ALL AMERICAN SCOREBOARDS

A product of

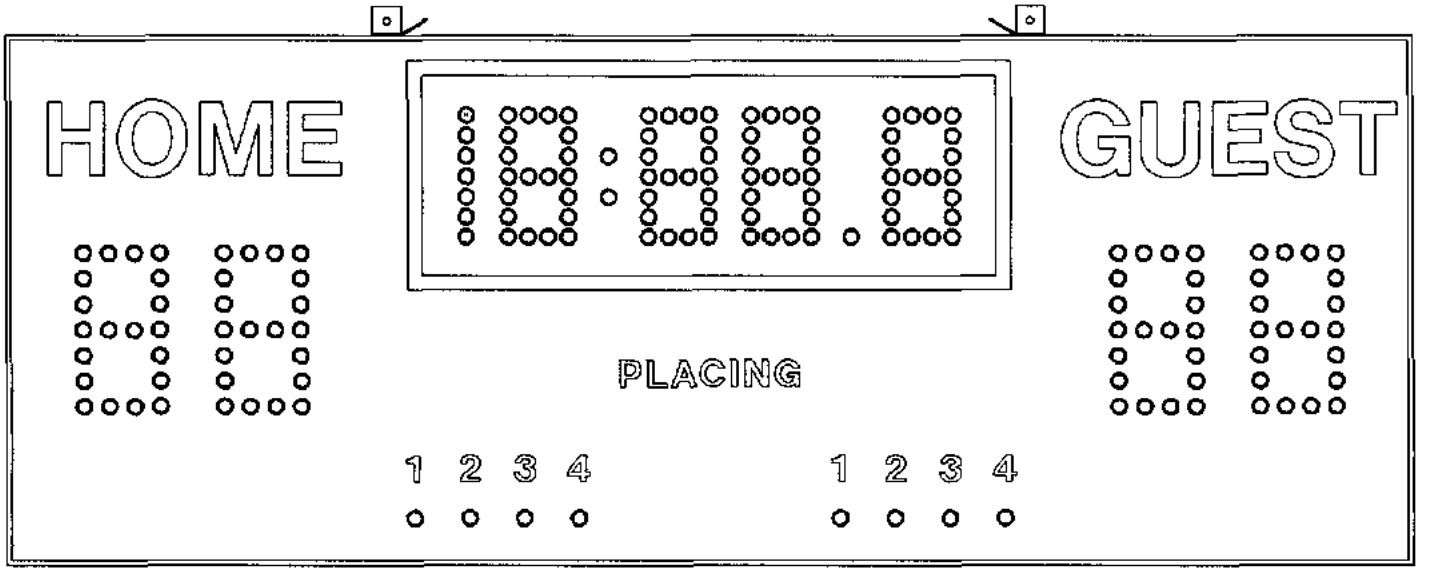
Everbrite

401 S Main St
Pardeeville, WI 53954
(608) 429-2121 / (800) 356-8146

OPERATING INSTRUCTIONS AND SERVICE MANUAL

SWIMMING SCOREBOARD

MODEL MP-2702



EFFECTIVE S.N.XXXX, AUG 23,1994

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1. GENERAL INFORMATION

1.1 DESCRIPTION

Your All-American scoreboard has been carefully inspected and tested before leaving the factory. It is possible, however, that components may be loosened or forced out of adjustment in transit. If this occurs, follow the troubleshooting guide (section 4). If equipment then fails to operate, contact immediately:

ALL-AMERICAN Service Department
EVERBRITE Corporation
P.O. Box 97
Pardeeville, WI 53954
Telephone: (608) 429-2121
Toll Free: 800-356-8146

Parts being returned for repair are to be sent to:

ALL-AMERICAN Service Department
EVERBRITE Corporation
401 S. Main Street
Pardeeville, WI 53954

NOTE

If you need to send parts in for repair, please call the ALL AMERICAN service department for a returned goods authorization (RGA) number.

1.2 Identification

ALL-AMERICAN uses a 4 digit serial number for scoreboard identification. The serial number tags are located on the back of the control console and the lower right hand corner on the face of the scoreboard display. When contacting the factory for assistance it is important that the model number and serial number are known.

1.3 Damage

Upon receipt, check for visible damage. If this occurs, or if damage is found after shipment has been accepted, follow the damage claim procedure.

1.4 Damage Claim Procedure

An instruction sheet is enclosed advising the consignee in case of damage in transit. If damage is noted at the time of delivery, consignee must obtain an 'Inspection of Bad Order' from the delivering carrier. In order to process your claim, this must be properly filled out with a complete statement of all damage and it must be signed by the carrier.

If damage is discovered after delivery, you should call the delivery company. Have them make out a Concealed Damage Report. Fifteen days after delivery are allowed, so this should be done promptly or it is impossible to process this claim.

Advise EVERBRITE corporation of necessary replacement parts, or repairs. Consignee will be invoiced and then should file a claim with the carrier to recover charges. To file your claim follow this procedure:

(A) Cost of replacement parts or repair charges are invoiced to the carrier by the consignee.
(B) The following documents, properly filled out, plus invoice, are forwarded to the trucking company in support of your claim:

(a) Original bill of lading
(b) Original paid freight bill
(c) Certified copy of original invoice
(d) Standard form for presentation of loss and damage claim

2. INSTALLATION

2.1 General Information

Shipping papers accompany each scoreboard. Check carefully to see that you receive the following:

1 ea Swimming Display
1 ea Control Console
1 ea Service Manual
1 ea Wall Junction Box
1 ea Horn
? ft Control Cable (if ordered)

IMPORTANT!
The MP-41 cable supplied by ALL AMERICAN SCOREBOARDS for use on the Microprocessor based scoreboards is specifically designed for this system. Use of a substitute cable may void the warranty on the scoreboard!

2.2 Inspection

Inspect each unit and tighten all screws, lamps, and fittings that may have loosened in shipment.

NOTE

A small length of rubber hose may be used as a lamp extractor. Simply taper the inside of the hose with a sharp knife to fit the lamp.

2.3 Pre-Test

Before installing the scoreboard, pre-test all functions.

(A) Connect the scoreboard to a 20 AMP, 120 Volt AC circuit.
(B) Plug the control console into the top of the scoreboard.
(C) Test operate all functions on the scoreboard according to operating instructions in section 3 of this manual.
(D) When all the functions test out, disconnect the power and the control console before hanging the scoreboard.

2.4 Data Cable Installation

The MP-41 data cable carries only low voltage signals and therefore can be installed with or without conduit. consult section 6 for junction box and scoreboard wiring.

2.5 Electrical connections

This scoreboard requires a 120 V. 15 AMP AC circuit for the exclusive use of the scoreboard.

NOTE

To protect the MP-3000 control from damage, it is advisable that you disconnect the control and store in a dry secure area when not in use.

NOTE

This equipment is **ETL** (Electronics Testing Laboratories) **CSA** and **NRTL** approved and complies with the requirements in part 15 of the FCC rules for a class A computing device. Operation of this equipment in a residential area may cause unacceptable interference to radio and television reception, requiring the operator to take whatever steps are necessary to correct the interference.

3. CONTROL CONSOLE OPERATION

3.1 Scoreboard Power

Turn on the branch circuits to the scoreboard. The Home and Guest scores will show "0", and the timer will show ":00".

3.2 Console Display

The 4 digit Liquid Crystal Display module displays the scoreboard information entered from the keyboard.

3.3 Console Power

Plug the control console cable into the wall junction box.

Push [ON/OFF] once to turn the console on.

Push [ON/OFF] a second time to shut the console off.

When first turned on; the LCD should show: CODE

3.4 To Use Scoreboard

Enter the two digit code (60) shown in the lower left corner of the keyboard as in the following example:

Push [CODE] [6] [0] [ENTER].

When the proper code has been entered, the console display will show: :00

3.5 Time Setting and Control

To set an 8 minute period, Push: [SET] [8] [0] [0] [ENTER].

Any time up to 99:59 may be preset in a similar manner.

The [UP/DN] key determines the timer mode. When in the UP mode the timer counts up. When in the DOWN mode the timer counts down.

Pushing the [IN/OUT] key, starts and stops the timer.

Push [RESET] to return the timer to the previously set value.

3.6 Team Scores

The Home and Guest Scores can be changed in three different ways.

(A) To add 1 to the existing score: Push [+1].

(B) To directly enter or correct a score: Push Home or Guest [SCORE] followed by the desired number, then [ENTER].

Example: Present Home Score is 15. Change the score from 15 to 23.

Push: Home [SCORE] [2] [3] [ENTER] .

(C) To clear the score: Push [SCORE] [CLEAR] .

3.8 Horn

The horn will blow for 1/2 second each time [HORN] is pressed.

The horn will blow automatically at the end of each period for 2 seconds.

3.9 Placing Indicators

Push Home [PLACE] then the placing for home, then [ENTER] for home placing. Repeat this procedure for the Guest side.

WARNING

120 VAC wires are exposed whenever the cover over the controller assembly is removed from the scoreboard. Use extreme caution during troubleshooting or repair. To avoid possible damage to equipment or personal injury, always turn off the main power before removing the cover or replacing assemblies, or replacing lamps.

4. MAINTENANCE AND TROUBLESHOOTING

4.1 Introduction

This section gives maintenance and troubleshooting information. Included are troubleshooting guides for typical scoreboard malfunctions. If the cause of a problem cannot be determined, please contact the customer service department.

4.2 Test Equipment

A simple analog or digital voltmeter will be sufficient for all user repairable problems. Printed circuit boards requiring troubleshooting should be returned to the factory.

4.3 Troubleshooting

Whenever possible, follow the troubleshooting guides prior to contacting the customer service department. If a problem not described in the guides exists, contact the customer service department immediately. Refer to the diagrams provided for assistance in troubleshooting scoreboard malfunctions.

4.4 Troubleshooting Guides

(A) Scoreboard doesn't light and console doesn't work

(a) Check that the main power switch is turned on.
(b) Replace any defective or blown fuses.
(c) Check the power connections and voltages at the scoreboard.
(d) Contact the customer service department.

(B) Scoreboard digits don't light, but the console works

(a) With the main power switch "off"; remove the cover over the controller assembly.
(b) Check all connections.
(c) Turn the main power on.
(d) If the scoreboard still doesn't light, check the transformer voltage going to the receiver PCB (printed circuit board) assembly (blue wires) using a voltmeter set on the 12 VAC or higher scale.

If the voltage is less than 8 VAC contact the customer service department.

If the voltage is between 8-12 VAC see the replacement parts list for a receiver PCB assembly, and contact the customer service department.

(C) The scoreboard digits light but the console doesn't work

(a) Check for continuity between the scoreboard and the junction box.
(b) If an open circuit is found, the problem is either the cable or a cable connection.
(c) If the continuity test checks good, check the voltage between the green wire and the white wire in the junction box, using a voltmeter set on the 12 VAC or higher scale.

If the voltage is 0 VAC see the controller parts list for a transformer assembly.

If the voltage is less than 8 VAC consult the controller wiring diagram for instructions on long cable compensation.

If the voltage is between 8 VAC and 12 VAC contact the customer service department.

(D) The scoreboard digits light, the console works, but there is no control of the scoreboard.

(a) Check the voltage between the black and red wires in the junction box with a voltmeter set on the 3 VDC or higher scale. The voltage should read somewhere between 2-3 VDC when the console is working properly.

(b) If the voltage is 0 VDC contact the customer service department for assistance.
(c) If the voltage is correct, (2-3 VDC) check that this reading also appears at the scoreboard.
(d) If the correct voltage also appears at the scoreboard, see the replacement parts list for a receiver PCB assembly.

(E) The scoreboard works, but some lights stay on all the time

(a) With the main power "OFF", switch the plug from the bad digit with the plug for a known good digit.

EXAMPLE: Plug "C" into "D" and "D" into "C" locations.

(b) Turn the power back on. If the same lamps remain lit all the time, the problem is a shorted lamp socket. If the lamps on a different digit now stay lit all the time, the problem is on the driver PCB assembly. See the replacement parts list for the proper replacement part.

(F) The scoreboard works, but some lights do not come on.

(a) Check for burned out lamps.

IMPORTANT !!!

In this scoreboard the 120 volt line is on the lamp socket all the time, and the common is switched to turn the lamps on and off. For this reason, to avoid damage to the equipment or personal injury, it is important to turn the main power off when changing the lamps.

(b) Check for a broken wire or bad connection on the 12 pin connector.
(c) See the replacement parts list for the proper replacement driver board.

5. REPLACEMENT PARTS LIST

5.1 Scoreboard Display Parts

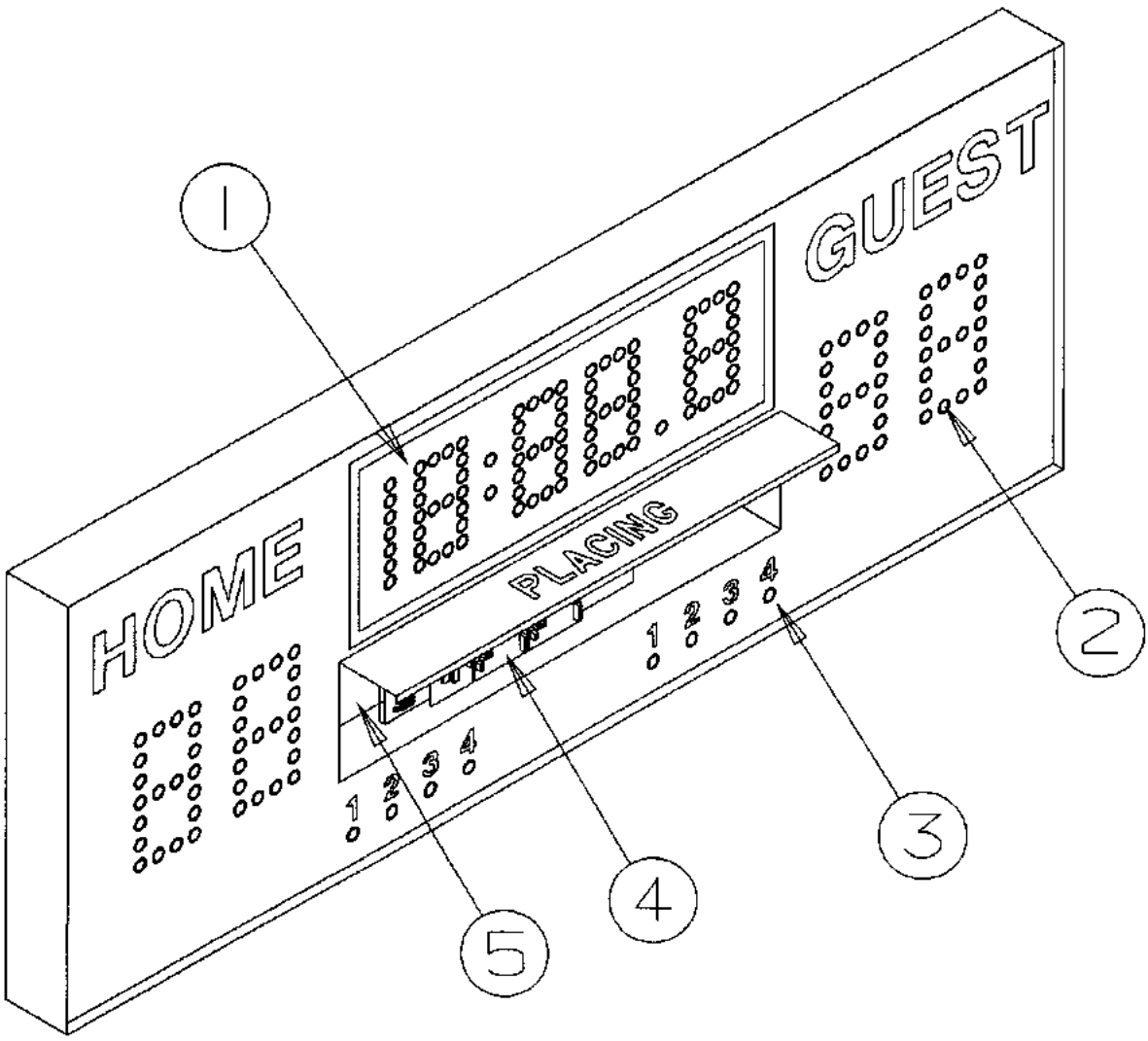


figure 1

DISPLAY ASSEMBLY

REPLACEMENT PARTS LIST (MP-2702)

fig.& index	MFG PART NUMBER	DESCRIPTION	REF DES	VENDOR PART #
1-	150460	Display Assembly		150460
1-1	850001	Lamp, 7C7/125V White		7C7/W
1-2	850002	Lamp, 7C7/125V Amber		7C7/A
1-3	850003	Lamp, 7C7/125V Green		7C7/G
1-4	180156	Controller Assembly *****SEE FIGURE 2*****		180156
1-5	119337	Line Filter, Mallory		20VB1
1-6	700102	Resistor, 2 OHM 10 WATT		HLM-10-10Z
	SU4450	Control Console		SU4450
	HB005500	Slipsheet Pair		HB005500
	HB002300	Transmitter PCB Assembly	A1	HB002300
	SW005100	Toggle Switch,	S1	SW005100
	702785	Connector, 5 Pin Male Cable	P1	RM12BPG5P
	EL053000	LCD Display, 2 Line 20 Character		
	HB002400	Keyboard Assembly,		HB002400
	WH009100	Ribbon Cable Assembly, 14C 8"		WH009100
	122763	Enclosure,		
	151204	Wall Junction Box, Single		151204
	702786	Connector, 5 Pin Female	J1	RM12BRD5S
	150500	Cable, MP-41 Control		8723
	150205	Wall Junction Box, Dual		150205
	702786	Connector, 5 Pin Female	J1-J3	RM12BRD5S
	150500	Cable, MP-41 Control		8723
	700618	Diode, 1N457A	D1/D2	1N457A

5.2 Scoreboard Controller Assembly Parts

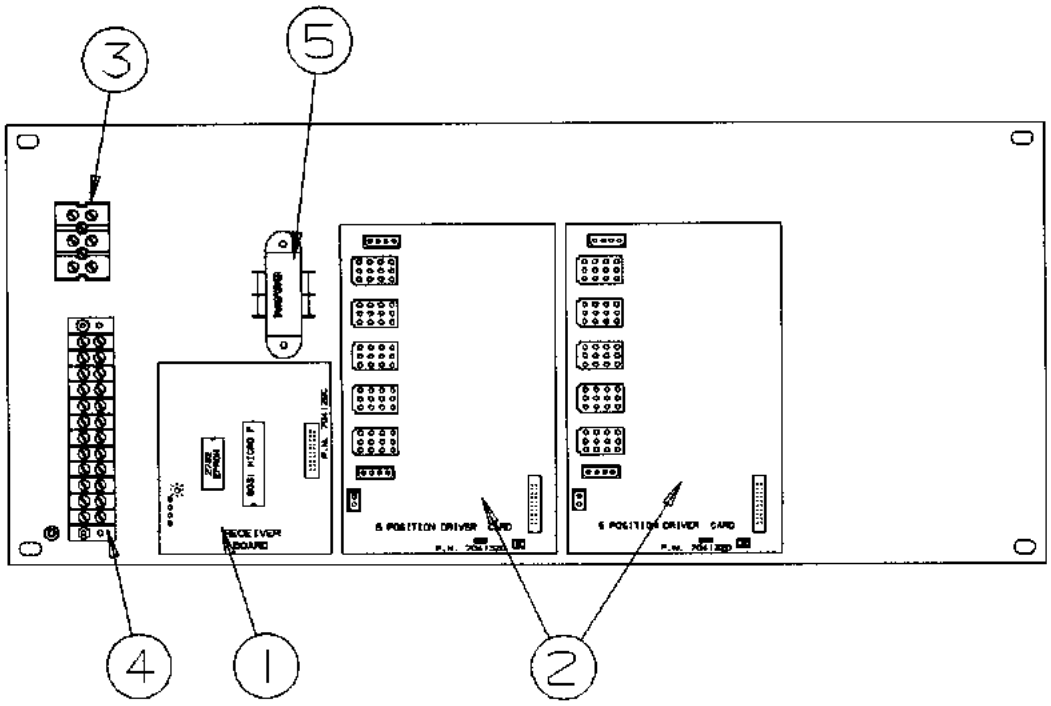


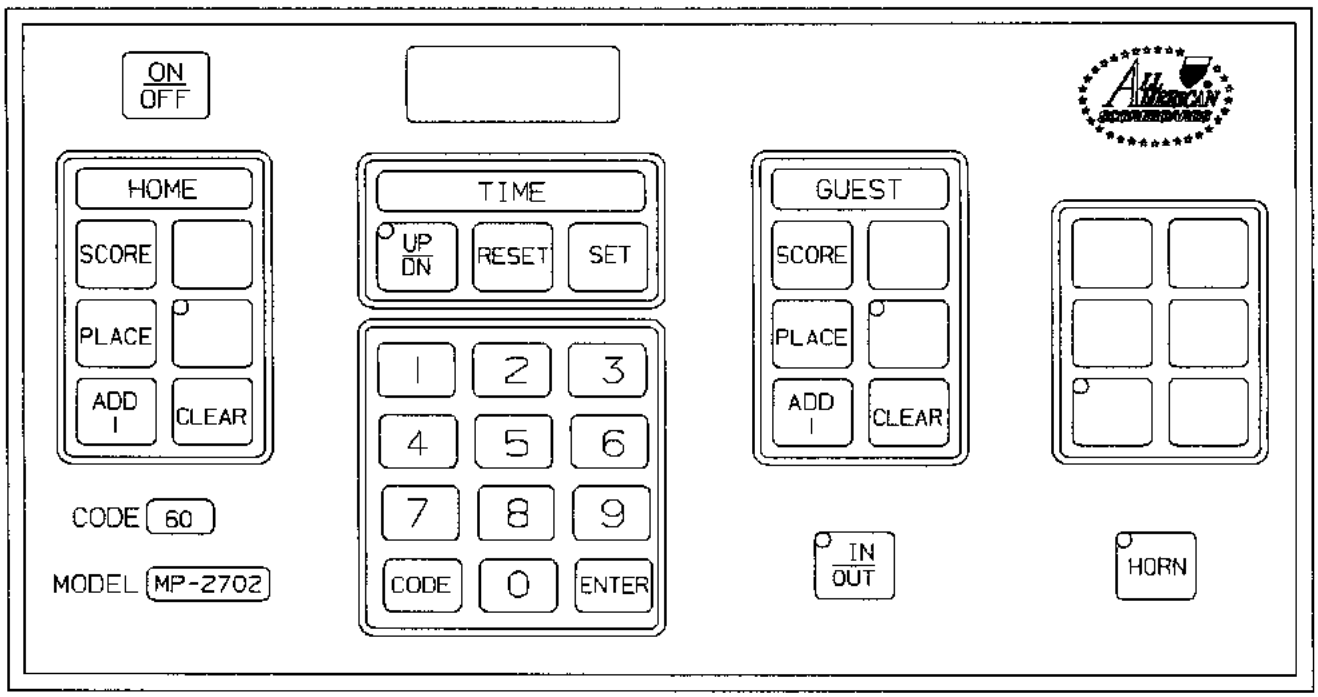
figure 2

CONTROLLER ASSEMBLY

REPLACEMENT PARTS LIST (MP-2702 Controller Assembly)				
fig.& index	MFG PART NUMBER	DESCRIPTION	REF DES	VENDOR PART #
2-	180156	Controller Assembly	A2	180156
2-1	150366	Receiver PCB Assembly *** PROGRAM 3MP-CNT-V00***	A3	150366
2-2	150368	Driver PCB Assembly, 5 Position	A4-A5	150368
2-3	EL055800	Terminal Block, 3C	TB-1	B-03 EAGLE
2-4	701103	Terminal Block, 12C	TB-2	670-12
2-5	151301	Transformer, 8V/18V	T1	CS-697
2-6	151300	Horn Suppressor Assy.		151300
2-7	700520	Varistor,		ERZ-C20DK201U
2-8	700850	Capacitor, 0.02 MFD 400V.		
2-9	705075	Ribbon Cable Assy, W/2 Fem.Connectors		AS-1053
2-10	HB005600	Cover		HB005600
2-11	705723	Spacer, P.C.Board		LCBS-6-01

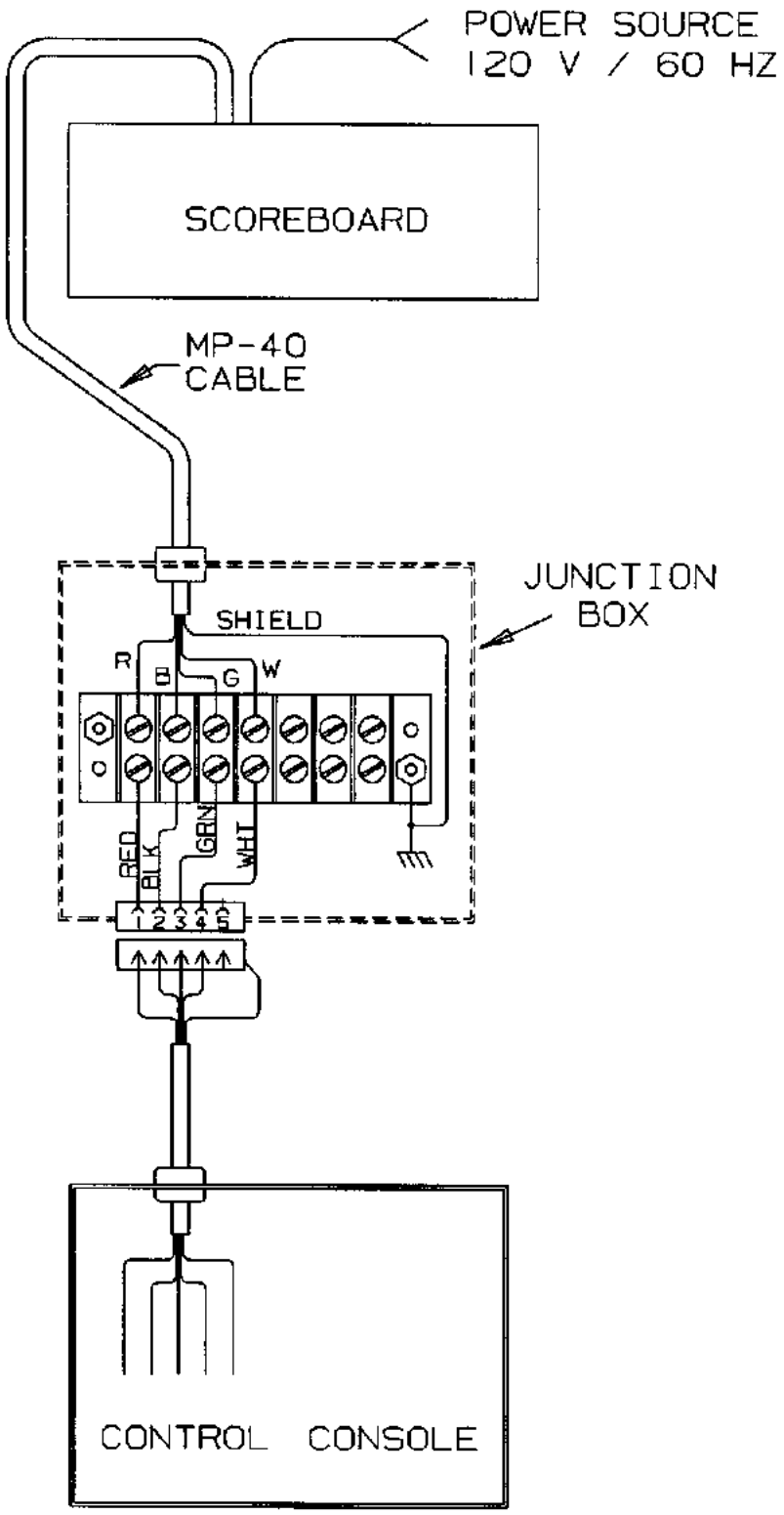
6. DIAGRAMS

6.1 Control Console Keyboard and Slipsheet Layout



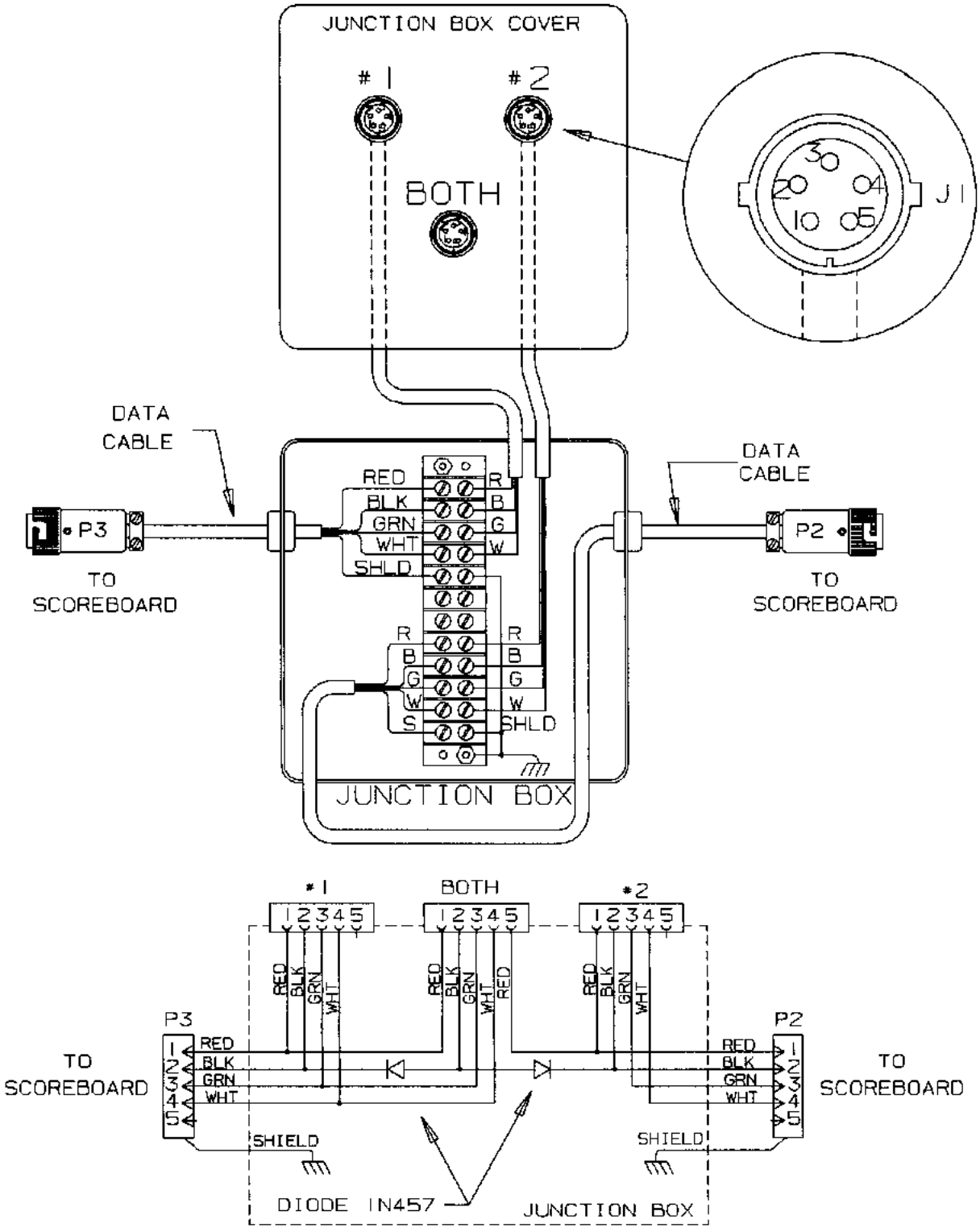
CONSOLE KEYBOARD

6.2 Scoreboard System Layout



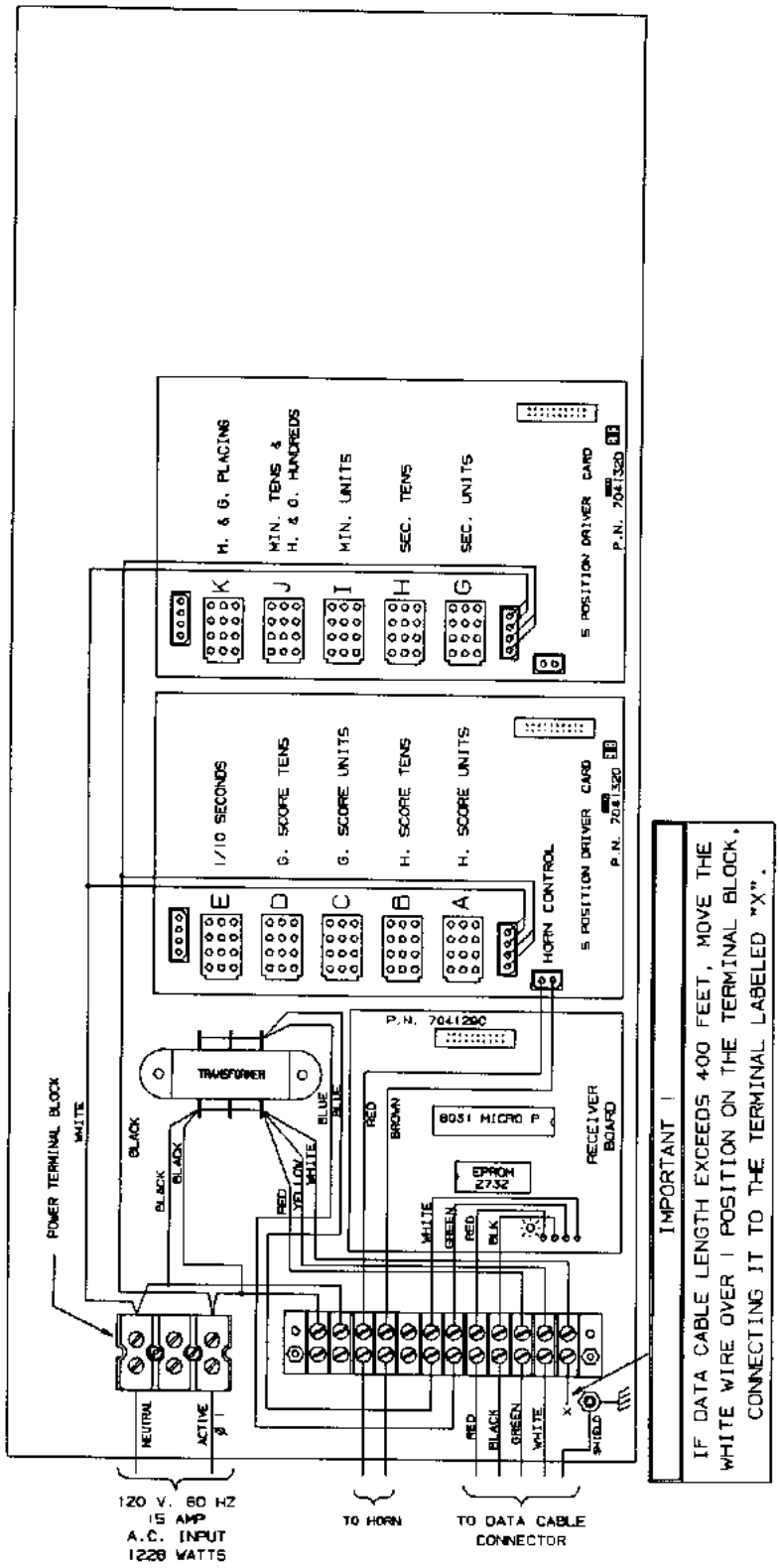
SYSTEM LAYOUT

6.4 Dual Wall Junction Box Wiring



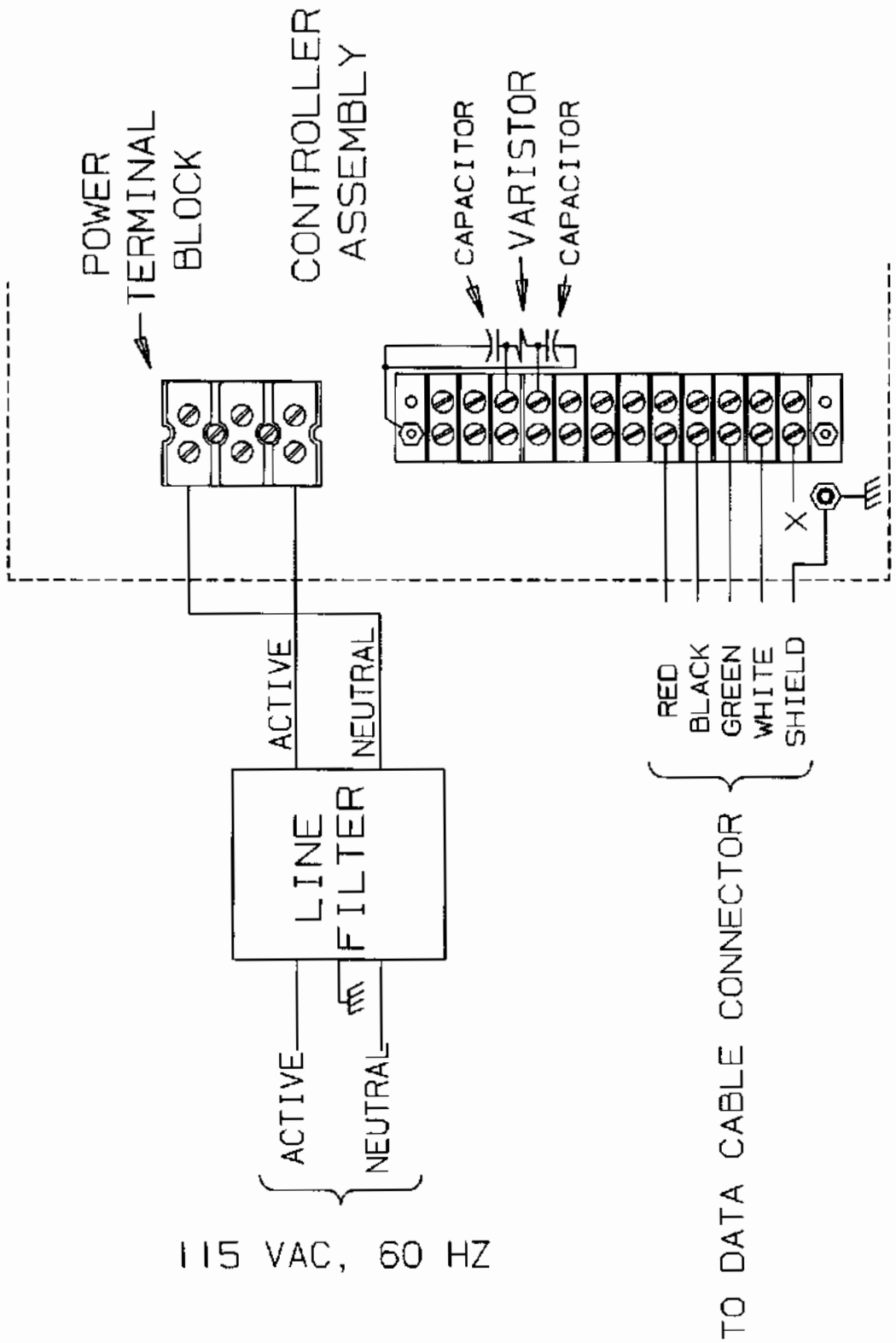
DUAL JUNCTION BOX WIRING

6.5 Controller Assembly Wiring



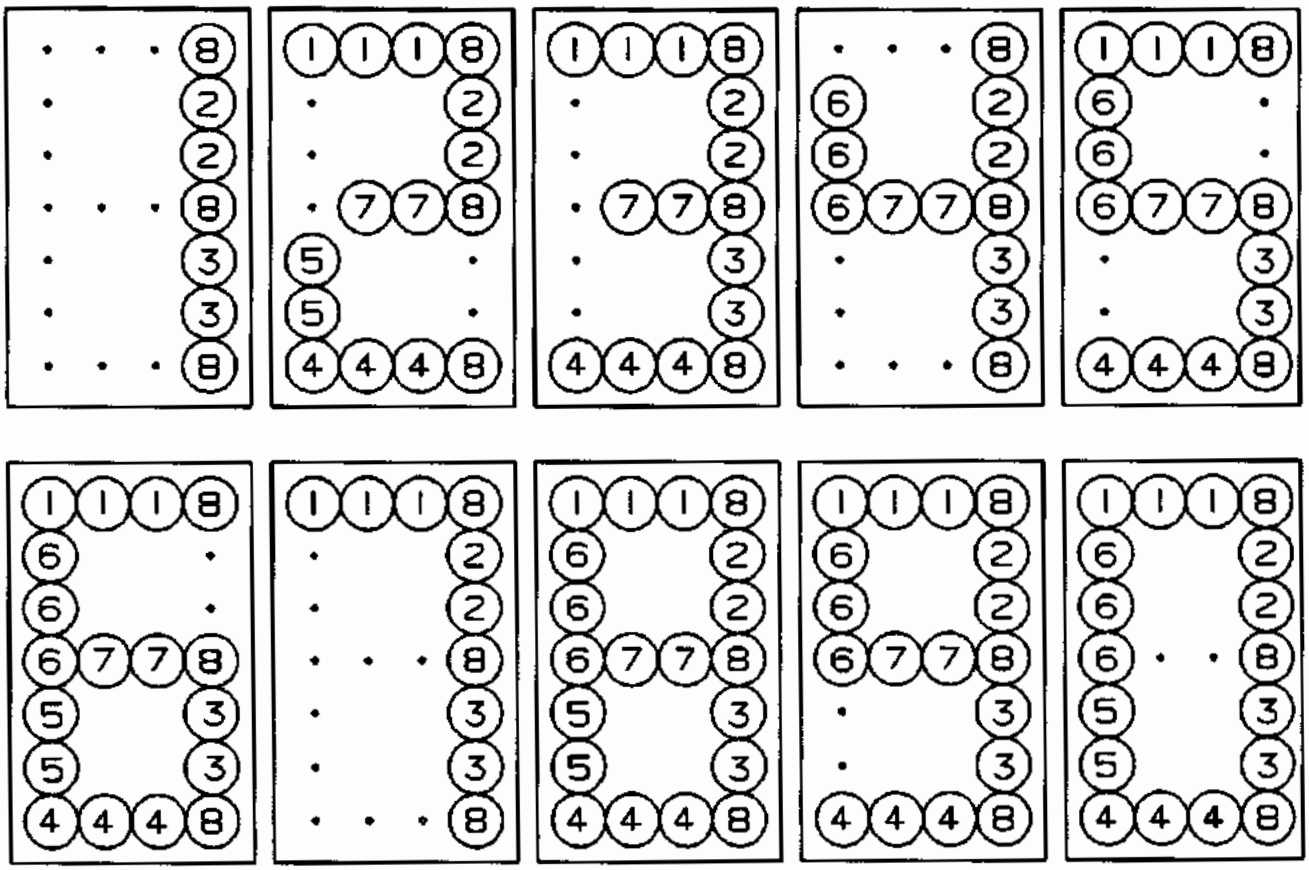
CONTROLLER ASSEMBLY

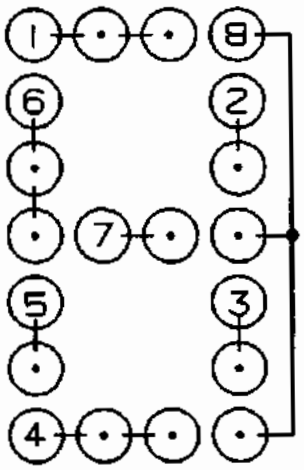
6.6 Line Filter Wiring Diagram



LINE FILTER WIRING

6.7 Microprocessor 4 X 7 Lamp Pattern (8 Bit)



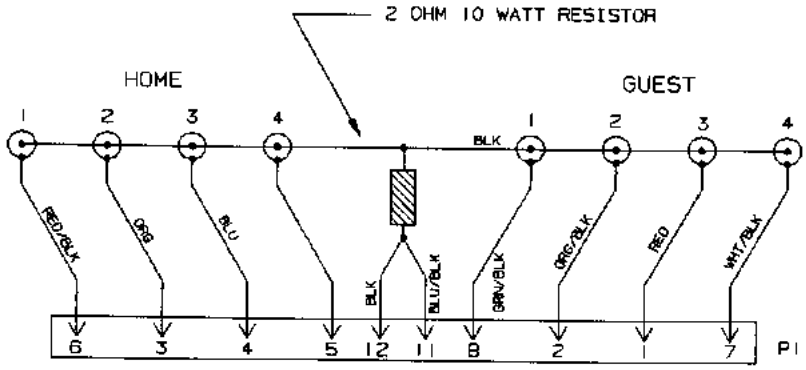


NUMERALS

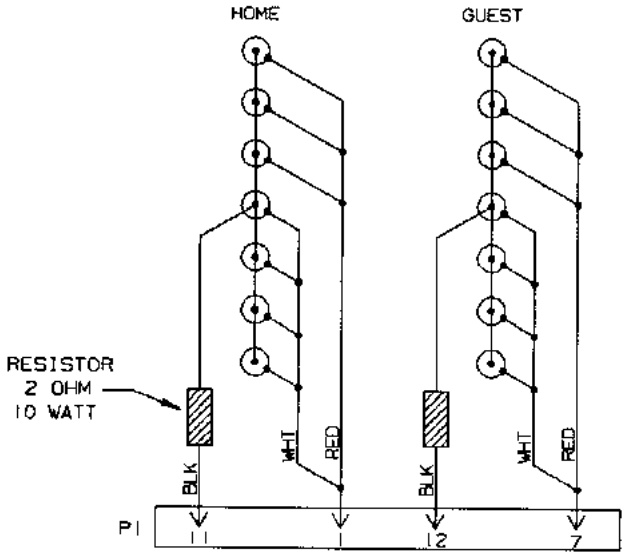
BIT NUMBERS	0	1	2	3	4	5	6	7	8	9
1	0	.	2	3	.	5	6	7	8	9
2	0	1	2	3	4	.	.	7	8	9
3	0	1	.	3	4	5	6	7	8	9
4	0	.	2	3	.	5	6	.	8	9
5	0	.	2	.	.	.	6	.	8	.
6	0	.	.	.	4	5	6	.	8	9
7	.	.	2	3	4	5	6	.	8	9
8	0	1	2	3	4	5	6	7	8	9

MICROPROCESSOR 4 X 7 (8 BIT) LAMP PATTERN

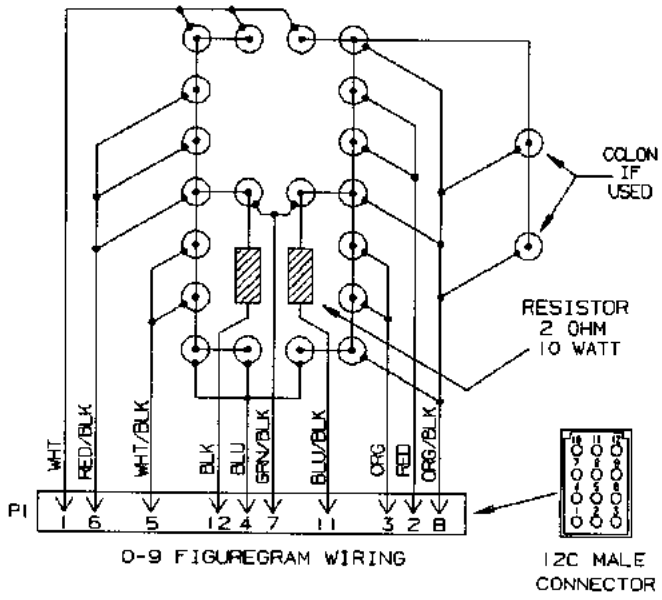
6.8 Figuregram Wiring



PLACING WIRING



SINGLE ONES WIRING
OPTIONAL FOR 199 SCORING

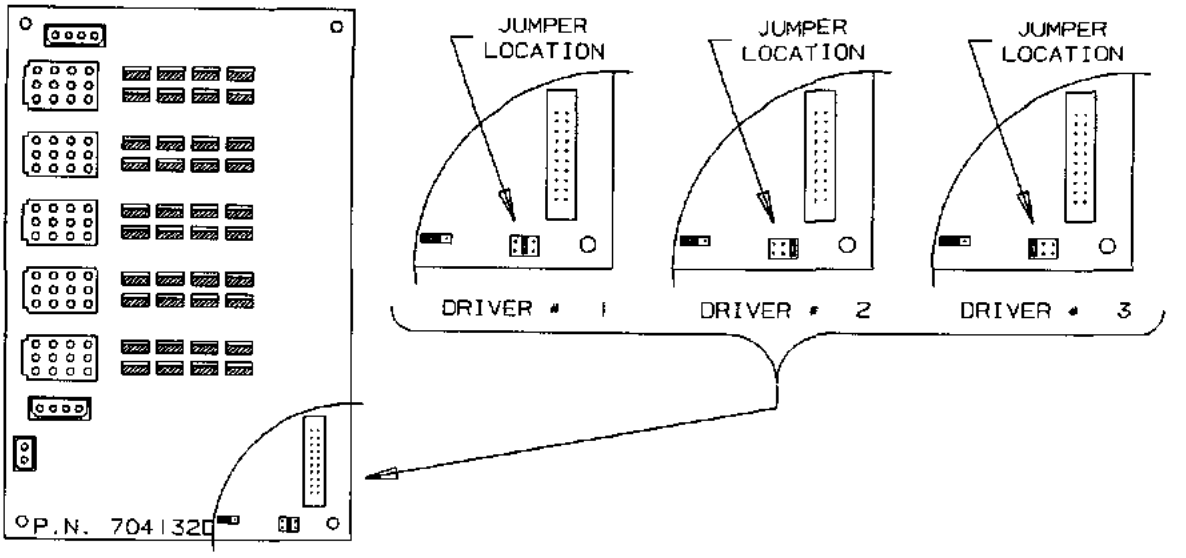


0-9 FIGUREGRAM WIRING

I2C MALE
CONNECTOR

8 BIT FIGUREGRAM WIRING

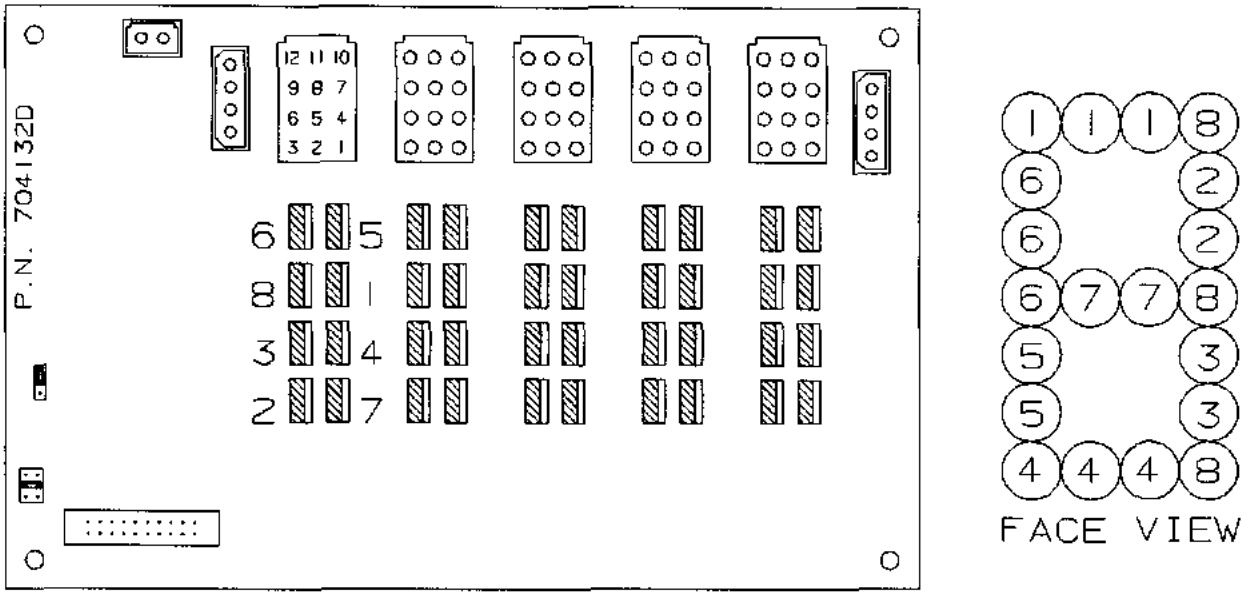
6.9 Jumper Location on 5 Position System



JUMPER LOCATION

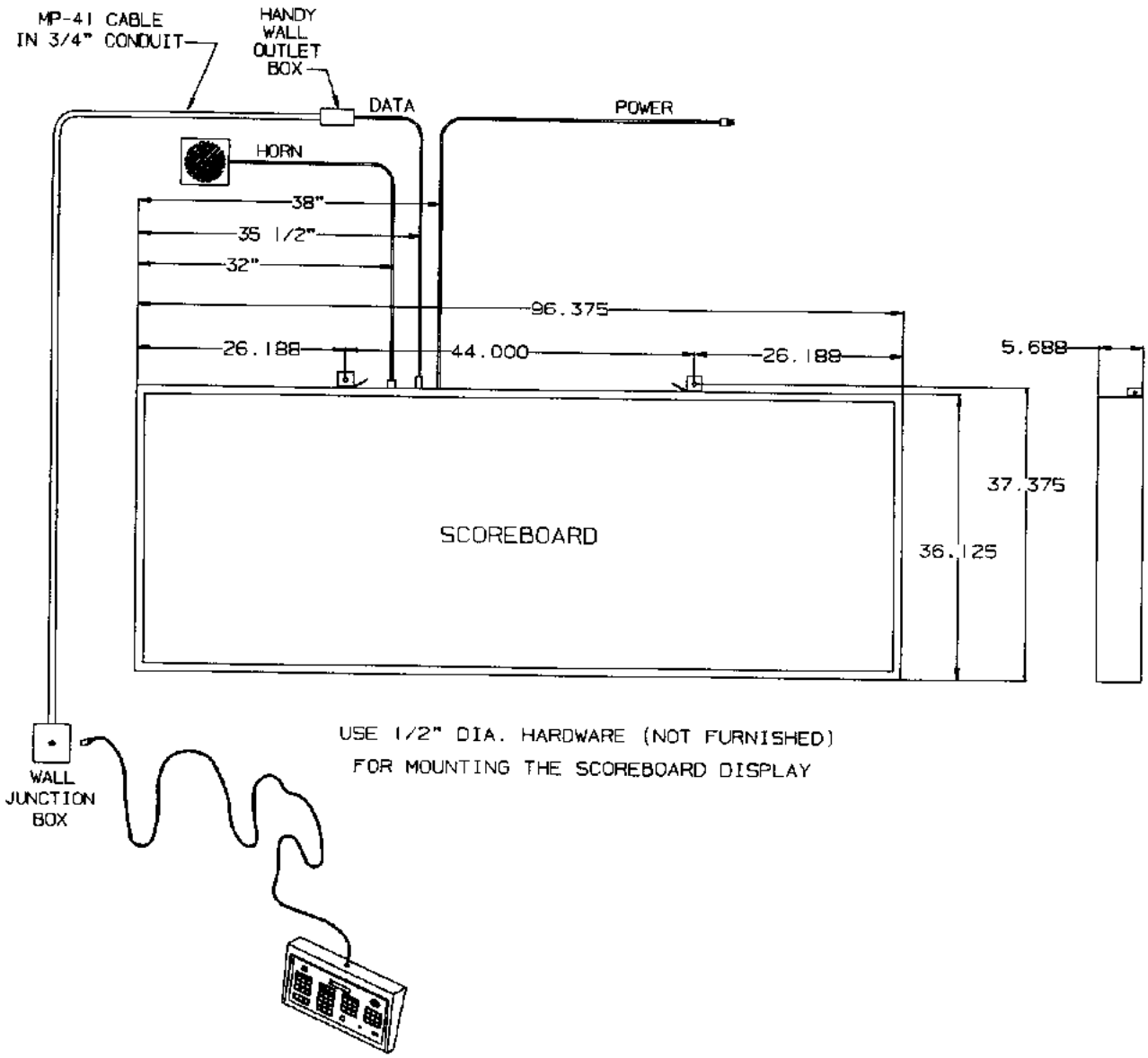
6.10 Triac Placement

The triac is the switch that controls the figuregram lamps. The triacs for any given figuregram are adjacent to the twelve pin connector on the driver board that controls that figuregram. Shown below is the triac placement and bit designation relative to the figuregram bit pattern.



MP TRIAC PLACEMENT

6.11 Installation Drawing



INSTALLATION DRAWING