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1101 A AIRWAY
GLENDALE, CA 91201

Series 200 Modular System

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217

220

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THE ROH SERIES 200

incorporates many popular audio functions within one modular product line. The modular design approach allows a maximum of flexibility in the construction of both routine and unique audio systems. This product series is intended for use wherever quality of performance and reliability are an essential consideration. Each circuit provides professional performance and is sufficiently broad in operating range to make system construction an easy procedure. All modules are electrically and mechanically compatible with any enclosure or mounting accessory and may be combined as required. The broad choice of enclosures and accessories permits system construction using conventional rack mounting, or a custom installation of any module. Socket assemblies offer a convenient and attractive installation approach for single or multiple modules. Thus, the unusual flexibility of this modular system can greatly simplify your next audio system design.

ELECTRICAL FEATURES

Modules feature modern design techniques and incorporate the latest developments in solid state technology, both of which are combined with a conservative engineering philosophy. Specifications indicate a worst case measurement and the guaranteed limit of variation, rather than typical module performance. All audio processing modules are designed for use in a balanced or unbalanced 600 ohm impedance system. Module inputs incorporate RFI filtering which provides effective reduction of AM broadcast and higher frequencies. Audio circuitry and accessories incorporate a dual ground return, which separates signal and power circuitry, thereby avoiding common ground loop problems. Gain and input/output level adjustments are made with potentiometers and are immediately accessible. Modules operate from a common, single polarity 24-30 Vdc power supply and incorporate filtering for isolation between modules. All circuitry, both audio and power supply, will sustain and automatically recover from a mismatch or short circuit condition.

MECHANICAL FEATURES

Equipment enclosures provide effective environmental shielding, as well as, adequate convection cooling for the modules. All electrical and mechanical subassemblies are readily accessible for user maintenance. Modules and connectors are keyed to assure correct insertion and are locked in place when plugged into an enclosure. Circuit boards are made of glass epoxy, flame-retardant material and conductor surfaces are tin plated. The circuit board and connector mating surfaces are gold plated. Modules incorporate a 14 guage aluminum ground plane shield which also adds mechanical strength to the unit. Equipment connections are made to non-breakable plastic barrier blocks, which feature wire clamp terminals and eliminate soldering, wire wrapping, or lugging for proper connections. The wire need only be stripped and inserted for the screw-actuated clamp to make a secure termination.

WARRANTY

All Roh Corporation products are guaranteed against defects in material and workmanship. This warranty applies for one year from the date of delivery to the original purchaser. We will repair or replace, at our option, products which prove to be defective during the warranty period provided they are returned to the factory. Products returned for warranty repair will be serviced and shipped within 2 working days. Customers may repair and calibrate equipment without voiding the guarantee, provided the service is performed in a workmanlike manner. Roh Corporation will supply parts free of charge to those customers who elect to repair equipment that is under warranty. This warranty is in lieu of all other warranties, expressed or implied and constitutes fulfillment of all our liabilities to the purchaser. We assume no liability, in any event, for consequential or incidental damages incurred by the purchaser in connection with products covered under this warranty.



ROH CORPORATION
107 TECHNOLOGY PARK/ATLANTA

NORCROSS, Ga 30071

~~452-4240~~
(404) 449-0873

200 SERIES
APPLICATION NOTES

To achieve optimum results from the 200 Series audio processing modules and accessories, the following instructions should be considered prior to installation.

Equipment should be located with due consideration of ambient operating temperature, available air circulation, and freedom of high energy electromagnetic fields. All equipment chassis and line cord grounds should be connected to a common earth ground. Three wire line cords will provide an adequate chassis ground only if the plug receptacle is grounded at the equipment location.

Wire clamp terminal blocks are provided for convenient termination of the equipment. The terminal blocks require only that the wire insulation be removed prior to termination. Several stripped wires of similar gauge may be inserted between the clamp plates. The wire should be pushed through the clamp plates until visible from both sides of the terminal block, then the terminal screw should be tightened securely. Wiring between modules of a common enclosure can be made with unshielded hook up wire. All other system wiring should be made with two conductor foil shielded cable. At no time should the shield be used as part of the audio circuit or grounded at more than one point.

Modules are keyed to assure proper mating with the module connector and are mechanically locked in the connector when the front door of the equipment enclosure is closed. The installation of the module should be done with care so that module keying is effective. All modules are compatible with any module location within an enclosure. However, modules should be grouped in a logical order which provides the greatest separation between high and low level circuitry within a system.



Many modules incorporate voltage gain which may be adjusted over some nominal range to best suit a variety of module applications. Where practical, the gain control has been incorporated in the feedback circuit so that the signal to noise ratio is proportional to the gain derived. Considering the proportional relationship between noise and gain, a system should be constructed using the minimum gain required to achieve satisfactory performance. The bus level used within a system should be between -10 and 0 dbm for adequate headroom and minimum cross talk. The system output should be maintained between 0 and +10 dbm to maximize overall signal to noise ratio. Modules which incorporate output level potentiometers should be set for the maximum output level and reduced settings should be used only if required. Unused inputs or outputs do not require termination.

Transformers are often required for input or output termination of an audio module with remote equipment, but are seldom required for the interconnection between modules of a common enclosure. Modules with 10K ohm bridging inputs incorporate input line RFI filtering. All bridging inputs are intended for use with 600 ohm sources and will produce nominal loading effects on this source impedance throughout the audio frequency range. However, due to the reactive component of the input circuit filter source resistances greater than 2500 ohms will cause a high frequency loss in excess of module specifications. The Model 255, Input Transformer, will convert 10K ohms unbalanced bridging inputs to a balanced bridging input. The nominal input impedance of the Model 255 is 5,000 ohms, and the line loading will be less than 1 db, however for the specified frequency response the source should be limited to 600 ohms impedance. Module outputs are source terminated between 75 and 150 ohms. Each output should have a nominal loss of less than 2 db drop in level when terminated into 600 ohms. Module outputs are capable of driving several 600 ohm loads in parallel or in excess of ten bridging module inputs. The Model 256, Output Transformer, will convert unbalanced outputs to a 600 ohm balanced circuit. This unit provides a matched 600 ohm output impedance and should be loaded with a 600 ohm circuit for specified performance.

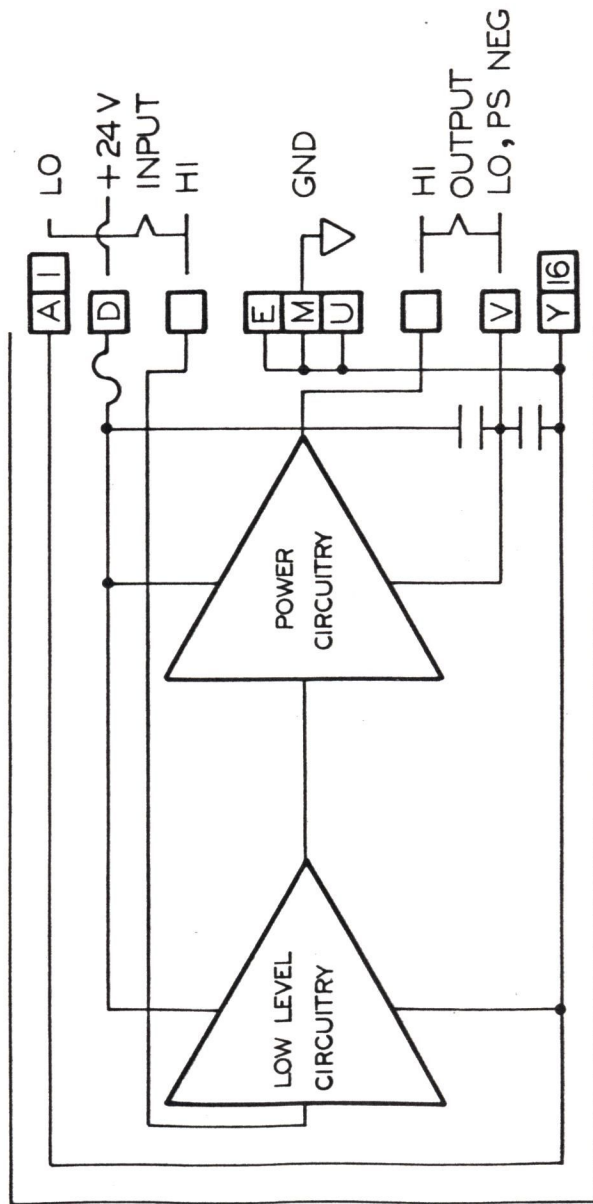
Enclosures which contain a power supply incorporate wiring between the power supply and each module location. Unpowered enclosures and socket assemblies require connection to an external power supply and should be wired as recommended in the following description and enclosed drawing. All 200 Series equipment incorporates two separate module ground buses; one ground bus is used for the audio signal ground and the other for DC power distribution. Signal lines and low level circuitry are connected to the power supply "ground" bus. DC control lines and power amplifier circuitry are connected to the "negative" power supply bus. Both the "ground" and "negative" buses are returned to the power supply negative terminal and at that single point connected to the system ground. The interconnection of single or multiple modules to a single or redundant power supply will vary and the enclosed drawing should be consulted. This procedure of wiring ground loop and cross talk problems commonly associated with audio system installation. The power supply remote sensing capability should be used if the power supply and equipment enclosure are separated by a distance greater than 25 feet. All external power distribution should be made with 18 guage or larger wire.

All equipment is designed for operation within the range of 24-30V for specified performance. The power source should be adequately regulated and contain no more than 1% output ripple voltage. Operating voltages beyond a 22-33V range should no be used. The current specified for each module is the maximum required to produce the rated output under a fully loaded condition. Quiescent current and normal operating current requirements are significantly less than the maximum ratings. Module fusing has been chosen so that maximum operating conditions can be sustained, yet a module failure will not affect the remaining system.

Routine maintenance is not required for any Series 200 equipment. All products are intended for continuous duty operation and only an occasional inspection need be performed. However, equipment should be kept clean so that ventilation passage and components bodies are free of excessive dust accumulation.

POWER DISTRIBUTION - 200 SERIES MODULE

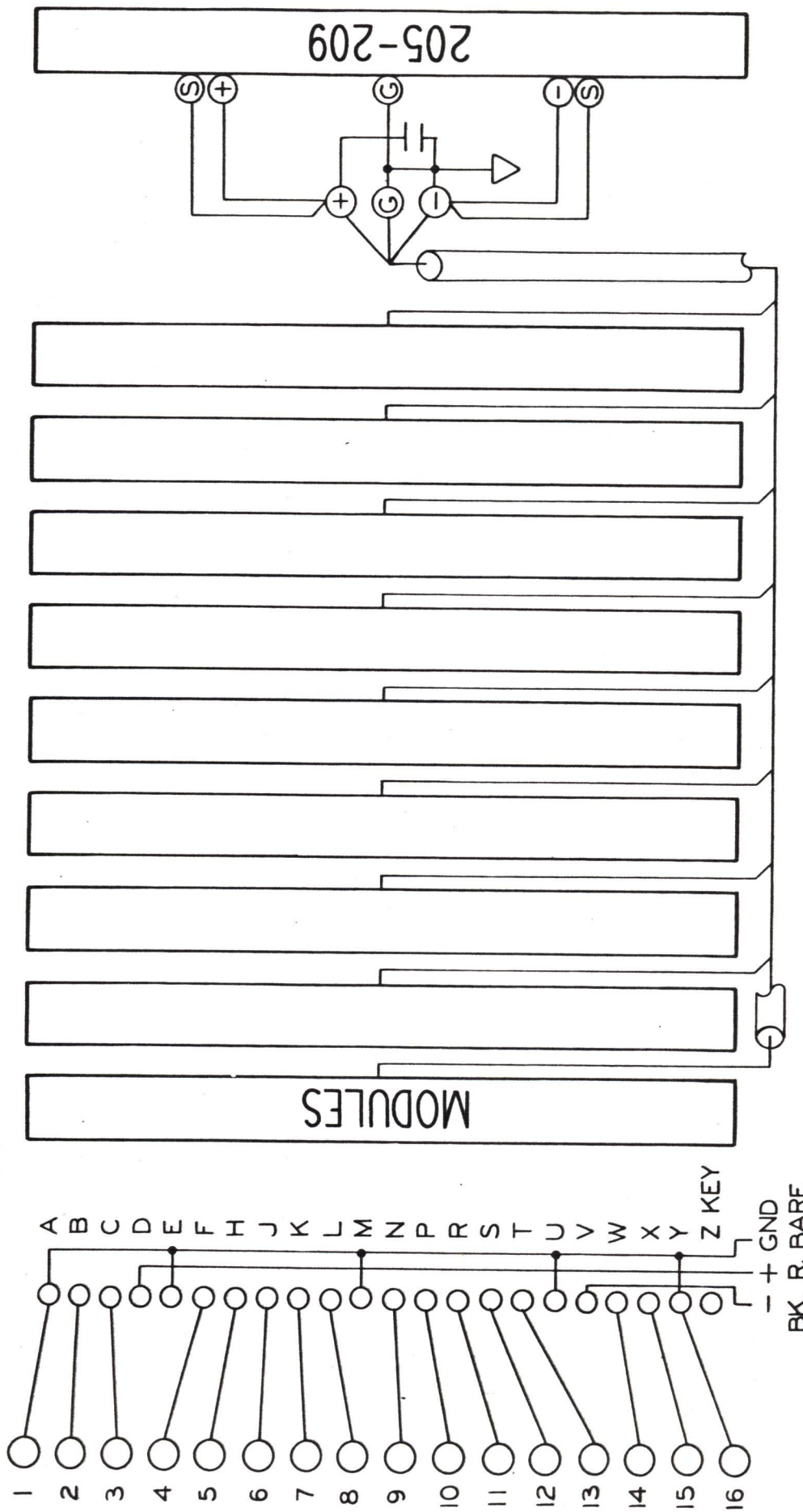
AUDIO MODULE



50 MA. MAX | 5A. MAX

MODULE GND. AND NEG. JOIN AT SYSTEM GND. REFERENCE

200 SERIES EQUIPMENT



MODULE TERMINATION

ENCLOSURE WIRING

POWER SUPPLIES

Series 200
Modular
System



SPECIFICATION GUIDE



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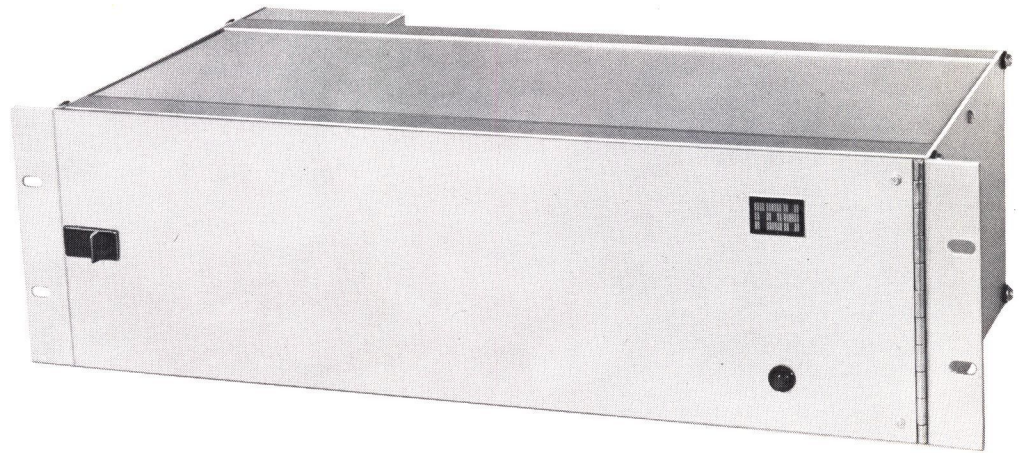
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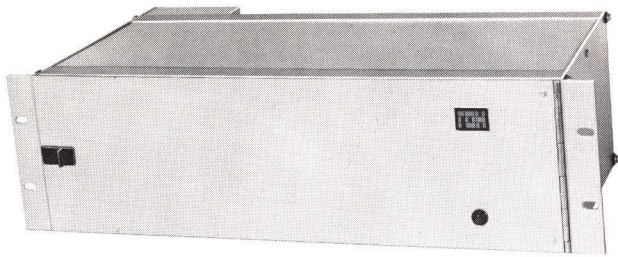
Model	Function	Feature	Channels	Gain	Input	Input Impedance	Output	Output Impedance	Output Level	Freq. Response @ Rated Output	Distortion @ Rated Output & Frequency Response	Output Noise @ Maximum Gain *Unity Gain	Crosstalk @ 10 kHz	Control Voltage	Power Input @ 24-30 Vdc
210B 220B	Power Amplifier	30 watt bridge op.	1 2	30 dB, input potentiometer adj	unbalanced	10k ohms, 1000 pf	unbalanced	4 or 8 ohms	10 watts/8 ohms 15 watts/4 ohms	20 Hz to 20 kHz \pm .5 dB	-50 dB, 10 watts -46 dB, 30 watts	-70 dBv	-50 dB, 220		1A/500 mA/ch 4/8 ohm load
211B 212B	Distribution Amplifier	Individual output adj	1x6	0 to +30 dB	balanced, 80 dB CMR	10k ohms, 500 pf	balanced, 1% diff balanced, floating	600 ohms	+18 dBm +24 dBm	20 Hz to 20 kHz \pm .5 dB 50 Hz to 20 kHz \pm .5 dB	-50 dB	-70 dBm	-50 dB between outputs		200 mA
213B 223B	Mixing Amplifier	Individual input adj	2, 6x1 6x1	0 to +20 dB	unbalanced balanced, 40 dB CMR	10k ohms, 1000 pf 10k ohms, 500 pf	unbalanced balanced, 1% diff	600 ohms	+15 dBm +18 dBm	20Hz to 20kHz \pm .25 dB	-60 dB	-80 dBm* -70 dBm*	-60 dB between inputs		25 mA/ch
214B 224B	Mic/Line Preamplifier	40 dB adj 600 ohm input pad	1 2	+20 to +60 dB	balanced, 80 dB CMR	150 to 600 ohms	balanced, 1% diff	600 ohms	+18 dBm	30 Hz to 20 kHz \pm 1 dB	-50 dB	-65 dBm	-70 dB, 224		25 mA/ch
215B 225B	Program/Line Amplifier	1 watt into 600 ohms	1 2	+10 to +30 dB	balanced, 80 dB CMR	10k ohms, 500 pf	balanced, floating	150-600 ohms	+24/30 dBm	30/50Hz to 20kHz \pm .5dB	-50 dB	-65 dBm	-60 dB, 225		100 mA/ch
216B 226B 236B	Remote Attenuator	Mixing & cue bus outputs	4 ch or 4x1 4x1 4 ch	0 to -80 dB, control	unbalanced balanced, 80 dB CMR unbalanced	600 ohms	unbalanced	600 ohms	+15 dBm	20 Hz to 20 kHz \pm .5 dB 226 50 Hz to 20 kHz \pm .5 dB	-60 dB -50 dB, 226	-80 dBm*	70 dB	0 to 24 Vdc @ 1 mA	100 mA
217B 227B 228B	Crosspoint Switch	Transient free switching	4 ch or 4x1 4x1 6x1	0 to -80 dB, on/off	unbalanced balanced, 80 dB CMR unbalanced	600 ohms	unbalanced	600 ohms	+15 dBm	20 Hz to 20 kHz \pm .25 dB 227 50 Hz to 20 kHz \pm .5 dB	-60 dB -50 dB, 227	-80 dBm*	70 dB	0 or 5 to 24 Vdc @ 1 mA	25 mA/ch
218B	Turntable Preamplifier	Adj HF equalization	2	+40 to +60 dB	unbalanced	50k ohms, 100 pf	balanced, 1% diff	600 ohms	+18 dBm	\pm 1 dB of RIAA equalization \pm 10 dB adj @ 10 kHz	-50 dB	-55 dBm	-60 dB		25 mA
219B 229B	AGC Amplifier Peak Limiter	Metered operation	1	40 dB AGC range 0 to 20 dB compression	balanced, 80 dB CMR	10k ohms, 500 pf	balanced, floating	600 ohms	+24 dBm	30 Hz to 20 kHz \pm .5 dB	-50 dB	-65 dBm*			200 mA
221B	Relay Routing Switch	Isolation transformer	4x1 or 1x4	unity	balanced, 80 dB CMR	600 ohms	balanced, floating	600 ohms	+15 dBm	50 Hz to 20 kHz \pm .5 dB	-50 dB	-80 dBm	-80 dB	0 or 5 to 24 Vdc @ 1 mA	40 mA/relay
222B	Multiple Relay Switching	Logic compatible control	2 DPDT or 4 SPDT						Dry circuit or 125 Vac 2A maximum				-70 dB	0 or 5 to 24 Vdc @ 1 mA	40 mA/relay
230B	Power Amplifier	Balanced input & output	1	0 to +30 dB	balanced, 80 dB CMR	10k ohms, 500 pf	balanced, 1% diff	4 or 8 ohms	30 watts	20 Hz to 20 kHz \pm .5 dB	-46 dB	-70 dBv			2A, 8 ohm load 3A, 4 ohm load
231B	Active Crossover	Broad crossover range	1	unity	balanced, 40 dB CMR	10k ohms, 500 pf	balanced, 1% diff	600 ohms	+18 dBm	100 Hz to 5 kHz, adj crossover frequency	-50 dB	-70 dBm			25 mA
232B	Remote Equalizer	Accurate step response	1	unity	balanced, 40 dB CMR	10k ohms, 500 pf	balanced, 1% diff	600 ohms	+18 dBm	0, 3, 6, 9, 15 dB boost or cut @100 Hz, 1 kHz, 10 kHz	-50 dB	-70 dBm		0, 6, 12, 18, 24 Vdc @ 1 mA	25 mA
233B	6 Band Equalizer	Low bandpass ripple	1	unity	balanced, 40 dB CMR	10k ohms, 500 pf	balanced, 1% diff	600 ohms	+18 dBm	10 dB boost or cut @ 60,120,250,4k,8k,15kHz	-60 dB	-70 dBm			25 mA
234B 235B	Line/Interface Amplifier	Line impedance conversion	4	20 dB, input potentiometer adj	balanced, 80 dB CMR unbalanced	600 ohms 10k ohms, 1000 pf	unbalanced balanced, floating	50 ohms 600 ohms	+18 dBv +15 dBm	50 Hz to 20 kHz \pm .5 dB	-46 dB	-65 dBv -65 dBm	-50 dB		100 mA/ch
237B	Remote Attenuator	20 Steps, excellent stability	2	0 to -80 dB control	balanced, 40 dB CMR	10k ohms, 500 pf	balanced, 1% diff	600 ohms	+18 dBm	20Hz to 20 kHz \pm .25 dB	-60 dB	-80 dBm*	-70 dB	0 to 24 Vdc @ 1 mA	50 mA
238B	6 Stage Tally	Alternate or interlock operation	6						24-30 Vdc @ 100 mA					0 or 5 to 24 Vdc @ 1 mA	25 mA plus output current
239B	Audio Presence Detector/VOX	Momentary or latching output	2	-20 to +20 dBm also 70.7V line	balanced, 40 dB CMR	10k ohms, 500 pf	DPST, NO relay and 24 Vdc logic output		125 Vac 2A maximum 24 Vdc @ 5 mA	20 Hz to 20 kHz \pm .5 dB -40 dB @ 60 Hz notch			-80 dB	remote contact closure provides alarm reset	100 mA
240B	Power/Line Amplifier	10 watts into 600 ohms	1	+10 to +40 dB	balanced, 70 dB CMR	10K ohms, 500 pf	balanced, floating	500-600 ohms 70.7V line	+40 dBm 10 watts/600 ohms	30 Hz to 20 kHz \pm 1 dB	-46 dB	-60 dBm			1 A

Module Enclosures

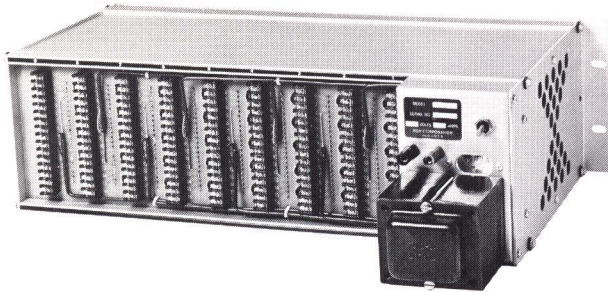
**Models 201B
202B
203B
204B**



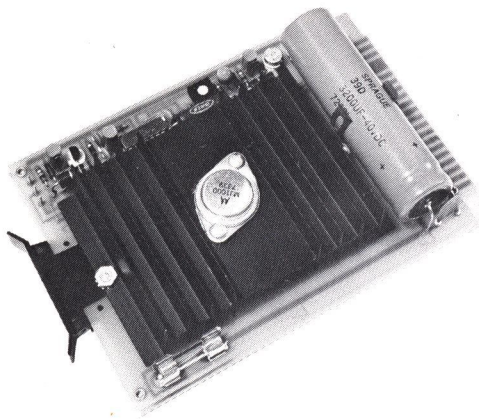
Module enclosures provide efficient packaging and effective shielding for Series 200 modular systems. All modules are compatible with any enclosure and each enclosure provides rigid mechanical support and adequate convection cooling for the contents. Hinged front panels offer quick access to the modules and attractively conceal module adjustments and unused enclosure space. Modules are locked in position when the front panel is secured but remain accessible for immediate removal. All models provide barrier block termination and power busing for each module. Barrier block terminals are a screw compressed wire clamp type which make a secure connection without requiring lugging or wrapping. Enclosures are available either powered, or unpowered with power supply redundancy easily achieved through several options.



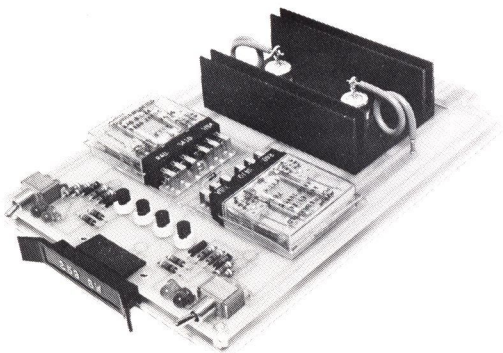
**Model 201B, 202B
Front**



Rear



Model 205B



Model 259B

Module Enclosures

Model 201B, 202B

The Model 201B and 202B enclosures offer compact rack mounting and convenient access and termination for any of the Series 200 modules. The hinged front panel allows immediate access to modules, while attractively concealing module control adjustments and unused enclosure space. The two enclosures are the same with the exception that the Model 201B is unpowered and the Model 202B incorporates a plug-in power supply. The Model 202B includes the Model 205B power supply module and required power transformer with the power supply output available at binding posts on the rear.

The Model 201B is for use with external power supplies or when the current requirement exceeds the 2A capability of the Model 202B. The Model 201B enclosure can be used with the Model 259 redundant power supply switch and two power supplies to provide a redundant power supply system. Two of the Model 202B powered enclosures can be operated with the power supplies connected in parallel to provide power supply redundancy.

Module Capacity:	10 units
Model 201B	9 units, 1 power supply module
Model 202B	
Module Access:	Hinged front panel
Module Termination:	16 section barrier blocks, wire-clamp type
Power Supply:	Model 205B power supply module
Output Voltage:	24–30 Vdc, adjustable range
Voltage Limit:	35 Vdc $\pm 5\%$, SCR crowbar type
Output Current:	2A
Current Limit:	3A
Voltage Regulation:	1%, line and load
Ripple and Noise:	0.001% RMS maximum
Ambient Temperature:	0° to +50° C operating range
Power Requirement:	
Model 201B	24–30 Vdc, voltage input 20A maximum input current
Model 202B	115/230 Vac $\pm 10\%$, 50 or 60 Hz 100 watts maximum
Size:	5.25" H \times 19" W \times 9" D, 201 5.25" H \times 19" W \times 13" D, 202
Weight:	10 lbs., 201B 15 lbs., 202B

Redundant Power Supply Switch Model 259B

The Model 259B allows two power supplies to operate in a redundant mode. The module incorporates DC output isolation and automatic or manual switchover in the event of a power supply failure. A voltage comparator circuit disconnects either power supply if the output voltage is beyond a satisfactory range. Indicator lamps monitor the operating status of each power supply. An alarm output voltage is also available to operate remote lamps or a sounding device. The Model 259B is intended for use with the Model 201B enclosures or accessory socket assemblies and the Models 207–209B power supplies.

Switch Operation:	Automatic with manual override
Switching Time:	50 ms, automatic mode
Operating Voltage Range:	24–30 Vdc
Current Range:	0–16A
Power Supply Disconnect Limits:	Less than 22 Vdc or greater than 33 Vdc
Voltage Loss:	1.5 Vdc maximum at 16A load
Alarm Output:	24–30 Vdc, relay closure

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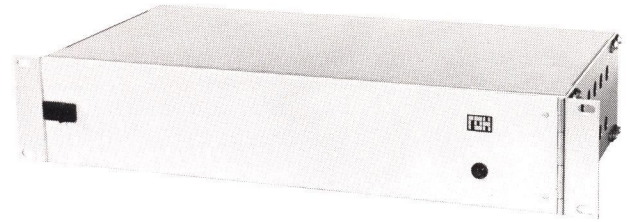
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Model 203B

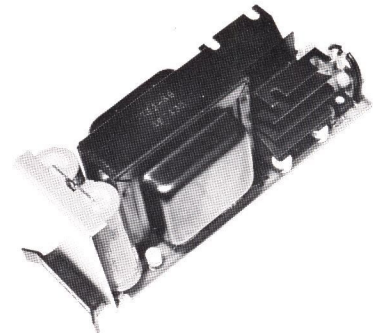
Module Enclosure

The Model 203B enclosure offers standard rack mounting and convenient access and termination of any module. The hinged front panel attractively conceals modules and unused enclosure space. The enclosure includes the Model 206B plug-in power supply. The power supply output is also available at binding posts at the rear of the enclosure. Two of the enclosures may be operated with the power supplies connected in parallel to provide power supply redundancy. The enclosure pilot lamp will indicate the individual power supply status.

Module Capacity:	3 units
Module Access:	Hinged front panel
Module Termination:	16 section barrier blocks, wire-clamp type
Power Supply:	Model 206B power supply module
Output Voltage:	24 Vdc
Output Current:	1A
Current Limit:	2A
Voltage Regulation:	1%, line and load
Ripple and Noise:	0.01% RMS maximum
Ambient Temperature:	0° to +50° C operating range
Power Requirement:	115 Vac \pm 10%, 50 or 60 Hz 50 watts maximum
Size:	3.5" H \times 19" W \times 9" D
Weight:	10 lbs.



Model 203B



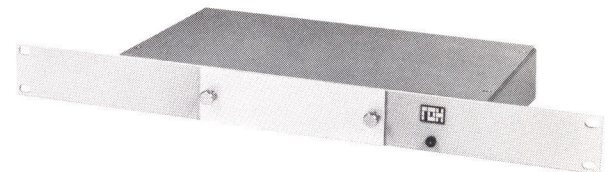
Model 206B

Model 204B

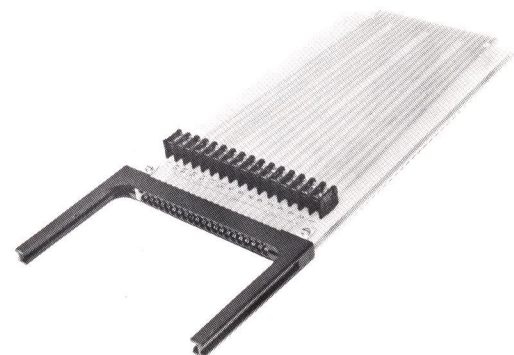
Single Module Enclosure

The Model 204B enclosure will house one module and includes a built-in regulated power supply. The module is easily accessible through the front panel security cover. The power supply is fully protected from overload or short circuit conditions. The unit may be serviced with either the enclosure top or bottom cover removed. The rear panel also includes binding posts for access to the power supply output. Two of the enclosures may be operated with the power supplies connected in parallel to provide power supply redundancy. The enclosure pilot lamp will indicate the individual power supply status.

Module Capacity:	1 unit
Module Access:	Behind security cover
Module Termination:	16 section barrier block, wire-clamp type
Power Supply:	Self Contained
Output Voltage:	24 Vdc
Output Current:	500 mA
Current Limit:	1A
Voltage Regulation:	1%, line and load
Ripple and Noise:	0.1% RMS maximum
Ambient Temperature:	0° to +50° C operating range
Power Requirement:	115 Vac \pm 10%, 50 or 60 Hz 25 watts maximum
Size:	1.75" H \times 19" W \times 9" D
Weight:	5 lbs.



Model 204B



Model 250B

Model 250B Module Circuit Board Extender

The Model 250B offers full access to module circuit adjustments and components while operating the module in conjunction with an enclosure. A front mounted barrier block provides the same termination configuration as used in the enclosure rear panel. The guided module connector assures adequate support for the suspended module as well as correct keying. For use with any Series 200 component.

MODEL 201B, 202B
Power Supply Termination

Model 201

Power Input Block

Positive:	+24 to 30 Vdc
Ground:	Equipment ground and power supply ground
Negative:	Power supply negative, the negative and ground must be connected together at either the enclosure or power supply terminals.

Model 202

Power Input Requirement:

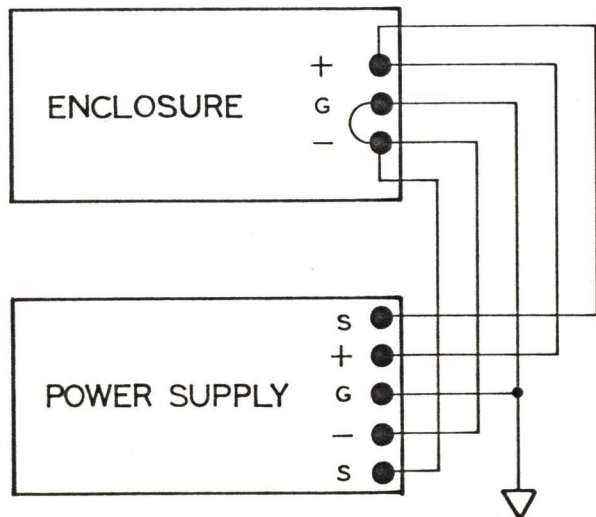
115/230 Vac $\pm 10\%$, 50-60 Hz, 100 watts maximum

Power Supply Output

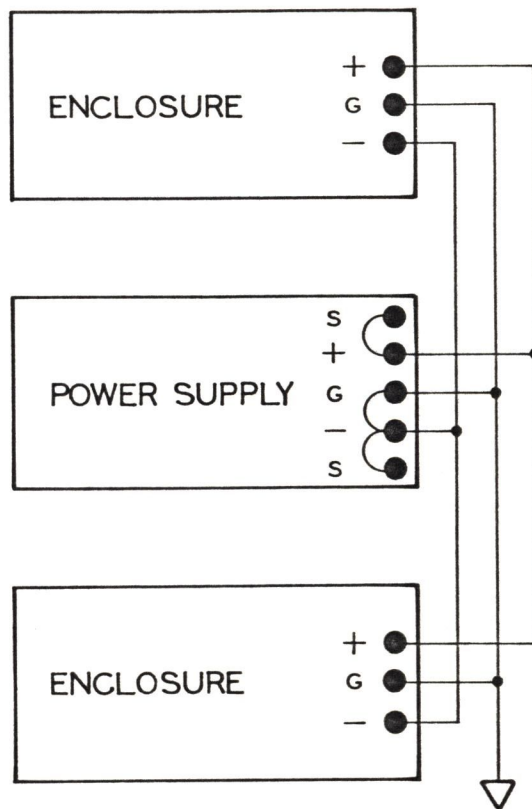
Red binding post:	+24 to 30 Vdc
Black binding post:	Negative and equipment ground

SINGLE ENCLOSURE

CONNECT SENSING TERMINALS AS SHOWN FOR WIRE LENGTHS IN EXCESS OF 10 FEET.



MULTIPLE ENCLOSURES



MODEL 211C, 212B
DISTRIBUTION AMPLIFIER

The Models 211C and 212B are designed for splitting a 600 ohm source into six isolated 600 ohm outputs. The module can provide up to 30 dB of gain which may be adjusted to accommodate input levels from -20 to +20 dBm. The input circuitry incorporates a true instrumentation amplifier which provides excellent common mode noise rejection without requiring readjustments due to ambient temperature variations. The input circuitry also incorporates RFI filtering which significantly attenuates the module response above audio frequencies. Each output circuitry includes an output level potentiometer. The output levels may be adjusted individually over a 20 dB range to accommodate the input requirements of associated equipment. The output circuits function independently and an output load mismatch or short circuit will not affect the remaining outputs or cause amplifier damage.

SPECIFICATIONS

Gain: 0 to +30 dB, potentiometer adjustment

Input: 10k ohms balanced bridging
80 dB CMR at 60 Hz
+20 dBm maximum common mode input

Outputs:
Model 211C Six 150 ohm differential outputs
+1% balance to equipment common

Model 212B Six 600 ohm transformer outputs
Secondary windings floating

Output Level: +24 dBm, 50 Hz to 20 kHz, 30 Vdc
+21 dBm, 30 Hz to 20 KHz, 24 Vdc
+18 dBm, 20 Hz to 20 kHz, 24 Vdc

Output Isolation: 50 dB at 10 kHz

Frequency Response: +.5 dB maximum deviation from specified
bandwidth at rated output

Distortion, THD or IM:
Model 211C -60 dB, 0.1% maximum at rated output,
0.01% at +8 dBm

Model 212B -50 dB, 0.33% maximum at rated output

Noise: 90 dB S/N ratio, 70 dBm residual

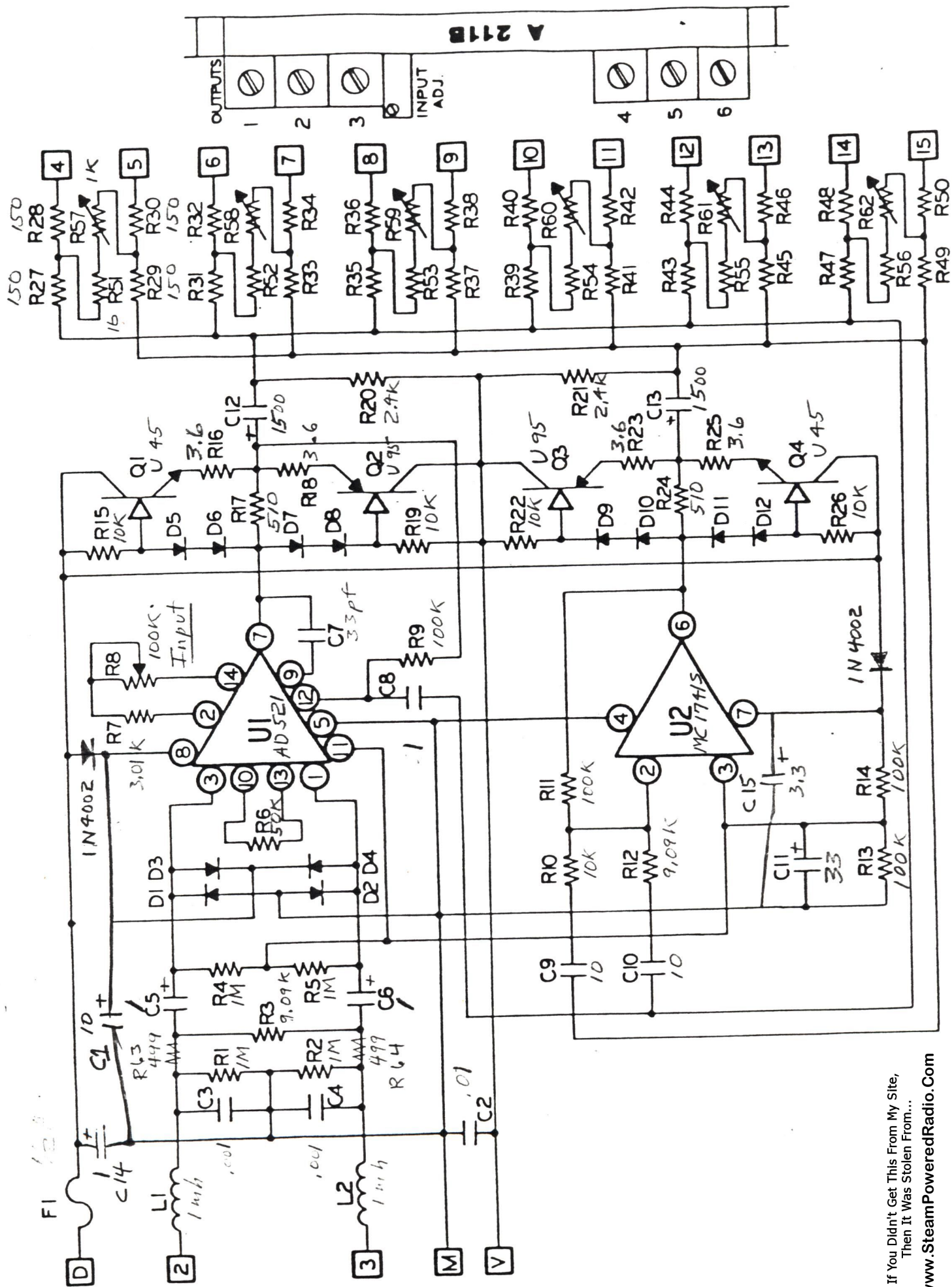
Ambient Temperature: 0° to 50° C operating range

Power Requirement: 24 to 30 Vdc, 200 mA maximum

211B Test Procedure

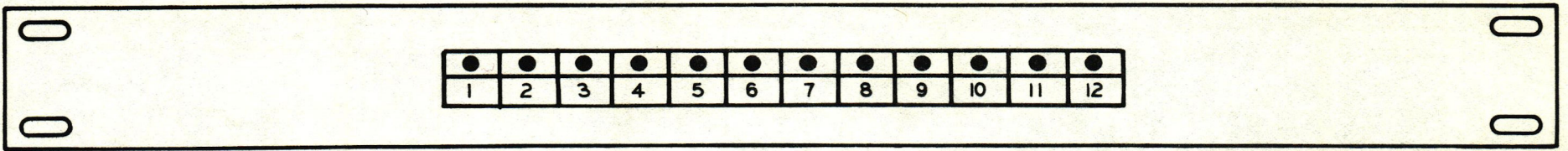
1. Set input gain CCW, set outputs CW, provide input @ -6dbm, 1000 Hz between pin **2** and **3**. Provide power @ 30 Vdc + terminate outputs in 600 ohms - Verify outputs \leq -6dbm.
2. Adjust gain for Output #1 = +18dbm - Verify distortion \leq -50db, Verify current drain \leq 200 ma
3. Verify output pot₁ ^{full ccw} will reduce output 20+3-0 db.
4. Repeat para 3 for outputs 2 thru 6.
5. Remove input - Reset outputs CW - Verify Output #1 \leq -52dbm.
6. Reconnect input - Record all outputs
7. Change freq to 20 Hz - Verify each output change _^ \leq 1/2db. ^{from para 6}
8. Change freq to 20 KHz - Verify each output change _^ \leq 1/2db. ^{from para 6}
9. Change input to provide common mode - change freq to 60 Hz - Verify Output #1 \leq 62dbm.

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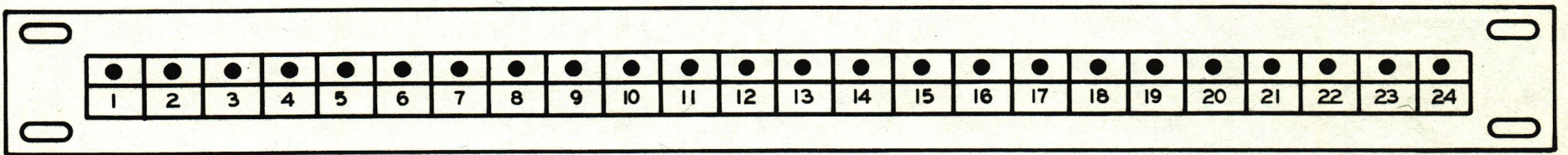


170 SERIES AUDIO ROUTING SWITCHERS

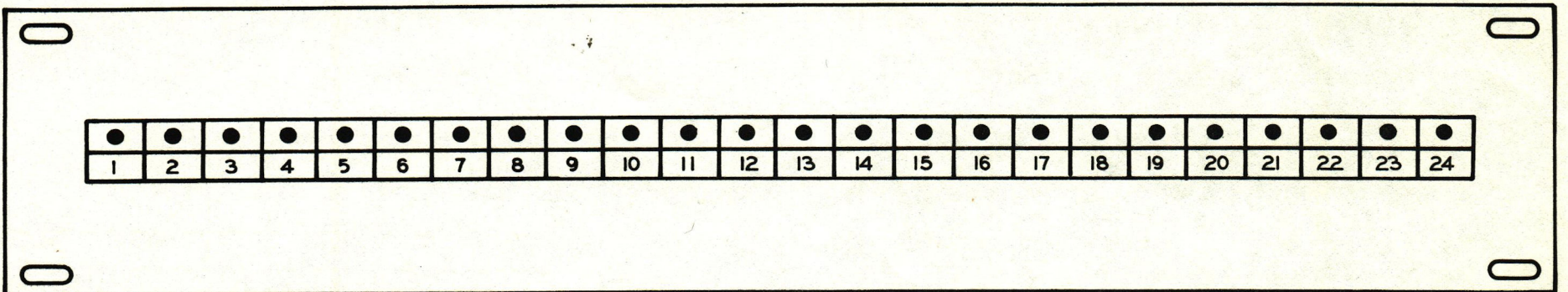
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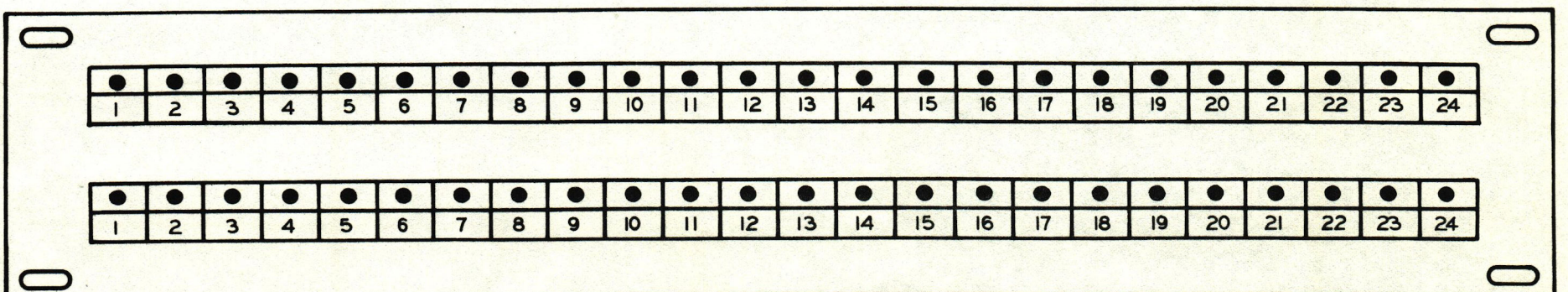
MODEL 171-172



MODEL 173-174



MODEL 175



MODEL 176

Series 200
Modular
System

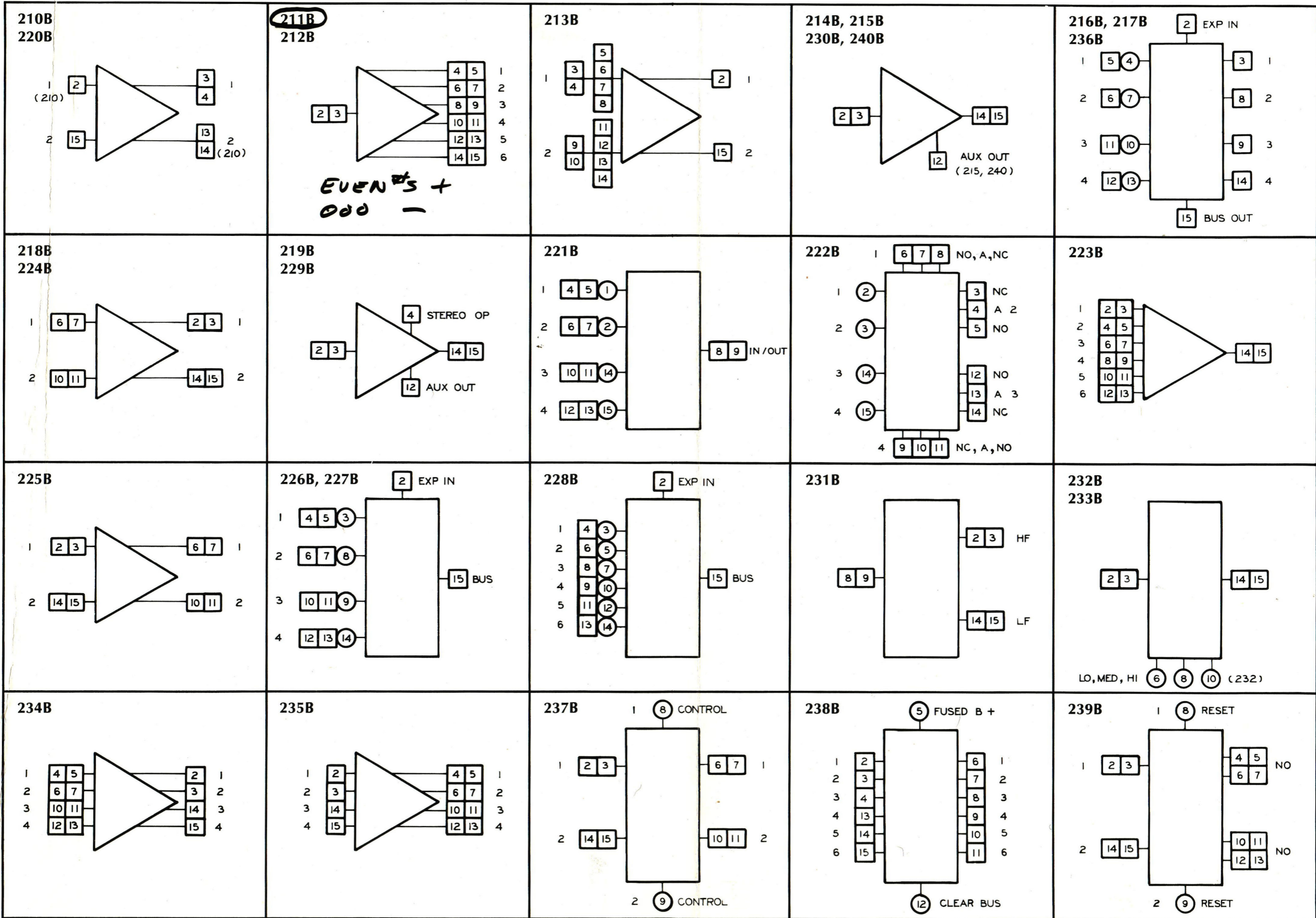
Termination GUIDE



ROH CORPORATION
107 TECHNOLOGY PARK/ATLANTA

NORCROSS, GA 30071

~~452-4240~~
(404) 449-0873



□ UNBALANCED □ BALANCED ○ DC CONTROL INPUTS, LEFT / OUTPUTS, RIGHT TERMINALS 1 & 16 ARE GROUND FOR ALL MODULES

MODEL 205B
POWER SUPPLY MODULE

The Model 205B, power supply module, has been designed to convert low voltage AC to 24-30 Vdc with very low ripple voltage. The unit is intended for use with the Model 202B module enclosure or any application that requires a 24-30 Vdc, 2 amp power supply. Output voltage and input line regulation are more than adequate for critical audio applications. The Model 205B includes over-voltage and short-circuit protection with continuous short-circuit duration capability. This module requires a 35 Vac, 4 amp rated power transformer when used in applications other than with the Model 202 module enclosure.

SPECIFICATIONS

Voltage Output:	24-30 Vdc, adjustable range
Output Current:	2 amps
Voltage Regulation:	.1% maximum
(Load and Line):	(No load to full load, 105-125 Vac input)
Ripple and Noise:	250 uV RMS maximum at rated output
Voltage Limit:	33V 5%, crowbar type
Current Limit:	3A, foldback type
Power Requirement:	35 Vac at 4A RMS
Ambient Temperature:	0 ⁰ to 50 ⁰ C operating range
Terminating Connector:	22 contact, .156" terminal spacing single readout
Size:	4.5" W x 7" L x 1.5" H
Weight:	1 pound

MODEL 205B

APPLICATION NOTE

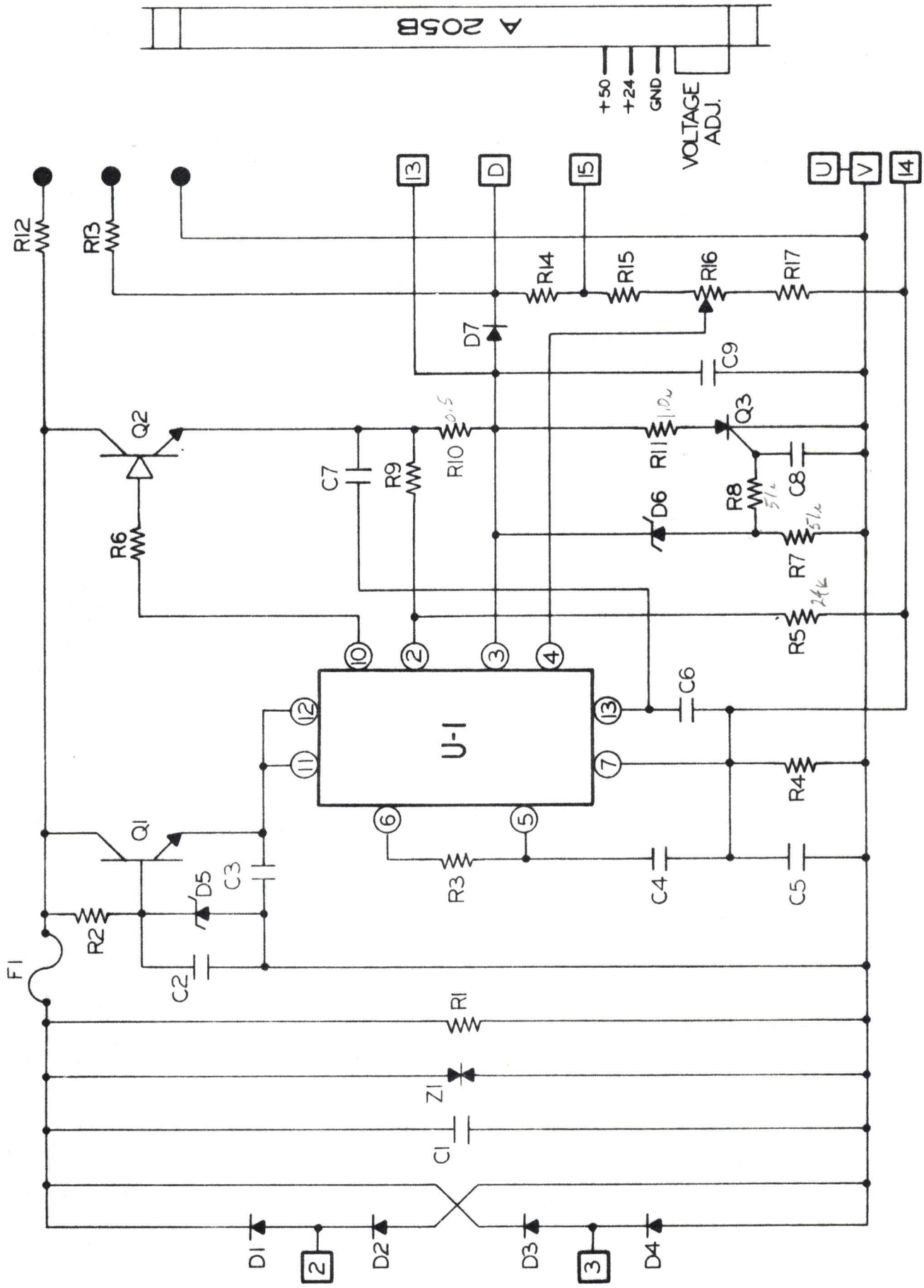
The potentiometer located on the circuit board provides adjustment of output voltage within the specified range. The circuit incorporates automatic current limiting which will limit output current to 3 amps. As the load is increased, the current will reduce in level (fold back) to approximately 1 amp in a short circuit condition. Position and negative sensing terminals are provided to compensate for connector and wiring losses. However, use of the sensing terminals is not required for satisfactory operation of the power supply. The module should be inserted into the connector before AC power is applied.

TERMINATION GUIDE

MODULE	ENCLOSURE OR SOCKET ASSEMBLY
AC Input (B, C)	2,3
Positive Output (D)	Positive
Negative Output (U,V)	Negative, 1 or 16
Negative Sensing (W)	14
Positive Sensing (X)	15

PARTS LIST

Item	Description	Part Number or Type	Manufacturer
C1	2500 uF 50 Vdc elec	TCG252U050N3L3P	Mallory
C2	10 uF 50 Vdc tant	T392F106K050AS	Kemet
C3,5	0.01 uF 100 V cera	TGS10	Sprague
C4	33 uF 16 Vdc tant	T392D336K016AS	Kemet
C6	0.001 uF 1 kV cera	2SSD10	Sprague
C7	100 pF 1 kV cera	10TST10	Sprague
C8	100 uF 6.3 Vdc tant	T392D107K006AS	Kemet
C9	10 uF 35 Vdc tant	T392D106K035AS	Kemet
D1-4	3 A 100 PRV	MR501	Motorola
D5	39 V 1/2 W 5% Zener	1N5259B	Motorola
D6	22 V 1/2 W 5% Zener	1N5257B	Motorola
D7	5 A 100 PRV	MR751	Motorola
F1	3 A 125 V	AGX 8AG	Bussman
Q1	Transistor	2N3053A	Motorola
Q2	Transistor	MJ3000	Motorola
Q3	SCR	S2600	RCA
R1	2.5 k ohms 3 W 5%	CW-2C	Dale
R2	5.1 k ohms 1/4 W 5%	RCR07	Allen Bradley
R3	2.4 k ohms 1/4 W 5%	RCR07	Allen Bradley
R4,14	36 ohms 1/4 W 5%	RCR07	Allen Bradley
R5	24 k ohms 1/4 W 5%	RCR07	Allen Bradley
R6	100 ohms 1/4 W 5%	RCR07	Allen Bradley
R7,8	51 ohms 1/4 W 5%	RCR07	Allen Bradley
R9	1 k ohms 1/4 W 5%	RCR07	Allen Bradley
R10	0.5 ohms 5 W 10%	CW-5	Dale
R11	1 ohms 3 W 5%	242E	Sprague
R12	10 k ohms 1/4 W 5%	RCR07	Allen Bradley
R13	3.6 k ohms 1/4 W 5%	RCR07	Allen Bradley
R15	6.04 k ohms 1/4 W 1%	RN55D	Allen Bradley
R16	1 k ohms 1/2 W 10%	3389P	Bourns
R17	2 k ohms 1/4 W 1%	RN55D	Allen Bradley
U1	Integrated Circuit	uA723C	Fairchild
Z1	Varistor	V68ZA10	General Electric



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200 SERIES
MODULE TO RECEPTACLE CROSS REFERENCE

MODULE		ENCLOSURES AND SOCKET ASSEMBLIES
A (GND)	1	1
B	2	2
C	3	3
D (+)	4	POSITIVE
E (GND)	5	1,16 (GND)
F	6	4
H	7	5
J	8	6
K	9	7
L	10	8
M (GND)	11	1,16 (GND)
N	12	9
P	13	10
R	14	11
S	15	12
T	16	13
U (GND)	17	1,16 (GND)
V (-)	18	NEGATIVE
W	19	14
X	20	15
Y (GND)	21	16 (GND)
Z (NC)	key	

ROH CORPORATION
SYMBOL DESIGNATION ASSIGNMENT

1. A Circuit Board
2. B Battery
3. C Capacitor
4. D Diode
5. E Diode Assembly
6. F Fuse
7. G Circuit Breaker
8. H Hardware
9. I Indicator, Lamp
10. J Jack
11. K Relay
12. L Inductor
13. M Meter
14. N Terminal
15. O Receptacle, Female Connector
16. P Plug, Male Connector
17. Q Transistor, Thyristor
18. R Resistor
19. S Switch
20. T Transformer
21. U Intergrated Circuit
22. V Vacumn Tube
23. W Wire
24. X Electrical Sub Assembly
25. Y Mechanical Sub Assembly
26. Z Miscellaneous Category