

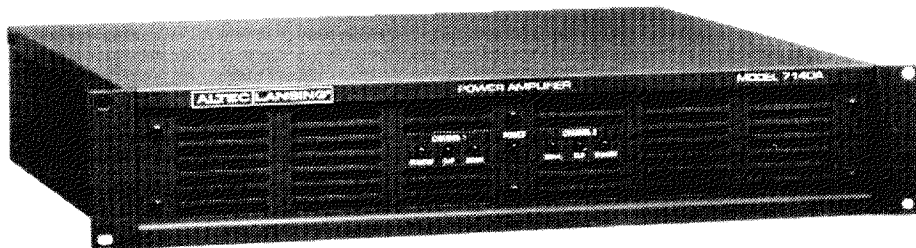


a Mark IV company

7140A

Dual-Channel Power Amplifier

- Independent channel selection for 8/4-ohm and/or 70-volt
- Ultra-quiet and efficient cooling system
- Interchangeable Input Modules
- Illegal mode protection for mono output modes
- Link-able signal processing PCBs plug directly onto input modules
- Interactive Technology compatible



Description

The Altec Lansing 7140A dual channel power amplifier is designed for direct voice-coil drive and/or 70-volt distributed systems. Each channel can be independently configured for 70-volt line operation or 8/4-ohm systems. The two channels can be paralleled or bridged for driving a single load.

This amplifier features an ultra-quiet, continuously variable cooling system which pulls air from front to rear in a directed fashion which focuses the air flow on the critical components. A removable air filter is incorporated into the front grill allowing easy access for cleaning or replacement.

The signal input module is removable and comes standard with both XLR and screw terminal connectors. Optional signal processing PCBs plug directly onto the input modules. Control module options provide compatibility and connection to Mark IV Audio's Interactive Technology network, allowing remote, centralized supervision and/or control of the amplifier.

Each channel is protected against load shorts, over temperature and output DC. Front panel indicators provide a visual display of signal present, signal clip, and stand by for each channel, as well as a power on indicator.

Architects' and Engineers' Specifications

The power amplifier shall be a two rack-space, dual-channel amplifier providing 100 watts per channel in dual channel mode. The amplifier will provide an incorporated means to independently configure each channel for either 8/4-ohm loads or 70-volt line operation.

The amplifier shall have a switch-able configuration between dual-channel, parallel mono and bridged mono mode. The amplifier will also provide a guard against illegal mode operation with a visual indicator as well as disabling operation until channel load configurations correspond to output configuration mode. Bridged mono output mode shall provide a differential balanced signal to the speaker load.

The amplifier will incorporate a directed air flow cooling system utilizing an ultra-quiet continuously variable cross-flow fan pulling air from the front and pushing air out the rear of the amplifier. The unit will provide a front accessible air filter.

The amplifier shall incorporate interchangeable signal input modules which provide for signal processing PCBs to be directly connected to the module without

replacement. Input modules will provide both XLR and screw terminal connectors in a parallel circuit. Input module pin-outs shall be published information. The amplifier will provide for optional Interactive Technology control modules to be used.

The amplifier shall meet the following performance criteria. Rated power in dual channel mode: 4-ohm = 250 watts, 8-ohm = 200 watts, 70-volt = 200 watts; rated power in parallel mono mode: 2-ohm = 500 watts, 4-ohm = 400 watts, 8-ohm = 200 watts, 70-volt = 400 watts; rated power in bridged mono mode: 8-ohm = 500 watts, 16-ohm = 400 watts, 70-volt = 400 watts, 140-volt = 400 watts.

The power amplifier shall be 19 inches (482.6 mm) wide by 16 inches (406.4 mm) deep by 3.4 inches (88.1 mm) high and weigh 30.75 pounds (13.95 kg).

The power amplifier shall be the ALTEC LANSING Model 7140A.

Uniform Limited Warranty Statement

Altec Lansing products are guaranteed against malfunction due to defects in materials or workmanship for a specified period, as noted in the individual product-line statement(s) below, or in the individual product data sheet or owner's manual, beginning with the date of original purchase. If such

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malfunction occurs during the specified period, the product will be repaired or replaced (at our option) without charge. The product will be returned to the customer prepaid. **Exclusions and Limitations:** The Limited Warranty does not apply to: (a) exterior finish or appearance; (b) certain specific items described in the individual product-line statement(s) below, or in the individual product data sheet or owner's manual; (c) malfunction resulting from use or operation of the product other than as specified in the product data sheet or owner's manual; (d) malfunction resulting from misuse or abuse

of the product; or (e) malfunction occurring at any time after repairs have been made to the product by anyone other than Mark IV Audio Service or any of its authorized service representatives. **Obtaining Warranty Service:** To obtain warranty service, a customer must deliver the product, prepaid, to Mark IV Audio Service or any of its authorized service representatives together with proof of purchase of the product in the form of a bill of sale or receipted invoice. A list of authorized service representatives is available from Mark IV Audio Service at 10500 W. Reno Avenue, Oklahoma City, OK 73127 (800-845-8727 or FAX 405-577-3274). In-

cidental and Consequential Damages Excluded: Product repair or replacement and return to the customer are the only remedies provided to the customer. Altec Lansing shall not be liable for any incidental or consequential damages including, without limitation, injury to persons or property or loss of use. Some states do not allow the exclusion or limitation of incidental or consequential damages so the above limitation or exclusion may not apply to you. **Other Rights:** This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

Input Card Pin Assignments

Pin #	Name	Function	Pin #	Name	Function	Pin #	Name	Function
1	VOUT_SENSE_CH1	0 to 5 VDC, load voltage channel one	12	-15V	-15 VDC supply with 100 mA capacity	21	POWER_CTL	Shorting this pin to DGND will power down entire amplifier with exception of 6 VDC supply
2	VOUT_SENSE_CH2	0 to 5 VDC, load voltage channel two	13	CLIP_CH1	0 to 8 volt signal indicating channel one clip by going high (> 4 volts)	22	AGND	AGND, analog, fault and +15-volt supply ground reference
3	IOUT_SENSE_CH1	0 to 5 VDC, load current channel one	14	+6V	6 VDC supply with 800 mA capacity reference only to DGND	23	AUDIO_IN_CH2	Unbalanced channel two input to amplifier referenced to AGND. Sensitivity=0.775 Vrms
4	IOUT_SENSE_CH2	0 to 5 VDC, load current channel two	15	CLIP_CH2	0 to 8 volt signal indicating channel two clip by going high (> 4 volts)	24	AGND	AGND, analog, fault and +15-volt supply ground reference
5	TEMP_CH1	0 to 5 VDC, heat sink temperature channel one	16	DGND	DGND, reference for 6 VDC supply (PIN 14)	25	AGND	AGND, analog, fault and +15-volt supply ground reference
6	TEMP_CH2	0 to 5 VDC, heat sink temperature channel two	17	FAULT_CH1	Normally connected to PIN 9. Indicates channel one critical temp, over-current, output DC or shorted output by going high (> 5 volts). Signal norm is low (< 1 volt). Referenced to AGND	26	AGND	AGND, analog, fault and +15-volt supply ground reference
7	AUDIO_OUT_CH1	Channel one output scaled down for 0 dBu full scale. Can be used for monitoring or line out.	18	DGND	DGND, reference for 6 VDC supply (PIN 14)	27	AUDIO_IN_CH1	Unbalanced channel one input to amplifier referenced to AGND. Sensitivity=0.775 Vrms
8	AUDIO_OUT_CH2	Channel two output scaled down for 0 dBu full scale. Can be used for monitoring or line out.	19	FAULT_CH2	Normally connected to PIN 9. Indicates channel two critical temp, over-current, output DC or shorted output by going high (> 5 volts). Signal norm is low (< 1 volt). Referenced to AGND	28	AGND	AGND, analog, fault and +15-volt supply ground reference
9	STANDBY_CH1	Control signal turns channel one power supply on by forcing pin to AGND. Normally connected to PIN 17	20	DGND	DGND, reference for 6 VDC supply (PIN 14)	29	CHASSISGND	Connects to chassis ground inside amplifier
10	+15V	15 VDC supply with 100 mA capacity				30	CHASSISGND	Connects to chassis ground inside amplifier
11	STANDBY_CH2	Control signal turns channel two power supply on by forcing pin to AGND. Normally connected to PIN 17						

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Figure 1—7140A Rear Panel Diagram

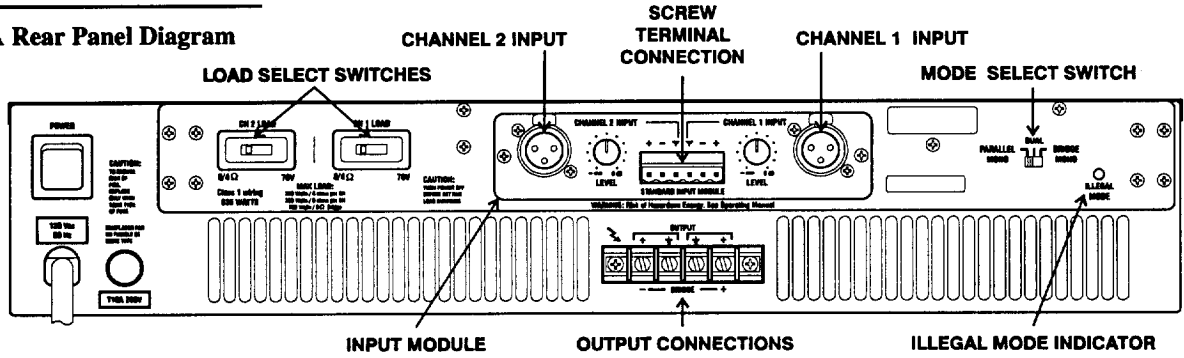
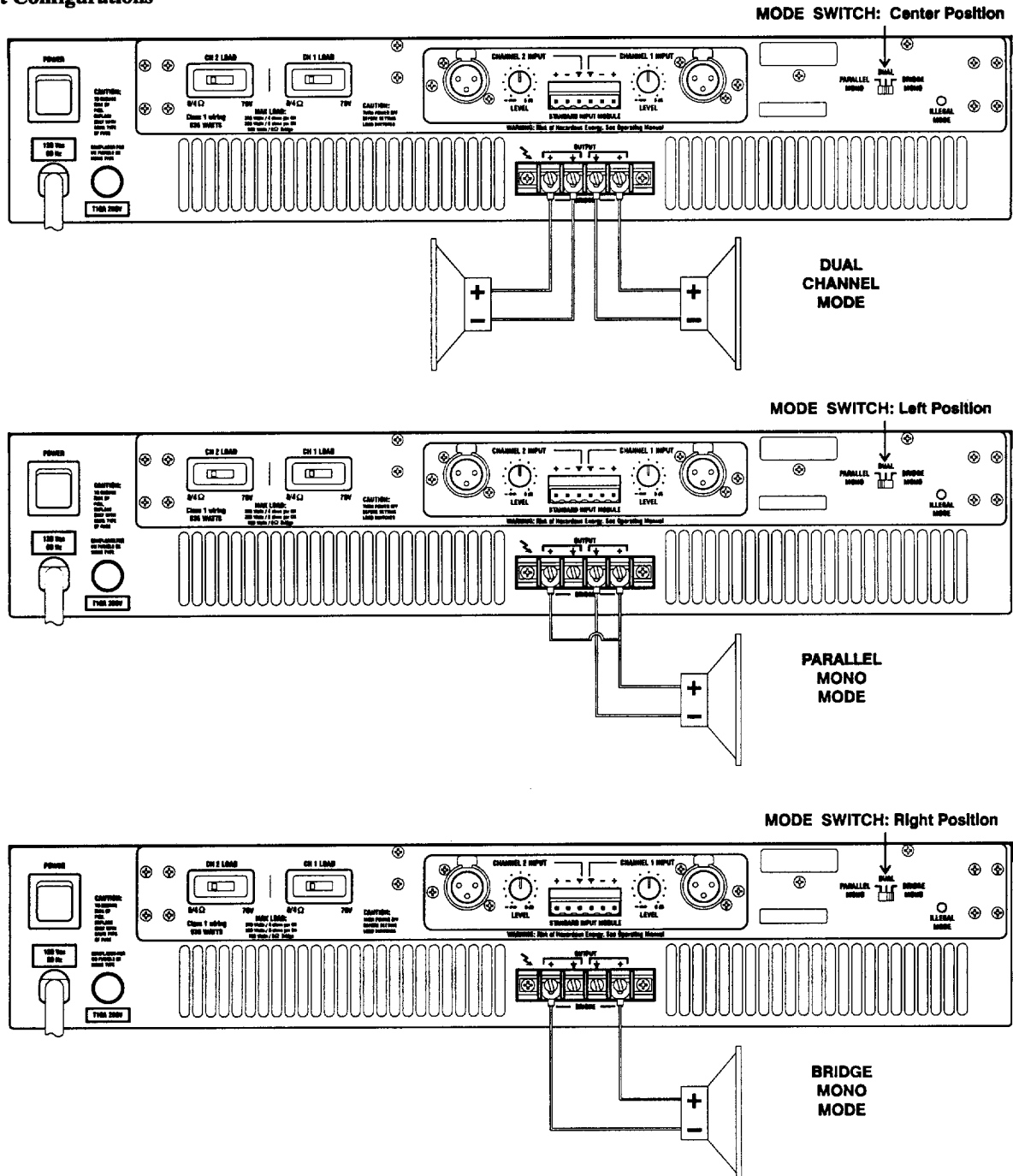


Figure 2., Output Configurations



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Specifications

All output power specifications are for <0.1% THD, 20-20,000 Hz, 30kHz measurement bandwidth, both channels driven and 120 V ac input power unless otherwise stated.

Full Power, 0.1% THD, 1 kHz (30 kHz measurement bandwidth), both channels driven, 120 V ac input power,

Dual Mode:

4-ohm	264 watts
8-ohm	215 watts
70-volt	227 watts

Parallel Mono Mode:

2-ohm	507 watts
70-volt	464 watts

Bridged Mono Mode

8-ohm	542 watts
140-volt	458 watts

Frequency Response:

10 Hz to 80 kHz
(ref. 1 kHz, 1 watt output, +0/-3 dBr)

Power Bandwidth:

20 Hz to 20 kHz
(ref. 1 kHz, +0/-0.5 dBr where 0 dBr = rated output power in any mode)

Voltage Gain (ref. 1 kHz):

Dual Mode

4/8-ohm	34.2 dBr
70-volt	39.2 dBr

Parallel Mono Mode

2/4/8/-ohm	34.2 dBr
70-volt	39.2 dBr

Bridged Mono Mode

8/16-ohm	40.2 dBr
140-volt	45.2 dBr

Signal to Noise: >100 dBr (A-weighted)
measured below rated output

THD: <0.1% 20 - 20 kHz
(any mode, 30 kHz measurement bandwidth)

Sensitivity,

8 ohm/70 volt/140 volt:
0 dBr (0.775 V RMS)

4 ohm:

-2 dBr (0.616 V RMS)

Input Impedance: 20 k ohms

Source Impedance: 0.032 ohms

Cross Talk: < -70 dB at 1 kHz

DC Offset: < 5 mV

Slew Rate: 15 V/μS

Damping Factor: >300 (1 kHz, 8-ohm)

AC Power: 120 V ac/60 Hz

Minimum AC Voltage:

95 V ac/60 Hz

Power Consumption:

See Table 1 (below)

Physical Dimensions:

Depth 16 inches (406.4 mm)

Width 19 inches (482.6 mm)

Height 3.4 inches (88.1 mm)

Weight:

Amplifier 30.75 lb (13.95 kg)

Shipping Weight 34.87 lb (15.81 kg)

Table 1 — 7140A Line Current, Power Consumption, Thermal Dissipation and Power Output for Selected Applications

The following table provides guidelines for estimating heat dissipation of each amplifier, given its intended application. This data is based on the following equation:

$$P_{dis} = P_{ac} - P_{ld}$$

where:

P_{dis} = Power dissipated in watts

P_{ac} = True ac mains power in watts consumed

P_{ld} = Total average power delivered to the load

Measurement Conditions:

Line = 120 V ac, both channels driven equally and with equal loads for dual mode measurements.

The application definitions are as follows:

Idle: The amplifier is on with no signal present.

Paging/Background Music: The amplifier is operating with one second announcements (at full power) every 15 seconds or background music which is attenuated -32 dBr.

Continuous Speech: The amplifier is operating with continuous speech that is attenuated -23 dBr.

Dynamic: The amplifier is operating with a dynamic input signal such as motion-picture sound track or classical music.

Loud passages are at full power, soft passages are equivalent to continuous speech.

Full Music Power: The amplifier is operating with continuous music input at rated output to the load with only occasional clipping.

Application: Idle

LOAD	LINE CURRENT (A)	PAC (W)	PLD (W)	PDI (W)	STU/HR	KCAL/HR
2-ohm Parallel	.44	29	0	29	99	25
4-ohm Dual	.55	42	0	42	143	36
8-ohm Dual	.55	42	0	42	143	36
8-ohm Bridged	.52	36	0	36	123	31
70-V Dual	.58	45	0	45	154	39
70-V Parallel	.50	35	0	35	120	30
140-V Bridged	.60	47	0	47	161	41

Application: Paging/Background Music

LOAD	LINE CURRENT (A)	PAC (W)	PLD (W)	PDI (W)	STU/HR	KCAL/HR
2-ohm Parallel	.85	65	.45	64.5	220	55
4-ohm Dual	.75	58	.45	57.5	196	49
8-ohm Dual	.90	70	.36	69.6	238	60
8-ohm Bridged	.89	70	.45	69.5	237	60
70-V Dual	.78	62	.36	61.6	210	53
70-V Parallel	.74	58	.36	57.6	197	50
140-V Bridged	.77	61	.36	60.6	207	52

Application: Continuous Speech

LOAD	LINE CURRENT (A)	PAC (W)	PLD (W)	PDI (W)	STU/HR	KCAL/HR
2-ohm Parallel	1.87	154	5	149	508	128
4-ohm Dual	1.94	161	5	156	533	134
8-ohm Dual	1.41	113	4	109	372	94
8-ohm Bridged	1.91	159	5	154	526	133
70-V Dual	1.40	113	4	109	372	94
70-V Parallel	1.38	110	4	106	362	91
140-V Bridged	1.38	111	4	107	365	92

Application: Dynamic

LOAD	LINE CURRENT (A)	PAC (W)	PLD (W)	PDI (W)	STU/HR	KCAL/HR
2-ohm Parallel	3.55	317	26.3	291	994	250
4-ohm Dual	3.60	321	26.3	295	1007	254
8-ohm Dual	2.53	218	21.2	197	673	170
8-ohm Bridged	3.60	321	26.3	295	1007	254
70-V Dual	2.46	208	21.6	186	635	160
70-V Parallel	2.42	204	21.6	182	622	157
140-V Bridged	2.47	210	21.6	188	642	162

Application: Full Music Power

LOAD	LINE CURRENT (A)	PAC (W)	PLD (W)	PDI (W)	STU/HR	KCAL/HR
2-ohm Parallel	5.50	520	80	440	1503	379
4-ohm Dual	5.65	535	80	455	1554	391
8-ohm Dual	3.93	353	64	289	987	249
8-ohm Bridged	5.61	535	80	455	1554	392
70-V Dual	3.72	332	64	268	915	231
70-V Parallel	3.72	331	64	267	912	230
140-V Bridged	3.65	325	64	261	891	225



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