

BAC-1

TRANSISTOR BROADCAST CONSOLETTTE

DATA BOOK

B246.



FEATURES

- 6 low-level and 4 high-level inputs.
- Low-level inputs for microphone or pre-equalised pick-ups.
- 2 identical programme amplifiers.
- A 10-watt high-quality monitor amplifier.
- A flexible talk-back system.
- Facilities can be easily extended to meet individual requirements.
- Plug-in printed-circuit boards facilitate servicing.

APPLICATION

The AWA Broadcast Consolette is a self-contained, high-quality, all solid state, audio control unit designed to satisfy the present day requirements for a simple, yet flexible, announcer-operated unit for sound broadcasting installations.

A specially designed extension housing can be supplied to provide a range of additional facilities as required. This greatly increases the applications and flexibility of this consolette particularly when catering for the specific requirements of the Broadcasting, Television, Recording and Film Industries.



**AMALGAMATED WIRELESS
(AUSTRALASIA) LIMITED.**

47 YORK STREET, SYDNEY

DESCRIPTION

The consolette is a desk-mounted unit with a sloping front panel upon which the v.u. meters and all controls are mounted. The front panel is hinged at its lower edge and tilts forward to provide access to components and wiring. The amplifier components are carried on printed-circuit boards which plug into receptacles on the consolette. All connections are made at the back of the unit on screwed terminals. These terminals are exposed when the top cover is removed.

SUMMARY OF FACILITIES:

Inputs:

Six low-level and four high level inputs.

Input Level Control:

Fader-Controls are provided on all inputs.

Input Channel Mixing:

All inputs can be switched independently to one of two output channels.

Outputs:

Two 600-ohm programme channels are provided, the second of which is internally connected to the Cue/Talkback system.

A normal/Emergency switch interchanges the two programme amplifiers, allowing continuation of programme output in the event of programme amplifier failure.

Cueing and Talkback:

Channel 2 may be used as a cue channel, and is wired for such use. Inputs 2-10 are available directly to channel 2, whilst input 1 is available via the talkback press-to-talk buttons which divert channel 2 output to the selected talkback line.

Monitor:

A push-button switch selects one of four inputs to the monitor amplifier. Three outputs are provided, one unmuted and the other two muted by the BOOTH and STUDIO relays respectively.

Muting:

Any low-level input key may be wired to mute either the BOOTH (including cue) or STUDIO speakers by a simple connection to a terminal block at the rear. Remote muting is also possible. Normally, muting operates on channel 1 only, but with simple internal wiring changes the muting can be made to operate on both channels.

Utility Key:

A key switch wired to a terminal block on the rear provides two-way switching of one balanced line and one d. c. circuit.

Level Metering:

Two V. U. meters are incorporated; one for each of the two channels provided.

PERFORMANCE

Consolette

Gain:

Low-level inputs to programme outputs 92 dB $\pm$ 2 dB insertion gain. High-level inputs to programme outputs 12 dB $\pm$ 2 dB voltage gain bridging or 24 dB $\pm$ 2 dB voltage gain terminated.

Input Impedances:

Low level: 50 or 150 ohms balanced C. T. earthed

High level: 600 ohms bridging no C. T. or 600 ohms terminated.

Maximum Input Level:

(1% distortion)

Low Level: -30 dBm

High Level: +20 dBm bridging; or +10 dBm terminated.

Output Impedance:

150 ohms or 600 ohms balanced.

Output Return Loss:

At least 20 dB relative to 600 ohms.

Output Level:

0 VU = +8 dBm.

Maximum Continuous and Peak:

+24 dBm

Frequency Response:

30 Hz to 15 kHz $\pm$ 1 dB

(1 kHz reference).

Harmonic Distortion:

Less than 1% at +24 dBm output at any frequency within the range 30 Hz to 15 kHz.

Noise and Hum:

Low level inputs; Input terminated in correct impedance; not greater than -120 dBm referred to the input, over the band 30 Hz to 15 kHz.

Monitor Amplifier

Power Output:

10 watts into 15-ohms load.

Gain:

When connected to a line delivering +18 dBm into a 600-ohm load, the amplifier will deliver 10 watts into a 15-ohm load.

Input Impedance:

Balanced bridging.

Frequency Response:

30 Hz to 15 kHz $\pm$ 1 dB

(1 kHz reference).

Harmonic Distortion:

Less than 1% at 10 watts output at any frequency
within the range 30 c/s to 15 kc/s

Noise and Hum:

At least 80 db below 10 watts

Mains Input:

105 - 130 or 210 - 250V a.c.

50 - 60 c/s nominal

A $\pm$ 5% variation about the nominal supply voltage is
permitted when connected to the nearest transformer tap.

Power Consumption:

Maximum 40 VA.

Ambient Temperature:

The unit will perform satisfactorily in ambient temperature
between 0°C and 55°C.

Dimensions and Weight:

Height: 9 inches (22.9 cm)

Width: 30 inches (76.2 cm)

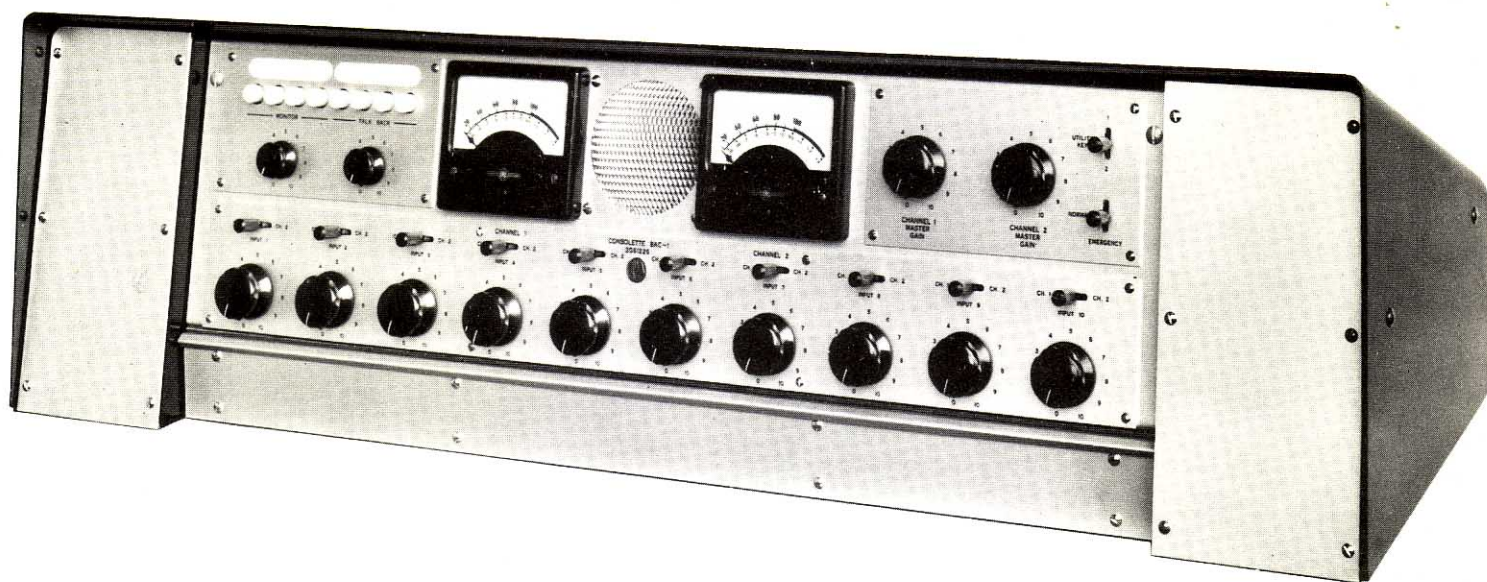
Depth: 10 inches (25.4 cm)

Weight: 43 lb (19.5 kg)

AMALGAMATED WIRELESS (AUSTRALASIA) LIMITED

AUSTRALIA'S NATIONAL WIRELESS ORGANISATION

HEAD OFFICE: 47 YORK STREET, SYDNEY
MELBOURNE
BRISBANE
PERTH
HOBART
LAUNCESTON
WELLINGTON, N.Z.
LONDON

TYPE 1R61228

The A. W. A. Audio Consolette Extension Housing is designed to permit the addition of extra features to the standard BAC-1 without changing its basic concept. The construction allows the user to add facilities easily, at any time, to meet changes in operating requirements.

As shown in the photograph the housing is constructed as an expanded "U" with side wings and a flat base resembling a tray. The consolette is mounted above the base section, neatly fitting between the two end sections and giving the appearance of a single unit. A cover is provided for the complete assembly replacing the normal consolette cover and further adding to the unity of appearance. The consolette fittings are designed so that it may be raised on pivots for easy servicing.

Ample space is provided in the end sections for additional monitoring or utility amplifiers, intercom, switching, or other extensions as may be required. Also operational components can be fitted in the base section.

Overall dimensions and weight:

Height:	11.¼ in.	(28.6 cm)
Width:	40 in.	(101.5 cm)
Depth:	15 in.	(38.1 cm)
Weight:	67 lb.	(30.5 kg)

TRANSISTORISED
10 WATT MONITOR AMPLIFIER BAM-2
TYPE IG60796

CATALOGUE

B230



FEATURES

- Fully transistorised design
- Facilities for internal preset or external gain control
- Built-in power supply with fuses in mains input and d.c. supply units
- 600 ohm line-bridging input
- Three units are accommodated in a single rack-mounting tray 5¼ inches high
- 15-ohm output (unbalanced).
- May be adapted for sound distribution providing 10 outputs.

APPLICATION

The AWA Transistorised 10-Watt Monitor Amplifier, BAM-2, is a high quality amplifier designed for monitoring of sound in broadcasting and television systems. It can also be used for distribution purposes by the addition of the AWA splitting adaptor, type 1G60806.



AMALGAMATED WIRELESS
(AUSTRALASIA) LIMITED.

47 YORK STREET, SYDNEY

DESCRIPTION

All components and transistors are mounted on a one-piece folded steel chassis made in the form of a box, open on top and on one side to allow free air circulation. It is a plug-in assembly using a robust 16-way connector on both the chassis and the slide. The mounting tray, type 1Z60799, which is 5¼ inches high and fits a standard A.P.O. rack, will hold three of these units side-by-side.

The balanced, bridging input provides for an internally fitted, or external gain control.

Two stages amplify the input signal before applying it to a complementary symmetry phase inverter consisting of two transistors which drive the class-B output stage.

All stages are d.c. coupled and stabilised with both a.c. and d.c. feedback. Temperature compensation is employed on the output transistors to maintain correct operating conditions.

TYPICAL PERFORMANCE

Power Output:

10 watts into 15 ohms. Using the recommended gain control connected across a 600-ohm line delivering +18 dbm to a 600-ohm load the amplifier will deliver 10 watts (i.e. 40 dbm). That is the apparent gain is 22 db.

Input Impedance:

10K ohms balanced, when used with recommended gain control (bridging loss 0.5 db on 600-ohm line)

Frequency Response:

± 1 db from 30 c/s to 15 kc/s

Harmonic Distortion:

0.5% at 10 Watts output into 15 ohms within the range 30 c/s to 15 kc/s.

Noise:

Better than 80 db below full output

Power Supply:

105 to 130/210 to 250 volts, in 5 volt steps, 50/60 c/s.

Semi-Conductor Complement:

<u>Type</u>	<u>Quantity</u>
2N2614	1
2N384	1
BCY31	1
2N2270	1
2N2147	2
OA5	3
OA202	2
1N3193	4

Dimensions & Weight:

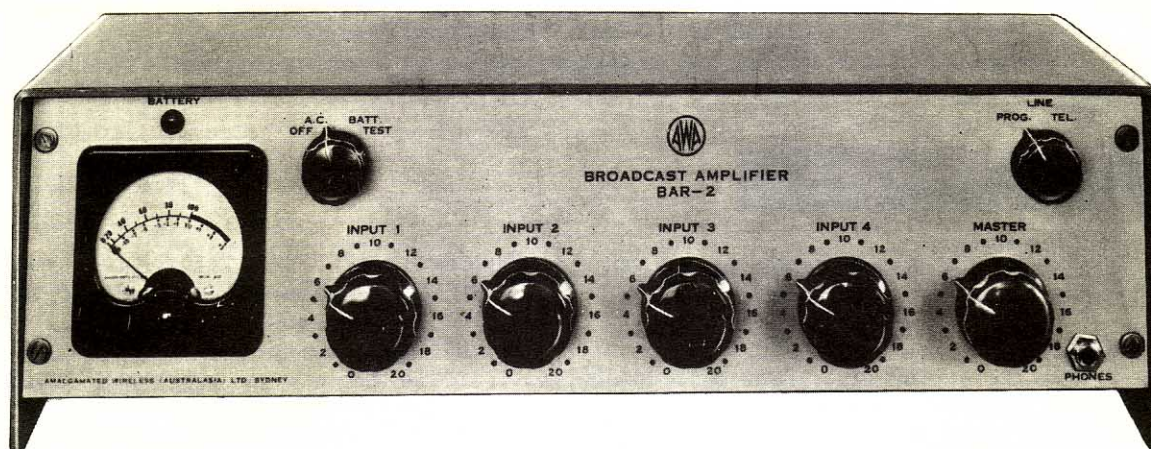
Height	4-3/4 inches
Width	5¼ inches (3 units per mounting tray)
Depth	11-3/4 inches
Weight	9 lbs.

BROADCAST AMPLIFIER BAR-2

CATALOGUE

B154/2

TYPE 2G59747



FEATURES

- Transistors used throughout.
- Silicon rectifiers
- Four controls for high-level mixing.
- Printed wiring gives reliability.
- Four separate, balanced microphone-inputs.
- Low-noise input transistors.
- Output transistors protected against line shorts.

APPLICATION

The AWA Broadcast Amplifier, type 2G59747, is a lightweight four-channel amplifier suitable for remote broadcasts or for studio use and fulfils the requirements of the Australian Broadcasting Control Board. Because of its small size and light weight it is particularly valuable for remote broadcasts, providing amplifying and control facilities for raising low-level signals to a value suitable for transmission over a telephone line to the studio. The equipment has four independent, simultaneous channels, with balanced inputs and it may be used as a simple four-channel mixer or in conjunction with pickup equalisers as a four-turntable, sub-group control unit.



Engineering Products Division
422 LANE COVE ROAD, NORTH RYDE, N.S.W. 88 6666

AMALGAMATED WIRELESS (AUSTRALASIA) LTD

MELBOURNE
67 9161

BRISBANE
4 1631

PERTH
28 6400

LAUNCESTON
2 1804

TOWNSVILLE
72 1744

PORT MORESBY
5 5528

The amplifier uses transistors and silicon diodes throughout and is completely self-contained for a.c. or battery operation. Printed circuits are used and two etched-wiring boards carry most of the small components and transistors.

An isolation pad precedes the output transformer to protect the output transistors from damage in the event of a short-circuit on the line.

The a.c. power supply comprises a full-wave rectifier using two silicon diodes and a resistance-capacitance filter. Temperature correction is incorporated to insure that the output voltage is satisfactory up to 50 °C.

All controls, switches, vu meter and phone jack, are mounted on the front panel. Batteries are mounted in special clamps attached to a removable base plate.

The base plate is fastened by two quarter-turn "Oddie" fasteners.

Mounted on the rear panel of the amplifier are four Cannon-type XL-3-13 sockets for the microphone inputs, terminals for the line and telephone, and the mains fuse. An 8ft. connecting lead fitted with a three-pin plug is attached to the amplifier to connect it to an a.c. mains supply.

A weather-proof canvas carrying case, so designed that it is not necessary to remove it when using the amplifier, is supplied with the unit.

TECHNICAL DATA

Input Impedance:

Suitable for connection to 50— ohm or 150— ohm sources.

Input Level:

—80 dBm to —40 dBm. There are 4 inputs incorporating high level mixing.

Load Impedance:

150 ohms, or 600 ohms, balanced or unbalanced.

Output Level:

+20 dBm maximum.

Gain:

92 dB $\pm$ 2 dB

Frequency Response:

$\pm$ 1.0 dB from 50 Hz to 10 kHz.
 $\pm$ 2.0 dBm from 30 Hz to 15 kHz.

Harmonic Distortion:

30 Hz to 15,000 Hz
 At +16 dBm, less than 1%.

Noise Level:

60 dB below +8 dBm with 20 dB held in the master gain control and the channel control set for an overall gain of 68 dB.

Power Requirements:

Mains Operation:

220 V to 250 V a.c. 50 c/s.

Battery Operation:

Four 9 V dry batteries. Eveready 2362 type.
 One 1.5 V dry battery Eveready D50 leakproof type.

Metering:

3-inch vu meter indicating 0 vu for +8 dBm at line terminals. VU meter is also used for testing batteries.

Controls:

- (i) Individual-channel gain-controls after each pre-amplifier.
- (ii) Master Gain-Control
 All Controls are logarithmic, moulded carbon-track potentiometers.
- (iii) The following controls are fitted on the front panel:
 Four Channel Faders (i)
 Master Gain-Control (ii)
 Power Switch
 Programme Telephone-Switch
 VU Meter
 Phone Jack
 Battery Indicator Pilot.

Semi-conductor Complement:

Type	No.
2N220	5
2N217	3
2N214	1
2N270	1
1N1763	2

Construction:

The amplifier is housed in a case constructed of aluminium alloy.

Finish:

Metallic Grey, anodised front panel, black characters.

Dimensions:

4½ in. high 11.42 cm.
 17 3/4 in. wide 45.1 cm.
 8 in. deep 20.32 cm.

Weight:

16 lbs. 7.249 kg.

The information given herein is typical of the performance that may be expected in practice, but is subject to confirmation at the time of ordering.

PROGRAM CONTROL AMPLIFIER BIG-1



FEATURES

- Ultra-fast attack times and complete absence of transients with gain changes.
- Independent positive peak-level control
- Extensive 25 dB control range
- Very low distortion when limiting
- Maintains constant programme 'loudness'
- Absolute gain stability during programme pauses
- Input and Output attenuators provided



AMALGAMATED WIRELESS (AUSTRALASIA) LTD

Engineering Products Division

422 LANE COVE ROAD, NORTH RYDE, N.S.W. 88 6666

APPLICATION

The AWA Programme Control Amplifier, BIG-1, is the latest item of broadcast-studio equipment designed to give the best obtainable automatic control of programme level and peak limiting in high-quality audio systems, broadcasting & television.

The basic limiting amplifier rapidly suppresses programme peaks above a selected level, while the programme level control can be operated in either one of two modes. A "time-constant recovery" mode or an "input-gated with memory" mode; automatically returning to a median gain condition.

The use of plug-in modules and silicon-semiconductor circuitry results in compact construction with built-in reliability and low maintenance.

DESCRIPTION

The BIG-1 Amplifier is constructed as a rack mounting unit with one or more modules fitted according to the application required. The unit comprises:

- (a) Control Amplifier Frame which contains all signal and power transformers, front panel jacks and gain reduction meter.
- (b) Limiting Module, Type 1G64837, contains rectifier and regulator circuits, the main signal path amplifier and control circuitry. The three major functions of the control circuitry are:
 - (i) D.C. controlled variable loss.
 - (ii) Output-level sampling amplifier.
 - (iii) Derivation of loss control voltages.When supplied as a limiter this module only is fitted and the action of the BIG-1 is that of a very fast attack peak limiter.
- (c) Programme Control Module, Type 1R64835, is used to maintain high average modulation, without exceeding specified peak programme levels. This module is required in addition to the Limiting Module for A.G.C. operation.

Two main functions are provided:

- (i) Sampling of the input signal before it is acted upon by the variable loss circuit.
- (ii) Derivation of the additional loss control signals required. A Logic Unit, type 1R64838, is incorporated and determines the action of the Programme Control Module to ensure that optimum output-signal levels are maintained. Sealed-unit construction is used so that the necessary circuit stability is maintained over long periods.

PERFORMANCE SUMMARY

Input:

The amplifier has a fully balanced terminating input with a centre tap and electrostatic screen. Return loss referred to 600 ohms is at least 20 dB.

Level at which gain reduction commences may be set within the range -25 dBm to +20 dBm. The maximum permissible input level is +20 dBm.

Output:

The output circuit is floating. Return loss referred to 600 ohms is at least 26 dB.

The output feeds a 600-ohm load at a peak level in the range +18 dBm to +22 dBm, adjusted by the output-level control which is a recessed screwdriver control on the front panel. A 600-ohm attenuator of 20 dB in 2 dB steps is also provided.

Gain:

The overall gain is 45 dB $\pm$ 1 dB when both manual attenuators and the loss-control elements are at minimum loss.

Threshold:

Over the frequency range 30 Hz to 15 kHz, the limiting threshold will not vary by more than +0 dB to -0.5 dB from that at 400 Hz.

A pre-set control may be adjusted so that positive peaks up to twice the amplitude of negative peaks will give similar limiting action.

Frequency Response:

When measured at a level below that at which control of gain commences, the frequency response over the range 30 Hz to 15 kHz will not vary by more than ± 0.5 dB from that at 400 Hz.

Distortion:

With the input sensitivity adjusted to maximum, the total harmonic distortion produced by the amplifier will not exceed that set out below:-

INPUT	TOTAL-HARMONIC DISTORTION
1 dB below limiting threshold } 1 dB above limiting threshold }	0.5%, 30 Hz - 15 kHz
20 dB above limiting threshold	1.0%, 50 Hz - 15 kHz
25 dB above limiting threshold	2.0%, at 30 Hz

The last distortion figure decreases with increasing frequency or recovery time constant.

Noise:

The unweighted noise output of the amplifier, measured over the band 30 Hz to 15 kHz, with a 600-ohm resistor across input and output unattenuated, is less than -55 dBm when input sensitivity is adjusted to maximum.

Attack Time:

Attack time is less than 50 μ s. This is the interval between the application of 10 kHz tone at 20 dB above limiting threshold and the return of output level to within 1 dB of its eventual value.

Compression:

An increase of 25 dB in input level from threshold will not increase steady-state output level more than 0.5 dB.

Recovery Time:

Basic time-constants of 0.5 s, 1.0 s, and 2.0 s, are provided and longer time-constants can be obtained by combination of these. A pre-set control may be adjusted so that the passage of positive peaks up to twice the amplitude of negative peaks will result in similar limiting action.

Thump:

Negligible thump is introduced by the gain-control element.

Front Panel Controls:

Knobs are provided for:

Input Level.

Output Attenuator.

Screwdriver adjustments are provided for:

Output Level Fine (Limiting Module)

Threshold (Programme Control Module).

A switch disables the limiting action to allow the line amplifier to be tested at levels higher than normal.

Power Supply:

Tappings are provided at 5 V intervals for inputs 105 V to 130 V and 210 V to 250 V. Variations of $\pm 10\%$ and frequencies from 48 Hz to 65 Hz will not degrade performance.

Operation Temperature:

The amplifier will maintain specified performance in an ambient temperature up to at least 55 °C.

Metering:

Connections are provided for an external meter of 100 μ A f.s.d. with a total circuit resistance of not more than 5 kilo-ohms.

Dimensions & Weight:

Height: 5.25 in (129 mm)

Depth: 12.75 in (324 mm) behind mounting flanges, including connections

Width: 19 inch rack fitting

Weight: 12.25 lbs. (5.5 kg)

Front Panel Test Jacks:

Two twin-carrier test jacks permit connections to be made to the input and output circuits for testing purposes.

Insertion of a jack into a test socket automatically disconnects any external lines which may be connected.

ASSOCIATED EQUIPMENT

Programme Control Amplifier BIG-1 Type 1G64830 comprises:

Control Amplifier Frame

Limiting Module, Type 1G64837.

Optional Module:

Programme Control Module, Type 1R64835,

which contains a Logic Unit, Type 1R64838.

ADDITIONAL ACCESSORIES (Optional)

Module Extender type 1R64839:

Facilitates maintenance adjustments and may be accommodated behind 0.8 -inch wide blank panel at the right-hand end after fitting the guides provided.

Additional Modules:

A line amplifier, line equaliser or similar unit may be fitted in a 4-inch space provided in the unit which is normally concealed by a blank panel.

The information given herein is typical of the performance that may be expected in practice, but is subject to confirmation at the time of ordering.

OUTSIDE BROADCAST AMPLIFIER

BOB-2

CATALOGUE

B256



FEATURES

- Designed for ease of operation.
- "No thump" automatic level control with rapid attack.
- Two independent low-level inputs.
- Rugged construction.
- Uses standard 1.5 "C" size cells.
- Meter indication of line level and battery condition.
- Very low distortion.
- All silicon semiconductors; no temperature problems.
- Terminals for telephone.
- Durable lightweight carrying case.
- Headphone jack for programme monitoring.

APPLICATION

The AWA Outside Broadcast Amplifier BOB-2 is a compact solid-state unit ideally suitable for general broadcast use. It has provision for two microphone inputs and will produce an output signal level which is maintained automatically in spite of wide variations of input level.

DESCRIPTION

The Amplifier is ruggedly constructed using solid state components with printed circuit board, and is housed in an aluminium case with a removable panel cover. The case is sprayed with a thick nylon protective coating. Controls and connections are on the front panel. A weather proof canvas carrying case is supplied and is designed to allow operation of the amplifier without having to remove it. An added feature is that when the monitoring headphone plug is removed the battery supply is disconnected.



Engineering Products Division

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AMALGAMATED WIRELESS (AUSTRALASIA) LTD

PERFORMANCE

Figures apply to either input, when the input is fed from a 50 ohm source and the output is terminated in 600 ohms.

Input Impedance:	Suitable for bridging nominal 50 to 200 ohm impedance microphones
Maximum Input Level:	-30 dBm peak when holding 15 dB or more in the gain control
Frequency Response:	Response in the range 50 Hz to 10 kHz is within +0.5 dB, -1 dB of the response at 1 kHz.
Compression Ratio:	25 dB to 2 dB typical
Compression Threshold:	+ 16 dBm at output
Attack Time:	100 μ S
Output:	Designed to feed 600 ohm or 150 ohm lines with a low driving impedance
Output Level:	+ 8 VU on average programme
Harmonic Distortion:	Typically less than 1% in the range 50 Hz to 10 kHz, with up to 25 dB of compression.
Maximum Undistorted Output:	With the compression function disabled, the output level for which the total harmonic distortion is 1% or less is 20 dBm or greater.
Gain:	With either input gain control set to maximum, the output level into a 600 ohm termination will be 12 ± 2 dBm, when the input is connected to a 1000 Hz 50 ohm source which has been adjusted to feed a 50 ohm resistor with a level of -72 dBm.
Noise:	The signal-to-noise ratio at the output is 50 dB under the conditions noted in the previous paragraph, with the signal source replaced by a 50 ohm resistor and when measured in a 30 Hz to 15 kHz bandwidth.
Battery Complement:	Twelve 1.5 volt "C" size cells.
Battery Drain:	Zero signal; 9.5 mA Maximum Output; 18.5 mA
Overall Dimensions:	Height $4\frac{1}{2}$ in (114.3 mm) Width $8\frac{1}{4}$ in (209.5 mm) Depth 10 in (254.0 mm)
Weight:	7 lb (3.0 kg) in carrying case
Finish:	Front panel is silver satin anodised. Case is grey scuff-resistant nylon.
Connectors:	Microphone - Cannon LX-3-13. Line and Telephone "Belling Lee Binding Post L1499" Headphones - Mallory SC3 jack (accepts T. R. S. or T. S. plug)
Temperature:	Performance normal at case temperature up to 55°C .

The information given herein is typical of the performance that may be expected in practice, but is subject to confirmation at the time of ordering.

24 VOLT POWER SUPPLY BUP-2 TYPE IH60798

CATALOGUE

B231



FEATURES

- Silicon Rectifier Bridge circuit
- Mounts in same rack-mounting tray as Utility Amplifiers RAL-2 and Monitor Amplifier BAM-2
- Magnetically screened power transformer to reduce induction field.
- Fuses in main input and d. c. output circuits
- Amplifier or Relay Supply
- Shielding permits programme line level amplifiers to be mounted adjacent to power supply and low level pre-amplifiers next to the line amplifiers.

APPLICATION

The AWA 24 volt Power Supply, type 1H60798, is designed to supply the operating voltage for seven transistorised utility amplifiers or to supply the voltage to operate relays.



**AMALGAMATED WIRELESS
(AUSTRALASIA) LIMITED.**

47 YORK STREET, SYDNEY

DESCRIPTION

All components and transistors are mounted on a one-piece folded steel chassis made in the form of a box, open on top and on one side to allow free air circulation. It is a plug-in assembly using a robust 24-way connector on both the chassis and slide. The mounting tray, type 1Z60799, which is $5\frac{1}{4}$ inches high and fits a standard A.P.O. rack, will hold five of these units side-by-side.

TYPICAL PERFORMANCE

Mains Input:

105 to 130 and 210 to 250 volts
in 5 volt steps, 50/60 c/s.

D.C. Output:

24V d.c. 1 amp isolated from ground

Output Ripple:

Less than 1 volt peak-to-peak at 1 amp
(suitable for feeding Utility Amplifier
BAL-2)

Semi-Conductor Complement:

<u>Type</u>	<u>Quantity</u>
1N3193	4

Dimensions & Weight:

Height	4-5/8 inches
Width	3-1/8 inches (5 units per mounting tray)
Depth	11 inches
Weight	8 lbs.



AWA Building

163-173 QUEEN STREET, MELBOURNE, VIC.

AMALGAMATED WIRELESS (AUSTRALASIA) LTD

PO BOX 1674N MELBOURNE 3001
TELEGRAMS "EXPANSE" MELBOURNE
TELEPHONE 67 9161
TELEX 31245

Ref: EP23445/DMacG.

10th September 1970.

Mr. B. K. Horman,
c/o. Clarion Enterprises Pty. Ltd.,
63 Kingsway,
SOUTH MELBOURNE. VIC. 3205.

Dear Sir,

As requested, please find enclosed literature concerning
our range of Broadcast equipment.

Prices less tax are as follows:-

BIG-1	\$450	(extra \$100 for prog. module)
BAM-2	\$140	
BAR-2	\$375	
BAC-1	\$1350	
BUP-2	\$75	
BOB-2	\$300	

Should you require any further information please do not
hesitate to contact us.

Yours faithfully,
AMALGAMATED WIRELESS (A/ASIA.) LTD.

D. MacGregor
.....

D. MacGREGOR

ENGINEERING PRODUCTS DIVISION

Encl.