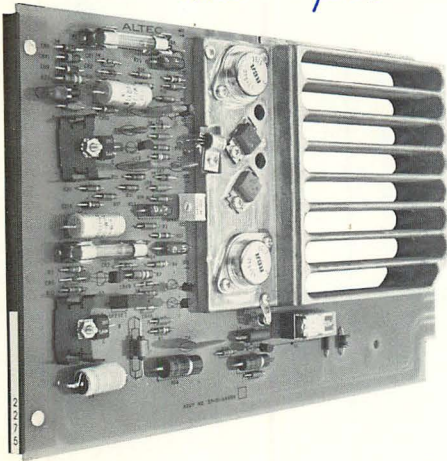


New York City dealer
 ALTEC Sound Systems
 15 West 37th St.
 719-5800
 8am - 5 p.m.

**ALTEC
 LANSING**

**MODEL 2275
 POWER AMPLIFIER MODULE**

**TECHNICAL
 INSTRUCTIONS**



2275

DESCRIPTION

The Model 2275 Power Amplifier Module Cards are plug-in components of the ALTEC Incremental Power System. The power amplifier modules are rated at 75 watts each, and may be combined in 75-watt increments for up to 600 watts output power from each main frame system. Operating configurations of the power amplifier module include independent, parallel, bridged, and parallel-bridged modes.

As shipped from the factory, the main frame and each power amplifier module operate into a load impedance of 16 ohms. However, by re-selection of taps on the ac power

transformer of the main frame, and removal of two jumper leads of each power amplifier module, the main frame system is converted to operate into a load impedance of 8 ohms.

Two fuses on each module protect output transistors against excessive current drain. See Figure 1. Output transistors Q9 and Q11 are fused through F1; output transistors Q10 and Q12 are fused through F2.

CAUTION

Replace fuses only with identical type and rating. See Parts List. Use of larger value fuse voids warranty.

SPECIFICATIONS, MODEL 2275*

	Individual Model 2275 Driven by Model 2250 or 2252 Driver Card with Model 2220 Input Card	Eight Model 2275's in Parallel/Bridge Mode Driven by Model 2250 or 2252 Driver Card with Model 2220 Input Card
Power Output	75 watts continuous average sine wave power into a 16-ohm load impedance.	600 watts continuous average sine wave power into an 8-ohm load impedance.
Power Output at Clipping	90 watts at 1 kHz into a 16-ohm load impedance	675 watts at 1 kHz into an 8-ohm load impedance
Frequency Response	+ 0, - 0.5 dB from 20 Hz to 20 kHz	+ 0, - 0.5 dB from 20 Hz to 20 kHz
Total Harmonic Distortion	Less than 0.25% from 20 Hz to 15 kHz. Less than 0.03% at 1 kHz, 75 watt output into 16-ohms	Less than 0.25% from 20 Hz to 15 kHz. Less than 0.05% at 1 kHz, 600 watt output into 8-ohms
Damping Factor	57:1 @ 100 Hz	57:1 @ 100 Hz
Actual Output Impedance	0.28 ohm in series with 10 microhenries	0.14 ohm in series with 5 microhenries
Hum and Noise	96 dB signal to noise ratio	93 dB signal to noise ratio
Separation Between Any Two Model 2275's	75 dB @ 1 kHz	(Does not apply)
Phase Shift	Less than ± 15° from 20 Hz to 20 kHz	Less than ± 20° from 20 Hz to 20 kHz
Offset Voltage	Less than ± 50 mV DC	Less than ± 100 mV DC
Indicator	One red LED "ON" indicator per 2275 turns off in the event of module failure.	
Fuses	(2) AGC-style 2.5 amp "fast blow" fuses per 2275 Power Amplifier.	

*These specifications apply to 16-ohm operation of the Model 2275's only.

Specifications and components subject to change without notice. Overall performance will be maintained or improved.

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LARRY or Dennis

42-02-045288-02 1178-1M
 LITHO IN USA

Relay K1 protects loudspeakers of the system against transients during turn-on of power. Also, excessive temperature at the heat sink will cause relay K1 to de-energize, protecting the output transistors against excessive heat. The heat-sensing element attached to the heat sink is resistor R28. See Figure 1.

INSTALLATION, CONNECTIONS, OPERATION

Refer to Operating Instructions for the Incremental Power System (42-02-045121).

CONVERSION FOR 8-OHM LOAD IMPEDANCE

Refer to Operating Instructions for the Incremental Power System (42-02-045121).

ADJUSTMENTS

In the event of replacement of circuit components, the bias and offset should be checked and reset prior to using the power amplifier module. Use of the Model 2279 Extender Card will facilitate this voltage measurement and readjustment.

Bias Adjustment

1. Disconnect load at appropriate OUTPUT terminals at rear of main frame.
2. Check for voltage of 0.010 to 0.020V dc across resistor R22. See Figure 1. As necessary, adjust Bias Control R13.
3. Operate system for two minutes and repeat Steps 1 and 2.
4. Reconnect load at OUTPUT terminals.

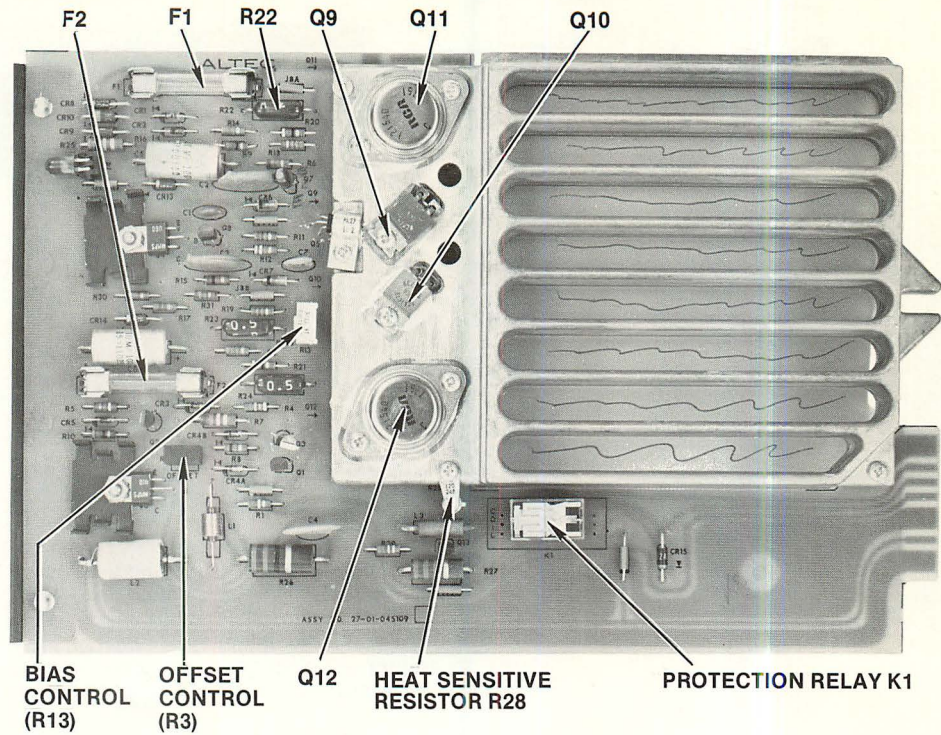


Figure 1. Model 2275 Power Amplifier Module

Offset Adjustment

1. Check that appropriate driver is assigned (appropriate matrix switches closed) to power amplifier module.
2. With input signal (to input module) at zero, check for voltage of less than ± 30

mVdc at appropriate OUTPUT terminals at rear of main frame. As necessary, adjust Offset Control R3; see Figure 1.

3. Operate system for 2 minutes and repeat Steps 1 and 2.
4. Resume normal operation.

PARTS LIST

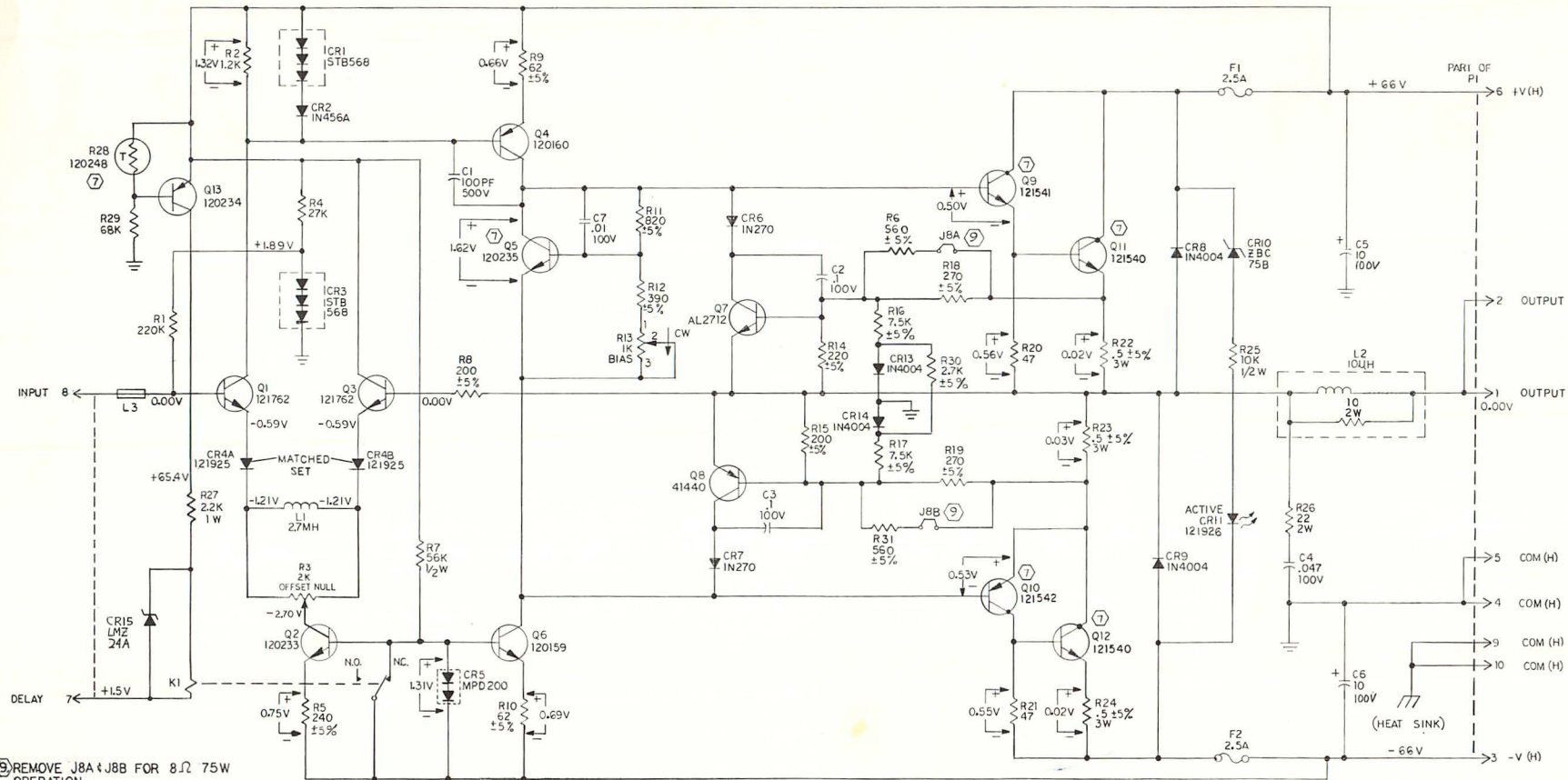
Reference Designator	Ordering Number	Name and Description
C1	15-02-100024-02	Cap., 100 pF $\pm 10\%$, 500V
C2,3	15-02-100109-01	Cap., 0.1 mF $\pm 20\%$, 100V
C4	15-02-108526-02	Cap., 0.47 mF $+ 80\%$, $- 20\%$, 100V
C5,6	15-01-102595-01	Cap., 10 mF, 100V
C7	15-02-100307-01	Cap., 0.1 mF $\pm 20\%$, 100V
CR1,3	48-01-107429-02	Diode, STB 568, 12V
CR2	48-01-107017-01	Diode, 1N456A
CR4A,4B	48-01-121925-01	Diode, matched set, 121925
CR5	48-01-121865-01	Diode, MPD200
CR6,7	48-01-100876-01	Diode, 1N270
CR8,9,13,14	48-02-042787-01	Rect., 42787
CR10	48-01-114357-01	Diode, Zener, 75V $\pm 5\%$, 2W
CR11	39-01-121926-01	Lamp, LED, red
CR15	48-01-107522-01	Diode, Zener, 24V $\pm 5\%$, 2W
F1,2	51-04-100466-01	Fuse, 2.5A, 250V, 3AG
K1	45-01-079458-01	Relay, 8A507
L1	56-01-121543-01	Choke, RF, 2.7 mH
L2	56-01-018220-01	Choke, 10 μ H
L3	56-01-043100-01	Choke, ferrite bead, 6D462
Q1,3	48-03-121762-01	Transistor, MPS-A 43, selected
Q2	48-03-120233-01	Transistor, SPS 6872K, MPS A43
Q4	48-03-120160-02	Transistor, MPS-U60, selected
Q5	48-03-120235-02	Transistor, 120235
Q6	48-03-120159-02	Transistor, 120159
Q7	48-03-101098-04	Transistor, 2N2711, selected
Q8	48-03-041440-03	Transistor, 2N3906, selected

Reference Designator	Ordering Number	Name and Description
Q9	48-03-121541-01	Transistor, 121541
Q10	48-03-121542-01	Transistor, 121540
Q11,12	48-03-121540-01	Transistor, SJ6333, selected
Q13	48-03-120234-02	Transistor, MPS-A93
R1	47-01-102191-01	Res., 220 k Ω $\pm 10\%$, 1/4 W
R2	47-01-102164-01	Res., 1.2 k Ω $\pm 10\%$, 1/4 W
R3	47-06-121916-01	Pot., 2 k Ω $\pm 20\%$, 1/2 W
R4	47-01-102180-01	Res., 27 k Ω $\pm 10\%$, 1/4 W
R5	47-01-102063-01	Res., 240 Ω $\pm 5\%$, 1/4 W
R6,31	47-01-102072-01	Res., 560 Ω $\pm 5\%$, 1/4 W
R7	47-01-102376-01	Res., 56 k Ω $\pm 10\%$, 1/4 W
R8,15	47-01-102061-01	Res., 200 Ω $\pm 5\%$, 1/4 W
R9,10	47-01-102049-01	Res., 62 Ω $\pm 5\%$, 1/4 W
R11	47-01-102076-01	Res., 820 Ω $\pm 5\%$, 1/4 W
R12	47-01-102068-01	Res., 390 Ω $\pm 5\%$, 1/4 W
R13	47-06-121743-01	Pot., 1 k Ω $\pm 20\%$, 1/2 W
R14	47-01-102062-01	Res., 220 Ω $\pm 5\%$, 1/4 W
R16,17	47-01-102099-01	Res., 7.5 k Ω $\pm 5\%$, 1/4 W
R18,19	47-01-102064-01	Res., 270 Ω $\pm 5\%$, 1/4 W
R20,21	47-01-102147-01	Res., 47 Ω $\pm 10\%$, 1/4 W
R22,23,24	47-02-120244-01	Res., 0.5 Ω $\pm 5\%$, 3W
R25	47-01-102367-01	Res., 10 k Ω $\pm 10\%$, 1/2 W
R26	47-01-102627-01	Res., 22 Ω $\pm 10\%$, 2W
R27	47-01-100653-01	Res., 2.2 k Ω $\pm 10\%$, 1W
R28	47-09-120248-01	Res., temp. var., 120248
R29	47-01-102185-01	Res., 68 k Ω $\pm 10\%$, 1/4 W
R30	47-01-102088-01	Res., 2.7 k Ω $\pm 5\%$, 1/4 W

Repla
 Q7 -
 Q8 -
 Q9 -
 Q10 -
 SK3037
 2/16/25
 Ec6/18)

COM ENITS
 2712
 2906
 154
 153
 152
 151
 150

REVISIONS						
ISSUE	ZONE	ECO	DESCRIPTION	BY	DATE	APPROVED
E			ADDED CR15	ABK	10-11-77	ABK
F			VOLTAGES ADDED & NOTES			ABK
99			RELEASE FOR PILOT	C.B.	2-11-81	ABK
98			VOLTAGES ADDED: J1, E, G & E2 DELETED		3/9/79	ABK
01			REL FOR PRODUCTION		4/1/78	ABK



- ⑨ REMOVE J8A & J8B FOR 8 Ω 75W OPERATION.
 - B. D.C. VOLTAGES NOMINAL AT QUIESCENT, HEAT SINK AT 26°C WITH 10 MIN WARMUP VOLTAGES REFERENCED TO COM(H) UNLESS OTHERWISE DESIGNATED MODULE IN TEST FIXTURE AT 24°C AMBIENT, STILL AIR, INPUT SHORTED TO COM(H)
 - ⑦ COMPONENT MOUNTED ON HEAT SINK
 - 6. FOR ASSEMBLY DRAWING SEE 9C139
 - 5.
 - 4.
 - 3. FOR SEPARATE BILL OF MATERIAL SEE 10-02-01-191 AND 27-01-045109
 - 2. ALL CAPACITOR VALUES ARE IN MICROFARADS.
 - 1. ALL RESISTOR VALUES ARE IN OHMS 1/4W ±10%.
- NOTES: UNLESS OTHERWISE SPECIFIED

HIGHEST REFERENCE DESIGNATION USED			
Q13	CR15	R34	C7
L3	K1	F2	E2
REFERENCE DESIGNATIONS NOT USED			
CR12			

Figure 2. Schematic (9D130-01), Model 2275 Power Amplifier Module