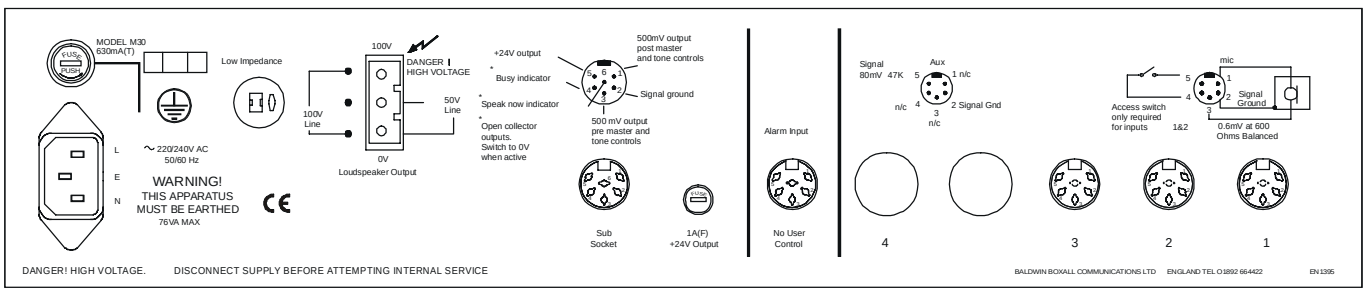

AS SUPPLIED THE MIM20 & MIM21 WILL PROVIDE A 24V DC SWITCHED OUTPUT (VOLUME RESTORATION) FROM THE MAINFRAME SUB SOCKET.

IF VOLUME RESTORATION IS NOT REQUIRED, REMOVE DIODE D4.

# M30 INTERNAL LAYOUT & FRONT / REAR PANEL VIEWS



# M30 TECHNICAL SPECIFICATION

| | | |
|---|---|---|
| RATED OUTPUT POWER<br>(100 volt line) 230V AC supply | | 30W |
| Typical RMS: (Max 1% THD @1kHz) | | |
| | 100V line | 32W (330 Ω) |
| Low impedance: | 8 Ω | 23W |
| | 4 Ω | 36W |
| | 2 Ω | N/A |
| Output voltages available: (Floating) | | 50V and 100V |
| Output Regulation: (1kHz 100V line) | | 1.6dB |
| Distortion THD: (1kHz 100V line, Aux input) | | Better than 0.2% |
| Frequency Response (100V line, Aux input) | | -3dB @ 50Hz – 18kHz |
| Aux Input Sensitivity | | 80mV @ 40kΩ |
| Aux S/N Ratio | | Better than 70dB |
| Mic Input Sensitivity | | 600μV @ 600Ω |
| Mic S/N Ratio | | Better than 60dB |
| Tone Controls: | | |
| | Bass | ± 12dB @ 100Hz |
| | Treble | ± 12dB @ 10kHz |
| Power Consumption: | | |
| | Quiescent | 17VA |
| | Nominal output power @ 1kHz | 76VA |
| Weight | | 4.25Kg |
| Dimensions (mm) | | 300D x 430W x 90H |
| Fuse Protection: | | |
| | AC 20mm 1 off | 630mA (T) |
| | DC 20mm 2 off | 2A (F) |
| | 24V DC Aux output 1 off | 1A (F) |
| Terminations: | | |
| | AC Supply Input | 3 pin DIN IEC 6A |
| | Signal Input | 5 pin 240° DIN |
| | Input / Output | 5 pin 240° DIN |
| | Loudspeaker Line | 3 pin screw terminated connector |
| | Loudspeaker Low Impedance | 2 pin speaker DIN |

CE

Low Voltage Directive
73/23/EEC as amended
by 93/68/EEC

EMC Directive
89/336/EEC as amended
by 92/31/EEC and 93/68/EEC

Applies only when the items are correctly fitted and operated in or with products of our manufacture and are installed in a recommended enclosure.