AVL

MP10
Multi-Image AV Computer

Operator's Manual
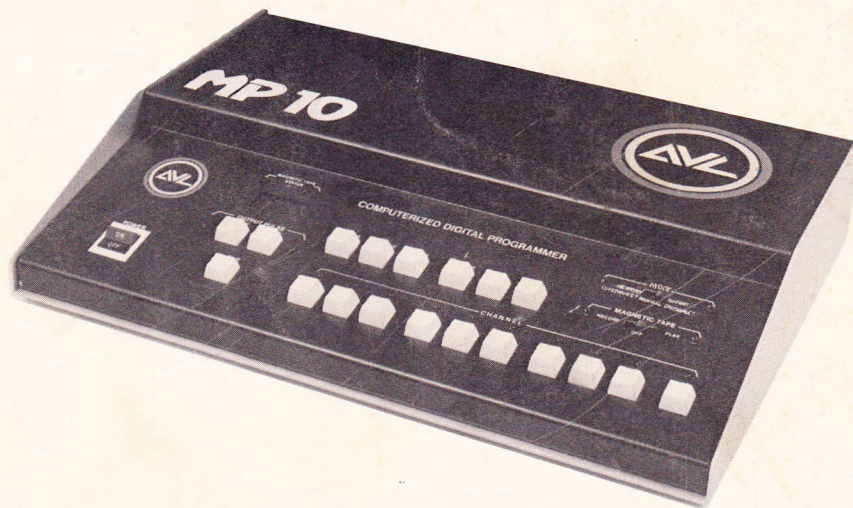
The professional team in multi-image programming systems.

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SR # 1203

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INTRODUCTION

The AVL MP 10 is a ten-channel, multi-purpose programmer with a feature that gives you all the advantages of unhurried, uncomplicated leisure time programming and editing: Computer Memory!

Here's the kind of versatility you can expect as, with the aid of this manual, you put your MP 10 through its paces . . .

For starters, its identification as "ten-channel, multi-purpose" means this programmer will activate any combination of up to ten functions simultaneously.

Like all programmers of this type, the MP 10 is normally used in conjunction with slide projectors, dissolve units or 16 mm projectors. But it can also interface with an even wider variety of external equipment because it has several different output pulses, increasing the range of its control capabilities.
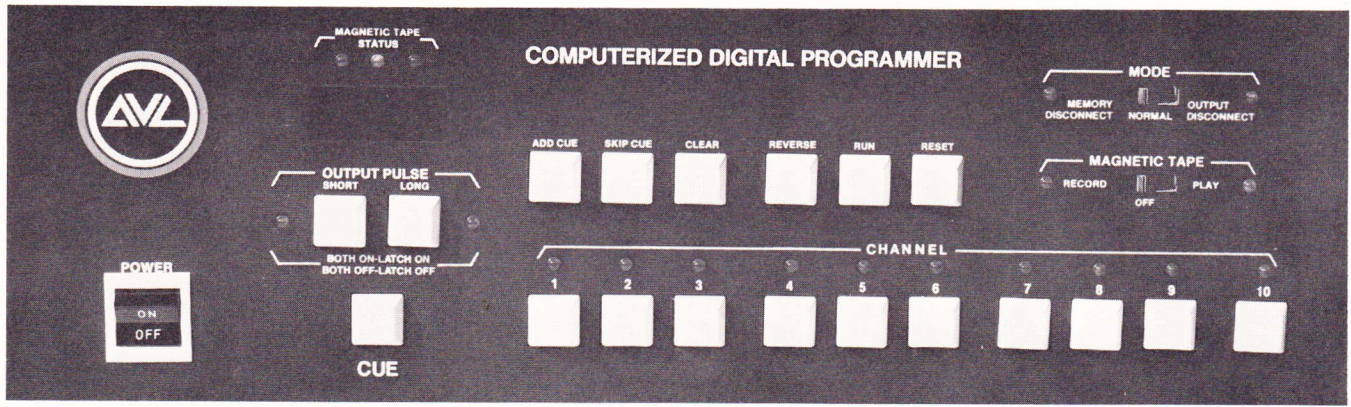
In brief, this application of AVL technological know-how brings you big show performance at a price previously typical of simple, real time tone or digital programmers.

This manual will help familiarize you with the MP 10.

We think you'll find it opens up new multi-image possibilities. And we're confident you'll find the MP 10's reliability as gratifying as the excitement it can generate on-screen.
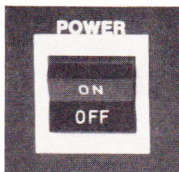
TABLE OF CONTENTS

COMPUTERIZED DIGITAL PROGRAMMER

FRONT PANEL

The keyboard controls of your MP 10 are designed for simple, trouble-free editing and programming, with all phases of operation apparent at a glance, all ten channel control functions at your fingertips. Here are the specific functions of each keyboard control.

Power
Activates the system in the "ON" position. A durable rocker variety switch, when Power is pressed to the "ON" position it brings the CUE COUNTER to 001. The programmer will be in the short output pulse mode, indicated by the corresponding LED.

Magnetic Tape Status Lights
These status lights indicate the condition of magnetic tape memory during playback, providing continuous grading of the tape.

Green	Perfect
Green and Yellow	Fair to Good
Green, Yellow and Red	Poor
Continuous Red	Unacceptable

Digital Cue Counter
Records each cue as it's entered, beginning with 001. At any point in a program the CUE COUNTER and control console preview the next step to be executed. Each time the MP 10 is turned on or its memory is cleared, the memory section of the computer is automatically and completely tested. If there is a problem the CUE COUNTER will spell out "BAD" instead of indicating 001.
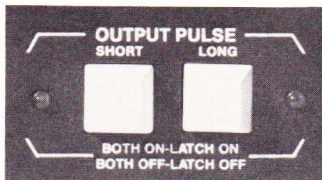
Output Pulse

Short Pulse -	One tenth of a second momentary closure (50 milliseconds on, 50 milliseconds off)
Long Pulse -	One half of a second momentary closure
Latch On -	Unlike a momentary closure, Latch On keeps a selected channel on permanently until interrupted by a new command
Latch Off -	Cancels Latch On status and renders channel inactive until introduction of a new output pulse

Beside each Output Pulse button there is an LED indicating its status. When the MP 10 is turned on the Short Output LED display comes on. The status of either LED can be changed simply by pushing the corresponding button.

Note: A single channel or any combination of channels from one to ten can be cued simultaneously with a short output pulse, long output pulse, latched on or latched off.
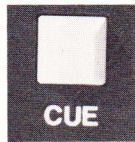
Cue

This button is the final command to execute after all channel presets, combined with the appropriate output pulse, are selected. The CUE button *must be pushed* before the computer will act on any preset selected. CUE puts the information into memory and activates the peripheral equipment according to your command.

Add-A-Cue

Inserts new instructions at any point in a program by opening memory and moving all subsequent cues backward.

Skip-A-Cue

Eliminates a cue at any point in a program by opening memory and moving all subsequent cues forward.

Clear

Clears all channel presets on the keyboard. On playback, this button also clears MAGNETIC TAPE LEDs. Pushing the CLEAR button *does not* change the status of the output pulse. To change output pulse, please review Output Pulse, Page 3.

Note: Clear also produces a tonal signal for level setting of your tape recorder prior to recording any programmed information.

Reverse

This button steps memory backward one cue at a time. Each time the REVERSE button is pressed the keyboard will display the previous command.

Note: REVERSE is used in reviewing and editing memory only. It is *not* programmable.

Run

Steps program forward to any point at a rate of ten cues per second. Used for editing as well as high speed memory "dump" onto magnetic tape for temporary or permanent storage of cues.

Reset

Takes computer memory back to start position (001). RESET may be used at any point in a program without altering the programmed memory.

Note: if RESET and CLEAR are pushed *simultaneously,* programmed memory is erased. RESET is not a recordable function, strictly manual.
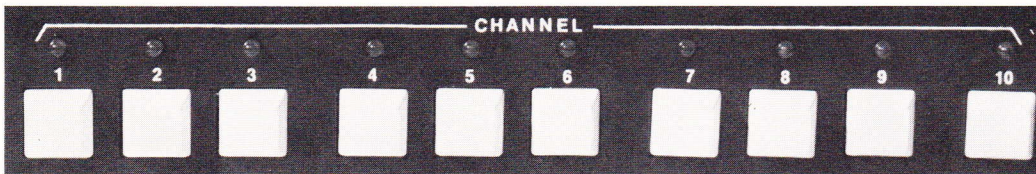
Channels

With ten channels, your MP 10 operates up to ten pieces of peripheral equipment. Each channel has its own preset button. Directly above the button is an LED display that shows the channel's status during programming or playback. To preset any channel, push the corresponding button, which in turn will light up that channel's LED. If any channel is incorrectly selected, its preset can be cancelled by pushing that channel's button a second time.

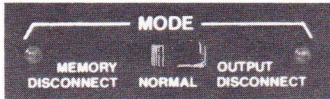**Note:** The use of a channel's short output pulse is normally sufficient for operation of conventional equipment. The long output pulse makes possible operation of SAV projectors or other equipment requiring a long pulse to function.

Mode Switch

Memory Disconnect

This position is used to prevent keyboard commands or information previously transferred to magnetic tape from entering or changing the MP 10's computer memory. The MEMORY Disconnect mode is indicated by a red LED to the left of the switch.

Normal

This position is used to program commands into memory; to transfer information to magnetic tape; or to transfer information from magnetic tape. The NORMAL position is for playback and programming of shows with outputs of channels connected.

Output Disconnect

Disconnects output to all external equipment. Output Disconnect is used for high speed loading of memory from magnetic tape. For quick editing of cues, this position also allows you to run to any point in the memory without activating external equipment.

Magnetic Tape Record/Off/Play

This three-position switch must be in the RECORD (left) position to record a program on sound track; in the PLAY (right) position to play a recorded program. The RECORD position is indicated by a red light, the PLAY by a green light. In OFF (center) position, both Mag Tape RECORD and PLAY are disconnected. All programming should be done with this switch in the OFF position.
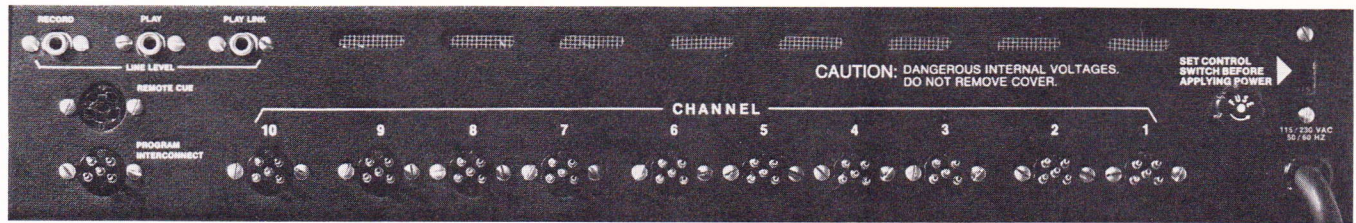
REAR PANEL

To Record
Connect RCA jack from Line Level RECORD of MP 10 to Line Level "In" of desired cue track on tape deck.

To Play Back
Connect RCA jack from Line Level PLAY of MP 10 to Line Level "Out" of same track recorded on tape deck.

Play Link is a jack that permits playback of recorded signals on two or more MP 10s simultaneously.

Remote Cue
A standard female five-pin Kodak receptacle that accepts the cord from a Kodak remote hand control. Each time the hand control's forward button is pushed the programmer's memory is cued. (Contact closure: Pin 2 to Pin 5.)

Program Interconnect
Used to interconnect an additional MP 10 or other AVL computer systems. Remote cueing the first MP 10 will simultaneously cue the interconnected system when a standard Kodak cable is run from PROGRAM INTERCONNECT of the MP 10 to REMOTE CUE of the second system.

Channel Control Receptacles
Ten male receptacles that accept standard five-pin Kodak cables from equipment controlled by each channel. These channels are electrically isolated closures (Pin 2 to Pin 5), 120 Volts AC or DC, 3 amp maximum.

International Voltage Change Switch
Changes voltage from 115 to 230 VAC.

Note: Always set this switch before applying power. Standard voltage in North America is 115.

HOOKING UP YOUR SYSTEM

Preparing your MP 10 for operation requires relatively little time. Because it's a multi-purpose programmer, there are several methods, depending upon the equipment you intend to use. The following example employs three AVL MARK II dissolve units, three "klunk"* (non-dissolving) slide projectors, and a 16 mm projector in a three-screen format. See diagram, page 11.

* A "klunk" projector is one controlled directly by the MP 10. It must be operated in the Lamp On position. It moves forward only.

1. Connect left and right projectors to corresponding receptacles of MARK II dissolve units.

2. Connect 16 mm projector's AC cord to AVL Remote Power Control Box (if needed). Turn projector lamp on.

3. Using Channels 1 to 3 as the Cut cue for the three MARK IIs, run five-pin Kodak extension cables from Channel 1 to Cut on the first MARK II; from Channel 2 to Cut on the second MARK II; and from Channel 3 to to Cut on the third MARK II.

4. Using Channels 4 to 6 as the Dissolve Rate cue for the MARK IIs, run five-pin Kodak cables from Channel 4 to Dissolve plug on the first MARK II; from Channel 5 to the Dissolve plug on the second; and from Channel 6 to the Dissolve plug on the third.

5. Using Channels 7, 8 and 9 respectively for the "klunk" projector control on screens 1, 2 and 3, connect five-pin Kodak cables from Channel 7 to the back of the first projector; from Channel 8 to the back of the second; and from Channel 9 to the back of the third.

6. Using Channel 10 for on/off control of the 16 mm projector, run a standard Kodak cable between this channel and Cue Input on the AVL Power Box.

7. Now check International Voltage Change switches on the MP 10 and MARK IIs for proper setting (115 for North America).

8. Plug in MARK IIs. Set projectors to Fan. Plug in the "klunk" projectors set to Lamp On position. Next, plug in the Remote Power Box, then the MP 10. Turn the programmer on.

9. Your system is now ready for programming.

10. If you intend to record the memory after programming, run an audio cord with standard RCA connectors from the RECORD jack of the MP 10 to Line Level "In" on your tape deck cue track. For playback, run a similar cable from the PLAY jack of the MP 10 to Line Level "Out" on the tape deck.

11. Now your system is ready for all phases of operation.

BEFORE YOU PROGRAM . . .

(1) Load slide trays into all projectors, align and focus.

(2) Cue up 16 mm projector to beginning of visual portion.

Note:
Because "klunk" projector lamps are on constantly, a blank slide must be used whenever a visual isn't required. When running film, the corresponding slide projector must have a blank slide or a motion film framing slide.

PROGRAMMING WITH YOUR MP10

Now it's time to get an idea of what the MP 10 can do. By running through the following brief programming steps you'll gain a clearer idea of how to operate it, and of what it can do for you on-screen.

CUE COUNTER READS	OUTPUT PULSE	CHANNEL PRESET	SCREEN ACTION
001	SHORT	Push 4, 5, 6 CUE	Two-second dissolve on all three screens simultaneosly
002	SHORT	Push 1, 3 CUE	Cut appears on screen 1 and 3 simultaneously. Down-going projectors advance.
003	SHORT	Push 2, 10 CUE	Center screen MARK II cuts between projectors. Because Channel 10 is activating the 16 mm projector, the "up" slide projector should have a blank slide
004	SHORT	Push 4, 2, 6, 10 CUE	Screens 1 and 3 dissolve from visual to visual simultaneously. The 16 mm projector goes off. The center screen MARK II cuts, projecting a new image
005	SHORT	Push 7, 8, 9 CUE	"Klunk" projectors advance from blank to visual superimposed over images projected on each screen by MARK II dissolves
006	SHORT	Push 4, 5, 6, 7, 8, 9 CUE	Images projected by MARK IIs dissolve to new visuals. Projectors advance to blank slides, removing the superimposition

Note:
As many channels as needed can be cued simultaneously to achieve an effect. When 16 mm alone is required on screen, the "up" slide projector on that screen must have a blank slide in its gate or a masked slide used for framing the 16 mm format image.

Because of the MP 10's 1000-cue memory, shows of almost any length can be programmed into it. If 1000 cues are insufficient, cues can be stored temporarily on magnetic tape. This storage allows you to clear the programmer's memory and then continue programming the balance of your show.

RECORDING CUES

Choice of Tape Deck
Your choice of tape deck to be used in conjunction with the MP 10 is very important. A tape deck used with the MP 10 must have *independent* left and right record. For example, if your sound track is on the left channel and you wish to use the right channel for your cue track, you *must* be able to play back the left channel and record on the right channel *at the same time.*

Level Setting of Tape Deck
With the MP 10 in the RECORD mode, press the CLEAR button to generate a tone for level setting. The tone should be played back at Zero VU. Many tape decks that record at +3 DB play back at Zero. To check your tape deck, play back the recorded tone. If it reads approximately zero, proceed. If it doesn't, change the record level and try again. Once you've established a record level you should not have to change the setting during programming.

HIGH SPEED DUMPING OF MEMORY ONTO MAGNETIC TAPE

At any time during programming or after its completion, all information stored in the MP 10's memory can be transferred to magnetic tape. The procedure is called "dumping." Memory can be recorded on mag tape one cue at a time for synching, or at the rate of ten cues per second for temporary or permanent storage. For high speed dumping, follow these instructions.

1. Push RESET to bring memory back to start.

2. Set MEMORY switch in the Output DISCONNECT (left) position, indicated by red light.

3. Set Magnetic Tape switch to RECORD (left) position, indicated by red light.

4. Interconnect from the RECORD jack on the MP 10's back panel to Line Level "In" on the tape deck.

5. Put tape deck in Record and start.

6. Press RUN button on the MP 10 and hold down until all memory information has been transferred to the mag tape.

Note:
Using the RUN button instead of the CUE button records the memory at a rate of ten cues per second.

RECORDING CUES IN SYNCH

The MP 10 Mag Tape switch, together with the cue track of the tape deck, must be in the Record position. The programmer's memory switch should be in the NORMAL position. To record all information in synchronization, return all projectors and peripheral equipment to starting points. Start recorder and push the MP 10's CUE button as the channel sequences are required. Each time the CUE button is pushed the MP 10 will generate the digital information necessary to perform the commands selected.

PLAYBACK OF YOUR SYNCHRONIZED SHOW

1. Rewind tape deck to beginning of presentation.

2. Set MP 10's Magnetic Tape switch to Play position.

3. Return projector trays and 16 mm projector to start positions.

4. Start tape and enjoy your "canned" show.

PRESENTING A "MIXED" SHOW

There will be occasions when you want to combine canned elements and a live speaker in the same presentation. Here's how to go about it.

1. With the Mode switch in the Output Disconnect position, load speaker support cues into memory.

2. After loading, reset memory to 001.

3. Put Mode switch into Memory Disconnect position.

4. Present your canned show.

5. After completion of canned portion, put Mode switch into Normal position. The first cue sequence will be previewed on the keyboard.

6. Push Cue button each time a new screen action is required from memory.

OTHER APPLICATIONS FOR YOUR MP 10

In addition to audio-visual applications, your MP 10 can also be used for a multitude of other purposes. The range of possibilities extends beyond the scope of this manual, but they include:

• Light shows synchronized to music, using each channel to control different colored lights

• In "live" theater, the MP 10's ability to operate virtually any motorized apparatus means it can be employed to lower props, light scenes, open and close curtains or control house lights.

CONCLUSION

After familiarizing yourself with the MP 10 and its operation, we think you will agree that it is a very versatile and highly effective programmer, capable of producing multi-image excitement . . . and more!

You'll find it easy to work with and tolerant of operator error.

Create . . . experiment . . . enjoy.

SCREEN 1

SCREEN 2

SCREEN 3

KLUNK

LEFT PROJECTOR

RIGHT PROJECTOR

KLUNK

LEFT PROJECTOR

RIGHT PROJECTOR

16mm FILM

KLUNK

LEFT PROJECTOR

RIGHT PROJECTOR

KODAK

KODAK

AC POWER

KODAK

AC POWER

KODAK

KODAK

AC POWER

KODAK

AC POWER

AC POWER

KODAK

KODAK

AC POWER

KODAK

AC POWER

AC POWER

AC POWER

MARK II DISSOLVE

MARK II DISSOLVE

POWER CONTROL BOX

AC POWER

MARK II DISSOLVE

CUT

DISSOLVE

CUT

DISSOLVE

CUT

DISSOLVE

KODAK

KODAK

KODAK

KODAK

KODAK

KODAK

KODAK

TAPE DECK

1 2 3   4 5 6   7 8 9   10
— CHANNEL —

LINE OUT
RCA CORDS
LINE IN

PLAYLINK
PLAY
RECORD

MP10 PROGRAMMER

AC POWER

SPARE PARTS LIST

ITEM NO.	QTY. AVL	PART NO.	DESCRIPTION
1	1	60-001	Transformer, 8V
2	1	60-005	Transformer, 28V
3	1	30-021	Bridge
4	2	30-015	Diode, 1N4002
5	1	34-001	LED, Red
6	1	34-002	LED, Green
7	1	34-003	LED, Amber
8	1	34-030	Numerical Display
9	2	71-010	Switch, Pushbutton
10	1	72-009	Switch, Slide, DPTT
11	1	73-001	Switch, Rocker
12	1	35-001	Voltage Regulator (+5V)
13	1	35-002	Voltage Regulator (+12V)
14	1	33-002	Transistor (Tip-35)
15	1	33-015	Transistor (Tis-37)
16	1	70-001	Relay
17	5	99-025	Fuse, 1 Ampere (AGC-1)
18	1	81-021	Connector, Female, EBY, 5Pin
19	1	81-022	Connector, Male EBY, 5Pin
20	1	81-016	Jack, Audio, RCA-Type
21	2	99-010	Spacer, Shockmount, F/F
22	2	99-011	Spacer, Shockmount, M/F
23	4	99-001	Foot, Bumper
24	1		Asst. Hardware Package

IEC SPARE PARTS

25	1	81-038	Connector, Din, Female, 6Pin
26	1	81-039	Connector, Din, Male, 6Pin
27	1	99-021	Fuseholder, IEC
28	1	99-022	Adapter, Fuse (For 5x20mm Fuse)
29	1	99-031	Fuse, 1 Ampere (5x20mm)
30	1	83-021	Power Cord (Plug Not Included)
31	1	60-030	EMI Filter, 5K1

SPECIFICATIONS

CHANNELS: Ten momentary or latching 3 amp/120 Volt AC/DC contact closures with standard Kodak five-pin receptacles

MAG TAPE: Line Level record and playback time division multiplex (digital) multiple pass with cyclic redundancy check (CRC) characters and computer analysis on playback
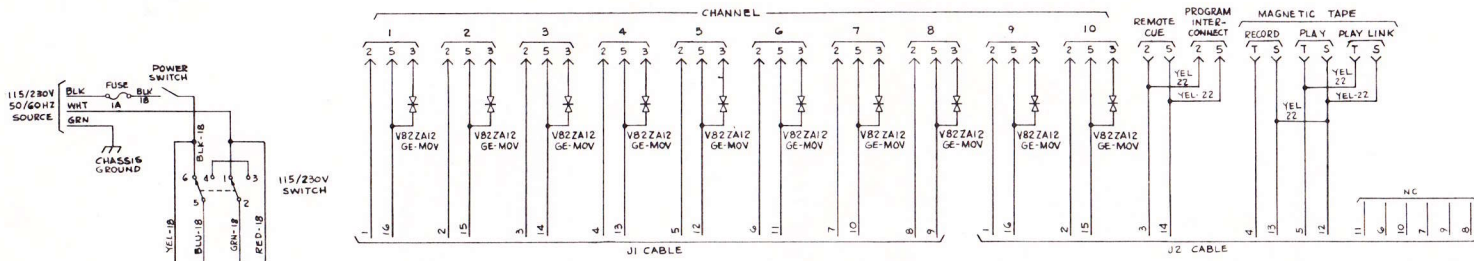
ELECTRICAL: 115/230 VAC   50/60 Hz
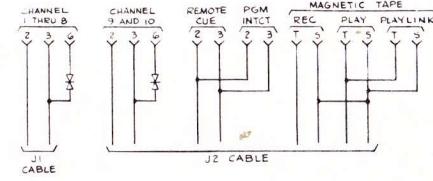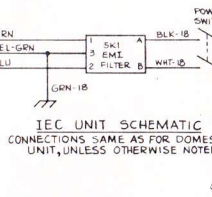
SIZE (H x W x D): 4" x 19" x 13½" (11 x 49 x 35cm)
WEIGHT: 11 pounds (5kg)
ORIGIN: Manufactured in U.S.A.

CHANNEL
1 2 3 4 5 6 7 8 9 10

REMOTE CUE
PROGRAM INTERCONNECT
MAGNETIC TAPE
RECORD PLAY PLAY LINK

V82ZA12 GE-MOV (×10)

YEL 22
YEL-22
YEL 22
YEL-22

NC

J1 CABLE

J2 CABLE

POWER SWITCH

115/230V 50/60HZ SOURCE
BLK FUSE 1A BLU
WHT
GRN

CHASSIS GROUND

115/230V SWITCH

MOLEX CONNECTOR

DOMESTIC UNIT SCHEMATIC

T1 (EF-753)
T2 (7549)

YEL-18 BLU-18 GRN-18 RED-18

BLK-WHT WHT BLK-RED BLK

RED RED BLK-18 YEL-18 YEL-18

+8V GRD +28V

J1 J2

SEE TABLE A FOR CONNECTIONS

PRINTED WIRING BOARD ASSEMBLY

115/230V 50/60 HZ SOURCE
BRN
YEL-GRN
BLU
5K1 EMI 3 FILTER B
BLK-18
POWER SWITCH
BLK-18
FUSE 1A
BLK-18
WHT-18 WHT-18

GRN-18

IEC UNIT SCHEMATIC
CONNECTIONS SAME AS FOR DOMESTIC UNIT, UNLESS OTHERWISE NOTED

115/230 SWITCH

YEL-18 BLU GRN RED-18

MOLEX CONNECTOR

CHANNEL 1 THRU 8
CHANNEL 9 AND 10
REMOTE CUE
PGM INTCT
MAGNETIC TAPE
REC PLAY PLAYLINK

J1 CABLE

J2 CABLE

MOLEX CONNECTOR
YELLOW RED BLUE GREEN

EBY FEMALE
REMOTE CUE (WIRING SIDE)

EBY MALE
CHANNEL 1 THRU 10 (WIRING SIDE)

EBY MALE
PROGRAM INTERCONNECT (WIRING SIDE)

DIN FEMALE
REMOTE CUE (WIRING SIDE)

DIN MALE
CHANNEL 1 THRU 10 (WIRING SIDE)

DIN MALE
PROGRAM INTERCONNECT (WIRING SIDE)

PGM ICT
REMG
CHANNEL
RECORD PLAY PLAY LINK

PWR
115/230
FUSE

J2 CABLE J1 CABLE

U4 U1
U3
U2

T2
+28V
+8V
T1

LINE LOAD
ON/OFF

BOARD ASSEMBLY
(SEE NOTE 1)

NOTES:

1. CAUTION – THIS ASSEMBLY CONTAINS MOS-TYPE DEVICES WHICH ARE SUBJECT TO ELECTROSTATIC (STATIC) CHARGES. INDIVIDUALS AND TOOLS SHOULD BE GROUNDED BEFORE COMING IN CONTACT WITH THE ASSEMBLY OR DEVICES. BOARD ASSEMBLY MUST BE WRAPPED IN METALLIC FOIL FOR HANDLING AND/OR STORAGE.

2. THIS COMPONENT IS LOCATED ON THE COMPONENT SIDE (FAR SIDE) OF THE PRINTED WIRING BOARD.

3. THIS COMPONENT IS LOCATED ON THE BASE ASSEMBLY AND IS SHOWN IN ITS RELATIVE LOCATION WHEN THE COVER AND BASE ARE ASSEMBLED.

4. ○ DENOTES A DOMESTIC UNIT COMPONENT
   □ DENOTES AN IEC UNIT COMPONENT

5. THE IEC FUSEHOLDER, ITEM 25, WILL ACCEPT AN AGC-1 FUSE, ITEM 15. A 1 AMPERE 5×20 MM FUSE, ITEM 27 WITH AN ADAPTER, ITEM 26, MAY BE SUBSTITUTED.
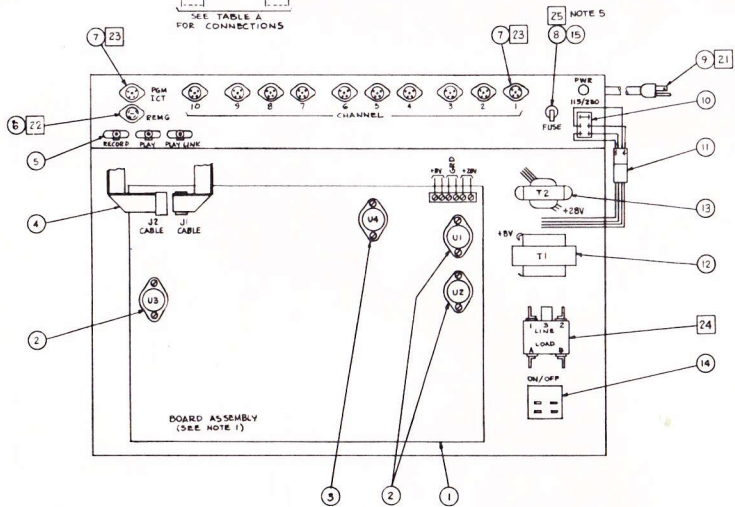
TABLE A

WIRE NO.	J1 CABLE	EBY	DIN	J2 CABLE	EBY	DIN
16	CHANNEL 1	5	3	CHANNEL 9	5	3
1		2	2		2	2
15	CHANNEL 2	5	3	CHANNEL 10	5	3
2		2	2		2	2
14	CHANNEL 3	5	3	REMCUE &	5	3
3		2	2	PROG INTCT	2	2
13	CHANNEL 4	5	3	RECORD JK	SLEEVE	
4		2	2		TIP	
12	CHANNEL 5	5	3	PLAY &	SLEEVE	
5		2	2	PLAY LINK JKS	TIP	
11	CHANNEL 6	5	3			
6		2	2			
10	CHANNEL 7	5	3	(NO CONNECTION)		
7		2	2			
9	CHANNEL 8	5	3			
8		2	2			

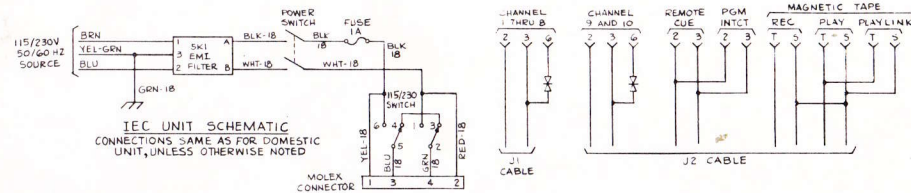| ITEM NO.	AVL PART NUMBER	MANUFACTURER	DESCRIPTION	NOTE
28				
27	99-031	LITTLEFUSE	FUSE, 1 AMPERE, 5×20 MM	5
26	99-022	LITTLEFUSE	ADAPTER FOR 5×20 MM FUSE	5
25	99-021	LITTLEFUSE	FUSEHOLDER, IEC	5
24	60-030	CORCOM	EMI FILTER, 5K1	
23	81-039		CONNECTOR, MALE, DIN, 6 PIN	
22	81-038		CONNECTOR, FEMALE DIN 6 PIN	
21	83-021		POWER CORD, IEC (PLUG NOT PROVIDED)	
20				
19				
18	30-021	MOTOROLA	BRIDGE	
17	30-015	ITT	DIODE, SEMICONDUCTOR, N40JZ	
16	30-040	GENERAL ELECTRIC	GE-MOV SUPPRESSOR V82ZA12	
15	99-025	BUSSMAN	FUSE, 1 AMPERE (AGC-1)	
14	73-001	ALCO ELEC	SWITCH, ROCKER, DPST	
13	60-005	ENSIGN	TRANSFORMER, STEPDOWN (7549)	3
12	60-001	ELEC WINDINGS	TRANSFORMER, STEPDOWN (EF-753)	3
11	81-005(M), 81-006 (F)	MOLEX	CONNECTOR, 4 POS	
10	72-008	SWITCHCRAFT	SLIDE SWITCH, DPDT (115/230)	
9	83-007	BELDEN	POWER CORD	
8	99-020	LITTLEFUSE	FUSEHOLDER	
7	81-022	EBY	PLUG, MALE, 5 PINS	
6	81-021	EBY	JACK, FEMALE, 5 PINS	
5	81-016	H.H. SMITH	JACK, AUDIO	
4	83-030	ALPHA	CABLE, RIBBON, 16 COND	
	80-001	3M CO.	CONNECTOR, RIBBON CABLE	
3	35-002	MOTOROLA	VOLTAGE REGULATOR (+12V)	2
2	35-001	MOTOROLA	VOLTAGE REGULATOR (+5V)	2
1	17 33 002	AVL	PRINTED WIRING BOARD	1

MP10 PROGRAMMER SCHEMATIC AND SPECIFICATIONS

SCALE — DATE 4/27/77 APPROVED BY — DRAWN BY —

AUDIO VISUAL LABORATORIES, INC
ATLANTIC HIGHLANDS, NEW JERSEY 07716

D 17 99 001 SH 1 OF 1 REV A
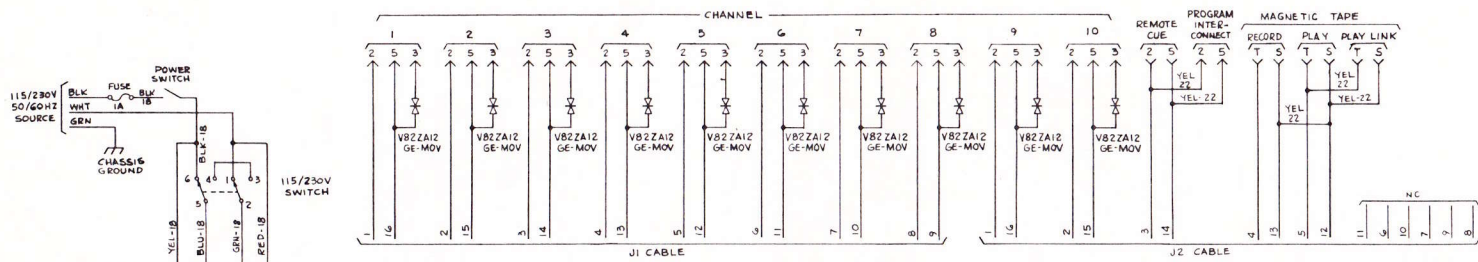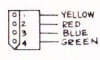
DOMESTIC UNIT SCHEMATIC

IEC UNIT SCHEMATIC
CONNECTIONS SAME AS FOR DOMESTIC
UNIT, UNLESS OTHERWISE NOTED

CHANNEL

1 2 3 4 5 6 7 8 9 10

REMOTE CUE   PROGRAM INTERCONNECT   MAGNETIC TAPE   RECORD PLAY PLAY LINK

V82ZA12 GE-MOV

J1 CABLE

J2 CABLE

115/230V 50/60HZ SOURCE BLK WHT GRN FUSE 1A POWER SWITCH

CHASSIS GROUND

115/230V SWITCH

MOLEX CONNECTOR

T1 (EF-753)

T2 (7549)

+8V   GRD   +28V

PRINTED WIRING BOARD ASSEMBLY

SEE TABLE A FOR CONNECTIONS

MOLEX CONNECTOR
0 1 2 3 4 = YELLOW / RED / BLUE / GREEN

EBY FEMALE — REMOTE CUE (WIRING SIDE)

EBY MALE — CHANNEL 1 THRU 10 (WIRING SIDE)

EBY MALE — PROGRAM INTERCONNECT (WIRING SIDE)

DIN FEMALE — REMOTE CUE (WIRING SIDE)

DIN MALE — CHANNEL 1 THRU 10 (WIRING SIDE)

DIN MALE — PROGRAM INTERCONNECT (WIRING SIDE)

PGM ICT   REMG

RECORD PLAY PLAY LINK

CHANNEL

BOARD ASSEMBLY (SEE NOTE 1)

NOTES:

1. CAUTION - THIS ASSEMBLY CONTAINS MOS-TYPE DEVICES WHICH ARE SUBJECT TO ELECTROSTATIC (STATIC) CHARGES. INDIVIDUALS AND TOOLS SHOULD BE GROUNDED BEFORE COMING IN CONTACT WITH THE ASSEMBLY OR DEVICES. BOARD ASSEMBLY MUST BE WRAPPED IN METALLIC FOIL FOR HANDLING AND/OR STORAGE.

2. THIS COMPONENT IS LOCATED ON THE COMPONENT SIDE (FAR SIDE) OF THE PRINTED WIRING BOARD.

3. THIS COMPONENT IS LOCATED ON THE BASE ASSEMBLY AND IS SHOWN IN ITS RELATIVE LOCATION WHEN THE COVER AND BASE ARE ASSEMBLED.

4. ○ DENOTES A DOMESTIC UNIT COMPONENT
   ☐ DENOTES AN IEC UNIT COMPONENT

5. THE IEC FUSEHOLDER, ITEM 25, WILL ACCEPT AN AGC-1 FUSE, ITEM 15. A 1 AMPERE, 5x20 MM FUSE, ITEM 27 WITH AN ADAPTER, ITEM 26, MAY BE SUBSTITUTED.

TABLE A

WIRE NO.	J1 CABLE			J2 CABLE		
		EBY	DIN		EBY	DIN
16	CHANNEL 1	5	3	CHANNEL 9	5	3
1		2	2		2	2
15	CHANNEL 2	5	3	CHANNEL 10	5	3
2		2	2		2	2
14	CHANNEL 3	5	3	REMCUE & PROG INTCT	5	3
3		2	2		2	2
13	CHANNEL 4	5	3	RECORD JK	SLEEVE	
4		2	2		TIP	
12	CHANNEL 5	5	3	PLAY & PLAY LINK JKS	SLEEVE	
5		2	2		TIP	
11	CHANNEL 6	5	3	(NO CONNECTION)		
6		2	2			
10	CHANNEL 7	5	3			
7		2	2			
9	CHANNEL 8	5	3			
8		2	2			

ITEM NO	AVL PART NUMBER	MANUFACTURER	DESCRIPTION	NOTE
28				
27	99-031	LITTLEFUSE	FUSE, 1 AMPERE, 5x20 MM	5
26	99-022	LITTLEFUSE	ADAPTER FOR 5x20 MM FUSE	5
25	99-021	LITTLEFUSE	FUSEHOLDER, IEC	5
24	60-030	CORCOM	EMI FILTER, 5KI	
23	81-039		CONNECTOR, MALE DIN, 6 PIN	
22	81-038		CONNECTOR, FEMALE DIN 6 PIN	
21	33-021		POWER CORD, IEC (PLUG NOT PROVIDED)	
20				
19				
18	30-021	MOTOROLA	BRIDGE	
17	30-015	ITT	DIODE, SEMICONDUCTOR, N4002	
16	30-040	GENERAL ELECTRIC	GE-MOV SUPPRESSOR V82ZA12	
15	99-025	BUSSMAN	FUSE, 1 AMPERE (AGC-1)	
14	73-001	ALCO ELEC	SWITCH, ROCKER, DPST	
13	60-005	ENSIGN	TRANSFORMER, STEPDOWN (7549)	3
12	60-001	ELEC WINDINGS	TRANSFORMER, STEPDOWN (EF-753)	3
11	81-005(M), 81-006 (F)	MOLEX	CONNECTOR, 4 POS	
10	72-008	SWITCHCRAFT	SLIDE SWITCH, DPDT (115/230)	
9	33-007	BELDEN	POWER CORD	
8	99-020	LITTLEFUSE	FUSEHOLDER	
7	81-022	EBY	PLUG, MALE, 5 PINS	
6	81-021	EBY	JACK, FEMALE, 5 PINS	
5	81-016	H.H. SMITH	JACK, AUDIO	
4	83-030	ALPHA	CABLE, RIBBON, 16 COND	
4	80-001	3M CO.	CONNECTOR, RIBBON CABLE	
3	35-002	MOTOROLA	VOLTAGE REGULATOR (+12V)	2
2	35-001	MOTOROLA	VOLTAGE REGULATOR (+5V)	2
1	17 33 002	AVL	PRINTED WIRING BOARD	1

MP10 PROGRAMMER SCHEMATIC AND SPECIFICATIONS